

BOARD MEETING DATE: January 5, 2024

AGENDA NO. 14

**PROPOSAL:** Determine that Proposed Amended Rule 1180 - Fenceline and Community Air Monitoring for Petroleum Refineries and Related Facilities, Proposed Rule 1180.1 - Fenceline and Community Air Monitoring for Other Refineries, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines are Exempt from CEQA; Amend Rule 1180, Adopt Rule 1180.1, and Amend the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines

**SYNOPSIS:** Proposed Amended Rule 1180 (PAR 1180) and Proposed Rule 1180.1 (PR 1180.1) will require refineries and facilities with operations related to refineries to monitor certain air pollutants at or near their fenceline and to fund the installation and operation of monitoring stations within the community near their facilities. PAR 1180 will remove an exemption, include facilities with operations related to petroleum refineries, and include monitoring requirements for additional air pollutants. PR 1180.1 will establish similar fenceline and community monitoring requirements for smaller refineries that are not currently subject to Rule 1180. PAR 1180 and PR 1180.1 will establish notification thresholds, add provisions if there is an exceedance, require independent audits and corrective actions, and improve data accessibility. In addition, the Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines will be updated to reflect the proposed rule changes and reflect the adoption of Rule 1180.1.

**COMMITTEE:** Stationary Source, September 15 and November 17, 2023

**RECOMMENDED ACTIONS:**

Adopt the attached Resolution:

1. Determining that Proposed Amended Rule 1180 – Fenceline and Community Air Monitoring for Petroleum Refineries and Related Facilities, Proposed Rule 1180.1 - Fenceline and Community Air Monitoring for Other Refineries, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines, are exempt from the requirements of the California Environmental Quality Act;
2. Amending Rule 1180 – Fenceline and Community Air Monitoring for Petroleum Refineries and Related Facilities and adopting Rule 1180.1 - Fenceline and Community Air Monitoring for Other Refineries; and

### 3. Amending Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines.

Wayne Natri  
Executive Officer

SR:MK:HF:YZ:MM:JV

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#### Background

Rule 1180 – Refinery Fenceline and Community Air Monitoring (Rule 1180) was adopted in November 2017 to require major petroleum refineries to conduct real-time fenceline air monitoring for a list of specified air pollutants at or near the property boundaries, and to provide data as quickly as possible to the public. The rule also requires the petroleum refineries to fund refinery-related community air monitoring stations that are installed and operated by the South Coast AQMD. Rule 1180 applies to petroleum refineries permitted to process petroleum products, with an exemption for refineries with a maximum capacity to process less than 40,000 barrels per day (bpd) of crude oil. Rule 1180 was adopted to provide ambient air monitoring data to petroleum refineries, communities, and South Coast AQMD staff about certain air pollutants, including some toxic air pollutants. Rule 1180 requires petroleum refinery owners or operators to submit a written fenceline air monitoring plan for establishing and operating the fenceline air monitoring systems. The Rule 1180 Refinery Fenceline Air Monitoring Guidelines, which were adopted with Rule 1180 in November 2017, specify criteria that refineries must follow when developing their fenceline air monitoring plan.

On December 19, 2022, East Yard Communities for Environmental Justice filed a lawsuit against the South Coast AQMD in Los Angeles Superior Court (Case No. 22STCP04398). The lawsuit claimed that South Coast AQMD has not fulfilled its duty to implement Health and Safety Code Section 42705.6, which specifies elements that must be included in a refinery monitoring rule, due to the 40,000 bpd exemption in Rule 1180.

PAR 1180 and PR 1180.1 were developed to address the issues identified in the lawsuit and include monitoring requirements for air pollutants that are identified in the Office of Environmental Health Hazard Assessment report “Analysis of Refinery Chemical Emissions and Health Effects” finalized in March 2019 (OEHHA 2019 report). The regulated facilities will not be required to monitor air pollutants identified in the OEHHA 2019 report that are not emitted from their facilities or are not feasible to monitor in real-time or near real-time. Amendments to the Rule 1180 Refinery Fenceline Air Monitoring Guidelines (which is proposed to be renamed as Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines) are also necessary to include both Rule 1180 and PR 1180.1 and to reflect the proposed changes in PAR 1180.

## **Public Process**

PAR 1180 and PR 1180.1 were developed through a public process. Staff held five Working Group Meetings on: January 25, April 19, May 30, July 11, and October 12, 2023. The meetings included a variety of stakeholders such as affected facilities, industry associations, public agencies, environmental groups, and community groups. In addition, staff held two Public Workshops on August 22, 2023, in the day and evening to enhance community engagement. As part of this rule development process, staff also met with individual stakeholders and conducted site visits at affected facilities.

## **Proposed Rule and Amendments**

PAR 1180 will expand the applicability provision to include additional facilities with operations that are related to the petroleum refineries that are located on properties adjacent to, or contiguous with, petroleum refineries, remove the 40,000 bpd exemption, require monitoring of additional air pollutants identified in the OEHHA 2019 report, include fees for the purchase and installation of additional monitoring technologies at existing community air monitoring stations to measure the new compounds associated with refinery operations that were identified in the OEHHA 2019 report, include fees to establish two new community air monitoring stations, and exempt terminals with smaller tank capacities.

PR 1180.1 will establish fenceline monitoring requirements for smaller refineries that were exempted by Rule 1180, including two asphalt refineries and one refinery that processes alternative feedstocks, require monitoring of applicable air pollutants identified in the OEHHA 2019 report, and include fees to establish three new community air monitoring stations near the PR 1180.1 facilities.

In addition, PAR 1180 and PR 1180.1 will set notification thresholds for several of the newly included air pollutants and include a notification threshold based on historical fenceline monitoring data for total VOCs, require specific cause analysis when air pollutants are detected above notification thresholds, and require an independent audit and corrective action plan for any deficiencies identified. Both PAR 1180 and PR 1180.1 include specifications for a web-based fenceline data display and notification program and quarterly reports.

The Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines specify criteria that facilities must follow when developing their fenceline air monitoring plan. These guidelines will be updated to include PR 1180.1 and reflect the changes to PAR 1180.

## **Key Issues**

Throughout the rule development process, staff worked with stakeholders and revised PAR 1180 and PR 1180.1 to address key issues. There are three remaining key issues:

exemption for terminals based on tank capacity, applicability of the rule to Kinder Morgan, and the criteria for excluding air pollutants from monitoring.

*Exemption for Terminals Based on Tank Capacity Due to Low Emissions*

Some stakeholders expressed concern that PAR 1180 will exempt certain tank terminals.

PAR 1180 includes an exemption for smaller terminals based on their low potential for emissions, which is about two pounds per day or less. These terminals have a fewer number of tanks along with a smaller volume size than the tank terminals subject to the rule. In addition, these small terminals already have fence-line air monitoring systems in place on several sides of their fence-line operated by the adjacent petroleum refineries as well as nearby community monitoring systems in place, which provide coverage to detect potential air pollutant emissions from the terminals. In addition, terminals are regulated under Rule 1178 - Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities and/or Rule 463 - Organic Liquid Storage which include weekly VOC emission leak detection requirements, using optical gas imaging.

*Applicability of the Rule to Kinder Morgan Liquids Terminal (Kinder Morgan)*

Kinder Morgan has stated that they should not be subject to Rule 1180 because they do not meet the definition of a facility with operations related to petroleum refineries (related facility) which includes “any establishment that has operations related to the refinery processes located on properties adjacent to or contiguous with a Petroleum Refinery which receive more than 50 percent of their product input either directly or **indirectly** from, or provide more than 50 percent of their product output either directly or **indirectly** to, any of the Petroleum Refineries.”

Kinder Morgan is a large terminal with a total of 63 tanks, whose operations involve local Rule 1180 petroleum refineries. This facility has provided documentation that indicates they receive 45.8 percent of their product input directly from the Rule 1180 petroleum refineries, which is less than the 50 percent threshold in the definition. However, staff has confirmed with several tank terminals sending products to Kinder Morgan that a considerable quantity of their product input comes from local Rule 1180 petroleum refineries. Therefore, Kinder Morgan is receiving product input **indirectly** from local Rule 1180 petroleum refineries through other tank terminals. Kinder Morgan has not demonstrated they do not meet the definition of a related facility and will remain subject to the rule. If the rule is approved for adoption, Kinder Morgan will have 12 months to either develop a fence-line air monitoring plan for approval or definitively demonstrate they do not meet the definition of a related facility.

### *Criteria for Excluding Air Pollutants from Fenceline or Community Air Monitoring Systems*

The petroleum refineries would like additional criteria to exclude pollutants listed in PAR 1180 from fenceline and community monitoring, including if pollutants are only emitted at low levels or not historically detected.

PAR 1180 and PR 1180.1 specify a list of pollutants identified as priority pollutants emitted from petroleum refineries in the 2019 OEHHA report that require real-time air monitoring. OEHHA acknowledges some of the compounds identified, such as the metal pollutants cadmium, nickel, and manganese, are emitted at low levels; however, they included them on the priority list due to their high toxicity. Petroleum refineries report metal emissions on their Annual Emission Reporting (AER) at levels much higher than the screening thresholds in Rule 1401 - New Source Review of Toxic Air Contaminants (Rule 1401). While the AER reported emissions are facility-wide emissions and the Rule 1401 screening thresholds were developed for emissions of individual units, one can use these screening thresholds as a conservative method to indicate possible health risks based on AER reported emissions. Based on AER reported data, refinery emissions for cadmium, nickel, and manganese are orders of magnitude higher than screening thresholds used for permitting. Although computer modeling has shown that ground level concentrations of these toxic air contaminants are below notification levels, ambient monitoring will provide additional information to ensure these levels are below health protective thresholds. Staff does not agree that pollutants routinely measured below the detection limits of currently available real-time monitoring equipment should no longer require monitoring. It is commendable that many of the air pollutants remain below the monitoring detection limits during routine operations. However, the refineries in the South Coast AQMD are located very close to communities with high population densities, which means elevated concentrations crossing the fenceline could broadly affect neighboring communities.

### **California Environmental Quality Act**

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project (PAR 1180, PR 1180.1, and the Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines) is exempt from CEQA pursuant to CEQA Guidelines Sections 15061(b)(3) and 15306. Further, there is no substantial evidence indicating that any of the exceptions to the categorical exemption set forth in CEQA Guidelines Section 15300.2 apply to the proposed project. A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062 and is included as Attachment K to this Board letter. If the proposed project is approved, the Notice of Exemption will be filed for posting with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties, and with the State Clearinghouse of the Governor's Office of Planning and Research.

### **Socioeconomic Impact Assessments**

The proposed project potentially affects 15 facilities: the seven petroleum facilities originally subject to Rule 1180, the five new related facilities subject to PAR 1180, and the three new PR 1180.1 facilities, and would require the installation of new real-time fenceline air monitoring equipment at the property line of petroleum refineries and related facilities and the payment of fees to cover the cost of community monitoring stations in surrounding areas. None of the 15 affected facilities qualify as small businesses. The 15 facilities would incur costs related to the installation and maintenance of new monitoring equipment, labor costs to install and maintain monitoring systems, and other costs consistent with the Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines. The total present discounted cost of the proposed project over the 2025-2045 period is estimated to be \$165.71 million to \$122.05 million with a 1% and 4% discount rate, respectively. The annual average compliance cost of PAR 1180 and PR 1180.1 is estimated to be \$8.88 million to \$9.27 million for a 1% and 4% interest rate, respectively. The majority of the affected facilities belong to the Petroleum Refining Industry. When the compliance cost is annualized using a 4% interest rate, seven net jobs are projected to be added to the regional economy on average over the period between 2025 and 2045, relative to the baseline forecast.

### **AQMP and Legal Mandates**

Pursuant to Health and Safety Code Section 40460(a), the South Coast AQMD is required to adopt an AQMP demonstrating compliance with all federal regulations and standards. The South Coast AQMD is required to adopt rules and regulations that carry out the objectives of the AQMP. PAR 1180 and PR 1180.1 are not a control measure of the 2022 AQMP but is needed to implement the requirements of Health and Safety Code Section 42705.6 that requires petroleum refineries to install and operate fenceline air monitoring systems and to fund air districts to install and operate refinery-related community air monitoring systems. PAR 1180 and PR 1180.1 further protect public health by requiring petroleum refineries to record and maintain real-time and historical data of refinery air pollutant emissions at or near their property boundaries, and to provide data as quickly as possible to the South Coast AQMD and to the public, which can be used for estimating associated pollutant exposures and health risks and in determining trends in air pollutant levels over time. The data will also improve staff's understanding of the impacts that these emissions at petroleum refineries have on local and regional air quality.

### **Implementation and Resource Impacts**

PAR 1180 and PR 1180.1 require affected facilities to pay fees to fund the installation and operation of community air monitoring systems. Further, Rule 301 – Permitting and Associated fees (Rule 301) specifies fees Rule 1180 petroleum refineries are required to pay to fund the annual operation and maintenance of the community air monitoring systems. Rule 301 will need to be revised to include additional annual fees for new facilities subject to PAR 1180 and PR 1180.1 to fund additional staff resources for

operating and maintaining the community air monitoring stations. Annual operating and maintenance costs for the community air monitoring stations will not be required until they are installed and in operation, which staff anticipates will be in the 2026 calendar year. Furthermore, Rule 306 – Plan Fees will cover the staff resources spent on reviewing and approving the FAMPs. Staff anticipates about 10 full-time positions will be required, which will be covered by fee schedules specified in the aforementioned rules.

**Attachments**

- A. Summary of Proposals
- B. Key Issues and Responses
- C. Rule Development Process
- D. Key Contacts List
- E. Resolution
- F. PAR 1180
- G. PR 1180.1
- H. Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines
- I. Final Staff Report
- J. Final Socioeconomic Impact Assessment
- K. Notice of Exemption from CEQA
- L. Board Presentation

**ATTACHMENT A**  
**SUMMARY OF PROPOSALS**

**Proposed Amended Rule 1180 – Fenceline and Community Air Monitoring for  
Petroleum Refineries and Related Operations**  
**and**  
**Proposed Rule 1180.1 – Fenceline and Community Air Monitoring for Other  
Refineries**

**Applicability**

- PAR 1180: Petroleum refineries that primarily produce transportation fuels and adjacent facilities with operations that are related to the Rule 1180 petroleum refineries (Related Facility)
- PR 1180.1: Refineries that refine crude oil, alternative feedstocks, or both crude oil and alternative feedstocks, such as asphalt plants

**Plan Submittal**

- PAR 1180
  - Seven months after [Date of Rule Adoption], for a facility with an existing Fenceline Air Monitoring Plan (FAMP)
  - 12 months after [Date of Rule Adoption], for a Related Facility without an existing FAMP
  - At least one year prior to commencing operations at a new facility
- PR 1180.1
  - 12 months after [Date of Rule Adoption]
  - At least one year prior to commencing operations at a new refinery

**Compliance Schedule to install and begin operating new monitoring equipment or new fenceline air monitoring systems**

- PAR 1180
  - 15 months after FAMP approval or partial approval
  - Six months after revised FAMP approval or partial approval
- PR 1180.1
  - 24 months after FAMP approval or partial approval
  - Six months after revised FAMP approval or partial approval

**Web-based Fenceline Data Display and Notification Program**

- Display and store at least five years of data collected from the Fenceline Air Monitoring Systems
- Automatically generate and send a notification as soon as technically feasible, but no later than 15 minutes after, any air pollutant exceeds the notification threshold



**Proposed Amended Rule 1180 – Fenceline and Community Air Monitoring for  
Petroleum Refineries and Related Operations  
and  
Proposed Rule 1180.1 – Fenceline and Community Air Monitoring for Other  
Refineries**

- Send a follow-up notification each time the measured concentration of the air pollutant increases significantly above the initial notification thresholds
- Send a follow-up notification when an air pollutant continuously detected at a level below the notification threshold for 30 minutes or two continuous measurements

**Independent Audit**

- Cause an independent audit of fenceline air monitoring systems according to an audit protocol approved by the Executive Officer
- The independent audit shall be conducted by a qualified independent party, who will identify any deficiencies in the fenceline air monitoring system and quality assurance procedures and document the findings in an audit report
- For a Fenceline Air Monitoring System installed before [Date of Rule Adoption], an Independent Audit shall be completed by January 1, 2029, and once every three calendar years thereafter
- For a Fenceline Monitoring System installed on or after [Date of Rule Adoption], the initial audit shall be completed within one calendar year after the installation and operation of the Fenceline Air Monitoring System and subsequent audits shall be completed once every three calendar years thereafter
- If the audit report identifies deficiencies the Facility shall develop a Corrective Action Plan within three calendar months of the audit report
- The Executive Officer shall notify the Facility in writing whether the Corrective Action Plan is approved or disapproved
- If the Corrective Action Plan is disapproved, the Facility shall submit a revised Corrective Action Plan within 14 calendar days after notification of disapproval of the plan

**Recordkeeping, Reporting, and Specific Cause Analysis**

- Maintain records of all information required for at least five calendar years and shall make the information available to the Executive Officer upon request
- When an air pollutant measured above the Notification Threshold on a Facility Fenceline, initiate a Specific Cause Analysis within 24 hours to determine the source(s) of the air pollutant
- If the specific cause was determined to be from an on-site source, initiate corrective actions to stop the exceedance or taken to prevent a similar recurrence
- If the specific cause was determined to be from an off-site source, notify the Executive Officer no later than 24 hours of such determination

**Proposed Amended Rule 1180 – Fenceline and Community Air Monitoring for Petroleum Refineries and Related Operations  
and  
Proposed Rule 1180.1 – Fenceline and Community Air Monitoring for Other Refineries**

- If the specific cause was determined to be from an on-site source, submit a Specific Cause Analysis report to the South Coast AQMD and make it available on the web-based program within 14 calendar days of identifying the specific cause

Community Air Monitoring Fees

- PAR 1180
  - By January 31, 2025, a petroleum refinery shall pay the applicable installation fee for community air monitoring systems
  - By January 31, 2025, for phase one implementation and January 31, 2026, for phase two implementation, a Related Facility shall pay the applicable installation fee for community air monitoring systems
- PR 1180.1
  - By January 31, 2025, for phase one implementation and January 31, 2026, for phase two implementation, the owner or operator of a Refinery a Refinery shall pay the applicable installation fee for community air monitoring systems

Exemptions

- PAR 1180
  - Terminal with total tank storage capacity less than 310,000 barrels
- PAR 1180 and PR 1180.1
  - Facilities are exempt from the requirement of operating an existing Real-Time Fenceline Air Monitoring System for 96 hours in a calendar year, if operation of existing fenceline air monitoring equipment is disrupted by the required installation of new fenceline air monitoring equipment

**Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines (Guidelines)**

Guidelines have been modified to streamline the structure and clarify the language

Applicability

- Expanded to include both Rule 1180 and Rule 1180.1 facilities

Expanded discussions or specifications include:

- Discussions of new compounds and their monitoring technologies

**Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines (Guidelines)**

- Specifications for:
  - Criteria for excluding an air pollutant for fenceline air monitoring
  - Independent audit
  - Data display and dissemination
  - Text message notifications
  - Notification thresholds
  - Specific cause analysis

**ATTACHMENT B**  
**KEY ISSUES AND RESPONSES**

**Proposed Amended Rule 1180 – Fenceline and Community Air Monitoring for  
Petroleum Refineries and Related Facilities  
and  
Proposed Rule 1180.1 – Fenceline and Community Air Monitoring for Other  
Refineries**

Throughout the rule development process, staff worked with stakeholders to resolve key issues. The following three concerns were raised most recently, for which staff has worked with stakeholders to reach consensus.

[Exemption for Terminals Based on Tank Capacity Due to Low Emissions](#)

Some stakeholders expressed concern that PAR 1180 will exempt certain tank terminals.

PAR 1180 includes an exemption for smaller terminals based on their low potential for emissions, which is about two pounds per day or less. These terminals have a fewer number of tanks along with a smaller volume size than the tank terminals subject to the rule. In addition, these small terminals already have fenceline air monitoring systems in place on several sides of their fenceline operated by the adjacent petroleum refineries as well as nearby community monitoring systems in place, which provide coverage to detect potential air pollutant emissions from the terminals. In addition, these exempt terminals are regulated under Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities and/or Rule 463 – Organic Liquid Storage which include weekly VOC emission leak detection requirements using optical gas imaging.

[Applicability of the Rule to Kinder Morgan Liquids Terminal \(Kinder Morgan\)](#)

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subject to the rule. If the rule is approved for adoption, Kinder Morgan will have 12 months to either develop a fenceline air monitoring plan for approval or definitively demonstrate they do not meet the definition of a related facility.

### Criteria for Excluding Air Pollutants from Fenceline or Community Air Monitoring Systems

The petroleum refineries would like additional criteria to exclude air pollutants listed in PAR 1180 from fenceline and community monitoring, including if pollutants are only emitted at low levels or not historically detected.

PAR 1180 and PR 1180.1 provide a list of pollutants identified as priority pollutants emitted from petroleum refineries in the 2019 OEHHA report that require real-time air monitoring. OEHHA acknowledges some of the compounds identified, such as the metal pollutants cadmium, nickel, and manganese, are emitted at low levels; however, they included them on the priority list due to their high toxicity. Petroleum refineries report metal emissions on their Annual Emission Reporting (AER) at levels much higher than the screening thresholds in Rule 1401 – New Source Review of Toxic Air Contaminants (Rule 1401). While the AER reported emissions are facility-wide emissions and Rule 1401 screening thresholds were developed for emissions of individual units, one can use these screening thresholds as a conservative method to indicate possible health risks based on AER reported emissions. Based on AER reported data, refinery emissions for cadmium, nickel, and manganese are orders of magnitude higher than screening thresholds used for permitting. Although computer modeling has shown that ground level concentrations of these toxic air contaminants are below notification levels, ambient monitoring will provide additional information to ensure these levels are below health protective thresholds. Staff does not agree that pollutants routinely measured below the detection limits of currently available real-time monitoring equipment should no longer require monitoring. It is commendable that many of the air pollutants remain below the monitoring detection limits during routine operation. The refineries in the South Coast AQMD are located very close to communities with high population densities, which means elevated concentrations crossing the fenceline could broadly affect neighboring communities.

**ATTACHMENT C**  
**RULE DEVELOPMENT PROCESS**

**Proposed Amended Rule 1180 – Fenceline and Community Air Monitoring for Petroleum Refineries and Related Facilities**  
**and**  
**Proposed Rule 1180.1 – Fenceline and Community Air Monitoring for Other Refineries**



**Thirteen (13) months spent in rule development**  
**Two (2) Public Workshop Sessions**  
**Two (2) Stationary Source Committee Meetings**  
**Five (5) Working Group Meetings**

**ATTACHMENT D**  
**KEY CONTACTS LIST**

**Proposed Amended Rule 1180 – Fenceline and Community Air Monitoring for  
Petroleum Refineries and Related Facilities**  
**and**  
**Proposed Rule 1180.1 – Fenceline and Community Air Monitoring for Other  
Refineries**

Air Products and Chemical, Inc.

AltAir Paramount LLC

Atmosfir Optics, Ltd

California Department of Justice, Office of the Attorney General

Chevron Products Co.

Earthjustice

East Yard Communities for Environmental Justice

Kinder Morgan Liquids Terminals

LTR dba World Oil Refining

Olympus Terminal

Phillips 66 Company

Rancho LPG Holdings

Sonoma Technology, Inc.

Tesoro Refining & Marketing Co, LLC

Torrance Refining Company LLC

Valero (Ultramar Inc)

Valero Wilmington Asphalt Plant

Vopak Terminal Los Angeles Inc.

Western States Petroleum Association (WSPA)

## ATTACHMENT E

### RESOLUTION NO. 24-\_\_\_\_\_

**A Resolution of the Governing Board of the South Coast Air Quality Management District (South Coast AQMD) determining that Proposed Amended Rule 1180 – Fenceline and Community Air Monitoring for Petroleum Refineries and Related Facilities, Proposed Rule 1180.1 – Fenceline and Community Air Monitoring for Other Refineries, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines are exempt from the requirements of the California Environmental Quality Act (CEQA).**

**A Resolution of the South Coast AQMD Governing Board amending Rule 1180 – Fenceline and Community Air Monitoring for Petroleum Refineries and Related Facilities, adopting Rule 1180.1 – Fenceline and Community Air Monitoring for Other Refineries, and amending Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines.**

**WHEREAS**, the South Coast AQMD Governing Board finds and determines that Proposed Amended Rule 1180, Proposed Rule 1180.1, and the Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines are considered a “project” as defined by CEQA; and

**WHEREAS**, the South Coast AQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(i), and has conducted a CEQA review and analysis of the proposed project pursuant to such program (South Coast AQMD Rule 110); and

**WHEREAS**, the South Coast AQMD Governing Board finds and determines 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 the proposed project is exempt from CEQA; and

**WHEREAS**, the South Coast AQMD Governing Board finds and determines that, because the potential preparation of monitoring sites and installation of monitoring equipment may be achieved via minimal construction equipment, it can be seen with certainty that there is no possibility that the proposed project may have any significant effects on the environment, and is therefore, exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption; and

**WHEREAS**, the South Coast AQMD Governing Board finds and determines that enhancing air quality monitoring and collecting data would not result in a serious or major disturbance to an environmental resource, and is therefore, categorically exempt from CEQA pursuant to CEQA Guidelines Section 15306 – Information Collection; and



**WHEREAS**, the South Coast AQMD Governing Board has determined that there is no substantial evidence indicating that any of the exceptions to the categorical exemption apply to the proposed project pursuant to CEQA Guidelines Section 15300.2 – Exceptions; and

**WHEREAS**, the South Coast AQMD 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 Amended Rule 1180, Proposed Rule 1180.1, Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines, and supporting documentation, including but not limited to, the Notice of Exemption, the Final Socioeconomic Impact Assessment, and the Final Staff Report were presented to the South Coast AQMD Governing Board and the South Coast AQMD 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 South Coast AQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (Section 30.5(4)(D)(i) of the Administrative Code), that the modifications to Proposed Amended Rule 1180, Proposed Rule 1180.1, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines since the Notice of Public Hearing was published include the following: revising the wording in the applicability provision of Proposed Amended Rule 1180 and Proposed Rule 1180.1 for clarity; adding references under subparagraphs (g)(1)(B) and (h)(1)(E) of both rules for clarity; deleting “and quality assurance project plan” in subparagraph (h)(1)(E) of both rules since that plan is a part of the FAMP and does not need to be separately specified; providing 30 calendar days after rule adoption for a facility with existing plan or upon commencing operation of a new fenceline air monitoring system for a facility without a plan to implement new data display requirements under subparagraphs (h)(1)(B) through (h)(1)(D) of Proposed Amended Rule 1180; providing 90 calendar days after rule adoption for a facility with an existing plan or upon commencing operation of a new fenceline air monitoring system for a facility without an existing plan to implement the follow-up notification requirement under paragraph (h)(3) of Proposed Amended Rule 1180; dividing a sentence into two in paragraph (h)(4) of both rules for clarity; adding the word “and modifications” under paragraph (j)(8) of both rules for accuracy; correcting a reference error under subparagraph (k)(3)(C) of both rules; adding a reference under paragraph (l)(4) of Proposed Amended Rule 1180 and a reference under paragraph (l)(3) of Proposed Rule 1180.1 for accuracy; delaying the due date for the facilities to submit the applicable community monitoring fees in Proposed Amended Rule 1180 and Proposed Rule 1180.1 from January 1<sup>st</sup> to January 31<sup>st</sup>; renaming the “root cause analysis” to “specific cause analysis” in both rules to provide clarity and consistency with other rules; updating the community air monitoring fees for Kinder Morgan Liquids Terminals, LLC and Tesoro Logistics Carson Crude Terminal in Table 3 of Proposed Amended Rule 1180 to reflect the finalized community air monitoring fee analysis; correcting typos in both

rules; and updating phrases and sentences for clarity and alignment with the rules in Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines. These revisions meet the same air quality objective and are not so substantial as to significantly affect the meaning of Proposed Amended Rule 1180, Proposed Rule 1180.1, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines within the meaning of Health and Safety Code Section 40726 because: (a) the changes do not significantly 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 the proposed project is exempt from CEQA; and

**WHEREAS**, Health and Safety Code Section 40727 requires that prior to adopting, amending, or repealing a rule or regulation, the South Coast AQMD 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 South Coast AQMD Governing Board has determined that a need exists to amend Rule 1180, adopt Proposed Rule 1180.1, and amend Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines to further protect public health by providing air quality information to the public about levels of various criteria air pollutants, volatile organic compounds, metals, and other air pollutants, at or near the property boundaries of refineries and in nearby communities; and

**WHEREAS**, the South Coast AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, and 41508 as well as the federal Clean Air Act; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1180, Proposed Rule 1180.1, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines are written or displayed so that their meaning can be easily understood by the persons directly affected by them; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1180, Proposed Rule 1180.1, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines are in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or federal or state regulations; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1180, Proposed Rule 1180.1, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines do not impose the same requirements as any existing state or federal regulations, and the proposed project is

necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1180, Proposed Rule 1180.1, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines reference the following statutes which the South Coast AQMD hereby implements, interprets, or makes specific: Health and Safety Code Section 39002 (local and state agency responsibilities), Sections 40001(a) (rules to meet air quality standards); 40440(a) (rules to carry out the plan); and 40702 (adoption of rules and regulations); 42705.6 (refinery statute) and

**WHEREAS**, Health and Safety Code Section 40727.2 requires the South Coast AQMD to prepare a written analysis of existing federal air pollution control requirements applicable to the same source type being regulated whenever it adopts, or amends a rule, and that the South Coast AQMD's comparative analysis of Proposed Amended Rule 1180 and Proposed Rule 1180.1 is included in the Final Staff Report; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that the Final Socioeconomic Impact Assessment for the proposed project is consistent with the March 17, 1989 Governing Board Socioeconomic Resolution for rule adoption; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that the Final Socioeconomic Impact Assessment is consistent with the provisions of Health and Safety Code Sections 40440.8 and 40728.5; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that the proposed project neither includes new Best Available Retrofit Control Technology (BARCT) requirements nor a feasible measure pursuant to Health and Safety Code Section 40914; therefore, analyses for cost-effectiveness and incremental cost-effectiveness, consistent with the Health and Safety Code Section 40920.6, are not applicable; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that the proposed project will result in increased costs to the affected industries, yet such costs are considered to be reasonable, with a total annualized cost as specified in the Socioeconomic Impact Assessment; and

**WHEREAS**, the South Coast AQMD Governing Board has actively considered the Socioeconomic Impact Assessment and has made a good faith effort to minimize such impacts; and

**WHEREAS**, the South Coast AQMD staff conducted two Public Workshop sessions regarding the proposed project on August 22, 2023, at 10:00 a.m. and 6:00 p.m.; and

**WHEREAS**, a Public Hearing has been properly noticed in accordance with the provisions of Health and Safety Code Sections 40725 and 40440.5; and

**WHEREAS**, the South Coast AQMD Governing Board has held a Public Hearing in accordance with all provisions of state and federal law; and

**WHEREAS**, the South Coast AQMD specifies the Planning and Rules Manager overseeing the development for Proposed Amended Rule 1180, Proposed Rule 1180.1, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed project is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

**WHEREAS**, Proposed Amended Rule 1180, Proposed Rule 1180.1, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines will not be submitted for inclusion into the State Implementation Plan; and

**NOW, THEREFORE, BE IT RESOLVED**, that the South Coast AQMD Governing Board does hereby determine, pursuant to the authority granted by law, that the proposed project (Proposed Amended Rule 1180, Proposed Rule 1180.1, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines) is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption. The South Coast AQMD Governing Board does also hereby determine, pursuant to the authority granted by law, that the proposed project is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15306 – Information Collection. No exceptions to the application of the categorical exemption set forth in CEQA Guidelines Section 15300.2 – Exceptions, apply to the proposed project. This information was presented to the South Coast AQMD Governing Board, whose members exercised their independent judgment and reviewed, considered, and approved the information therein prior to acting on the proposed project; and

**BE IT FURTHER RESOLVED**, that the Executive Officer shall conduct the following assessments by January 1, 2029, and every five years thereafter, and report the results of the assessment to the Stationary Source Committee: (a) assess the community air monitoring systems and fenceline air monitoring systems to evaluate adequate coverage and/or need for equipment upgrades; (b) assess the development of improved or new technologies capable of real-time air pollutant monitoring; and (c) reassess the applicability provision of Rule 1180 and Rule 1180.1; and

**BE IT FURTHER RESOLVED**, that the South Coast AQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Amended Rule 1180, Proposed Rule 1180.1, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines, as set forth in the attached, and incorporated herein by reference.

DATE: \_\_\_\_\_

\_\_\_\_\_  
CLERK OF THE BOARDS

## ATTACHMENT F

(Adopted December 1, 2017) (Amended [Date of Rule Adoption])

[RULE INDEX TO BE ADDED AFTER RULE ADOPTION]

**PROPOSED AMENDED RULE 1180. FENCELINE AND COMMUNITY AIR MONITORING FOR REFINERY PETROLEUM REFINERIES AND RELATED FACILITIES FENCELINE AND COMMUNITY AIR MONITORING**

(a) Purpose

The purpose of this rule is to require ~~Real-Time FenceLine Air Monitoring Systems~~ and to establish a fee schedule to fund refinery-related community air monitoring systems that provide air quality information to the public about levels of various criteria air pollutants, volatile organic compounds, metals, and other ~~compounds~~ air pollutants, at or near the property boundaries of ~~Petroleum Refineries~~ and in nearby communities.

(b) Applicability

This rule applies to ~~petroleum refineries~~ Petroleum Refineries, Related Facilities, and their successors are subject to the rule. Applicable Rule 1180 Facilities are included in Table 2 – Refinery-Related Community Air Monitoring System Fees for Petroleum Refineries (Table 2) and Table 3 – Refinery-Related Community Air Monitoring System Fees for Related Facilities (Table 3). Petroleum Refineries that were subject to Rule 1180 on [Date of Rule Adoption] remain subject to Rule 1180, even if they transition some or all of their operations to refining alternative feedstocks, which are organic material not derived from crude oil product, coal, natural gas, or any other fossil fuel-based material. This rule does not apply to facilities subject to Rule 1180.1 – Other Refinery FenceLine and Community Air Monitoring.

(c) Definitions

~~For the purposes of this rule, the following definitions shall apply:~~

- (1) COMMUNITY AIR MONITORING SYSTEM is a combination of equipment that measures and records air pollutant concentrations in communities near a ~~petroleum refinery~~ Facility.
- (2) CORRECTIVE ACTION PLAN is a compliance plan that details the actions a Facility will execute to correct any deficiencies identified in an Independent Audit report.

- (3) DATA QUALITY FLAGS are indicators that designate the status, quality, or reliability of the data measured by the Fenceline Air Monitoring System.
- (4) FACILITY WITH OPERATIONS RELATED TO PETROLEUM REFINERIES (RELATED FACILITY) is any establishment that has operations related to the refinery processes located on properties adjacent to or contiguous with a Petroleum Refinery, including electricity generating facilities, Hydrogen Production Plants, sulfuric acid plants, Sulfur Recovery Plants, and Terminals, which receive more than 50 percent of their product input either directly or indirectly from, or provide more than 50 percent of their product output either directly or indirectly to, any of the Petroleum Refineries subject to this rule in 2022 calendar year.
- (5) FACILITY is any Petroleum Refinery or Related Facility.
- (6) FENCELINE AIR MONITORING PLAN (FAMP) is a compliance plan that provides detailed information about air monitoring instrumentation, maintenance and quality control procedures, backup systems, auditing, and data reporting methods for the affected Facility. The FAMP includes:
- (A) The plan for the installation of the Fenceline Air Monitoring System specified in subparagraphs (d)(1)(A) through (d)(1)(D);
- (B) The plan to comply with the web-based fenceline data display and notification program specified in subdivision (h); and
- (C) The quality assurance project plan that details the project objectives, procedures, and tasks performed to ensure the Fenceline Air Monitoring System is producing reliable data.
- (27) FENCELINE AIR MONITORING SYSTEM is a combination of equipment that measures and records air pollutant concentrations at or near the property boundary of a ~~petroleum refinery~~ Facility; data systems that process and store historical data; and public web-based fenceline data display and notification systems, where data are displayed and through which public fenceline notifications are issued.
- (8) HYDROGEN PRODUCTION PLANT is an establishment that produces hydrogen by steam hydrocarbon reforming, partial oxidation of hydrocarbons, or other processes.
- (9) INDEPENDENT AUDIT is an assessment conducted by a Qualified Independent Party with relevant technical expertise in Fenceline Air Monitoring Systems that was not involved in the implementation of the FAMP, including the installation, operation, maintenance, and quality assurance procedures of the Fenceline Air Monitoring System at the Facility being audited.

- (10) NOTIFICATION THRESHOLD is a level above which Facilities are required to send a fence line notification.
- (311) PETROLEUM REFINERY is an ~~facility~~-establishment, as defined in the Standard Industrial Classification Manual as Industry No. 2911, that is permitted to process petroleum and primarily produces transportation fuels, including gasoline, diesel, and jet fuel.
- (12) QUALIFIED INDEPENDENT PARTY is a person, research institution, educational institution, or consulting firm with the relevant technical expertise that is not an employee of a Facility.
- (413) REAL-TIME is the actual or near actual time during which air pollutant levels occur at or near the property boundary of a ~~petroleum refinery~~ Facility or in a nearby community.
- (514) RULE 1180 AND RULE 1180.1 REFINERY-FENCELINE AIR MONITORING PLAN GUIDELINES are a written framework to be used by the Executive Officer to evaluate a FAMP.
- (15) ROOT-SPECIFIC CAUSE ANALYSIS is an analysis conducted by a Facility to determine the cause of an air pollutant detected above an applicable Notification Threshold, which includes the investigation into the source of the air pollutant.
- (16) SULFUR RECOVERY PLANT are units within a Petroleum Refinery, or a separate establishment, that recovers elemental sulfur or sulfur compounds from sour or acid gases and/or sour water generated by Petroleum Refineries.
- (17) TERMINAL is an establishment used to store crude oil, petroleum products, and/or petrochemical products in above-ground storage tanks.
- (d) Plan Requirements
- (1) ~~No later than August 1, 2018, the owner or operator of a petroleum refinery shall submit to the Executive Officer a written fence line air monitoring plan for establishing and operating a real-time fence line air monitoring system.~~
- (21) ~~The fence line air monitoring plan shall~~ The owner or operator of a Facility shall revise an existing FAMP or shall prepare a FAMP pursuant to the schedule in subdivision (e), in accordance with the Rule 1180 and Rule 1180.1 Fence Line Air Monitoring Plan Guidelines, and provide the following detailed information:
- (A) Equipment to be used to continuously monitor, record, and report air pollutant levels for the air pollutants specified in Table 1 – Air Pollutants and Notification Thresholds to be Addressed by ~~Fence Line Air Monitoring~~

~~Plans~~ FAMPs (Table 1), in Real-Time, at or near the property boundary of the petroleum refinery Facility;

- ~~(B)~~ A technical justification for not including Real-Time fenceline air monitoring for any of the air pollutants specified in Table 1, consistent with the criteria in the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines;
- ~~(C)~~ Equipment to be used to continuously monitor, record, and report wind speed and wind direction, installed in at least one location per Facility, unless adequate coverage has been demonstrated to the satisfaction of Executive Officer;
- ~~(B)~~ Siting and equipment specifications;
- ~~(D)~~ Equipment specifications and Facility maps with locations of fenceline air monitoring equipment;
- ~~(DE)~~ Procedures for Fenceline Air Monitoring equipment System maintenance and failures. The procedures for equipment system maintenance and failures shall include a plan that describes the maintenance activities necessary to maintain proper performance of the Fenceline Air Monitoring equipment System and a plan that deals with addresses equipment system failures. At a minimum, the maintenance and failure plan shall describe the following:
  - ~~(i)~~ Routine maintenance requirements for equipment;
  - ~~(ii)~~ A planned schedule for routine maintenance performed on equipment;
  - ~~(iii)~~ Estimated Length of time that equipment the Fenceline Air Monitoring System will would not be operating during routine maintenance activities; and
  - ~~(iv)~~ Temporary air monitoring measures measurements that will would be implemented taken in the event of an equipment system failure or during routine maintenance activities and used until the Fenceline Air Monitoring System is restored to normal operating conditions;
- ~~(E)~~ Procedures for implementing quality assurance by a qualified independent party, including quality control and audits of the fenceline air monitoring systems;



- (F) Procedures for implementing the ~~fenceline air monitoring plan~~ FAMP, including, information pertaining to the installation, operation, maintenance, and quality assurance and quality control, for the ~~f~~ Fenceline ~~a~~ Air ~~m~~ Monitoring ~~s~~ System;
  - (G) Methods for disseminating ~~on~~ of data collected by the equipment specified in subparagraphs (d)(~~2~~1)(A) and (d)(~~2~~1)(C) to the public, local response agencies, and ~~SCAQMD~~ the Executive Officer as expeditiously as possible, but no later than 15 minutes after the data is collected;
  - (H) Methods for making the most recent five calendar years of electronic historical data collected by the equipment specified in subparagraphs (d)(1)(A) and (d)(1)(C) available within 60 calendar days after the conclusion of each quarter for public download in an easily downloadable, accessible, and interpretable electronic format that is approved by the Executive Officer;
  - (I) Methods for making the most recent five calendar years of electronic historical data collected by the equipment specified in subparagraphs (d)(1)(A) and (d)(1)(C) available to be electronically transmitted to the Executive Officer within 60 calendar days after the conclusion of each quarter in a format that is approved by the Executive Officer;
  - (J) Notification Thresholds for each air pollutant listed in Table 1, unless the air pollutant was excluded in the approved or partially approved FAMP; and
  - (K) Any other information specified in the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines.
- (2) The owner or operator of a Facility may include the use of emerging technologies in a FAMP that is compliant with the requirements of this rule.
- (3) ~~The fenceline air monitoring plan required by paragraph (d)(1) shall address real-time air monitoring for the air pollutants specified in Table 1 on a continuous basis. The fenceline air monitoring system required by subdivision (e) shall monitor for all pollutants identified in Table 1. The owner or operator of a petroleum refinery must provide an explanation for not including real time air monitoring for any of the pollutants specified in Table 1 in the fenceline air monitoring plan. Explanations for not including real time air monitoring for any of the pollutants specified in Table 1 must be consistent with the criteria in the Rule 1180 Fenceline Air Monitoring Guidelines.~~

~~(4) The review and approval of the fence-line air monitoring plan shall be subject to plan fees as specified in Rule 306—Plan Fees.~~

(e) Plan Submittal Deadlines

(1) At least 12 calendar months prior to commencing operations at a new Facility, the owner or operator of a Facility shall submit to the Executive Officer a written FAMP for establishing and operating a Real-Time Fence-line Air Monitoring System.

(2) No later than seven calendar months after [Date of Rule Adoption], the owner or operator of a Facility with an existing Fence-line Air Monitoring Plan (FAMP) shall submit a revised FAMP to include:

(A) Any Related Facility with the same board of directors or parent corporation, that will be included in the Facility's FAMP, if applicable;

(B) Any air pollutant in Table 1 that was not addressed in the Facility's previous FAMP; and

(C) Any requirement in paragraph (d)(1) that was not addressed in the Facility's previous FAMP.

(3) No later than 12 calendar months after [Date of Rule Adoption], the owner or operator of a Related Facility that does not have the same board of directors or parent corporation as a Facility with an existing FAMP, shall submit to the Executive Officer a written FAMP for establishing and operating a Real-Time Fence-line Air Monitoring System.

~~(45)~~ The owner or operator of a petroleum refinery-Facility shall submit an updated revised fence-line air monitoring plan FAMP to the Executive Officer as follows:

(A) Ten (10) calendar days after the date of any unplanned facility, equipment, process, or administrative modification that could result in changes to an approved or partially approved fence-line air monitoring plan FAMP does not adequately address;

(B) Forty-five (45) calendar days before the date of implementation of any planned facility, equipment, process, or administrative modification that could result in changes to an approved fence-line air monitoring plan or partially approved FAMP does not adequately address;

(C) Sixty (60) calendar days after the date of receiving information that an approved fence-line air monitoring plan or partially approved FAMP does

not adequately measure any air pollutant(s) identified in Table 1 that are emitted from the ~~petroleum refinery~~ Facility;

~~(D)~~ Sixty (60) calendar days from the initial Fenceline Air Monitoring System downtime or malfunction that required a revised FAMP pursuant to paragraph (i)(4);

~~(E)~~ Sixty (60) calendar days after the Independent Audit is submitted to the Executive Officer if the Independent Audit report indicates there are deficiencies in the FAMP;

~~(F)~~ Sixty (60) calendar days after the Executive Officer notifies the Facility in writing of deficiencies in the FAMP; and

~~(G)~~ Sixty (60) calendar days after the Executive Officer provides the Facilities written notice that Real-Time monitoring of Polycyclic Aromatic Hydrocarbons (PAHs) is feasible.

~~(D)~~ Failure to comply with the requirements of subparagraphs (d)(5)(A) through (d)(5)(C) shall result in revocation of an approved fenceline air monitoring plan. Thirty (30) days after revocation of an approved fenceline air monitoring plan the owner or operator of a petroleum refinery shall submit a new fenceline air monitoring plan to the Executive Officer pursuant to paragraphs (d)(1) through (d)(4) and (d)(6) through (d)(7). The updated fenceline air monitoring plan shall not be subject to the implementation schedule in subdivision (e). An updated implementation schedule subject to approval by the Executive Officer shall be included in the new fenceline air monitoring plan but in no case shall be longer than 180 days.

~~(6)~~ The owner or operator of a petroleum refinery may include the use of emerging technologies in a fenceline air monitoring plan that is compliant with the requirements of this rule.

~~(7)~~ All fenceline air monitoring plans shall be consistent with the Rule 1180 Refinery Fenceline Air Monitoring Plan Guidelines.

~~(ef)~~ Fenceline Air Monitoring System Requirements-Installation Compliance Schedule

~~(1)~~ The owner or operator of a Facility shall complete installation and begin operation of a Real-Time Fenceline Air Monitoring System or modify the operation of the Fenceline Air Monitoring System in accordance with the ~~an~~ approved or partially approved FAMP:

- (A) Beginning no later than ~~one year~~ 15 calendar months after a ~~fenceline air monitoring plan~~ FAMP submitted pursuant to paragraph (e)(1), (e)(2), or (e)(3) is approved, or partially approved, by the Executive Officer; ~~the owner or operator of a petroleum refinery shall complete installation and begin operation of a real time fenceline air monitoring systems in accordance with the approved fenceline air monitoring plan.~~
- (B) No later than six calendar months after the Executive Officer approves, or partially approves, a revised FAMP required pursuant to paragraph (e)(4); and
- (C) Prior to commencing operations at a new Facility.

(fg) Plan Review Process

- (1) The Executive Officer ~~shall~~ will notify the owner or operator of a Facility in writing whether the ~~fenceline air monitoring plan~~ FAMP submitted pursuant to paragraph (e)(1) or (e)(3), or the revised FAMP submitted pursuant to paragraph (e)(2) or (e)(4), is approved, partially approved, disapproved, or partially disapproved as follows: ~~Determination of approval status for the fenceline air monitoring plan shall be based on, at a minimum, submittal of information that satisfies the criteria in subdivision (d) and the Rule 1180 Refinery Fenceline Air Monitoring Plan Guidelines.~~
  - (A) The FAMP will be approved if the owner or operator of a Facility submits all of the information in subdivision (d) and the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines and all sections are approved; and
  - (B) The Executive Officer will partially approve a FAMP if the section described in subparagraph (c)(6)(A), (c)(6)(B), or (c)(6)(C), is approved.
- (A2) If the FAMP or revised FAMP is disapproved pursuant to paragraph (g)(1), the owner or operator of a Facility shall resubmit ~~the a revised fenceline and air monitoring plan~~ FAMP, subject to plan fees specified in Rule 306, within 30 calendar days after notification of disapproval of the plan. The ~~resubmitted~~ revised plan shall include any information necessary to address deficiencies identified in the disapproval letter.
- (B3) The Executive Officer will either approve the revised ~~and resubmitted fenceline air monitoring plan~~ FAMP submitted pursuant to (g)(2) or modify the plan and approve it as modified. If the Facility does not submit the revised FAMP within 30 calendar

days after notification of disapproval of the plan as required in paragraph (g)(2), the Executive Officer will modify the plan and approve it as modified. The owner or operator of a Facility may appeal the ~~fenceline air monitoring plan~~ FAMP modified by the Executive Officer to the Hearing Board pursuant to Rule 216 – Appeals and Rule 221 – Plans.

~~(24) A fenceline air monitoring plan~~ The Executive Officer will make the FAMP or revised FAMP that is submitted pursuant to subdivision (d) ~~shall be made available, by the Executive Officer,~~ available for public review no less than ~~fourteen~~ (14) calendar days prior to approval.

(5) The owner or operator of a Facility shall pay compliance plan review fees as specified in Rule 306 – Plan Fees for the review, approval, and modifications of FAMPs and revised FAMPs.

(h) Web-based Fenceline Data Display and Notification Program

(1) The owner or operator of a Facility shall maintain a web-based fenceline data display and notification program according to the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines to display and store at least five calendar years of the most recent data collected from the Fenceline Air Monitoring Systems, and make, at a minimum, the following information publicly available:

(A) Description of measurement techniques, Notification Thresholds, type of Notification Threshold (health standard-based or information-based), and all instances when an air pollutant was measured above a Notification Threshold;

(B) Effective 30 calendar days from [Date of Rule Adoption] for a Facility with an existing FAMP on [Date of Rule Adoption], or upon commencing operation of a new Fenceline Air Monitoring System for a Facility without an existing FAMP on [Date of Rule Adoption], Real-Time and historic concentrations, of all air pollutants measured on the Fenceline Air Monitoring System with Data Quality Flags;

(C) Effective 30 calendar days from [Date of Rule Adoption] for a Facility with an existing FAMP on [Date of Rule Adoption], or upon commencing operation of a new Fenceline Air Monitoring System for a Facility without an existing FAMP on [Date of Rule Adoption], Real-Time and historic wind speed and wind direction data measured on the Fenceline Air Monitoring System;

- (D) Effective 30 calendar days from [Date of Rule Adoption] for a Facility with an existing FAMP on [Date of Rule Adoption], or upon commencing operation of a new Fenceline Air Monitoring System for a Facility without an existing FAMP on [Date of Rule Adoption], ~~the~~ definition of Data Quality Flags;
- (E) The most recently approved, or partially approved, FAMP ~~and quality assurance project plan~~ prominently labeled to indicate the approval status of each section described in subparagraphs (c)(6)(A), (c)(6)(B), and (c)(6)(C);
- (F) Report(s) generated from Independent Audit conducted pursuant to subdivision (j);
- (G) ~~Root-Specific Cause Analysis-Analyses~~ as required pursuant to paragraphs (k)(2), (k)(3), and (k)(4);
- (H) Quarterly reports as required pursuant to paragraph (k)(5);
- (I) Corrective Action Plans as required pursuant to paragraph (j)(4); and
- (J) Description of the air pollutants monitored by the Fenceline Air Monitoring Systems, their general health impacts, and a link to the Office of Health Hazard Assessment (OEHHA) Air Chemical database website.
- (2) The web-based fenceline data display and notification program operated by the owner or operator of a Facility shall automatically generate and send a notification as soon as technically feasible, but no later than 15 minutes after, any air pollutant listed in Table 1 is detected at a level that exceeds the applicable Notification Thresholds in the approved, or partially approved, FAMP, regardless of the cause of the air pollutant emissions and shall include:
  - (A) A unique identification number for each notification generated;
  - (B) Facility name;
  - (C) Location, site, date, and time of the exceedance;
  - (D) Air pollutant name, concentration measured, and the Notification Threshold; and
  - (E) A link to the OEHHA Air Chemical database website to the specific air pollutant detected above the threshold;
- (3) Effective 90 calendar days from [Date of Rule Adoption] for a Facility with an existing FAMP on [Date of Rule Adoption], or upon commencing operation of a new Fenceline Air Monitoring System for a Facility without an existing FAMP on [Date of Rule Adoption], ~~the~~ owner or operator of a Facility shall automatically

generate and send a follow-up notification as soon as technically feasible, but no later than 15 minutes after, the first occurrence when the measured concentration of the air pollutant exceeds the follow-up Notification Threshold during an exceedance event. The follow-up Notification Threshold shall be determined as:

*Follow – up Notification Threshold*

$$= \text{Applicable Notification Threshold} \times 2^X$$

Where X = 1, 2, 3, 4, and 8

The follow-up notifications shall include:

- (A) The corresponding unique identification number;
  - (B) Facility name;
  - (C) Location, site, date, and time of the exceedance;
  - (D) Air pollutant name, concentration measured, and the Notification Threshold; and
  - (E) A link to the OEHHA Air Chemical database website to the specific air pollutant detected above the threshold;
- (4) The owner or operator of a Facility shall send a notification at the conclusion of the exceedance event that required a notification pursuant to (h)(2) after the air pollutant has been continuously detected at a level below the applicable Notification Threshold for a minimum of 30 minutes or two consecutive measurements, which The notification shall include:
- (A) The corresponding unique identification number;
  - (B) The maximum concentration of the air pollutant, -detected during the period the Notification Threshold was exceeded, using the same averaging time as the Notification Threshold; and
  - (C) The duration for which the Notification Threshold was exceeded; or
  - (D) If the fenceline notification was sent in error, the notification shall include an explanation as to the cause of the erroneous fenceline notification.
- (5) The web-based fenceline data display and notification program operated by the owner or operator of a Facility shall include a mechanism for the public to:
- (A) Opt-in to receive fenceline notifications and to opt-out of fenceline notifications;
  - (B) Select separate email and/or text message notification options; and

(C) Provide comments or feedback to the Facility and a mechanism for the Facility to respond.

(gi) Notifications Fenceline Air Monitoring System Downtime or Malfunction

(1) Upon installation and operation of a ~~f~~Fenceline ~~a~~Air ~~m~~Monitoring ~~s~~System as required by ~~paragraph (d)(5) or subdivision (ef)~~, the owner or operator of a ~~petroleum refinery~~ Facility shall comply with the following notification requirements ~~by~~:

(A) Calling 1-800-CUT-SMOG<sup>®</sup> to notify the Executive Officer at least 48 hours prior to the planned maintenance or modification of the Fenceline Air Monitoring System described in the FAMP activity subject to subparagraph (d)(2)(D) and (d)(5)(B) by providing the name of the ~~petroleum refinery~~ Facility, the name of the monitor, and the planned date(s) of the occurrence(s); and

(B) Calling 1-800-CUT-SMOG<sup>®</sup> to notify the Executive Officer within two hours of discovering, and no more than eight hours after the start of downtime or malfunction, that the Fenceline Air Monitoring System~~equipment~~ described in the ~~fenceline air monitoring plan~~FAMP subject to subdivision (d) failed to accurately provide ~~Real-time~~ air monitoring information for more than one hour. The owner or operator shall ~~also~~ provide the:

(i) ~~n~~Name of the petroleum refinery~~Facility; the name of the air monitor;~~

(ii) Part(s) of the impacted Fenceline Air Monitoring System;

(iii) Impacted data;

(iv) ~~the d~~Date and time of the occurrence; and

(v) ~~the r~~Reason for the lapse in collecting and/or reporting the Real-time air monitoring information.

(2) The owner or operator of the ~~petroleum refinery~~ Facility shall submit a written notification to the Executive Officer of any ~~equipment failure~~ Fenceline Air Monitoring System downtime or malfunction that ~~also~~ results in a failure to accurately provide continuous, ~~Real-time~~ fenceline air monitoring information as required by the approved, ~~fenceline air monitoring plan or partially approved,~~ FAMP subject to subdivision (d) for 24-hours or longer. The written notification shall be submitted to the Executive Officer within 24 hours of ~~discovering,~~ and no



more than 30 hours of the start of the ~~equipment failure~~ Fenceline Air Monitoring System downtime or malfunction and shall include the following:

- (A) An ~~explanation~~ description of activities ~~actions~~ currently being taken to remedy the ~~equipment failure~~ Fenceline Air Monitoring System downtime or malfunction;
  - (B) Estimated time needed to restore the ~~fenceline air monitoring equipment~~ Fenceline Air Monitoring System or if already restored, the time the Fenceline Air Monitoring System was returned to normal operating conditions that comply with the approved ~~or partially approved fenceline and community air monitoring plan~~ FAMP; and
  - (C) Temporary ~~fenceline~~ air monitoring measures ~~subject to subparagraph (d)(2)(D) from the approved fenceline air monitoring plan to be~~ being implemented until the ~~f~~ Fenceline ~~a~~ Air ~~m~~ Monitoring ~~s~~ System is restored to normal operating conditions.
- (3) When the Fenceline Air Monitoring System is experiencing a known downtime or malfunction, the owner or operator of a Facility shall indicate the data is unavailable for the missed or inaccurate measurements on their web-based fenceline data display and notification program.
- (34) The owner or operator of a petroleum refinery shall submit an updated ~~fenceline air monitoring plan to the Executive Officer~~ if an ~~equipment failure~~ Fenceline Air Monitoring System downtime or malfunction results in a failure to accurately provide continuous, ~~Real-time~~ fenceline air monitoring information for more than 30 consecutive calendar days; ~~and the Executive Officer determines and notifies the owner or operator of a Facility that a revised FAMP is required to address the downtime or malfunction, the owner or operator of a Facility shall submit a revised FAMP to the Executive Officer, pursuant to the schedule in subparagraph (e)(4)(D).~~

(j) Independent Audits

- (1) The owner or operator of a Facility shall cause an Independent Audit to be conducted and completed according to an audit protocol approved by the Executive Officer.
- (2) The Independent Audit shall:
  - (A) Identify any deficiencies in the Fenceline Air Monitoring System and quality assurance procedures; and

- (B) Produce an Independent Audit report that shall be:

  - (i) Signed by the party that conducted the Independent Audit, certifying under penalty of law, based on information and belief formed after reasonable inquiry, that the statements and information in the audit report and in all attachments and other materials are true, accurate, and complete; and
  - (ii) Submitted to the Executive Officer and made available on the web-based fenceline data display and notification program within 90 calendar days after the audit has been completed.
- (3) The owner or operator of a Facility shall cause an Independent Audit to be performed according to the following schedule:

  - (A) For a Fenceline Air Monitoring System installed before [Date of Rule Adoption], an Independent Audit shall be completed by January 1, 2029, and once every 36 calendar months thereafter; ~~and~~
  - (B) For a Fenceline Monitoring System installed on or after [Date of Rule Adoption], an Independent Audit shall be completed within 12 calendar months after the installation and operation of the Fenceline Air Monitoring System and subsequent Independent Audits shall be completed once every 36 calendar months thereafter; and
  - (C) A Facility with a Fenceline Monitoring System installed before [Date of Rule Adoption] that was required to amend their FAMP to include Related Facilities shall complete the Independent Audits for their Related Facility pursuant to the schedule in subparagraph (j)(3)(A).
- (4) Corrective Action Plan

If the Independent Audit report identifies deficiencies in a Fenceline Air Monitoring System, the owner or operator of the Facility shall:

  - (A) Develop a Corrective Action Plan within three calendar months of the audit report, describing:

    - (i) All actions that will be taken to address all deficiencies; and
    - (ii) Any deficiency included in the Independent Audit report that the owner or operator of the Facility is proposing to exempt from corrective action because any corrective action will negatively affect safety;
  - (B) Submit the Corrective Action Plan to the Executive Officer for review and make it available on the Facility's web-based fenceline data display and

notification program within one business day of approval by the Executive Officer;

(C) Perform all corrective action(s) pursuant to the schedule in an approved Corrective Action Plan; and

(D) Maintain a record indicating when the corrective action(s) —have been completed.

(5) Corrective Action Plan Approval Process

The Executive Officer shall notify the owner or operator of a Facility in writing whether the Corrective Action Plan submitted pursuant to paragraphs (j)(4) is approved or disapproved.

(A) If the Corrective Action Plan is disapproved, the owner or operator of a Facility shall submit a revised Corrective Action Plan within 14 calendar days after notification of disapproval of the plan. The revised plan shall include any information necessary to address deficiencies identified in the disapproval letter; and

(B) The Executive Officer will either approve the revised Corrective Action Plan or modify the plan and approve it as modified. If the facility does not submit the revised Corrective Action Plan within 30 calendar days after notification of disapproval of the plan as required in subparagraph (j)(5)(A), the Executive Officer will modify the plan and approve it as modified. The owner or operator of a Facility may appeal the Corrective Action Plan modified by the Executive Officer to the Hearing Board pursuant to Rule 216 – Appeals and Rule 221 – Plans.

(6) Follow-up Independent Audit

The owner or operator of a Facility shall:

(A) Cause a party to conduct and complete a follow-up Independent Audit within three calendar months of completing the corrective action(s) pursuant to subparagraph (j)(4)(C) to:

(i) Determine if all of the actions specified in the Corrective Action Plan were completed;

(ii) Determine if the corrective action(s) resolved the deficiencies identified in the Independent Audit report; and

(iii) Produce a follow-up Independent Audit report that shall be:

(A) Signed by the party that conducted the follow-up Independent Audit, certifying under penalty of law, based on

information and belief formed after reasonable inquiry, that the statements and information in the follow-up Independent Audit report and in all attachments and other materials are true, accurate, and complete; and

(B) Submitted to the Executive Officer and made available on the web-based fenceline data display and notification program within 90 calendar days after the follow-up Independent Audit has been completed;

(B) Develop a Corrective Action Plan pursuant to paragraph (j)(4) that shall be approved pursuant to paragraph (j)(5) if the follow-up Independent Audit report identifies deficiencies in a Fenceline Air Monitoring System.

(7) Revised FAMP

The owner or operator of a Facility shall submit a revised FAMP to the Executive Officer pursuant to the schedule in subparagraph (e)(4)(E) if the Executive Officer notifies the Facility in writing that the Independent Audit or follow-up Independent Audit indicates deficiencies in the FAMP.

(8) Plan Review Fees

The owner or operator of a Facility shall pay compliance plan review fees as specified in Rule 306 – Plan Fees for the review ~~and~~, approval, and modifications of any Corrective Action Plan specified in subdivision (j).

(ik) Recordkeeping, Reporting, and ~~Root-Specific~~ Cause Analysis

(1) The owner or operator of a ~~petroleum refinery~~ Facility shall maintain records of all information required under this rule for at least five calendar years and shall make the information available to ~~SCAQMD personnel~~ the Executive Officer upon request. Records for at least the two most recent calendar years shall be kept onsite.

(2) ~~Root-Specific~~ Cause Analysis

When an air pollutant listed in Table 1 is measured above the Notification Threshold on a Facility Fenceline Air Monitoring System, the owner or operator of any Facility utilizing the Fenceline Air Monitoring System that measured the air pollutant shall:

(A) Initiate a ~~Root-Specific~~ Cause Analysis upon discovery, but no later than 24 hours after discovery, to determine the source(s) of the air pollutant using techniques such as:

(i) Visual inspection;

- (ii) Optical gas imaging;
  - (iii) Leak inspection using EPA Method 21; or
  - (iv) Other test or monitoring method approved by the Executive Officer;
- (B) If the ~~root-specific~~ cause was determined to be from an on-site source, initiate corrective action(s) to stop the exceedance or prevent a similar exceedance, if needed, as soon as practicable, but no later than 24 hours after identifying the ~~root-specific~~ cause;
- (C) If the ~~root specific~~ cause was determined to be from an off-site source, notify the Executive Officer by calling 1-800-CUT-SMOG® upon discovery, but no later than 24 hours after discovery of such determination, providing the basis of such determination, and the suspected off-site source(s);
- (D) If the ~~root specific~~ cause was determined to be from an on-site source, submit a ~~Root-Specific~~ Cause Analysis report to the Executive Officer and make it available on the web-based fenceline data display and notification program within 14 calendar days of identifying the ~~root-specific~~ cause. The report shall include, at a minimum:
  - (i) Cause and duration of the air pollutant emissions;
  - (ii) Determination of the source(s) of air pollutant emissions and methodology used to determine the source;
  - (iii) Any mitigation and corrective action(s) taken to stop the exceedance or taken to prevent a similar recurrence;
  - (iv) If a corrective action(s) would take more than 14 calendar days, the reason(s) why; and
  - (v) Any monitoring data requested by the Executive Officer;
- (E) If corrective action(s) is required pursuant to subparagraph (k)(2)(B), the owner or operator of the Facility shall:
  - (i) Conduct a reinspection of the source within 14 calendar days of completing the corrective action(s) to assess if the corrective action(s) reduced or eliminated the source(s) of the air pollutant; and
  - (ii) Submit a report to the Executive Officer and make the report available on the web-based fenceline data display and notification program within 28 calendar days of completing the corrective action(s) describing how the corrective action(s) addressed the source(s) of the air pollutant.

- (3) If the owner or operator of the Facility is notified by the Executive Officer to be the off-site source of an air pollutant measurement that exceeds the Notification Threshold, the owner or operator of the Facility shall:
- (A) Initiate a ~~Root-Specific~~ Cause Analysis upon notification, but no later than 24 hours after being notified that their Facility is the cause of the air pollutant emissions using techniques in clauses (k)(2)(A)(i) to (k)(2)(A)(iv);
  - (B) Initiate corrective action(s), if applicable, as soon as practicable, but no later than 24 hours of identifying the ~~root-specific~~ cause;
  - (C) Submit a ~~Root-Specific~~ Cause Analysis report to the Executive Officer and make it available on the web-based fenceline data display and notification program within 14 calendar days of identifying the ~~root-specific~~ cause. The report shall include at a minimum the information in clauses (k)(2)(D)(i) to ~~(k)(2)(D)(iv)~~ (k)(2)(D)(v); and
  - (D) If corrective action(s) is required pursuant to subparagraph (k)(3)(B), the owner or operator of the Facility shall:
    - (i) Conduct a reinspection of the source within 14 calendar days of completing the corrective action(s) to assess if the corrective action(s) reduced or eliminated the source(s) of the air pollutant; and
    - (ii) Submit a report to the Executive Officer and make the report available on the web-based fenceline data display and notification program within 28 calendar days of completing the corrective action(s) describing how the corrective action(s) addressed the source(s) of the air pollutant.
- (4) For the purpose of this provision, an air pollutant measured above the applicable Notification Threshold in Table 1 on a Facility Fenceline Air Monitoring System within a seven calendar-day period shall be considered one event. If three events require ~~Root-Specific~~ Cause Analyses within the same calendar year indicate the same cause, or indicate the cause cannot be determined, for the same air pollutant detected above the Notification Threshold by the same monitor of a Fenceline Air Monitoring System, the owner or operator of a Facility shall:
- (A) Cause a Qualified Independent Party with relevant technical expertise in refinery operations or Fenceline Air Monitoring Systems to initiate a ~~Root~~ Specific Cause Analysis, which may include installing additional temporary monitors to identify the source of the air pollutants, within 14 calendar days of the most recent instance when the Notification Threshold was exceeded

to determine the ~~root-specific~~ cause and corrective action(s) that could prevent future emissions;

- (B) Cause the Qualified Independent Party to produce a ~~Root-Specific Cause Analysis~~ report, certified under penalty of law, based on information and belief formed after reasonable inquiry, that the statements and information in the ~~Root-Specific Cause Analysis~~ report and in all attachments and other materials are true, accurate, and complete;
- (C) Submit a ~~Root Specific Cause Analysis~~ report, certified by the Qualified Independent Party pursuant to paragraph (k)(4)(B), to the Executive Officer and make it available on the web-based fenceline data display and notification program within 14 calendar days of the ~~Root-Specific Cause Analysis~~ conducted pursuant to that includes, at a minimum:
  - (i) Cause and duration of the air pollutant emissions;
  - (ii) Determination of the source(s) of air pollutant emissions and methodology used to determine the source;
  - (iii) Any mitigation and corrective action(s) taken to stop the exceedance or taken to prevent a similar recurrence;
  - (iv) If a corrective action would take more than 14 calendar days, the reason(s) why; and
  - (v) Any monitoring data requested by the Executive Officer;
- (D) Initiate corrective action(s) to stop the exceedance or prevent a similar recurrence, if applicable, as soon as practicable, but no later than 24 hours of the Qualified Independent Party identifying the ~~root-specific~~ cause; and
- (E) If the ~~Root-Specific Cause Analysis~~ conducted by the Qualified Independent Party required corrective action(s), the owner or operator of a Facility shall:
  - (i) Conduct a reinspection of the source within 14 calendar days of completing the corrective action(s) to assess if the corrective action(s) reduced or eliminated the source(s) of the air pollutant; and
  - (ii) Submit a report to the Executive Officer and make the report available on the web-based fenceline data display and notification program within 28 calendar days of completing the corrective action(s) describing how the corrective action(s) addressed the source(s) of the air pollutant.

(5) Quarterly Report

The owner or operator of a Facility with an approved or partially approved FAMP shall submit a quarterly report to the Executive Officer and make the report available on the web-based fenceline data display and notification program within 60 calendar days after the conclusion of each quarter. The report shall be consistent with the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines, in a format approved by the Executive Officer, and at a minimum include a description of:

- (A) Summary of the air pollutant concentrations indicating the concentration trend for each air pollutant;
- (B) Data processing calculations, such as conversion calculations of instrument signal to pollutant concentration;
- (C) Summary of calibration data;
- (D) Description of data completeness, accuracy, and precision;
- (E) Quality assurance/quality control measures;
- (F) Instrument maintenance and performance checks;
- (G) Any instance when an air pollutant was measured above a Notification Threshold;
- (H) Any instance when a Fenceline Air Monitoring System downtime or malfunction required a notification to Executive Officer pursuant to subdivision (i) or corrective action(s); and
- (I) Review and resolve any Data Quality Flags and finalize the data.

(j) Community Air Monitoring Fees

- (1) Pursuant to CA Health and Safety Code §42705.6, a No later than January 31, 2025, an owner or operator of a ~~petroleum refinery~~ Petroleum Refinery shall pay ~~an~~ the applicable installation fee for ~~refinery-related~~ community air monitoring systems based on the fee schedule established in Table 2—Refinery-Related Community Air Monitoring System Fees.
- (2) No later than January 31, 2025, for phase one implementation and January 31, 2026, for phase two implementation, an owner or operator of a Related Facility, or for a Petroleum Refinery with Related Facilities with the same board of directors or parent corporation, the owner or operator of the Petroleum Refinery, shall pay the applicable installation fee for community air monitoring systems established in Table 3.



- ~~(2) No later than July 1, 2018, the owner or operator of a petroleum refinery shall make an initial minimum payment to the SCAQMD as specified in Table 2.~~
- ~~(3) No later than January 30, 2019, the owner or operator of a petroleum refinery shall make a final payment to the SCAQMD for the remaining balance of the installation fee as specified in Table 2. The remaining balance shall be equal to the installation fee minus the initial minimum payment required by paragraph (j)(2).~~
- (43) An owner or operator of a Facility shall pay the Annual operating and maintenance fees for the community air monitoring system(s) shall be paid pursuant to Rule 301-Permitting and Associated Fees, when applicable.
- (54) The refinery-related community air monitoring fees required by paragraphs (j)(1), ~~and~~ (1)(2), and (1)(3) are in addition to permit and other fees otherwise authorized to be collected from such facilities.
- ~~(6) No later than January 1, 2025, and every five years thereafter, the Executive Officer shall conduct a refinery-related community air monitoring assessment to evaluate adequate coverage and/or need for equipment upgrades.~~

(m) Compliance

- (1) For a Petroleum Refinery with Related Facilities with the same board of directors or parent corporation, compliance with this rule shall be the responsibility of the owner or operator of the Petroleum Refinery.
- (2) Once a FAMP is approved or partially approved by the Executive Officer, the owner or operator of a Facility must comply with all portions of the FAMP.

(kn) Exemptions

- (1) An owner or operator of a petroleum refinery that has a maximum capacity to process less than 40,000 barrels per day of crude oil refinery subject to Rule 1180.1 is exempt from the requirements of this rule.
- (2) An owner or operator of a Terminal with total tank storage capacity less than 310,000 barrels is exempt from the requirements of this rule.
- (3) An owner or operator of a Facility is exempt from the requirement of operating an existing Real-Time Fenceline Air Monitoring System for 96 hours in a calendar year, provided:
- (A) The operation of existing fenceline air monitoring equipment is disrupted by the required installation of new fenceline air monitoring equipment to measure any air pollutant in Table 1 that was not addressed in the Facility's previous FAMP; and

- (B) The owner or operator of the facility complies with the notification requirement pursuant to subdivision (i).
- (4) An owner or operator of a Related Facility located entirely within the boundary of a Petroleum Refinery is exempt from the requirements of this rule provided the Petroleum Refinery's existing Real-Time Fenceline Air Monitoring Systems adequately cover the entire Facility's fenceline or property.
- (5) An owner or operator of the following Facilities are exempt from monitoring the specified air pollutant from Table 1:

  - (A) An owner or operator of a Facility is exempt from monitoring hydrogen fluoride if hydrogen fluoride is not used or stored at the Facility;
  - (B) An owner or operator of a Related Facility is exempt from monitoring black carbon and metal compounds; and
  - (C) An owner or operator of a Terminal is exempt from monitoring all the air pollutants in Table 1 other than the volatile organic compounds and hydrogen sulfide.

**Table 1– Air Pollutants and Notification Thresholds to be Addressed by  
Fenceline Air Monitoring Plans FAMPs**

<b>Air Pollutants</b>	<b>Health Standard-Based Notification Threshold*</b>	<b>Information-Based Notification Threshold</b>
<b>Criteria Air Pollutants</b>		
Sulfur Dioxide	<u>75 ppb</u>	<u>N/A</u>
<u>Oxides of Nitrogen Oxides</u>	<u>100 ppb</u>	<u>N/A</u>
<b>Particulate Matter</b>		
<u>PM2.5</u>	<u>35 µg/m<sup>3</sup> (24-hour avg.)</u>	<u>N/A</u>
<u>PM10</u>	<u>50 µg/m<sup>3</sup> (24-hour avg.)</u>	<u>N/A</u>
<b>Volatile Organic Compounds</b>		
Total VOCs (Non-Methane Hydrocarbons)	<u>N/A</u>	<u>730 ppb</u>
Formaldehyde	<u>44 ppb</u>	<u>N/A</u>
Acetaldehyde	<u>260 ppb</u>	<u>N/A</u>
Acrolein	<u>1.1 ppb</u>	<u>N/A</u>
1,3 Butadiene	<u>297 ppb</u>	
<u>Naphthalene</u>	<u>N/A</u>	<u>N/A</u>
<u>Polycyclic Aromatic Hydrocarbons (PAHs)</u>	<u>N/A</u>	<u>N/A</u>
Styrene	<u>5,000 ppb</u>	<u>N/A</u>
Benzene	<u>8 ppb</u>	<u>N/A</u>
<u>Toluene</u>	<u>1,300 ppb</u>	<u>N/A</u>
<u>Ethylbenzene</u>	<u>N/A</u>	<u>N/A</u>
<u>Xylenes</u>	<u>5,000 ppb</u>	<u>N/A</u>
<b>Other</b>		
<u>Cadmium</u>	<u>N/A</u>	<u>N/A</u>
<u>Manganese</u>	<u>0.17 µg/m<sup>3</sup> (8-hour avg.)</u>	<u>N/A</u>
<u>Nickel</u>	<u>0.2 µg/m<sup>3</sup></u>	<u>N/A</u>
<b>Other</b>		
Hydrogen Sulfide	<u>30 ppb</u>	<u>N/A</u>
Carbonyl Sulfide	<u>270 ppb</u>	<u>N/A</u>
Ammonia	<u>4,507 ppb</u>	<u>N/A</u>
Black Carbon	<u>N/A</u>	<u>N/A</u>
Hydrogen Cyanide	<u>309 ppb</u>	<u>N/A</u>
Hydrogen Fluoride+	<u>289 ppb</u>	<u>N/A</u>

\* Notification Thresholds are based on 1-hour averaging time unless otherwise noted.

+ If the facility uses hydrogen fluoride.

**Table 2 – Refinery-Related Community Air Monitoring System Fees for Petroleum Refineries**

<u>Facility ID</u>	<u>Facility Name and Location</u>	<u>Location</u>	<u>Effective Dates and Fee Requirements</u>		
			<u>No later than July 1, 2018, petroleum refineries shall make the following initial minimum payment required by paragraph (j)(2)</u>	<u>No later than January 30, 2019, petroleum refineries shall make the following final payment required by paragraph (j)(3)</u>	<u>No later than January 31, 2025</u>
<u>174655</u>	<del>Andeavor Corporation (Carson)</del> <u>Tesoro Refining &amp; Marketing Co, LLC</u>	<u>Carson</u>	\$429,078	\$1,001,181	<u>\$753,192</u>
<u>800436</u>	<del>Andeavor Corporation (Wilmington)</del> <u>Tesoro Refining &amp; Marketing Co, LLC</u>	<u>Wilmington</u>	\$214,539	\$500,591	<u>\$376,596</u>
<u>800030</u>	<del>Chevron U.S.A, Inc. (El Segundo)</del> <u>Chevron Products Co.</u>	<u>El Segundo</u>	\$429,078	\$1,001,181	<u>\$753,192</u>
	<del>Delek U.S. Holdings, Inc. (Paramount)</del>		\$107,269	\$250,295	
<u>171109</u>	<del>Phillips 66 Company (Carson)</del> <u>Phillips 66 Company/Los Angeles Refinery</u>	<u>Carson</u>	\$214,539	\$500,591	<u>\$376,596</u>
<u>171107</u>	<del>Phillips 66 Company (Wilmington)</del> <u>Phillips 66 Company/LA Refinery Wilmington Pl</u>	<u>Wilmington</u>	\$214,539	\$500,591	<u>\$376,596</u>
<u>181667</u>	<del>PBF Energy, Torrance Refining Company (Torrance)</del> <u>Torrance Refining Company LLC</u>	<u>Torrance</u>	\$429,078	\$1,001,181	<u>\$753,192</u>

			Effective Dates and Fee Requirements		
<u>Facility ID</u>	<u>Facility Name and Location</u>	<u>Location</u>	<del>No later than July 1, 2018, petroleum refineries shall make the following initial minimum payment required by paragraph (j)(2)</del>	<del>No later than January 30, 2019, petroleum refineries shall make the following final payment required by paragraph (j)(3)</del>	<u>No later than January 31, 2025</u>
<u>800026</u>	<del>Valero Energy (Wilmington)</del> (Permitted as Ultramar Inc.)	<u>Wilmington</u>	\$214,539	\$500,591	<u>\$376,596</u>

**Table 3 – Refinery-Related Community Air Monitoring System Fees for Related Facilities**

			<u>Effective Date and Fee Requirement</u>	
<u>Facility ID</u>	<u>Facility Name</u>	<u>Location</u>	<u>No later than January 31, 2025</u>	<u>No later than January 31, 2026</u>
<u>3417</u>	<u>Air Products &amp; Chemicals, Inc.</u>	<u>Carson</u>	<u>\$76,982</u>	<u>\$179,626</u>
<u>101656</u>	<u>Air Products and Chemicals, Inc.</u>	<u>Wilmington</u>	<u>\$76,982</u>	<u>\$179,626</u>
<u>151798</u>	<u>Tesoro Refining and Marketing Co, LLC (Sulfur Recovery Plant)</u>	<u>Carson</u>	<u>\$76,982</u>	<u>\$179,626</u>
<u>800057</u>	<u>Kinder Morgan Liquids Terminals, LLC)</u>	<u>Carson</u>	<u><del>\$104,882</del>\$103,786</u>	<u><del>\$244,724</del>\$242,168</u>
<u>174694</u>	<u>Tesoro Logistics, Carson Crude Terminal</u>	<u>Carson</u>	<u><del>\$104,882</del>\$103,786</u>	<u><del>\$244,724</del>\$242,168</u>

# ATTACHMENT G

Adopted [Date of Adoption]

*[RULE INDEX TO BE ADDED AFTER RULE ADOPTION]*

## **PROPOSED RULE 1180.1. FENCELINE AND COMMUNITY AIR MONITORING FOR OTHER REFINERIES**

(a) Purpose

The purpose of this rule is to require Real-Time Fenceline Air Monitoring Systems and to establish a fee schedule to fund Refinery-related Community Air Monitoring Systems that provide air quality information to the public about levels of various criteria air pollutants, volatile organic compounds, and other air pollutants, at or near the property boundaries of refineries and in nearby communities.

(b) Applicability

This rule applies to Refineries that refine crude oil, Alternative Feedstocks, or both crude oil and Alternative Feedstocks, including, but not limited to, Asphalt Plants including their successors. ~~Applicable~~ Rule 1180.1 facilities are included in Table 2 – Refinery-Related Community Air Monitoring System Fees (Table 2). This rule does not apply to facilities subject to Rule 1180 – Fenceline and Community Air Monitoring for Petroleum Refineries and Related Facilities.

(c) Definitions

- (1) ASPHALT PLANT is a facility permitted to process petroleum, that primarily produces asphaltic materials, as defined in the Standard Industrial Classification Manual as Industry No. 2911.
- (2) ALTERNATIVE FEEDSTOCK is any feedstock, intermediate, product or byproduct material containing organic material that is not derived from crude oil product, coal, natural gas, or any other fossil-fuel based organic material.
- (3) COMMUNITY AIR MONITORING SYSTEM is a combination of equipment that measures and records air pollutant concentrations in communities near a Refinery.
- (4) CORRECTIVE ACTION PLAN is a compliance plan that details the actions a Refinery will execute to correct any deficiencies identified in an Independent Audit report.
- (5) DATA QUALITY FLAGS are indicators that designate the status, quality, or reliability of the data measured by the Fenceline Air Monitoring System.

- (6) FENCELINE AIR MONITORING PLAN (FAMP) is a compliance plan that provides detailed information about air monitoring instrumentation, maintenance and quality control procedures, backup systems, auditing, and data reporting methods for the affected Refinery. The FAMP includes:
- (A) The plan for the installation of the Fenceline Air Monitoring System specified in subparagraphs (d)(1)(A) through (d)(1)(D);
  - (B) The plan to comply with the web-based fenceline data display and notification program specified in subdivision (h); and
  - (C) The quality assurance project plan that details the project objectives, procedures, and tasks performed to ensure the Fenceline Air Monitoring System is producing reliable data.
- (7) FENCELINE AIR MONITORING SYSTEM is a combination of equipment that measures and records air pollutant concentrations at or near the property boundary of a Refinery; data systems that process and store historical data; and public web-based fenceline data display and notification systems, where data are displayed and through which public fenceline notifications are issued.
- (8) INDEPENDENT AUDIT is an assessment conducted by a Qualified Independent Party with relevant technical expertise in Fenceline Air Monitoring Systems that was not involved in the implementation of the FAMP, including the installation, operation, maintenance, and quality assurance procedures of the Fenceline Air Monitoring System at the Refinery being audited.
- (9) NOTIFICATION THRESHOLD is a level above which Refineries are required to send a fenceline notification.
- (10) QUALIFIED INDEPENDENT PARTY is a person, research institution, educational institution, or consulting firm with the relevant technical expertise that is not an employee of a Refinery.
- (11) REAL-TIME is the actual or near actual time during which air pollutant levels occur at or near the property boundary of a Refinery or in a nearby community.
- (12) REFINE is to convert crude oil or Alternative Feedstock to produce more usable products such as gasoline, diesel fuel, aviation fuel, lubricating oils, asphalt or petrochemical feedstocks, or any other similar product.
- (13) REFINERY is a facility that is permitted to Refine crude oil as defined in the Standard Industrial Classification Manual as Industry No. 2911 and/or a facility that is permitted to Refine Alternative Feedstocks. Refinery does not include petroleum refineries subject to Rule 1180.



- (14) RULE 1180 AND RULE 1180.1 FENCELINE AIR MONITORING PLAN GUIDELINES are a written framework to be used by the Executive Officer to evaluate a FAMP.
  - (15) ROOT-SPECIFIC CAUSE ANALYSIS is an analysis conducted by a Refinery to determine the cause of an air pollutant detected above an applicable Notification Threshold, which includes the investigation into the source of the air pollutant.
- (d) Plan Requirements
- (1) The owner or operator of a Refinery shall revise an existing FAMP or shall prepare a FAMP pursuant to the schedule in subdivision (e) in accordance with the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines and provide the following detailed information:
    - (A) Equipment to be used to continuously monitor, record, and report air pollutant levels for the air pollutants specified in Table 1 – Air Pollutants and Notification Thresholds to be Addressed by FAMPs (Table 1), in Real-Time, at or near the property boundary of the Refinery;
    - (B) A technical justification for not including Real-Time fenceline air monitoring for any of the air pollutants specified in Table 1, consistent with the criteria in the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines;
    - (C) Equipment to be used to continuously monitor, record, and report wind speed and wind direction, installed in at least one location per Refinery, unless adequate coverage has been demonstrated to the satisfaction of Executive Officer;
    - (D) Equipment specifications and facility maps with locations of fenceline air monitoring equipment;
    - (E) Procedures for Fenceline Air Monitoring System maintenance and failures. The procedures for system maintenance and failures shall include a plan that describes the maintenance activities necessary to maintain proper performance of the Fenceline Air Monitoring System and a plan that addresses system failures. At a minimum, the maintenance and failure plan shall describe the following:
      - (i) Routine maintenance requirements;
      - (ii) A planned schedule for routine maintenance;
      - (iii) Estimated length of time that the Fenceline Air Monitoring System would not be operating during routine maintenance activities; and

- (iv) Temporary measurements that would be taken in the event of a system failure or during routine maintenance activities and used until the Fenceline Air Monitoring System is restored to normal operating conditions;
  - (F) Procedures for implementing the FAMP, including, information pertaining to the installation, operation, maintenance, and quality assurance and quality control, for the Fenceline Air Monitoring System;
  - (G) Methods for disseminating data collected by the equipment specified in subparagraphs (d)(1)(A) and (d)(1)(C) to the public, local response agencies, and the Executive Officer as expeditiously as possible, but no later than 15 minutes after the data is collected;
  - (H) Methods for making the most recent five calendar years of electronic historical data collected by the equipment specified in subparagraphs (d)(1)(A) and (d)(1)(C) available within 60 calendar days after the conclusion of each quarter for public download in an easily downloadable, accessible, and interpretable electronic format that is approved by the Executive Officer;
  - (I) Methods for making the most recent five calendar years of electronic historical data collected by the equipment specified in subparagraphs (d)(1)(A) and (d)(1)(C) available to be electronically transmitted to the Executive Officer within 60 calendar days after the conclusion of each quarter in a format that is approved by the Executive Officer;
  - (J) Notification Thresholds for each air pollutant listed in Table 1, unless the air pollutant was excluded in the approved or partially approved FAMP; and
  - (K) Any other information specified in the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines.
- (2) The owner or operator of a Refinery may include the use of emerging technologies in a FAMP that is compliant with the requirements of this rule.
- (e) Plan Submittal Deadlines
  - (1) No later than 12 calendar months after [*Date of Rule Adoption*], or 12 calendar months prior to commencing operations at a new Refinery, the owner or operator of the Refinery without an existing FAMP shall submit to the Executive Officer a written FAMP for establishing and operating a Real-Time Fenceline Air Monitoring System.

- (2) The owner or operator of a Refinery shall submit a revised FAMP to the Executive Officer as follows:
  - (A) Ten (10) calendar days after the date of any unplanned modification that an approved or partially approved FAMP does not adequately address;
  - (B) Forty-five (45) calendar days before the date of implementation of any planned modification that an approved or partially approved FAMP does not adequately address;
  - (C) Sixty (60) calendar days after the date of receiving information that an approved or partially approved FAMP does not adequately measure any air pollutant(s) identified in Table 1 that are emitted from the Refinery;
  - (D) Sixty (60) calendar days from the initial Fenceline Air Monitoring System downtime or malfunction that required a revised FAMP pursuant to paragraph (i)(4);
  - (E) Sixty (60) calendar days after the Independent Audit report is submitted to the Executive Officer if the Independent Audit report indicates there are deficiencies in the FAMP;
  - (F) Sixty (60) calendar days after the Executive Officer notifies the Refinery in writing of deficiencies in the FAMP; and
  - (G) Sixty (60) calendar days after the Executive Officer provides the Refineries written notice that Real-Time monitoring of Polycyclic Aromatic Hydrocarbons (PAHs) is feasible.
  
- (f) Fenceline Air Monitoring System Installation Compliance Schedule
  - (1) The owner or operator of a Refinery shall complete installation and begin operation of Real-Time Fenceline Air Monitoring System or modify the operation of the Fenceline Air Monitoring System in accordance with ~~the~~an approved or partially approved FAMP:
    - (A) Beginning no later than 24 calendar months after a FAMP submitted pursuant to paragraph (e)(1) is approved, or partially approved, by the Executive Officer;
    - (B) No later than six calendar months after the Executive Officer approves, or partially approves, a revised FAMP required pursuant to paragraph (e)(2); and
    - (C) Prior to commencing operations at a new Refinery.

(g) Plan Review Process

- (1) The Executive Officer will notify the owner or operator of a Refinery in writing whether the FAMP submitted pursuant to paragraph (e)(1), or the revised FAMP submitted pursuant to paragraph (e)(2), is approved, partially approved, disapproved, or partially disapproved as follows:
  - (A) The FAMP will be approved if the owner or operator of a Refinery submits all of the information in subdivision (d) and the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines and all sections are approved; and
  - (B) The Executive Officer will partially approve a FAMP if the section described in subparagraph (c)(6)(A), (c)(6)(B), or (c)(6)(C) is approved.
- (2) If the FAMP, or revised FAMP is disapproved pursuant to paragraph (g)(1), the owner or operator of a Refinery shall submit a revised FAMP, within 30 calendar days after notification of disapproval of the plan. The revised plan shall include any information necessary to address deficiencies identified in the disapproval letter.
- (3) The Executive Officer will either approve the revised FAMP submitted pursuant to (g)(2) or modify the plan and approve it as modified. If the Refinery does not submit the revised FAMP within 30 calendar days after notification of disapproval of the plan as required in paragraph (g)(2), the Executive Officer will modify the plan and approve it as modified. The owner or operator of a Refinery may appeal the FAMP modified by the Executive Officer to the Hearing Board pursuant to Rule 216 – Appeals and Rule 221 – Plans.
- (4) The Executive Officer will make the FAMP or revised FAMP that is submitted pursuant to subdivision (d) available for public review no less than 14 calendar days prior to approval.
- (5) The owner or operator of a Refinery shall pay compliance plan review fees as specified in Rule 306 – Plan Fees for the review, approval, and modifications of FAMPs and revised FAMPs.

(h) Web-based Fenceline Data Display and Notification Program

- (1) The owner or operator of a Refinery shall maintain a web-based fenceline data display and notification program according to the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines to display and store at least five calendar years of the most recent data collected from the Fenceline Air Monitoring Systems, and make, at a minimum, the following information publicly available:

- (A) Description of measurement techniques, Notification Thresholds, type of Notification Threshold (health standard-based or information-based), and all instances when an air pollutant was measured above a Notification Threshold;
  - (B) Real-Time and historic concentrations of all air pollutants measured on the Fenceline Air Monitoring System with Data Quality Flags;
  - (C) Real-Time and historic wind speed and wind direction data;
  - (D) Definition of Data Quality Flags;
  - (E) The most recently approved, or partially approved, FAMP ~~and quality assurance project plan~~ prominently labeled to indicate the approval status of each section described in subparagraphs (c)(6)(A), (c)(6)(B), and (c)(6)(C);
  - (F) Report(s) generated from Independent Audit conducted pursuant to subdivision (j);
  - (G) ~~Root~~Specific Cause AnalysisAnalyses as required pursuant to paragraphs (k)(2), (k)(3), and (k)(4);
  - (H) Quarterly report as required pursuant to paragraph (k)(5);
  - (I) Corrective Action Plans as required pursuant to paragraph (j)(4); and
  - (J) Description of the air pollutants monitored by the Fenceline Air Monitoring Systems, their general health impacts, and a link to the Office of Health Hazard Assessment (OEHHA) Air Chemical database website.
- (2) The web-based fenceline data display and notification program operated by the owner or operator of a Refinery shall automatically generate and send a notification as soon as technically feasible, but no later than 15 minutes after, any air pollutant listed in Table 1 is detected at a level that exceeds the applicable Notification Thresholds in the approved, or partially approved, FAMP regardless of the cause of the air pollutant emissions and shall include:
- (A) A unique identification number for each notification generated;
  - (B) Refinery name;
  - (C) Location, site, date, and time of the exceedance;
  - (D) Air pollutant name, concentration measured, and the Notification Threshold; and
  - (E) A link to the OEHHA Air Chemical database website to the specific air pollutant detected above the threshold.
- (3) The owner or operator of a Refinery shall automatically generate and send a follow-up notification as soon as technically feasible, but no later than 15 minutes after,

the first occurrence when the measured concentration of the air pollutant exceeds the follow-up Notification Threshold during an exceedance event. The follow-up Notification Threshold shall be determined as:

$$\begin{aligned} & \textit{Follow - up Notification Threshold} \\ & = \textit{Applicable Notification Threshold} \times 2^X \\ & \text{Where } X = 1, 2, 3, 4, \text{ and } 8 \end{aligned}$$

The follow-up notifications shall include:

- (A) The corresponding unique identification number;
  - (B) Refinery name;
  - (C) Location, site, date, and time of the exceedance;
  - (D) Air pollutant name, concentration measured, and the Notification Threshold; and
  - (E) A link to the OEHHA Air Chemical database website to the specific air pollutant detected above the threshold.
- (4) The owner or operator of a Refinery shall send a notification at the conclusion of the exceedance event that required a notification pursuant to (h)(2) after the air pollutant has been continuously detected at a level below the applicable Notification Threshold for a minimum of 30 minutes, or two consecutive measurements, ~~which~~ The notification shall include:
- (A) The corresponding unique identification number;
  - (B) The maximum concentration of the air pollutant, detected during the period the Notification Threshold was exceeded, using the same averaging time as the Notification Threshold; and
  - (C) The duration for which the Notification Threshold was exceeded; or
  - (D) If the fenceline notification was sent in error, the notification shall include an explanation as to the cause of the erroneous fenceline notification.
- (5) The web-based fenceline data display and notification program operated by the owner or operator of a Refinery shall include a mechanism for the public to:
- (A) Opt-in to receive fenceline notifications and to opt-out of fenceline notifications;
  - (B) Select separate email and/or text message notification options; and
  - (C) Provide comments or feedback to the Refinery and a mechanism for the Refinery to respond.

- (i) Fenceline Air Monitoring System Downtime or Malfunction
  - (1) Upon installation and operation of a Fenceline Air Monitoring System as required by subdivision (f), the owner or operator of a Refinery shall comply with the following notification requirements:
    - (A) Calling 1-800-CUT-SMOG<sup>®</sup> to notify the Executive Officer at least 48 hours prior to the planned maintenance or modification of the Fenceline Air Monitoring System described in the FAMP by providing the name of the Refinery, the name of the monitor, and the planned date(s) of the occurrence(s); and
    - (B) Calling 1-800-CUT-SMOG<sup>®</sup> to notify the Executive Officer within two hours of discovering, and no more than eight hours after the start of downtime or malfunction, that the Fenceline Air Monitoring System described in the FAMP subject to subdivision (d) failed to accurately provide Real-Time air monitoring information for more than one hour. The owner or operator shall provide the:
      - (i) Name of the Refinery;
      - (ii) Part(s) of the impacted Fenceline Air Monitoring System;
      - (iii) Impacted data;
      - (iv) Date and time of the occurrence; and
      - (v) Reason for the lapse in collecting and/or reporting the Real-Time air monitoring information.
  - (2) The owner or operator of the Refinery shall submit a written notification to the Executive Officer of any Fenceline Air Monitoring System downtime or malfunction that results in a failure to accurately provide continuous, Real-Time fenceline air monitoring information as required by the approved, or partially approved, FAMP subject to subdivision (d) for 24-hours or longer. The written notification shall be submitted to the Executive Officer within 24 hours of discovery, and no more than 30 hours of the start of the Fenceline Air Monitoring System downtime or malfunction and shall include the following:
    - (A) A description of actions being taken to remedy the Fenceline Air Monitoring System downtime or malfunction;
    - (B) Estimated time needed to restore the Fenceline Air Monitoring System or if already restored, the time the Fenceline Air Monitoring System was returned to normal operating conditions that comply with the approved or partially approved FAMP; and

- (C) Temporary fenceline air monitoring measures being implemented until the Fenceline Air Monitoring System is restored to normal operating conditions.
  - (3) When the Fenceline Air Monitoring System is experiencing a known downtime or malfunction, the owner or operator of a Refinery shall indicate the data is unavailable for the missed or inaccurate measurements on their web-based fenceline data display and notification program.
  - (4) If a Fenceline Air Monitoring System downtime or malfunction results in a failure to accurately provide continuous, Real-Time fenceline air monitoring information for more than 30 consecutive calendar days and the Executive Officer determines and notifies the owner or operator of a Refinery that a revised FAMP is required to address the downtime or malfunction, the owner or operator of a Refinery shall submit a revised FAMP to the Executive Officer, pursuant to the schedule in subparagraph (e)(2)(D).
- (j) Independent Audits
- (1) The owner or operator of a Refinery shall cause an Independent Audit to be conducted and completed according to an audit protocol approved by the Executive Officer.
  - (2) The Independent Audit shall:
    - (A) Identify any deficiencies in the Fenceline Air Monitoring System and quality assurance procedures; and
    - (B) Produce an Independent Audit report that shall be:
      - (i) Signed by the party that conducted the Independent Audit, certifying under penalty of law, based on information and belief formed after reasonable inquiry, that the statements and information in the audit report and in all attachments and other materials are true, accurate, and complete; and
      - (ii) Submitted to the Executive Officer and made available on the web-based fenceline data display and notification system within 90 calendar days after the audit has been completed.
  - (3) The owner or operator of a Refinery shall cause an Independent Audit to be completed within 12 calendar months after the installation and operation of the Fenceline Air Monitoring System and subsequent Independent Audits shall be completed once every 36 calendar months thereafter.



(4) Corrective Action Plan

If the Independent Audit report identifies deficiencies in a Fenceline Air Monitoring System, the owner or operator of the Refinery shall:

- (A) Develop a Corrective Action Plan within three calendar months of the audit report, describing:
  - (i) All actions that will be taken to address all deficiencies; and
  - (ii) Any deficiency included in the Independent Audit report that the owner or operator of the Refinery is proposing to exempt from corrective action because any corrective action will negatively affect safety;
- (B) Submit the Corrective Action Plan to the Executive Officer for review and make it available on the Refinery's web-based fenceline data display and notification program within one business day of approval by the Executive Officer;
- (C) Perform all corrective action(s) pursuant to the schedule in an approved Corrective Action Plan; and
- (D) Maintain a record indicating when the corrective actions have been completed.

(5) Corrective Action Plan Approval Process

The Executive Officer shall notify the owner or operator of a Refinery in writing whether the Corrective Action Plan submitted pursuant to paragraphs (j)(4) is approved or disapproved.

- (A) If the Corrective Action Plan is disapproved, the owner or operator of a Refinery shall submit a revised Corrective Action Plan within 14 calendar days after notification of disapproval of the plan. The revised plan shall include any information necessary to address deficiencies identified in the disapproval letter; and
- (B) The Executive Officer will either approve the revised Corrective Action Plan or modify the plan and approve it as modified. If the facility does not submit the revised Corrective Action Plan within 30 calendar days after notification of disapproval of the plan as required in subparagraph (j)(5)(A), the Executive Officer will modify the plan and approve it as modified. The owner or operator of a Refinery may appeal the Corrective Action Plan modified by the Executive Officer to the Hearing Board pursuant to Rule 216 – Appeals and Rule 221 – Plans.

(6) Follow-up Independent Audit

The owner or operator of a Refinery shall:

- (A) Cause a party to conduct and complete a follow-up Independent Audit within three calendar months of completing the corrective action(s) pursuant to subparagraph (j)(4)(C) to:
  - (i) Determine if all of the actions specified in the Corrective Action Plan were completed;
  - (ii) Determine if the corrective action(s) resolved the deficiencies identified in the Independent Audit report; and
  - (iii) Produce a follow-up Independent Audit report that shall be:
    - (A) Signed by the party that conducted the follow-up Independent Audit, certifying under penalty of law, based on information and belief formed after reasonable inquiry, that the statements and information in the follow-up Independent Audit report and in all attachments and other materials are true, accurate, and complete; and
    - (B) Submitted to the Executive Officer and made available on the web-based fenceline data display and notification program within 90 calendar days after the follow-up Independent Audit has been completed;
- (B) Develop a Corrective Action Plan pursuant to paragraph (j)(4) that shall be approved pursuant to paragraph (j)(5) if the follow-up Independent Audit report identifies deficiencies in a Fenceline Air Monitoring System.

(7) Revised FAMP

The owner or operator of a Refinery shall submit a revised FAMP to the Executive Officer pursuant to the schedule in subparagraph (e)(2)(E) if the Executive Officer notifies the Refinery in writing that the Independent Audit or follow-up Independent Audit indicates deficiencies in the FAMP.

(8) Plan Review Fees

The owner or operator of a Refinery shall pay compliance plan review fees as specified in Rule 306 – Plan Fees for the review, ~~and approval,~~ and modifications of any Corrective Action Plan specified in subdivision (j).

(k) Recordkeeping, Reporting, and ~~Root~~ Specific Cause Analysis

- (1) The owner or operator of a Refinery shall maintain records of all information required under this rule for at least five calendar years and shall make the

information available to the Executive Officer upon request. Records for at least the two most recent calendar years shall be kept onsite.

(2) Root Specific Cause Analysis

When an air pollutant listed in Table 1 is measured above the Notification Threshold on a Refinery Fenceline Air Monitoring System, the owner or operator of any Refinery that utilizes the Fenceline Air Monitoring System that measures the air pollutant shall:

- (A) Initiate a Root Specific Cause Analysis upon discovery, but no later than 24 hours after discovery, to determine the source(s) of air pollutant using techniques such as:
  - (i) Visual inspection;
  - (ii) Optical gas imaging;
  - (iii) Leak inspection using EPA Method 21; or
  - (iv) Other test or monitoring method approved by the Executive Officer;
- (B) If the root specific cause was determined to be from an on-site source, initiate corrective action(s) to stop the exceedance or prevent a similar exceedance, if needed, as soon as practicable, but no later than 24 hours after identifying the root specific cause;
- (C) If the root specific cause was determined to be from an off-site source, notify the Executive Officer by calling 1-800-CUT-SMOG® upon discovery, but no later than 24 hours after discovery of such determination, providing the basis of such determination, and the suspected off-site source(s);
- (D) If the root specific cause was determined to be from an on-site source, submit a Root Specific Cause Analysis report to the Executive Officer and make it available on the web-based fenceline data display and notification program within 14 calendar days of identifying the root specific cause. The report shall include, at a minimum:
  - (i) Cause and duration of the air pollutant emissions;
  - (ii) Determination of the source(s) of air pollutant emissions and methodology used to determine the source;
  - (iii) Any mitigation and corrective action(s) taken to stop the exceedance or taken to prevent a similar recurrence;
  - (iv) If a corrective action(s) would take more than 14 calendar days, the reasons why; and
  - (v) Any monitoring data requested by the Executive Officer;

- (E) If a corrective action(s) is required pursuant to subparagraph (k)(2)(B), the owner or operator of the Refinery shall:
  - (i) Conduct a reinspection of the source within 14 calendar days of completing the corrective action(s) to assess if the corrective action(s) reduced or eliminated the source(s) of the air pollutant; and
  - (ii) Submit a report to the Executive Officer and make the report available on the web-based fenceline data display and notification program within 28 calendar days of completing the corrective action(s) describing how the corrective action(s) addressed the source(s) of the air pollutant.
  
- (3) If the owner or operator of ~~the~~a Refinery is notified by the Executive Officer to be the off-site source of an air pollutant measurement that exceeds the Notification Threshold, the owner or operator of the Refinery shall:
  - (A) Initiate a ~~Root~~Root Specific Cause Analysis upon notification, but no later than 24 hours of being notified that their Refinery is the cause of the air pollutant emissions using techniques in clauses (k)(2)(A)(i) to (k)(2)(A)(iv);
  - (B) Initiate corrective action(s), if applicable, as soon as practicable, but no later than 24 hours of identifying the ~~root~~root specific cause;
  - (C) Submit a ~~Root~~Root Specific Cause Analysis report to the Executive Officer and make it available on the web-based fenceline data display and notification program within 14 calendar days of identifying the ~~root~~root specific cause. The report shall include at a minimum the information in clauses (k)(2)(D)(i) to ~~(k)(2)(D)(iv)~~(k)(2)(D)(v); and
  - (D) If corrective action(s) is required pursuant to subparagraph (k)(3)(B), the owner or operator of the Refinery shall:
    - (i) Conduct a reinspection of the source within 14 calendar days of completing the corrective action(s) to assess if the corrective action(s) reduced or eliminated the source(s) of the air pollutant; and
    - (ii) Submit a report to the Executive Officer and make the report available on the web-based fenceline data display and notification program within 28 calendar days of completing the corrective action(s) describing how the corrective action(s) addressed the source(s) of the air pollutant.
  
- (4) For the purpose of this provision, an air pollutant measured above the applicable Notification Threshold in Table 1 on a Refinery Fenceline Air Monitoring System within a seven calendar-day period shall be considered one event. If three events

require Root Specific Cause Analyses within the same calendar year indicate the same cause, or indicate the cause cannot be determined, for the same air pollutant detected above the Notification Threshold by the same monitor of a Fenceline Air Monitoring System, the owner or operator of a Refinery shall:

- (A) Cause a Qualified Independent Party with relevant technical expertise in refinery operations or Fenceline Air Monitoring Systems to initiate a Root Specific Cause Analysis, which may include installing additional temporary monitors to identify the source of the air pollutants, within 14 calendar days of the most recent instance when the Notification Threshold was exceeded to determine the root specific cause and corrective action(s) that could prevent future emissions;
- (B) Cause the Qualified Independent Party to produce a Root Specific Cause Analysis report, certified under penalty of law, based on information and belief formed after reasonable inquiry, that the statements and information in the Root Specific Cause Analysis report and in all attachments and other materials are true, accurate, and complete;
- (C) Submit the Root Specific Cause Analysis report, certified by the Qualified Independent Party pursuant to paragraph (k)(4)(B), to the Executive Officer and make it available on the web-based fenceline data display and notification program within 14 calendar days of the Root Specific Cause Analysis conducted pursuant to that includes, at a minimum:
  - (i) Cause and duration of the air pollutant emissions;
  - (ii) Determination of the source(s) of air pollutant emissions and methodology used to determine the source;
  - (iii) Any mitigation and corrective action(s) taken to stop the exceedance or taken to prevent a similar recurrence;
  - (iv) If a corrective action would take more than 14 calendar days, the reason(s) why; and
  - (v) Any monitoring data requested by the Executive Officer;
- (D) Initiate corrective action(s) to stop the exceedance or prevent a similar recurrence, if applicable, as soon as practicable, but no later than 24 hours of the Qualified Independent Party identifying the root specific cause; and
- (E) If the Root Specific Cause Analysis conducted by the Qualified Independent Party required corrective action(s), the owner or operator of a Refinery shall:

- (i) Conduct a reinspection of the source within 14 calendar days of completing the corrective action(s) to assess if the corrective action(s) reduced or eliminated the source(s) of the air pollutant; and
- (ii) Submit a report to the Executive Officer and make the report available on the web-based fenceline data display and notification program within 28 calendar days of completing the corrective action(s) describing how the corrective action(s) addressed the source(s) of the air pollutant.

(5) Quarterly Report

The owner or operator of a Refinery with an approved or partially approved FAMP shall submit a quarterly report to the Executive Officer and make the report available on the web-based fenceline data display and notification program within 60 calendar days after the conclusion of each quarter. The report shall be consistent with the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines, in a format approved by the Executive Officer, and at a minimum include a description of:

- (A) Summary of the air pollutant concentrations indicating the concentration trend for each air pollutant;
- (B) Data processing calculations, such as conversion calculations of instrument signal to pollutant concentration;
- (C) Summary of calibration data;
- (D) Description of data completeness, accuracy, and precision;
- (E) Quality assurance/quality control measures;
- (F) Instrument maintenance and performance checks;
- (G) Any instance when an air pollutant was measured above a Notification Threshold;
- (H) Any instance when a Fenceline Air Monitoring System downtime or malfunction required a notification to Executive Officer pursuant to paragraph (i)(1) or corrective action(s); and
- (I) Review and resolve any Data Quality Flags and finalize the data.

(1) Community Air Monitoring Fees

- (1) No later than January 31, 2025, for phase one implementation and January 31, 2026, for phase two implementation, an owner or operator of a Refinery shall pay the applicable installation fee for community air monitoring systems established in Table 2.

- (2) An owner or operator of a Refinery shall pay the annual operating and maintenance fees for the Community Air Monitoring System(s) pursuant to Rule 301–Permitting and Associated Fees.
  - (3) The community air monitoring fees required by paragraphs (1)(1) and (1)(2) are in addition to permit and other fees otherwise authorized to be collected from such Refineries.
- (m) Compliance
- (1) Once a FAMP is approved or partially approved by the Executive Officer, the owner or operator of a Refinery must comply with all portions of the FAMP.
- (n) Exemptions
- (1) An owner or operator of a petroleum refinery subject to Rule 1180 is exempt from the requirements of this rule.
  - (2) An owner or operator of a Refinery is exempt from the requirement of operating an existing Real-Time Fenceline Air Monitoring System for 96 hours in a calendar year, provided:
    - (A) The operation of existing fenceline air monitoring equipment is disrupted by the required installation of new fenceline air monitoring equipment to measure any air pollutant in Table 1 that was not addressed in the Refinery’s previous FAMP; and
    - (B) The owner or operator of the Refinery complies with the notification requirement pursuant to subdivision (i).

**Table 1– Air Pollutants and Notification Thresholds to be Addressed by FAMPs**

<b>Air Pollutants</b>	<b>Health Standard-Based Notification Threshold*</b>	<b>Information-Based Notification Threshold</b>
<b>Criteria Air Pollutants</b>		
Sulfur Dioxide	75 ppb	N/A
<u>Oxides of Nitrogen Oxides</u>	100 ppb	N/A
Particulate Matter		
PM2.5	35 µg/m <sup>3</sup> (24-hour)	N/A
PM10	50 µg/m <sup>3</sup> (24-hour)	N/A
<b>Volatile Organic Compounds</b>		
Total VOCs (Non-Methane Hydrocarbons)	N/A	730 ppb
Formaldehyde	44 ppb	N/A
Acetaldehyde	260 ppb	N/A
Acrolein	1.1 ppb	N/A
1,3 Butadiene	297 ppb	N/A
Naphthalene	N/A	N/A
Polycyclic aromatic hydrocarbons (PAHs)	N/A	N/A
Styrene	5,000 ppb	N/A
Benzene	8 ppb	N/A
Toluene	1,300 ppb	N/A
Ethylbenzene	N/A	N/A
Xylenes	5,000 ppb	N/A
<b>Other Air Pollutants</b>		
Hydrogen Sulfide	30 ppb	N/A
Carbonyl Sulfide	270 ppb	N/A
Ammonia	4,507 ppb	N/A
Hydrogen Cyanide	309 ppb	N/A

\* Notification Thresholds are based on 1-hour averaging time unless otherwise noted.



**Table 2 – Refinery-Related Community Air Monitoring System Fees**

Refinery ID	Permit Name	Location	Effective Dates and Fee Requirements	
			Phase One Implementation (No later than January 31, 2025)	Phase Two Implementation (No later than January 31, 2026)
187165	AltAir Paramount, LLC	Paramount	\$230,947	\$538,876
800080	LTR dba World Oil Refining	South Gate	\$230,947	\$538,876
800393	Valero Wilmington Asphalt Plant	Wilmington	\$230,947	\$538,876

**PROPOSED AMENDED RULE  
1180 AND RULE 1180.1  
FENCELINE AIR MONITORING  
PLAN GUIDELINES**



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Diamond Bar, California

January 2024

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## 1. Background

The South Coast Air Quality Management District (South Coast AQMD) Governing Board ~~adopted~~ amended Rule 1180 – Fenceline and Community Air Monitoring for Petroleum Refineries and Related Facilities (Rule 1180) and adopted Rule 1180.1 – Fenceline and Community Air Monitoring for Other Refineries (Rule 1180.1) on January 5, 2023. (date of adoption). The main purpose of Rule 1180 and Rule 1180.1 is to require real-time fenceline air monitoring systems and to establish a fee schedule to fund refinery-related community air monitoring systems that provide air quality information to the public and local response agencies about levels of various criteria air pollutants, volatile organic compounds, and other compounds at or near the property boundaries of ~~petroleum refineries and related facilities.~~ For the purpose of this guidance document, the term facility will be used to refer to petroleum refineries and related facilities subject to Rule 1180 and refineries subject to Rule 1180.1.

Rules 1180 and 1180.1 requires that ~~refinery facility owner or operators~~ refinery facility owner or operators submit a written ~~f~~F~~enceline a~~ir m~~Monitoring p~~lan (air monitoring plan~~FAMP)~~ FAMP for establishing and operating a real-time fenceline air monitoring system. ~~Therefore, South Coast AQMD staff developed the Rule 1180 – Refinery Fenceline Air Monitoring Plan Guidelines (Guidelines) these Guidelines to serve as a written framework to be used by the Executive Officer to evaluate air monitoring plans FAMPs required by Rules 1180 and 1180.1. In addition, these Guidelines inform facility owners or operators about the elements necessary to complete a FAMP.~~

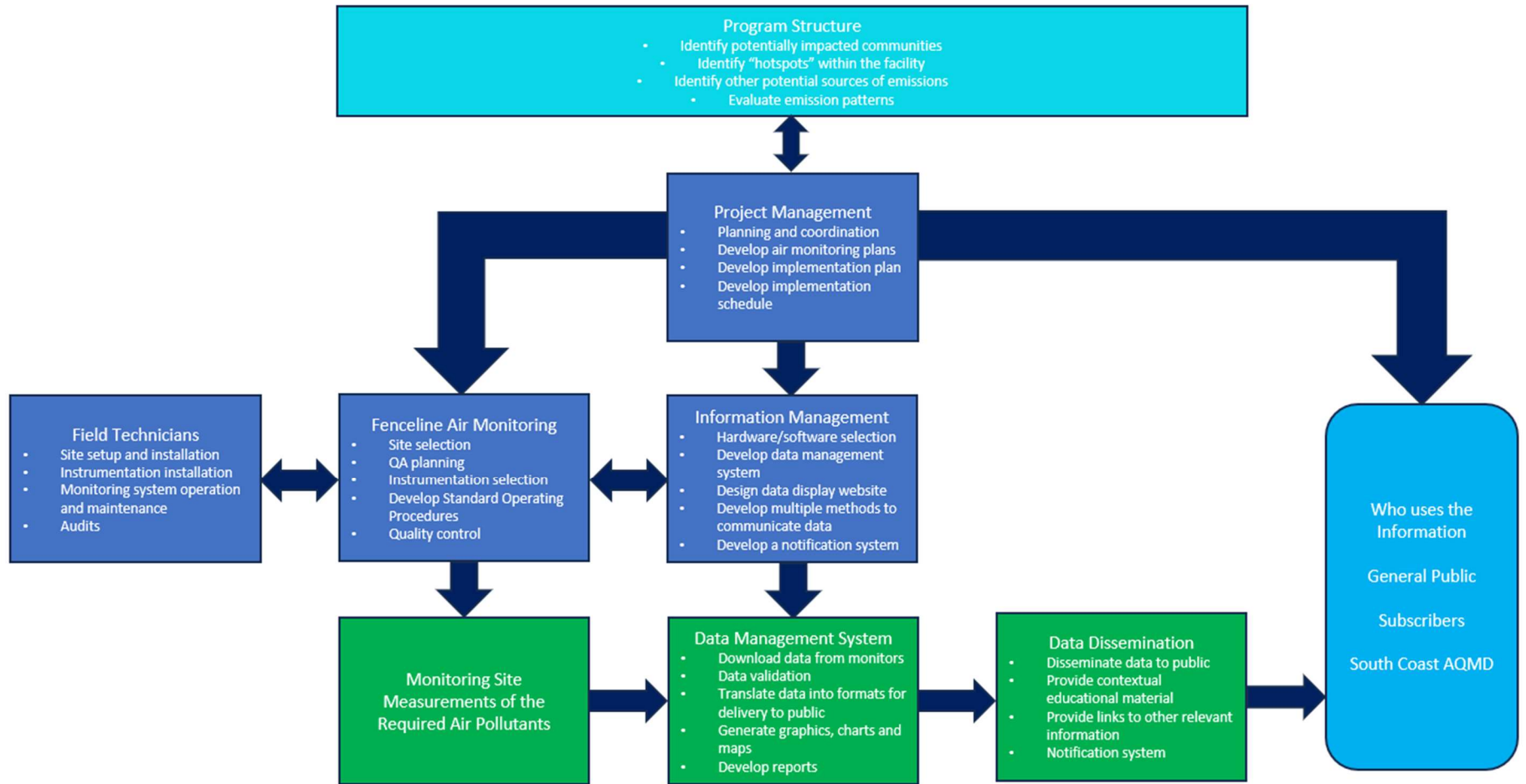
~~By design, these Guidelines will inform petroleum refinery operator owners or operators subject to the Rules 1180 about the elements necessary to complete an air monitoring plan. South Coast AQMD recognizes the need for flexibility when designing an air monitoring plan FAMP, therefore, each plan will be evaluated on a case-by-case basis and should be tailored to each facility's size, operations, specific location, and its surrounding receptors. Therefore, a fenceline air monitoring system must be representative of the size of the affected facility and its emissions and must achieve adequate coverage along the entire facility fenceline, whenever feasible. Rule 1180.1 is similar to Rule 1180 in its air monitoring requirements; therefore, staff revised existing Rule 1180 Guidelines to include guidelines for Rule 1180.1. The guidelines provide criteria that would be used to allow the exclusion of certain types of monitoring.~~

~~A fundamental requirement of Rules 1180 and 1180.1 is requires that fenceline air monitoring plan FAMPs must and quality assurance project plans (QAPPs) provide detailed information about the installation, operation, and maintenance, and quality assurance and quality control (QA/QC) of a fenceline air monitoring system. A fenceline air monitoring system is defined as a combination of equipment that measures and records air pollutant concentrations at or near the property boundary of a petroleum refinery facility; data systems that process and store historical data; and public web-based fenceline data display and notification systems, where data are displayed and through which public fenceline notifications are issued. An effective fenceline air monitoring system should shall be capable of measuring concentrations at the fenceline from routine emissions from refineries and detecting leaks, as well as unplanned releases from~~

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Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines

refineryfacility equipment and other sources of refineryfacility-related emissions. For this purpose, fenceline air monitoring system must cover the entire facility. The fenceline air monitoring system would inform refineryfacility operators and the public about potential air pollution impacts to nearby communities ~~from refinery operations.~~ The following diagram (Figure 1) outlines the facility fenceline program. Each of the parts will be discussed in this guidance document.

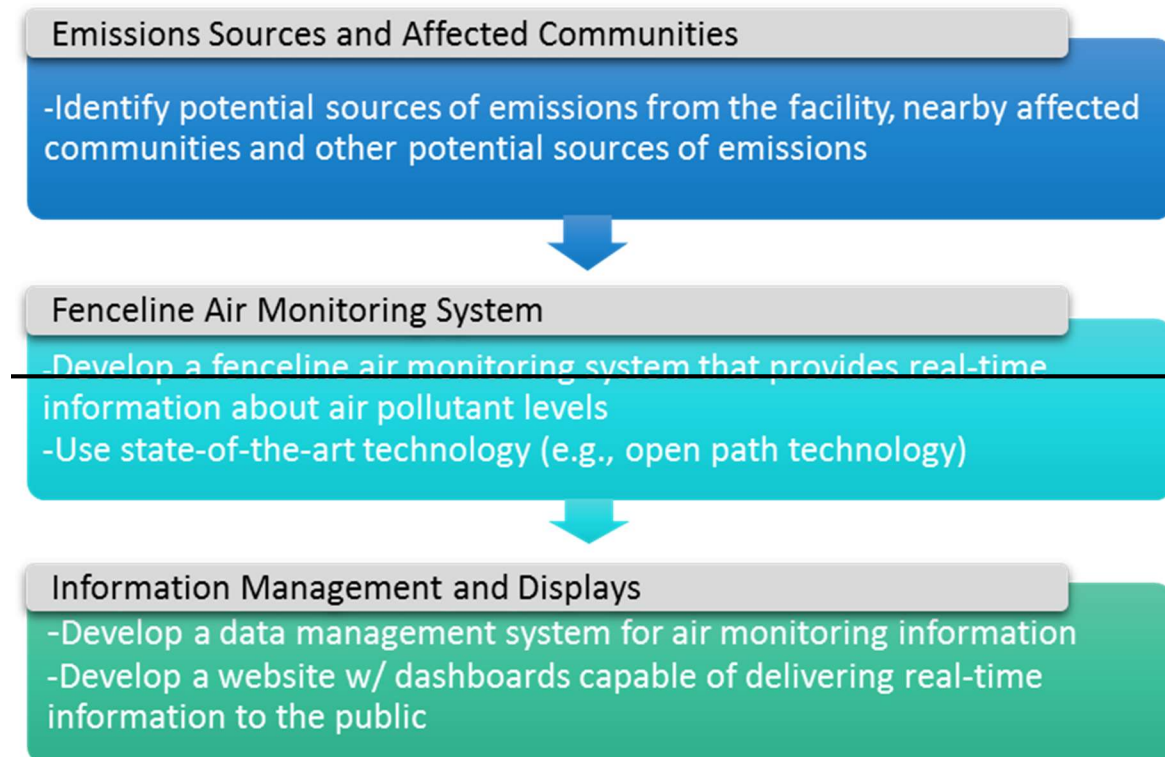
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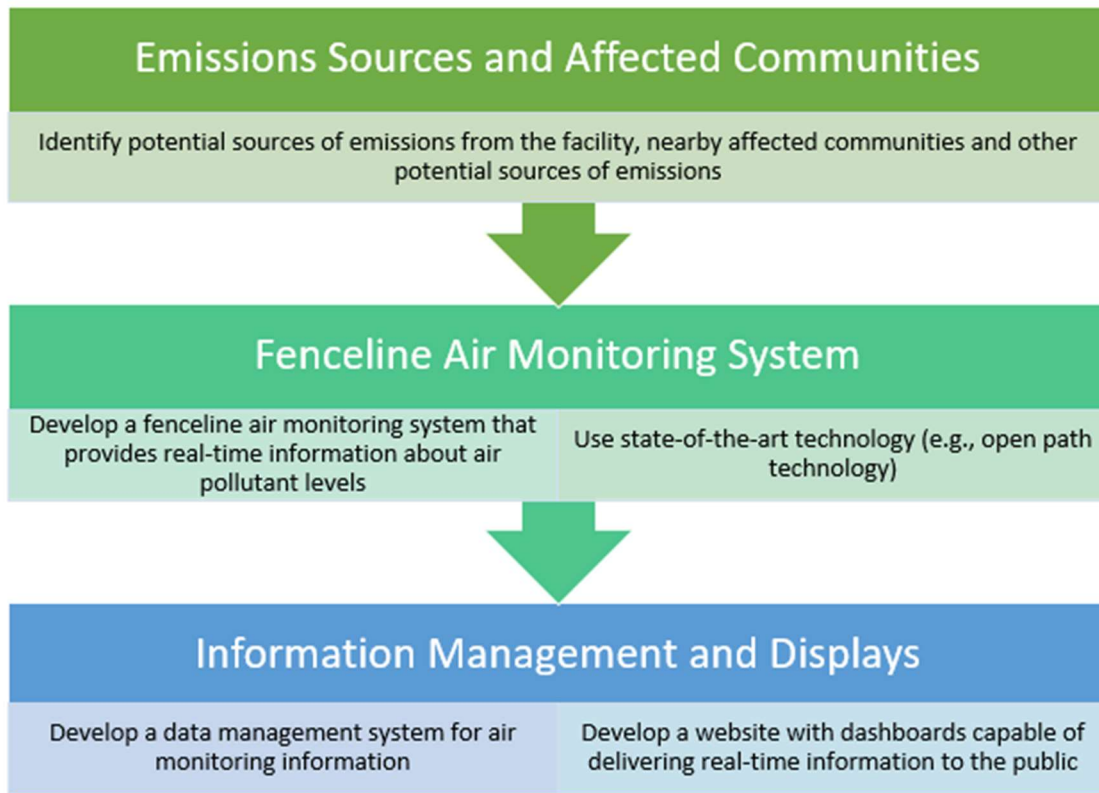


**Figure 1: Overview of the Facility Fenceline Air Monitoring Programs**

## 2. Fenceline Air Monitoring Plan

Developing an air monitoring plan requires three important steps; There are three main steps in developing a FAMP: (1) identifying emissions sources and affected communities, (2) deriving-developing a fenceline air monitoring system that can provide real-time information about certain air pollutant levels, and (3) effectively communicating this information using data management technology and displays. The below diagram (Figure 12 - Overview of Key Steps to Developing an Air Monitoring Plan FAMP), below outlines important considerations for developing a fenceline air monitoring system these steps.





**Figure 2: Overview of Key Steps to Developing a FAMP**

An approved fenceline air monitoring plan shall meet the following key objectives:

- Provide ~~information about~~ measurements of various air pollutant levels (i.e., ~~determined by air pollutant concentration~~) ~~measured~~ in real-time (when feasible) in ~~duration~~s and in short enough time resolutions to adequately address significant emissions changes from ~~refinery~~ facility operations;
- Gather accurate ~~air quality and meteorological data~~ to identify ~~both the time(s) and location(s)~~ factors that may impact ~~of various~~ air pollutant levels near ~~refinery~~ facility operations ~~and provide a comparison of these levels to other pollutant levels monitored in the Basin;~~
- Track long-term air pollutant levels, variations, and trends over time at or near the property boundaries of ~~petroleum refineries and in nearby communities;~~
- Provide context to the data so that local communities can ~~distinguish~~ understand differences (if any) in air quality in their location from other locations in the Basin and understand the potential health impacts associated with local air quality near ~~petroleum refinery~~ facility operations;
- Notify subscribers ~~Provide a notification system for communities near refineries when emissions exceed~~ pre-determined thresholds (e.g., ~~reference exposure levels (RELs) or~~



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~~other~~ the relevant health-based notification standards or information-based notification standards listed in the rules, whichever is lower; and

- Provide quarterly reports summarizing the measurements, data completeness, and quality assurance.

Thus, a FAMP shall address these objectives.

Rules 1180 and 1180.1 sets forth requirements for air monitoring plans FAMPs and QAPPs. Please see Appendix A for Fenceline Air Monitoring Plan Checklist. The air monitoring plan FAMP shall include details of ~~detailed information for the following~~ the following:

- An evaluation of routine emission sources at the refinery facility (e.g., utilizing remote sensing or other measurement techniques or modeling studies, such as those used for health risk assessments);
- An analysis of the distribution of operations and processes within the refinery facility to determine potential emission sources and their location;
- An assessment of air pollutant distribution in surrounding communities (e.g., mobile surveys, gradient measurements, and/or modeling studies used for health risk assessments);
- A summary of fenceline air monitoring instruments and ancillary equipment that are proposed to continuously measure, monitor, record, and report air pollutant levels in real-time near the ~~petroleum refinery~~ refinery facility perimeter (i.e., fenceline);
- A summary of instrument specifications, detectable pollutants, minimum and maximum detection limits for all air monitoring instruments;
- Proposed monitoring equipment siting and selected pathways (when applicable) for fenceline instruments, including the justification for selecting specific locations based on the assessments mentioned above;
- Operation and maintenance requirements for the proposed monitoring systems;
- An implementation schedule consistent with the requirements of Rules 1180 and 1180.1;
- Procedures for implementing quality assurance and quality control of data;
- A web-based system for disseminating information collected by the fenceline air monitoring system;
- Details of the ~~proposed~~ public notification system; and
- ~~Demonstration of independent oversight~~ Independent audit.

This information will ~~assist the Executive Officer in determining~~ be used by the Executive Officer to determine the approval status of ~~whether to approve the air monitoring plan FAMP and QAPP during the plan review process required by~~ set forth in paragraph (f) of Rules 1180 and 1180.1.

### **3. Fenceline Air Monitoring Systems**

~~Pursuant to the requirements of Rule 1180 discussed above, d~~ Development of a fenceline air monitoring system shall take into account ~~consider the~~ geospatial layout of the refinery facility

site, potential release sources, local meteorology, atmospheric dispersion characteristics of the compounds of concern, the relative risk to likely receptors based on these criteria, and other considerations—outlined below. Fenceline air monitoring systems should achieve maximum possible fenceline coverage, whenever feasible.

<b>Fenceline Air Monitoring Coverage (or Spatial Coverage)</b>	
<b>R</b>	Identify the facility's proximity to sensitive receptors affected by the refinery operation and provide the information below:
	<ul style="list-style-type: none"> <li>○ Distance from facility to closest sensitive receptor(s)</li> <li>○ Location of downwind and upwind communities</li> <li>○ Eminent sources of non-refinery emissions surrounding the facility (e.g. non-refinery industrial facilities)</li> <li>○ Dispersion modeling<sup>‡</sup></li> </ul>
<b>R</b>	Describe historical facility emission patterns and pollutant hotspots based on the following:
	<ul style="list-style-type: none"> <li>○ On-site location of operations and processes within the facility's perimeter</li> <li>○ On-site location of emissions sources and level of emissions</li> <li>○ Facility plot plans and topography</li> <li>○ Dispersion modeling<sup>‡</sup></li> </ul>
<b>R</b>	Select sampling locations along the perimeter of the facility based on the information above. Also, provide the following:
	<ul style="list-style-type: none"> <li>○ Locations where equipment will be sited (e.g., GIS coordinates) and measurement pathways</li> <li>○ Elevations of equipment and pathways</li> <li>○ A description of how the monitoring system will cover all nearby downwind communities</li> </ul>
<b>Fenceline Air Monitoring Equipment Description</b>	
<b>R</b>	Select open path air monitoring equipment that is capable of continuously measuring air pollutants in real time and provide the following:
	<ul style="list-style-type: none"> <li>○ Specifications for the open path instruments (e.g., detection limits, time resolution, etc.)</li> </ul>

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	<del>○ Explanation of the operation and maintenance requirements for selected equipment</del>
	<del>○ Substantiate any request to use alternative technologies</del>
<b>R</b>	<b>Monitor for the pollutants listed in Table 1 of Rule 1180 and include the following:</b>
	<del>○ Specify pollutant detection limits for all instruments and paths measured</del>
	<del>○ Substantiate any exclusion of chemical compounds listed in Table 1 of Rule 1180 or the use of an alternative air monitoring technology</del>
<b>Quality Assurance</b>	
<b>R</b>	<b>Develop a Quality Assurance Project Plan (QAPP) that describes the following:</b>
	<del>○ Quality assurance procedures for data generated by the fenceline air monitoring system (e.g. procedures for assessment, verification and validation data)</del>
	<del>○ Standard operating procedures (SOP) for all measurement equipment</del>
	<del>○ Routine equipment and data audits</del>
<b>Data Presentation to the Public</b>	
<b>R</b>	<b>Design a data display website that includes the following:</b>
	<del>○ Educational material that describes the objectives and capabilities of the fenceline air monitoring system</del>
	<del>○ A description of all pollutants measured and measurement techniques</del>
	<del>○ A description of background levels for all pollutants measured and provide context to levels measured at the fenceline</del>
	<del>○ Procedures to upload the data and ensure quality control</del>
	<del>○ Definition of QC flags</del>
	<del>○ Hyperlinks to relevant sources of information</del>
	<del>○ A means for the public to provide comments and feedback; Procedures to respond</del>
	<del>○ Archived data that with data quality flags, explains changes due to QA/QC and provides chain of custody information</del>
	<del>○ Quarterly data summary reports, including relationship to health thresholds, data completeness, instrument issues, and quality control efforts</del>

<b>Notification System</b>	
<input checked="" type="checkbox"/>	Design a notification system for the public to voluntarily participate in that includes the following:
	<ul style="list-style-type: none"> <li>○ <del>Notifications for activities that could affect the fenceline air monitoring system (e.g., planned maintenance activities or equipment failures)</del></li> </ul>
	<ul style="list-style-type: none"> <li>○ <del>Notifications for the availability of periodic reports that inform the community about the air and provide updates on the performance and maintenance of the fenceline air monitoring system</del></li> </ul>
	<ul style="list-style-type: none"> <li>○ <del>Triggers for exceedances in thresholds (e.g. Acute Reference Exposure Levels (RELS))</del></li> </ul>
	<ul style="list-style-type: none"> <li>○ <del>Communication methods for notifications, such as, website, mobile applications, automated emails/text messages and social media</del></li> </ul>

‡Dispersion modeling shall be conducted using U.S. EPA’s Preferred and Recommended Air Quality Dispersion Model (e.g., Health Risk Assessment)

Details about each of these key considerations are explained below.

### Multi-Pollutant Monitoring

The purpose of Rules 1180 and 1180.1 is to provide air quality information to the public on regarding levels of applicable certain air pollutants such as criteria air pollutants, volatile organic compounds, metals, and other air pollutants, at or near the facility property boundaries and in nearby communities. Multi-pollutant monitoring is a means to provides air quality information for multiple air pollutants and, therefore, can broaden the understanding of air quality conditions and pollutant interactions. This can, furthering the capabilities to of evaluating air quality models, development of emissions control strategies, and support research, including (i.e., health studies). Petroleum refineries and activities associated with them emit a wide range of air pollutants, including criteria pollutants (sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>x2</sub>), carbon monoxide (CO), and particulate matter (PM)); volatile organic compounds (VOCs), including photochemically reactive VOCs that contribute to formation of tropospheric ozone (e.g., ethylbenzene, formaldehyde); carcinogenic hazardous air pollutants (e.g., benzene, 1,3-butadiene, naphthalene, polycyclic aromatic hydrocarbons, formaldehyde); non-carcinogenic air toxics (hydrogen fluoride, hydrogen cyanide); persistent bio-accumulative toxics (mercury), air toxic metals (e.g., at a minimum nickel, cadmium, manganese) and other air pollutants (e.g., hydrogen sulfide, and carbonyl sulfide, and particulate matter).

Chemical compounds associated with health risk and those measured at other ambient air monitoring locations All of the air pollutants list in Table 1 from the applicable rule, e.g., Rule 1180 or Rule 1180.1, should shall be identified in the air monitoring plans FAMPs. Identification of the health risk drivers can be informed by the health risk assessment studies performed at the refineries, as well as other information regarding potential health risk near refineries. Exclusion of any of these chemical compounds air pollutants identified in Table 1 of the rules must be

~~thoroughly explained and justified within the facility's air monitoring plan (FAMP). Other chemicals may also be detected by the fenceline air monitoring systems (e.g., ozone by the open path optical remote sensing analyzers) and may be included in the reporting for additional public information.~~

~~Additional chemicals may be of interest to monitor as a part of the fenceline air monitoring system, for example, if certain annual emissions exceed 10,000 lbs/year. Other chemicals may also be inherently monitored by the open path systems and may be included in the reporting for additional public information.~~

### **Chemical Species of Interest**

The California Environmental Protection Agency's (CalEPA) Office of Environmental Health Hazard Assessment (OEHHA) is collaborating with the California Air Resources Board (CARB) and the Interagency Refinery Task Force to identify and develop information on chemicals emitted from refineries and their health effects in order to assist air agencies in developing plans for air monitoring at refineries in California. OEHHA, which is part of CalEPA, published ~~a the draft report in September 2017~~ report in March 2019. The report ~~that presented~~ a comprehensive list of chemicals emitted from California refineries, including emissions that occur routinely in daily operations, as well as accidental and other non-routine emissions<sup>1</sup>. The list prioritizes the chemicals according to their emissions levels and toxicity. Those at or near the top of the list would, ~~providing a list of chemicals that would be top candidates for air monitoring near refineries according to the volume of the chemicals emitted and their toxicity.~~ The presence of a chemical on this comprehensive list does not necessarily mean it is released from all refineries, at all times, or in significant quantities.

~~The potential compounds emitted from refineries that pose the highest health risk in nearby communities should~~ shall be identified along with the appropriate monitoring technologies selected to measure them. This assessment ~~The identification of compounds and selection of monitoring technologies should be informed by the OEHHA report on Refinery Chemical Emissions and Health Effects Report.~~ The chemical compounds of interest for Rules 1180 and 1180.1 are based on the 2019 OEHHA report as presented in Table 1 below, however, black carbon and the metal compounds are not required to be monitored by Rule 1180 related facilities and Rule 1180.1 refineries.

~~The petroleum refinery air monitoring plan must explain exclusion or replacement of monitoring for any of the compounds identified in Table 1 below. For example, in certain instances a petroleum refinery operator may propose to exclude monitoring for specific compounds that are not likely to be measured at or above the detection limits of the fenceline air monitoring~~

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<sup>1</sup> OEHHA, "Analysis of Refinery Chemical Emissions and Health Effects," March 2019. ~~[Online].~~ Available at <https://oehha.ca.gov/media/downloads/faqs/refinerychemicalsreport032019.pdf>.

equipment. In these instance, the petroleum refinery operator would be required to provide an alternative measurement methodology or evidence (e.g., historical air monitoring data or operational information) to support the proposed exclusion. A petroleum refinery may submit a revised fenceline air monitoring plan if changes to the fenceline air monitoring system are supported based on new information.

**Table 1 - Refinery-Related Air Pollutants to be Addressed by Fenceline Air Monitoring Plan FAMPs**

Air Pollutants
<b>Criteria Air Pollutants</b>
—Sulfur Dioxide
— <u>Oxides of Nitrogen</u> <del>Oxides</del>
<u>Particulate Matter</u>
<b>Volatile Organic Compounds</b>
—Total VOCs (Non-Methane Hydrocarbons)
—Formaldehyde
—Acetaldehyde
—Acrolein
—1,3-Butadiene
<u>Naphthalene</u>
<u>Polycyclic aromatic hydrocarbons</u> *
—Styrene
<u>Benzene</u>
<u>Toluene</u>
<u>Ethylbenzene</u>
— <del>BTEX Compounds (Benzene, Toluene, Ethylbenzene, Xylenes)</del>
<b><u>Metals</u> **</b>
<u>Cadmium</u>
<u>Manganese</u>
<u>Nickel</u>
<b>Other Compounds</b>
—Hydrogen Sulfide
—Carbonyl Sulfide
—Ammonia
—Black Carbon*
—Hydrogen Cyanide
Hydrogen Fluoride* <sup>±</sup>

\*When real-time monitoring is feasible

\*\*Not required for Rule 1180 related facilities and Rule 1180.1 refineries

\*If the facility uses hydrogen fluoride.

### ***Sulfur Dioxide (SO<sub>2</sub>)***

Heating and burning of fossil fuel releases the sulfur present in these materials and result in the formation of SO<sub>2</sub>. SO<sub>2</sub> is the criteria pollutant that is the indicator of SO<sub>x</sub> concentrations in the ambient air and can have direct health impacts and can cause damage to the environment. As a result, SO<sub>2</sub> is routinely measured in ambient air monitoring networks. The major sources of SO<sub>2</sub> at refineries are fuel fired in furnaces and boilers, FCC Fluid Catalytic Cracking units (FCCUs), Sulphur Recovery Units, flares, etc. As a result, measurement of this compound will help identify potential contribution of refineries to the ambient concentrations of SO<sub>2</sub> in nearby communities.

### ***Oxides of Nitrogen (NO<sub>x</sub>)***

Both gasoline and diesel-powered vehicles are the main source of NO<sub>x</sub> emissions; however, substantial emissions are also added by stationary sources such as petroleum refineries. Nitrogen oxides-NO<sub>x</sub> includes nitric oxide (NO) and NO<sub>2</sub>, a group of highly reactive gases that contribute to the formation of secondary particles-particulate matter, as well as tropospheric ozone. Scientific evidence links NO<sub>2</sub> exposures with adverse respiratory effects and is one of the criteria pollutants, making it a compound that is routinely measured in ambient air monitoring networks. NO<sub>2</sub> measurements also typically include measurement of NO and NO<sub>x</sub>. Measurement of these constituents will help determine if refineries add significant concentrations of NO<sub>x</sub> to nearby urban environments.

### ***Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)***

PM is a mixture of liquid droplets and solids such as dust, dirt, soot, and smoke in the air. These particles exist in a large variety of shapes, sizes, and chemical compositions. Fine particles commonly contain ionic species (e.g., sulfate, nitrate, and ammonium), acid (e.g., hydrogen ion, H<sup>+</sup>), organic and elemental carbon, and trace elements (e.g., aluminum, silicon, sulfur, chlorine, potassium, calcium, titanium, vanadium, chromium, manganese, nickel, copper, zinc, selenium, bromine, arsenic, cadmium, and lead). PM<sub>2.5</sub> can also contain larger amounts of polycyclic aromatic hydrocarbons (PAHs) such as naphthalene, chrysene, phenanthrene, and anthracene than PM<sub>10</sub>.

Particulates have been detected at many emissions points in refineries (abrasive blasting, asbestos abatement, boilers, cooling towers, crude units, heaters, cokers, FCCUs, incinerators, and flares) and in non-routine emissions outdoors.

There are point monitors for particulate matter which employ methods such as beta attenuation, light scattering/absorption, and tapered element oscillating microbalance. These instruments range from hourly to minute averages and cover a range of PM types including PM<sub>2.5</sub>, PM<sub>10</sub>, and speciated particulate matter. Real-time PM monitoring instruments and methods are in use throughout regulatory air monitoring networks.

### ***Volatile Organic Compounds (VOCs)***

VOCs include non-methane hydrocarbons (NMHC) and oxygenated ~~NMHC~~ NMHC such as alcohols, aldehydes, and organic acids. ~~They~~ VOCs are emitted by a ~~large number~~ variety of sources, but many hydrocarbons are associated with fuels and the production of fuels and ~~VOCs,~~ ~~mainly hydrocarbons,~~ originate from production processes, storage tanks, transport pipelines and waste areas. As a result, measurement of these compounds is critical to determine the impacts that refineries have on nearby communities. Facilities are required to measure fenceline concentrations of total VOCs and specific VOCs listed in Table 1 of the respective rule using Open Path Ultraviolet Differential Optical Absorption Spectroscopy (UV-DOAS) and Fourier Transform Infrared Spectroscopy (FTIR) technologies unless other technologies have been approved in the facility's FAMPs.

~~While measurements of NMHC could provide valuable information about potential refinery emissions, for a refinery it is possible to distinguish a few and well-defined number of specified VOCs~~ Table 1 of the respective rules, lists specific VOCs that must be monitored. These VOCs required for monitoring to represent refinery facility fugitive emissions and/or health risk drivers. Measurement of these specified VOCs must be carried out continuously, using open path technologies at the fenceline of the refineries. In addition to individual VOC concentrations, total VOC measurements are also required at the facility fenceline. Total VOC's in this guideline is described as Non-Methane Hydrocarbons, and CARB defines Non-Methane Hydrocarbons as the sum of all hydrocarbon air pollutants except methane<sup>2</sup>. Various hydrocarbon species absorb strongly around the 3000 cm<sup>-1</sup> infrared spectral region. The absorption features of these hydrocarbons are similar, with the absorption strength scaling to the mass of the alkane species. As a result, Total VOCs can be readily quantified by open path FTIR technology by conducting spectral retrieval in the above-mentioned spectral region (the exact retrieval spectral window may vary slightly by vendor and retrieval approach).

~~Unless it is demonstrated in the fenceline air monitoring plan that an alternative measurement technique (e.g. point monitors) can be effectively utilized. Automated gas chromatographs (Aauto-GCs) is the best point monitor option to measure offer sub-ppb sensitivity for monitoring of select VOCs pollutant concentrations semi-continuously at a monitoring site (for example, hourly time resolution, with data for previous hour being available within 15-20 minutes past the hour). This technology has been developed by a number of several manufacturers. The and U.S. EPA have has evaluated the current state and availability of several commercially available auto-GCs in order to determine their suitability for use in air monitoring stations and have has published the results in the Photochemical Air Monitoring Station (PAMS) Gas Chromatography~~

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<sup>2</sup> California Air Resources Board Glossary available at <https://ww2.arb.ca.gov/about/glossary>



Evaluation Study Report<sup>3</sup>. Other emerging methods for continuous measurement of ~~speciated~~selected VOCs include, but are not limited to, ~~in-situ DOAS and FTIR optical analyzers. systems and quantum cascade laser~~ These instruments that can effectively measure can reliably measure selected VOCs simultaneously with high time resolution (e.g., 1 minute or less), but with higher detection limits, compared to auto-GCs. ~~The use of these measurement techniques can potentially provide real-time and continuous air quality data, h~~ However, a substantial number of these auto-GCs units and/or (or other point monitors) would need to be deployed to achieve sufficient spatial coverage along the property boundary or fenceline of a petroleum refinery facility. For this reason, open-path technologies used at the fenceline air monitoring of VOCs at the facility fenceline is preferred.

~~In some cases, more traditional measurement techniques could be utilized, if the air monitoring plan successfully demonstrates the effectiveness of the measurement technique. For example, VOCs could be measured by the collection of ambient air using evacuated canister sampling and subsequent analysis on a gas chromatograph (GC). This method relies on acquiring air sample that often require a considerable amount of time depending on the measured concentrations (e.g., several hours with canisters to several days with adsorption cartridges) and subsequent chemical analysis in a certified laboratory. The sample collection time can vary from instantaneous grab samples to averaging times of 24 hours. If this sampling technique is selected, periodic 24-hour samples (e.g., 1 in 6 days) and instantaneous grab samples (e.g., 5- or 10-minute samples) that are triggered by elevated readings of continuous NMHC are required. The continuous NMHC measurement must achieve the temporal and spatial coverage requirements of the rule, while the periodic and triggered samples will provide information on the speciation of the measured VOCs.~~

Measurement of hydrocarbons will help determine if refineries add significant concentrations to nearby urban environments and can indicate leaks and emissions from refinery sources. ~~The following are potential compounds of interest and are separated out based on their measurement and/or analytical techniques.~~ techniques to measure and/or analyze them are described below.

### ***Aldehydes***

Aldehydes emitted into ambient air include, but are not limited to, formaldehyde, acetaldehyde, and acrolein ~~that~~. These three aldehydes are identified as toxic air contaminants (TACs) and could be emitted from a refinery facility. These ~~compounds~~aldehydes are the products of incomplete combustion of natural gas and are both precursors of atmospheric radicals that accelerate the formation of ozone and toxic air pollutants that may cause respiratory symptoms and cancer. ~~These compounds~~aldehydes could be measured continuously at the fenceline of the refineries

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<sup>3</sup> RTI International and EC/R Incorporated, "Gas Chromatograph (GC) Evaluation Study," 2014 available at <https://www.epa.gov/sites/default/files/2019-11/documents/labevalreport.pdf>

using open-path technologies. A more detailed listing of aldehydes with potential health concerns is provided by OEHHA.

### ***Aromatic Hydrocarbons***

Benzene, toluene, ethylbenzene, and xylenes, referred to as BTEX, are some of the aromatic hydrocarbons known as BTEX (referring to benzene, toluene, ethylbenzene, and xylenes) that occur naturally in crude oil and are associated with emissions from petroleum refineries. The BTEX compounds are products of incomplete combustion of natural gas, and can also be emitted as fugitive emissions from petroleum storage and transfer. Emissions also occur from different other combustion sources, such as wood combustion, and stationary and motor vehicle fossil fuel combustion, and elevated levels of BTEX compounds are expected in the vicinity of major roadways. Monitoring the concentrations of this group of aromatic VOCs are important because not only they pose a risk to human health, they also and play a role in the formation of tropospheric ozone.

Analytical methods for BTEX compounds in air include absorption traps and subsequent separation by gas chromatography (GC) with detection by flame ionization optical absorption or mass chromatography, as well as and automatic-GC monitors. Optical methods such as Open Path UV-DOAS and ~~OP~~ Open Path FTIR monitors are more advanced techniques for real-time measurements; however, UV-DOAS instruments are particularly more sensitive in at detecting on of BTEX compounds at low concentrations and with good time resolution compared to ~~OP~~ Open Path FTIR instruments, and should be used for fenceline monitoring of BTEX. In the future, as technologies evolve and improve, it is possible that ~~technologies~~ instruments other than UV-DOAS will improve to achieve similar detection limits.

### ***Other Hazardous Air Pollutant VOCs***

Other VOC air toxics of concern that are often reported in refineries' emission inventories include 1,3-butadiene and styrene that have been detected in routine and non-routine refinery emissions; and therefore, these chemicals must be measured and reported. A more detailed listing of potential VOCs of with potential health concerns is provided by the OEHHA. In addition, and the AB\_2588 Health Risk Assessment reports could that will help inform assist in identifying other air toxics specifically to emitted at each facility. Depending on emissions from each facility, measurement of other VOC-volatile air toxics may be appropriate. Such VOC compounds including, but are not limited to, methanol, phenol, naphthalene, and hexane. For example, the plan could include a requirement that these toxic gases shall be monitored and reported, if the emissions exceed 10,000 lbs/year and/or selected monitoring technologies are capable of detecting them.

### ***Naphthalene***

Naphthalene is a volatile white crystalline solid that exists in air in the form of vapor or adsorbed to particulates. It is released into the atmosphere from coal and oil combustion and from the use of mothballs. Naphthalene emissions have been detected at several refinery process units (separators, boilers, cooling towers, crude units, heaters, storage tanks, cokers, FCCUs, wastewater treatment, incinerators, and vents) and naphthalene has been detected in both routine and non-routine emissions. Open Path UV-DOAS instruments currently installed at the refineries for fenceline air monitoring would be capable of monitoring naphthalene.

#### **Diethanolamine**

Diethanolamine is a hydrocarbon found in air, water vapor, and particulate phases and has been detected at multiple refinery process units. Diethanolamine can be detected in air by drawing the air sample through sampling tubes for analysis with gas chromatography. However, diethanolamine has tendencies to absorb water and to supercool. Supercooling is a process of lowering the temperature of a liquid below its freezing point without it becoming a solid. As a result, diethanolamine has a short-lived gaseous phase. -Due to the nature of the compound, it would not remain in the vapor state long enough to be transported to the fenceline. For this reason, refineries will not be required to measure diethanolamine at the fenceline.

#### **Polycyclic Aromatic Hydrocarbons (PAHs)**

PAHs are a group of over 100 different chemicals that are formed during incomplete combustion of organic matter at high temperature. -Examples of incomplete combustion include fossil fuel burning, combustion in motor vehicle engines, waste incineration, oil refining, and coke and asphalt production. Due to their carcinogenic/mutagenic effects, 16 PAHs are currently listed as priority air pollutants in the Office of Environmental Health Hazard Assessment report, "Analysis of Refinery Chemical Emissions and Health Effects," finalized in March 2019 (OEHHA report)-. Typical analytical methods used to monitor PAHs require multistep sampling preparations and are not suited for continuous monitoring. There are studies for developing continuous monitoring of PAHs<sup>4</sup>. However, at the time of this writing, staff is not aware of any real-time technology for fenceline monitoring. Staff will report to the -Stationary Source Committee when Polycyclic Aromatic Hydrocarbons (PAHs) real-time monitoring is deemed feasible and provide guidance on the installation, operation, and maintenance of the real-time monitoring system before the Executive Officer provides a facility written notice for revising the FAMP to include PAHs real-time fenceline monitoring.

#### **Metals: Cadmium, Manganese, and Nickel**

Cadmium, manganese, and nickel are identified in the OEHHA report as candidates for air monitoring. Their toxicity-weighted emission scores make them among the highest priority air pollutants to be monitored at the refineries. Exposure to and bioaccumulation of metals have been shown to lead to numerous health problems. Those metals are associated with many facility process units. For example, manganese emissions could be associated with boilers, cooling

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<sup>4</sup> M. R. a. D. B. Franck Amiet, "Continuous Monitoring of Polycyclic Aromatic Hydrocarbons Using Automatic Thermal Desorption-Gas Chromatography," 2016.

towers, crude units, heaters, storage tanks, cokers, FCCUs, incinerators, etc. However, the FCCU is the only source that could have a large-scale release of metals as part of spent catalyst. The Electrostatic Precipitator (ESP) is a control equipment to remove PM from the FCCU flue gas. There were incidents of a refinery ESP failure or explosion that resulted in a large amount of spent FCCU catalyst with high PM and metal emissions being released to the nearby community. A speciated metals analyzer is commonly utilized for real-time monitoring of multiple metals in air samples, including cadmium, manganese, and nickel.

### ***Hydrogen Sulfide (H<sub>2</sub>S)***

Hydrogen sulfide is a colorless, flammable, extremely hazardous gas with a “rotten egg” smell. It can result from the breakdown of organic matter in the absence of oxygen such as in swamps and sewers. ~~It can also,~~ occurs naturally in crude petroleum and natural gas, and is produced at oil refineries as a by-product of refining crude oil. ~~As a result,~~ low-level concentrations can occur continuously at ~~petroleum~~ refineries and its measurement will help identify potential leaks at refineries and address community odor concerns.

### ***Carbonyl Sulfide (COS)***

Carbonyl sulfide (COS) is naturally found in crude oil and is a chemical intermediate and a byproduct of oil refining with a distinct sulfide odor. It is classified as a California Toxic Air Contaminant (TAC) and a federal hazardous air pollutant (HAP). COS can be released into atmosphere as fugitive emissions from refineries and at high concentration levels may cause narcotic effects in humans. COS can be measured using open-path technologies and ~~should~~ shall be measured and reported at the fenceline, ~~if the selected open-path monitors can detect it at desirable levels.~~

### ***Ammonia (NH<sub>3</sub>)***

While the main sources of ammonia are natural, primarily from the decay of organic matter, ~~petroleum~~ refineries can also emit considerable amounts, particularly from catalyst regenerator vent releases. It is colorless, pungent-smelling, and corrosive and even though it is unlikely to have adverse effect on health at background levels, exposure to high concentrations following an accidental release or in occupational settings may induce adverse health impacts. Ammonia can be measured using open-path technologies and shall be measured and reported at the fenceline.

### ***Black Carbon (BC)***

Black carbon (BC) is a product of incomplete combustion of fossil fuels, biofuels, and biomass, and it is emitted directly into atmosphere in form of particles, mostly in the ~~PM<sub>2.5</sub>-PM<sub>2.5</sub>~~ size range. BC is a major component of “soot”, a complex mixture that also contains some organic carbon (OC). It is emitted in high quantities by diesel engines and biomass burning. Although BC is often associated with emissions from heavy-duty diesel engines, a portion of all combustion emissions contains ~~these constituents~~ BC. BC has been routinely used to estimate the contribution of diesel particulate matter (DPM) to total PM. DPM is the major contributor to air toxic health risk in the South Coast Air Basin; ~~however,~~ it cannot be directly measured through

atmospheric measurements and has to be estimated, usually based on BC measurements. In order to help determine if refineries add significant BC concentrations to nearby urban environments and discern the contribution of refineries to observed BC levels in the community, BC is measured using point sensor technologies so full fenceline coverage is not achievable. For this reason, the petroleum refinery owners or operators are advised—required to determine potential BC hotspots on the facility fenceline (or within the facility), and perform BC measurements.

### ***Hydrogen Cyanide (HCN)***

Hydrogen cyanide is colorless, highly flammable and can be explosive when exposed to air in high concentrations. It is released from various industrial activities, including refining. At high concentrations, such as from accidental releases, it is highly toxic. HCN can be effectively measured using open-path technologies and should be measured and reported at the fenceline ~~if the selected open-path monitors can detect it at desirable levels.~~

### ***Hydrogen Fluoride (HF)***

Hydrogen fluoride (HF) is a pungent, highly corrosive acid used at some oil refineries in a process called alkylation that boosts gasoline octane. HF also is used at chemical plants to manufacture compounds including refrigerants. The chemical poses a health risk to nearby residents and businesses because in the event of an accidental release, it can form a dense, fuming cloud capable of etching glass and causing severe damage to human skin and lung tissue. ~~The facilities with alkylation units may already have monitors in place for detecting HF, such as could be associated with an accidental releases. Such monitors should ideally be placed near the alkylation unit, to ensure a rapid detection of accidental leaks to subsequently provide warning and real-time alerts to inform health concerns for the protection of refinery facility workers and the nearby communities in the vicinity of the refinery facility. All facilities that use hydrogen fluoride must monitor the ambient concentrations of HF or demonstrate in the air monitoring plan that HF concentrations are adequately monitored and reported at the alkylation unit to be exempt from HF measurements at the fenceline.~~

### ***Sulfuric Acid***

Sulfuric acid is a colorless, oily liquid that exists in air, water vapor, and particulates. It is corrosive to metals and organic materials and emits toxic sulfur trioxide-containing fumes or vapors when heated. In refineries, sulfuric acid is used as a catalyst during alkylation and in various treatment processes. Sulfuric acid has a very high boiling point, around 356°C; therefore, it is not very volatile. If sulfuric acid is released into the atmosphere, it would quickly fall to the ground as a liquid. Due to the nature of the compound, it would not remain in the vapor state long enough to be transported to the fenceline. For this reason, refineries will not be required to measure sulfuric acid at the fenceline.

### **Criteria for Exclusion**

In certain cases, the facility owner or operator can request to exclude a compound identified in Table 1 if:

- The compounds are not associated with the processes at the facility:
  - A facility that does not store or use hydrogen fluoride;
  - A facility that does not have a FCCU, which is considered the only source of high concentrations of cadmium, manganese, and nickel which could be emitted as part of spent catalyst; or
  - A facility, such as a tank terminal, which does not have combustion equipment;  
or
- Technologies are not yet developed to perform real-time monitoring for the compound (e.g., PAHs). At the time of writing this Guidance Document, staff is not aware of any real-time technology for fenceline monitoring PAHs. That would serve as technical justification to not include real-time monitoring for PAHs in the FAMP; or
- Other technical justifications approved by the Executive Officer.

### **Continuous and Real-Time Measurement of Air Pollutants**

Continuous air monitoring at or near the property boundaries of ~~petroleum~~ refineries can significantly improve rapid detection and communication of potential hazardous releases to ~~refinery~~ facility owner or operators, responders, and the public in addition to providing long-term data, which would be used to determine trends in emissions air quality near refinery fenceline (e.g., diurnal, seasonal, routine emissions variations), and provide additional insight into facility emissions. Therefore, the fenceline monitoring equipment shall be operated continuously with a required time resolution of five-minute averaging when feasible. High time resolution monitoring reduces the chance of pollutant hot spots being undetected over the measured area and can provide real-time emissions information to ~~refinery~~ facility personnel and the nearby communities. Due to the configuration of some open-path systems, e.g., an optical tent monitoring system or open path fenceline air monitor on a panning head, the measurements cycle for each fenceline path might take longer. The optical tent is a novel remote sensing system employing dual scanning Long-Path Differential Optical Absorption Spectroscopy (LP-DOAS), currently operational at a refinery in South Coast AQMD. Comprising of two open-path instruments, each scanning five light paths, this system continuously measures concentrations of selected VOCs along the refinery fenceline and inside the refinery. Such set-up provides benefits of early detection of pollution plumes, in certain instances before they reach the refinery fenceline; and augmented ability to pin-point the source(s) of unwanted emissions within the refinery. If achieving the desired time-resolution is not feasible, ~~refinery~~ facility owner or operators shall provide rationale in the air monitoring plan FAMP for any proposed time resolutions averaging time greater than five minutes averaging (e.g., based on the equipment employed; the reasons for selecting such equipment; the number of paths covered by each open-

path system; other potential benefits of the proposed measurement set-up; or other operational limitations/justifications).

### **Selection of Fenceline Air Monitoring Technologies**

A ~~petroleum refinery facility~~ fenceline air monitoring system is a combination of equipment that measures and records air pollutant concentrations at or near the property boundary of a ~~petroleum refinery facility~~. Multiple technologies may need to be employed to ensure adequate compound identification and fenceline spatial coverage. Conventional fenceline air monitoring techniques rely on point monitors that only provide concentration information from a single point in the survey area, ~~greatly~~ increasing the chances of missing ~~surface~~-emissions hotspots or emissions plumes. ~~Therefore, e~~Even after collecting data from multiple points in the survey area, ~~the~~ point sampling approaches may lack the spatial or temporal data necessary to obtain a complete picture of the emissions from large area sources. As a result, adequate number and spatial distribution of point monitors must be considered for fenceline air monitoring. Open path monitoring systems require a clear line of sight along the fenceline in order to provide accurate measurements. If facility demonstrates that such line of sight is not available, a facility may request approval to install point sensors instead of open path monitoring systems at selected portions of the fenceline.

Open-path technology is a well-established method to measure path-integrated trace gas absorptions and concentrations in the open atmosphere making it ideal for long-term fenceline monitoring of pollutant concentrations at levels emitted from refineries or other large area sources. Open-path technology is a type of Optical Remote Sensing (ORS) that measures air pollutant concentration levels along an open path, significantly improving the spatial coverage. ORS instruments use a light signal to continuously detect and measure concentrations of several chemical compounds simultaneously along the distance covered by the light signal in real-time. As a result, open-path technologies can provide greater temporal and spatial resolution compared to conventional air monitoring techniques; ~~for example e.g.~~ narrow pollutant plumes can be detected by an open-path fenceline air monitoring system that might otherwise be missed by point monitors. The light source emits light towards a detector, either at the opposite end of the light path (bi-static configuration) or co-located with the light source (mono-static configuration) if the light is reflected back by a reflector, providing path-averaged concentrations of multiple pollutants, simultaneously. Although the open-path ORS techniques have been used for over 20 years and are well-established, they are constantly improving and gaining use for ~~large area source~~-monitoring applications over large areas that are not ~~conductive~~ conductive to traditional point source testing methods. Improvements often include changes to technologies that improve detection limits, or the type of compounds detected.

A Ppath-averaged monitoring approach presents Aanother advantage of open-path measurements is ~~the capability of monitoring pollutant concentrations due to point source and fugitive emissions at or near the property boundary of a petroleum refinery facility operation.~~ Fugitive emissions are emissions of gases or vapors from leaks and other unintended or

accidental releases of ~~emissions~~ pollutants. Leaks from pressurized process equipment generally occur through valves, pipe connections, mechanical seals, or related equipment, usually originating from the process area and storage tanks. ~~Fugitive emissions also occur from storage tanks.~~ These tanks are used to store crude oil prior to refining, intermediates between refining processes, and refined product streams. Except for a few process storage tanks, the storage tanks are generally located together in what is referred to as the "tank farm." Due to the large number of potential leak sources that are scattered over a wide area at large refineries, and difficulties in detecting and repairing these leaks (which may become significant collectively), these emissions are best monitored over a large area or path, using ~~the open-path~~ systems. U.S. EPA has published a comprehensive assessment of various open-path ORS technologies, outlining the advantages and limitations of each measurement method. In addition, South Coast AQMD conducted a comprehensive ORS technology demonstrations study to assess open-path capabilities for fenceline air monitoring<sup>5</sup>.

In summary, for fenceline monitoring, open-path technologies through ORS, offer more advantages for fenceline air monitoring over compared to traditional point monitors. They provide continuous, real-time measurements of multiple pollutants along an open path, thus enhancing its temporal and spatial coverage. This kind of coverage might not be possible with that might evade conventional point monitors. With the ability to monitor fugitive emissions across a wider area, open-path systems showcase a greater efficacy in identifying and addressing potential leak sources, therefore, making open-path technologies a more feasible-effective long-term solution for facility fenceline air monitoring. Based on the advantages that open-path technologies provide over conventional air monitoring techniques, South Coast AQMD staff recommends the use of open-path technology, when applicable available, and appropriate for implementing a fenceline air monitoring system required by Rules 1180 and 1180.1. For open path monitoring systems, if the fenceline does not provide a clear line of sight, it may pose an infeasible condition for optimal open path measurements. In this case, the facility may request approval to install point sensors instead of open path monitoring systems.

The ~~air monitoring plan~~ FAMP must provide specifications for the fenceline instruments selected for a fenceline air monitoring system, such as detection limits of the equipment for each chemical and time-resolution capabilities. Prior to the installation of open path systems, expected detection limits for open-path instrumentation (described by different manufacturers as Method Detection Limits (MDLs) or Method Quantification Limits (MQLs)) for Rule 1180 or Rule 1180.1 compounds should be listed in facility's FAMP. These predicted MDLs are mainly the result of theoretical estimates based on spectroscopic specifications of the fenceline air monitoring equipment and estimated light path length. In real-life, actual MDLs of an open path system are dynamic quantities that are also depended on atmospheric conditions (e.g., MDL will increase as atmospheric visibility decreases), the presence of interfering or unknown compounds, the unique

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<sup>5</sup> South Coast Air Quality Management District, "Optical Remote Sensing Studies," 2015. [Online]. available at <http://www.aqmd.gov/ors-study>.



characteristics of each spectroscopic system, the atmospheric path length, and equipment performance. Real-life MDLs can be higher or lower than projected and can also change with time. Therefore, it is necessary to periodically re-evaluate and update open path MDLs for all measured compounds. Ideally, MDLs should be calculated for each open-path measurement. For open-path analyzers that do not provide this capability, MDL re-evaluation should be conducted for each Rule 1180 compound for each open path system every two weeks (at a minimum) or more frequently. Also, the ~~air monitoring plan~~ FAMP must demonstrate that the instruments can adequately measure the pollutants identified in Table 1. The selected open-path instruments should be able to record and store the measured spectral ~~absorption, background and reference spectra and any other data used for concentration retrievals,~~ and associated average concentrations of measured pollutants for retrospective investigations. ~~Where open path monitors are being operated,~~ All factors that could affect air pollutant measurements where open-path monitors are being operated, such as the maximum path length the instruments are capable of measuring and potential interferences, must be discussed in the ~~air monitoring plan~~ FAMP. In certain instances, a ~~refinery facility~~ owner or operator may demonstrate that other air monitoring techniques and/or technologies (e.g., emerging technologies) could be used in place of open-path technology ~~depending on the~~ for certain pollutant(s) that are monitored.

#### **Alternative Fenceline Air Monitoring Technologies**

In certain instances, alternative monitoring technologies may be appropriate to cover areas along the perimeter of a ~~refinery facility~~ (for example, along the portions of the fenceline where open-path monitoring is not feasible, or for pollutants that cannot be reliably measured by open-path technologies). In these instances, the ~~refinery facility~~ owner or operator may propose an alternative air monitoring technology(s). The ~~refinery facility~~ owner or operator must demonstrate the proposed alternative air monitoring technology(s) will meet the requirements of Rules 1180 and 1180.1 and provide adequate sensitivity and ~~adequate~~ temporal and spatial coverage for the compounds identified in Table 1.

#### **Fenceline Sampling Location(s) and Coverage**

~~Air monitoring plans must specify~~ The FAMP must achieve the complete fenceline, where feasible, spatial coverage, whenever feasible, and provide the following information related to the locations selected for the fenceline air monitoring equipment:

1. Areas along the perimeter that are likely to detect compounds associated with ~~petroleum refinery facility~~ operations;
2. Locations of facility equipment or operations that may be emitting these compounds;
- ~~2.3.~~ 3. Proximity of proposed fenceline monitoring equipment to residences in the community and other sensitive receptors, such as schools, day~~ta~~ care centers, hospitals, clinics, nursing homes, and recreation areas;
- ~~3.4.~~ 4. Where equipment will be sited (e.g., GIS coordinates);
- ~~4.5.~~ 5. Elevations at which equipment will be placed; and
6. Length of each path that will be monitored with fenceline instruments; and

5.7. A map of the facility indicating where the proposed monitors will be located.

~~The air monitoring plan FAMP must provide a discussion that explains the rationale for choosing these~~ the siting of the refinery facility fenceline monitoring equipment—equipment—siting specifications. When considering a suitable fenceline technology for sites along the refinery perimeter, t ~~The refinery facility owner or operator must address key considerations when siting the monitoring equipment, such as, the distance necessary to accurately measure emissions~~ spatial coverage of monitors needed to detect emissions and critical transport areas around the perimeter of the petroleum refinery facility. These considerations are further discussed below.

To ensure the highest level of accuracy when measuring emissions levels at or near the property boundary of a ~~petroleum refinery facility~~, the fenceline air monitoring system ~~should~~ shall be designed considering the following key factors: local meteorological conditions, topography, pollutant hotspots, spatial coverage of monitors, and emerging technologies.

***Local Meteorological Conditions***

Meteorological conditions can significantly affect the concentration of air pollutants in a region. ~~T~~ therefore, it is important that the petroleum refinery facility owner or operators consider the typical meteorological conditions (e.g., wind patterns, temperature, rainfall, cloud cover, etc.) of a site. For example, if a facility is in an area that is prone to fog, the facility owner or operator should ensure the equipment for the fenceline air monitoring system is not sensitive or easily impeded by low-lying cloud cover, and that visibility is being monitored produced by fog.

Evaluating historical meteorological data is imperative in air monitoring equipment site selection and in determining whether certain candidate equipment locations are likely to experience higher measured pollutant concentrations from an emissions source. ~~Wind can be the most critical meteorological element for the transport of refinery facility emissions to the surrounding communities. Often, peak concentrations occur during stable, low wind speed conditions when pollutants can build up and meander drift in any direction, highlighting the importance of complete or near-complete fenceline coverage, where feasible.~~ To the extent feasible, both long- and short-term wind measurements should shall be assessed in the air monitoring plan FAMP. Frequency distributions of winds and associated graphic analyses (i.e., wind roses) can be analyzed to evaluate predominant wind patterns, as well as diurnal and seasonal variability.

***Topography***

Concentrations of pollutants can be greater in valleys than for areas of higher ground. ~~This is because, under certain weather conditions, pollutants can become trapped in low lying areas~~ under certain weather conditions. Therefore, the topography of the ~~refinery facility~~ can affect the distribution and dispersion of pollutants from ~~refinery facility~~ operations. The ~~petroleum refinery operator should design the fenceline air monitoring system to ensure fenceline air monitoring equipment is sited such that it captures at~~ the most critical transport and dispersion areas along the perimeter of the facility would increase the likelihood for detection of fugitive emissions. The facility owner or operator should consider the topography of the facility when siting the fenceline

air monitoring equipment such that the monitors are placed at locations and altitudes to maximize the likelihood of detecting pollution plumes crossing the facility fenceline.

### ***Pollutant Hotspots***

Facility owners or operators must identify potential pollutant hotspots within the facility to ensure fenceline monitoring of these emissions. This process ensures effective information dissemination to neighboring communities with adequate spatial coverage. ~~It is essential for the refinery operators to identify potential pollutant hotspots within the facility to ensure fenceline monitoring of these emissions and to provide effective information to the neighboring communities with sufficient spatial coverage. Therefore, in developing the air monitoring plan FAMP, the refinery facility owner or operator should survey the facility with special attention to areas where emissions are most likely, such as, tank storage, processing, wastewater treatment, and loading areas. Information gathered from the survey should be used to establish the facility's overall emissions profile. The survey should also consider geographical and topographical parameters, as well as the elevation of potential pollutant hotspots.~~

### ***Spatial Coverage of Monitors***

The fenceline monitoring system ~~should~~ shall be designed to ensure adequate coverage of the area along the facility perimeter, to the extent feasible. Considerations, such as, ~~the proximity of refinery facility~~ emissions sources to sensitive receptors (i.e., residents, schools, hospitals, etc.) and type of pollutants to be measured could require additional ~~open-path~~ monitors for a facility. In addition, an existing fenceline monitoring system installed and maintained by another Rule 1180 or 1180.1 facility along a shared fenceline may be considered when evaluating adequate coverage. ~~Also, information available from dispersion modeling, gradient sampling, and mobile measurements, should also be taken into consideration when assessing adequate coverage of a facility perimeter with a fenceline air monitoring system.~~

For metal monitors, since the only source of significant metal emissions are the FCCU and ESP, the facility owner or operators could propose in their FAMP, with sufficient technical justification, that adequate coverage may be achieved with a limited number of air monitors located near those units.

Sampling locations should be away from certain ~~supporting~~ structures and have an open, unobstructed path. ~~Ideally, each air monitoring path should~~ have an unobstructed line of sight be at least 1 meter vertically and horizontally from any supporting structure, and be away from dusty or dirty areas, whenever possible. Additionally, locations and heights of monitoring paths should be selected to maximize the potential of capturing unwanted emissions, which may require positioning of analyzer shelters and/or reflectors at elevations of 15 feet or higher, depending on facility layout.

~~Moreover, the air monitoring plan FAMPs must identify potential disruption of airflow and the potential effect on measured concentrations caused by obstacles or traffic. Also, potential interferences caused by meteorological (e.g., fog or rain) or process issues (e.g., process steam) associated with the selected location(s) must be addressed. The air monitoring plan~~ should ~~shall~~

describe how the proposed fenceline air monitoring system will effectively provide relevant information for all nearby communities, especially downwind communities, given the expected meteorological conditions. Due to the high prevalence of marine fog in the areas where the Basin South Coast AQMD refineries are located, heaters and fans may be required to keep the instrument optics and reflector mirrors free of moisture to maximize data recovery.

### **Emerging Technologies**

Some emerging next-generation monitoring technologies ~~could possibly~~ might meet the requirements for ~~this rule~~ Rules 1180 or 1180.1. For example, it is possible that PM<sub>2.5</sub> low-cost sensors could ~~potentially~~ one day allow cost-effective, real-time monitoring at numerous fixed locations along the perimeter (i.e., the fenceline) of a ~~petroleum refinery~~ facility. Despite substantial progress, at this time, none of these methods can provide the level of sensitivity and accuracy ~~required~~ necessary to measure the air pollutants ~~required~~ listed by in Table 1 at the levels at or below ~~expected during normal refinery operations~~ the health-standard based notification thresholds. However, gaseous sensors are ~~expected to~~ may improve in the near future, at which point ~~and fenceline air monitoring plans the FAMPs~~ could be ~~augmented~~ revised to employ include the potential use of these sensors. ~~therefore, South Coast AQMD may~~ would consider approving emerging technologies in the future. ~~for future compliance with Rules 1180.~~

~~SCAQMD has established an Air Quality Sensor Performance Evaluation Center (AQ-SPEC) to inform the public about commercially available low-cost sensors. Under this program, the performance of these sensors is compared against Federal Reference Method (FRM), Federal Equivalent Method (FEM), and Best Available Technology (BAT) instruments to determine their performance relative to more established measurement techniques. Some of these commercially available low-cost sensors can provide measurements for criteria pollutants (e.g., PM<sub>2.5</sub>, PM<sub>10</sub>, ozone, NO<sub>2</sub>, and CO) which correlate well with FRM, FEM, and BAT methods, however, the situation is different for gaseous air toxics, where sensors with sufficiently low detection limits for specific compounds (e.g., benzene) are generally not available at this time. Total VOC concentrations can be measured using sensors based on Photon Ionization Detection (PID) at parts per billion (ppb) levels, although they do not provide VOC speciation and are not considered “low cost” sensors. These sensors can serve as a temporary measurement technique in the event of an equipment failure or during extended maintenance activities until the fenceline air monitoring system is restored to normal operating conditions. However, as a substitute for the ORS-based approach, the refinery operators would have to deploy a network of traditional point monitors simultaneously at the fenceline of a facility. This would likely result in substantially increased sampling and analysis costs in order to achieve same level of temporal and spatial resolution and speciation of the target pollutants achieved with the ORS methods. In comparing the costs of an ORS based measurement approach with traditional point monitoring approaches for long-term fenceline measurements, an ORS-based approach is likely to be more cost-effective.~~

#### **5.4. Meteorological Measurements**

Exposures to air contaminants within an urban area can vary greatly due to proximity to emission sources;<sup>7</sup> the magnitude and specific mix of emissions;<sup>7</sup> structures and terrain influences;<sup>7</sup> and meteorological conditions. Variability in wind speed and direction ~~in particular,~~ pose significant challenges for the analysis of data from air quality monitoring programs and exposure assessments ~~that rely on the ability to determine upwind and downwind locations in relation to emissions sources at any time. Therefore, a~~ An understanding and assessment of the general meteorological patterns in and around each facility is a critical component in ~~not only~~ the design of the measurement systems ~~but also~~ and when interpreting the measurement results, including the transport and dispersion of air pollutants from the refinery facility to the community. Open-path measurements can also be affected by atmospheric visibility. Therefore, visibility monitors should also be included in fenceline air monitoring installations. ~~Therefore, the sub-paragraph (d)(2)(D) of Rule 1180 requires fenceline monitoring locations to continuously record wind speed and wind direction data.~~

The ~~Air Monitoring Plan FAMP~~ must provide information on siting considerations and equipment to be employed for real-time meteorological data collection at high time resolution (at minimum, matching the time resolution of the air quality pollutant monitors), in order to provide high quality data. -Wind sensor quality, siting, and quality assurance shall meet the specifications and guidelines that are typically required by air quality regulatory measurements and modeling purposes (for reference, see the U.S. EPA Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements<sup>6</sup>).

#### **6.5. Quality Assurance/Quality Control (QA/QC)**

~~The measurements from the fenceline air monitoring system shall reflect a commitment to quality data that is outlined in the air monitoring plan. Facilities must ensure that the data is high quality. The air monitoring plan FAMP shall address:~~

- ~~a~~ Quality assurance, including training of personnel;<sup>7</sup> development and maintenance of proper documentation [i.e., instrument manuals, Standard Operating Procedures (SOP), and a Quality Assurance Project Plan (QAPP)];<sup>7</sup>
- ~~r~~ Routine maintenance and calibration checks;<sup>7</sup>
- ~~t~~ Technical audits;<sup>7</sup>
- ~~d~~ Data verification and validation;<sup>7</sup> and
- ~~d~~ Data quality assessment.

A QAPP for each refinery facility fenceline monitoring project ~~must be developed that~~ outlines the QA/QC plan, following U.S. EPA guidelines<sup>7</sup>. The QAPP provides a blueprint for conducting and documenting a study or program that produces quality results and must outline the specific

<sup>6</sup> U.S. EPA, "Quality Assurance Handbook for Air Pollution Measurement Systems," 2008. [Online]. Available at [https://www.epa.gov/sites/default/files/2021-04/documents/volume\\_iv\\_meteorological\\_measurements.pdf](https://www.epa.gov/sites/default/files/2021-04/documents/volume_iv_meteorological_measurements.pdf).

<sup>7</sup> U.S. EPA, "Guidance for Quality Assurance Project Plans," December 2002. [Online]. Available at: <https://www.epa.gov/sites/default/files/2015-06/documents/g5-final.pdf>.

goals of the monitoring networks and instrumentation, the data quality that is required and how that relates to when data generated by the instrumentation is accepted, and how the data will be reviewed and managed by the refineries. The QAPP ~~should~~shall provide clear definitions and procedures ~~for QA/QC that are necessary to indicate why some data may be missing, suspect, or invalid.~~ in the QA/QC plan for facilities to determine when data is missing, suspect, or invalid.

The critical functions to be addressed in the QAPP are summarized below. -These functions were based on U.S. EPA guidelines.:

- **Project ~~b~~Background and ~~m~~Management:** The QAPP ~~should~~shall provide background information and ~~define the problem(s) to be addressed and~~ the general goals of the fenceline ~~and community monitoring system, and describe~~including:
  - ~~project organization~~Organization tree that provides all personnel working on the project;
  - ~~Quality objectives and acceptance criteria for measurement data;~~ and
  - Plans for documentation, record keeping, and data dissemination.
- **Technical Approach:** The QAPP ~~should~~shall demonstrate that the appropriate approaches and methodologies are employed ~~for performing data measurements, and data handling, and quality control are selected and address the design and implementation of the measurement systems.~~
- **Assessment/Oversight:** The QAPP ~~should~~offershall provide appropriate QA/QC steps for ensuring the effectiveness of the monitoring plan. ~~It shall cover~~covering experimental design; representativeness of the data; instrument operation and data acquisition; calibration check procedures, data quality indicators, independent ~~systems~~and performance audits; and peer ~~review.~~
- **Data Validation and Usability:** The QAPP ~~should~~shall describe what steps ~~will~~shall be taken to ensure that the individual data elements conform to the criteria specified in the monitoring plans.

All monitoring data must be collected, managed, and archived in a standard electronic format as approved by the Executive Officer after necessary data processing and validation. Processing the data involves collecting the data, assuring its quality, storing the data in a standardized format, and interpreting the data for communication to the public. The most critical steps in this process include, but are not limited to:

- Automatically retrieving data from the fenceline monitors containing the measured levels of each air pollutant along with meteorological ~~parameters~~data from the meteorological stations and data from visibility monitors;
- Validating data file completeness and integrity;
- Transferring file contents to a database;
- Flagging data that do not meet pre-defined quality control limits;

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- Copying quality assured data and indices into a database for use by data display and dissemination program;
- Generating and recording logs to monitor system operation;
- ~~Notifications~~Notifying the public when measured concentrations are above pre-defined concentrations limits~~the notification thresholds.~~

To ensure that the collected data meets the highest quality possible, each piece of monitoring equipment must be operated in strict accordance with an in-depth operating protocol. To achieve the appropriate level of detail and standardization, and to consequently ensure that the monitoring equipment provides high quality data, ~~Standard Operating Procedures (SOPs)~~ must be prepared for each specific measurement method. The SOPs ~~should~~ shall be informed by general operating instructions that are typically provided by the manufacturers of equipment, by operational experience and audits, and by general operational guidelines and performance specifications that are available for U.S. EPA and State approved methods. The SOPs ~~should~~ shall address ~~specific topics such as calibration procedures and quality control procedures;~~ including (indicating standards and checks, acceptance criteria, and schedule); ~~as well as~~ and data reduction ~~(indicating procedures; including validation procedures, reporting, and schedule).~~

~~Rule 1180 requires that the measurements from the fenceline monitoring system be available to the public on a real-time basis with Quality Assurance/Quality Control (QA/QC) measures implemented to provide confidence in the data collected.~~ Rules 1180 and 1180.1 require that measurements from the fenceline monitoring system be available to the public in real-time, with implemented QA/QC measures to ensure confidence in the data. Publicly available quarterly measurement reports ~~should~~ shall reflect a higher level of data validation, including a manual review of the data by qualified personnel. The real-time and near-real-time disseminated measurement data should not be considered final, but it is important that the preliminary real-time measurement data distributed to the public be of an acceptable quality. Also, it is important that instrument ~~failures~~ downtimes or malfunctions are detected quickly, with automated screening where feasible, to prevent grossly invalid data from being presented to the public. This can be accomplished by utilizing built-in status flags on the instrument operational parameters and by providing real-time data screening for outliers, impossible values, stuck values, negative values, rates of change, excessive short-term noise, etc.

#### **6. Independent Audit**

South Coast AQMD staff has been working with each facility to assure appropriate instrumentation, standardization of data acquisition and reporting, and appropriate procedure implementation to produce high-quality data. However, there is a need to have an independent party conduct a systematic review of the entire fenceline air monitoring network and ensure that the collected facility data meets the stringent quality assurance criteria of QAPP.

Based on the results of a Request for Proposals (RFP), South Coast AQMD selected a qualified contractor to develop an auditing protocol and implement the first independent audit of all fenceline air monitoring systems subject to Rule 1180. Staff anticipates the audit methodology

will be developed in the second quarter of 2024, followed by audits initiated later in 2024. The audit protocol, or some portions of the protocol, developed through this process will also be used as the basis for conducting an independent audit for facilities subject to Rule 1180.1, and for periodic ongoing independent audits of facilities subject to Rule 1180 and 1180.1.

Rules 1180 and 1180.1 require recurring audits to ensure the systems provide accurate data. The independent audit shall be performed by a qualified independent party according to the independent audit protocol to identify any deficiencies in the fenceline air monitoring system and quality assurance procedures.

Audit reports shall be signed by the qualified independent party, submitted to the South Coast AQMD, and made available to the public via the web-based fenceline notification system by the facility within 90 days after the audit has been performed.-The qualified independent party shall certify under the penalty of law, based on information and belief formed after reasonable inquiry, that the statements and information in audit report and in all attachments and other materials are true, accurate, and complete.

## **7. Data Display and Dissemination**

The primary goal of Rules 1180 and 1180.1 is to collect real-time ~~emissions~~ air pollutant data and share that data with the community, local responders, and industry, to the extent feasible and as quickly as possible, so that ~~it can be used~~ they can use the data to evaluate and adaptively manage the impacts of refineries' emissions on the community. ~~Therefore, it~~ is essential that the collected data ~~must be~~ made available and displayed online in a relevant, useful, and understandable manner to the public in real-time or near-real-time and clearly identified as preliminary data. To provide context to this complex data set for the public, the designed website shall contain information regarding the species measured and the measurement techniques and corresponding MDLs, a discussion of levels of concern for each measured species, typical background levels, potential non-refinery sources that could contribute to measured concentrations, and definitions of data QC flags. This should be written with clarity and thoroughness and with links provided to additional sources of information. In addition, the FAMP and the data website should include details of how the public can report experiences and provide comments and feedback for improvement of the website and other data dissemination tools, and the monitoring activities in general.

The air monitoring data must be provided in a manner that the public can readily access and understand. Websites for all facilities shall be designed in a user-friendly format. In order to make the data provided as accessible as possible, the project websites should use data visualization tools to graphically depict information using maps and time series plots of measured pollutants and wind data. In order to provide context to this complex data set for the public, the designed website shall contain information regarding the species measured and the measurement techniques, discussion of levels of concern for each measured species, typical background levels, potential non-refinery sources that could contribute to measured concentrations, and definitions of data QC flags.



The facility owner or operator must maintain a web-based data display to display, store, and make, at a minimum, the following information publicly available:-

**a. Real-Time or Near-Real-Time Data**

The real-time or near-real-time data must be submitted to SCAQMD made publicly available on the facility's fenceline monitoring data display webpage, in a real-time or near-real-time manner, in an approved format. The refinery facility owner or operators must also publish quarterly reports, root-specific cause analysis, and other information specified by Rules 1180 and 1180.1 subdivision (gh) written at a public-friendly level on the data dissemination website. The air monitoring plan FAMP must include information and examples of how the quality-controlled data will be displayed and the steps taken to provide context to the real-time measurements to the public. Also, the air monitoring plan FAMP shall address means for providing automated, reliable, useful, and understandable information, including, the intent and any limitations of in the data collected and an explanation of how background concentrations and/or contributions from other sources may affect measured concentrations.

**b. Historical Data**

The facility owner or operators must make historical data publicly available on facility's fenceline monitoring data display webpage, including a graphical data display, with the ability to download electronic data that includes all historical measurements for the five most recent calendar years from each monitor for all air pollutants measured as one-hour averages, including time, date, and windspeed data. The data must be made available to the public in a timely and accessible manner that is easy to find on the website and can be understood by the general public. In addition, the facility owner or operators must make electronic real-near time and historical data available to the Executive Officer in an approved format.

**bc. Quarterly Report**

The refinery facility owner or operators must provide make quarterly data reports publicly available on facility's fenceline monitoring data display webpage. The quarterly report should include:

- after rigorous review of eCalibration data; data processing calculations (such as conversion calculations of instrument signal to pollutant concentration),
- dData consistency;
- fField data sheets and logbooks;
- iInstrument performance checks; and
- eEquipment maintenance documentation; and
- eCalibration forms.

All changes to the reported real-time data must be explained in quarterly reports. The major goals of the outreach program include:

- ~~Developing multiple communication venues to ensure widespread access to environmental information and to appeal to the various communication preferences (e.g., text messages, email, website, etc.) among the end users;~~
- ~~Promoting access to and awareness of the measurements and use of the real time air pollution data through an active outreach and education program;~~
- ~~Developing contextual material to assist interpretation and understanding of the real-time data and its limitations;~~
- ~~Designing an effective public outreach program (e.g., informational meetings, workshops, etc.) that informs the public about the health impacts associated with emissions levels detected by the fenceline air monitoring system and informs decision related to reducing community exposure;~~
- ~~Identifying designated personnel to address SCAQMD's and public questions about monitoring equipment and readings.~~

~~The air monitoring data must be provided in a manner that the public can readily access and understand. Websites for all refineries should be designed in a user-friendly format. In order to make the data provided in this outreach as accessible as possible, the project websites should use data visualization tools to graphically depict information using maps and time series plots of measured pollutants and wind data. In order to provide context to this complex data set for the public, the designed website should contain information regarding the species measured and the measurement techniques, discussion of levels of concern for each measured species, typical background levels, potential non-refinery sources that could contribute to measured concentrations, and definition of data QC flags. This should be written at a public-friendly level with clarity and thoroughness and with links provided to additional sources of information. In addition, the air monitoring plan and the data website should include details of how the public can report experiences and provide comments and feedback for improvement of the website and other data dissemination tools, and the monitoring activities in general.~~

#### **ed. Root Specific Cause Analysis**

When an air pollutant exceeds the notification threshold, Rules 1180 and 1180.1 require the facility owner or operator to conduct a root-specific cause analysis. -The root-specific cause analysis is the process of discovering the root-specific cause of the emissions-pollutant concentrations exceeding the thresholds. The rules provides specifications on the analysis, which primarily include:

- Timeline for:
  - Initiating the analysis;
  - Conducting corrective action, if applicable, and
  - Making the root-specific cause analysis report available on the online platform;
- Key elements to include in the analysis; and
- Corrective action.

## 8. Notification System

The website ~~should~~shall offer an opt-in notification system that is integrated with the data collected by the air monitoring network, ~~that~~ The notification system shall automatically generates and issues notifications to subscribers when the concentration of any each of the pollutant levels exceeds the corresponding thresholds pursuant to the approved air monitoring plan FAMP.

For text message notifications, the subscriber shall be able to opt-in to receive notifications via a short message service (SMS) or multimedia message service (MMS). A disclaimer must be provided, indicating that the subscriber may be subject to fees based on their phone service provider. The disclaimer must also indicate that messages may be delayed or not received based on their phone coverage. A mechanism to opt-out of the text message notifications is also required. The subscriber is responsible to opt-out of the text message notifications if they desire to do so.

### a. Notification Thresholds

~~Resources that should inform the thresholds include~~In establishing health-standard based notification thresholds, South Coast AQMD reviewed the National Ambient Air Quality Standards (NAAQS), California Ambient Air Quality Standards (CAAQS), and the acute, chronic, or carcinogenic Reference Exposure Levels (RELs) as assessed by California Office of Environmental Hazard Assessment<sup>8</sup> (OEHHA<sup>9</sup>). Except for six pollutants, air pollutants identified in Table 1 of Rules 1180 and 1180.1 have health standards available for establishing a health-standard-based notification threshold. The six air pollutants without health standards are total VOCs, ethylbenzene, black carbon, naphthalene, PAHs, and cadmium. Informational notification thresholds based on fenceline air monitoring data collected since the beginning of Rule 1180 fenceline air monitoring in 2020 have been established for total VOC. This notification threshold will indicate when air pollutant measurements are well above the levels typically detected at the fenceline. No informational notification thresholds have been established for ethylbenzene as its historical fenceline air monitoring data were mostly below the air monitoring systems' method detection limits. South Coast AQMD was not able to develop informational based thresholds for naphthalene, PAHs, and cadmium as there is no historical data available. Regarding Black Carbon, given its inclusion as part of the PM<sub>2.5</sub> measurements with established notification thresholds based on health standards, the staff is not currently considering proposing an informational-based notification threshold specifically for Black Carbon

The table below lists the health standard-based or informational-based notification threshold for each ~~required~~ air pollutant. One-hour rolling average data are utilized to determine if the notification thresholds would be exceeded, except that eight-hour rolling averages are used for

<sup>8</sup> OEHHA, "OEHHA Acute, 8-hour and Chronic Reference Exposure Level (REL) Summary," August 2020. [Online]. Available at: <http://www.oehha.ca.gov/air/allrels.html>

<sup>9</sup> OEHHA, 2008; <http://www.oehha.ca.gov/air/allrels.html>

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manganese and 24-hour rolling averages are used for PM<sub>2.5</sub> and PM<sub>10</sub>. South Coast AQMD will revise these thresholds and amend Rules 1180 and 1180.1 if the applicable standards and RELs are updated, or when sufficient historical data become available.

**Table 2 Air Pollutants and Notification Thresholds\***

<u>Air Pollutants</u>	<u>Health Standard-Based Notification Threshold (ppb)</u>	<u>Information-Based Notification Threshold (ppb)</u>
<u>Sulfur Dioxide</u>	<u>75</u>	<u>N/A</u>
<u>Oxides of Nitrogen-Oxides</u>	<u>100</u>	<u>N/A</u>
<u>Particulate Matter</u>	<u>35 µg/m<sup>3</sup> (PM<sub>2.5</sub>) and 50 µg/m<sup>3</sup> (PM<sub>10</sub>) (24-hr)</u>	
<u>Total VOCs (Non-Methane Hydrocarbons)</u>	<u>N/A</u>	<u>730</u>
<u>Formaldehyde</u>	<u>44</u>	<u>N/A</u>
<u>Acetaldehyde</u>	<u>260</u>	<u>N/A</u>
<u>Acrolein</u>	<u>1.1</u>	<u>N/A</u>
<u>1,3 Butadiene</u>	<u>297</u>	
<u>Naphthalene</u>	<u>N/A</u>	<u>N/A</u>
<u>Polycyclic aromatic hydrocarbons (PAHs)</u>	<u>N/A</u>	<u>N/A</u>
<u>Styrene</u>	<u>5,000</u>	<u>N/A</u>
<u>Benzene</u>	<u>8</u>	<u>N/A</u>
<u>Toluene</u>	<u>1,300</u>	<u>N/A</u>
<u>Ethylbenzene</u>	<u>N/A</u>	<u>N/A</u>
<u>Xylenes</u>	<u>5,000</u>	<u>N/A</u>
<u>Cadmium</u>	<u>N/A</u>	<u>N/A</u>
<u>Manganese</u>	<u>0.17 µg/m<sup>3</sup> (8-hr)</u>	<u>N/A</u>
<u>Nickel</u>	<u>0.2 µg/m<sup>3</sup></u>	<u>N/A</u>
<u>Hydrogen Sulfide</u>	<u>30</u>	<u>N/A</u>
<u>Carbonyl Sulfide</u>	<u>270</u>	<u>N/A</u>
<u>Ammonia</u>	<u>4,507</u>	<u>N/A</u>
<u>Black Carbon</u>	<u>N/A</u>	<u>N/A</u>
<u>Hydrogen Cyanide</u>	<u>309</u>	<u>N/A</u>
<u>Hydrogen Fluoride</u>	<u>289</u>	<u>N/A</u>

\*One-hour rolling average data are utilized to determine notification thresholds exceedances, except that eight-hour rolling averages are used for manganese and 24-hour rolling averages are used for PM<sub>2.5</sub> and PM<sub>10</sub>.

~~An REL is an airborne concentration level of a chemical at or below which no adverse health effects are anticipated for a specified exposure duration as developed by RELs are based on the most sensitive, relevant, adverse health effect reported in the medical and toxicological literature. RELs are designed to protect the most sensitive individuals in the population by the inclusion of margins of safety. Therefore, exceeding the REL does not automatically indicate an adverse health impact. The REL is not the threshold where population health effects would first be seen. However, levels of exposure above the REL levels may have an increasing but undefined probability of resulting in an adverse health impact, particularly in sensitive individuals (e.g., the very young, the elderly, pregnant women, and those with acute or chronic illnesses). OEHHA has developed acute RELs for assessing potential non-cancer health impacts for short term, one-hour peak exposures to air pollutants including facility emissions., therefore For example, if the one-hour average concentration of any of the measured pollutants exceed its corresponding acute REL, notifications should be sent out to the subscribers. By definition, an acute REL is an exposure that is not likely to cause adverse health effects in a human population, including sensitive subgroups, exposed to that concentration for the specified exposure duration on an intermittent basis. Chronic RELs are developed for assessing non-cancer impacts from long term exposure, at or below which no adverse health impacts are anticipated following long term exposure. Long-term exposure for these purposes has been defined by U.S. EPA as at least 12 percent% of a lifetime, or about eight years for humans. However, for assessment and reporting programs, such as those required by AB 2588, 1-year emissions assessments are typically used for modeling ambient conditions in nearby communities for long term exposures. Therefore, chronic RELs must be compared to annual average concentrations of measured toxic pollutants and be reported in the periodic reports once one year of data is available.~~

#### **b. Notification System Design**

The notification system ~~should~~ shall be designed to provide information to the public, ~~via email, text message, or other approved communication venues with, at minimum, the ability to be notified regarding:~~ methods, with a mechanism for the public to opt-in or opt-out. Examples of methods for communicating the data to the public include the following:

- Website data displays;
- Mobile application;
- Automated email/fax/text notification system;
- Social media feeds;
- Public data displays in community locations; and
- Automated call-in phone system

At a minimum, the notification system shall notify the public of the following:

- (1) data availability and release of periodic reports ~~The maximum concentration of the air pollutant detected during the period of an exceedance;~~
- (2) exceedances of thresholds established in approved fenceline air monitoring plans ~~The notification thresholds of the air pollutant;~~

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- ~~—~~
- ~~(3) monitoring system status~~
- Duration of the exceedance.

~~For each exceedance, an initial notification shall be generated and issued within 15 minutes of the exceedance occurrence and a follow up notification is required within 15 minutes of the conclusion of the exceedance to inform the public the required information. The timely notifications will inform the public when certain pollutants exceed those concentration thresholds or may pose a potential health concern, allowing the public to consider further actions to protect their health. The notifications would also provide information to refinery facility owners or operators to so they can rapidly identify and mitigate reduce any previously undetected and/or accidental emissions. The notification system shall also send a notification if a fenceline notification was sent in error with an explanation as to the cause of the false fenceline notification. This can have a significant impact reduce on the reduction of refinery fugitive emissions.~~

~~Websites should not simply provide graphical information about current conditions. Air monitoring plans should include a plan for how residents can access historical data directly and in a user friendly manner. The archived data should include data quality control flags, explain changes, and provide information to identify data that should be removed or was removed after QA/QC. The data must also be made available to SCAQMD in an approved format.~~

~~The air monitoring plan should also identify alternative methods of accessing without a computer for those members of the community who may not have internet access (e.g., automated phone systems for dial-in information, or public displays, hard copies of periodic reports in libraries or community centers, etc.). Based on the needs of the communities, providing information in other languages should be strongly considered.~~

~~Some examples of methods for communicating the data to the public include the following:~~

- ~~Website data displays;~~
- ~~Mobile application;~~
- ~~Automated email/fax/text notification system;~~
- ~~Social media feeds;~~
- ~~Public data displays in community locations;~~
- ~~Automated call-in phone system;~~
- ~~Television and radio reports; and~~
- ~~Published data summary reports.~~

~~As provided by state law, emergency response agencies such as local fire agencies, have the primary responsibility for scene management during an accidental release of emissions or other emergency incidents. The refinery operators must identify the primary local agency that provide emergency preparedness and response services for each refinery, and coordinate with the first~~

~~responders to integrate with and augment the existing public alert systems and communication mechanisms to provide the public with access to timely alerts and public safety information during refinery upsets and accidental releases of pollutants and not to conflict or duplicate the first response alert systems in case of an accidental release of emissions.~~

~~The California Air Resources Board (CARB) Monitoring and Laboratory Division and the California Air Pollution Control Officers Association (CAPCOA) have completed the first volume and a draft a second volume of the Refinery Emergency Air Monitoring Assessment Report. The Objective 1: Delineation of Existing Capabilities report, released in May 2015, provides a comprehensive inventory of emergency air monitoring assets and capabilities located in and around California's major oil refineries. The draft report for Objective 2: Evaluation of Air Monitoring Capabilities, Gaps, and Potential Enhancements became available in September 2017. Also in September 2017 OEHHA released a related draft report: Analysis of Refinery Chemical Emissions and Health Effects. These are available from the CARB Refinery Air Monitoring website.~~

#### **Text message notification system**

Refineries are required to offer options for interested parties to opt in or opt out of receiving text notifications when they exceed a notification threshold. Depending on the availability of smartphones at the end user's location, the type of messaging can vary. It could range from receiving simple text messages with up to 160 characters (commonly known as SMS) to receiving longer messages containing links to other websites (e.g., OEHHA Air Chemical Database website) to provide more information in the form of MMS. Therefore, the system shall allow subscribers to opt-in to receive text messages in the form of either SMS or MMS. Interested parties are responsible for re-opting in if their phone numbers change; this is not the responsibility of the notification-issuing facility. The text message notification system should, at a minimum, provide this information:

- For SMS notifications:
  - Facility name, location, site, date, and time of the exceedance.
  - Air pollutant name, concentration measured, and the notification threshold.
- For MMS notifications:
  - Include all of the information in the SMS notification.
  - Add a link to the OEHHA Air Chemical Database website for the specific air pollutant detected above the threshold.
  - Add a link to the facility's website that contains additional information about the event.
- Include a disclaimer that text messages are handled by individual cell phone carriers, which is outside the control of the facilities.

#### **9. Other Regulatory Programs**

~~The U.S. EPA adopted a rule in December 2015 (40 CFR §63.658) with fenceline monitoring provisions that require sampling for benzene at refinery property boundaries. Considering that open-path technologies are currently the best available and the most accurate method for~~



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~~fenceline monitoring of benzene and other pollutants, SCAQMD will assist the refineries in seeking U.S. EPA approval for monitoring systems proposed as part of Rule 1180 through the refinery's fenceline air monitoring plan to also meet U.S. EPA requirements for monitoring of benzene.~~

**11.9. Future Updates to Rules 1180 and 1180.1 Fenceline Air Monitoring Plan Guidelines**

Revisions and updates to this guidance are expected ~~and will be required~~ as new instrumentation, methodologies and monitoring strategies are developed. The resolution for the 2023~~4~~ Rule 1180 amendment and Rule 1180.1 adoption included a commitment to technology assessment. Staff will assess real-time monitoring technologies for any air pollutant listed in Table 1 of the rules by January 1, 2029, and every five years thereafter, and report the results of the assessment to the South Coast AQMD Stationary Source Committee.

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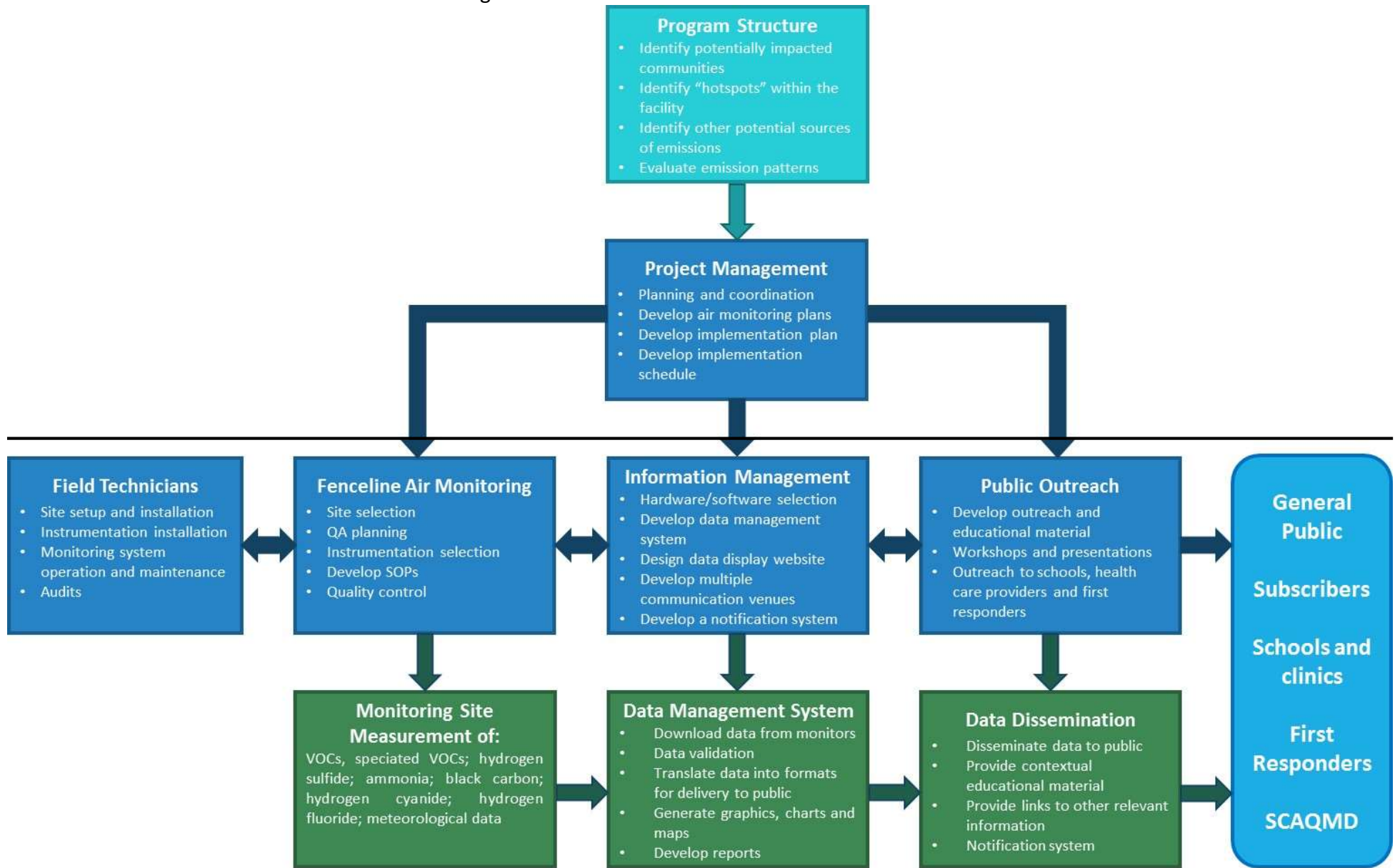


Figure 22— Overview of the Refinery Fenceline Air Monitoring Programs

### Appendix A - FAMP Checklist

<b>Fenceline Air Monitoring Coverage (or Spatial Coverage)</b>	
p	<u>Identify the facility’s proximity to sensitive receptors affected by the facility operation and provide the information below.</u>
	○ <u>Distance from facility to closest sensitive receptor(s)</u>
	○ <u>Location of downwind and upwind communities</u>
	○ <u>-Significant sources of non-refinery emissions surrounding the facility (e.g. non-refinery industrial facilities)</u>
	○ <u>Dispersion modeling†</u>
p	<u>Describe historical facility emission patterns and pollutant hotspots based on the following:</u>
	○ <u>On-site location of operations and processes within the facility’s perimeter</u>
	○ <u>On-site location of emissions sources -and level of emissions</u>
	○ <u>Facility plot plans and topography</u>
	○ <u>Dispersion modeling†</u>
p	<u>Select sampling locations along the perimeter of the facility based on the information above. -Also, provide the following:</u>
	○ <u>Locations where equipment will be sited (e.g., GIS coordinates) and measurement pathways</u>
	○ <u>Elevations of equipment and pathways</u>
	○ <u>A description of how the monitoring system will provide adequate coverage, especially for all nearby downwind communities</u>
<b>Fenceline Air Monitoring Equipment Description</b>	
p	<u>Select fenceline air monitoring equipment that is capable of continuously measuring air pollutants in real-time and provide the following:</u>
	○ <u>Specifications for the fenceline instruments (e.g., detection limits, time resolution, etc.)</u>
	○ <u>Explanation of the operation and maintenance requirements for selected equipment</u>
	○ <u>Justification to use alternative technologies</u>

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p	<u>Monitor for the pollutants listed in Table 1 of Rule 1180 or Rule 1180.1 and include the following:</u>
	○ <u>Pollutant detection limits for all instruments and the defining factors, such as paths measured for open path systems</u>
	○ <u>Justification of any exclusion of chemical compounds listed in Table 1 of Rules 1180 and 1180.1 or measurement of a surrogate compound</u>
<b><u>Quality Assurance</u></b>	
p	<u>Develop a Quality Assurance Project Plan (QAPP) that describes the following:</u>
	○ <u>Quality assurance procedures for data generated by the fenceline air monitoring system (e.g., procedures for assessment, verification and validation data)</u>
	○ <u>Standard operating procedures (SOP) for all measurement equipment</u>
	○ <u>Routine equipment and data audits</u>
<b><u>Data Presentation to the Public</u></b>	
p	<u>Design a data display website that includes the following:</u>
	○ <u>Educational material that describes the objectives and capabilities of the fenceline air monitoring system</u>
	○ <u>A description of all pollutants measured and measurement techniques</u>
	○ <u>A description of background levels for all pollutants measured and provide context to levels measured at the fenceline</u>
	○ <u>The most recently approved, or partially approved, FAMP and QAPP</u>
	○ <u>Definition of each data quality flag</u>
	○ <u>Report(s) generated from independent audit(s), including corrective action plan(s) or revised corrective action plan(s) if applicable</u>
	○ <u>Root Specific cause analysis</u>
	○ <u>Hyperlinks to relevant sources of information</u>
	○ <u>A means for the public to provide comments and feedback; Procedures to respond</u>
	○ <u>Real-time and at least five years of historic concentration data of all air pollutants measured on the fenceline air monitoring system including data quality flags, quarterly reports, audits, etc.</u>

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 Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines

	○ <u>Real-time and at least five years of historic <del>concentration</del> wind speed and wind direction data</u>
	○ <u>Quarterly data summary reports, including relationship to notification thresholds, data completeness, instrument issues, and quality control efforts</u>
<b><u>Notification System</u></b>	
p	<u>Design a notification system for the public to voluntarily participate in that includes the following:</u>
	○ <u>Notifications for activities that could affect the fenceline air monitoring system (e.g., planned maintenance activities or equipment downtime)</u>
	○ <u>Notifications for the availability of periodic reports that inform the community about air quality</u>
	○ <u>Triggers<del>Notifications</del> for exceedances <del>in</del>of thresholds (e.g. <del>Acute Reference Exposure Levels (RELs)</del>)</u>
	○ <u>Communication methods for notifications, such as, automated emails, text messages, and other approved communication methods</u>

† Dispersion modeling shall be conducted using U.S. EPA’s Preferred and Recommended Air Quality Dispersion Model (e.g., Health Risk Assessment)

## Appendix B - Other Resources

**Bay Area Air Quality Management District, 2016. –Air Monitoring Guidelines for Petroleum Refineries.**

<http://www.baaqmd.gov/~media/files/planning-and-research/public-hearings/2016/9-14-and-12-15/042016-hearing/1215-amg-041416-pdf.pdf?la=en>

**Bay Area Air Quality Management District, 2016. -Regulation 12, Rule 15: -Petroleum Refining Emissions Tracking.**

[\[http://www.baaqmd.gov/~media/files/planning-and-research/rules-and-regs/reg-12/rg1215-pdf.pdf?la=en\]](http://www.baaqmd.gov/~media/files/planning-and-research/rules-and-regs/reg-12/rg1215-pdf.pdf?la=en)

**U.S. EPA, 2015. -AP-42: -Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Chapter 5: -Petroleum Industry.**

[\[https://www3.epa.gov/ttn/chief/ap42/ch05/index.html\]](https://www3.epa.gov/ttn/chief/ap42/ch05/index.html)

**U.S. EPA, 2015. –40 CFR §63.658, Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards, Final Rule.**

[\[https://www.gpo.gov/fdsys/pkg/FR-2015-12-01/pdf/2015-26486.pdf\]](https://www.gpo.gov/fdsys/pkg/FR-2015-12-01/pdf/2015-26486.pdf)

**U.S. EPA Requirements for Quality Assurance Project Plans (EPA QA/R-5, EPA/240/B-01/003)**

[\[https://www.epa.gov/sites/production/files/2016-06/documents/r5-final\\_0.pdf\]](https://www.epa.gov/sites/production/files/2016-06/documents/r5-final_0.pdf)

**U.S. EPA Guidance for the Data Quality Objectives Process (EPA QA/G-4, EPA/600/R-96/055)**

[\[https://archive.epa.gov/epawaste/hazard/web/pdf/epaqag4.pdf\]](https://archive.epa.gov/epawaste/hazard/web/pdf/epaqag4.pdf)

**U.S. EPA Guidance on Technical Audits and Related Assessments for Environmental Data Operations (EPA QA/G-7, EPA/600R-99/080)**

[\[https://www.epa.gov/sites/production/files/2015-07/documents/g7-final.pdf\]](https://www.epa.gov/sites/production/files/2015-07/documents/g7-final.pdf)

**Network Design for State and Local Monitoring Stations (SLAMS), National Air Monitoring Stations (NAMS), and Photochemical Assessment Monitoring Stations (PAMS).**

Code of Federal Regulations. Title 40, Part 58, Subpart E, Appendix D.

**Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, Part 1 (EPA-454/R-98-004)**

[\[https://goo.gl/HGCNrR\]](https://goo.gl/HGCNrR)

**Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air (EPA/625/R-96/010b)**

[\[https://www3.epa.gov/ttn/amtic/airtox.html\]](https://www3.epa.gov/ttn/amtic/airtox.html)

**Guidance for Preparing ~~Standard Operating Procedures (SOPs)~~ (EPA QA/G-6, EPA/240/B-01/004)**

[\[https://www.epa.gov/sites/production/files/2015-06/documents/g6-final.pdf\]](https://www.epa.gov/sites/production/files/2015-06/documents/g6-final.pdf)

Proposed Amended  
Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines

**U.S. EPA Handbook: Optical Remote Sensing for Measurement and Monitoring of Emissions Flux**

[<https://www3.epa.gov/ttnemc01/guidlnd/gd-052.pdf>]

**Draft CARB/CAPCOA Refinery Air Monitoring Assessment Reports**

[<https://www.arb.ca.gov/fuels/carefinery/crseam/crseam.htm>]

**Draft OEHHA Report: Analysis of Refinery Chemical Emissions and Health Effects**

[<https://oehha.ca.gov/air/analysis-refinery-chemical-emissions-and-health-effects>]

# ATTACHMENT I

## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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### Final Staff Report for:

**Proposed Amended Rule 1180 – Fenceline and Community Air Monitoring for Petroleum Refineries and Related Facilities; and  
Proposed Rule 1180.1 – Fenceline and Community Air Monitoring for Other Refineries**

January 2024

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## **EXECUTIVE SUMMARY**

Proposed Amended Rule 1180 – Fenceline and Community Air Monitoring for Petroleum Refineries and Related Facilities (PAR 1180) and Proposed Rule 1180.1 – Fenceline and Community Air Monitoring for Other Refineries (PR 1180.1) aim to enhance air quality monitoring and provide public access to information about pollutants in the vicinity of refineries.

Rule 1180 – Refinery Fenceline and Community Air Monitoring (Rule 1180) was adopted in December 2017 to require major petroleum refineries to conduct real-time fenceline air monitoring for specified air pollutants at or near the property boundaries. The rule also includes a fee schedule to fund refinery-related community air monitoring systems. –It was adopted to provide valuable information as quickly as possible about the potential presence of air contaminants, including some toxics, resulting from petroleum refinery operations to petroleum refineries, nearby communities, and South Coast AQMD staff. Rule 1180 applies to petroleum refineries permitted to process petroleum, as defined in the Standard Industrial Classification Manual as Industry No. 2911, with an exemption for petroleum refineries with a maximum capacity to process less than 40,000 barrels per day (bpd) of crude oil.

In 2020, Comite Progreso de Lamont and others filed a lawsuit in Fresno County Superior Court (Court) against San Joaquin Valley Air Pollution Control District (SJVAPCD) regarding its fenceline and community air monitoring rules. The Court ordered SJVAPCD to remove compliance exemptions for non-crude oil refining facilities and to remove the 40,000-bpd exemption. South Coast AQMD commenced rule development to amend Rule 1180 in November 2022 to address the 40,000-bpd exemption. On December 19, 2022, East Yard Communities for Environmental Justice filed a lawsuit against South Coast AQMD in Los Angeles Superior Court (Case No. 22STCP04398) claiming the air district has not fulfilled its duty to implement Health and Safety Code Section 42705.6 due to the exemption for refineries with a refining capacity less than 40,000 bpd from the fenceline and community air monitoring requirements. The parties stipulated to a settlement. South Coast AQMD agreed to develop a proposed or proposed amended rule that removes the exemption for petroleum refineries with a capacity of less than 40,000 barrels per day.

Staff proposes to amend Rule 1180 and adopt PR 1180.1 primarily to address the issues identified in the South Coast AQMD and SJVAPCD lawsuits. Seven petroleum refineries are currently subject to Rule 1180 and have been operating fenceline monitoring systems since the second quarter of 2020. PAR 1180 will broaden the applicability to include several facilities with operations related to petroleum refineries. PR 1180.1 will require three facilities, two asphalt refineries and one refinery that processes alternative feedstocks, to install fenceline monitoring systems and includes a fee schedule to cover South Coast AQMD’s cost to design, develop, install, operate, and maintain refinery-related community air monitoring systems. In addition, PAR 1180 and PR 1180.1 will: 1) require additional air pollutants identified in the Office of Environmental Health Hazard Assessment report, “Analysis of Refinery Chemical Emissions and Health Effects,” finalized in March 2019 (OEHHA report); 2) set notification thresholds for more air pollutants; 3) require ~~not~~ specific cause analysis and corrective actions when air pollutants are detected above notification thresholds; and 4) provide additional specifications on compliance schedule, web-based fenceline data display and notification program, independent audits, and quarterly reports. The public process for PAR 1180 and PR 1180.1 included five Working Group Meetings and a Public Workshop.

## CHAPTER 1: BACKGROUND

INTRODUCTION

REGULATORY HISTORY

PUBLIC PROCESS

## INTRODUCTION

The South Coast AQMD Governing Board adopted Rule 1180 in December 2017 to require real-time fenceline air monitoring for specified compounds at or near the property boundaries and to provide data as quickly as possible to the public. The rule also includes a fee schedule to fund refinery-related community air monitoring systems. Rule 1180 applies to petroleum refineries permitted to process petroleum, as defined in the Standard Industrial Classification Manual as Industry Number 2911, with an exemption for petroleum refineries with a maximum capacity to process less than 40,000 barrels per day of crude oil.

The following section provides a detailed background on state laws, Rule 1180, comparable rules by other air districts, and the lawsuits that triggered the rule development process for PAR 1180 and PR 1180.1.

## REGULATORY BACKGROUND

In October 2017, California State Legislature passed Assembly Bill 1647 (Muratsuchi) (AB 1647) to add California Health and Safety Code Section 42705.6, which established mandates for fenceline air monitoring at petroleum refineries and air monitoring in nearby communities. Prior to or after the passage of AB 1647, several air districts adopted refinery fenceline and community air monitoring rules that align with the requirements of Health and Safety Code Section 42705.6.

### Rule 1180

Rule 1180 was adopted by the South Coast AQMD Governing Board on December 1, 2017, and the rule applies to petroleum refineries that have a maximum capacity to process more than 40,000 bpd of crude oil.

In the South Coast AQMD, there are seven facilities that are currently subject to Rule 1180:

- Tesoro Carson (Tesoro Refining and Marketing Company, LLC), Carson, CA
- Tesoro Wilmington (Tesoro Refining and Marketing Company, LLC), Wilmington, CA
- Torrance (Torrance Refining Company); Torrance, CA
- Chevron (Chevron Products Co); El Segundo, CA
- Phillips 66 Company; Carson, CA
- Phillips 66 Company; Wilmington, CA
- Valero (Ultramar Inc.); Wilmington, CA

Rule 1180 requires that refinery owners and operators submit a written Fenceline Air Monitoring Plan (FAMP) for establishing and operating a fenceline air monitoring system. The “Refinery Fenceline Air Monitoring Plan Guidelines”<sup>1</sup> (Guidelines) provided by the South Coast AQMD specifies criteria for developing an approvable FAMP and for FAMP evaluation. The Guidelines are referenced by facilities for the elements necessary to complete an air monitoring plan and by the Executive Officer for the evaluation of the air monitoring plans.

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<sup>1</sup> ~~In this amendment as~~ The revised version of the Guidelines to be adopted are titled, “Rule 1180 and Rule 1180.1 Air Monitoring Plan Guidelines.”



Rule 1180 also establishes a fee schedule, to be paid by the petroleum refineries, for the cost of designing, developing, installing, operating, and maintaining refinery-related community air monitoring systems. Staff prepared Rule 1180 Community Air Monitoring Plan<sup>2</sup> (CAMP) that outlines the South Coast AQMD's strategy and approach for conducting air monitoring in communities adjacent to the above-mentioned refineries, as part of Rule 1180 implementation.

In August 2018, all refineries submitted their draft FAMPs to South Coast AQMD. Staff identified deficiencies during the initial review and worked with each refinery individually to improve its plans. South Coast AQMD staff determined that the revised fenceline coverages are adequate to satisfy the requirements of Rule 1180; therefore, all refineries received partial approvals of the fenceline air monitoring portion of the FAMPs. As of December 15, 2023, all but one of the QAPPs have been approved. QAPP adjustments and modifications may be required based on the results of any audit and as the Rule 1180 program develops over time.

South Coast AQMD staff has been working with all refineries on all other elements of the fenceline monitoring plans, namely: back-up monitoring and maintenance, data presentation to the public, public notifications and notification thresholds, and a Quality Assurance Project Plan (QAPP). The revised FAMPs and QAPPs for all refineries can be found on the South Coast AQMD website<sup>3</sup>.

To comply with Rule 1180 and the Guidelines, the refineries established their data display webpages to provide real-time and historical air monitoring data, and notification systems that automatically generate and issue a notification when concentrations exceed the defined notification thresholds. All current Rule 1180 refineries have been providing data and notifications since the second quarter of 2020. The public have access to the data display websites and may subscribe for the notifications by using the links in the below.

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<sup>2</sup> South Coast AQMD, "Rule 1180 Community Air Plan," last modified April 2020, [http://www.aqmd.gov/docs/defaultsource/fenceline\\_monitoring/r1180\\_draft\\_community\\_monitoring\\_plan\\_rev\\_2\\_04022020\\_final\\_use\\_updated1.pdf?sfvrsn=8](http://www.aqmd.gov/docs/defaultsource/fenceline_monitoring/r1180_draft_community_monitoring_plan_rev_2_04022020_final_use_updated1.pdf?sfvrsn=8).

<sup>3</sup> South Coast AQMD, "Rule 1180 - Refinery Community and Fenceline Air Monitoring," <http://www.aqmd.gov/home/rules-compliance/rules/support-documents/rule-1180-refinery-fenceline-monitoring-plans#:~:text=Rule%201180%20requires%20petroleum%20refineries,pollutants%20and%20toxic%20air%20contaminants>.

**Table 1-1:Fenceline Air Monitoring Data Display Website Links**

Facility Name and Location	Fenceline Air Monitoring Data Display Website
Tesoro Carson (Tesoro Refining and Marketing Company, LLC)	<a href="https://marathonlosangelesrefineryfencelinemonitoring.com/">https://marathonlosangelesrefineryfencelinemonitoring.com/</a>
Tesoro Wilmington (Tesoro Refining and Marketing Company, LLC)	
Chevron, El Segundo (Chevron Products Co.)	<a href="https://www.elsegundo1180.com/">https://www.elsegundo1180.com/</a>
Phillips 66 Company Carson	<a href="https://p66losangeles1180.com/">https://p66losangeles1180.com/</a>
Phillips 66 Company Wilmington	
Torrance (Torrance Refining Company)	<a href="https://torc.data.spectrumenvsoln.com/">https://torc.data.spectrumenvsoln.com/</a>
Valero (Ultramar Inc.)	<a href="https://wilmingtonrefinerymonitoring.org/">https://wilmingtonrefinerymonitoring.org/</a>

### *Overall success of the Rule 1180 monitoring*

Staff investigates every time an air pollutant is detected above the notification threshold and evaluates the concentration of the pollutant, the location of the exceedance, and meteorological conditions, e.g., wind speed and direction. In addition, staff conducts an inspection at the refinery. Inspections may include the use of handheld total volatile analyzers, Jerome meters, and an optical gas imaging camera. Rule 1180 notifications may indicate refinery events, with certain instances resulting in the issuance of Notice of Violations ~~with~~ citing rules including Rule 3002 – Requirements, Rule 463 – Organic Liquid Storage, and Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities.

Data from Rule 1180 fenceline and community monitors have been used to locate sources of odors and resulted in early detection and mitigation of leaks. In October 2021, South Coast AQMD investigated odors from Dominguez Channel. Over 4,700 odor complaints were received from residents in Carson, Gardena, Long Beach, Redondo Beach, Torrance and Wilmington. A variety of technologies and strategies, including Rule 1180 monitors, were used to monitor the air in the impacted areas. Results showed elevated levels of hydrogen sulfide caused strong odors. Although refineries were initially considered as a possible source of the odor, data from the Rule 1180 monitors indicated refineries were not the main source of the elevated levels of hydrogen sulfide measured during the odor event. The Rule 1180 community and fenceline monitors, providing continuous real-time measurements of several air pollutants, were instrumental in distinguishing determining that refineries were not the primary contributors during the odor event. This underscores the pivotal role of these monitors in accurate source attribution and effective mitigation strategies for odor-related issues.

### **San Joaquin Valley Air Pollution Control District (SJVAPCD) Lawsuit**

In December 2019, SJVAPCD adopted Rule 4460 – Petroleum Refinery Fence-line Air Monitoring and Rule 3200 – Petroleum Refinery Community Air Monitoring Fees which included an exemption for facilities with a refining capacity 40,000-bpd or less, mirroring South Coast AQMD’s Rule 1180 exemption. In 2020, Comite Progreso de Lamont and others filed a lawsuit in Fresno County Superior Court against SJVAPCD’s regulations citing the 40,000-bpd or less

exemption. The court ordered SJVAPCD to remove compliance exemptions for non-crude oil refining facilities and to remove the 40,000-bpd exemption. In October 2022, SJVAPCD amended the Rules 4460 and 3200 to: 1) require monitoring for the list of air pollutants recommended by OEHHA, unless a refinery can provide sufficient justification for not monitoring a specified pollutant; 2) remove the exemption for refineries not currently engaged in refining crude oil; and 3) remove the 40,000-bpd exemption.

### South Coast AQMD Lawsuit

On December 19, 2022, East Yard Communities for Environmental Justice filed a lawsuit against South Coast AQMD in Los Angeles Superior Court (Case No. 22STCP04398) claiming the air district has not fulfilled its duty to implement Health and Safety Code Section 42705.6 due to the exemption for refineries with a refining capacity less than 40,000 bpd from the fenceline and community air monitoring requirements. East Yard Communities for Environmental Justice claimed that for at least three refineries with refining capacities less than 40,000 bpd, South Coast AQMD failed to:

- Require fenceline monitoring for each refinery,
- Install a community air monitoring system near each refinery,
- Prepare refinery fenceline and community air monitoring guidance documents, and
- Collect fees for community air monitoring systems from each refinery.

In April and May 2023, a settlement was signed and the order for dismissal was entered. South Coast AQMD agreed to propose a rule or propose an amended rule that removes the exemption for petroleum refineries with a capacity of less than 40,000 barrels per day and hold a Governing Board hearing by January 5, 2024, on whether to adopt such proposal. –Thus, PAR 1180 will remove the 40,000 bpd-exemption and PR 1180.1 will address the refineries previously exempted by Rule 1180 necessitating fenceline air monitoring, and related community monitoring requirements for those refineries.

### Bay Area Air Quality Management District (BAAQMD) Fenceline Monitoring Rule

In April 2016, BAAQMD adopted Regulation 12, Rule 15 – Refining Emissions Tracking. In 2020 and 2021, two of the five petroleum refineries in BAAQMD’s jurisdiction subject to this rule submitted permit applications to modify their facility operation to process alternative feedstocks with the intention of producing “renewable” products. On November 3, 2021, BAAQMD amended Regulation 12, Rule 15 to change the definition of “Petroleum Refinery” to “Refinery” and add alternative feedstock to the definition of “Refinery”. The revised refinery definition is “Refinery: An establishment that is located on one or more contiguous or adjacent properties that processes any petroleum or alternative feedstock, to produce more usable products such as gasoline, diesel fuel, aviation fuel, lubricating oils, asphalt or petrochemical feedstocks, or any other similar product.”

### Senate Bill 674 (SB 674)

On February 16, 2023, Senator Lena Gonzalez (Long Beach), introduced SB 674 – The Refinery Air Pollution Transparency and Reduction Act. SB 674 would extend the requirements of AB 1647 (Muratsuchi, Chapter 589, Statutes of 2017) – Petroleum refineries: air monitoring systems by expanding the definition of refineries to include non-crude oil feedstock refineries and related facilities and requiring refineries to improve public notification processes, reporting, data accessibility, and to conduct third-party audits and ~~root~~specific cause analyses of any threshold exceedances. Staff had aligned PAR 1180 and PR 1180.1 with SB 674 for most of its proposed

requirements and provided comments to Senator Gonzalez’s SB 674 staff to align remaining requirements. On September 14, 2023, SB 674 was moved to the inactive file for this legislative session. -It can be moved off the inactive file and continue the legislative process in 2024. For these reasons, PAR 1180 and PR 1180.1 are no longer being developed in parallel with SB 674; however, staff has maintained many of the requirements from SB 674.

### PAR 1180 and PR 1180.1

PAR 1180 and PR 1180.1 will address issues identified in the South Coast AQMD and SJVAPCD lawsuit. The rules will also update the air pollutants that require monitoring to reflect additional air pollutants identified in the Office of Environmental Health Hazard Assessment report “Analysis of Refinery Chemical Emissions and Health Effects” finalized in March 2019 (OEHHA report). The applicability provision of PAR 1180 will be expanded to include facilities with operations related to petroleum refineries located on contiguous or adjacent properties. PR 1180.1 will apply to facilities that are not subject to PAR 1180, including two asphalt refineries and one refinery that processes alternative feedstocks. PAR 1180 and PR 1180.1 will specify community air monitoring fees. In addition, both rules will:

- Set notification thresholds for several of the newly included air pollutants and several air pollutants with historical fence line monitoring data;
- Require ~~root~~-specific cause analysis and corrective actions when air pollutants are detected above notification thresholds; and
- Provide additional specifications on compliance schedule, web-based fence line data display and notification program, independent audits, and quarterly reports.

Lastly, PAR 1180 and PR 1180.1 will require facilities to submit a FAMP for establishing and operating the fence line air monitoring system. -The Guidelines provide criteria for developing an approvable FAMP. -Amendments to the Guidelines are necessary to clarify they apply to both Rule 1180 and PR 1180.1 and reflect the proposed changes in PAR 1180.

### PUBLIC PROCESS

PAR 1180 and PR 1180.1 were developed through a public process that included a series of working group meetings designed to provide the public and stakeholders an opportunity to discuss important details about the proposed rule and provide input to South Coast AQMD staff during the rule development process. The working group meetings were attended by a variety of stakeholders including representatives from industry, environmental groups, community groups, and public agency representatives. Table 1-2 summarizes the main topics discussed during five working group meetings, the public workshop, and the community public workshop.

**Table 1-2: Summary of Working Group Meetings and Public Workshops**

Meeting title	Date	Highlights
Working Group Meeting #1	January 25, 2023	<ul style="list-style-type: none"> <li>• Rule background</li> <li>• Regulatory history</li> <li>• Overview of the applicability provision and target compound list</li> </ul>

Meeting title	Date	Highlights
<b>Working Group Meeting #2</b>	April 19, 2023	<ul style="list-style-type: none"> <li>• Continued proposed amendments on the applicability provision and target compound list</li> <li>• Community air monitoring</li> <li>• SB 674</li> </ul>
<b>Working Group Meeting #3</b>	May 30, 2023	<ul style="list-style-type: none"> <li>• Response to stakeholder comments</li> <li>• PAH monitoring technology</li> <li>• Quality Assurance/Quality Control (QA/QC) and monitoring system performance</li> <li>• Pollutants without an established threshold</li> <li>• Rule and guideline proposal updates</li> </ul>
<b>Working Group Meeting #4</b>	July 11, 2023	<ul style="list-style-type: none"> <li>• Response to stakeholder comments</li> <li>• Establishing notification thresholds <ul style="list-style-type: none"> <li>○ Information-based notification thresholds</li> <li>○ Health standard-based notification thresholds</li> </ul> </li> <li>• Exclusion criteria for metals</li> <li>• Community monitoring QA/QC</li> <li>• Proposed rule language</li> </ul>
<b>Public Workshop and Community Public Workshop</b>	August 22, 2023 (10:00 a.m. and 6:00 p.m.)	<ul style="list-style-type: none"> <li>• Release preliminary draft rule language</li> <li>• Proposed revision to the Guidelines</li> <li>• Key issues</li> </ul>
<b>Working Group Meeting #5</b>	October 12, 2023 (1:00 p.m. and 6:00 p.m.)	<ul style="list-style-type: none"> <li>• Release revised preliminary draft rule language</li> <li>• Update on SB 674</li> <li>• Revisions to rule language <ul style="list-style-type: none"> <li>○ Applicability</li> <li>○ Compliance schedules</li> <li>○ Fenceline and community notifications</li> </ul> </li> </ul>

Meeting title	Date	Highlights
		<ul style="list-style-type: none"><li>○ Independent audits</li><li>○ <del>Root</del> <u>Specific</u> cause analysis</li></ul>

## CHAPTER 2: FENCELINE AND COMMUNITY AIR MONITORING

APPLICABILITY

TARGET COMPOUND LIST

POTENTIAL FENCELINE MONITORING CONFIGURATIONS AT NEW  
FACILITIES

COMMUNITY AIR MONITORING

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## APPLICABILITY

### Standard Industrial Classification (SIC) code 2911

Rule 1180 applies to petroleum refineries defined in SIC 2911<sup>4</sup> as establishments primarily engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, and lubricants, through fractionation or straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking, or other processes.

### PAR 1180 and PR 1180.1

In the settlement agreement to the 2022 lawsuit against South Coast AQMD,<sup>7</sup> South Coast AQMD agreed to remove the 40,000-bpd exemption in proposed rulemaking. Thus, all petroleum refineries identified under SIC 2911 will be subject to the proposed fenceline monitoring rules, including two asphalt refineries located within the South Coast AQMD. In addition, staff proposes to include facilities that refine alternative feedstocks, which would be similar to the requirements in comparable BAAQMD and SJVAPCD rules. Currently, this proposal would apply to one alternative feedstock refinery in the South Coast AQMD. Staff also proposes to include facilities with operations related to petroleum refineries (e.g., Hydrogen Production Plants, Sulfur Recovery Plants, and Terminals) located on contiguous or adjacent properties.

PAR 1180 will apply to the existing major petroleum refineries, including facilities with operations related to petroleum refineries located on contiguous or adjacent properties (related facilities). PR 1180.1 will apply to refineries that refine crude oil and/or alternative feedstocks that are not included in PAR 1180. PR 1180.1 is focused on smaller refineries previously exempted by Rule 1180. The existing petroleum refineries will remain subject to PAR 1180 and the same requirements, including the list of air pollutants to be monitored, will apply, even if they transition some or all of their operation to refining alternative feedstocks. PAR 1180 and PR 1180.1 applicability provision will be discussed in next sections with more details.

### PAR 1180 Facilities

Currently seven facilities are subject to Rule 1180 requirements as shown in Figure 2-1. Note the figure only shows the approximate boundaries of the facilities.

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<sup>4</sup> NAICS Association, “SIC Industry: 2911 Petroleum Refining,” <https://www.naics.com/sic-industry-description/?code=2911>.





**Figure 2-1: Current Rule 1180 Facilities**

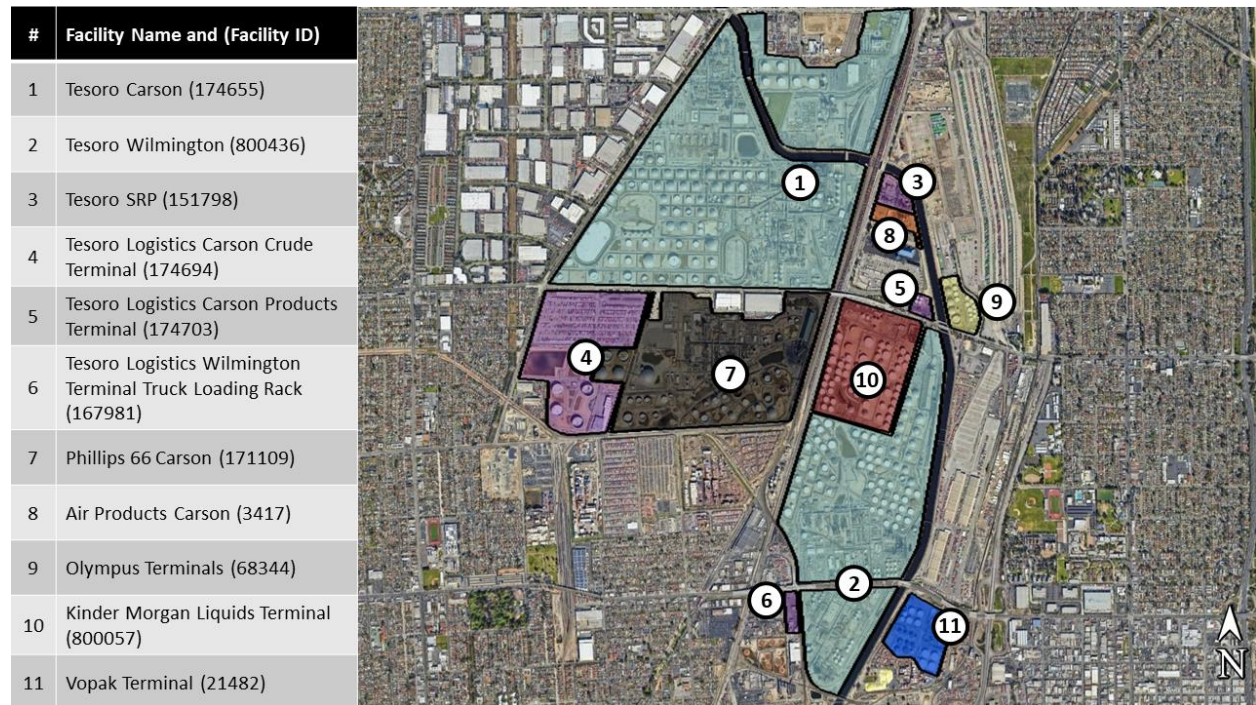
In addition, PAR 1180 will include several related facilities that have operations related to petroleum refineries and are located on properties contiguous or adjacent to a petroleum refinery. These related facilities are two hydrogen production plants, a sulfur recovery plant, and tank terminals.

Whether a facility is a related facility, and thus, subject to PAR 1180, depends in part on whether in the 2022 calendar year, they received more than 50 percent of their product input either directly or indirectly from, or provide more than 50 percent of their product output either directly or indirectly to, any of the Petroleum Refineries subject to this rule. Staff established the 2022 calendar year to make this determination, as that is the most current full calendar year of data the facilities could evaluate. Staff requested facilities to submit documentation, included a signed letter on company letterhead, if they claimed the facility's operations do not involve more than 50 percent of their input or output to petroleum refineries subject to PAR 1180. The more than 50 percent criteria were used because the intent of PAR 1180 is to measure air pollutant concentrations at the petroleum refineries fenceline, even if the air pollutant concentrations are occurring at a separate facility. Over time, some petroleum refineries have sold off parts of their operations. These facilities must exceed the 50 percent threshold to be subject to the rule. The intent of including "indirectly" in the definition is to capture instances where the origin of the input source is from a major petroleum refinery within the South Coast AQMD jurisdiction, or the main output destination is a major petroleum refinery within the South Coast AQMD jurisdiction but there is an intermediate facility that stores or receives the product. For instance, assume facility A receives product input from a terminal that holds products from one of the major petroleum refineries. The product received from the terminal would be included in the calculation of the petroleum refinery product input for facility A.

PAR 1180 will apply to related facilities adjacent or contiguous to petroleum refineries and require monitoring at and for those related facilities. Monitoring at and near these facilities allows regulators and the public to understand the air quality impact of refineries more fully. Contiguous properties mean they are either in physical contact or separated solely by a public roadway, or

other public right-of-way. U.S. EPA provides guidance on defining “contiguous” and determining<sup>5</sup> what qualifies as a “public right of way,” including adjacent properties separated by a railroad track.<sup>6</sup> The railroad track is deemed comparable to a roadway; hence, it does not disrupt the continuity between the adjacent properties.

The following figure shows the boundaries of the major petroleum refineries in the Wilmington /Carson area and the adjacent facilities with related operations that staff initially considered in the assessment for the applicability. The table below shows the reported 2022 total emissions and storage capacities for those facilities.



**Figure 2-2: Proposed Amended Rule 1180 Facilities with Adjacent Boundaries Map**

<sup>5</sup> U.S. EPA, “Applicability of Title V Permitting Requirements to Gasoline Bulk Terminals Owned by Williams Energy Ventures, Inc.,” May 19, 1999, <https://www.epa.gov/sites/default/files/2015-07/documents/we1999.pdf>.

<sup>6</sup> U.S. EPA, *Environmental Administrative Decisions: Decisions of the United States Environmental Protection Agency*, 1995.

**Table 2-1: Potential Related Facilities that Were Initially Identified  
(Listed by Its Reported 2022 Emissions in Ascending Order)**

Facility ID	Facility Name	2022 Total Emissions (tpd)	Storage Capacity (barrels)
21482	Vopak Terminal	N/A	1,669,000
195925	Olympus Terminal	0.0005	1,289,000
158910	Rancho LPG Holdings	0.0006	305,714
174703	Tesoro Logistics Carson Product Terminal	0.0007	80,857
174694	Tesoro Logistics Carson Crude Terminal	0.0013	2,028,000
167981	Tesoro Logistics, Wilmington Terminal Truck Loading Rack	0.0016	24,200
3417	Air Products Carson	0.007	N/A
101656	Air Products Wilmington	0.009	N/A
800057	Kinder Morgan Liquids Terminals	0.022	4,821,678
151798	Tesoro Sulfur Recovery Plant (SRP)	0.06	N/A

Related facilities are identified in three categories: hydrogen plants, SRPs, and tank terminals. The primary emissions from tank terminals are VOCs, which are significantly lower than the VOC emissions from petroleum refineries. According to the 2022 emissions annual emissions reports, petroleum refineries reported 6,900 – 29,900 lbs (0.01 – 0.41 tons per day) VOC emissions and tank terminals contiguous or adjacent to the petroleum refineries reported 80 – 10,195 lbs (0.0001 – 0.014 tpd) of VOC emissions. Smaller tank terminals with total tank capacity less than 310,000 barrels reported even less emissions than other tank terminals with less than 500 lbs (0.0007 tpd) VOC emissions and less than 1,200 lbs (0.0016 tpd) total emissions in 2022.

PAR 1180 will exempt tank terminals with total tank capacity less than 310,000 barrels. These smaller tank terminals emit only two to seven percent of the VOC emissions of that of a petroleum refinery. In addition to the lower emissions, the smaller tank terminals are located adjacent to the petroleum refineries which already have fenceline monitoring systems in place. Many of the smaller terminals already have monitors on several sides of their fenceline, which may provide adequate coverage to detect any potential air pollutant emissions from the terminals. Furthermore, VOC emissions from tank terminals are controlled by other South Coast AQMD rules such as Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities and Rule 463 – Organic Liquid Storage. These rules contain control measures including best available rim seal systems and covers or sleeves on all roof components that are gasketed, bolted, or equipped with wipers to reduce emissions from openings. Additionally, domes are required on

tanks storing high volatile material and enhanced leak detection technology is utilized to reduce fugitive emissions.

### *Related Facilities Under Common Ownership with Tesoro*

Tesoro Refining and Marketing Company LLC (Tesoro) has two petroleum refineries, one located in Wilmington and the other in Carson, and four potential related facilities located on contiguous properties including Carson Crude Terminal, Carson Product Terminal, Tesoro Sulfur Recovery Plant (SRP), and Tesoro Logistics Wilmington Terminal. SRP reported the highest total emissions in 2022 among those Tesoro potential related facilities, and will be subject to PAR 1180. Carson Products Terminal, Carson Crude Terminal, and Wilmington Terminal Truck Loading Rack, reported similar total emissions in 2022 (516, 584, and 1,000 lbs, respectively). Carson Crude Terminal has the capacity to hold approximately two million barrels of crude and will be expanded with an additional six tanks in the future. Due to its capacity and potential for more air pollutant emissions, Carson Crude Terminal will be subject to PAR 1180. Carson Products Terminal and Wilmington Terminal Truck Loading Rack are much smaller in tank capacity (80,857 barrels and 24,200 barrels respectively) with a lower potential for air emissions; therefore, staff is not proposing to include them in PAR 1180. With the proposed low-emission-based capacity exemption of 310,000 barrels, Carson Products Terminal and Wilmington Terminal Truck Loading Rack will not be subject to PAR 1180.

### *Other Related Facilities*

Figure 2-2 shows the following potentially related facilities adjacent to Tesoro Carson Refinery and Tesoro Wilmington Refinery: Air Products at Carson; Olympus Terminals; Vopak Terminal Los Angeles; and Kinder Morgan Liquids Terminal LLC. Figure 2-3 shows Air Products at Wilmington adjacent to Valero Refinery, and Figure 2-4 shows Rancho LPG Holdings contiguous to Phillips 66 Wilmington.

Both Air Product facilities supply the majority of their produced hydrogen to the local petroleum refineries. In the case of Air Products Wilmington, that hydrogen plant used to be owned by a refinery. The Air Product hydrogen plants will be subject to PAR 1180.

Kinder Morgan Liquids Terminal is a large tank terminal with a total of 63 tanks, whose operations involve both the local petroleum refineries and refineries outside the South Coast AQMD jurisdiction. ~~There is a potential for this facility to have operations related to the local petroleum refineries at a level that exceeds 50 percent. Staff is assessing if Kinder Morgan Liquids Terminal will be subject to PAR 1180. Kinder Morgan Liquids Terminal was unable to substantiate that their terminal has operations related to the local refineries at a level that is below 50 percent before the January 5, 2024 hearing on amending Rule 1180. Local refineries provided estimates of their operations that suggest Kinder Morgan Liquids Terminal has operations related to the local petroleum refineries that exceed 50 percent. Assuming Rule 1180 is amended as proposed, after such amendment, Kinder Morgan Liquids Terminal can either provide documentation that definitively demonstrates they are not a related facility as defined in the rule, or they have 12 months to develop and submit a FAMP. If Kinder Morgan Liquids Terminal can demonstrate they are below the threshold and not subject to the rule, they would not be subject to the fees in Table 3 intended to partially fund a community air monitoring station. In that case, Monitoring and Analysis Division (MAD) staff would have to consider the funding that is available when designing and siting the new community air monitoring systems to ensure there is adequate coverage within the community to detect elevated air pollutant concentrations from the facilities.~~

Olympus Terminal and Vopak Terminal have both provided information documenting that their operations do not relate to the petroleum refineries at a level that exceeds 50 percent. In the case of Vopak Terminal, as of 2023, their operations have shifted entirely away from products manufactured at the local petroleum refiners to products shipped from overseas. Staff is not proposing to include those terminals in PAR 1180 as their operations are not largely related to the Rule 1180 petroleum refineries.

Rancho LPG Holdings stores liquid petroleum gas (LPG). The gas is obtained from multiple facilities, including the local petroleum refineries. The facility is a small facility with less than ten employees. They have two large tanks with capacities of 150,000 barrels each and four smaller tanks with a capacity of 60,000 gallons (5,714 barrels) each. The capacity of the tanks at this facility are smaller than tank capacities at the petroleum refineries. For example, each tank at the Carson Crude Terminal holds over 400,000 barrels of crude oil. Staff is not proposing to include Rancho Holdings in PAR 1180; that facility will be exempted under the low-emission-based capacity exemption of 310,000 barrels.

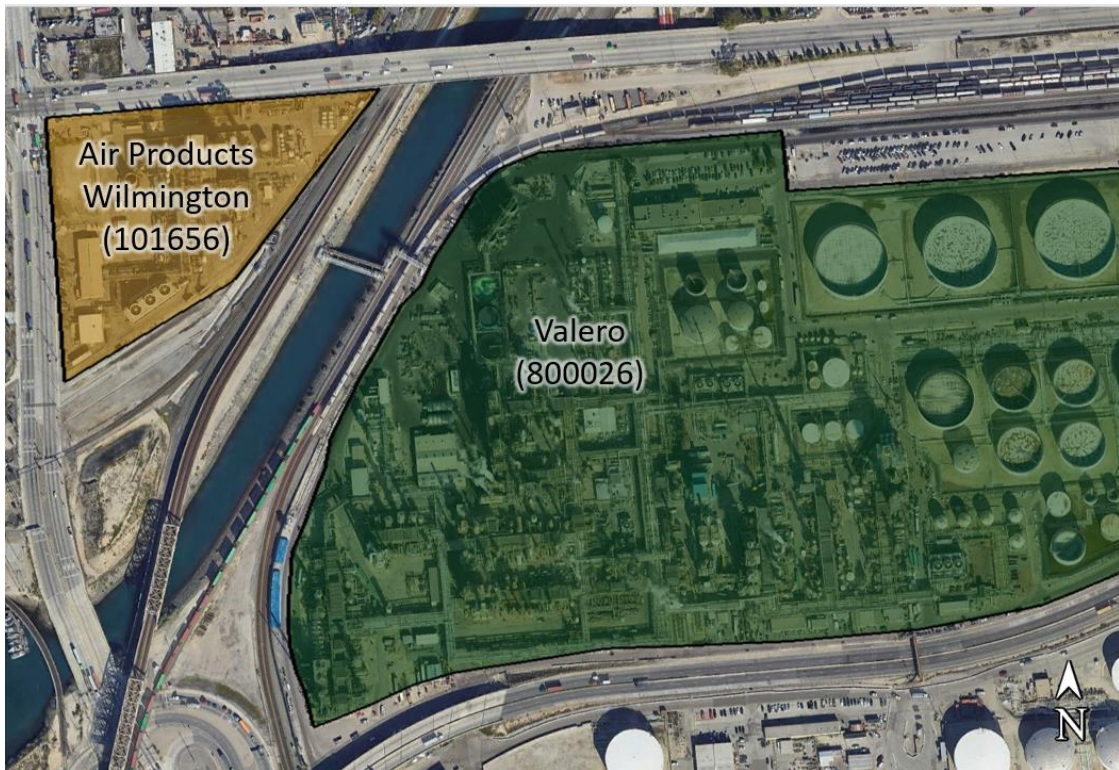


Figure 2-3: Air Products Wilmington Adjacent to Valero

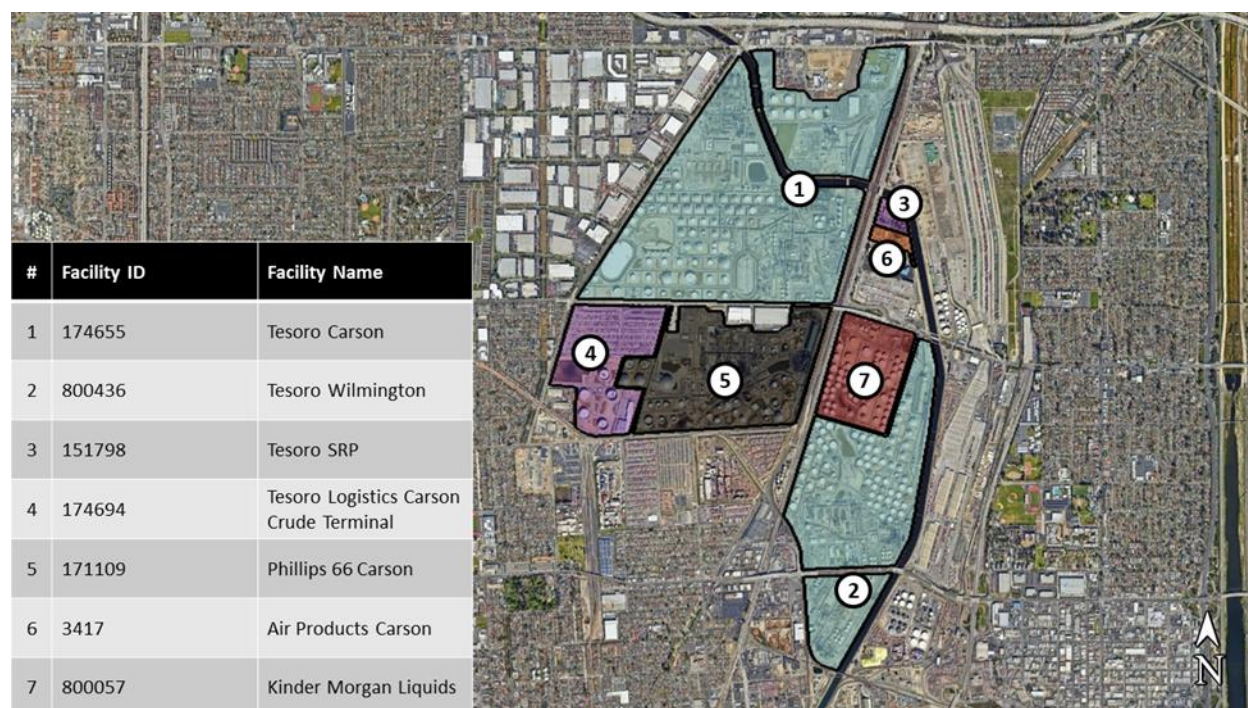


Figure 2-4: Rancho LPG Holdings Adjacent to Phillips 66 Wilmington.

Based on staff's assessment, PAR 1180 will apply to the facilities listed in Table 2-2. The facilities subject to PAR 1180 in the Wilmington and Carson area are shown in Figure 2-5 ~~Figure 2-5~~.

**Table 2-2: PAR 1180 Facilities**

Facility ID	Facility Name	Location	Type of Facility
<b>Major Petroleum Refineries</b>			
<b>174655</b>	Tesoro Carson (Tesoro Refining & Marketing Co, LLC)	Carson	Petroleum Refinery
<b>800436</b>	Tesoro Wilmington (Tesoro Refining & Marketing Co, LLC)	Wilmington	Petroleum Refinery
<b>171109</b>	Phillips 66 Carson (Phillips 66 Company/Los Angeles Refinery)	Carson	Petroleum Refinery
<b>171107</b>	Phillips 66 Wilmington (Phillips 66 Company/LA Refinery Wilmington Pl)	Wilmington	Petroleum Refinery
<b>800030</b>	Chevron, (Chevron Products Co.)	El Segundo	Petroleum Refinery
<b>181667</b>	Torrance (Torrance Refining Company LLC)	Torrance	Petroleum Refinery
<b>800026</b>	Valero (Ultramar Inc.)	Wilmington	Petroleum Refinery
<b>Related Facilities</b>			
<b>174694</b>	Tesoro Logistics, Carson Crude Terminal	Carson	Tank Terminal
<b>800057</b>	Kinder Morgan Liquids Terminal LLC	Carson	Tank Terminal
<b>3417</b>	Air Products Carson (Air Products and Chemicals)	Carson	Hydrogen Plant
<b>101656</b>	Air Products Wilmington (Air Products and Chemicals)	Wilmington	Hydrogen Plant
<b>151798</b>	Tesoro SRP (Tesoro Refining & Marketing Co, LLC)	Carson	Sulfur Recovery Plant



**Figure 2-5: Proposed Amended Rule 1180 Related Facilities in Wilmington/Carson Area After Evaluation**

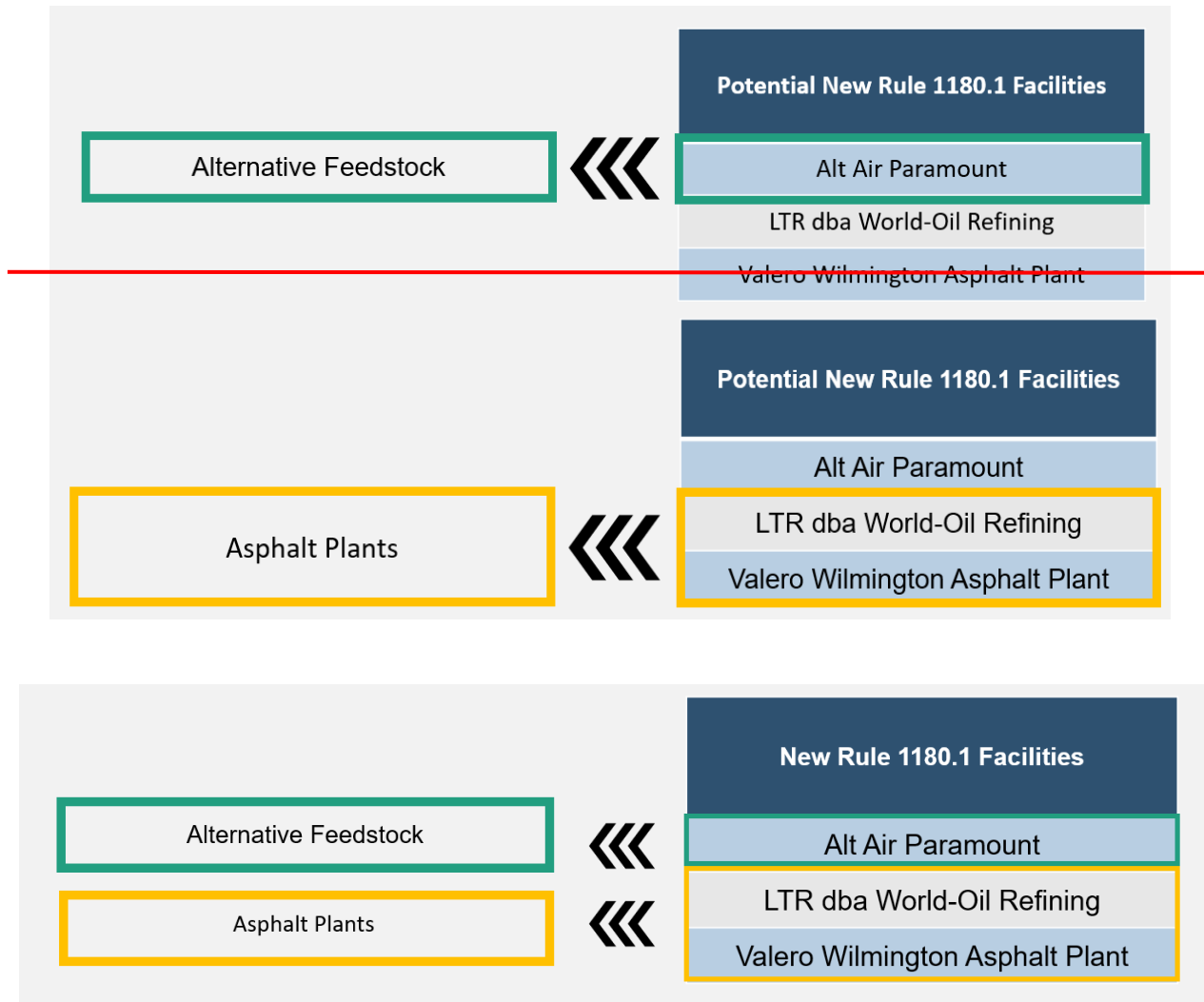
### PR 1180.1 Facilities

PR 1180.1 was developed to require fenceline monitoring at refineries that are not subject to PAR 1180. -PR 1180.1 would apply to smaller refineries that were previously exempt from Rule 1180 (i.e., refineries with a refining capacity of 40,000 bpd or less) and refineries that process non-crude oil, alternative feedstocks.

In the South Coast AQMD, AltAir Paramount is currently the only facility processing alternative feedstocks that will be subject to PR 1180.1. Any new refinery permitted to process alternative feedstocks, regardless of its throughput capacity, would be subject to PR 1180.1, existing PAR 1180 facilities would continue to comply with Rule 1180 even if they transition to alternative feedstocks at a partial or full capacity.

Two smaller petroleum refineries that produce asphalt from crude oil in the South Coast AQMD and are classified under SIC 2911 will be subject to PR 1180.1. These two facilities are currently exempted from Rule 1180 as their maximum process capacities are less than 40,000 bpd.





**Figure 2-6: Alternative Feedstock Facility and Asphalt Plants Subject to PR 1180.1**

Staff initially (in WGM#1) believed that World Oil Recycling (DeMenno-Kerdoon) (Facility ID 800037) would be subject to PR 1180.1. Staff later (in WGM#2) determined World Oil Recycling would not be subject to PR 1180.1 because: 1) the facility is not identified under SIC 2911; 2) establishments primarily re-refining used lubricating oils are classified under SIC 2992; and 3) AB 1647 fenceline monitoring requirements do not apply to SIC 2992 establishments.

Table 2-3 summarizes the facilities that would be subject to PR 1180.1 at the time of the rule adoption.

Table 2-3: PR 1180.1 Facilities

Facility ID	Facility Name	Location	Type
800393	Valero Wilmington Asphalt Plant	Wilmington	Asphalt Plant
800080	LTR dba World Oil Refining	South Gate	Asphalt Plant
187165	AltAir Paramount LLC	Paramount	Alternative Feedstock

The following map shows the locations of the PR 1180.1 facilities.

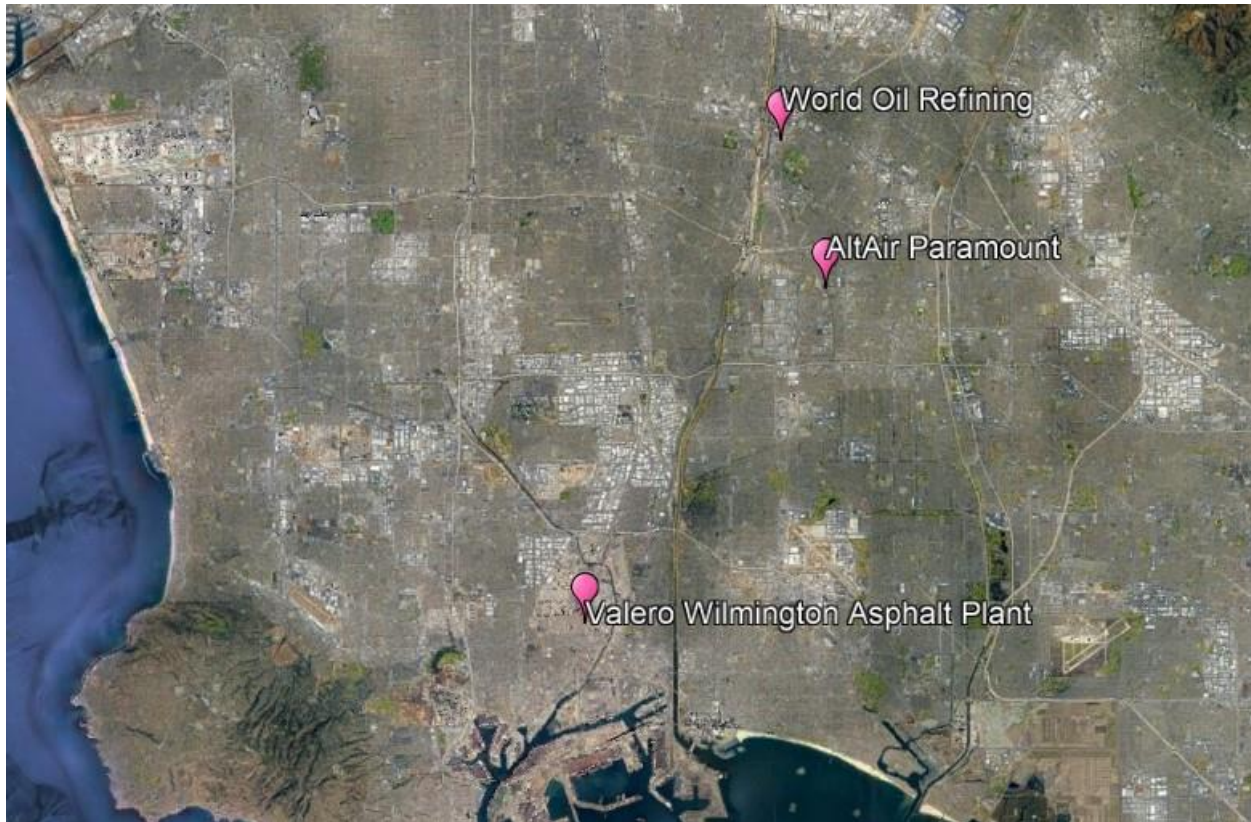
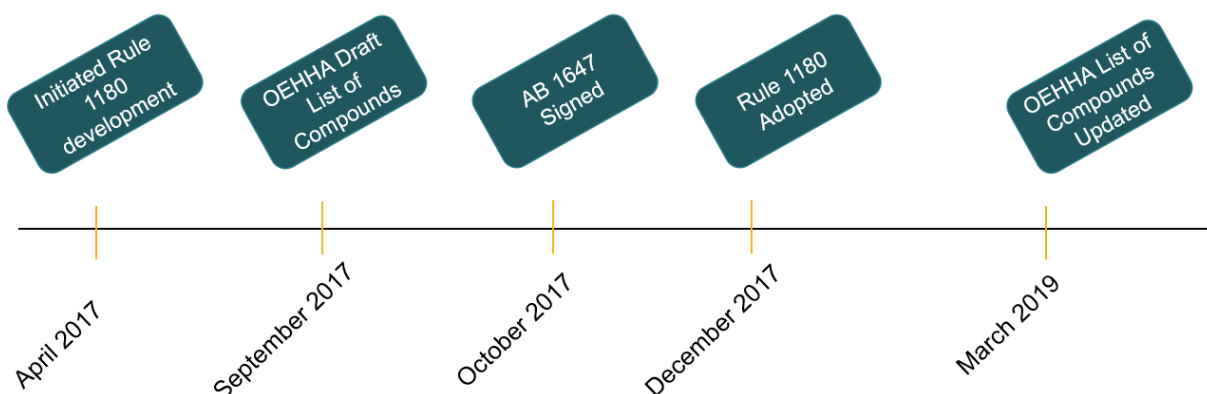


Figure 2-7: Map of PR 1180.1 Facilities

### TARGET COMPOUND LIST

Rule 1180 target compound list was based on the Office of Environmental Health Hazard Assessment (OEHHA) report “Analysis of Refinery Chemical Emissions and Health Effects.” At the time of the Rule 1180 adoption on December 1, 2017, only the September 2017 draft OEHHA report was available. Based on the September 2017 draft report, current Rule 1180 requires 18 pollutants to be addressed by a refinery fenceline air monitoring plan. In March 2019, OEHHA

finalized the report and updated the compound list<sup>7</sup>. Figure 2-8 below presents the timeline of PR the original Rule 1180 development and OEHHA Final Report (Analysis of Refinery Chemical Emissions and Health Effects).



**Figure 2-8: Rule 1180 and OEHHA’s Final Report Timeline**

In the OEHHA Final Report, 188 chemicals are identified as emitted from California refineries and 18 air pollutants are listed as the top candidates for air monitoring based on their toxicity level, average levels of emissions from refineries statewide, and involvement in multiple refinery processes and incidences (hereafter the updated list will be called “OEHHA priority list”). Out of the 18 air pollutants identified in the OEHHA priority list, eight air pollutants are not addressed in Rule 1180: Particulate Matter (PM), Naphthalene, Polycyclic Aromatic Hydrocarbons (PAHs), diethanolamine, sulfuric acid, nickel, manganese, and cadmium. The table below ~~provides a comparison for the~~ compares chemicals included in Rule 1180 versus the OEHHA priority list, air pollutants highlighted in red are not currently required to be monitored by Rule 1180:

<sup>7</sup> OEHHA, “Analysis of Refinery Emissions and Health Effects,” March 2019, <https://oehha.ca.gov/media/downloads/faqs/refinerychemicalsreport032019.pdf>.

Table 2-4: Existing Rule 1180 vs. OEHHA Priority List of Air Pollutants

	2019 OEHHA Priority list of Air Pollutants Included in Rule 1180?
Acetaldehyde	Y
Acrolein	Y/N/A*
Ammonia	Y
Benzene	Y
Black Carbon	Y/N/A
1,3-butadiene	Y
<b>Cadmium</b>	N
Carbonyl Sulfide	Y/N/A
<b>Diethanolamine</b>	N
Ethylbenzene	Y
Formaldehyde	Y
Hydrogen Cyanide	Y/N/A
Hydrogen Fluoride	Y
Hydrogen Sulfide	Y
<b>Manganese</b>	N
<b>Naphthalene</b>	N
<b>Nickel</b>	N
Nitrogen Oxide	Y
<b>Polycyclic aromatic hydrocarbons (PAH)</b>	N
<b>Particulate Matter</b>	N (Only BC is currently measured)
Styrene	Y/N/A
Sulfur Dioxide	Y
<b>Sulfuric Acid</b>	N
Toluene	Y
Total VOCs (Non-Methane Hydrocarbons)	Y/N/A
Xylenes	Y/N/A

\* Not listed in the 2019 OEHHA priority list, but included in the existing Rule 1180

Staff is proposing to update the existing air pollutants list for PAR 1180 and PR 1180.1 based on the OEHHA 2019 report. However, PAR 1180 and PR 1180.1 will not require the monitoring of certain air pollutants if it is not feasible based on existing technology. There are technical challenges for real-time, continuous monitoring for some air pollutants, such as PAHs, which will be discussed in the Fenceline Air Monitoring Technologies section. In addition, staff is proposing criteria for the potential exclusion of an air pollutant from monitoring requirements; for example, when the chemical is not emitted from the process and/or cannot be measured during normal operation or equipment breakdowns.

## FENCELINE AIR MONITORING TECHNOLOGIES

### Use of Point and Open Path Monitors

A petroleum refinery fenceline air monitoring system is a combination of equipment that measures and records air pollutant concentrations at or near the property boundary of a petroleum refinery. Conventional air monitoring approaches rely on point monitors ~~that are limited to, which providing~~ provide information about concentrations at single point, thereby, increasing the chances of missing emissions hotspots or plumes. Given the potential challenges of spatial data that is provided by point monitors it is necessary to employ additional technologies that contribute to a more comprehensive understanding of emissions from sizable facilities such as petroleum refineries.

Open-path technology is a well-established method to measure path-integrated trace gas absorptions and concentrations in the open atmosphere making it ideal for long-term fenceline air monitoring of air pollutant concentrations from refineries or other facilities that extend across a large area. Open-path technology is a type of Optical Remote Sensing (ORS) that measures air concentrations along an open-path, significantly improving spatial coverage. ORS instruments use a light signal to continuously detect and measure concentrations of air pollutants along the distance covered by the light signal in real-time. As a result, open-path technologies can provide greater spatial resolution compared to conventional air monitoring techniques; for example, narrow pollutant plumes can be detected by an open-path fenceline air monitoring system, which might otherwise be missed by point monitors. The light source emits light towards a detector either at the opposite end of the light path (bi-static configuration) or co-located with the light source (mono-static configuration) if the light is reflected by a reflector, providing path-averaged concentrations of multiple pollutants, simultaneously. Although the open-path ORS techniques have been used for over 20 years and are well-established, they are constantly improving and gaining use for monitoring sizable facilities that are not conducive to traditional point source testing methods. Improvements often include changes to technologies that improve detection limits, or the type of air pollutants detected.

Another advantage of open-path measurements is the capability of monitoring pollutant concentrations from point source and fugitive emissions at or near the property boundary of a petroleum refinery operation. Fugitive emissions can occur from gaseous or vapor leaks in pressurized process equipment (e.g., valves, pipe connections, mechanical seals, or related equipment) and from other accidental releases. Fugitive emissions can also emanate from storage tanks used to store crude oil, intermediates generated during the refining processes, and product streams. These emissions are best identified using open-path systems given the numerous potential sources, their distribution over large areas and the challenges with immediate detection and repair of the equipment that is the source of emissions.

The U.S. EPA has published a comprehensive assessment of various open-path ORS technologies, outlining the advantages and limitations of each measurement method<sup>8</sup>. South Coast AQMD also conducted a comprehensive technology demonstration study to evaluate several ORS technologies for various applications, including fenceline air monitoring<sup>9</sup>. Based on the advantages that open-

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<sup>8</sup> U.S. EPA, “EPA Handbook: Optical Remote Sensing for Measurement and Monitoring of Emissions Flux,” December 2011, available at <https://www3.epa.gov/ttnemc01/guidInd/gd-052.pdf>.

<sup>9</sup> South Coast AQMD, “SCAQMD Optical Remote Sensing Program,” 2015, available at <http://www.aqmd.gov/ors-study>.

path technologies provide over conventional air monitoring techniques, staff recommends the use of open-path technology for implementing a fenceline air monitoring system required by PAR 1180 and PR 1180.1. For open path monitoring systems, if the fenceline does not provide a clear path that is at least 500 meters long, it may pose an infeasible condition for optimal open path measurements. In this case, the facility may request approval to install point sensors instead of open path monitoring systems.

In accordance with the Guidelines, a refinery owner or operator has the option to use other air monitoring techniques and/or technologies depending on the pollutant(s) that are monitored. Alternative or emerging monitoring technologies may be acceptable only to cover areas along the perimeter of a refinery that are not suited for other monitors such as open-path technologies or traditional point monitors. The refinery operator or owner must demonstrate the proposed alternative air monitoring technology(ies) will meet the requirements of PAR 1180 and PR 1180.1 and provide adequate sensitivity and adequate temporal and spatial coverage for the air pollutants being monitored.

### **Technologies Currently Used for Rule 1180 Monitoring**

Rule 1180 refineries utilize open-path instruments and point monitors for real-time fenceline air monitoring. Open-path instruments transmit light energy across a long open path and the absorption of light relates to the average concentration of gases of interest along the path according to the Beer-Lambert absorption law. Measurement methods include Fourier-transform infrared spectroscopy (FTIR) and Ultra-Violet Differential Optical Adsorption Spectrometer (UV-DOAS). Point monitors are used to measure black carbon and hydrogen sulfide; black carbon is detected by an aethalometer that measures the attenuation of a beam of light transmitted through a filter, while the filter is continuously collecting an aerosol sample; and for hydrogen sulfide, cavity ring-down spectroscopy (CRDS), UV fluorescence, or reaction-based detectors may be used. Table 2-5 shows the existing technologies used by refineries to comply with Rule 1180.

Table 2-5: Real-Time Fenceline Air Monitoring Technologies Used by Rule 1180 Facilities

Existing Rule 1180 Air pollutants	Monitoring Technology
Acetaldehyde	Open-path FTIR
Acrolein	Open-path FTIR
Ammonia	Open-path FTIR
Benzene	<del>Open-path FTIR</del> , Open-path UV- DOAS <sup>1</sup>
Black Carbon	Aethalometer
1,3-butadiene	Open-path FTIR
Carbonyl Sulfide	Open-path FTIR
Ethylbenzene	<del>Open-path FTIR</del> , Open-path UV- DOAS <sup>1</sup>
Formaldehyde	Open-path FTIR
Hydrogen Cyanide	Open-path FTIR
Hydrogen Fluoride	Open-path FTIR
Hydrogen Sulfide	CRDS, UV Fluorescence, or reaction-based detector
Nitrogen Oxide	Open-path FTIR
Styrene	Open-path FTIR
Sulfur Dioxide	<del>Open-path FTIR</del> , Open-path UV- DOAS <sup>1</sup>
Toluene	<del>Open-path FTIR</del> , Open-path UV- DOAS <sup>1</sup>
Total VOCs	Open-path FTIR
Xylenes	<del>Open-path FTIR</del> , Open-path UV- DOAS <sup>1</sup>

<sup>1</sup> For these compounds, some facilities use open-path FTIR monitoring, which has poorer detection capabilities, for back-up monitoring when open-path UV-DOAS instruments are not working

### PAH monitoring

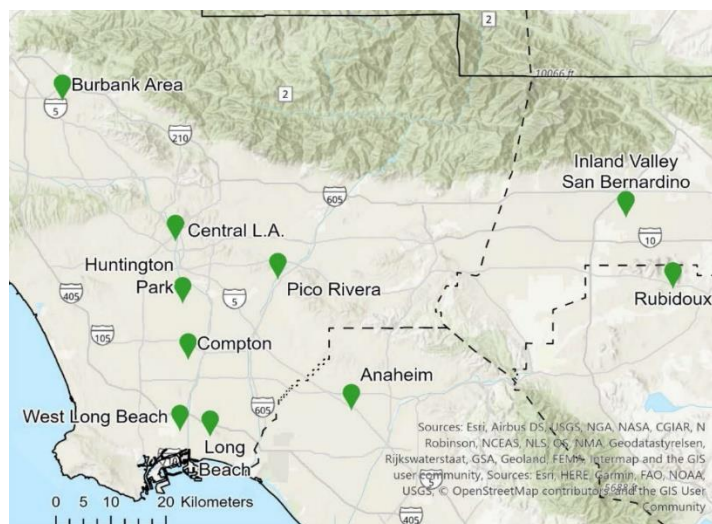
PAHs consist of up to 24 hydrocarbons; mainly formed from incomplete combustion of fossil fuels. Based on the OEHHA 2019 report on refinery chemical emissions and health effects, PAH emissions from refineries are relatively small and the emissions result from routine and non-routine refinery operations. PAHs are not in the top ten routine and non-routine chemical pollutants emitted by California refineries. Based on staff's research, naphthalene is the only PAH that can

be reliably measured using real-time monitoring technologies at this time, namely open-path UV-DOAS.

South Coast AQMD monitors PAH for the Multiple Air Toxics Exposure Study (MATES) and National Air Toxics Trends Stations (NATTS) programs; however, those measurements rely on time-integrated samples collected on a certain schedule (e.g., once every six days), and cannot be conducted using real-time monitoring technologies. PAHs are measured according to EPA Compendium Method TO-13A. Ambient air is drawn through a Poly-Urethane Foam (PUF) sampler over a 24-hour sampling period. Considerable sampler preparation is required prior to sampling, then PAHs are extracted from the PUF sampler and samples are analyzed by gas chromatography–mass spectrometry (GC/MS) in the laboratory. Sample results are usually obtained within 2-3 weeks after sample collection.

### *MATES*

South Coast AQMD has conducted five MATES campaigns. The last MATES campaign (MATES V) in 2018 and 2019 took measurements at ten fixed monitoring sites, and PAHs were measured at the Central LA and Rubidoux stations. Prior MATES studies also measured PAHs at other stations. For example, MATES IV measured PAH at the Long Beach station, which is closer to refinery operations. MATES are designed to provide update to our inventory of toxic air contaminants for modeling localized risks. The studies use advanced monitoring technologies, and technologies providing near real-time data. Staff engages with the local communities, particularly those near refineries.

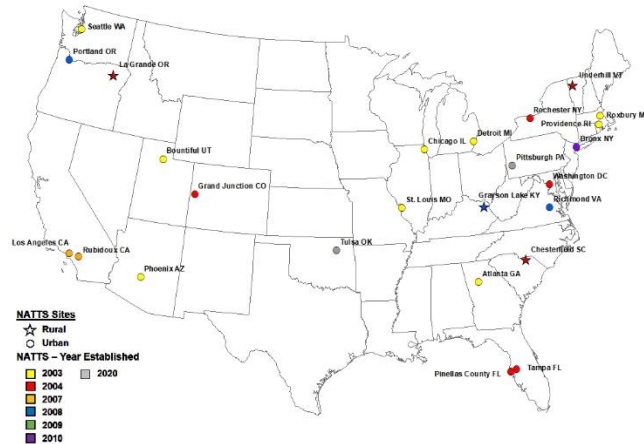


**Figure 2-9: MATES V Program Monitoring Stations**

### *NATTS program*

The goal of the federal NATTS program is to develop long-term air toxics monitoring data of consistent quality. NATTS network was initiated in 2003 and the current network configuration has 26 sites across the United States. There are typically over 100 pollutants monitored at each NATTS station, although only 19 of those are required by the NATTS program. South Coast AQMD monitors PAHs at two monitoring locations, Central Los Angeles, and Rubidoux, using the data for both NATTS and MATES programs.

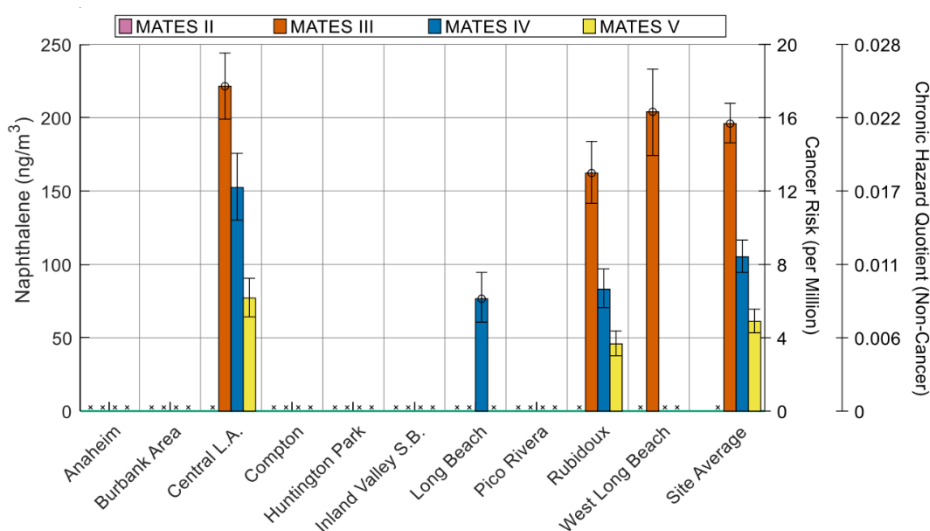




**Figure 2-10: NATTS Network Including Two South Coast AQMD Stations**

Figure 2-11 shows measurements of naphthalene, which is a PAH. Complete measurements can be found in the MATES V Final Report.<sup>10</sup> OEHHA data and South Coast AQMD data shows naphthalene is the most emitted PAH. As shown in the graph, the PAH concentrations have declined compared to previous MATES studies (as shown in the graph, measurements were taken only at Central L.A, Long Beach, Rubidoux, and West Long Beach during different MATES studies). During the MATES IV campaign, the Long Beach station, which is closest to refineries, was added to measure PAHs and measured PAH concentrations were similar to the concentrations measured by other two stations.

<sup>10</sup> South Coast AQMD, “Multiple Air Toxics Exposure Study in the South Coast AQMD,” August 2021, <http://www.aqmd.gov/docs/default-source/planning/mates-v/mates-v-final-report-9-24-21.pdf>.



**Figure 2-11: Naphthalene Measurements in Different MATES Studies<sup>11</sup> (Error bars denote the 95% confidence interval)**

In summary, there is no real-time air monitoring technology currently available to measure the sum of the concentrations of PAHs. PAHs measurements by MATES and NATTS programs take considerable amount of time for sample preparation and lab testing. The measurements indicate that naphthalene is the most emitted PAH and the PAHs concentrations have declined over the years. Naphthalene is the only PAH that can be monitored in real-time and current open-path systems installed at the refinery fenceline can reliably detect and report naphthalene in real-time.

Staff will continue to monitor and assess the development of real-time air monitoring technologies for PAHs and report the results of the assessment to the Stationary Source Committee every five calendar years. If at any point staff determines real-time air monitoring is feasible, the facilities would be required to revise their FAMPs and QAPPs and start monitoring for PAHs according to the timeline specified by PAR 1180 and PR 1180.1. Staff will report to the Stationary Source Committee when PAHs real-time monitoring is deemed feasible and provide guidance on the installation, operation, and maintenance of the real-time monitoring system before the Executive Officer notifies the facility in writing to revise the FAMP to include real-time fenceline monitoring. The Stationary Source Committee will provide an opportunity for the public, the regulated facilities, and other experts in air monitoring technologies to provide comments on the proposed technology.

### Metal Monitoring

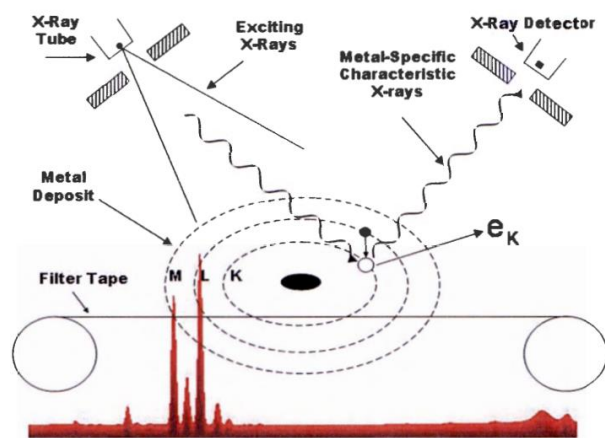
#### *X-Ray Fluorescence (XRF) technology for metal monitoring*

Cadmium, manganese, and nickel are identified in the OEHHA 2019 report as candidates for air monitoring. Their toxicity-weighted emissions scores are among the highest of emissions from refineries. Exposure and bioaccumulation of metals have been shown to lead to numerous health

<sup>11</sup> Error bars denote the 95% confidence interval.

problems. Those metals are associated with many refinery process units. However, a Fluid Catalytic Cracking Unit (FCCU) is the only unit capable of emitting high concentrations of metals as part of spent catalyst. A speciated metals analyzer is commonly utilized for real-time monitoring of multiple metals in air samples, including cadmium, manganese, and nickel.

XRF technology can be used to detect particulate metals. As shown in the figure below, in the XRF chamber, the X-ray tube emits high energy X-rays that bombard the filter tape deposit. The metal atoms in the tape deposit are excited by the incoming radiation and emit X-rays with energies characteristic of the elements present in the sample. These sample X-rays are detected, and the resulting pulses are processed by a digital pulse processing unit. The digital pulse processor relays the counts/channel/second to a software package located on the computer. Each spectrum, plotted as intensity versus energy, is interpreted by the software's least-squares fitting package to determine the metals contributing to the spectral peak intensities of the sample deposit. This spectral deconvolution process uses multiple reference spectra stored in an electronic reference spectra library to fit the unknown spectrum.



**Figure 2-12: XRF Technology**

Modern, high time resolution multi-metals monitoring of ambient air can achieve detection limits almost as low as traditional laboratory methods. A manufacturer's specification for a specific model of a real-time multi-metal detector indicates the following method detection limits for the air pollutants being considered for inclusion in Rule 1180: manganese 1.2 ng/m<sup>3</sup>, nickel 0.78 ng/m<sup>3</sup>, and cadmium 21 ng/m<sup>3</sup> for 15--minutes measurements<sup>12</sup>. Sampling rates are near real-time, as frequent as once every five minutes; however, detection limits might be lower for a longer sampling time. The real-time technologies can include daily calibration drift checks. Sampling and analysis methodologies for the technology are available and some technologies have been validated by the U.S. EPA Environmental Technology Verification (ETV) program, including the Cooper Environmental Services, LLC Xact 625 Particulate Metals Monitor<sup>13</sup>, which was tested and certified in 2012. The ETV program works to further environmental protection by accelerating

<sup>12</sup> SailBri Cooper, Inc. "Xact® 625i Ambient Continuous Multi-Metals Monitor."  
<https://sci-monitoring.com/product/xact-625i-ambient-continuous-multi-metals-monitor/>

<sup>13</sup> U.S. EPA, Environmental Technology Verification Report, Cooper Environmental Services LLC Xact 625 Particulate Metals Monitor, September 2012, <https://archive.epa.gov/nrmrl/archive-etv/web/pdf/p100fk6b.pdf>

the development, acceptance, and use of cost-effective technologies. The program is designed to provide high-quality, peer-reviewed data on technology performance. Stakeholders have expressed concerns over monitoring requirements that could result in unverified technologies being required, including concerns over real-time metal monitoring. Validation received through programs such as the U.S. EPA ETV program, which was issued over a decade ago of the Xact Particulate Metal Monitor, demonstrates that the technology is mature and proven.

The South Coast AQMD staff has extensive experience with technology for continuous metals monitoring and has operated Xact Particulate Metal Monitors since 2017, both at fixed air monitoring locations and onboard of a monitoring platform. This metal monitor has been found to generate reliable data and can operate over long periods of time provided routine maintenance and quality control checks are conducted regularly. The performance of the latest version of the Xact monitor (model 625i) was assessed by comparing its monitoring data with the results from the Inductively Coupled Plasma – Mass Spectrometry (ICP-MS) analysis of co-located integrated samples collected during a year-long campaign in Eastern Coachella Valley. This comparison demonstrated the levels measured by the Xact Metal Monitor were comparable to those measured by the reference method for most metals.

A facility expressed concern regarding potential radiation exposure to workers from XRF technology proposed for metal detection. XRF detectors for fenceline monitoring would be placed in a shelter on the refinery property for the safety of the community and workers. Safety procedures are set by federal and state regulations, manufacturer recommendations, and workplace policies to protect workers. XRF detectors are used in a wide variety of industries to measure the elemental composition of materials including for metals and are safely utilized in many South Coast AQMD community air monitoring stations.

### **Sulfuric Acid and Diethanolamine Monitoring**

Sulfuric acid is a colorless, oily liquid that exists in the air in water vapor and particulates. It is corrosive to metals and organic materials and emits toxic sulfur trioxide-containing fumes or vapors when heated. In refineries, sulfuric acid is used as a catalyst during alkylation and in various treatment processes. This chemical has also been detected in large amounts in refinery air emissions and reported in multiple fire and non-fire incidents. However, sulfuric acid has a very high boiling point, around 356 degrees Celsius (°C); therefore, it is not very volatile. If sulfuric acid is released into the atmosphere, it would quickly fall to the ground as a liquid. Due to the nature of the compound, it would not remain in the vapor state long enough to be transported to the fenceline. For this reason, refineries will not be required to measure sulfuric acid at the fenceline.<sup>14</sup>

Diethanolamine is a hydrocarbon found in air in water vapor and particulate phases. In refineries, diethanolamine has been detected at multiple refinery process units. Diethanolamine can be measured in air by drawing the air sample through sampling tubes for analysis with ion chromatography. However, diethanolamine has the tendency to absorb water and to supercool, which is a process of lowering the temperature of a liquid below its freezing point without it becoming a solid. As a result, diethanolamine has a short-lived gaseous phase. Due to the nature of the compound, it would not remain in the vapor state long enough to be transported to the fenceline. Furthermore, currently there is no real-time air monitoring technology for

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<sup>14</sup> PubChem, “Sulfuric Acid,” <https://pubchem.ncbi.nlm.nih.gov/compound/1118>.

diethanolamine. For these reasons, refineries will not be required to measure diethanolamine at the fenceline.<sup>15</sup>

### Total VOC (Non-Methane Hydrocarbons) Monitoring

The Rule 1180 and Rule 1180.1 Guidance Document has been updated with the following clarification as to how the facilities must monitor and report the Total VOC:

Various hydrocarbon species absorb strongly around the 3000 cm<sup>-1</sup> infrared spectral region. The absorption features of these hydrocarbons are similar, with the absorption strength scaling to the mass of the alkane species. As a result, Total VOCs can be readily quantified by open path FTIR technology by conducting spectral retrieval in the above-mentioned spectral region (the exact retrieval spectral window may vary slightly by vendor and retrieval approach).

### Acrolein Monitoring

Current real-time monitoring technology for acrolein is open path FTIR. The typical method detection limit for acrolein by this technology is 2-10 ppb, which is higher than its notification threshold of 1.1 ppb. Petroleum refineries are not required to provide notifications for acrolein if the measurements are below the method detection limit, provided they meet all other requirements in the approved and partially approved FAMP. Unless a newer real-time technology with lower method detection level for acrolein could be identified through a public process, this implementation will continue to be allowed. If measured acrolein concentrations are above both the method detection limit and the notification threshold, notifications must be sent to the public. Unless a newer real-time technology with lower method detection level for acrolein could be identified through a public process, this implementation will continue to be allowed.

### Establishing Information-Based Notification Thresholds

The notification thresholds for air pollutants to be addressed by FAMPs are in Table 1 of PAR 1180 and PR 1180.1. For most of the air pollutants, Health Standard-Based notification thresholds are established based on acute RELs by OEHHA, NAAQS, or CAAQS. However, Health Standard-Based notification thresholds have not been established for six air pollutants as they do not have an acute REL, NAAQS, or CAAQS. These six are total VOCs, ethylbenzene, black carbon, naphthalene, PAHs, and cadmium. Staff is proposing to establish an information-based notification threshold for pollutants without a Health Standard-Based notification threshold using historical data if data is available. The purpose of establishing information-based notification thresholds is to notify communities when higher than typical pollutant concentrations are present and ~~consequently, to~~ alert facilities to investigate and ensure normal operation.

Monitoring for total VOCs, ethylbenzene, and black carbon has been required by Rule 1180 since the second quarter of 2020. Staff analyzed the historical data in the refineries' quarterly reports to establish Information-Based notification thresholds.

#### *Ethylbenzene*

Facilities reported the quarterly concentration mean and maximum concentration for ethylbenzene for each path in parts per billion (ppb) in their respective quarterly reports. The majority of

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<sup>15</sup> PubChem, "Diethanolamine," <https://pubchem.ncbi.nlm.nih.gov/compound/diethanolamine#section=Vapor-Pressure>.

quarterly concentration means and maxima from the first quarter of 2022 through the first quarter of 2023 were below the method detection limit (MDL). MDLs in the quarterly reports range of 0.3 ppb to 17 ppb. Since concentrations were mostly found to be below MDL for ethylbenzene, staff proposes not to establish an information-based notification threshold for ethylbenzene. It is likely that ethylbenzene would be co-emitted with other pollutants. Benzene, toluene, ethylbenzene, and xylene (BTEX) pollutants are usually emitted together since these air pollutants all occur naturally in crude oil. Benzene, toluene, and xylene have health-based notification thresholds and would serve as indicators of potential ethylbenzene emission. For these reasons, staff is not proposing to include an information-based notification threshold for ethylbenzene.

### *Black Carbon*

Facilities reported quarterly average of black carbon hourly concentrations and quarterly maximum of black carbon hourly concentrations. Staff initially considered using that data to establish an information-based notification threshold for black carbon. Considering black carbon is included as part of the PM<sub>2.5</sub> measurements, for which health standard-based notification thresholds are established, staff will not include an information-based notification threshold for black carbon.

Black carbon is not listed as a candidate for air monitoring in OEHHA 2019 final report, “Analysis of Refinery Chemical Emissions and Health Effects,” which is the basis for ~~required~~ air pollutants ~~listed~~ newly added in Table 1. The major petroleum refineries who already have black carbon monitoring systems installed are required to continue to monitor for black carbon.

### *Total Volatile Organic Compounds (VOCs)*

The quarterly maximum of total VOC hourly concentrations provided in the quarterly reports for the first quarter of 2022 through the first quarter of 2023 of three refineries were used to establish the total VOC notification threshold. These data are the most recent and available data measured with the FTIR system at the time of amending the rule. Staff based the determination on data collected by three of the refineries, whose quarterly reports offered the most detailed data summary. These three refineries had 1-hour time series graphs used for the evaluation. The 90<sup>th</sup> percentile of the maximum quarterly VOC concentrations was calculated, resulting in a 730 ppb notification threshold. ~~Table 2-6~~ Table 2-6 shows the number of notifications each facility would have received based on the corresponding threshold, using the 1-hour time-series graphs provided in the quarterly report. Thresholds above and below the proposed 730 ppb threshold were included to evaluate whether thresholds above or below the 90<sup>th</sup> percentile would be more suitable. These thresholds above and below the proposed 730 ppb threshold were determined using the time series graphs. Both 300 ppb and 400 ppb are approximately the 20<sup>th</sup> percentile and 1,300 ppb and 9,000 ppb were the two highest maxima found. Based on these data, staff believes that concentrations above the 90<sup>th</sup> percentile would indicate above normal concentrations to trigger facilities to assess their operation.

**Table 2-6: Number of Potential Total VOC Notifications for Selected Facilities**

Facility	Proposed Threshold (Hourly Concentration in ppb)	Number of Notifications per Quarter				
		2022				2023
		Q1	Q2	Q3	Q4	Q1
Phillips 66 Carson	300	16	>20	>20	0	2
	400	6	>20	>20	0	1
	730	0	>20	>20	0	0
	1,300	0	12	13	0	0
	9,000	0	2	3	0	0
Phillips 66 Wilmington	300	2	0	0	0	1
	400	2	0	0	0	0
	730	0	0	0	0	0
	1,300	0	0	0	0	0
	9,000	0	0	0	0	0
Valero	300	1	0	0	0	0
	400	1	0	0	0	0
	730	1	0	0	0	0
	1,300	0	0	0	0	0
	9,000	0	0	0	0	0

### Manganese and Particulate Matter (PM) Notification Thresholds

There are no one-hour RELs, CAAQS, or NAAQS standards available for manganese and particulate matter (PM); however, current standards include an 8-hour REL for manganese, and a 24-hour NAAQS and CAAQS for PM. Staff proposes to establish a notification threshold for manganese and PM based on the 8-hour and 24-hour standards respectively and allowing facilities to use the averages with a rolling period consistent with the corresponding standard for notifications. The notification will be required within 15 minutes of the monitors detecting the pollutant above the threshold using the rolling average.

National Ambient Air Quality Standards for PM was revised in 2012 and retained in the most recent review in 2020. Table 2-7 shows federal and state 24-hour standard for PM<sub>2.5</sub> and PM<sub>10</sub>.

Staff proposes to set 24-hour rolling average thresholds for PM<sub>2.5</sub> and PM<sub>10</sub> as 35 µg/m<sup>3</sup> and 50 µg/m<sup>3</sup> respectively and require a notification to the public when measured PM<sub>2.5</sub> and PM<sub>10</sub> concentration level of 24-hour rolling average exceeds the threshold.

**Table 2-7: PM 2.5 and PM 10 24-Hour Standards**

	PM <sub>2.5</sub>	PM <sub>10</sub>
National Ambient Air Quality Standard (24-hour) (µg/m <sup>3</sup> )	35	150
California Ambient Air Quality Standard (24-hour) (µg/m <sup>3</sup> )	N/A	50

Manganese has an 8-hour OEHHA REL at 0.17 µg/m<sup>3</sup>. The last 8-hour OEHHA REL revision was in 2008. Staff proposes to set an 8-hour rolling average threshold for manganese at 0.17 µg/m<sup>3</sup> and require a notification sent to the public when measured manganese concentration level of 8-hour rolling average exceeds the threshold.



Table 2-8 shows the proposed notification thresholds required of each air pollutant:

**Table 2-8: Air Pollutants and Notification Thresholds**

Air Pollutants	Health Standard-Based Notification Threshold	Information-Based Notification Threshold
<b>Criteria Air Pollutants</b>		
Sulfur Dioxide	75 ppb	N/A
<del>Oxides of Nitrogen-Oxides</del>	100 ppb	N/A
Particulate Matter		
PM10	50 µg/m <sup>3</sup>	N/A
PM2.5	35 µg/m <sup>3</sup>	N/A
<b>Volatile Organic Compounds</b>		
Total VOCs (Non-Methane Hydrocarbons)	N/A	730 ppb
Formaldehyde	44 ppb	N/A
Acetaldehyde	260 ppb	N/A
Acrolein	1.1 ppb	N/A
1,3 Butadiene	297 ppb	N/A
Naphthalene	N/A	N/A
Polycyclic aromatic hydrocarbons (PAHs)	N/A	N/A
Styrene	5,000 ppb	N/A
Benzene	8 ppb	N/A
Toluene	1,300 ppb	N/A
Ethylbenzene	N/A	N/A
Xylenes	5,000 ppb	N/A
<b>Metals</b>		
Cadmium	N/A	N/A
Manganese	0.17 µg/m <sup>3</sup> (8-hour avg.)	N/A
Nickel	0.2 µg/m <sup>3</sup>	N/A
<b>Other Air pollutants</b>		
Hydrogen Sulfide	30 ppb	N/A
Carbonyl Sulfide	270 ppb	N/A
Ammonia	4,507 ppb	N/A
Black Carbon	N/A	N/A
Hydrogen Cyanide	309 ppb	N/A
Hydrogen Fluoride+	289 ppb	N/A

+ If the facility uses hydrogen fluoride.

## Follow-up Notifications

Staff is proposing to require follow-up notifications in both rules if the initially measured concentration, which was above the notification threshold, increases over time ~~to the~~ and exceeds specified levels. According to the rule language, the owner or operator of a facility shall automatically generate and send a follow-up notification as soon as technically feasible, but no later than 15 minutes after each instance where the measured concentration of the air pollutant exceeds the follow-up notification thresholds (the same averaging time applies to follow-up notifications):

$$\text{Follow-up Notification Threshold} = \text{Applicable Notification Threshold} \times 2^X$$

(Where X = 1, 2, 3, 4, and 8)

For example, with a notification threshold of 100 ppb, the follow-up notification thresholds will be 200 ppb, 400 ppb, 800 ppb, 1,600 ppb, and 25,600 ppb respectively. This approach allows for a maximum of five additional notifications to the originally generated notification to alert the public if the measured air pollutant concentration substantially increases. The follow-up notification threshold is capped at 256 times of the applicable notification threshold. Staff expects corrective actions would have been taken before the monitored concentration would reach this level.

The table below, shows four scenarios for an air pollutant with a notification threshold of 100 ppb. Each scenario is considered as one event as described in subdivision (k) in PAR 1180.

**Table 2-9: Follow-up Notification Scenarios**

Notification Threshold = 100 ppb	
Follow up notification thresholds: 200 ppb, 400 ppb, 800 ppb, 1,600 ppb, and 25,600 ppb	
<b>Scenario #1:</b>	
<i>Measured Concentration #1 = 120</i>	
<i>Measured Concentration #2 = 350</i>	
<i>Measured Concentration #3 = 620</i>	
<i>Measured Concentration #4 = 1200</i>	
Result: Facility will send a notification (#1) with three follow up notifications (#2, #3, and #4)	
<b>Scenario #2:</b>	
<i>Measured Concentration #1 = 350</i>	
<i>Measured Concentration #2 = 1200</i>	
Result: Facility will send a notification (#1) with one follow up notification (#2)	
<b>Scenario #3:</b>	
<i>Measured Concentration #1 = 1200</i>	
<i>Measured Concentration #2 = 500</i>	
Result: Facility will send one notification (#1) with no follow up notification	
<b>Scenario #4:</b>	
<i>Measured Concentration #1 = 120</i>	
<i>Measured Concentration #2 = 70</i>	
<i>Measured Concentration #3 = 230</i>	
<i>Measured Concentration #4 = 160</i>	
<i>Measured Concentration #5 = 580</i>	
Result: Facility will send a notification (#1) with two follow up notifications (#3 and #5)	

In scenario #1, the initial notification is triggered by the exceedance of the applicable notification threshold as indicated in Table 1. After the initial notification, no additional notification is required if the concentration stays above the notification threshold but below the first follow-up notification threshold. If the concentration drops below the any of the notification thresholds and then increases back above the threshold, only the first occurrence when the threshold is exceeded will trigger a notification. Each time the measured concentration exceeds the corresponding follow-up notification threshold, a subsequent notification, with a maximum of five follow-ups, will be sent to the public. In cases similar to scenarios #2 and #3, where the measured concentration is already above the applicable follow-up notification threshold, one notification will be sent to the public (Scenario #3) unless the concentration further increases, surpassing another follow-up notification threshold (Scenario #2).

Scenario #4 illustrates a case where concentration levels fluctuate between the notification threshold and follow-up notification thresholds. It even falls below the initial notification threshold. In this scenario, a notification will be sent each time the measured concentration exceeds any applicable notification or follow-up notification thresholds. As indicated in the table, the first notification will be sent for exceeding the applicable notification threshold. The second and third notifications will be sent each time the concentration exceeds the applicable follow-up notification threshold, which is 230 ppb and 580 ppb in this case. Should the concentration level remain below the notification threshold for more than 30 minutes (measured concentration #2), that would trigger a follow-up notification that the exceedance event has ended. Measured concentration #3 would be considered the start of a new exceedance notification event and a notification will be sent once the concentration level exceeds 100 ppb notification threshold.

The following table includes the follow-up notification thresholds for air pollutants.

**Table 2-10: Follow-up Notification Thresholds**

Air Pollutants	Initial Notification	2 <sup>nd</sup> Notification (X=1)	3 <sup>rd</sup> Notification (X=2)	4 <sup>th</sup> Notification (X=3)	5 <sup>th</sup> Notification (X=4)	6 <sup>th</sup> Notification (X=8)
<b>Criteria Air Pollutants</b>						
<b>Sulfur Dioxide</b>	75 ppb	150 ppb	300 ppb	600 ppb	1,200 ppb	19,200 ppb
<b>Oxides of Nitrogen-Oxides</b>	100 ppb	200 ppb	400 ppb	800 ppb	1,600 ppb	25,600 ppb
<b>Particulate Matter</b>						
<b>PM10</b>	35 µg/m <sup>3</sup>	70 µg/m <sup>3</sup>	140 µg/m <sup>3</sup>	280 µg/m <sup>3</sup>	560 µg/m <sup>3</sup>	8,960 µg/m <sup>3</sup>
<b>PM2.5</b>	50 µg/m <sup>3</sup>	100 µg/m <sup>3</sup>	200 µg/m <sup>3</sup>	400 µg/m <sup>3</sup>	800 µg/m <sup>3</sup>	12,800 µg/m <sup>3</sup>
<b>Volatile Organic Compounds</b>						
<b>Total VOCs</b>	730 ppb	1,460 ppb	2,920 ppb	5,840 ppb	11,680 ppb	186,880 ppb
<b>Formaldehyde</b>	44 ppb	88 ppb	176 ppb	352 ppb	704 ppb	11,264 ppb
<b>Acetaldehyde</b>	260 ppb	520 ppb	1,040 ppb	2,080 ppb	4,160 ppb	66,560 ppb
<b>Acrolein</b>	1.1 ppb	2.2 ppb	4.4 ppb	8.8	17.6 ppb	281.6 ppb
<b>1,3 Butadiene</b>	297 ppb	594	1,188	2,376	4,752 ppb	76,032 ppb
<b>Naphthalene</b>	N/A	N/A	N/A	N/A	N/A	N/A
<b>PAHs</b>	N/A	N/A	N/A	N/A	N/A	N/A
<b>Styrene</b>	5,000 ppb	10,000 ppb	20,000 ppb	40,000 ppb	80,000 ppb	128,000 ppb
<b>Benzene</b>	8 ppb	16	32	64	128 ppb	2,048 ppb

<b>Toluene</b>	1,300 ppb	2,600	5,200	10,400	20,800 ppb	332,800 ppb
<b>Ethylbenzene</b>	N/A	N/A	N/A	N/A	N/A	N/A
<b>Xylenes</b>	5,000 ppb	10,000	20,000	40,000	80,000 ppb	128,000 ppb
<b>Metals</b>						
<b>Cadmium</b>	N/A	N/A	N/A	N/A	N/A	N/A
<b>Manganese</b>	0.17 µg/m <sup>3</sup>	0.34 µg/m <sup>3</sup>	0.68 µg/m <sup>3</sup>	1.36 µg/m <sup>3</sup>	2.72 µg/m <sup>3</sup>	43.52 µg/m <sup>3</sup>
<b>Nickel</b>	0.2 µg/m <sup>3</sup>	0.4 µg/m <sup>3</sup>	0.8 µg/m <sup>3</sup>	1.6 µg/m <sup>3</sup>	3.2 µg/m <sup>3</sup>	51.2 µg/m <sup>3</sup>
<b>Other Compounds</b>						
<b>Hydrogen Sulfide</b>	30 ppb	60 ppb	120 ppb	240 ppb	480 ppb	7,680 ppb
<b>Carbonyl Sulfide</b>	270 ppb	540 ppb	1,080 ppb	2,160 ppb	4,320 ppb	69,120 ppb
<b>Ammonia</b>	4,507 ppb	9,014 ppb	18,028 ppb	36,056 ppb	72,112 ppb	1,153,792 ppb
<b>Black Carbon</b>	N/A	N/A	N/A	N/A	N/A	N/A
<b>Hydrogen Cyanide</b>	309 ppb	618 ppb	1,236 ppb	2,472 ppb	4,944 ppb	79,104 ppb
<b>Hydrogen Fluoride+</b>	289 ppb	578 ppb	1,156 ppb	2,312 ppb	4,624 ppb	73,984 ppb

### Exclusion criteria

A facility is required to demonstrate one or more of the following criteria to exclude a compound from the required monitoring:

- The pollutant is not emitted and never has been emitted through the facility's activities and processes;
- Real-time air monitors capable of reliably measuring the pollutant are not available; or
- Other technical justifications.

The facility must submit a FAMP and QAPP to obtain approval for excluding a compound.

#### *Exclusion criteria - technical feasibility*

Air pollutants may be considered for exclusion if there is no feasible real-time monitoring technology capable of real-time or near-real time measurements. Staff will discuss the feasibility of real-time detection technologies for air pollutants in the relevant section of the staff report. Staff will monitor the progress of real-time and near-real-time air monitoring technologies and conduct a technology assessment every five calendar years for any air pollutant listed in Table 1 in PAR 1180 and PR 1180.1 that had been deemed infeasible to detect in any previously approved, or partially approved, fenceline air monitoring plan and report the results of the assessment to the Stationary Source Committee.

#### *Exclusion criteria – air pollutant not part of the process*

Compounds that are not used and have never been used at a facility can be excluded based on facility's activities and processes. For example, an asphalt plant that does not use, and has never used, hydrofluoric acid could request to exclude it from their FAMP. For a facility with operations related to the petroleum refinery, monitoring may not be required for compound(s) not generated at that site.

In the case of PAR 1180 where related facilities are required to have fenceline monitoring, a petroleum refinery will be responsible for submitting the FAMP and conducting fenceline monitoring if they share the same ownership. In that case, the refineries would amend their existing FAMP and QAPP instead of submitting new plans for each related facility and South Coast AQMD would evaluate the plan and facilities holistically when considering what would qualify as adequate coverage. For example, a refinery could request to exclude NO<sub>x</sub> monitoring of its neighboring tank terminal if the terminal only stores VOC containing materials, has no combustion sources or nitric acid process, and the refinery already has adequate coverage with its existing NO<sub>x</sub> monitors. Each facility will have to justify excluding compounds when they submit their FAMP which are subject to Executive Officer approval.

#### *Exclusion criteria for metals*

Currently, Rule 1180 does not require monitoring for the following metal pollutants that were newly included in the 2019 OEHHA report: cadmium, manganese, and nickel. Staff assessed the reported metal emissions at PAR 1180 and PR 1180.1 facilities to determine if there is a potential for metal emissions and therefore a need to install fenceline metal monitoring technology. Table 2-11 shows the 3-year (2019-2021) average of annual emissions for each metal reported by facilities subject to PAR 1180 and PR 1180.1. PAR 1180 facilities emitted significantly higher concentrations of cadmium, manganese, and nickel. Higher throughput and use of refinery gas for combustion contributed to higher metal emissions based on facilities' Annual Emission Report (AER).

**Table 2-11: AER Three-Year Average Emissions for PAR 1180 and PR 1180.1 Facilities**

	PAR 1180 Facilities (lbs/year)	PR 1180.1 Facilities (lbs/year)
Cadmium	1 – 44	0.01 – 0.04
Manganese	24 – 719	0.00 – 6.39
Nickel	4 – 205	0.02 – 0.41

The FCCU is the unit with the largest potential for metal emissions as part of spent catalyst. The Electrostatic Precipitator (ESP) is a control equipment to remove PM from the FCCU flue gas. A FCCU/ESP breakdown could result in high PM and metal emissions. In November 2022, there was an incident at PBF Martinez refinery in the San Francisco Bay Area. Initial assessments estimated 20 tons of spent FCCU catalyst released into the neighborhood due to the ESP failure. In February 2015, an explosion occurred in the ExxonMobil Torrance refinery's (now operating as the Torrance Refining Company) ESP, which scattered catalyst dust up to a mile away into the nearby community. The table below shows that FCCUs and ESPs are operated by most of PAR 1180 facilities but not by any PR 1180.1 facility.

**Table 2-12: FCCU and ESP in PAR 1180 and PR 1180.1 Facilities**

PAR 1180	FCCU	ESP
Tesoro Carson	Yes	Yes
Tesoro Wilmington	No	No
P66 – Carson	No	No
P66 – Wilmington	Yes	Yes
Chevron	Yes	Yes
Torrance	Yes	Yes
Valero	Yes	Yes
Related Facilities (As shown in Table 2-2)	No	No
PR 1180.1		
AltAir Paramount	No	No
LTR dba World Oil Refining	No	No
Valero Asphalt Plant	No	No

Since PR 1180.1 facilities do not operate an ESP or FCCU, metals (cadmium, manganese, and nickel) are excluded from Table 1 of PR 1180.1. For the same reason, PAR 1180 related facilities are not required to monitor metals. For PAR 1180 petroleum refineries that operate a FCCU and ESP, staff is considering requiring at least one fenceline metal monitor for each FCCU and ESP. The location and number of the metal monitoring technology installations will be determined upon approval of the FAMP.

### Technology Assessment

Revisions and updates to the rules and guidelines are expected as new instrumentation, methodologies, and monitoring strategies are developed. Staff will include in the Resolution for the Public Hearing a commitment to conduct a technology assessment every five years. The technology assessment may include, but is not limited to, the assessment of real-time monitoring technologies, real-time monitoring protocols, quality assurance and quality control protocols, additional compounds to be monitored, and fenceline air monitoring and community air monitoring fees. Staff will perform the technology assessment through a public process by January 1, 2029, and every five years thereafter, and report the results of the assessment to the South Coast AQMD Stationary Source Committee.

### POTENTIAL FENCELINE MONITORING CONFIGURATIONS AT NEW FACILITIES

#### *World Oil Refining*

On April 12, 2023, staff conducted a site visit of the LTR dba World Oil Refining facility (Facility ID 800080). LTR dba World Oil Refining is a small refinery situated on a compact site for refinery

operations with a refining capacity of 8,500 bpd of crude oil.<sup>16</sup> Staff identified the potential to have an open path coverage for some of the facility's perimeter and will work with the facility to identify the most complete fenceline coverage as appropriate. Point sensor monitoring for certain pollutants, such as hydrogen sulfide will be considered.



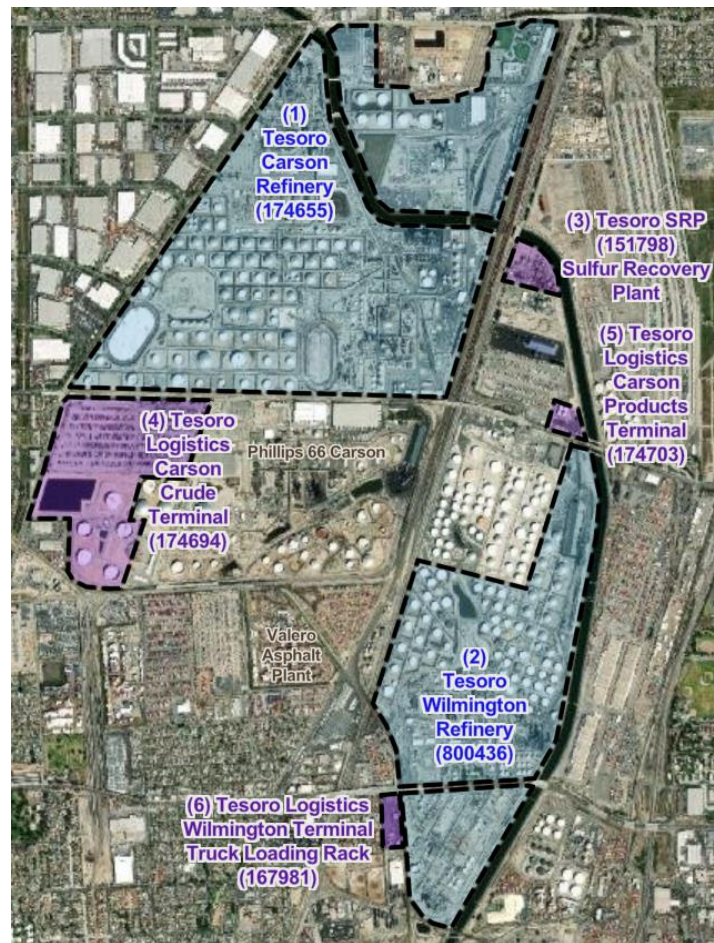
**Figure 2-13: LTR dba World Oil Refining Facility**

#### *Tesoro Refining and Marketing Company LLC*

On April 20, 2023, staff conducted a site visit of four facilities contiguous or adjacent to Tesoro Carson and Tesoro Wilmington. They are Tesoro Sulfur Recovery Plant (SRP) (Facility ID 151798), Tesoro Logistics Carson Crude Terminal (Facility ID 174694), Tesoro Logistics Carson Product Terminal (Facility ID 174703), and Tesoro Logistics Wilmington Terminal Truck Loading Rack (Facility ID 167981) as shown in ~~Figure 2-14~~ ~~Figure 2-14~~. As discussed previously, due to the small storage capacity of the Carson Product Terminal and the Wilmington Terminal Truck Loading Rack, staff is not proposing to include those two facilities in PAR 1180.

Existing Rule 1180 fenceline monitoring at the perimeter of Tesoro Carson, Tesoro Wilmington, and Philips 66 Carson could address the coverage for the shared fenceline with those contiguous facilities if a shared fenceline is agreed upon by the owners or operators of the existing fenceline air monitoring systems and approved by the South Coast AQMD. Tesoro Refining and Marketing Company may be able to demonstrate there is adequate coverage along certain sides of their related operations based on existing monitors. For ~~other~~ ~~some~~ contiguous facilities, preliminary analysis identified that open path coverage is potentially feasible. For example, there is potential to have an open path monitor that covers the west and south perimeter of Tesoro Logistics Carson Crude Terminal, and an open path coverage for the north and east perimeter of Tesoro SRP. Point monitors for hydrogen sulfide would also be needed for north and east perimeter Tesoro SRP due to the high emissions ~~by~~ ~~stated~~ ~~in~~ its annual emission reports. Facilities are responsible for proposing specific monitoring sites and fenceline coverage in their FAMP.

<sup>16</sup> California Energy Commission, "California Oil Refinery History," last modified May 22, 2023, <https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/californias-oil-refineries/california-oil>.



**Figure 2-14: Related Facilities at Tesoro Refining and Marketing Company LLC**

#### *Valero Asphalt Plant*

On May 12, 2023, staff conducted a site visit of the Valero Asphalt Plant (Facility ID 800393), which will be subject to PR 1180.1. The eastern perimeter of facility parallels Tesoro Wilmington refinery's fenceline with an open path monitoring coverage, separated by a roadway, as shown in Figure 2-15. The facility may be able to demonstrate there is adequate coverage on the east side of the property based on existing monitors. For the west and south side perimeter, preliminary analysis identified feasible options for open path and point monitors.





**Figure 2-15: Valero Asphalt Plant (Yellow Shading)**

*AltAir Paramount*

On August 24, 2023, staff conducted a site visit at AltAir Paramount (Facility ID 187165), which will be subject to PR 1180.1. For this facility, fenceline coverage via open path technologies is highly feasible, as there are few to no obstructions around the perimeter. On the southern end, a railway owned by AltAir Paramount and other facilities may need to be evaluated to find the most suitable location to install fenceline air monitoring equipment. Staff will work with the facility to identify the most feasible fenceline air monitoring systems through the FAMP submittal and approval process.



**Figure 2-16: AltAir Paramount Facility**

#### *Kinder Morgan Liquids Terminals*

Staff conducted a site visit at Kinder Morgan Liquids Terminals (Facility ID 800057) on October 11, 2023, which is subject to PAR 1180. Kinder Morgan Liquids Terminals is adjacent to the Tesoro Wilmington Refinery (Figure 2-17) and shares a fenceline on the southern and eastern sides of the facility. The west side of the facility has a street and railway, which are both a public right-of-way, which would make Kinder Morgan Liquids Terminals an adjacent facility to Phillips 66. While the western border shares a boundary with Phillips 66 Carson, the distance between fencelines may be too far to share fenceline monitors with Phillips 66 Carson and would require further evaluation. Both the western border and northern border are great candidates for open path technologies.



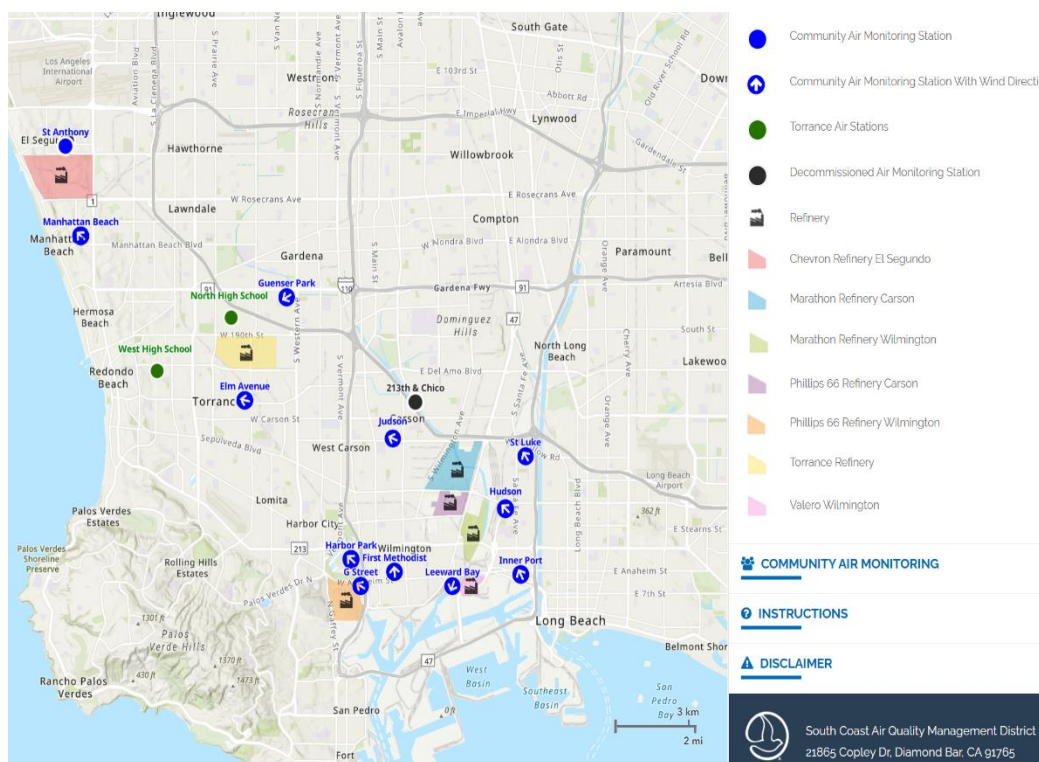
**Figure 2-17: Kinder Morgan Liquids Terminals Facility**

## COMMUNITY AIR MONITORING

### Existing refinery community air monitoring

Pursuant to Health and Safety Code Section 42705.6, Rule 1180 requires facilities to install and operate a real-time fenceline air monitoring system in accordance with their approved fenceline air monitoring plan, and pay fees to install, operate, and maintain the refinery-related community air monitoring system. Using these funds, the South Coast AQMD conducts air monitoring in communities adjacent to the refineries according to the Community Air Monitoring Plan (CAMP).<sup>17</sup> The locations of community air monitors are shown in the figure below Figure 2-18.

<sup>17</sup> South Coast AQMD, "Rule 1180 Community Air Plan," last modified April 2020, [http://www.aqmd.gov/docs/default-source/fenceline\\_monitoring/r1180\\_draft\\_community\\_monitoring\\_plan\\_rev\\_2\\_04022020\\_final\\_use\\_updated1.pdf?sfvrsn=8](http://www.aqmd.gov/docs/default-source/fenceline_monitoring/r1180_draft_community_monitoring_plan_rev_2_04022020_final_use_updated1.pdf?sfvrsn=8).



**Figure 2-18: Existing Rule 1180 Community Air Monitoring Stations**

Air monitoring equipment is placed in climate-controlled enclosures and meets short- and long-term monitoring needs. Long-term monitoring is essential to assess trends and potential air quality impacts from refinery emissions, and the equipment selected for this purpose must be able to detect typical urban variations of the target pollutants. Short-term monitoring is necessary to evaluate the immediate impact of fugitive emissions (e.g., leaks) and other releases in the surrounding communities and will require monitoring equipment with high time-resolution and reporting ability to report data in real-time or near real-time. Air monitoring sSite selection is another important part of community air monitorsconsideration. Locations were selected to be representative of typical air quality conditions in communities around the refineries, in order to characterize air quality and potential impacts that may result from refinery-related operations. Other community air monitoring site selection considerations include proximity to sensitive receptors and environmental justice communities, proximity to refinery and non-refinery sources, meteorology, long-term site availability, meteorology, infrastructure access and safety, and site suitability for air quality monitoring.

Ten fully equipped and two partially equipped (monitoring fewer air pollutants) community air monitoring stations have been established as shown in the figure above. Rule 1180 community air monitoring network is providing continuous measurements of all required pollutants in near real-time via a dedicated data portal (<https://xapprod.aqmd.gov/Rule1180CommunityAirMonitoring>). Public notifications are provided when pollutant concentrations exceed pre-determined health-based notification threshold. -Section A3 of Rule 1180 CAMP provides a detailed description of the threshold selection process and rationale. (Note: notifications are currently not issued for black carbon, VOCs, and ethylbenzene due to a lack of existing short-term health-based standards).

Rule 1180 requires facilities to pay for the community air monitoring fees including an installation fee, specified in Table 2 of Rule 1180, and annual operating and maintenance fees, specified in

Rule 301 - Permitting and Associated Fees (Rule 301). The Table below lists the specified number of community monitoring stations each facility needs to cover with its fees. The number was determined during the 2017 rulemaking based on the facility's throughput capacity. At this time, staff has evaluated additional community coverage and the applicable fees that would be required with the inclusion of new facilities, which is included in Table 3 of PR 1180.

**Table 2-13: Number of Community Air Monitoring Stations Each Existing Facility Funds**

Existing Facility	Number of stations
Tesoro Carson	3
Tesoro Wilmington	
Torrance Refining Company	2
Chevron – El Segundo	2
Phillips 66 Carson	2
Phillips 66 Wilmington	
Valero Wilmington	1

### **New proposed facilities community air monitoring**

As presented in Table 2-14, staff is proposing to have at least one community monitoring station for each new facility subject to PR 1108.1. The number of community monitoring stations could be increased in the future if a facility exceeds the notification threshold continuously.

The MAD assessed if additional community air monitoring stations are needed to fully capture potential emission contributions from the five new PAR 1180 related facilities. The MAD team has identified two general areas in the Wilmington/Carson community where additional monitoring is necessary to fully characterize air pollution contributions from the five new PAR 1180 related facilities. The exact locations for new additional community monitoring will not be identified until after rule adoption, as the MAD team needs time to assess potential locations suitable for establishing air monitoring stations. This is the same process the MAD team undertook when Rule 1180 was first adopted to select the locations of the community air monitoring stations, which are now in operation. The areas where the MAD team will seek to locate the first of two new proposed community air monitoring stations include the neighborhoods north of the Tesoro SRP and the Carson Air Products plant. These neighborhoods would be the most influenced by emissions from these new proposed facilities, especially during calm meteorological conditions, and the current stations are not positioned to adequately access the impact of these new facilities. This community station will monitor all air pollutants listed in Table 2 of Rule 1180 except air toxic metals, which will only be measured at community stations funded by the petroleum refineries. The location of the second proposed community station will be to the west of the Carson Crude terminal. This neighborhood directly borders the new proposed facility and therefore would be directly influenced by its emissions. Currently there are no existing air monitoring stations in the vicinity of this community. This station will monitor for VOC and hydrogen sulfide, as it is believed that these are the pollutants that are emitted from the terminals. For PAR 1180 related facilities, staff is proposing to require SRP and two Air Products facilities to evenly fund one new community station. The terminals will fund a community station that only measures VOCs and hydrogen sulfide.

**Table 2-14: Proposed Community Monitoring Stations for Each New Facility to Fund**

New Facility Subject to PAR 1180 or PR 1180.1	Number of stations
LTR dba World Oil Refining	1
AltAir Paramount	1
Valero Wilmington Asphalt Plant	1
Tesoro Sulfur Recovery Plant (SRP)	1
Air Products Carson	
Air Products Wilmington	
Tesoro Logistics Carson Crude Terminal	1 (VOCs/hydrogen sulfide only)
Kinder Morgan Liquids Terminals	

The original community monitoring fees established by Rule 1180 have already been paid by the petroleum refineries and thus have been removed from PAR 1180. PAR 1180 and PR 1180.1 provides the fees required for initial installation costs for newly required community monitors and initial annual operation and maintenance, including cost for labor, testing, part, etc. For existing Rule 1180 facilities, annual operating and maintenance fees for the refinery-related community air monitoring system designed, developed, installed, operated, and maintained by South Coast AQMD are included in Rule 301. Future amendments to Rule 301 will include the operating and maintenance fees for the PAR 1180 related facilities and the PR 1180 facilities.

### Community Monitoring QA/QC

The community air monitoring is subject to QA/QC requirements and independent audits will be conducted at those sites. The air monitoring systems QAPP for refinery community air monitoring network has been developed with the following major elements.

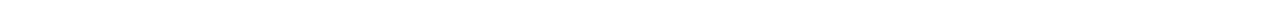
- Quality Assurance Procedures for data generated by community air monitoring systems
  - Data quality objectives
  - Routine maintenance, calibration, and verification for air monitoring equipment
  - Data review, validation and verification
- Project management and responsibilities
- Documentation and recordkeeping
- Data transmittal, including data security
- Training

Similar to fenceline monitoring systems, the first independent audit for community monitoring systems is planned to begin in 2024.

## CHAPTER 3: PROPOSED AMENDED RULE 1180

INTRODUCTION

PROPOSED AMENDED RULE 1180



## INTRODUCTION

PAR 1180 applies to petroleum refineries, as defined in the Standard Industrial Classification Manual as Industry No. 2911, and facilities with operations related to refinery processes located on properties contiguous or adjacent to a petroleum refinery (that is, related facilities). The amended rule requires petroleum refineries to install and operate continuous, fenceline air monitoring systems to monitor a comprehensive list of criteria pollutants, toxic air contaminants, and other pollutants in real-time. The amended rule does not apply to refineries that are subject to PR 1180.1. PAR 1180 also establishes a fee schedule, to be paid by the petroleum refineries and related facilities, for the cost of designing, developing, installing, operating and maintaining refinery-related community air monitoring systems. -The amended rule PAR 1180 implements Health and Safety Code § 42705.6.

## PROPOSED AMENDED RULE 1180

The purpose of PAR 1180 is to require real-time fenceline air monitoring systems and to establish a fee schedule to fund refinery-related community air monitoring systems that collect and provide air quality information to South Coast AQMD and the public about levels of various criteria air pollutants, volatile organic compounds, metals, and other compounds, at or near the property boundaries of petroleum refineries and in nearby communities. -PAR 1180 does not directly reduce emissions from the facilities but will provide information that will assist facilities to detect air emission leaks early; therefore, allowing the facilities to quickly mitigating leaks or upset conditions. PAR 1180 also incorporates enforcement requirements, such as ~~root-specific~~ cause analysis to quickly locate and mitigate the source of ~~the any~~ leaks. As previously discussed, PAR 1180 will establish fenceline air monitoring requirements for petroleum refineries and facilities with operations related to petroleum refineries located on contiguous or adjacent properties. The amended rule will require the submittal and approval of a fenceline air monitoring plan. -This plan must provide detailed information about the fenceline air monitoring systems such as siting, wind data collection, maintenance procedures, temporary measures for equipment failures, quality assurance and auditing, and data reporting methods. Additionally, the proposed amended rule will set forth requirements for the plan review process, notifications and recordkeeping. The proposed amended rule does not apply to refineries subject to PR 1180.1.

### PAR 1180 (a) – Purpose

The purpose of PAR 1180 is to require real-time fenceline air monitoring systems and to establish a fee schedule to fund refinery-related community air monitoring systems that provide air quality information to the South Coast AQMD and the public about levels of various criteria air pollutants, volatile organic compounds, metals, and other compounds, which result from petroleum refinery emissions at or near the property boundaries of petroleum refineries and in nearby communities.

### PAR 1180 (b) – Applicability

PAR 1180 applies to petroleum refineries, related facilities, and their successors. As detailed in Chapter 2, a related facility is any establishment that has operations related to the refinery processes located on properties adjacent to or contiguous with a petroleum refinery, which receive more than 50 percent of its product input either directly or indirectly from, or provide more than 50 percent of its product output either directly or indirectly to, any of the petroleum refineries subject to the rule in the 2022 calendar year. ~~Some r~~Related facilities include electricity generating facilities, hydrogen production plants, sulfuric acid plants, sulfur recovery plants, and terminals.



Terminals with total tank capacity less than 310,000 barrels are exempted from PAR 1180. Related facilities must provide documentation from the 2022 calendar year to demonstrate that PAR 1180 does not apply to their facility. A successor to a petroleum refinery and/or related facility is an entity that assumes ownership or operation of the refinery after its acquisition or transfer of ownership. For instance, if a facility subject to PAR 1180 is acquired by a new company, the facility will remain subject to the rule.

Petroleum refineries that were subject to Rule 1180 on December 1, 2017, will remain subject to PAR 1180, even if they have transitioned their operations entirely or partially to process alternative feedstock. Moreover, PAR 1180 does not apply to refineries subject to PR 1180.1.

Seven petroleum refineries and five related facilities have been identified to be subject to this rule.

### **PAR 1180 (c) – Definitions**

Below lists the definitions that have been added in PAR 1180:

- Corrective Action Plan
- Data Quality Flags
- Facility with Operations Related to Petroleum Refineries (Related Facility)
- Facility
- Fenceline Air Monitoring Plan (FAMP)
- Hydrogen Production Plant
- Independent Audit
- Notification Threshold
- Qualified Independent Party
- ~~Root-Specific~~ Cause Analysis
- Sulfur Recovery Plant
- Terminal

Related Facility is a key definition added to define and expand which facilities are subject to the rule. Some definitions were added for terms affiliated with Related Facility. The definition for Facility was added as a term to refer to either a Petroleum Refinery or a Facility with Operations Related to Petroleum Refineries. Corrective Action Plan, Independent Audit and ~~Root-Specific~~ Cause Analysis are defined due to new requirements in the rule. Other new definitions clarify the terms that have been used in the rule and/or the Guidelines.

The Guidelines were revised to be a reference for both PAR 1180 and PR 1180.1 facilities.

### **Requirements**

Subdivision (d) through (m) establish requirements for FAMP submittal, the fenceline air monitoring system, the plan review process, web-based fenceline data display and notification program, notifications for equipment failure, independent audits, recordkeeping and reporting, community air monitoring fees, and exemptions. PAR 1180 Table 1 identifies the air pollutants to be addressed by the FAMP.

### **PAR 1180 (d) – Plan Requirements**

The FAMP shall address all air pollutants in PAR 1180 Table 1. This includes the following pollutants newly added to PAR 1180:

- Particulate Matter
- Naphthalene
- Polycyclic aromatic hydrocarbons (PAHs)
- Cadmium
- Manganese
- Nickel

The FAMP must also adhere to the Guidelines and provide all of the information listed in subparagraphs (d)(1)(A) to (d)(1)(K). The FAMP must have three parts which are: 1) the plan for the installation of the Fenceline Air Monitoring System; 2) the plan to comply with the web-based fenceline data display and notification program; and 3) the quality assurance project plan that details the project objectives, procedures and tasks to be performed to ensure the Fenceline Air Monitoring System is producing reliable data.

In addition, the FAMP must state how the facility will collect and make available for download historical data from the most recent five calendar years, that includes all historical measurements from each monitor for all air pollutants measured as one-hour averages. The historical measurements must include time, date, and windspeed data, must be made available to the public in a timely and accessible manner that is easy to find on the website, and can be understood by the general public, according to subparagraph (d)(1)(G) and (d)(1)(H). And according to subparagraph (d)(1)(I), the facility owner or operator must make the collected historical data available to the Executive Officer in an approved format.

Some other revisions are for clarification and streamlining purposes. For example, some specifications regarding the FAMP from the existing guidelines are now explicitly provided in paragraph (d)(1). The rationale for health standard-based notification thresholds is explained in Chapter 2.

#### **PAR 1180 (e) – Plan Submittal Deadlines**

For new facilities, the owner or operator of the facility must submit a written FAMP outlining the operation of a real-time fenceline air monitoring system at least 12 calendar months prior to operation commencement.

For facilities with an existing FAMP, the owner or operator of the facility must submit a revised FAMP within seven calendar months of [Date of Rule Adoption]. Facilities with an existing FAMP may need to revise their FAMP to address related facilities, additional air pollutants, and/or any requirement in paragraph (d)(1) that was not addressed in the Facility's previous FAMP.

For related facilities without an existing FAMP, the owner or operator of the Facility must submit a FAMP no later than 12 calendar months after [Date of Rule Adoption].

Paragraph (e)(4) lists the scenarios in which the FAMP must be revised and submitted to the Executive Officer. The feasibility of real-time monitoring for air pollutants listed in Table 1 will be evaluated by the South Coast AQMD every five years and the results will be reported to the Stationary Source Committee. The five-year requirement does not preclude staff from evaluating new technologies as they are developed. For example, if at any time, real-time technology is deemed feasible for PAHs, the Executive Officer will provide written notification to the facilities, and the facilities must submit a revised FAMP. The feasibility of real-time PAH monitoring technologies will include an assessment of the robustness, precision and accuracy of the technology.

### PAR 1180 (f) – Fenceline Air Monitoring Compliance Schedule

Subdivision (f) provides deadlines for installation and operation of the fenceline air monitoring system. The facility must complete installation and begin operation of the system within 15 calendar months after a FAMP submitted pursuant to paragraph (e)(1), (e)(2), or (e)(3) is approved or partially approved. The facility must complete installation and begin operation of the system within six calendar months after a FAMP submitted pursuant to paragraph (e)(4) is approved or partially approved.

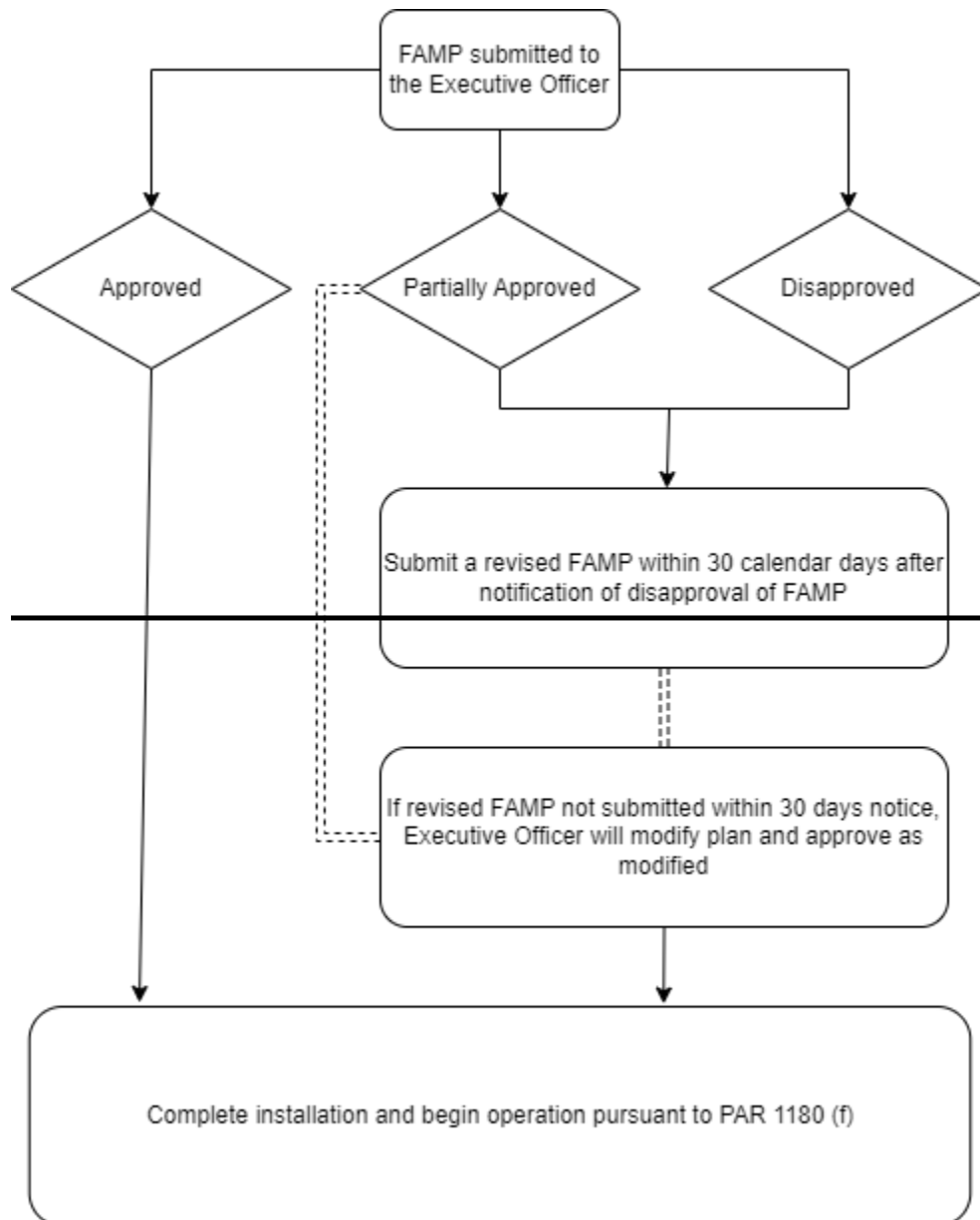
### PAR 1180 (g) – Plan Review Process

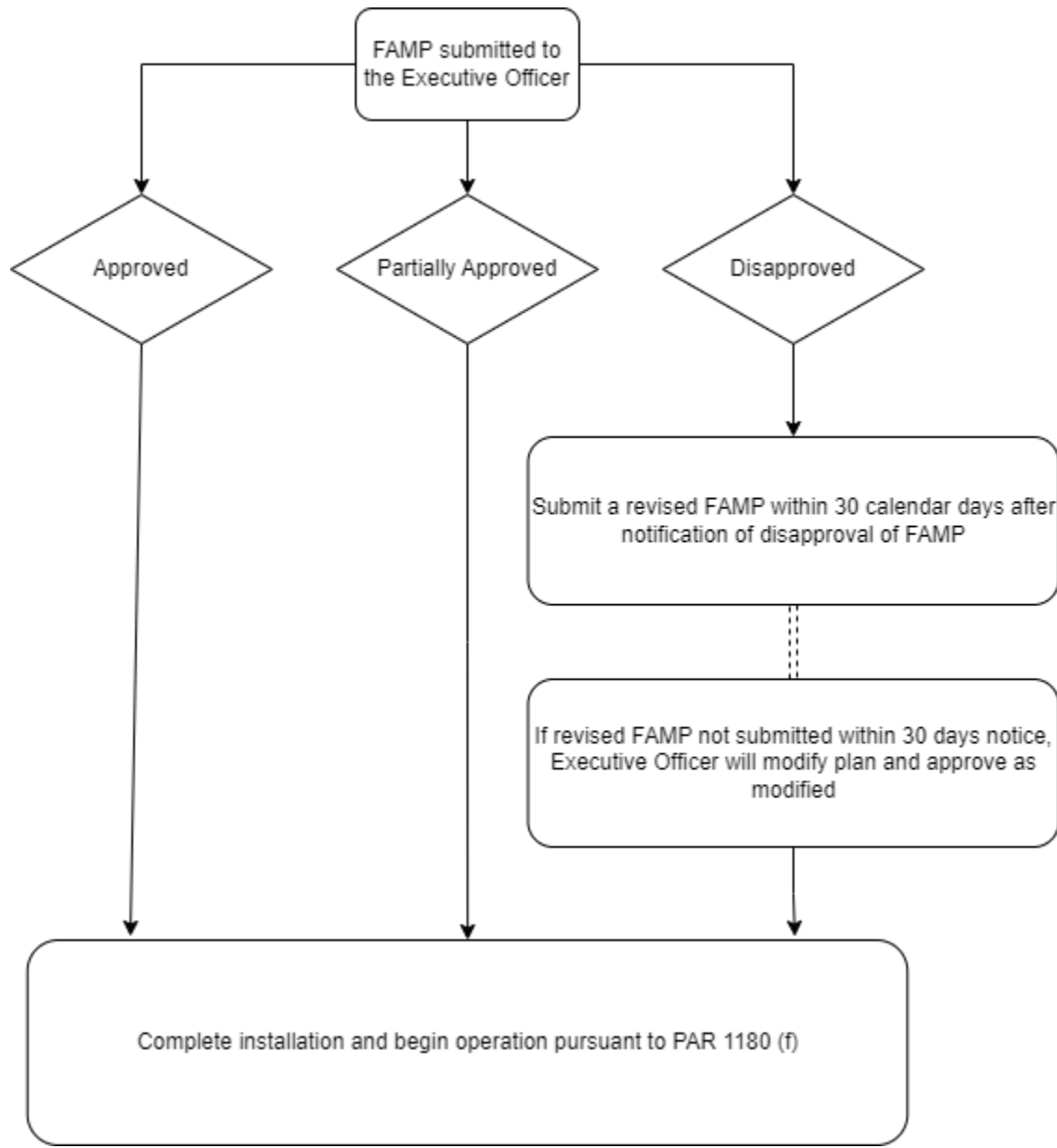
Subdivision (g) outlines the FAMP review process. The Executive Officer will notify facility owners or operators in writing regarding the approval status of their submitted FAMP or revised FAMP. The Executive Officer will make a determination based on the information submitted by the facility. Facilities are required to submit a FAMP that complies with paragraph (d)(1) and the Guidelines. A FAMP is comprised of three main sections: ~~which are plan for the installation of the air monitoring system layout specified in subparagraphs (d)(1)(A) through (d)(1)(D), data dissemination plan, and quality assurance project plan. A FAMP is partially approved if the plan section for air monitoring layout is approved. Each section can be approved separately, that is, a FAMP can be partially approved.~~ Currently, all submitted FAMPs have been partially approved. Staff will determine if full approval could be granted to the existing FAMPs after an independent audit of the applicable fenceline air monitoring systems.

If a FAMP or revised FAMP is disapproved, the facility owner or operator must submit a revised FAMP within 30 calendar days of receiving the disapproval notification. The updated plan must include all necessary information to address the deficiencies identified in the disapproval letter.

The Executive Officer will either approve the revised FAMP or modify it and approve it. In the case of dissatisfaction in the modified FAMP, the facility owner or operator has the option to appeal to the Hearing Board.

Staff proposes a new requirement under paragraph (g)(3). If the facility does not submit the revised FAMP within 30 calendar days after notification of disapproval of the plan, the Executive Officer will modify the plan and approve it as modified. By allowing the Executive Officer to modify the plan, this proposal would ensure no further delays. A summary of the plan review process is shown in ~~Figure 3-1~~ Figure 3-4 below.





**Figure 3-1: Plan Review Process Flowchart**

Any FAMP or revised FAMP submitted under subdivision (e) will be made available for public review by the Executive Officer 14 calendar days prior to approval.

The review, approval, and modifications of FAMPs and revised FAMPs are subject to plan fees as specified in Rule 306 – Plan Fees.

**PAR 1180 (h) – Web-based Fenceline Data Display and Notification Program**

Subdivision (h) is a new subdivision for existing requirements specified in the existing guidelines. It lists the features that the web-based fenceline data display and notification program must have publicly available. The owner or operator of a facility is required to maintain a web-based fenceline data display and notification program. The owner or operator of a facility with an existing FAMP must meet requirements in subparagraphs (h)(1)(B), (h)(1)(C), and (h)(1)(D) within 30 calendar

days from the date of rule adoption and requirements in paragraph (h)(3) within 90 calendars from the date of rule adoption. The owner or operator of a facility without an existing FAMP, e.g., a new related facility that does not have the same board of directors or parent corporation as a facility with an existing FAMP must meet requirements in subparagraphs (h)(1)(B), (h)(1)(C), (h)(1)(D), and in paragraph (h)(3) upon commencing operation of a new Fenceline Air Monitoring System. A petroleum refinery that will include new related facilities in an existing FAMP must meet the requirements in subparagraphs (h)(1)(B), (h)(1)(C), (h)(1)(D), and paragraph (h)(3) pursuant to the compliance schedule in the rule; however, real-time and historical data for the new related facilities will not be available until the fenceline air monitoring systems have been installed and are in operation. ~~Table 3-1~~ Table 3-1 lists the data display requirements for the web-based fenceline data display programs.

**Table 3-1: Web-based Fenceline Data Display Requirements**

Data Display Requirement	<del>Requirement to Comply</del> Rule Reference
Description of all instances when an air pollutant was measured above a notification threshold, measurement techniques, notification thresholds, and type of notification threshold (health-based or information-based)	Pursuant to subparagraph (h)(1)(A)
Real-Time and historic concentrations, which includes at least five calendar years of data of all air pollutants measured on the fenceline air monitoring system including data quality flags	As required pursuant to paragraph (k)(1);
Real-time and historic wind speed and wind direction data	Pursuant to subparagraph (h)(1)(C)
Definition of data quality flags	Pursuant to paragraph (c)(3). Examples of Data Quality Flags include: Valid, Invalid, Suspect/Questionable
The most recently approved, or partially approved, FAMP and QAPP	As described in paragraph (c)(6) and subparagraph (c)(6)(C). A link to the document shall be accessible via the web-based system
Report(s) generated from Independent Audit conducted	Pursuant to subdivision (j)
<del>Root-Specific</del> cause analysis	As required pursuant to paragraph (k)(2), (k)(3), and (k)(4)
Quarterly report	As required pursuant to paragraph (k)(5)

Data Display Requirement	<del>Requirement to Comply</del> <u>Rule Reference</u>
Corrective Action Plans	Pursuant to paragraph (j)(4)
Description of the air pollutants monitored by the fenceline air monitoring systems, their general health impacts, and a link to the Office of Health Hazard Assessment (OEHHA) online Air Chemical Database website	<u>Pursuant to subparagraph (h)(1)(J)</u>

The web-based fenceline notification system operated by the owner or operator of a facility shall automatically generate and send a notification as soon as technically feasible, but no later than 15 minutes after, any air pollutant in Table 1 is detected at a level that exceeds the applicable notification threshold in the approved or partially approved FAMP. At a minimum, the web-based fenceline data display and notification program shall include:

- A unique identification number for each notification generated
  - The nomenclature/naming system is ~~to~~ at the owner or operator of the facility's discretion
  - The identification number must be unique to each notification event related to the notification-exceedance
  - A notification event in this context means the event that is initially triggered when a pollutant exceeds a notification threshold, potentially has additional notifications if the concentration increases past any of the follow-up notification levels and ends once it is measured below the notification threshold for 30 consecutive minutes.
- Facility name
- Location, site, date, and time of the exceedance
- Air pollutant name, concentration measured, and the notification threshold, and
- A link to the OEHHA Air Chemical database website to the specific air pollutant detected above the threshold
  - Take benzene as an example, the link provided would be the following: <https://oehha.ca.gov/air/chemicals/benzene>

Notifications are also required as soon as technically feasible, but no later than 15 minutes from, each time the measured concentration of the air pollutant exceeds the follow-up notification threshold determined as below:

$$\begin{aligned} & \textit{Follow - up Notification Threshold} \\ & = \textit{Applicable Notification Threshold} \times 2^X \end{aligned}$$

Where X = 1, 2, 3, 4, and 8

These notifications have the same requirements as the initial exceedance notification, and would have the same identification number as the initial exceedance.

When the air pollutant is ~~detected~~ has been continuously detected at a level below the applicable notification threshold for 30 minutes or for two consecutive measurements, a follow up notification is required and shall include, at a minimum, what is listed in paragraph (h)(4).

The web-based fenceline data display and notification program must also include a mechanism for the public to opt-in to receive notifications or opt-out of fenceline notifications via email and/or text message. There must also be a mechanism for the public to provide comments or feedback to the facility, and for the facility to respond.

For text message notifications, the Guidelines include requirements for the web-based fenceline data display and notification program to include disclaimers to alert potential users of issues receiving text-based notifications:

1. The user holds sole responsibility for any fees that are incurred by the phone service provider by receiving text message notifications and
2. Text message notifications may be delayed due to available phone services or issues related to compatibility with different phone service providers.

### **PAR 1180 (i) – Fenceline Air Monitoring System Downtime or Malfunction**

Subdivision (i) requires facilities to notify the Executive Officer about downtimes and malfunctions of the fenceline air monitoring system. This also includes downtimes and malfunctions of the web-based system.

The owner or operator must call 1-800-CUT-SMOG® to notify the Executive Officer:

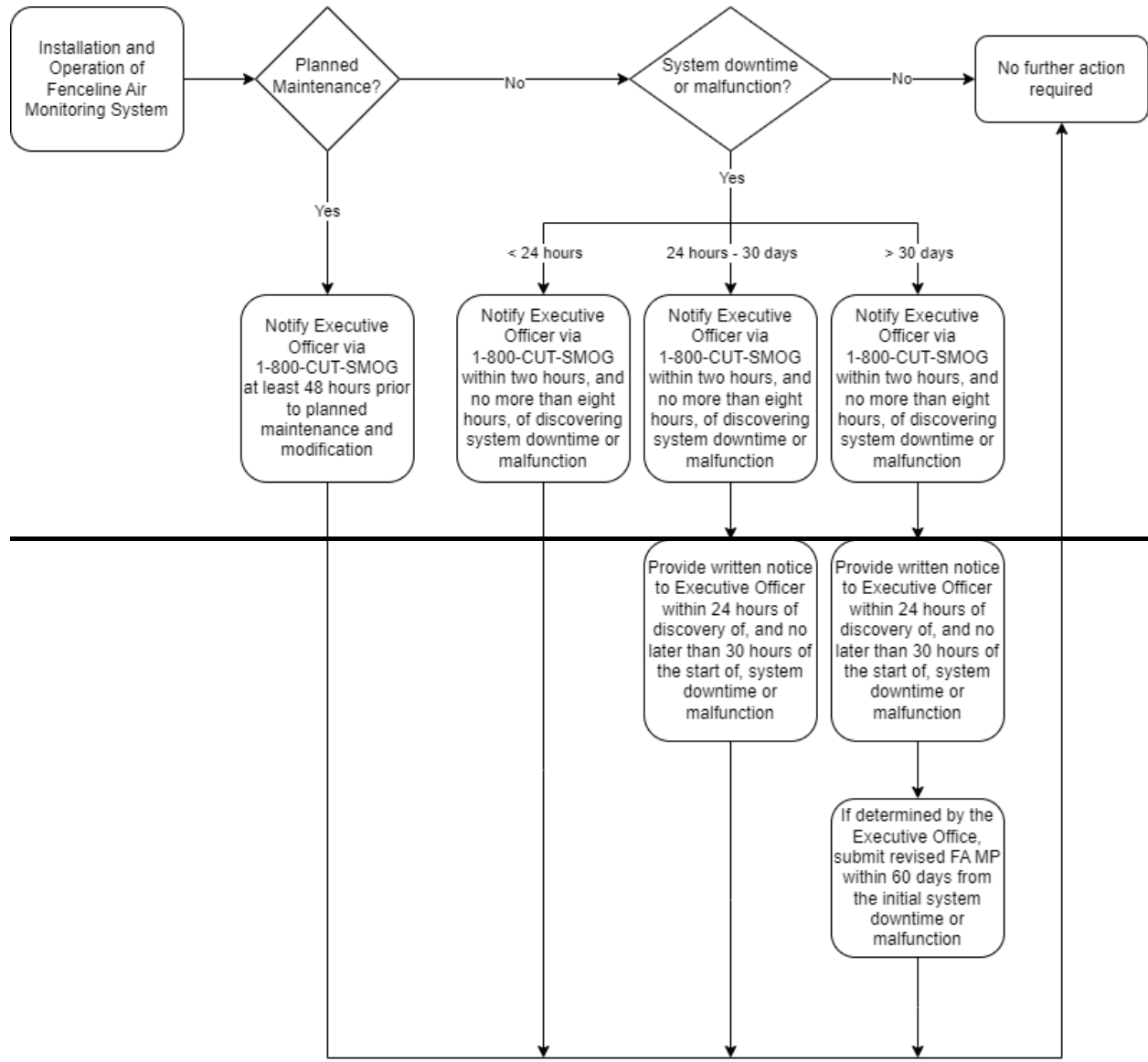
1. ~~At least 48 hours prior to a planned maintenance or modification. The notification must include the facility name, name of the monitor, and planned date(s) of occurrence(s), must be provided.~~
2. Within two hours of discovering, and no more than eight hours, of the start of downtime or malfunction, ~~of discovering~~ that fenceline air monitoring system described in the FAMP fails to provide Real-Time monitoring information for more than one hour. The notification must include the facility name, the part(s) of the impacted fenceline air monitoring system, the impacted data, the date(s) and time(s) of the occurrence(s), and the reason for the lapse in collecting and/or reporting the real-time air monitoring information.

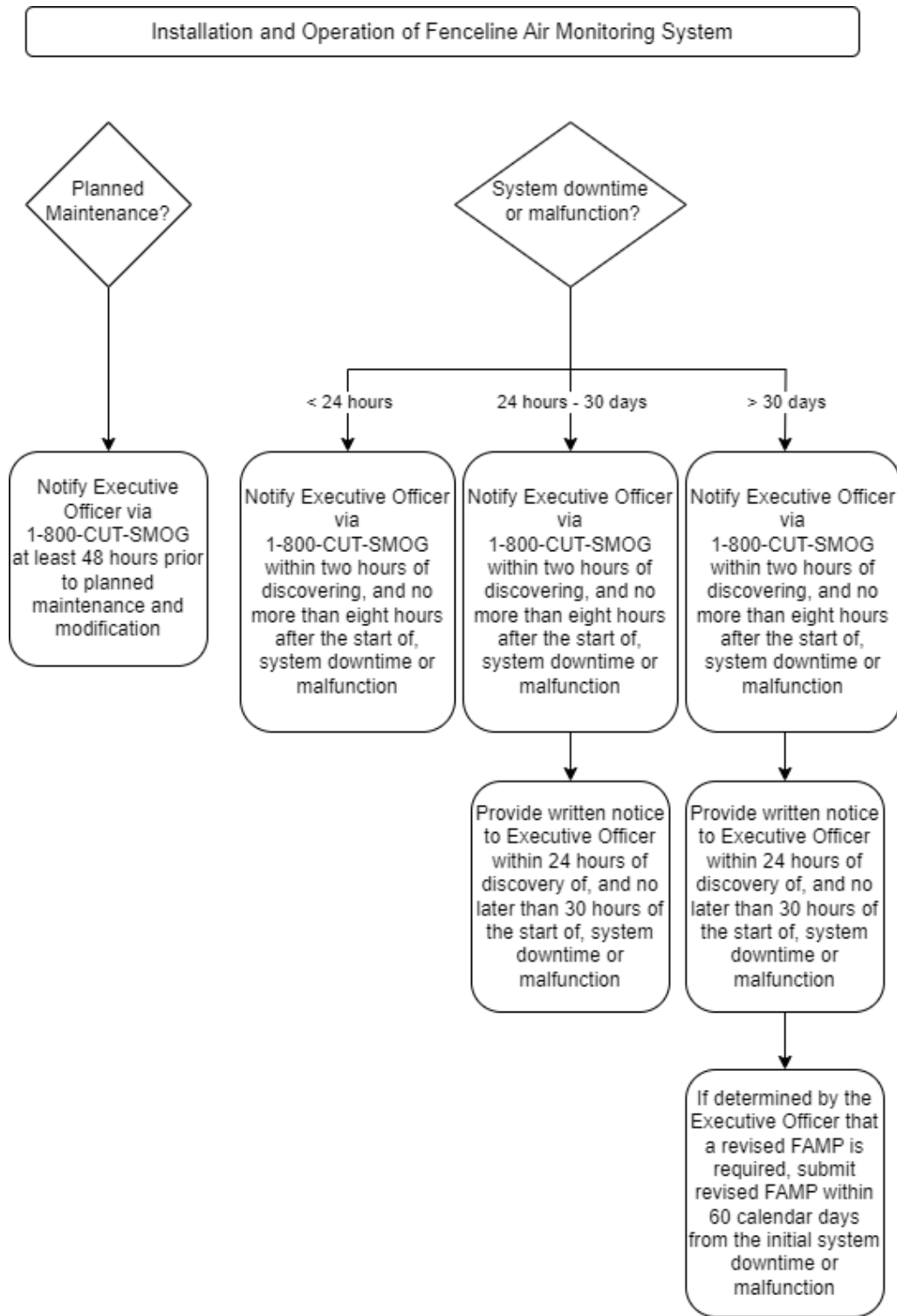
Written notification to the Executive Officer is required if the fenceline air monitoring system downtime or malfunction lasts 24 hours or longer. The written notification must be submitted to the Executive Officer within 24 hours of discovery and no more than 30 hours from the start of the fenceline air monitoring system downtime or malfunction. Subparagraphs (i)(2)(A), (i)(2)(B), and (i)(2)(C) of PAR 1180 lists the information needed in the written notification. A revised FAMP must be submitted to the Executive Officer if the fenceline air monitoring system described in the FAMP fails to provide continuous, real-time monitoring information for more than 30 consecutive calendar days. An updated FAMP must be submitted no later than 60 calendar days from the initial fenceline air monitoring system downtime or malfunction. ~~(See PAR 1180(e)(4)(D).)~~

The definition of a “Fenceline Air Monitoring System” in the rule includes the equipment that measures and records air pollutant concentrations and the data systems that process and store historical data; and public web-based fenceline data display and notification systems where data



are displayed and through which public fenceline notifications are issued. Therefore, a data system or fenceline notification system failure, downtime, or malfunction will be subject to the same notification requirement for equipment failure. A summary of the notifications required for fenceline air monitoring system failure is detailed in the figure below (Figure 3-2~~Figure 3-2~~).





**Figure 3-2: Overview of Process for Notifications for Fenceline Air Monitoring System Downtime or Malfunction**

### PAR 1180 (j) – Independent Audits

Subdivision (j) is separated into the following categories and their corresponding paragraphs:

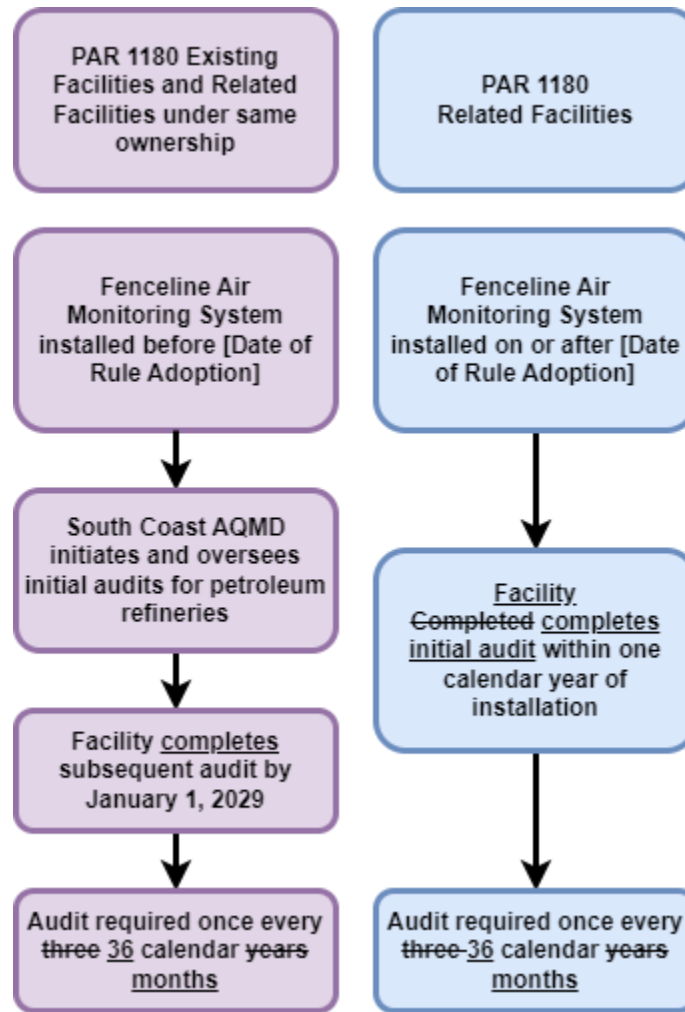
1. Independent audit requirements (j)(1) and (j)(2),
2. Independent audit schedule (j)(3),
3. Corrective action plan development and submittal (j)(4),
4. Corrective action plan approval process (j)(5),
5. Follow-up independent audit (j)(6),
6. Revised FAMP (j)(7), and
7. Plan review fees (j)(8)

South Coast AQMD will oversee an initial audit for the fenceline monitoring system at petroleum refineries. This initial audit is not covered by rule language. Based on the results of a Request for Proposals (RFP), South Coast AQMD selected a qualified contractor to develop an auditing protocol and implement the first independent audit of all existing Rule 1180 fenceline air monitoring systems.

PAR 1180 requires ~~Current~~ facility owners or operators ~~must to~~ cause an independent audit of their fenceline air monitoring systems to be conducted and completed according to an audit protocol approved by the Executive Officer. The independent audit shall be conducted by a qualified independent party, who will identify any deficiencies in the fenceline air monitoring system and quality assurance procedures and document the findings in an audit report. A qualified independent party for an independent audit must be a party that has relevant technical expertise in fenceline air monitoring systems but was not employee of the facility nor involved in the installation or operation of the fenceline monitoring system at the refinery. ~~(Note, an installer or operator of a fenceline air monitoring system could be considered a qualified independent party for purposes of conducting a root-specific cause analysis pursuant to subdivision-subparagraph (j)(4) (analysis after three exceedance events), so long as they meet the definition of qualified independent party set forth in PAR 1180(c)(12).)~~

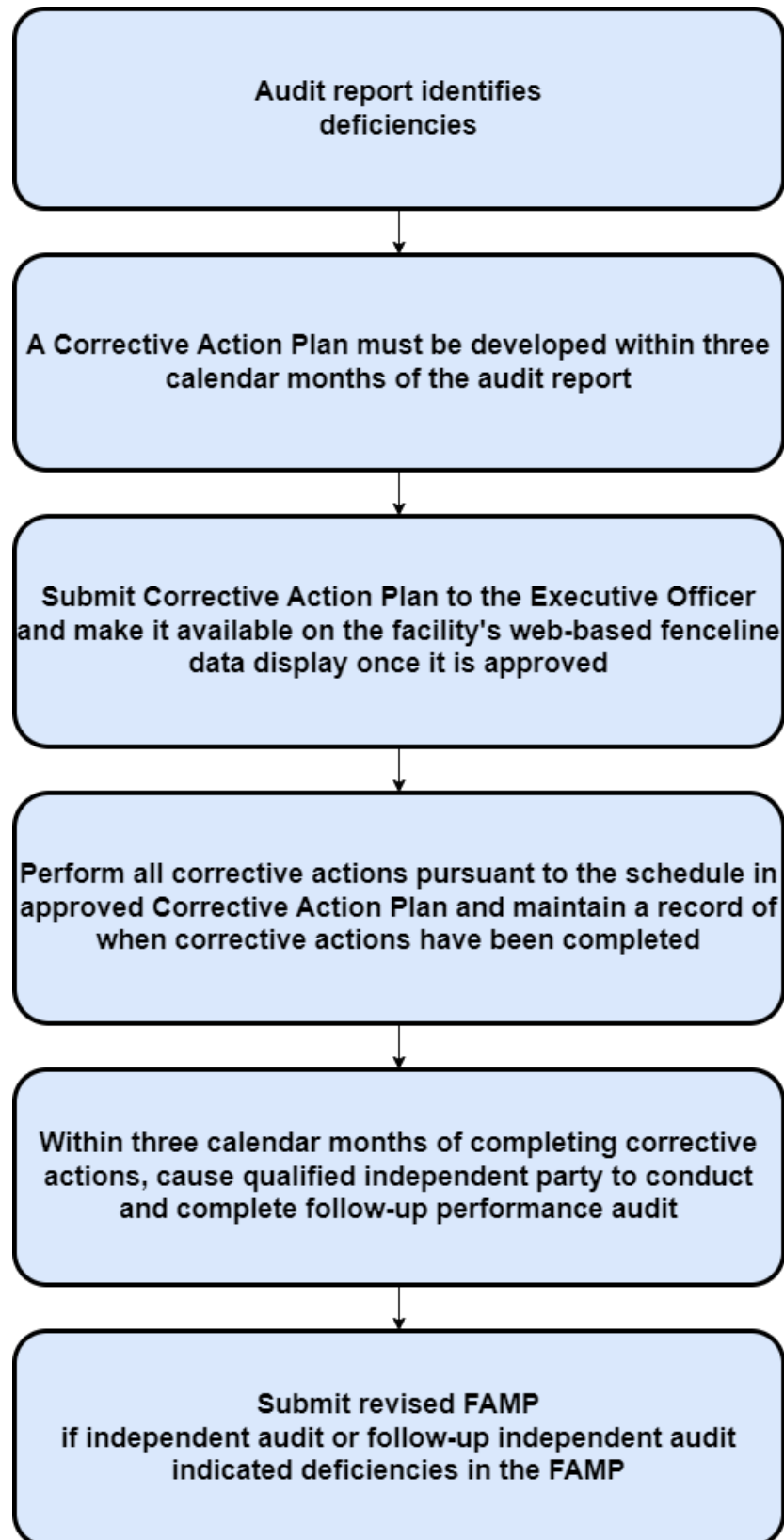
The audit report must be submitted to the Executive Officer and made available to the web-based fenceline data display and notification system within 90 calendar days after the audit has been completed.

~~There are separate schedules depending~~ Audit schedules depend on the date of the fenceline air monitoring system installation, data and operations related to a facility ~~See summarized Figure 3-3~~ See summarized Figure 3-3 summary below. Additional time will be allowed for related facilities that did not have fenceline air monitoring systems installed prior to this rule amendment. In addition, note, there are considerations for related facilities with the same parent company as a petroleum refinery that already operates a fenceline air monitoring system shall be included in the petroleum refinery's revised FAMP. For those facilities, the petroleum refinery will follow the same schedule as all facilities with fenceline air monitoring systems installed prior to rule adoption. Once the fenceline air monitoring systems have been installed at their related facilities, the audit schedule will align with the audit schedule for the petroleum refinery. Staff did not want to have the petroleum refinery and their related terminals or SRP on different audit schedules, so the fenceline air monitoring systems must be reviewed as one large system.



**Figure 3-3: PAR 1180 Independent Audit Schedule**

If the independent audit report identifies deficiencies, the facility owner or operator must develop a corrective action plan. The plan must address all deficiencies, unless corrective action would negatively affect safety. In that case, the facility may ask for an exemption from corrective action. Figure below summarizes the requirements for the corrective action plan.



**Figure 3-4: Summary of Corrective Action Plan Development, Approval, and Post-Approval Actions**

The Executive Officer will notify the owner or the operator of a facility in writing whether a corrective action plan is approved or disapproved. If disapproved, the facility is required to submit a revised corrective action plan within 14 calendar days after notification of disapproval of the corrective action plan. Deficiencies outlined in the disapproval letter must be addressed and included in the revised corrective action plan. If the owner or operator, however, does not respond to the disapproval letter within 30 calendar days, the Executive Officer will modify and approve it as modified.

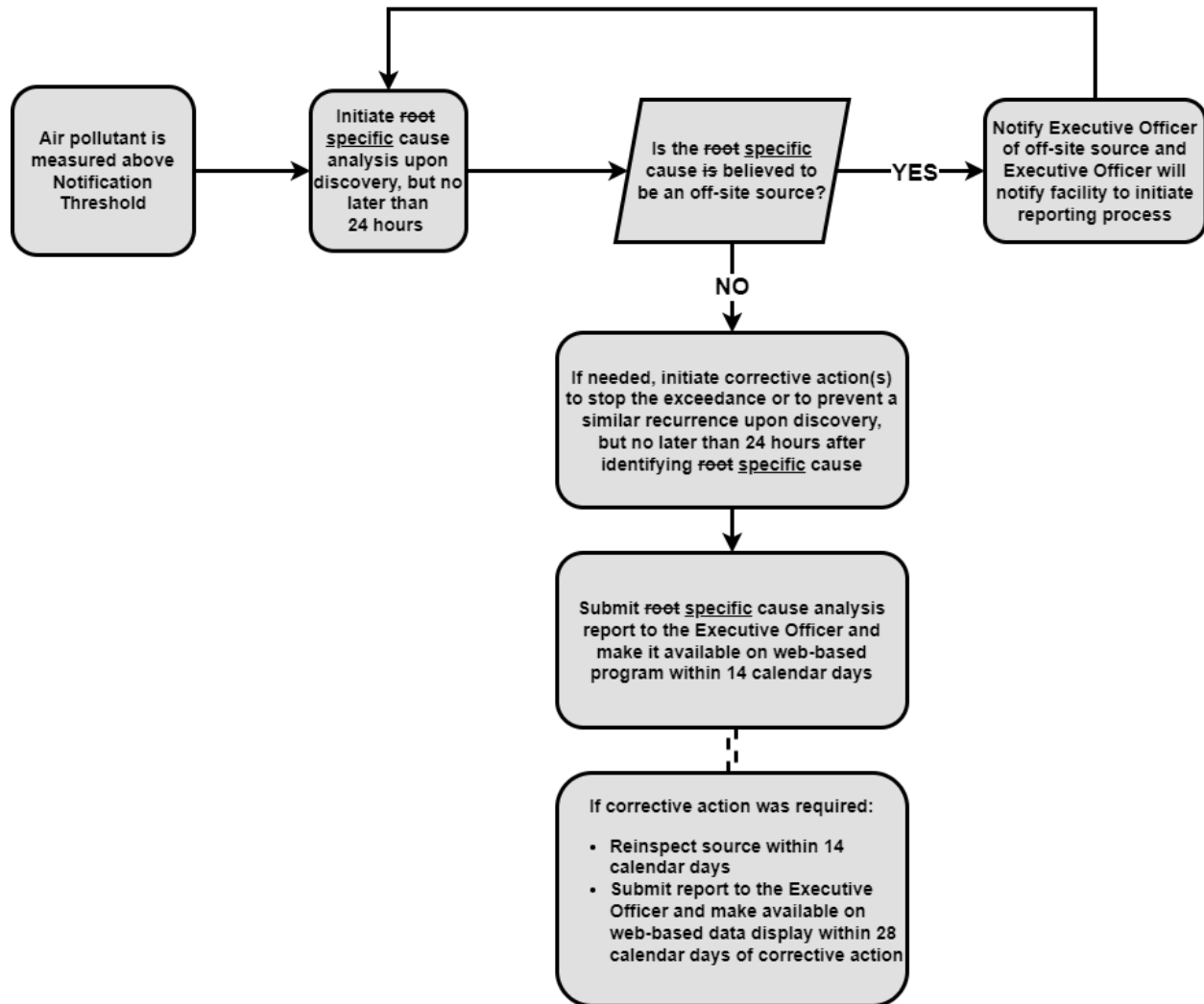
Within three calendar months of completing all corrective actions, the owner or operator of a facility must cause a follow-up independent audit and audit report. This audit report must be signed by the qualified independent party that the statements in the audit report and all attachments and materials are true, accurate, and complete. In addition, the audit report must be submitted to the Executive Officer and made available on the web-based fenceline data display and notification system within 90 calendar days after the follow-up audit has been performed. If the follow-up independent audit identifies more deficiencies, a corrective action plan must be developed and approved according to the corrective action plan development process in paragraph (j)(4) and approval process in paragraph (j)(5).

If the independent audit identifies deficiencies in the FAMP, the owner or operator of the facility must submit a revised FAMP to the Executive Officer within 60 calendar days according to subparagraph (e)(4)(E).

#### **PAR 1180 (k) – Recordkeeping, Reporting, and ~~Root-Specific~~ Cause Analysis**

Subdivision (k) requires the facility to keep five calendar years of records for all information required in this rule and requires the information to be made available to the Executive Officer upon request. Records for at least the two most recent years must be kept onsite.

~~Figure 3-5~~ Figure 3-5 below summarizes the requirements for the ~~root-specific~~ cause analysis when an air pollutant listed in Table 1 is measured above the notification threshold on a facility fenceline air monitoring system.



**Figure 3-5: Root-Specific Cause Analysis Process Flow**

The root-specific cause analysis must be initiated upon discovery, but no later than 24 hours of the measured exceedance, where ~~the~~ The source(s) of the air pollutant must be determined using techniques such as: visual inspection, optical gas imaging, leak inspection using EPA Method 21, and/or any other test or monitoring method approved by the Executive Officer. Corrective actions must also be initiated, if possible, upon discovery, but no later than 24 hours of the measured exceedance.

If the source of the exceedance is determined to be an off-site source, the facility must notify the Executive Officer and provide the basis of the determination by calling 1-800-CUT SMOG® no later than 24 hours of determination of ~~cause the source and provide the basis of the determination.~~ The Executive Officer will notify the responsible facility. If the responsible facility is a PAR 1180 facility, it must initiate the root-specific cause analysis process outlined in subparagraph (k)(3)(A), (k)(3)(B), and (k)(3)(C). The owner or operator of the Facility shall: 1) initiate a root-specific cause analysis within 24 hours of being notified their facility is the cause of the air pollutant emissions, 2) initiate corrective actions, if applicable, no later than 24 hours of identifying the root-specific



cause, and 3) submit a ~~root-specific~~ cause analysis report to the South Coast AQMD and make it available on the web-based program within 14 calendar days of identifying the ~~root-specific~~ cause.

The ~~root-specific~~ cause analysis report prepared by the responsible party must be submitted to the Executive Officer and made available on the web-based program within 14 calendar days of identifying the ~~root-specific~~ cause. Subparagraph (k)(2)(D) lists what the ~~root-specific~~ cause analysis report must include at a minimum.

If the ~~root-specific~~ cause analysis required corrective action, the owner or operator of a facility must conduct a reinspection of the source within 14 calendar days of the corrective action. Subsequently, the owner or operator of the facility must submit the reinspection report to the Executive Officer and make the report available on the refinery fenceline monitoring webpage within 28 calendar days of the corrective actions.

One event is defined as an instance where an air pollutant in Table 1 is measured above the applicable notification threshold on a facility fenceline air monitoring system within a seven-calendar-day period. -If three separate events that require ~~root-specific~~ cause analyses within the same calendar year indicate the same cause, or the cause cannot be determined, for the same air pollutant by the same monitor of the fenceline air monitoring system, the owner or operator of the facility shall cause a qualified independent party within 14 calendar days to conduct a ~~root-specific~~ cause analysis of the most recent occurrence. A ~~root-specific~~ cause analysis may involve installation of additional, temporary monitors to identify the source of the air pollutants. The qualified independent party must have relevant technical expertise in refinery operations or fenceline air monitoring systems. The ~~root-specific~~ cause analysis shall determine the corrective actions that could prevent recurring exceedances of the air pollutant threshold. Similarly, the ~~root-specific~~ cause analysis report must be certified by a qualified independent party and submitted to the Executive Officer within 14 calendar days of the ~~root-specific~~ cause analysis that was conducted. If there are corrective actions, they must be initiated as soon as practicable, but no later than 24 hours of identifying the specific cause. Additionally, a reinspection of the source must be completed within 14 calendar days of the corrective action and a report of the corrective actions and ~~root-specific~~ cause analysis must be submitted to the Executive Officer and posted on the refinery fenceline monitoring webpage within 28 calendar days of the corrective action.

Quarterly reports are an existing requirement specified by the existing guidelines. Current Rule 1180 facilities are posting the quarterly reports on their data display websites. For streamlining, staff moved the specifications to the rule and require a report due date 60 calendar days after the conclusion of each quarter.

### **PAR 1180 (l) – Community Air Monitoring Fees**

Subdivision (l) lists the fees associated with the installation of a refinery-related community air monitoring system in addition to permit and other fees authorized to be collected. Petroleum refineries have paid the phase one and phase two fees pursuant to existing requirements. -These existing requirements have been deleted from PAR 1180 as they have been met. PAR 1180 provides the new required fees that addresses the cost of installing new community air monitors. Petroleum refineries must pay the fee no later than January 31, 2025. Related facilities must pay the fees by two phases, no later than January 31, 2025, for phase one implementation, and January 31, 20162026, for phase two implementation. Petroleum refineries are responsible for paying fees for themselves and their related facilities as stated in the requirements in subdivision (l). For instance, Tesoro Refining and Marketing Company, LLC is responsible to pay fees for the

petroleum refineries, Tesoro Carson (Facility ID 174655) and Tesoro Wilmington (Facility ID 800436), and their related facilities, Tesoro SRP (Facility ID 151798) and Tesoro Carson Crude Terminal (Facility ID 174694). Annual operating and maintenance fees for the community air monitoring system are to be paid pursuant to Rule 301. For existing Rule 1180 facilities, annual operating and maintenance fees are already included in Rule 301. Once the additional community monitoring systems are installed to support the related facilities, Rule 301 will be amended to include annual operating and maintenance fees for the PAR 1180 related facilities. Note, these fees are paid in addition to permit and other fees otherwise authorized to be collected from such facilities. Table below specifies the fees to be paid by each facility.

The detailed fee estimated costs for existing petroleum refineries air monitoring station upgrades (PAR 1180 Table 2), full air monitoring station for PAR 1180 related facilities, and VOC/hydrogen sulfide (H<sub>2</sub>S) community air monitoring station are detailed in the table below:

**Table 3-2: PAR 1180 Refinery-Related Community Air Monitoring System Itemized Costs/Fees**

	PAR 1180 Petroleum Refineries	PAR 1180 Related Facilities Full Station	PAR 1180 Related Facilities VOC/H <sub>2</sub> S
<b>PM Analyzers</b>	\$60,000	\$60,000	N/A
<b>Optical Multi Pollutant Analyzers</b>	N/A	\$250,000	\$250,000
<b>Metal Monitor</b>	\$220,000	N/A	N/A
<b>H<sub>2</sub>S Analyzer</b>	N/A	20,000	20,000
<b>BC Analyzer</b>	N/A	N/A	N/A
<b>Auto Gas Chromatography</b>	N/A	\$80,000	\$80,000
<b>Met Station</b>	N/A	\$20,000	\$20,000
<b>Data System</b>	\$10,000*	\$30,000	\$30,000
<b>Zero Air Generator</b>	N/A	\$10,000	\$10,000
<b>Dilution System</b>	N/A	\$15,000	\$15,000
<b>Installation Labor cost</b>	\$19,728	\$32,993	\$28,912
<b>South Coast AQMD Staff Labor cost</b>	\$66,868	\$111,830	\$97,996
<b>Site Preparation</b>	N/A	\$140,000	\$140,000
<b>Total</b>	\$376,596	\$769,824	\$691,907 <del>8</del>

\*Data system upgrade

**Table 3-3: PAR 1180 Refinery-Related Community Air Monitoring System Fees**

<b>Facility ID</b>	<b>Facility Name</b>	<b>Location</b>	<b>Number of Community Air Monitoring Stations</b>	<b>Fees Due no later than January 31, 2025</b>
<b>174655</b>	Tesoro Carson	Carson	2	\$753,192
<b>800436</b>	Tesoro Wilmington	Wilmington	1	\$376,596
<b>800030</b>	Chevron (El Segundo)	El Segundo	2	\$753,192
<b>171109</b>	Phillips 66 Company (Carson)	Carson	1	\$376,596
<b>171107</b>	Phillips 66 Company (Wilmington)	Wilmington	1	\$376,596
<b>181667</b>	Torrance Refining Company (Torrance)	Torrance	2	\$753,192
<b>800026</b>	Valero (Ultramar Inc.)	Wilmington	1	\$376,596

**Table 3-4: PAR 1180 Related Community Air Monitoring System Fees for Related Facilities**

Facility ID	Facility Name (Permit Name)	Location	Number of Community Air Monitoring Stations	Effective Date and Fee Requirement	
				No later than January 31, 2025	No later than January 31, 2026
3417	Air Products Carson (Air Prod & Chem Inc.)	Carson	1/3 full station	\$76,982	\$179,626
101656	Air Products Wilmington (Air Products and Chemicals Inc.)	Wilmington	1/3 full station	\$76,982	\$179,626
151798	Tesoro SRP (Tesoro Refining and Marketing Company, LLC)	Carson	1/3 full station	\$76,982	\$179,626
800057	Kinder Morgan (Kinder Morgan Liquids Terminals, LLC)	Carson	1/2 VOC+H <sub>2</sub> S station	\$104,882,103,786	\$244,724,242,168
174694	Tesoro Carson Terminal (Tesoro Logistics, Carson Crude Terminal)	Carson	1/2 VOC+H <sub>2</sub> S station	\$104,882,103,786	\$244,724,242,168

### PAR 1180 (m) – Compliance

Subdivision (m) clarifies that the petroleum refinery is ultimately the responsible party when it comes to complying with the requirements of the rule for the related facilities with the same board of directors or parent corporation as the petroleum refinery. That means the petroleum refinery will not only include their related facilities in the revised FAMP, but also will comply with the data display, notification, reporting, notification, independent audit, and all other requirements that are applicable to their related facilities. In addition, once a FAMP is approved or partially approved by the Executive Officer, the owner or operator of a facility must comply with all portions of the FAMP.

### PAR 1180 (n) – Exemptions

The exemption subdivision ~~includes~~ provides exemptions to some or all provisions in the rule. The following parties are exempt from PAR 1180:

1. An owner or operator of a refinery subject to Rule 1180.1 (as staff developed Rule 1180.1 to include requirements for the smaller refineries);
2. An owner or operator of a terminal with a total tank storage capacity less than 310,000 barrels (~~because these terminals which has~~ have low reported annual emissions as discussed in Chapter 2 ~~for the~~ under applicability); and
3. An owner or operator of a related facility located entirely within the boundary of a petroleum refinery, ~~(given the entire fenceline of their facilities are within the petroleum refinery’s existing real-time fenceline air monitoring system).~~

There is also a limited exemption included to allow for downtime of an existing fenceline air monitoring systems if the downtime is needed to install new monitoring technologies required in this amendment.

1. An owner or operator of a facility is exempt from operating the fenceline air monitoring systems if the operation of existing fenceline air monitoring equipment is disrupted by the required installation of new fenceline air monitoring equipment to measure any air pollutant in Table 1 that was not addressed in the facility’s previous FAMP and complies with the notification requirement pursuant to subdivision (h) for 96 hours in a calendar year.

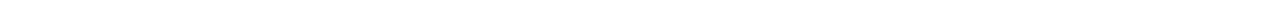
Also included in the subdivision are several air pollutants that facilities do not need to monitor for as they are not emitted from their facilities. Based on the discussion in Chapter 2, the following parties are exempt from monitoring one or more compounds from Table 1 as listed below:

1. An owner or operator of a facility is exempt from monitoring hydrogen fluoride if hydrogen fluoride is not used or stored at the facility. This is not a new exemption, previously it was a footnote to Table 1;
2. An owner or operator of a related facility is exempt from monitoring black carbon and metal compounds (cadmium, manganese, and nickel); and
3. An owner or operator of a terminal is exempt from monitoring all the compounds in Table 1, besides volatile organic compounds (VOCs) and hydrogen sulfide.

## CHAPTER 4: PROPOSED RULE 1180.1

INTRODUCTION

PROPOSED RULE 1180.1



## INTRODUCTION

PR 1180.1 holds several parallels to PAR 1180 since PR 1180.1 was developed to address refineries exempt by the original Rule 1180 adopted December 1, 2017. The original Rule 1180 exempted refineries that had a maximum processing capacity of ~~processing~~ less than 40,000 barrels per day of crude oil. PR 1180.1 will apply to smaller refineries and refineries processing alternative feedstocks, regardless of ~~the~~ throughput capacity. The differences between the two rules are summarized in Table 4-1~~Table 4-1~~.

**Table 4-1: Summary of Differences Between PAR 1180 and PR 1180.1**

Subdivision	Title	Difference from PAR 1180
<b>a</b>	Purpose	None
<b>b</b>	Applicability	Applies to smaller refineries that refine crude oil, Alternative Feedstocks, or both
<b>c</b>	Definitions	Includes Alternative Feedstock, Refine, and Refinery
<b>d</b>	Plan Requirements	None
<b>e</b>	Plan Submittal Deadlines	Timeline for plan submittals
<b>f</b>	Fenceline Air Monitoring Compliance Schedule	Installation schedule
<b>g</b>	Plan Review Process	None
<b>h</b>	Web-based Fenceline Data Display and Notification Program	<del>None</del> <u>Timeline for implementation</u>
<b>i</b>	Notifications to the Executive Officer for Fenceline Air Monitoring System Downtime	None
<b>j</b>	Independent Audit	None
<b>k</b>	Recordkeeping, Reporting, and <del>Root</del> <u>Specific Cause Analysis</u>	None
<b>l</b>	Community Air Monitoring Fees	Fee schedule
<b>m</b>	Compliance	Does not include the reference to related facilities
<b>n</b>	Exemptions	PAR 1180 Refineries are exempt
<b>Table 1</b>	Air Pollutants and Notification Thresholds to be Addressed by FAMPs	Metals and Black Carbon not required for 1180.1 facilities
<b>Table 2</b>	Refinery-Related Community Air Monitoring System Fees	Specifies the fees for each PR 1180.1 facility

## PROPOSED RULE 1180.1

The differences between PAR 1180 and PR 1180.1 are discussed below. Several key concepts are derived from PAR 1180 and modified for PR 1180.1 refineries.

### PR 1180.1 (a) – Purpose

The purpose of PR 1180.1 is the same as PAR 1180.

### PR 1180.1 (b) – Applicability

One key difference between PAR 1180 and PR 1180.1 is the applicability provision. PR 1180.1 applies to Refineries that refine crude oil, alternative feedstocks, or both crude oil and alternative feedstocks. PR 1180.1 does not apply to Facilities subject to PAR 1180. In short, the intention of PR 1180.1 is to apply to the ~~facilities~~ refineries exempted by PAR 1180. ~~Table 2-3~~ Table 2-3 Chapter 2 lists the refineries that will be subject to PR 1180.1.

### PR 1180.1 (c) – Definitions

PR 1180.1 definitions include asphalt plant, alternative feedstock, refine, and refinery, which help differentiate the applicability provisions of PR 1180.1 and PAR 1180.

### PR 1180.1 (d) – Plan Requirements

Similar to PAR 1180, PR 1180.1 subdivisions (d) through (k) establish requirements for fenceline air monitoring plan submittal, the fenceline air monitoring system, the air monitoring plan review process, web-based fenceline data display and notification program, notifications to the Executive Officer for Fenceline Air Monitoring System downtime, independent audits, recordkeeping, ~~and~~ reporting, specific cause analysis, community air monitoring fees, and exemptions. As summarized in ~~Table 4-1~~ Table 4-1, PR 1180.1 is identical with PAR 1180 for majority of the requirements, including subdivision (d). The sections below discuss the key differences between PR 1180.1 and PAR 1180, which are the provisions on schedules for plan submittal, installation, and fees.

### PR 1180.1 (e) – Plan Submittal Deadlines

PR 1180.1 refineries are all new facilities without an existing FAMP. They have 12 calendar months from [Date of Rule Adoption] to submit a FAMP (the initial FAMP). For future revisions of an existing FAMP for planned or unplanned administration or equipment changes, or deficiencies identified, the required timelines for PR 1180.1 refineries are the same as for PAR 1180 facilities.

### PR 1180.1 (f) – Fenceline Air Monitoring System Installation Compliance Schedule

PR 1180.1 refineries would have up to 24 calendar months after their new FAMP is approved or partially approved to complete installation and begin operation of a real-time fenceline air monitoring system. If a FAMP revision is required pursuant to paragraph (e)(2), PR 1180.1 refineries shall complete installation no later than six calendar months after the Executive Officer approves or partially approves a revised FAMP.

Refineries subject to PR 1180.1 are granted additional installation time compared to PAR 1180 facilities. PR 1180.1 refineries will be designing and installing fenceline air monitoring systems for the first time. Establishing these installations and ensuring their effectiveness presents a considerable challenge, unlike PAR 1180 facilities, which already have established systems in place.



**PR 1180.1 (g) – Plan Review Process**

As summarized in Table 4-1, the requirements in PR 1180.1(g) is identical to PAR 1180 for these requirements.

**PR 1180.1 (h) – Web-based Fenceline Data Display and Notification Program**

The owner or operator of a PR 1180.1 refinery must comply with subparagraph (h)(1)(B), (h)(1)(C), and (h)(1)(D) and paragraph (h)(3) before commencing operation of a new Fenceline Air Monitoring System.

**PR 1180.1 (i) – (k)**

As summarized in Table 4-1, the requirements in PR 1180.1(i) – (k) are identical to PAR 1180 for these requirements.

**PR 1180.1 (l) – Community Air Monitoring Fees**

Subdivision (l) provides two implementation phases and deadlines for when Refineries must submit payment to the South Coast AQMD. The implementation has been divided into two phases to spread out the cost for a facility; a similar approach to the fees specified in was taken in 2017 for payments by existing petroleum refineries in the original Rule 1180. The Phase 1 implementation fee can cover the capital investment of the equipment and site preparation, while the Phase 2 implementation fee will fund the rest of the installation. Phase One implementation requires a minimum payment to be made to the South Coast AQMD no later than January 31, 2025. Phase Two implementation requires the remaining balance to be paid to South Coast AQMD no later than January 31, 2026. The combined ~~cost~~ amount of Phase One and Phase Two fees for each facility is the estimated cost for one community monitoring station. PR 1180 Table 2 lists the Phase One and Phase Two fees for each refinery. Note, the community air monitoring fees required by paragraph (l)(1) are in addition to permit and other fees authorized to be collected from refineries.

The detailed fee costs for PR 1180.1 refineries community air monitoring stations upgrades (PR 1180.1 Table 2), are detailed provided in the table below:

**Table 4-2: PAR 1180 Refinery-Related Community Air Monitoring System Itemized Fees**  
**Costs**

	PR 1180.1 Refineries
<b>PM Analyzers</b>	\$60,000
<b>Optical Multi Pollutant Analyzers</b>	\$250,000
<b>Metal Monitor</b>	N/A
<b>H<sub>2</sub>S Analyzer</b>	\$20,000
<b>BC Analyzer</b>	N/A
<b>Auto Gas Chromatography</b>	\$80,000
<b>Met Station</b>	\$20,000
<b>Data System</b>	\$30,000

<b>Zero Air Generator</b>	\$10,000
<b>Dilution System</b>	\$15,000
<b>Installation Labor cost</b>	\$32,993
<b>South Coast AQMD Staff Labor cost</b>	\$111,830
<b>Site Preparation</b>	\$140,000
<b>Total</b>	<b>\$769,823</b>

**Table 4-3: PR 1180.1 Community Air Monitoring Fees**

Facility ID	Facility Name	Location	Phase One Implementation (No later than January 31, 2025)	Phase Two Implementation (No later than January 31, 2026)
187165	AltAir Paramount (Paramount)	Paramount	\$230,947	\$538,876
800080	LTR dba World Oil Refining (South Gate)	South Gate	\$230,947	\$538,876
800393	Valero Wilmington Asphalt Plant (Wilmington)	Wilmington	\$230,947	\$538,876

#### **PR 1180.1 (m) – Compliance**

Once a FAMP is approved or partially approved by the Executive Officer, the owner or operator of a Facility must comply with all portions of the FAMP.

#### **PR 1180.1 (n) – Exemptions**

Petroleum refineries subject to PAR 1180 are exempt from PR 1180.1. Additionally, the owner or operator of a refinery is exempt from the requirement of operating a real-time fenceline air monitoring system for 96 hours if new fenceline air monitoring equipment is installed to address any air pollutant in Table 1 ~~or~~ and the facility complies with the notification requirement in subdivision (i). This situation could occur if real-time PAH monitoring technology became available that the refineries were required to install.

## CHAPTER 5: IMPACT ASSESSMENT

AFFECTED SOURCES

EMISSION IMPACTS

SOCIOECONOMIC IMPACT ASSESSMENT

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

DRAFT FINDINGS UNDER HEALTH AND SAFETY CODE

COMPARATIVE ANALYSIS

## AFFECTED SOURCES

### PAR 1180

PAR 1180 applies to petroleum refineries and facilities with operations related to petroleum refineries located on contiguous or adjacent properties. Based on South Coast AQMD permits and information provided by facilities, there are seven petroleum refineries and several facilities with operations related to petroleum refineries that would be affected by PAR 1180 as listed in the table below.

**Table 5-1: PAR 1180 Affected Sources**

Facility ID	Facility Name	Location	Type of Facility
<b>Petroleum Refineries</b>			
174655	Tesoro Carson (Tesoro Refining & Marketing Co, LLC)	Carson	Petroleum Refinery
800436	Tesoro Wilmington (Tesoro Refining & Marketing Co, LLC)	Wilmington	Petroleum Refinery
171109	Phillips 66 Carson (Phillips 66 Company/Los Angeles Refinery)	Carson	Petroleum Refinery
171107	Phillips 66 Wilmington (Phillips 66 Company/LA Refinery Wilmington Pl)	Wilmington	Petroleum Refinery
800030	Chevron, (Chevron Products Co.)	El Segundo	Petroleum Refinery
181667	Torrance (Torrance Refining Company LLC)	Torrance	Petroleum Refinery
800026	Valero (Ultramar Inc.)	Wilmington	Petroleum Refinery
<b>Related Facilities</b>			
151798	Tesoro SRP (Tesoro Refining & Marketing Co, LLC)	Carson	Related Operations
101656	Air Products Wilmington (Air Products and Chemicals)	Wilmington	Related Operations
3417	Air Products Carson (Air Products and Chemicals)	Carson	Related Operations
174694	Tesoro Logistics, Carson Crude Terminal	Carson	Related Operations
800057	Kinder Morgan Liquids Terminal LLC	Carson	Related Operations

PR 1180.1 applies to refineries that refine crude oil, alternative feedstocks, or both crude oil and alternative feedstocks that are not subject to PAR 1180. Based on South Coast AQMD permits, there are three refineries that would be affected by PR 1180.1:

**Table 5-2: PR 1180.1 Affected Sources**

Facility ID	Facility Name	Location	Type
800393	Valero Wilmington Asphalt Plant	Wilmington	Asphalt Plant
800080	LTR dba World Oil Refining	South Gate	Asphalt Plant
187165	AltAir Paramount LLC	Paramount	Alternative Feedstock

## EMISSION IMPACTS

PAR 1180 and PR 1180.1 do not directly reduce emissions from facilities. However, even though quantifiable emissions reduction will not result from the rules, indirect emissions benefits may be realized. Indirect emissions reductions are achieved through early detection of leaks or malfunctions and quick action to control such fugitive emissions or make corrections.

## SOCIOECONOMIC IMPACT ASSESSMENT

~~A socioeconomic impact assessment will be conducted and released for public review and comment at least 30 calendar days prior to the South Coast AQMD Governing Board Hearing on PAR 1180 and PR 1180.1, which is anticipated to be heard on January 5, 2024 (subject to change). A Draft Socioeconomic Impact Assessment for the proposed project was released for public review and comment on December 5, 2023. For a copy of the Final Socioeconomic Impact Assessment, please refer to Attachment J of the January 5, 2024, Governing Board package.~~

## CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project (PAR 1180, ~~and~~ PR 1180.1, and Proposed Amended Rule 1180 and Proposed Rule 1180.1 Fenceline Air Monitoring Plan Guidelines) is exempt from CEQA pursuant to CEQA Guidelines Sections 15061(b)(3) and 15306. Further, there is no substantial evidence indicating that any of the exceptions in CEQA Guidelines Section 15300.2 apply to the proposed project. A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062, and if the proposed project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties, and with the State Clearinghouse of the Governor's Office of Planning and Research.

## DRAFT FINDINGS UNDER HEALTH AND SAFETY CODE

### Requirements to Make Findings

Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the South Coast AQMD 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

There is a need to adopt PAR 1180 and PR 1180.1 to address issues identified in the SJVAPCD and South Coast AQMD lawsuits, by removing the 40,000-bpd exemption, and including facilities with operations related to petroleum refineries located on contiguous or adjacent properties and refineries that refine alternative feedstocks. PAR 1180 and PR 1180.1 are also needed to provide more specifications on the compliance schedule, web-based fence-line data display and notification program, independent audits, and quarterly reports. Further, PAR 1180 and PR 1180.1 are needed to set notification thresholds for several new air pollutants and air pollutants with historical fence-line monitoring data and require ~~root-specific~~ cause analysis of threshold exceedances and corrective action and community air monitoring fees for new facilities and for existing Rule 1180 facilities.

### Authority

The South Coast AQMD Governing Board has authority to adopt PAR 1180 and PR 1180.1 pursuant to Health and Safety Code Sections 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, 41700 and 42705.6.

### Clarity

PAR 1180 and PR 1180.1 are written or displayed so that its meaning can be easily understood by the persons directly affected by it.

### Consistency

PAR 1180 and PR 1180.1 are in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

### Non-Duplication

PAR 1180 and PR 1180.1 do not impose the same requirements as any existing state or federal regulation and it is necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

### Reference

By adopting PAR 1180 and PR 1180.1, the South Coast AQMD Governing Board will be implementing, interpreting, or making specific the provisions of the Health and Safety Code Sections 39002, 40001, 40702, and 42705.6 (refinery air monitoring) and Federal Clean Air Act Section 116 (Retention of State authority).

## INCREMENTAL COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for Best Available Retrofit Control Technology (BARCT) rules or emission reduction strategies when there is more than one control option that would achieve the emission reduction objective of the proposed amendments, relative to ozone, carbon monoxide, sulfur oxides, NO<sub>x</sub>, and their precursors. PAR 1180 and PR 1180.1 do not include new BARCT requirements; therefore, this provision does not apply to the proposed project.

**COMPARATIVE ANALYSIS**

Health and Safety Code Section 40727.2 requires a comparative analysis when South Coast AQMD proposes to adopt, amend, or repeal a rule or regulation. The comparative analysis is made relative to existing federal requirements, existing or proposed South Coast AQMD rules and air pollution control requirements and guidelines that apply to the same equipment or source type. As such, a comparative analysis for PAR 1180 and PR 1180.1 is provided in the following tables.

**Table 5-3: Comparison of PAR 1180 and PR 1180.1 with Health and Safety Code § 42705.6 and U.S. EPA 40 CFR § 63.658**

Rule Element	PAR 1180	PR 1180.1	Health and Safety Code § 42705.6 <sup>18</sup>	US EPA 40 CFR § 63.658 <sup>19</sup>
<b>Applicability</b>	– Petroleum refineries and related facilities.	– Refineries that refine crude oil, alternative feedstocks, or both crude oil and alternative feedstocks (facilities exempted by PAR 1180)	– Petroleum Refineries	– Petroleum refineries that are a major source as defined by section 112(a) of the Clean Air Act; and emit or have equipment containing or contacting one or more specified hazardous air pollutants
<b>Required air pollutants for monitoring</b>	– Sulfur dioxide, <u>oxides of nitrogen</u> , PM10, PM2.5, total VOCs, formaldehyde, acetaldehyde, acrolein, 1,3 butadiene, naphthalene, PAHs, styrene, benzene, toluene, ethylbenzene, xylenes, metals (cadmium, manganese, nickel), hydrogen sulfide, carbonyl sulfide, ammonia, black carbon, hydrogen cyanide, hydrogen fluoride	– Sulfur dioxide, <u>oxides of nitrogen</u> , PM10, PM2.5, total VOCs, formaldehyde, acetaldehyde, acrolein, 1,3 butadiene, naphthalene, PAHs, styrene, benzene, toluene, ethylbenzene, xylenes, hydrogen sulfide, carbonyl sulfide, ammonia, hydrogen cyanide	– Not specified (compounds emitted to the atmosphere from refinery processes, as determined by the district; in accordance with guidance developed by the district)	– Benzene

<sup>18</sup> Health and Safety Code § 42705.6, available at: <https://codes.findlaw.com/ca/health-and-safety-code/hsc-sect-42705-6/#>

<sup>19</sup> US EPA 40 CFR § 63.658, July 2022, available at: <https://www.govinfo.gov/content/pkg/CFR-2022-title40-vol12/pdf/CFR-2022-title40-vol12-sec63-658.pdf>



Rule Element	PAR 1180	PR 1180.1	Health and Safety Code § 42705.6 <sup>18</sup>	US EPA-40 CFR § 63.658 <sup>19</sup>
<b>Plan Requirements</b>	<ul style="list-style-type: none"> <li>- A facility shall revise an existing Fenceline Air Monitoring Plan (FAMP) or shall prepare a FAMP in accordance with the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines</li> </ul>	<ul style="list-style-type: none"> <li>- Same requirements as PAR 1180</li> </ul>	<ul style="list-style-type: none"> <li>- A district shall design, develop, install, operate, and maintain the refinery-related community air monitoring system, which shall be operated and maintained in accordance with guidance from the appropriate district</li> <li>- The refinery-related community air monitoring system shall include equipment capable of measuring compounds emitted to the atmosphere from refinery processes, as determined by the appropriate district</li> <li>- On or before January 1, 2020, the owner or operator of a petroleum refinery shall develop, install, operate, and maintain a fence-line monitoring system in accordance with guidance developed by the appropriate district</li> </ul>	<ul style="list-style-type: none"> <li>- The owner of operator must develop and submit a site-specific monitoring plan for approval according to the requirements in paragraph (i) of this section</li> </ul>
<b>Plan Submittal Deadline</b>	<ul style="list-style-type: none"> <li>- <u>At least 12 calendar months prior to commencing operations at a new refinery</u></li> <li>- No later than seven calendar months after [Date of Rule</li> </ul>	<ul style="list-style-type: none"> <li>- <u>Submit to the Executive Officer a written FAMP <del>n</del> No later than <del>one year</del> 12 calendar months after [Date of Rule Adoption], or at</u></li> </ul>	<ul style="list-style-type: none"> <li>- No provision</li> </ul>	<ul style="list-style-type: none"> <li>- No provision</li> </ul>

Rule Element	PAR 1180	PR 1180.1	Health and Safety Code § 42705.6 <sup>18</sup>	US EPA-40 CFR § 63.658 <sup>19</sup>
	<p>Adoption] for a petroleum refinery with an existing FAMP to update their systems or include new related facilities with common ownership</p> <ul style="list-style-type: none"> <li>- No later than 12 calendar months after [Date of Rule Adoption] for a facility without an existing FAMP</li> <li>- Ten to sixty calendar days to submit a revised FAMP addressing issues specified in the rule, which include planned and unplanned modification, system malfunction, and deficiency identified by independent audit or <del>root</del>-specific cause analysis</li> </ul>	<p>least <del>one year</del> 12 calendar months prior to commencing operations at a new refinery</p> <ul style="list-style-type: none"> <li>- <u>Ten to sixty calendar days to submit a revised FAMP addressing issues specified in the rule, which include planned and unplanned modification, system malfunction, and deficiency identified by independent audit or specific cause analysis</u></li> <li>- <del>Same FAMP requirements as PAR 1180</del></li> </ul>		

Rule Element	PAR 1180	PR 1180.1	Health and Safety Code § 42705.6 <sup>18</sup>	US EPA-40 CFR § 63.658 <sup>19</sup>
<p><b>Monitoring Technologies or Test Methods</b></p>	<p><u>As specified in the Guidelines.</u>  <del>Real-time</del> real-time monitoring (e.g., measurement every 5-minute) using:</p> <ul style="list-style-type: none"> <li>- Point monitors measuring black carbon, hydrogen sulfide, PM/PM2.5, and metals</li> <li>- Open-Path technologies including Fourier-transform infrared spectroscopy (FTIR) and Ultra-Violet Differential Optical Adsorption Spectrometer (UV-DOAS) for other air pollutants</li> </ul>	<p><u>As specified in the Guidelines.</u>  <del>Real-time</del> real-time monitoring (e.g., measurement every 5-minute) using:</p> <ul style="list-style-type: none"> <li>- Point monitors measuring; hydrogen sulfide, and PM/PM2.5</li> <li>- Open-Path technologies including Fourier-transform infrared spectroscopy (FTIR) and Ultra-Violet Differential Optical Adsorption Spectrometer (UV-DOAS) for other air pollutants</li> </ul>	<ul style="list-style-type: none"> <li>- In accordance with guidance from the appropriate district</li> </ul>	<ul style="list-style-type: none"> <li>- Conduct sampling along the facility property boundary and analyze the samples in accordance with Methods 325A and 325B</li> <li>- Alternative test methods capable of real time measurements, open path instruments</li> <li>- Alternative method must be validated according to Method 301</li> </ul>
<p><b>Fenceline Air Monitoring System Installation and Compliance Schedule</b></p>	<ul style="list-style-type: none"> <li>- Complete installation and begin operation of a real-time fenceline air monitoring system in accordance with the approved or partially approved FAMP:</li> <li>- Beginning no later than <del>15</del> 8 calendar months after a FAMP submitted</li> <li>- No later than six calendar months after the Executive Officer approves, or partially approves, an updated FAMP</li> <li>- <u>Prior to commencing operations at a new facility</u></li> </ul>	<ul style="list-style-type: none"> <li>- Complete installation and begin operation of a real-time fenceline air monitoring system in accordance with the approved or partially approved FAMP:</li> <li>- Facility without an existing FAMP: no later than <del>two</del> 24 calendar <del>years</del> months after a FAMP submitted</li> <li>- Facility with an existing FAMP: no later than six calendar months after a FAMP submitted</li> </ul>	<ul style="list-style-type: none"> <li>- On or before January 1, 2020, the owner or operator of a petroleum refinery shall develop, install, operate, and maintain a fence-line monitoring system in accordance with guidance developed by the appropriate district</li> </ul>	<ul style="list-style-type: none"> <li>- By January 29, 2018 refineries are required to install fenceline air monitoring systems</li> </ul>

Rule Element	PAR 1180	PR 1180.1	Health and Safety Code § 42705.6 <sup>18</sup>	US EPA-40 CFR § 63.658 <sup>19</sup>
		<ul style="list-style-type: none"> <li>- Prior to commencing operations at a new Refinery</li> </ul>		
<b>Plan Review Process</b>	<ul style="list-style-type: none"> <li>- The Executive Officer shall notify the owner or operator in writing whether the FAMP is approved, partially approved, or disapproved</li> <li>- Determination of approval status for the fenceline air monitoring plan shall be based on, at a minimum, submittal of information that satisfies the criteria set forth in rule and guidelines</li> </ul>	<ul style="list-style-type: none"> <li>- Same requirements as PAR 1180</li> </ul>	<ul style="list-style-type: none"> <li>- No provision</li> </ul>	<ul style="list-style-type: none"> <li>- The EPA administrator is required to approve site-specific monitoring plans within 90 days of receipt</li> <li>- If the EPA Administrator disapproves the plan for deficiencies the petroleum refinery owner or operator is provided 90 days to re-submit the plan</li> <li>- The plan is considered approved if the EPA administrator approves the plan in writing or fails to disapprove the plan in writing</li> <li>- Approval of the site-specific plan will be based on completeness, accuracy and reasonableness of the request</li> </ul>
<b>Web-based Fenceline Data Display and Notification Program</b>	<ul style="list-style-type: none"> <li>- Maintain a web-based fenceline data display and notification program to display, store, which includes at least five calendar years of data and shall, at a minimum:</li> <li>- Automatically generate and issue a notification no longer later than 15 minutes after any</li> </ul>	<ul style="list-style-type: none"> <li>- Same requirements as PAR 1180</li> </ul>	<ul style="list-style-type: none"> <li>- The district and the owner or operator of a petroleum refinery shall collect real-time data from the refinery-related community air monitoring system and the fence-line monitoring system and shall maintain records of that data. To the extent</li> </ul>	<ul style="list-style-type: none"> <li>- No provision</li> </ul>

Rule Element	PAR 1180	PR 1180.1	Health and Safety Code § 42705.6 <sup>18</sup>	US EPA 40 CFR § 63.658 <sup>19</sup>
	<p>air pollutant listed in Table 1 exceeds the applicable notification thresholds</p> <ul style="list-style-type: none"> <li>- Include a mechanism for public to opt-in to (and opt-out of) fenceline notifications</li> <li>- Send the fenceline notifications, by email and/or text message, to members of the public</li> <li>- Send follow-up notifications each time the measured concentration of the air pollutant exceeds follow-up notification threshold(s)</li> <li>- Send a follow-up notification after the air pollutant has been continuously detected at a level below the applicable Notification Threshold for 30 minutes or two consecutive measurements</li> </ul>		<p>feasible, the data generated by these systems shall be provided to the public as quickly as possible in a publicly accessible format.</p>	
<p><b>Fenceline Air Monitoring System Downtime or Malfunction</b></p>	<ul style="list-style-type: none"> <li>- Upon installation and operation, a fenceline air monitoring system shall comply with the following notification requirements:                             <ul style="list-style-type: none"> <li>o Call 1-800-CUT-SMOG® to notify the Executive Officer within 48 hours of planned maintenance activities</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Same requirements as PAR 1180</li> </ul>	<ul style="list-style-type: none"> <li>- No provision</li> </ul>	<ul style="list-style-type: none"> <li>- No provision</li> </ul>

Rule Element	PAR 1180	PR 1180.1	Health and Safety Code § 42705.6 <sup>18</sup>	<del>US EPA-40 CFR § 63.658</del> <sup>19</sup>
	<ul style="list-style-type: none"> <li>○ Call 1-800-CUT-SMOG to notify the Executive Officer within 2 hours of discovering <u>and no more than eight hours after the start of downtime or malfunction that the system that</u> failed to accurately provide real-time air monitoring information <u>for more than one hour</u></li> <li>– Submit a written notification to the Executive Officer of any equipment failure that also results in a failure to accurately provide continuous, real-time air monitoring information for 24 hours or longer.</li> <li>– Submit an updated FAMP to the Executive Officer if an equipment failure results in a failure to accurately provide continuous, real-time air monitoring information for more than <u>30 consecutive</u> days</li> </ul>			
<b>Independent Audit</b>	<ul style="list-style-type: none"> <li>– Initiate an Independent Audit according to a protocol approved by the Executive Officer to identify any deficiencies in the Fenceline Air Monitoring System and quality assurance procedures</li> <li>– Conduct an Independent Audit no later than January 1, 2029, if Fenceline Monitoring System</li> </ul>	<p><u>Cause an Independent Audit to be completed within 12 calendar months after the installation and operation of the Fenceline Air Monitoring System and Subsequent Independent Audits shall be completed once every 36 calendar months thereafter</u></p>	<ul style="list-style-type: none"> <li>– No provision</li> </ul>	<ul style="list-style-type: none"> <li>– No provision</li> </ul>

Rule Element	PAR 1180	PR 1180.1	Health and Safety Code § 42705.6 <sup>18</sup>	<del>US EPA-40 CFR § 63.658</del> <sup>19</sup>
	<p>installed before [Date of Rule Adoption]</p> <ul style="list-style-type: none"> <li>– Complete within 12 calendar months -after the installation and operation of the Fenceline Air Monitoring System for a Fenceline Monitoring System installed on or after [Date of Rule Adoption]</li> <li>– Corrective Action Plan to be submitted to the Executive Officer for review within three calendar months of the audit report</li> <li>– The Executive Officer shall notify the owner or operator of a facility in writing whether the Corrective Action Plan is approved or disapproved</li> <li>– If the Corrective Action Plan is disapproved, submit a revised Corrective Action Plan within 14 calendar days after notification of disapproval of the plan</li> <li>– Cause a qualified independent party conduct and complete a follow-up Independent Audit within three calendar months of completing the corrective actions</li> </ul>	<p>Same <u>other</u> requirements as PAR 1180</p>		

Rule Element	PAR 1180	PR 1180.1	Health and Safety Code § 42705.6 <sup>18</sup>	US EPA-40 CFR § 63.658 <sup>19</sup>
<p><b>Recordkeeping, Reporting, and <del>Root</del> <u>Specific Cause Analysis</u></b></p>	<ul style="list-style-type: none"> <li>- The owner or operator of a facility is required maintain records of all information required under this rule for at least five calendar years</li> <li>- Initiate <del>Root-Specific</del> Cause Analysis within 24 hours when an air pollutant listed in PAR 1180.1 Table 1 is measured above the Notification Threshold:                             <ul style="list-style-type: none"> <li>o Submit a <del>Root-Specific</del> Cause Analysis report to the South Coast AQMD and make it available on the web-based program within 14 calendar days</li> </ul> </li> <li>- Submit a quarterly report within 60 calendar days after the conclusion of each quarter</li> </ul>	<ul style="list-style-type: none"> <li>- Same requirements as PAR 1180</li> </ul>	<ul style="list-style-type: none"> <li>- The district and the owner or operator of a petroleum refinery shall collect real-time data from the refinery-related community air monitoring system and the fence-line monitoring system and shall maintain records of that data</li> </ul>	<ul style="list-style-type: none"> <li>- If the annual average value for benzene is greater than the action level, conduct a root cause analysis and corrective action</li> <li>- Within 5 days of determining that the action level has been exceeded for any annual average, initiate a root cause analysis</li> <li>- No longer than 50 days after completion of the sampling period, initiate a root cause analysis to determine the cause of such exceedance and to determine appropriate corrective action</li> <li>- The root cause analysis and initial corrective action analysis shall be completed and initial corrective actions taken no later than 45 days after determining there is an exceedance</li> </ul>
<p><b>Community Air</b></p>	<ul style="list-style-type: none"> <li>- Requires facilities to pay an installation fee for refinery-</li> </ul>	<ul style="list-style-type: none"> <li>- No later than <u>January 31, 2025</u><del>July 1, 2024</del>, shall make a payment to South Coast</li> </ul>	<ul style="list-style-type: none"> <li>- The owner or operator of a petroleum refinery shall be responsible for the costs</li> </ul>	<ul style="list-style-type: none"> <li>- No provision</li> </ul>



Rule Element	PAR 1180	PR 1180.1	Health and Safety Code § 42705.6 <sup>18</sup>	<del>US EPA-40 CFR § 63.658</del> <sup>19</sup>
<b>Monitoring Fees</b>	<p>related community air monitoring system</p> <ul style="list-style-type: none"> <li>- No later than January 31, 2025, the owner or operator of a Petroleum Refinery shall make the payment to the South Coast AQMD as specified in Table 2</li> <li>- No later than January 31, 2025, for phase 1 and no later than January 31, 2026 for phase two, the owner or operator of a Related Facility shall make the payment to the South Coast AQMD as specified in Table 3</li> <li>- Annual operating and maintenance fees for the community air monitoring system are to be recovered pursuant to Rule 301-Permitting and Associated Fees</li> </ul>	<p>AQMD as specified in Table 2 for phase one implementation.</p> <ul style="list-style-type: none"> <li>- No later than <u>January 31, 2026, January 30, 2025</u> shall make a payment to the South Coast AQMD as specified in Table 2 for phase two implementation</li> <li>- Remainder provides the same requirements as PAR 1180</li> </ul>	<p>associated with community air monitoring</p> <ul style="list-style-type: none"> <li>- To the extent a refinery-related community air monitoring system is intentionally utilized by a district to monitor emissions from sources under its jurisdiction other than a petroleum refinery, the district shall ensure the costs of the system are shared in a reasonably equitable manner</li> </ul>	
<b>Exemptions</b>	<ul style="list-style-type: none"> <li>- An owner or operator of a refinery subject to Rule 1180.1</li> <li>- Terminal with total tank storage capacity less than 310,000 barrels</li> <li>- Exempt from the requirement of operating an existing Real-Time Fenceline Air Monitoring System for 96 hours in a calendar year <u>if new fenceline air monitoring equipment is installed to address any air</u></li> </ul>	<ul style="list-style-type: none"> <li>- An owner or operator of a Refinery subject to Rule 1180 is exempt from the requirements of this rule</li> <li>- Exempt from the requirement of operating a real-time fenceline air monitoring system for 96 hours if new fenceline air monitoring equipment is installed to address any air pollutant in Table 1 <del>or</del> <u>and</u> the facility</li> </ul>	<ul style="list-style-type: none"> <li>- No provision</li> </ul>	<ul style="list-style-type: none"> <li>- No provision</li> </ul>

Rule Element	PAR 1180	PR 1180.1	Health and Safety Code § 42705.6 <sup>18</sup>	US EPA-40 CFR § 63.658 <sup>19</sup>
	<p><u>pollutant in Table 1 and the facility complies with the notification requirement in subdivision (i).</u></p> <ul style="list-style-type: none"> <li>- An owner or operator of a Related Facility located entirely within the boundary of a Petroleum Refinery</li> <li>- <del>Following</del> Facilities are exempt from monitoring the specified compound from Table 1 <u>as follows:</u> <ul style="list-style-type: none"> <li>o Exempt from monitoring hydrogen fluoride if hydrogen fluoride is not used or stored at the Facility;</li> <li>o Related facilities are exempt from monitoring black carbon and the metal compounds; and</li> <li>o A terminal is exempt from monitoring all the compounds in Table 1 other than the volatile organic compounds and hydrogen sulfide.</li> </ul> </li> </ul>	<p>complies with the notification requirement in subdivision (i).</p>		

Table 5-4: Comparison of PAR 1180 and PR 1180.1 with SJV APCD Rule 4460<sup>20</sup> and BAAQMD Regulation 12 Rule 15<sup>21</sup>

Rule Element	SJV APCD Rule 4460	BAAQMD Regulation 12 Rule 15
<b>Applicability</b>	<ul style="list-style-type: none"> <li>– Petroleum refineries</li> </ul>	<ul style="list-style-type: none"> <li>– Refineries and support facilities that processes any petroleum or alternative feedstock</li> </ul>
<b>Required air pollutants for monitoring</b>	<ul style="list-style-type: none"> <li>– Acetaldehyde, ammonia, benzene, 1,3-butadiene, cadmium, diethanolamine, ethylbenzene, formaldehyde, hydrogen fluoride, hydrogen sulfide, manganese, naphthalene, nickel, nitrogen oxide, polycyclic aromatic hydrocarbons (PAH), particulate matter (PM), sulfur Dioxide, sulfuric acid, toluene, xylene</li> </ul>	<ul style="list-style-type: none"> <li>– Sulfur dioxide (SO<sub>2</sub>), alkanes or other organic compound indicators, 1, 3-butadiene, and ammonia benzene, toluene, ethyl benzene, and xylenes (BTEX) and hydrogen sulfide</li> </ul>
<b>Plan Requirements</b>	<ul style="list-style-type: none"> <li>– Install, operate, and maintain a fence-line air monitoring system, and collect monitoring data in real-time</li> <li>– Make data available to the public as quickly as possible, and incorporate a public notification system in accordance with an APCO-approved fence-line air monitoring plan</li> </ul>	<ul style="list-style-type: none"> <li>– Detailed information describing the equipment to be used to monitor, record, and report air pollutant levels, the siting, operation, and maintenance of this equipment, and procedures for implementing data quality assurance and quality control</li> </ul>
<b>Plan Submittal Deadline</b>	<ul style="list-style-type: none"> <li>– No later than May 1, 2023, the owner or operator of a petroleum refinery shall submit to the APCO a written fence-line air monitoring plan</li> </ul>	<ul style="list-style-type: none"> <li>– On or before April 20, 2017, the owner/operator shall submit to the APCO a site-specific plan for establishing and operating a fence-line monitoring system</li> </ul>

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<sup>20</sup> Amended October 20, 2022

<sup>21</sup> Amended November 3, 2021

Rule Element	SJV APCD Rule 4460	BAAQMD Regulation 12 Rule 15
<p><b>Monitoring Technologies or Test Methods</b></p>	<p><u>Per guidelines</u>, <del>R</del>real-time monitoring using:</p> <ul style="list-style-type: none"> <li>○ Open path monitors: -Ultraviolet Differential Optical Absorption Spectroscopy (UV-DOAS), Tunable Diode Laser Absorption Spectroscopy (TDLAS), and -Fourier Transform Infrared (FTIR)</li> <li>- Point monitors: Gas, PM, total VOC monitoring and -Gas Chromatography - Mass Spectrometry (GC-MS)</li> </ul>	<ul style="list-style-type: none"> <li>- Refinery operators must measure benzene, toluene, ethyl benzene, and xylenes (BTEX) and hydrogen sulfide concentrations at refinery fence-lines with open path technology time resolution of five minutes</li> </ul>
<p><b>Fenceline Air Monitoring System Installation compliance schedule</b></p>	<ul style="list-style-type: none"> <li>- Complete installation and begin operation of a real-time fence-line air monitoring system within 365 calendar days of APCO approval of proposed monitoring plans</li> </ul>	<ul style="list-style-type: none"> <li>- Within one year of the approval of an air monitoring the petroleum refinery owner or operator will ensure that a fenceline monitoring system is installed and operated in accordance with an approved air monitoring plan</li> </ul>
<p><b>Plan Review Process</b></p>	<ul style="list-style-type: none"> <li>- The APCO shall notify the owner or operator in writing whether the fence-line air monitoring plan is approved or disapproved</li> <li>- If disapproved, the owner or operator shall revise and resubmit the fence-line and air monitoring plan within thirty (30) calendar days after notification of disapproval of the plan</li> </ul>	<ul style="list-style-type: none"> <li>- Air monitoring plan subject to public review procedure for determining whether and air monitoring plan meets the applicable requirements of the rule including the following:</li> <li>- A preliminary 45-day review by the APCO to identify any deficiencies that need to be corrected <u>and an opportunity for public comment</u></li> </ul>
<p><b>Web-based Fenceline Data Display and Notification Program</b></p>	<ul style="list-style-type: none"> <li>- The air monitoring plan shall identify how the data will be provided to the public through a website. The website for displaying the data shall include the current real-time measurements, historical data, and quarterly data reports. The</li> </ul>	<ul style="list-style-type: none"> <li>- The refinery operator must include in the Air Monitoring Plan how the data will be displayed and the steps taken to provide context of the measurements to the public</li> </ul>

Rule Element	SJV APCD Rule 4460	BAAQMD Regulation 12 Rule 15
	air monitoring data shall be provided in a manner that the public can readily access and understand.	– The Air Monitoring Plan must also outline a methodology for the public to provide comments and feedback for improvement of the website
<b>Fenceline Air Monitoring System Downtime or Malfunction</b>	– Submit a written report for each calendar quarter and include the time and date of each period during which the fence-line air monitoring system was inoperative and the nature of system repairs and adjustments	– No provision
<b>Independent Audit</b>	<ul style="list-style-type: none"> <li>– According to the air monitoring plan:</li> <li>– shall address quality assurance and quality control, including training of personnel, development and maintenance of proper documentation (i.e., instrument manuals, standard operating procedures (SOPs), a Quality Assurance Project Plan (QAPP), routine maintenance and calibration checks, technical audits, data verification and validation, and data quality assessment)</li> </ul>	– Supporting data maintained by a Refinery shall be made available for inspection and audit by the APCO at the Refinery upon request
<b>Recordkeeping and Reporting</b>	– The owner or operator of a petroleum refinery shall maintain onsite records of all information, required under this rule for at least five (5) years and shall make the information readily available to the District upon request	<ul style="list-style-type: none"> <li>– Air monitoring Plan must describe how the refinery will provide the air monitoring data in a way that the public can readily access and understand</li> <li>– Air Monitoring Plan must provide a means for public to provide input toward the way data are displayed</li> <li>– Maintain records of all information required under the rule for a period of 5 years after the date of the records</li> </ul>
<b>Community Air Monitoring Fees</b>	– In Rule 3200, Petroleum Refinery Community Air Monitoring Fees	– No provision in the rule but specified in their guidelines
<b>Exemptions</b>	– No provision	– The requirements of this rule shall not apply to refineries processing less than 20,000 barrels per stream day of any organic feedstock

## Appendix A RESPONSE TO COMMENTS

## PUBLIC WORKSHOP COMMENTS

Staff held the Public Workshop, with morning and evening sessions on August 22, 2023, to provide a summary of PAR 1180 and PR 1180.1. The following is a summary of the comments received on PAR 1180 and PR 1180.1 and staff responses.

### Public Workshop – Morning Session

*Commenter #1: Genghmun Eng – Citizen*

Comment #PWM-1a: Black carbon monitoring should not be exempted for PAR 1180 related facilities and 1180.1 facilities.

Response to Comment #PWM-1a:

Black carbon is not listed as a candidate for air monitoring in OEHHA 2019 final report, “Analysis of Refinery Chemical Emissions and Health Effects,” which is the basis for required air pollutants listed in Table 1. The major petroleum refineries who already have black carbon monitoring systems installed are required to continue to monitor for black carbon.

Comment #PWM-1b: Facilities using asphalt and asphaltic materials should be included in the rules.

Response to Comment #PWM-1b:

PAR 1180 and PR 1180.1 ~~are adopted to comply with~~ meet and exceed the requirements of Assembly Bill 1647 (Muratsuchi) and, codified in Health and Safety Code Section 42705.6. The law for requiring ~~requires~~ petroleum refinery refineries to conduct fence line air monitoring and fund refinery-related community air monitoring.

PR 1180.1 applies to small petroleum refineries that were exempted by PAR 1180 and refineries that process alternative fuel stocks. PAR 1180 has expanded its applicability to related operations contiguous or adjacent to a petroleum refinery, which receive or provide more than 50 percent of their input derived from, or production output to, ~~the local petroleum refinery~~ refineries. Overall, the rules are focused on the refineries as defined by SIC code 2911 and specified related operations, with a purpose of monitoring air pollutants from refinery operations.

Asphalt and asphaltic materials used by other industries are subjected to different rules for monitoring and controlling their emissions. For example, an asphalt aggregate plant is subject to several source specific rules. Depending on the operation and capacity, they could be subject to Regional Clean Air Incentives Market (RECLAIM) program for emissions control and monitoring, Rule 218 series for Continuous Emission Monitoring System if not in RECLAIM program, Rule 1155 for PM control, Rules 1110.2, 1146, 1146.1, 1146.2, and 1147.1 for the applicable combustion sources, or South Coast AQMD Regulation XXX – Title V Permits, if applicable.

Comment #PWM-1c: Where is the data source for previous PAHs measurements?

Response to Comment #PWM-1c:

Data related to PAHs measurements can be found in on the AQMD website under the Multiple Air Toxics Exposure Studies (MATES) here: <https://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies>.

*Commenter #2: Moses Huerta – City of Paramount Resident*

Comment #PWM-2: Can the requirement for independent audits “to be made available to the web-based fenceline data display and notification system within 90 days after the audit had been performed” be set to a shorter timeframe?

Response to Comment #PWM-2:

Facilities need adequate time to compile data, identify any potential issues, and finalize the report. For a comprehensive report such as the independent audit report, it is common for a rule to allow facilities 90 calendar days or a calendar quarter to submit the report. The South Coast AQMD will consider a shorter timeframe at the next rulemaking if it appears feasible based on the experience of future audits.

*Commenter #3: Jane Williams – California Communities Against Toxics*

Comment #PWM-3a: Do the rules specify subsequent requirement when corrective actions from root cause analysis are not completed in a timely manner?

Response to Comment #PWM-3a:

PAR 1180 and PR 1180.1 require the corrective actions, if applicable, to be initialized as soon as practicable but no later than 24 hours. The ~~root cause specific~~ cause (previously named “root cause”) analysis report shall be made available within 14 days and include an explanation of the reason(s) for any corrective actions taking more than 14 calendar days. If the corrective actions are not conducted according to the timeline required by the rules, it constitutes a violation of the rules, and the South Coast AQMD’s Compliance & Enforcement division may take an enforcement action towards the facility.

Comment #PWM-3b: The rule should specify test methods ~~for~~ required to measure the air pollutants ~~in the staff report~~.

Response to Comment #PWM-3b:

Many South Coast AQMD rules include a subdivision that list the required South Coast AQMD, U.S. EPA or ASTM Test Methods that must be performed in the laboratory to demonstrate compliance with emission limits in the rule. Ambient air monitoring, like the monitoring required in PAR 1180 and 1180.1, differs from laboratory compliance testing. Ambient air monitoring relies on operating procedures and quality assurance/quality control procedures that are specific to the air monitoring instruments being used. PAR 1180 and PR 1180.1 require the FAMP to include procedures for the operation, maintenance, and quality assurance and quality control for the fenceline air monitoring system. The fenceline air monitoring plan guidelines suggest the type of monitor to use for each air pollutant and provide certain specifications (e.g., spatial coverage, time resolution,



detection limits, etc.) on the measurement method or procedure for each air pollutant. Measurement procedures may vary among vendors and additional specifications are highly dependent on the manufacturers' recommendations. As required by the rule, each FAMP includes measurement procedures for the systems utilized for implementing the FAMP. Those measurement procedures are reviewed and approved through the FAMP review process.

*Commenter #4: McKina Alexander – City of Carson*

Comment #PWM-4: How is an independent party for independent audit selected?

Response to Comment #PWM-4:

The rule does not specify how an independent party for the audit is selected. As specified in the definition for independent audit, an independent party for this purpose shall be a party with technical expertise with fenceline air monitoring systems that has not worked on the implementation of Rule 1180 or Rule 1180.1 fenceline air monitoring at the facility. The South Coast AQMD will oversee the development of the audit protocols and the initial audits of the fenceline air monitoring systems at the petroleum refineries, ~~and~~ The South Coast AQMD selected National Physical Laboratory (NPL) through a Request for Proposal process.

*Commenter #5: Elizabeth Camilla - Unknown*

Comment #PWM-5a: Is there any audit of the root cause analysis to prevent a superficial root cause analysis that does not identify the real cause of an exceedance?

Response to Comment #PWM-5a

Currently, the rule does not have an audit of the ~~root-specific~~ cause (previously named "root cause") analysis. However, there are mechanisms to ensure each exceedance will be sufficiently addressed through the ~~root specific~~ cause analysis. First, the ~~root-specific~~ cause analysis must be submitted to the South Coast AQMD and made available for the public through the facility's ~~ies~~ data display website. The public can provide feedback to the South Coast AQMD regarding the analysis. South Coast AQMD enforcement staff also investigates each exceedance event and will review the ~~root-specific~~ cause analysis to ensure ~~it is the~~ exceedance event was sufficiently investigated. Furthermore, staff has proposed that if three ~~root-specific~~ cause analyses within the same calendar year indicate the same cause, or indicate the case cannot be determined, for the same air pollutant detected above the notification threshold by the same monitor, the facility will be subject to subsequent requirements. That is, the facility shall hire a qualified independent party to conduct a ~~root-specific~~ cause analysis within 14 calendar days, ~~or revise the FAMP to which may include installing additional temporary monitor(s) if the independent party cannot identify the root cause.~~

Comment #PW-5b: Please consider adding a requirement that the historic and real-time data on the online dashboards be publicly available to download.

Response to Comment #PWM-5b:

Staff acknowledges the importance of data accessibility and has added provisions under subdivision (d) of PAR 1180 and PR 1180.1 and specifications in the Rule 1180 And Rule 1180.1 Refinery Fenceline Air Monitoring Plan Guidelines to ensure FAMPs include methods to enhance data accessibility for the public. Specifically, a FAMP must describe methods for making—historical data available for public download in an easily downloadable, accessible electronic format that is approved by the Executive officer. Furthermore, subdivision (hg) of both rules specify that the web-based fenceline data display and notification program shall make all real-time and historic data publicly available.

### Public Workshop – Evening Session

*Commenter #1: Jan Viktor – East Yard Communities for Environmental Justice*

Comment #PWE-1: Importance of making data available quickly and to shorten audit timelines.

Response to Comment #PWE-2:

Staff understands the concern to make data available quickly; however, the facilities will need adequate time to ensure the data provided to the public is reliable and accurate. For more information, please refer to Response to Comment #PWM-2.

*Commenter #2: Renate Boronowski – East Yard Communities for Environmental Justice*

Comment #PWE-2: The community needs to understand health impacts to sensitive groups regarding notification thresholds.

Response to #PWE-2:

The health standard-based notification thresholds are established based on the acute reference exposure limit (RELs) by OEHHA, NAAQS, or CAAQS. The acute REL for OEHHA is based on short-term exposure meant to protect individuals from the adverse effects of exposure to an air pollutant. The NAAQS for pollutants are established to “protect public health, including the health of ‘sensitive’ populations, such as asthmatics, children, and the elderly.” Similarly, the REL for CAAQS is defined as the “the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without any harmful effects on people or the environment.” ~~The acute REL for OEHHA is based on short term exposure meant to protect individuals from the adverse effects of exposure to an air pollutant.~~

*Commenter #3: Whitney Amaya – East Yard Communities for Environmental Justice*

Comment #PWE-3a: Requested to include all pollutants in the OEHHA list since they all have health impacts on communities.

Response to Comment #PWE-3a:

OEHHA states that the “candidate chemicals will differ based on location as well as year. Some top-candidate chemicals are only released in small amounts from individual

refineries.”<sup>22</sup> 18 air pollutants are listed as the top candidates for air monitoring based on their toxicity level, average levels of emissions from refineries statewide, and involvement in multiple refinery processes and incidences. Of the 18 air pollutants, eight of them are not required by this rule for several reasons. For example, some air pollutants, such as diethanolamine and sulfuric acid, do not stay in the vapor phase for a sufficient amount of time and would be unable to be detected in real-time at the fenceline. In addition, real-time monitoring technology does not exist for polycyclic aromatic hydrocarbons (PAHs) other than naphthalene. Moreover, the likelihood of measuring a high concentration of metals, such as cadmium, nickel, and magnesium, is unlikely if the facility does not operate equipment capable of emitting metals during normal or upset conditions, such as a fluid catalytic cracking unit.

Comment #PWE-3b: Consider shorter timelines for corrective actions.

Response to Comment #PWE-3b:

Staff understands the uncertainty of the timelines for corrective actions to be completed. The timeline in which all corrective actions must be completed is detailed in the corrective action plan and will vary based on what is technically-feasible. Therefore, staff is proposing Executive Officer approval of the corrective action plan, which details the timeline needed to complete corrective actions. If the timeline provided in the corrective action plan is found to be longer than needed, the Executive Officer can disapprove the corrective action plan and require a shorter timeline.

*Commenter #4: Cindy Donis – East Yard Communities for Environmental Justice*

Comment #PWE-4a: Concerned that diethanolamine and sulfuric acid are no longer included in the rule.

Response to Comment #PWE-4a:

Diethanolamine has a short-lived gaseous phase since it has the tendency to absorb water and to supercool. Diethanolamine would not stay in the vapor phase long enough to be detected through real-time air monitoring technology at the fenceline.

Sulfuric acid is not very volatile, because of its high boiling point of 365 degrees Celsius (°C). If it is release to the atmosphere, it will most likely not stay in vapor phase and will fall to the ground in liquid phase. Similar to diethanolamine, sulfuric acid will not stay in the vapor phase long enough to be detected through real-time air monitoring technology at the fenceline; therefore, monitoring for these air pollutants are not required in the rules.

Comment #PWE-4b: Improve accessibility and simplify the information to make it more accessible and understandable for the general public.

Response to Comment #PWE-4b:

Staff is proposing requiring web-based fenceline data display and notification program to have a mechanism for the public to opt-in to receive fenceline notifications, select email

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<sup>22</sup> OEHHA, “Analysis of Refinery Emissions and Health Effects”, <https://oehha.ca.gov/air/analysis-refinery-chemical-emissions-and-health-effects>.

and/or text notification options, and provide comments or feedback on the facility. The South Coast AQMD is working to integrate fence-line and community air monitoring notifications via the South Coast AQMD mobile application.

*Commenter #5: Paola –East Yard Communities for Environmental Justice*

Comment #PWE-5: Are there any requirements for sensitive receptors such as schools?

Response to Comment #PWE-5:

PAR 1180 and PR 1180.1 are monitoring rules that require the facilities to monitor air pollutant concentrations at their fence-line and fund the South Coast AQMD to install and operate community air monitoring stations. The intent is to measure air pollutants in and around the refineries and alert members of the public who opt-in to receive notifications if an air pollutant is detected above a notification threshold. The health standard-based notification thresholds are established based on the acute reference exposure limit (RELs) by OEHHA, NAAQS, or CAAQS, which include sensitive populations. For more information on the health-based notification thresholds and sensitive groups, please refer to Response to Comment #PWE-2.

The South Coast AQMD also conducts air monitoring in communities adjacent to the refineries according to the Community Air Monitoring Plan (CAMP). Moreover, the South Coast AQMD also has other programs and rules that address sensitive receptors, such as AB 2588, Rule 1401, and Rule 1402.

*Commenter #6: Oscar Espino Padron – Earthjustice*

Comment #PWE-6: Consider including the five-year review of the requirements of the rule in the rule language

Response to Comment #PWE-9:

The intent of South Coast AQMD rules is to impose requirements on applicable facilities, not on the agency. The five-year review of the requirements of the rule will be specified in the resolution for this rule project, which is where requirements on the South Coast AQMD are normally included. The resolution will be presented for approval by the Governing Board at the Public Hearing to consider the adoption of PAR 1180 and PR 1180.1. The South Coast AQMD is legally bound to comply with the actions in the Resolution approved by the Governing Board; the Resolution is an enforceable document.

*Commenter #7: Christian Tapia Delgado – East Yard Communities for Environmental Justice*

Comment #PWE-7: Consider the option of text messages for notifications.

Response to Comment #PWE-7:

Staff is proposing requiring a mechanism for the public to opt-in for text message notifications. Please see Response to Comment #PWE-4b for more information.

## COMMENT LETTER #1

Comment Letter #1



August 8, 2023

VIA ELECTRONIC MAIL ONLY

Michael Krause, Assistant DEO  
 South Coast Air Quality Management District  
[mkrause@aqmd.gov](mailto:mkrause@aqmd.gov)

**Re: Proposed Amended Rule 1180 and Proposed Rule 1180.1 Fenceline and Community Air Monitoring for Petroleum and Alternative Feedstock Refineries and Related Operations**

Dear Mr. Krause:

On behalf of East Yard Communities for Environmental Justice, we submit the following comments on the draft Proposed Amended Rule 1180 and Proposed Rule 1180.1 (collectively "Refinery Monitoring Rules"). While South Coast AQMD has proposed significant improvements to the current refinery fenceline and community air monitoring program under this rulemaking, we have identified several areas of concern with the draft Refinery Monitoring Rules that should be addressed by staff.

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- **The Refinery Monitoring Rules create a compliance loophole by restricting monitoring to facilities with operations related to refining operations that are "located on contiguous properties" and "with the Same Ownership" as the petroleum refinery.**

The draft Refinery Monitoring Rules would allow some refining operations to exclude support facilities that may not be "contiguous" (i.e., bordering the refinery) but that might instead be "adjacent" to or located near but not necessarily sharing a border with the refinery.<sup>1</sup> This draft language is also at odds with definitions used by other air districts; for example, the Bay Area Air Quality Management District defines refineries as operations that are "located on one or more *contiguous or adjacent* properties that processes any petroleum or alternative feedstock."<sup>2</sup> Moreover, this draft language limits monitoring requirements to related facilities under the "Same Ownership" as the refinery. A facility is under the "Same Ownership" when it has the same "subsidiaries," "same board of directors," or "same

1-1

<sup>1</sup> See, e.g., Proposed Amended Rule 1180, subd. (b) (applicability), (c)(5) (defining "facilities with operations related to petroleum refineries." See also "Contiguous" defined as "[t]ouching at a point or along a boundary." "Adjacent" defined as "[l]ying near or close to, but not necessarily touching." *Black's Law Dictionary* (11th ed. 2019).

<sup>2</sup> BAAQMD Rule 12-15.

parent corporation” as the refinery.<sup>3</sup> Requiring that facilities be under the “Same Ownership” creates enforcement uncertainty and a compliance loophole that would allow refineries to exclude related facilities through corporate schemes. This approach also ignores what actually occurs in practice, where third-party operations that are essential to refinery operations are often under different ownership.

1-1

- **The proposed “independent audit” requirement under the Refinery Monitoring Rules should be completed in an expedited manner with community involvement and additional oversight by South Coast AQMD staff to ensure fenceline monitoring systems are operating as planned.**

South Coast AQMD staff must make several important updates to the “independent audit” requirement under the proposed Refinery Monitoring Rules as part of this rulemaking. First, South Coast AQMD staff should approve of auditors selected by refineries to ensure independence and appropriate qualifications to evaluate the adequacy of fenceline air monitoring systems. Second, the initial audit for fenceline air monitoring systems installed after rule adoption should be completed within a few months rather than one year to ensure data quality. Third, audits should be conducted every two years after the initial audit rather than every three years to maintain or modify fenceline air monitoring systems as needed. Finally, the Refinery Monitoring Rules should establish a deadline for approval or disapproval of audit-related corrective action plans by South Coast AQMD and community engagement by refineries when corrective action is necessary to ensure that fenceline air monitoring system issues are resolved by refineries in an expedited manner and that affected residents are aware of deficiencies.

1-2

- **The definition of “fenceline air monitoring plan” under the Refinery Monitoring Rules should underscore the need to detail not only data reporting under these plans but also a data provision element that outlines data objectives and standards.**

The draft Refinery Monitoring Rules language defines “fenceline air monitoring plan” as a compliance plan that details “data reporting methods” and other important data quality assurance measures.<sup>4</sup> In addition to highlighting the importance of data reporting, the Refinery Monitoring Rules should require that fenceline air monitoring plans establish key data objectives and standards as part of a data provision element. This standalone plan element should detail the objectives, procedures, and tasks that would be performed to ensure data produced by fenceline air monitoring systems are made available to the public

1-3

<sup>3</sup> See, e.g., Proposed Amended Rule 1180, subd. (c)(6).

<sup>4</sup> See, e.g., Proposed Amended Rule 1180, subd. (c)(8).

in a timely and accessible manner that conforms to the FAIR standards (i.e., standards concerning the Findability, Accessibility, Interoperability, and Reuse of digital assets).<sup>5</sup>

- **The definition of “fenceline air monitoring system” under the Refinery Monitoring Rules should clarify that these systems must also make air pollutant concentration data available to the public, not merely display or report this data.**

The draft Refinery Monitoring Rules language defining “fenceline air monitoring system” notes that these systems are comprised of “equipment that measures, records, and reports air pollutant concentrations” from refineries.<sup>6</sup> The proposed rules, however, should make clear that refineries must also make available or public the air monitoring data generated by these monitoring systems. There should be no ambiguity that South Coast AQMD is requiring that refineries make this data available to the public for download.

1-4

- **In describing the web-based fenceline data display program, the Refinery Monitoring Rules should expand on what it means to make “information publicly available,” which should involve more than the current practice of displaying data online.**

The South Coast AQMD staff should make clear that the web-based fenceline data program must make “information publicly available,” which includes public access to monitoring data in an easily downloadable, accessible format (e.g., .csv via an API).<sup>7</sup> Moreover, if applicable, data accessed through these systems should provide for a widely permissive licensing statement, such as creative commons licensing statement.<sup>8</sup> There should be no restrictions on the public use of this data.

1-5

- **The web-based fenceline data display and notification program should explain the health impacts associated with exposure to pollutants, when detailing the pollutants measured at the fenceline monitoring system.**

The draft Refinery Monitoring Rules currently require that refinery websites “[d]escribe all pollutants” monitored by the refinery.<sup>9</sup> In describing pollutants, refineries should also be directed to note the health impacts, such as developmental and cancer risk, associated with exposure to pollutants at certain levels and duration that are monitored at the fenceline. Similarly, South Coast AQMD should do the same on its own website for

1-6

<sup>5</sup> GO FAIR, *Fair Principles*, <https://www.go-fair.org/fair-principles/> [archived at <https://perma.cc/829C-CQEL>].

<sup>6</sup> See, e.g., See, e.g., Proposed Amended Rule 1180, subd. (c)(9).

<sup>7</sup> See Appendix B, Earthjustice, *Crossing the Fenceline: Critical Reforms to California’s Petroleum Refinery Emissions Monitoring Law*, [https://earthjustice.org/wp-content/uploads/fenceline\\_2022.pdf](https://earthjustice.org/wp-content/uploads/fenceline_2022.pdf)

<sup>8</sup> Creative Commons, *About CC Licenses*, <https://creativecommons.org/about/cclicenses/> [archived at <https://perma.cc/Y8AH-ZHIP>].

<sup>9</sup> Proposed Amended Rule 1180, subd. (g)(1)(A).

community air monitoring systems to assist community members in understanding when pollution levels become hazardous or would have negative health effects.

- **The fenceline air monitoring plan “methods for dissemination of data” description should be expanded to detail methods for maintaining data to ensure the public has reliable access to this air monitoring data.**

The South Coast AQMD’s objective in this rulemaking process should entail more than just data dissemination – it should also ensure adequate data management. To achieve this objective, fenceline air monitoring plans should also provide methods for maintaining data and ensuring findable, accessible, interoperable, and reusable data for government agencies, researchers, and the public.

1-7

- **The “notification to [the] Executive Officer” by refineries of equipment failures should also occur when there are problems with data collection and retention or other database problems, not just monitoring equipment issues.**

The draft Refinery Monitoring Rules should also require that South Coast AQMD be notified of instances where data for a period of 24 hours or greater is missing from publicly accessible data archives.<sup>10</sup> The agency should be made aware of database and other electronic infrastructure failures that undermine monitoring goals.

1-8

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We appreciate your consideration of these issues. We welcome the opportunity to discuss our concerns and we look forward to receiving a response to these comments.

Sincerely,



Oscar Espino-Padron, Senior Attorney  
Byron Chan, Senior Attorney  
Earthjustice

cc: Heather Farr, Planning and Rules Manager ([hfarr@aqmd.gov](mailto:hfarr@aqmd.gov))

Yanrong Zhu, Program Supervisor ([yzhu1@aqmd.gov](mailto:yzhu1@aqmd.gov))

Mojtaba Moghani, Ph.D., AQ Specialist ([mmoghani@aqmd.gov](mailto:mmoghani@aqmd.gov))

Jennifer Vinh, AQ Specialist ([jvinh@aqmd.gov](mailto:jvinh@aqmd.gov))

<sup>10</sup> See, e.g., Proposed Amended Rule 1180, subd. (h)(2)



## Response to Comment Letter #1

### *Response to Comment 1-1:*

Staff appreciates the comment and agrees with the concern. PAR 1180 definition for Facility With Operations Related to Petroleum Refineries (Related Facility) has been revised to include facilities that are “adjacent to or contiguous with” petroleum refineries and removed the “same ownership” requirement.

### *Response to Comment 1-2:*

PAR 1180 requires a qualified independent party to conduct and complete an independent audit according to an independent audit protocol approved by the Executive Officer. South Coast AQMD selected a qualified contractor through a Request for Proposals (RFP# P2022-13) to develop an audit protocol and implement the first independent audit of all fenceline air monitoring systems subject to Rule 1180. Staff expects the initial audits to be initiated by January 1, 2025. This audit protocol will establish methodologies for auditors and standardize future audits for facilities subject to both PAR 1180 and PR 1180.1.

The rules propose the initial audit within one calendar year of installation and operation for systems installed after rule adoption, and reoccurring audits every three calendar years for all systems. Sufficient data by operating the fenceline monitoring systems will be needed for auditors to have a systematic evaluation of the entire fenceline air monitoring network and ensure the collected refinery data meets the stringent quality control and quality assurance criteria. Staff believes that at least one calendar year’s data is needed for the initial audit. Facilities generally conduct quarterly and semi-annual internal audits according to their QAPP for quality control and quality assurance. An independent audit by a qualified third party every three calendar years is consistent with U.S. EPA’s Best Practices for Review and Validation of Ambient Air Monitoring Data<sup>23</sup>.

Staff agrees that ~~correction~~ corrective actions should not be delayed ~~by the approval or disapproval of the corrective action plan.~~ The current proposal is to require the facility to conduct all corrective actions pursuant to the schedule in an approved corrective action plan, and follow-up performance audit within three calendar months of completing the corrective actions. The facility must submit the corrective action plan to the Executive Officer within three calendar months of the audit report and make it available on the facility’s web-based fenceline data display and notification program within one business day of approval by the Executive Officer. Staff also proposed to require a revised FAMP within 60 calendar days if corrective action plan identifies that a modification of the FAMP is required.

### *Response to Comment 1-3:*

Staff acknowledges the importance of a data provision element that requires data to be accessible, intuitive, and easy to interpret. For more information regarding the data provision elements please refer to Response to Comment #PWM-5b.

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<sup>23</sup> U.S. EPA, "Best Practices for Review and Validation of Ambient Air Monitoring Data," August 2021. [Online]. Available: <https://www.epa.gov/system/files/documents/2021-10/data-validation-guidance-document-final-august-2021.pdf>.

*Response to Comment 1-4:*

Staff agrees with the comment and is proposing requiring public access to historical data in addition to the display of the data. Please refer to Response to Comment 1-3 and Response to Comment #PWN-5b for more information.

*Response to Comment 1-5:*

Please refer to Response to Comment 1-3. In addition to displaying data online which is currently existed in rule 1180, in this amendment the historical data shall also be available to public in an user friendly and downloadable format from facilities' web-based fenceline data display and notification program.

*Response to Comment 1-6:*

Staff agrees with the comment. Current web-based fenceline data display and notification programs are providing descriptions of all air pollutants being monitored and how they affect human health. Staff proposed to specify the requirement of describing the air pollutants and their health impacts and include a link to the OEHHA online Air Chemical Data base website under subdivision (h) to include additional health-based information with the notifications. The proposed requirement states the facility must include a link to the OEHHA website on the specific air pollutant in the fenceline notification when an air pollutant is detected above the threshold to provide information to the public on the health risks associated with the exceedances.

*Response to Comment 1-7:*

Please refer to Response to Comment 1-3 for rule enhancement on data accessibility. In addition, staff proposed to add a specification under subdivision (d) plan requirement requiring FAMP to include methods for data to be in an easily downloadable, accessible, and interpretable electronic format that is approved by the Executive Officer. The new subdivision (h) also requires the web-based fenceline data display and notification program to display and store at least five calendar years of the most recent data collected from the fenceline air monitoring systems and make the information publicly available.

*Response to Comment 1-8:*

Staff agrees and has modified the definition for Fenceline Air Monitoring System to include data systems that store historical data, public websites where data is displayed, and public fenceline notification systems. A data system or fenceline notification system failure, downtime, or malfunction will be subject to the same notification requirement for equipment failure.

## COMMENT LETTER #2:



**Ramine Cromartie**  
Senior Manager, Southern California Region

Comment Letter #2

August 15, 2023

Heather Farr  
Planning and Rules Manager  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Via e-mail at: hfarr@aqmd.gov

**Re: SCAQMD Proposed Amended Rule 1180, Fenceline and Community Air Monitoring for Petroleum Refineries and Related Operations, and SCAQMD Proposed Rule 1180.1, Other Refinery Fenceline and Community Air Monitoring  
WSPA Comments on Initial Draft Rule Language**

Dear Ms. Farr,

Western States Petroleum Association (WSPA) appreciates the opportunity to participate in South Coast Air Quality Management District (SCAQMD or District) Proposed Amended Rule 1180, Fenceline and Community Air Monitoring for Petroleum Refineries and Related Operations (PAR1180), and SCAQMD Proposed Rule 1180.1, Other Refinery Fenceline and Community Air Monitoring (PR1180.1), Working Group Meetings (WGMs). The purpose of this rulemaking is to remove exemptions so that all petroleum refineries identified under SIC 2911 will be subject to the rule and expand applicability to include operations related to refineries that are contiguous to the property of the refinery. SCAQMD is also proposing to expand the Rule 1180 list of monitored compounds to include those chemicals included in the California Office of Environmental Health Hazard Assessment (OEHHA) priority list.

WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport, and market petroleum, petroleum products, natural gas, renewable fuels, 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 SCAQMD and thus will be impacted by PAR1180 and PR1180.1.

SCAQMD published initial draft rule language for PAR1180 and PR1180.1 and proposed audit requirements on June 16, 2023.<sup>1,2,3</sup> WSPA offers the following comments.

<sup>1</sup> PAR1180 Initial Draft Rule Language, June 16, 2023. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/par-1180---initial-draft.pdf?sfvrsn=6>.

<sup>2</sup> PR1180.1 Initial Draft Rule Language, June 16, 2023. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/pr-1180-1---initial-draft.pdf?sfvrsn=6>.

<sup>3</sup> Proposed Audit Requirements, June 16, 2023. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/independent-audit-document---from-rule-language.pdf?sfvrsn=6>.

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1. SCAQMD is proposing to modify the list of monitored compounds; however, the District has not demonstrated that the proposed additional chemicals are present or detectable at the fencelines of each facility. Before requiring such monitoring, SCAQMD should perform a study to demonstrate that these compounds are detectable at the fencelines as a result of releases from refineries and not other neighboring sources. Additionally, WSPA recommends that only compounds with existing health notification thresholds and compounds where feasible real-time monitoring technology is available be included in Rule 1180 and Rule 1180.1.

SCAQMD has proposed to expand the Rule 1180 list of monitored compounds to include all of the chemicals included in the California Office of Environmental Health Hazard Assessment Analysis of Refinery Chemical Emissions and Health Effects (OEHHA Analysis) priority list.<sup>4,5</sup> The six compounds proposed to be added are as follows:<sup>6</sup>

- Particulate Matter (PM)
- Naphthalene
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Cadmium
- Manganese
- Nickel

2-1

While the OEHHA report lists an array of candidate chemicals for air monitoring, it also notes:<sup>7</sup>

*An important consideration for air monitoring at individual refineries is that the candidate chemicals will differ based on location as well as year. Some top-candidate chemicals are only released in small amounts from individual refineries... **the release of these chemicals from refineries does not necessarily mean that local communities face substantial exposures or significant health risks.** [emphasis added]*

Several pollutants are likely to be detected at the fenceline from sources outside the refineries. It is unclear how SCAQMD will treat those detections and differentiate those emissions from refinery source emissions. For example, PM at refineries is primarily emitted from combustion processes, which are released from elevated stacks. In many/most cases, PM from these refinery sources is unlikely to be detectable with fenceline air monitoring systems. It is much more likely

<sup>4</sup> Analysis of Refinery Chemical Emissions and Health Effects – Fact Sheet, California Office of Environmental Health Hazard Assessment, March 2019. Available at:

<https://oehha.ca.gov/media/downloads/fags/refinerychemicalsfacts032019.pdf>.

<sup>5</sup> Analysis of Refinery Chemical Emissions and Health Effects, California Office of Environmental Health Hazard Assessment, March 2019. Available at:

<https://oehha.ca.gov/media/downloads/fags/refinerychemicalsreport032019.pdf>.

<sup>6</sup> PAR1180 Initial Draft Rule Language, June 16, 2023. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/par-1180---initial-draft.pdf?sfvrsn=6>

<sup>7</sup> Analysis of Refinery Chemical Emissions and Health Effects, California Office of Environmental Health Hazard Assessment, March 2019. Available at:

<https://oehha.ca.gov/media/downloads/fags/refinerychemicalsreport032019.pdf>.

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that PM levels detected at fencelines will be contributed by surrounding mobile sources or roadways including tailpipe emissions and entrained road dust. Similarly, metals measured at a fenceline could be from mobile sources such as brake wear and tire wear, diesel particulate matter (DPM) from trucks, etc. SCAQMD should provide the methodology that will be used to distinguish the PM from refinery and non-refinery sources.

Of the above proposed compounds, only nickel has a proposed health-standard based threshold.<sup>8</sup> SCAQMD is proposing to add statistically based notification thresholds for one of the proposed compounds (i.e., PM) and two of the compounds listed under the existing Rule 1180 (i.e., total VOCs and black carbon).

Public notification thresholds need to be based on health hazards. Historical levels do not provide stakeholders with useful information on whether a measured concentration is potentially hazardous or not. WSPA strongly recommends the five chemicals with no established health hazard thresholds should be removed from the list of chemicals proposed for monitoring under Rule 1180 and 1180.1. WSPA also recommends against establishing statistical notification thresholds for any compounds required to be monitored under Rule 1180 and 1180.1. If SCAQMD proceeds with the statistical notification thresholds, WSPA recommends that these thresholds must be established through workshops with stakeholders to determine the upper bounds of background levels. And a single background value would likely not be appropriate to all refineries (or pathways) given the variations in ambient conditions and differences in the local non-refinery sources near the various facilities.

2-1

Finally, SCAQMD has acknowledged that there is no feasible real-time monitoring technology for PAHs and states that a facility can cite the staff report for not including such compounds.<sup>9</sup> Given that it is not possible to perform real-time monitoring on PAHs, WSPA recommends that references to PAHs be removed from the proposed rule.

**2. SCAQMD should clarify in the rule that the proposed technology review is only for compounds that are not currently monitored under Rule 1180 and would not impact monitoring of compounds that are already listed in the Fenceline Air Monitoring Plan (FAMP). For monitoring of new compounds, WSPA recommends that a cost-benefit analysis be performed in conjunction with stakeholders to understand if potential monitoring is necessary. For new facilities proposed in PAR 1180 and PR 1180.1, WSPA requests that facilities have the optionality to install point monitors in lieu of open path in instances where space constraints limit a facilities ability to achieve “full coverage.” Additionally, WSPA requests additional clarity on the rationale for and the process of providing technical justification to exclude compounds from the monitoring requirements.**

2-2

<sup>8</sup> PAR1180 Initial Draft Rule Language, June 16, 2023. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/par-1180---initial-draft.pdf?sfvrsn=6>

<sup>9</sup> SCAQMD PAR1180 and PR1180.1 Working Group Meeting #2. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/rule-1180-1180.1---wgm-2---presentation.pdf?sfvrsn=6>.

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SCAQMD is considering a requirement for Staff to conduct a review of technology, rule language and guidelines, and report findings to the Board every 5 years.<sup>10</sup> If Staff determined that real-time air monitoring is feasible for any previously excluded compound, the facility would be required to revise the fenceline air monitoring plan within 6 months and begin monitoring for the newly included compound one year after the plan is approved. It is not clear from the information provided by SCAQMD if this technology review would also result in modified technology requirements for compounds already being measured.

Refineries have constructed air monitoring systems based on requirements for the 18 initial compounds covered under the current rule. The elevated platforms, equipment stations, and power requirements were custom designed to accommodate the existing monitoring equipment. If new monitoring instrumentation is required, it could require expansion of the analyzer shelters, platforms, or electrical infrastructure. The facility would need to review each structure to determine spacing consideration as well as if it could accommodate additional weight. These are potentially costly endeavors.<sup>11</sup> SCAQMD must account for the cost of equipment, installation, and training and perform a cost-benefit analysis developed with stakeholders to understand whether the monitoring technology is necessary. If the results of the technology review show that additional monitoring equipment must be installed at facilities, there should be an allowance added to the rule stating that air monitoring is not required during periods of platform and station modification. There should not be an expectation of temporary back-up monitoring required during modification.

2-2

For new facilities, space constraints may limit a facility's ability to achieve the proposed monitoring requirements in all areas of the facility. As a way to meet the objectives of the proposed monitoring provisions, WSPA requests that facilities are granted the flexibility to install point monitors in lieu of open path monitors, where needed.

PAR1180(d)(4) states that facilities "must provide a technical justification for not including Real-Time air monitoring for any of the air pollutants specified in Table 1... Explanations for not including Real-Time air monitoring for any pollutants specified in Table 1 must be consistent with the criteria in the Refinery Fenceline Air Monitoring Guidelines." Additional guidance is needed for impacted facilities to understand how to perform this demonstration.

### **3. PAR1180 and PR1180.1 should include one timeline for installations subsequent to revised and updated FAMPs.**

PAR1180(d)(2) and (d)(5), and PR1180.1(d)(2) and (d)(5), respectively, set forth requirements to submit a "revised" or "updated" FAMP depending on the type of modification needed. PAR1180(e) sets forth the compliance schedule for completion of installation and start of operation in accordance with an approved or partially approved FAMP, stating:

2-3

<sup>10</sup> SCAQMD PAR1180 and PR1180.1 Working Group Meeting #2. Available at: [http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/rule-1180\\_1180-1---wgm-2---presentation.pdf?sfvrsn=6](http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/rule-1180_1180-1---wgm-2---presentation.pdf?sfvrsn=6).

<sup>11</sup> SCAQMD PAR1180 and PR1180.1 Working Group Meeting #3. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/rule-1180---wgm-3---final.pdf?sfvrsn=10>

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- (1) *The owner or operator of a Facility shall complete installation and begin operation of a Real-Time Fenceline Air Monitoring System or modify the operation of the Fenceline Air Monitoring System in accordance with the approved, or partially approved, FAMP:*
- (A) *Beginning no later than one year after a FAMP submitted pursuant to paragraph (d)(1) or (d)(2) is approved, or partially approved, by the Executive Officer;*
  - (B) *No later than six months after the Executive Officer approves, or partially approves, an updated FAMP required pursuant to paragraph (d)(5); and*
  - (C) *Prior to commencing operations at a new Petroleum Refinery.*

2-3

PR1180.1(e) uses similar language.

PAR1180 and PR 1180.1 should not include different compliance timelines for installation for “revised” and “updated” plans. The constraints on installation timeline result from system and structural design, permitting, and construction, and are the same regardless of revised or updated plans.

Additionally, it might not be possible for vendors to provide and build the volume of new analyzers required if AQMD approves multiple plans in a short time period. WSPA recommends that two years be allowed for all installation and start of operation under modified plans.

**4. WSPA requests that SCAQMD clarify the scientific necessity of adding additional community air monitoring stations and how the detected emissions will be attributed to local sources.**

SCAQMD seems to be proposing at least one community monitoring station for each new potential facility subject to the rule and have stated that “an owner or operator with an existing Rule 1180 fenceline air monitoring plan that modifies [the] plan to include related facilities may not be subject to new community monitoring requirements/fees”.<sup>12</sup>

2-4

At least some of the proposed new facilities under the proposed rule and rule amendments are near existing Rule 1180 facilities and community monitoring stations. SCAQMD needs to demonstrate why additional community monitoring stations are needed in these areas and include information outlining how any new stations would meaningfully improve stakeholder’s understanding beyond the information already being provided by the existing community monitoring stations. SCAQMD should also justify how the values measured at new stations would be attributed to contributing sources, including non-refinery sources.

**5. PAR1180 and PR 1180.1 require facilities to perform a root cause analysis when a monitored compound is measured above the notification threshold. It may not be possible to understand a root cause for emissions detected at the fenceline, as the source may be offsite or the direct cause cannot be identified. If a facility does find a leak that requires repair, that repair is handled under a separate rule, making a root**

2-5

<sup>12</sup> SCAQMD PAR1180 and PR1180.1 Working Group Meeting #2. Available at: [http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/rule-1180\\_1180-1---wgm-2---presentation.pdf?sfvrsn=6](http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/rule-1180_1180-1---wgm-2---presentation.pdf?sfvrsn=6).

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**cause analysis unnecessary under a fenceline air monitoring rule. In addition, for new facilities under PAR 1180 and PR1180.1, where root cause analysis may be a new requirement, WSPA requests potential changes to the Root Cause Analysis report.**

As currently drafted, PAR1180(j)(2) and PR1180.1(j)(2) would require a root cause analysis be initiated within 24 hours of an air pollutant measurement that is above the applicable notification threshold. A report detailing the analysis must be submitted to SCAQMD and made available on the web-based program within 14 days. PAR1180 and PR1180.1 are monitoring rules, not compliance programs. Therefore, there are no exceedances of thresholds.

Requiring a root cause analysis each time a measurement is above a notification threshold is burdensome and unnecessary, and so it should be limited to only health-based threshold exceedances. Performance of a root cause analysis would require source apportionment, which may not be possible for emissions detected at the fenceline. In addition, in the case where monitoring results in detection of a leak, repair of that leak would be addressed under source-specific rules such as Rule 1178. WSPA therefore recommends that the requirements related to a root cause analysis be re-evaluated to ensure there is no double work or conflicts with source specific rules like Rule 1173 and Rule 1178. One such example of this can be found with the 14-day reinspection requirement in PR1180(j)(2)D). Existing regulations may already call for reinspection after a leak is repaired. In instances such as this, where there is duplication of provisions, WSPA requests that Staff remove the provision from the PAR1180 rule language. As part of this evaluation, WSPA requests that Staff consider provisions in the event a root cause analysis cannot be performed within the designed time windows (e.g., allowances for an extension) or if, for example, a reinspection is not possible in a timely manner.

2-5

The rule provisions state that facilities shall "submit a Root Cause Analysis report to the South Coast AQMD and make it available on the web-based program within 14 days."<sup>13,14</sup> A root cause analysis may contain confidential information that may not be appropriate for submittal or posting online. To help ensure the protection of business confidential information, WSPA requests that the treatment of confidential information contained in root cause analyses is consistent with similar analyses (e.g., Specific Cause Analysis) in Rule 1118 and Rule 430.

<sup>13</sup> SCAQMD PAR1180 Draft Rule Language. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/par-1180---initial-draft.pdf?sfvrsn=6>.

<sup>14</sup> SCAQMD PAR 1180.1 Draft Rule Language Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/pr-1180-1---initial-draft.pdf?sfvrsn=6>



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WSPA appreciates the opportunity to provide these comments related to PAR1180 and PR1180.1. We look forward to continued discussion of this important rulemaking. If you have any questions, please contact me at (310) 808-2146 or via e-mail at [rcromartie@wspa.org](mailto:rcromartie@wspa.org).

Sincerely,



Cc:  
Michael Krause, Assistant Deputy Executive Officer, Planning, Rule Development and Implementation  
Yanrong Zhu, Program Supervisor  
Mojtaba Moghani, Ph.D., Air Quality Specialist  
Jennifer Vinh, Air Quality Specialist  
Andrea Polidori, Assistant Deputy Executive Officer, Monitoring and Analysis Division

**Response to Comment Letter #2:***Response to Comment 2-1:*

Thank you for providing comments. During the 2017 rulemaking, staff proposed the list of OEHHA identified air pollutants in the initial draft as the list of pollutants to be monitored by refineries. In March 2019, OEHHA finalized the report and added six compounds to the priority list. During the current amendment, staff added ~~the~~ additional compounds identified by OEHHA's finalized report into the rule.

Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines provide criteria for exclusion. The owner or operator of a facility can request to exclude a compound if there is no feasible real-time monitoring technology capable of real-time or near-real time measurement, or the facility has not used or will never use a compound based on facility's activities and processes. At previous Working Group Meetings and in this report, staff indicated there is no real-time and near-real-time air monitoring technology available for PAHs and suggested that facilities currently will not be required to conduct fenceline real-time air monitoring for PAHs. Staff's ~~proposed proposal to list~~ PAHs in Table 1 of PAR 1180 and PR 1180.1, but only requires PAHs monitoring if technologies beare available in the future. Staff will monitor the progress of real-time and near-real-time air monitoring technologies and conduct a technology assessment every five calendar years for the monitoring of any air pollutant that had been deemed infeasible.

Staff acknowledges that statistically derived notification thresholds (information-based notification thresholds) do not indicate if measured concentrations are hazardous or not, and health-based notification thresholds are preferred. However, some of the air pollutants subject to fenceline real-time monitoring do not have a health standard. The historical data show that their air pollutant concentrations could spike to a very high level but there is no notification provided to the community and no subsequent evaluation required. Staff established information-based notification threshold for two air pollutants, total VOCs and Black Carbon, through a public process based on available data from petroleum refineries' data display websites. The purpose of establishing information-based notification thresholds is to notify communities when higher than typical pollutant concentrations are present and consequently, alert facilities to conduct an investigation to ensure normal operation.

*Response to Comment 2-2:*

Rule 1180 included a five-year assessment to evaluate the fenceline monitoring systems:

- (6) No later than January 1, 2025, and every five years thereafter, the Executive Officer shall conduct a refinery-related community air monitoring assessment to evaluate adequate coverage and/or need for equipment upgrades.

The assessment was removed from the proposed rule language and instead will be included in the resolution. This assessment will not be limited to the new compounds but will be an overall assessment as was the original intent. The five-year assessment will be conducted through a public process and an element of the review will focus on technologies for real-time air monitoring that was previously infeasible.

Considering the disruption to existing fenceline air monitoring systems by new installations, PAR 1180 provides an exemption under subdivision (1). An existing real-time fenceline air monitoring system is exempt from the requirement of the rule for up to 96 hours if disrupted by the required installation of new fenceline air monitoring equipment to measure any new air pollutant.

This rule is not a Best Available Retrofit Control Technology rule subject to cost-effectiveness analysis; however, staff is evaluating the cost impact and conducting a socioeconomic impact analysis.

Facilities are required to have adequate fenceline coverage for the real-time air monitoring, when feasible. In its FAMP, the owner and operator of a facility can explain space or other constraints that limit the facilities' ability to install open-path monitoring technologies.

The Guidelines provide criteria for exclusion. Staff report Chapter 2 also has a section with more explanation. Please see Response to Comment 2-1 regarding criteria for exclusion.

*Response to Comment 2-3:*

Specified FAMP development and the installation timelines ~~are specified to~~ allow adequate time for facilities to comply with the new rule requirements. Facilities are subject to one of the following timelines to complete installation and begin operation of the new monitoring technologies or new fenceline air monitoring systems:

- a. Fifteen (15) calendar months after FAMP is approved or partially approved for:
  - i. an existing PAR 1180 facility to include related facilities of common ownership, any air pollutant in Table 1, and new requirements in subdivision (d) that was not addressed previously, and
  - ii. a new PAR 1180 related facility.
- b. Twenty four (24) calendar months for PR 1180.1 refineries.
- c. Six months after a revised FAMP is approved or partially approved if the FAMP was determined to be inadequate for ~~both~~ PAR 1180 and PR 1180.1 facilities.
- d. Prior to commencing operations for a new PAR 1180 facility or new PR 1180.1 refinery.

~~Staff is proposing a shorter implementation schedule (15 months versus 24 months) for PAR 1180 related operation facilities as PR 1180.1 facilities will require more time to establish analyzer shelters, platforms and electrical infrastructure, and potentially require the installation of multiple open path and point sensors. For PR 1180.1 facilities, more fenceline air monitoring technologies are expected to be installed as more compounds are required to be monitored than the related facilities in PAR 1180; therefore, staff is proposing more time (i.e., two calendar years) for the installation. Based on conversations with the petroleum refineries ~~for regarding~~ their previous experience ~~for with~~ installation and challenges involved in the timeline, staff did increase the timeline from 12 ~~to~~ 15 calendar months for the Rule 1180 facilities to install new monitoring equipment and including related facilities.~~

*Response to Comment 2-4:*

There are ten air monitoring stations within communities adjacent to refineries subject to Rule 1180 adopted in 2017, ~~whose location~~ the location of which were optimized for these facilities. However, there are several residential communities adjacent and or downwind of the related facilities proposed by PAR 1180 that do not have a community air monitoring station. Examples of such residential areas include a community located north-northeast of Tesoro Carson and Tesoro

SRP and another community located south of Phillips 66 Carson and Tesoro Logistics Carson Crude Terminal and west of Tesoro Wilmington refinery. Adding community stations in residential areas such as these will help assess the potential impact of emissions from the facilities in these communities. In addition, measurements of air pollutants will be used to alert the public of potential air pollutant levels that may cause health concerns.

Rule 1180 was adopted in 2017 and applies to seven petroleum refineries with an exemption to refineries with a capacity less than 40,000 bpd of crude oil. Based on Health and Safety Code § 42705.6 (Assembly Bill 1647, 2017) and Rule 1180, those petroleum refineries has funded the current Community Air Monitoring network. Rule 1180 Community Air Monitoring Plan (CAMP) outlines the South Coast AQMD's strategy and approach for conducting air monitoring in communities adjacent to the above-mentioned refineries, as part of Rule 1180 implementation. The Community Air Monitoring network was developed and has been operated by the South Coast AQMD based on the information provided in the CAMP.

With new facilities subject to PAR 1180 or PR 1180.1, more communities have been identified to be adjacent to ~~the applicable~~ those facilities. The East Yard Communities ~~f~~For Environmental Justice lawsuit against South Coast AQMD also specifically noted some communities near PR 1180.1 facilities requiring ~~communities~~ community monitoring.

Staff's current proposal on the number and type of community monitoring is based on analysis of the community coverage required to adequately assess the impact of all facilities subject to PAR 1180 and PR 1180.1 in the neighboring communities. Also, some information is provided in the existing Rule 1180 CAMP for the existing community monitoring stations. Staff included a discussion with more detail on additional community coverage required with the inclusion of new facilities in Chapter 2 of this staff report.

*Response to Comment 2-5:*

~~Root~~ Specific cause (previously named root cause) analysis is important to ~~initiate investigation in order to find the sources for correction.~~ Some previous ~~fenceline exceedance~~ fenceline exceedance notifications ~~at exceedance~~ led to issuance of Notice of Violations for Rule 3002 ~~(-Title V Requirements)~~, Rule 463 ~~(Organic Liquid Storage)~~, and Rule 1178 ~~(-Further reductions of VOC Emissions from Storage Tanks at Petroleum Facilities)~~. Conducting a ~~root specific~~ specific cause analysis when ~~the~~ concentrations at the fenceline is found exceeding the notification threshold would help the facility conduct compliance investigations and prevent any further potential violation of any source specific rule. Any investigation or ~~corrected~~ corrective action conducted for a source specific rule that is related to the exceedance at fenceline can be used for cause analysis.

A ~~root specific~~ specific cause analysis needs to be initiated (not completed) within 24 hours. Corrective actions, if applicable, must be initiated as soon as practicable. The rules do allow the facility to provide an explanation of the reason(s) if the corrective actions take more than 14 calendar days.

The information provided in a ~~root specific~~ specific cause analysis will be comparable to information found in compliance investigation reports that the facility provides to the South Coast AQMD or other public agencies. Staff is willing to consider facility's specific claims of confidential business information and work out a solution to protect the facility's confidentiality information on a case-by-case basis.

## COMMENT LETTER #3

Comment Letter #3

**Citizen Concerns**  
**Re: SCAQMD Rule 1180 and 1180.1 Released Data**  
**for 22 August 2023 SCAQMD Public Workshop**

Submitted on 21 August 2023 for the 22 August 2023 SCAQMD Public Workshop  
 on Rule 1180 Expansion and New Rule 1180.1  
 by Dr. Genghmun Eng ("Citizen"), 5215 Lenore Street, Torrance, CA 90503

**Please add the following Public Notes and Comments to the SCAQMD Record on this item, and take these additional factors into consideration in your rule-making in order to be properly protective of the Public Health and Safety.**

**Note 1:** The SCAQMD Workshop Presentation presently titled: "Preliminary Draft Refinery Fenceline Air Monitoring Plan Guidelines - August 2023" should be re-titled to indicate applicability to non-Refinery Facilities. Citizen suggests replacing all document text, aside of the references as follows: "Refinery" should be "Refinery {or other SCAQMD Monitored Facility}" and "Refineries" should become "Refineries {or other SCAQMD Monitored Facilities}".

3-1

**Note 2:** While the SCAQMD notes that their historical data supports not a lot of Refinery PAH (Polycyclic or Polynuclear Aromatic Hydrocarbon) emissions, their data primarily emphasizes normal Refinery operations, and proper PAH monitoring may disclose significantly higher Refinery PAH emissions during non-Normal Refinery operations, where the net short-term PAH release can significantly exceed months of Refinery PAH releases under normal operations. Thus it is incumbent for the SCAQMD to continue to work toward developing near real-time and intermittent time assessments of PAH release amounts.

3-2

**Note 3:** While the SCAQMD notes that their historical data supports not a lot of Refinery PAH (Polycyclic or Polynuclear Aromatic Hydrocarbon) emissions, the new Rule 1180.1 now covers additional facilities, where their historical PAH emissions are not well known. This further supports the necessity for the SCAQMD to continue to work toward developing near real-time and intermittent time assessments of PAH release amounts.

**Note 4:** If you are not looking for something, it is easy to not see it, until someone else points it out. This was true with the SCAQMD "discovery" of excess hexavalent chromium emissions from small chemical plating facilities. Citizen believes there are multiple localized emission sources of PAH, PM-2.5, PM-10, and other presently monitored air-pollution organics, presently within the SCAQMD responsibility region, which present a hazard to the Public Health and Safety, and which need to be put under SCAQMD monitoring and control. See **Notes 5-11**.

**Note 5:** The SCAQMD purview extends to fixed air pollution sources, i.e. to sources that are not moving. As a result, it is under the SQAQMD purview to regulate Diesel Truck idling at Fixed Trucking Stations, as well to regulate near-shore Diesel Ships when idling in the US protected waters off the US coastline edge. Eventually these sources move, putting them out of the SCAQMD purview once they become non-stationary. However, while they are temporarily stationary, it remains the SCAQMD responsibility to ensure their operation is properly monitored, with their operation being properly protective of the Public Health and Safety.

3-3

**Note 6:** The SCAQMD has responsibility over SIC 2911 entities and materials. The US Department of Labor OSHA SIC Manual notes the "SIC 2911 Petroleum Refining" designation applies to, among other things: (a) Petroleum Refining, (b) Road Materials, bituminous: produced in petroleum refineries, (c) Road oils, produced in petroleum refineries, and (d) Tar or residuum, produced in petroleum refineries.

**Note 7:** In light of the above Notes 5-6, the new category ASPHALT USING FACILITIES needs to be added to the Proposed Rule 1180.1 section (c) under 'Definitions', so as to be included in the SCAQMD purview. Citizen suggests the following additional wording:

(0) ASPHALT USING FACILITY is a stationary or temporarily stationary facility which uses: (a) Road Materials, bituminous: produced in petroleum refineries, (c) Road oils, produced in petroleum refineries, (d) Tar or residuum, produced in petroleum refineries; including (i) Asphalt Treated Road Material, (ii) Bituminous Cold Patch Material, (iii) Asphaltic Concrete Hot Mix, (iv) Recycled Asphalt Products, and similar items originally produced in petroleum refineries.

**Note 8:** Many of these presently SCAQMD unregulated ASPHALT USING FACILITIES are contractors hired by various City and State agencies for Road Repair. When doing Road Repair operations, each contractor establishes a temporary fenceline boundary, inside which ordinary Citizens are not allowed. However, on multiple occasions, Citizen has experienced nausea and headaches, even when ten to hundreds of feet away from these temporary fenceline boundaries. It is also unclear to Citizen whether the Contractor workers operate with proper OSHA PPE (Personal Protective Equipment), likely due to the lack of present-day proper regulatory oversight. Rule 1180.1 should fix this lack of proper facility regulation.

3-3

**Note 9:** Proposed Rule 1180.1 section (b) under 'Applicability' should be revised, so as to be included in the SCAQMD purview. Citizen suggests the following wording:

"This rule applies to Refineries and Other SCAQMD Monitored Facilities that refines crude oil, Alternative Feedstocks, or both crude oil and Alternative Feedstocks, including, but not limited to Asphalt Plants and Asphalt Using Facilities."

**Note 10:** Proposed Rule 1180.1 section (c) under 'Definitions', should add and (11a) so as to be included in the SCAQMD purview. Citizen suggests the following additional wording:

(11a) OTHER SCAQMD MONITORED FACILITY is a facility that operates by primarily using materials as defined in the Standard Industrial Classification Manual as Industry No. 2911, "SIC 2911 Petroleum Refining" designation, which applies to, among other things: (b) Road Materials, bituminous: produced in petroleum refineries, (c) Road oils, produced in petroleum refineries, and (d) Tar or residuum, produced in petroleum refineries; whereas (a) Petroleum Refining is covered by the above 'Definition (11) REFINERY'.

**Note 11:** The remainder of the proposed Rule 1180.1 sections should substitute "Refinery {or other SCAQMD Monitored Facility}" for "Refinery", and substitute "Refineries {or other SCAQMD Monitored Facilities}" for "Refineries", as needed, to be consistent with the above revised 'Definitions' and 'Applicability'.

3-4

Sent by eMail to:

Michael Krause (909) 396-2706, Assistant DEO: MKrause@aqmd.gov

Heather Farr (909) 396-3672, Planning and Rules Manager: HFarr@aqmd.gov

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Mojtaba Moghani, Ph.D (909) 396-2527, AQ Specialist: MMoghani@aqmd.gov

### Response to Comment Letter #3

#### *Response to Comment 3-1:*

The Guidelines have been retitled to, “Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines.” ~~These Guidelines which include~~ apply to all facilities detailed in subject to PAR 1180 and PR 1180.1. “Facility” in PAR 1180 refers to petroleum refineries and related facilities and is a defined term in the rule.

#### *Response to Comment 3-2:*

The South Coast AQMD is currently performing a study, called the Multiple Air Toxics Exposure Study (MATES VI), to characterize the risk from exposure to air toxics across the South Coast region, which includes areas outside petroleum refineries. The compounds being monitored includes several air toxics, including Polycyclic Aromatic Hydrocarbons (PAHs). The South Coast AQMD monitors PAHs in Central Los Angeles and Rubidoux as part of the MATES and the National Air Toxics Trends (NATTS) network, a nationwide program geared to provide consistent and long-term air toxics monitoring data. PAHs measurements by MATES and NATTS programs are not real-time measurements and take a considerable amount of time for sample preparation and lab testing.

There is no real-time air monitoring technology currently available to measure PAHs. Naphthalene is the only PAH that can be monitored in real-time and will be required to be monitored by current open-path systems installed at refinery fencelines. Staff will continue to monitor and assess the development of real-time air monitoring technologies for PAHs and report the results of the assessment to the Stationary Source Committee every five calendar years. If staff determines real-time air monitoring is feasible, the facilities would be required to revise their FAMPs and QAPPs and start monitoring for PAHs according to the timeline specified by PAR 1180 and PR 1180.1.

#### *Response to Comment 3-3:*

PAR 1180 and PR 1180.1 are adopted to comply with and exceed the requirements of Health and Safety Code Section 42705.6 with a focus on monitoring air pollutant concentrations that are a result of refinery or related facilities operations. Facilities must monitor ~~Some of the mentioned~~ air pollutants (e.g., PM10, PM 2.5) ~~will be required air pollutants that the facilities must monitor for once the new technologies are installed. mentioned in the comment.~~ In the case of PAHs, monitoring will be required once real-time monitoring technologies become available.

The South Coast AQMD enforces the California Air Resources Board (CARB) truck idling regulation, which limits diesel truck and bus idling to five minutes. More information can be found here: <https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/facility-based-mobile-source-measures/regs-commitments>

Health and Safety Code Section 42705.6 only applies to “petroleum refineries.” Facilities under Standard Industrial Classification (SIC) 2911 include refineries that *refine* asphalt but does not include facilities that *blend or apply* asphalt. PAR 1180 applies to facilities with operations related to petroleum refineries to address operations related to refinery processes located on properties adjacent or contiguous to a petroleum refinery. Moreover, “asphalt plant” is defined in PR 1180.1 as a facility permitted to process petroleum that primarily produces asphaltic materials as defined in SIC 2911. ~~Rule PAR 1180 or PR Rule 1180.1~~ may apply to other facilities that process materials stated in Standard Industrial Classification (SIC) 2911, but whether PAR 1180 or PR 1180.1 applies shall be evaluated on a case-by-case basis.

Temporary road repairs do not have an established property boundary and therefore, one cannot establish a fenceline air monitoring plan and/or a fenceline air monitoring system. Additionally, these repairs may be completed before the time it would take to develop, submit, and implement a fenceline air monitoring plan.

For more information regarding facilities subject to PAR 1180 and PR 1180.1, please see Response to Comment #PWM-1b.

*Response to Comment 3-4:*

Since PR 1180.1 will not include facilities that blend or apply asphalt as stated in Comment 3-3, Staff will not include new definitions for the aforementioned facilities.



## COMMENT LETTER #4

Comment Letter #4

**Mojtaba Moghani**

**From:** Renate Boronowsky <renate.ware@gmail.com>  
**Sent:** Sunday, August 27, 2023 3:16 PM  
**To:** Heather Farr; Mojtaba Moghani  
**Subject:** [EXTERNAL]Public Comment - Enhancing Fence Line and Community Monitoring for Refinery Operations

Dear South Coast Air Quality Management District (AQMD) members,

I trust this message finds you well. My name is Renate and I am a committed PhD student in environmental engineering, as well as a member of East Yard Communities for Environmental Justice. At this past week's workshop, I provided a public comment concerning the notification thresholds for air quality, particularly for sensitive groups. I wish to underscore the significance of this matter and encourage the AQMD to consider my perspective.

In line with the AQMD's expressed concern over the volume of notifications, I'd like to emphasize that *the crux of the matter is indeed the frequency of these alerts*. It is vital for residents, particularly those who are most vulnerable, to be made aware of the potential health risks posed by the air they breathe, and the frequency at which they are exposed to these harmful pollutants.

Many folks living in the vicinity of oil operations and refineries often have no option to relocate, and these communities are often characterized by lower income demographics. Disabled community members often live in low income neighborhoods due to the policies that limit access to social services based on an income cap. Those who live on ventilators, and experience other disabilities are much more likely to be harmed by pollutants within their environment, thus necessitating the need for notifications that inform sensitive groups.

It's also important to stress that the health challenges prevalent in these communities extend beyond air quality alone. These communities frequently grapple with a host of issues, including diet-related illnesses, trauma, and stress ailments that come as a direct result of living in poverty and near industrial operations. These additional factors compound with toxin emissions and further impact the health of many residents.

Moreover, the need to safeguard infants and children who inhabit or attend schools in these communities cannot be overstated. Some of these pollutants can impact brain development, and increase cancer risks. Clean air is a human right and something that every child should have access to. *Given these circumstances, I strongly urge the AQMD to revise the notification thresholds for each pollutant, aligning them with the level of risk to sensitive groups*. This revision should encompass both acute events and long-term exposures.

4-1

In sharing my perspective, I would also like to provide a personal context. I am a mother of twins who were born prematurely and brought home to our residence in West Long Beach that was just a few blocks from the edge of the Carson Marathon Refinery. In our time living on W Cameron street, our family experienced many flares from nearby refineries, often in the middle of the night. I distinctly recall a harrowing incident, as we were sitting with our infants in the garden, alarms blared and a heavy cloud of yellow smoke blew in our direction. When I called the police to see if we should be evacuating the area or shutting our windows, I was brushed off and told I would be notified if anyone needed to evacuate. They could tell me nothing of the pollutant that was escaping, nor the potential impacts to our health, and had no advice on how to protect us. However, I am confident that if I had been an individual calling from Bixby Knolls or Belmont Shore, my experience with the emergency services would have played out very differently. These events are vivid reminders of the tangible impact refinery operations can have on individuals and communities.

As a society, we bear a duty and a moral obligation to protect and value the life of the most vulnerable members of our population. The policies and practices that emerge from AQMD's decisions are pivotal in

determining the degree of equity – or lack thereof – that exists in terms of disability, race, and economic discrimination. Your policies implemented now can begin to repair the legacies of the environmentally racist policies of the past, and to help prevent further overall environmental degradation.

As an additional consideration, I align with the sentiment expressed by my fellow East Yard community members regarding accessibility. It is imperative that workshops and policy materials be made more comprehensible for all members of our community. I wholeheartedly support the implementation of text message notifications, recognizing their accessibility to a wide range of residents. However, I advocate for the integration of diverse communication methods. Multiple modalities should be developed. The existing South Coast AQMD app, for instance, presents an opportunity to offer residents real-time insights into emissions, risks, and pollution trends, fostering a deeper understanding of their environment.

4-2

Lastly, I urge the AQMD to expand the scope of refinery fees to include community projects aimed at environmental restoration and public health enhancement. In addition to covering monitoring device setup costs, the fees paid by refineries should contribute to alleviating the community impacts they generate. This could encompass initiatives such as providing funding to local environmental nonprofits, implementing tree plantings, providing and installing diverse air filter systems, and other projects that empower residents to proactively safeguard their health, regardless of their economic status.

4-3

In conclusion, I implore you to recognize the far-reaching consequences of your decisions on our most vulnerable populations. By embracing a more equitable and comprehensive approach to fence line and community monitoring, you play a pivotal role in shaping the well-being of our communities. I trust you will carefully consider these perspectives as you work toward a more just and inclusive future for all.

Thank you for your time and for your dedication to this work.

Sincerely,

--  
**Renate Boronowsky**  
(pronounced: Ren-ah-ta)  
(She/Her/Hers)  
*Environmental Engineering PhD Student*  
*University of California Los Angeles*

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## Response to Comment Letter #4

### *Response to Comment 4-1:*

Thank you for providing comments. The Office of Environmental Health Hazard Assessment (OEHHA) identified and developed information on chemicals emitted from refineries and their health effects and the final report published in March 2019 presents a comprehensive list of chemicals emitted from California refineries and prioritizes the chemicals according to their emissions levels and toxicity.

Measures of toxicity for individual air pollutants included OEHHA's Reference Exposure Levels (RELs), Cancer Potency Factors (CPFs) and Unit Risk Values which addresses both short- and long-term toxicity concerns. These toxicity designations were compared to routine and non-routine emissions from refineries and air pollutants with involvement in the most refinery equipment or processes. Therefore, this ~~study is an~~ extensive study ~~to find~~ identifies the top candidates for air monitoring either at the fenceline and in the communities. It considers the ~~considering~~ different types of health risks including long-term exposures that could potentially be involved.

Notification thresholds defined in PAR 1180 and PR 1180.1 are based on the most stringent of the OEHHA acute RELs, one-hour national, and one-hour California health-based standards (NAAQS and CAAQS). Based on the OEHHA definition, REL is the concentration level at or below which no adverse health effects are anticipated for a specified exposure duration. They ~~and~~ have been revised in 2008 in particular to explicitly include consideration of possible differential effects on the health of infants, children and other sensitive subpopulations, in accordance with the mandate of the Children's Environmental Health Protection Act (Senate Bill 25, Escutia, Chapter 731, Statutes of 1999, Health and Safety Code Section 39669.5 *et seq.*). Most of the listed pollutants have established RELs. EPA defines primary standards as "limits to protect public health, including the health of 'sensitive populations such as asthmatics, children, and the elderly'"<sup>24</sup>. In addition, staff proposed to add information-based notification thresholds for air pollutants with no established RELs or health-based standards to inform the public of any concentration exceedance from normal operations. In an event of threshold exceedance, a facility will include a link to the OEHHA online Air Chemical Database website to the specific air pollutant detected above the threshold and information on long term impacts will also be available.

For additional information and context, please refer to Response to Comment #PWE-2.

### *Response to Comment 4-2:*

Please refer to Response to Comment #PWM-5b, #1-3, and #1-5. In addition, staff is proposing to add text notifications and integrating notifications into the South Coast AQMD mobile application.

### *Response to Comment 4-3:*

~~The~~ PAR 1180 and PR 1180.1 will focus on monitoring air pollutant concentrations ~~from at the~~ fenceline of refineries and related operations in the South Coast Air Basin to provide real-time information to the public on the potential exceedance of air pollutants ~~emitted by thresholds at or~~ near these facilities. However, there are multiple programs in the South Coast AQMD focusing on

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<sup>24</sup> U.S. EPA, "NAAQS Table" <https://www.epa.gov/criteria-air-pollutants/naaq-table>.

improving air quality in communities near ~~to~~ refineries. For example, the AB 617 program invests resources and focuses on improving air quality in Environmental Justice communities. AB 617 committees ~~which includes developing~~ Community Emission Reduction Plans (CERPs). The AB 617 program holds meetings to discuss opportunities to address air pollution concerns in Environmental Justice communities. More information about AB 617 and the South Coast AQMD's AB 617 efforts ~~supporting efforts for AB 617~~ can be found here on the AQMD website: <http://www.aqmd.gov/nav/about/initiatives/environmental-justice/ab617-134>.

## COMMENT LETTER #5

Comment Letter #5

**Citizen Notes and Comments on Rule 1180 and 1180.1  
for 12 October SCAQMD Working-Group Meeting #5**

Submitted on 11 October 2023 for the SCAQMD Working Group Meeting #5 on Rule 1180 Expansion  
by Dr. Genghmun Eng ("Citizen"), 5215 Lenore Street, Torrance, CA 90503

**Note 1:** The SCAQMD Staff Presentation for their 12 October 2023 Working Group Meeting #5 (45 pages) has added the requirement (p. 25 of 45) for 'Real-Time Monitoring of PAHs' after an SCAQMD Executive Officer provides written notice that 'Real-Time Monitoring of PAHs' is feasible. Citizen appreciates this addition to the Rule 1180 / Rule 1180.1 requirements on this important issue.

**Note 2:** Citizen previously highlighted (*Further Notes and Concerns Regarding Facility PAH Emissions: Note 1, Submitted 11 July 2023*) the SCAQMD Staff noted in their Working Group Meeting #1 that their present rules and procedures require updating their Board on technology progress once every 5 years. Citizen noted back then that, for Public Health and Safety, progress and updates on PAH assessment should be done more often, and SCAQMD Staff verbally agreed to do a yearly PAH update assessment to their Board. This SCAQMD commitment should be explicitly captured in these Working-Groups Meeting charts. This yearly update to the SCAQMD Board by the SCAQMD Staff becomes even more important, to document progress, or lack of it, towards 'Real-Time Monitoring of PAHs', given the requirements for the SCAQMD Executive Officer to evaluate its feasibility.

5-1

**Note 3:** On p. 33 of 45, 'Root Cause Analysis', the flowchart box labeled "Root Cause is an off-site source?" would probably be better labeled as "Is Root Cause believed to be an off-site source?", as root-cause analysis often requires many steps to achieve reasonable certainty on a Primary Root Cause, as being the most likely one of many alternatives considered. Pathways for 'Yes' and 'No' should also be labeled in the final archived form for this SCAQMD Presentation page.

5-2

**Note 4:** Regarding 'Root Cause Analysis' (p. 33 of 45); A 'Fishbone Diagram' identifying potential Root-causes, and how their likelihoods were amplified or reduced during the Root-cause Analysis phase, is an important standard 1-page Root Cause Analysis Summary Tool. It's inclusion should be required for any and all Root Cause Analysis reporting, both as part of the historical record, and as an efficient guide to helping determine the most likely Root-cause in an efficient manner.

**Note 5:** Regarding 'Text Notifications' (p. 27 of 45), Citizen favors the Short-Messaging-Service (SMS) format with its 160-character limit. This should be done as an adjunct to the exemplary long-form email that is illustrated. Citizen further notes that a lot of the long-form email shown is dedicated to presenting historical and administrative information, a lot of which may be unnecessary for inclusion in an SMS. Citizen believes that highlighting threshold exceedances is more valuable and impactful in the shorted SMS format, compared to using a Multimedia Messaging Service (MMS) format which can result in messages 10X longer, risking the messages not being read.

**Note 6:** Citizen agrees it is a good idea to have both a SMS Threshold-Exceedance Message (TEM), as well as a follow-on SMS Now-Below-Threshold (NBT) Message. Both message types do not need to include the exact same information. Having a unique identification number for both TEM and NBT messages is a good idea. The simplest would be something like: 'N9270120C' where "N" indicates it is a notification indexer; 'C' indicates year 2023; '9' indicates month (with 'A', 'B', 'C' for October, November, or December); '27' indicated day-of-month; and '0120' is the hours and minutes on a 24-hour clock). High noon Christmas Day 2023 would then be 'NC251200C'.

5-3

**Note 7:** For the TEM, instead of having a 'Link to OEHHA Air Chemical Data Base', where someone would have to go look that up, Citizen suggests putting in the actual CAS Number for the chemical. It will help people receiving the text message to better manage what their needed responses should be. For the NBT, the CAS Number is not needed, as NBT's represent a return to normalcy.

**Note 8:** Citizen proposes these <160 character TEM and NBT message formats. Example here is based on the same representative situation used in the SCAQMD Presentation (p. 27 of 45):

**PROPOSED MODIFIED INFORMATIONAL TEXT**

Valero Wilmington Refinery (C2-East Sensors) shows  
 30.5 ppb Hydrogen Sulfide (CAS-7783064), 9-27-2023, 1:20:00AM  
 WilmingtonRefineryMonitoring.org N9270120C (153 char.)

Valero Wilmington Refinery (C2-East Sensors) below  
 30.0 ppb Hydrogen Sulfide Threshold, 9-27-2023, 2:30:00AM  
 WilmingtonRefineryMonitoring.org N9270230C (149 char.)

Inclusion of a link to the TEM and NBT source then allows the message receiver to efficiently find out any additional information that they need. Also, having the 'Notification Threshold' is unnecessary, because every TEM message is already an exceedance. Even if the first message were a high multiple of the 'Notification Threshold', knowing the actual value is a lot more important than knowing the 'Notification Threshold', since that is an administrative action threshold, and the existence of the notice itself already communicates that something is not normal. Finally, since most TEM and NBT messages are not expected to be reporting a full-scale disaster, the above proposed NBT message has the threshold value built into it, making that data available to all message receivers.

5-3

**Note 9:** After the first TEM message is sent out, what happens if the situation gets worse or better with time? Citizen suggests the following thresholds for TEM messages, until an NBT level is reached:

*TEM Message #2: When Threshold-Exceedance goes 40.0% or more of TEM Message #1*

*.OR. When Threshold-Exceedance goes below 30.0% or more of TEM Message #1*

5-4

These levels are carefully selected, so that two successive 40% increases  $(1.4) \times (1.4) = 1.96$  corresponds to a near doubling of the TEM levels, while two successive 30% decreases  $(0.7) \times (0.7) = 0.49$  corresponds to a reduction by nearly 1/2 of the TEM levels.

**END OF CITIZEN NOTES AND COMMENTS**

## Response to Comment Letter #5

### *Response to Comment 5-1:*

The owner or operator of a facility will be required to revise their FAMP if real-time monitoring technology for PAHs become available. The proposed five-calendar year technology assessment does not preclude staff from requiring PAH monitoring at any time if it determines monitoring is technically feasible. The South Coast AQMD Monitoring and Analysis Division is constantly evaluating new technologies for real-time monitoring. For more information regarding PAH measurements, please refer to Response to Comment #PWM-c.

### *Response to Comment 5-2:*

Staff agrees that reaching it is not always a straightforward yes or no definitive conclusion for the primary specific cause is not always possible when conducting a root-specific cause (previously named root cause) analysis and has amended the figure for the “yes” or “no” pathways. A root-specific cause analysis report is required to have the cause and duration of the air pollutant concentrations, determination of the source of air pollutant emissions, any mitigation and corrective actions taken to stop the exceedance or prevent a recurrence, an explanation of the release for why any corrective actions would that take more than 14 calendar days, and any monitoring data requested by the Executive Officer. The goal of the rule is to have the root-specific cause identified and to have all actions related to the root-specific cause documented thoroughly and effectively. A problem-solving pathway (referred to as a fishbone diagram by the commenter) could be a way for facilities to report the information for the root-specific cause analysis report. The provision for root-specific cause analysis has been further revised to improve the problem-solving pathway for identifying the root-specific cause and addressing the possible issues. In addition to the timelines of the root-specific cause analysis, corrective action, reinspection, and reporting, staff has modified the process required when a root-specific cause is identified to be from off-site sources, and proposed root-specific cause analysis by qualified independent party for reoccurring exceedances.

### *Response to Comment 5-3:*

The purpose of the text notification is to provide information to the general public in an effective and understandable manner. Integration of the CAS number into the message may not be easily understood by the general public. Staff will continue to work on the most feasible way to deploy and implement the text message notification system. Staff will take suggestions for content included in the text message notification into consideration. For more information regarding data accessibility, please refer to Response to Comment #PWE-4b.

### *Response to Comment 5-4:*

Staff agrees with the recommendation for follow-up notifications if concentrations significantly increase over time. Staff included a requirement for the facility to send follow-up notification(s) if the detected level of any of the air pollutants in Table 1 increases significantly above the notification threshold, using the following equation:

$$\begin{aligned} & \textit{Follow – up Notification Threshold} \\ & = \textit{Applicable Notification Threshold} \times 2^X \end{aligned}$$

Where X = 1, 2, 3, 4, and 8

The rules also include a ~~follow-up~~ notification when concentrations go below the threshold for a certain period of time as a conclusion of the event. This is ~~not~~ an existing practice but a new requirement for Rule 1180 with further specifications. ~~;~~ ~~however,~~ PAR 1180 specifies that includes clarification on the specific time (30 minutes) the air pollutant must be measured below the notification threshold level for a minimum of 30 minutes or two consecutive measurements before the follow-up, end of exceedance notification is triggered.



## COMMENT LETTER #6

Comment Letter #6



Ramine Cromartie  
Senior Manager, Southern California Region

November 02, 2023

Heather Farr  
Planning and Rules Manager  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Via e-mail at: hfarr@aqmd.gov

**Re: SCAQMD Proposed Amended Rule 1180, Fenceline and Community Air Monitoring for Petroleum Refineries and Related Operations, and SCAQMD Proposed Rule 1180.1, Other Refinery Fenceline and Community Air Monitoring  
WSPA Comments on Preliminary Draft Rule Language**

Dear Ms. Farr,

Western States Petroleum Association (WSPA) appreciates the opportunity to participate in South Coast Air Quality Management District (SCAQMD or District) Proposed Amended Rule 1180, Fenceline and Community Air Monitoring for Petroleum Refineries and Related Operations (PAR1180), and SCAQMD Proposed Rule 1180.1, Other Refinery Fenceline and Community Air Monitoring (PR1180.1) Preliminary Draft Rule Language. The purpose of this rulemaking is to remove exemptions so that all petroleum refineries identified under SIC 2911 will be subject to the rule and expand applicability to include operations related to refineries that are contiguous to the property of the refinery. SCAQMD is also proposing to expand the Rule 1180 list of monitored compounds to include those chemicals included in the California Office of Environmental Health Hazard Assessment (OEHHA) priority list.<sup>1</sup>

WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport, and market petroleum, petroleum products, natural gas, renewable fuels, 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 SCAQMD and thus will be impacted by PAR1180 and PR1180.1.

<sup>1</sup> OEHHA Analysis of Refinery Chemical Emissions and Health Effects. March 2019. Available at: <https://oehha.ca.gov/media/downloads/faqs/refinerychemicalsreport032019.pdf>.

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SCAQMD published the Preliminary Draft Staff Report and Preliminary Draft Refinery Fenceline Air Monitoring Plan Guidelines on August 18, 2023 and revised preliminary draft rule language for PAR1180 and PR1180.1 on October 6, 2023.<sup>2,3,4,5</sup> WSPA understands that this rulemaking was initially undertaken in response to a lawsuit filed by East Yard Communities for Environmental Justice (EYCEJ) that claimed that the District failed to install a community air monitoring system and require fenceline monitoring at refineries with <40,000 barrel per day production capacity.<sup>6,7</sup> As the rulemaking proceeded, SCAQMD added potential requirements that were being considered as part of a piece of proposed legislation, Senate Bill 674 (SB674).<sup>8</sup> SB674 would have expanded the definition of refineries to include certain non-crude oil feedstock refineries and auxiliary facilities, and require refineries to improve public notification processes, reporting, data accessibility, and to conduct third-party audits and root cause analyses of any threshold exceedances. But on September 14, 2023, SB674 was moved to the "inactive" file for the 2023 legislative session and as such will not become State law this year.<sup>5</sup> Given the number of outstanding issues proposed in the draft rule language related to these SB674 concepts, and the fact that SB674 is still a legislative proposal, WSPA recommends that Rule 1180 be bifurcated such that the concerns of the EYCEJ lawsuit are addressed separately by the required deadline. All other proposals which do not pertain to the EYCEJ lawsuit would be addressed after all refineries and auxiliary facilities have fully approved Fenceline Air Monitoring Plans (FAMPs)/ Quality Assurance Project Plans (QAPPs) and have conducted the first system audit under such approvals.

Under the bifurcation as indicated above, WSPA offers the following additional comments.

1. PAR1180 would require facilities with existing FAMPs to submit a revised FAMP within 6 months of the date of rule adoption. PAR1180 and PAR1180.1 would also require that facilities submit a revised FAMP within 60 days after notification that real time monitoring of polycyclic aromatic hydrocarbons (PAHs) is feasible. WSPA requests that these timelines be updated such that facilities would have one year to submit a revised FAMP.

6-1

<sup>2</sup> PAR1180 Revised Preliminary Draft Rule Language. October 6, 2023. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/revised-preliminary-draft-par-1180---october-2023.pdf?sfvrsn=14>.

<sup>3</sup> PR1180.1 Revised Preliminary Draft Rule Language. October 6, 2023. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/revised-preliminary-draft-pr-1180-1---october-2023.pdf?sfvrsn=14>.

<sup>4</sup> PAR1180 and PR1180.1 Preliminary Draft Staff Report. August 18, 2023. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/preliminary-draft-staff-report-for-par-1180-and-1180.1---august-2023.pdf?sfvrsn=6>.

<sup>5</sup> Preliminary Draft Refinery Fenceline Air Monitoring Plan Guidelines. August 18, 2023. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/preliminary-draft-1180-and-1180.1-guidelines---august-2023.pdf?sfvrsn=6>.

<sup>6</sup> SCAQMD PAR1180 and PR1180.1 Working Group Meeting #5, October 12, 2023. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/par-1180-and-pr-1180.1-wgm5-october-2023.pdf?sfvrsn=14>.

<sup>7</sup> East Yard Communities for Environmental Justice v. South Coast Air Quality Management District. Los Angeles County Superior Court, Case No. 22STCP04938. Available at: [https://legal-planet.org/wp-content/uploads/2022/12/2022-1219\\_1\\_Verified-Petition.pdf](https://legal-planet.org/wp-content/uploads/2022/12/2022-1219_1_Verified-Petition.pdf).

<sup>8</sup> Senate Bill 674. Available at: <https://legiscan.com/CA/bill/SB674/2023>.

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Under the current draft language, PAR1180(d)(2) would require that an owner or operator of a Refinery with an existing Fenceline Air Monitoring Plan (FAMP) submit a revised FAMP no later than six months after date of rule adoption. Further, PAR1180(d)(5)(G) and PR1180.1(d)(4)(G) would require that a revised FAMP be submitted 60 days after a future notification that real time monitoring of PAHs is feasible.

The addition of new equipment may require new locations and/or new infrastructure. Such projects take time to design, and the proposed timelines may not be feasible since at this time, it is unknown what the new equipment would be or what ancillary equipment would be necessary to support such equipment. WSPA suggests that PAR1180(d)(5)(G) and PR1180.1(d)(4)(G) be amended to allow 1 year for submittal of a revised FAMP. Further, FAMP development is based on the requirements in the Refinery Fenceline Air Monitoring Plan Guidelines. The timeline for a revised FAMP for PAH monitoring should therefore be tied to the issuance of revised Refinery Fenceline Air Monitoring Plan Guidelines rather than a notification by the Executive Officer.

6-1

- 2. WSPA recommends that two years be allowed for all installation of monitoring equipment and start of operation resulting from a revised FAMP. Additionally, installation of monitoring equipment should only be required once all FAMPs have been fully approved by the District.**

PAR1180(e) sets forth the compliance schedule for completion of installation and start of operation in accordance with an approved or partially approved FAMP, stating:

*(1) The owner or operator of a Facility shall complete installation and begin operation of a Real-Time Fenceline Air Monitoring System or modify the operation of the Fenceline Air Monitoring System in accordance with the approved or partially approved FAMP:*

*(A) Beginning no later than one year after a FAMP submitted pursuant to paragraph (d)(1) and, subparagraphs (d)(2)(B) and (d)(2)(C) is approved, or partially approved, by the Executive Officer;*

*(B) Beginning no later than 18 months after a FAMP submitted pursuant to subparagraph (d)(2)(A) and paragraph (d)(3) is approved, or partially approved, by the Executive Officer;*

*(C) No later than six months after the Executive Officer approves, or partially approves, a revised FAMP required pursuant to paragraph (d)(5); and*

*(D) Prior to commencing operations at a new Facility.*

6-2

PAR1180 should not include different compliance timelines for installation of equipment resulting from revised plans versus new plans. The constraints on installation timelines are associated with system and structural design, permitting, and construction, and are the same regardless of whether a plan is new or revised. Additionally, it might not be possible for vendors to provide and build the volume of new analyzers required if SCAQMD approves multiple plans in a short time period. WSPA recommends that two years be allowed for all installation and start of operation under both new and revised plans.

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Additionally, timelines in PAR1180 and PR1180.1 for the installation of new monitoring systems should specify that installation should only commence following full approval of all facility FAMPs. A requirement to construct and install monitoring systems which may only have partial District approval would place unreasonable risk on facilities should the District make changes later to the FAMP requirements. Also, WSPA believes SCAQMD needs to focus on fully approving the existing FAMPs before requiring facilities to modify them. Full approvals may end up staggered over a lengthy time period depending on the FAMP. With this, there may be the possibility that the District makes changes to the FAMP requirements as individual facility FAMPs are approved. This could result in an unequal application of the FAMP requirements across the various impacted facilities. Therefore, facilities should not be required to install their new systems until all FAMPs under rule have been fully approved.

6-2

3. While we appreciate the District's interest in making data collected under PAR1180 and PR1180.1 available to the public, facilities must be allowed sufficient time to ensure data is quality controlled before it is made available for public download.

PAR1180(d)(4)(H) and PR1180.1(d)(3)(H) require that facilities include in the FAMP methods to make real time and historical data available for public download. PAR1180 states:

*(H) Methods for making Real-Time Data and historical data collected by the equipment specified in subparagraphs (d)(4)(A) and (d)(4)(C) available for public download in an easily downloadable, accessible, and interoperable electronic format that is approved by the Executive Officer;*

6-3

Additionally, PAR1180(g)(1)(B) and PR1180.1(g)(1)(B) require that facilities maintain a web-based fenceline data display that includes real-time and historic concentrations of all air pollutants measured by the fenceline air monitoring system. Requiring that real time data be available to the public does not allow facilities the time to perform their QA/QC process to ensure data quality. This could result in presenting data that is not valid due to equipment malfunction. Data should be allowed to undergo QA/QC before it is made available for public download. Additionally, the rules should not require that a facility's real time data be publicly available until that facility's QAPP has been approved. References to "real-time" data should be removed from these sections of the rules.

4. Requirements related to the web-based fenceline data displays and notification program described in PAR1180(g)(1) and PR1180.1(g)(1) should be in accordance with a facility's approved FAMP, as opposed to the Refinery Fenceline Air Monitoring Plan Guidelines, and the rules should allow a timeline for facilities to make required changes to their websites.

PAR1180(g)(1) and PR1180.1(g)(1) describe requirements related to the web-based fenceline data displays and notification program. WSPA requests that the following update be made to the draft rule language in these sections:

6-4

*The owner or operator of a Facility shall maintain a web-based fenceline data display and notification program ~~according to the Refinery Fenceline Air Monitoring Plan Guidelines in accordance with the approved FAMP...~~*

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Additionally, time should be allowed for implementation of any changes that are required to be made to facilities' websites to meet the reporting requirements of these rule sections and should not be required until all FAMPs under rule are fully approved.

6-4

**5. PAR1180 and PR1180.1 would require facilities to include a mechanism in their notification programs to provide text messages to the public. WSPA believes that text messages are not the appropriate communication method for public notifications.**

PAR1180(g)(4) and PR1180.1(g)(4) would require that facilities include a mechanism in their notification programs to provide text messages to the public. Fenceline notifications can happen at any hour of the day, and the public may not be interested in receiving notifications late at night. Text messaging can impact users' data plan limits and have the potential to incur additional fees for the users. Additionally, messages are limited to a certain number of characters and therefore texts may not be able to fully convey the scope of the notification. Finally, carriers and devices are not necessarily reliable. There is a concern that if a text fails to be received by a member of the public, it could be perceived as a shortcoming of the refinery rather than an issue with a carrier or device. For these reasons, WSPA believes that text messages are not the appropriate communication method for notifications and requests that this requirement be removed from the rule.

6-5

**6. PR1180(j)(2) and PR1180.1(j)(2) would require that a root cause analysis (RCA) be performed when an air pollutant listed in Table 1 is measured above the notification threshold. The impetus for including root cause analyses in the proposed rules was alignment with SB674. Now that SB674 has been moved to the inactive file for this legislation, WSPA requests that requirements pertaining to root cause analyses be removed from the proposed rule/rule amendments.**

Per SCAQMD, the main goals and objectives of Rule 1180 are as follows:<sup>9</sup>

- Implement a robust, continuous and near real-time community air monitoring network near all refineries in the Basin;
- Provide near real-time air quality information through a dedicated website to inform the public of current air quality conditions in their community;
- Notify the public in case the ambient concentration of one or more air pollutants exceeds pre-determined thresholds;
- Collect air pollution data suitable for short- and long-term air quality assessments;
- Provide up-to-date community air quality data;
- Promote awareness of the potential impact of refinery emissions on air quality through public education; and
- Track progress in improving community air quality.

6-6

<sup>9</sup> SCAQMD Rule 1180 Community Air Monitoring. Available at: <http://www.aqmd.gov/home/rules-compliance/rules/support-documents/rule-1180-refinery-fenceline-monitoring-plans/rule-1180-community-air-monitoring>.

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The purpose of Rule 1180 is to require real-time fenceline air monitoring systems and “to provide air quality information to the public and local response agencies about levels of various criteria air pollutants, volatile organic compounds and other compounds at or near the property boundaries of petroleum refineries.”<sup>10</sup> [emphasis added] Requiring results of RCAs in the notification program does not align with this stated purpose for Rule 1180, and inclusion of RCAs in the notification program would inappropriately set the expectation to members of the public that PAR1180 and PR1180.1 are compliance rules. They are not. Additionally, existing regulations that address equipment repairs may already call for an RCA to be performed. In instances such as this, the RCA requirement would be duplicative.

Also, because SB674 has been moved to the inactive file by the legislature, and it is no longer necessary for the District to align these amendments with that legislative proposal, WSPA requests that requirements pertaining to root cause analyses be removed from the rule.

Although WSPA requests that RCAs be removed from the rule, WSPA offers the following comments with respect to RCAs as they apply to fenceline monitoring:

**a. Dealing with off-site sources**

- The most recent versions of PAR1180 and PR1180.1 acknowledge that refineries may not be the cause of an exceedance of a notification threshold. Other sources, such as vehicle traffic near the fenceline, could cause or contribute to pollutant exceedances. PAR1180 and PR1180.1 should include exceptions for reporting of RCAs when it is determined that pollutant exceedances are likely caused by off-site sources.
- PAR1180(j)(2)(C) and PR1180.1(j)(2)(C) require that a facility notify an off-site source subject to the rule if it is determined that the root cause was from the off-site source. It is not appropriate for SCAQMD to require one facility to assign a possibly legally enforceable compliance obligation to another facility; that is the District’s responsibility.

**b. Management of confidential business information**

- Publication of the details of an RCA must avoid disclosure of confidential business information to the public. The requirements listed under PAR1180(j)(2) and PR1180.1(j)(2) must allow for the exclusion or redaction of confidential business information in RCAs before they are publicly disclosed.

**c. Qualified independent party**

- PAR1180(j)(3) and PR1180.1(j)(3) state that if three RCAs within the same year indicate the same cause or indicate the cause cannot be determined for the same air pollutant detected above the notification threshold, the facility must have a qualified independent party conduct an RCA within 14 days of the most recent instance of exceedance of a threshold. SCAQMD has not defined “qualified independent party.” There are few who understand the complexities of refinery operations, so it will be difficult to source a qualified independent party to do the RCA. In addition, it is unlikely that such an individual outside of the refinery operations would be able to perform the audit in the suggested

6-6

<sup>10</sup> SCAQMD Rule 1180 Refinery Fenceline Air Monitoring Plan Guidelines, December 2017.

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timeframe. Further, if the threshold exceedances are spaced out over several months, it may be impossible to track down a root cause.

**d. Instrument or operator error**

- The rules should include exceptions for when data has been determined to not meet the requirements of the approved QAPP. This could be the result of, for example, instrument malfunction or operator error. If the facility determines that this has occurred, then the monitoring data should be considered invalid, and an RCA should not be required.

6-6

**7. PAR1180(h)(1) and PR1180.1(h)(1) include reporting requirements that are already required to be included in the quarterly reports; WSPA requests that these reporting requirements be removed from the draft rule language.**

PAR1180(h)(1)(B) and PR1180.1(h)(1)(B) require that phone notifications to the SCAQMD be made within two hours of discovering, and no more than eight hours of the start of downtime or malfunction, that the fenceline air monitoring system has failed to accurately provide real-time air monitoring information for more than one hour. Additionally, PAR1180(h)(2) and PR1180.1(h)(2) require written notification be submitted to SCAQMD within 24 hours of discovering that downtime of the fenceline air monitoring system has resulted in a failure to accurately provide information as required by the FAMP for 24 hours or longer. The same information related to equipment downtime is required to be included in the quarterly reports, so such additional reporting appears to be redundant. SCAQMD should only require that this information be included in the quarterly reports, as opposed to the shorter-term notification timelines prescribed in the revised preliminary draft rules.

6-7

**8. A facility should not be required to perform an audit unless there is an approved audit protocol. Audits should only be implemented at facilities when all FAMPs and QAPPs have been fully approved. Additionally, the rules should include a provision to allow facilities to contest audit findings if they determine that the findings are inaccurate or if the audit protocol was not followed correctly.**

PAR1180(i) and PR1180.1(i) describe requirements related to independent audits of the fenceline air monitoring systems. However, SCAQMD staff have not yet developed and approved a protocol for third parties to conduct these audits.<sup>6</sup> WSPA recommends that stakeholders be allowed to review and comment on the audit protocol prior to audits being performed. Audits should not be conducted until the protocol has been reviewed by stakeholders and approved by the Executive Officer. Additionally, audits should not be performed for a facility until all the FAMPs and QAPPs have both been fully approved for each facility.

6-8

The rules should include provisions to allow facilities to contest audit findings. There may be instances where findings are inaccurate, or the approved audit protocol was not correctly applied. Facilities must be given the opportunity to independently review the third-party auditor reports to determine whether the audits were conducted accurately and according to the approved protocol. If not, facilities must be allowed to contest the findings, report any such disputes to SCAQMD, and request an appropriate remedy.



Western States Petroleum Association 970 West 190th Street, Suite 304, Torrance, CA 90502 310.808.2146 wspa.org

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9. PAR1180(l) exempts Related Facilities from monitoring of black carbon. SCAQMD has used the OEHHA priority list of pollutants to inform what pollutants to include in monitoring in PAR1180 and PR1180.1. Because black carbon is not included in the OEHHA priority list, the rule should not require any facilities to monitor black carbon emissions.

PAR1180(l) states that an owner or operator of a Related Facility is exempt from monitoring black carbon. Although black carbon is not included on the OEHHA priority list of pollutants, facilities with existing black carbon monitors could, at their discretion, still use these monitors. But since black carbon is not included on the OEHHA list, facilities should no longer be required to monitor black carbon and its future monitoring should be at each facility's discretion.

6-9

WSPA appreciates the opportunity to provide these comments related to PAR1180 and PR1180.1. We look forward to continued discussion of this important rulemaking. If you have any questions, please contact me at (310) 808-2146 or via e-mail at [rcromartie@wspa.org](mailto:rcromartie@wspa.org).

Sincerely,



Cc: Michael Krause, Assistant Deputy Executive Officer  
Yanrong Zhu, Program Supervisor  
Mojtaba Moghani, Ph.D., Air Quality Specialist  
Jennifer Vinh, Air Quality Specialist  
Andrea Polidori, Assistant Deputy Executive Officer



## Response to Comment Letter #6

### *Response to Comment 6-1:*

At the initial rule adoption, refineries successfully met the 8-month timeline to submit a more comprehensive plan. However, staff understands that the original timelines in the rule were very challenging. While staff does not agree that a full calendar year is needed to revise the FAMPs, staff is proposing to extend the timeline from 6 calendar months to 7 calendar months for PAR 1180 petroleum refineries that have an existing FAMP to submit their revised FAMPs: to include related facilities with common ownership, newly required monitoring technologies, and other new requirements ~~in~~ for PAR 1180 facilities. A related facility without an existing FAMP are provided one year to develop and submit their FAMP.

Regarding PAHs, staff will report to the Stationary Source Committee when PAHs real-time monitoring is deemed feasible and provide guidance on the installation, operation, and maintenance of the real-time monitoring system before the Executive Officer notifies the facility in writing to revise the FAMP to include real-time fenceline monitoring for PAHs.

### *Response to Comment 6-2:*

Staff appreciates the comment and understands the challenges the original Rule 1180 timelines posed and has amended the proposed compliance timeline for equipment installation from 12 calendar months to 15 calendar months for facilities with an existing FAMP. The revised compliance timeline for equipment installation is the same for all facilities subject to this rule with or without a FAMP.

Regarding the approval of the plans, partial approval indicates a part of the plan is approved while other parts are still being assessed or are disapproved. Partial approval is granted if only individual sections are approved. For example, there can be approval of system design and equipment ~~are approved~~ while quality control provisions are still being assessed. ~~Moreover, partial approval is granted if only individual sections are approved.~~ Partial approval allows for ~~more~~ sooner installation of an air monitoring system, thus preventing delays in meeting rule requirements, reporting data in quarterly reports, commencing audits, etc.

### *Response to Comment 6-3:*

The staff recognizes the significance of delivering accurate data to the public and acknowledges the necessity for facilities to allocate sufficient time for quality control and quality assurance. Consequently, staff revised the proposed provision to specify that historical data must be made available for download within 60 calendar days after the conclusion of each quarter. Further, staff is proposing to eliminate the requirement to provide real-time data for download for the same rationale. However, facilities are required to store and display, on their web-based fenceline data display and notification program, at least the most recent five years of real-time and historical data.

### *Response to Comment 6-4:*

PAR 1180 already includes ample time for the facilities to comply with the new requirements for the web-based fenceline data display and notification systems. Subdivision ~~(d)~~ requires the facility to amend their FAMP, including the web-based fenceline data display and notification system, within ~~nine~~ seven -calendar months of rule adoption. According to the compliance schedule, facilities will have 15 calendar months to install the fenceline monitoring system, which includes the web-based fenceline data display and notification system. Consequently, the web-

based data display system must be operational in conjunction with the entire fenceline air monitoring system displaying and storing real-time and historical data. Historical ~~D~~data must be made available to the public and the Executive Officer for download 60 calendar days after the conclusion of the first quarter during which the entire fenceline air monitoring system is operational. Staff has updated the definition of the “Fenceline Air Monitoring System” to enhance clarity by explicitly including the web-based fenceline data display and notification system as an integral part of the entire system.

*Response to Comment 6-5:*

Staff acknowledges the concerns of facilities regarding the text message system. However, it is important to note that the text message option is specifically for interested parties to either opt in or opt out of receiving text notifications. The guidelines provide specific considerations related to the format of text messages, the information to include in each message type, and a disclaimer noting that text messages are handled by individual cell phone carriers, which is outside the control of the facilities to prevent the perception that the non-delivery of text messages is a fault of the facility.

*Response to Comment 6-6:*

Staff added specific~~root~~ cause (previously named root cause) analysis requirements in this rule amendment as an essential tool for identifying sources of air pollutant exceedances to prevent future exceedances. Those assessments will be made available to the public ~~and~~ staff understands that confidential business information cannot be provided. The ~~root~~-specific cause analysis must provide adequate information that demonstrates the actions the facilities took to determine the cause of the elevated air pollutant measurement and the steps they took to prevent future occurrences. Please see response to comment 2-5 for additional information.

Staff made additional modifications to the ~~root~~-specific cause requirements for an off-site source to remove the requirement to notify another facility that they may be the source of the air pollutant measurement. The current proposal only requires the facilities to notify the Executive Officer if the ~~root~~-specific cause is determined to be from an off-site source. Additionally, staff added a new definition for a “Qualified Independent Party”, allowing any person or consulting firm with technical expertise with fenceline air monitoring systems that is not an employee of the facility to conduct the ~~root~~-specific cause analysis.

The facility’s FAMP can include data flags to identify invalid data resulting from errors or malfunctions. If an error or malfunction is identified before an exceeding value is observed and the data are determined to be invalid before a ~~root~~-specific cause analysis should be initiated, the facility does not need to conduct the ~~root~~-specific cause analysis. Often times, it is uncertain based on the raw measurements if the data are invalid when a ~~root~~-specific cause analysis is due ~~by the raw measurements~~. In this case, the facility is expected to initiate the ~~root~~-specific cause analysis until the time of the data invalidity is confirmed. The facility is not required to conduct a ~~root~~-specific cause analysis for the time when the measurements cannot be validated. If a ~~root~~-specific cause analysis report is submitted based on with the invalid measurements, the report ~~invalidated~~ can be canceled or noted for invalidity. ~~However,~~ ~~†~~The invalid data will impact the data completeness which must be included in the quarterly report.

*Response to Comment 6-7:*

The notification and report required in subdivision (i) (subdivision (h) in the preliminary draft rule version) are required so staff can quickly respond to it for further investigation. This requirement is separate from the reporting requirements in the quarterly reports which will be available 60 days after conclusion of each quarter.

*Response to Comment 6-8:*

The initial audit for PAR 1180 petroleum refineries will be conducted by National Physical Laboratory (NPL), which is an independent party contracted by South Coast AQMD ~~after~~under a Request for Proposal (RFP). A requirement of the RFP was to develop an audit protocol through a public process. This protocol will be utilized for any future audit for PAR 1180 and PR 1180.1 facilities. Audits are expected to be performed one calendar year after the installation and operation of the fence-line air monitoring system. Facilities can always contest the audit findings ~~with~~through submitting comment letters.

*Response to Comment 6-9:*

Black carbon is a product of incomplete combustion, such as combustion in heavy-duty diesel engines; therefore, black carbon has historically been used to quantify the portion of particulate matter that is diesel particulate matter. In order to determine the level of particulate matter caused by truck traffic to and from refineries, monitoring the concentration of black carbon is vital.

## COMMENT LETTER #7



November 9, 2023

VIA: ELECTRONIC MAIL ONLY (cob@aqmd.gov)

Attn: Faye Thomas, Clerk of the Boards  
South Coast Air Quality Management District

**Re: Letter in Support of Proposed Amended Rule 1180 (Fenceline and Community Air Monitoring and Related Facilities) and Proposed Rule 1180.1 (Fenceline and Community Air Monitoring for Other Facilities)**

Dear Governing Board Members:

East Yard Communities for Environmental Justice and Earthjustice write in support of Proposed Amended Rule 1180 and Proposed Rule 1180.1 and urge the Governing Board's approval of the rules as currently proposed by air district staff. The Governing Board must reject oil industry efforts to weaken these proposed rules or delay the air district's consideration of these rules pending action by the legislature.

The proposed rules will bring additional refineries into compliance with state-mandated refinery fenceline and community air monitoring requirements under Health and Safety Code section 42705.6. For years, these refineries have been out of compliance with these monitoring mandates, thereby depriving surrounding communities of near real-time information to protect their health and safety when excess emissions cross the fenceline and enter their communities. Moreover, the proposed rules would close air monitoring gaps by requiring that contiguous or adjacent related facilities supporting refinery processes—such as storage tank farms and other inherently dangerous operations—install fenceline air monitoring and support community air monitoring efforts.

The proposed rules also implement critical updates to achieve the Legislature's intended goals in creating a state-wide refinery fenceline air monitoring program, including to identify sources of emissions at refineries; inform options to mitigate emissions; and notify surrounding communities when pollution levels become hazardous. Among several other critical updates, the proposed rules would require monitoring of toxic pollutants recommended by the Office of Environmental Health Hazard Assessment for monitoring at the fenceline; conducting root cause analysis and corrective action to address excess

7-1

emissions; routine auditing to ensure data quality and monitoring system reliability; and providing access to historical monitoring data and pollution trends, among other important updates.

For these reasons, the Governing Board must ensure that these critical updates are implemented. The South Coast AQMD must exercise its regulatory authority to implement best monitoring practices and address deficiencies in its existing refinery fenceline and community air monitoring program. The air district should not wait on the Legislature to take action to address these issues.

7-1

Respectfully submitted,

Oscar Espino-Padron, Senior Attorney  
Byron Chan, Senior Attorney  
**Earthjustice**

Cindy Donis, Community Organizer  
Jan Victor Andasan, Community Organizer  
**East Yard Communities for Environmental Justice**

cc: Michael Krause, Assistant DEO ([mkrause@aqmd.gov](mailto:mkrause@aqmd.gov))  
Heather Farr, Planning and Rules Manager ([hfarr@aqmd.gov](mailto:hfarr@aqmd.gov))  
Yanrong Zhu, Program Supervisor ([yzhu1@aqmd.gov](mailto:yzhu1@aqmd.gov))  
Mojtaba Moghani, Ph.D., AQ Specialist ([mmoghani@aqmd.gov](mailto:mmoghani@aqmd.gov))  
Jennifer Vinh, AQ Specialist ([jvinh@aqmd.gov](mailto:jvinh@aqmd.gov))

## Response to Comment Letter #7

### *Response to Comment 7-1:*

Staff appreciates the support voiced by East Yard Communities for Environmental Justice and Earthjustice in favor of Proposed Amended Rule 1180 and Proposed Rule 1180.1 and look forward to continuing this important work and collaborating with all stakeholders.

## COMMENT LETTER #8

Air Products and Chemicals, Inc.  
 4000 Mac Arthur Boulevard  
 Suite 420 East Tower  
 Newport Beach, CA 92660  
 T 949-474-1860  
[www.airproducts.com](http://www.airproducts.com)



November 10, 2023

Dr. Olga Pikelnaya  
 Program Supervisor  
 SCAQMD  
[opikelnaya@aqmd.gov](mailto:opikelnaya@aqmd.gov)

Heather Farr  
 Planning & Rules Manager  
 SCAQMD  
[Hfarr@aqmd.gov](mailto:Hfarr@aqmd.gov)

**RE: Rule 1180 - Applicability of Hydrogen facilities**

Dear Olga & Heather,

Air Products is the only U.S.-based global industrial gas company and the world's largest hydrogen producer. Within California, the company safely operates 9 hydrogen production facilities, about 30 miles of hydrogen pipeline and currently supplies and operates a network of light-duty and heavy-duty hydrogen fueling stations. Air Products has committed to invest more than \$15 billion to develop clean hydrogen supplies around the world, including in California. Air Products supports California's decarbonization efforts and has been selected to be part of the California ARCHES LLC Hydrogen Hub Project.

The proposed update to Rule 1180 makes several changes to the community fence line monitoring system program for communities and refineries, including expanding the program to include hydrogen facilities. The rationale for the inclusion of the two Air Products hydrogen facilities is unclear given they are not large toxic emitters.

While we appreciate the stated purpose of the rule is to, *"provide air quality information to the public about levels of various criteria air pollutants, volatile organic compounds, metals, and other compounds air pollutants, at or near the property boundaries of petroleum refineries and in nearby communities,"* our facilities are not large emitters of toxics as recognized by our reporting under AB2588, the Air Toxics **"Hot Spots"** Information and Assessment Act, that requires us to report the types and quantities of certain substances routinely released into the air. When Air Products reports its AB2588 emissions, SCAQMD has notified us that we are not a large emitter and therefore are not required to perform an AB2588 Health Risk Assessment.

As proposed, it is estimated that Rule 1180 would require Air Products to spend more than \$10 million initially, and at least \$2 million annually, to install and maintain fence

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line monitors when most of the pollutants listed in Rule 1180 are not expected to be present or emitted at our facilities.

We are captured in the proposed rule because we are adjacent to a refinery and provide more than 50 percent of our output to a refinery, not because we are a high emitter of toxics. The refineries use hydrogen to clean up gasoline, to remove sulfur and other impurities. Our facilities also provide hydrogen to automobiles and buses who use it as a zero emissions fuel.

The two Air Products' facilities that would be impacted by Proposed Rule 1180 – Carson and Wilmington, are already subject to robust requirements per our Title V permit and conditions. All the criteria pollutants that are subject to reporting and made public are a magnitude less than many industries from the [OEHAA report of March 2019](#) and the individual criteria pollutants subject to this rule as reported on [CARB](#).

We propose that the District consider adding an exemption in the rule for facilities that are not considered large toxic emitters under AB2588. This would create a rule that is focused on the problem of emissions by capturing facilities that are high toxic emitters on AB2588's Prioritization Score Threshold (i.e. [Prioritization Score Threshold](#)) without penalizing other facilities.

We appreciate your consideration of this request.

Sincerely,



JP Gunn  
HyCO Business Director, California

8-1

## Response to Comment Letter #8

### *Response to Comment 8-1:*

The primary goal of the Rule 1180 fenceline and community monitoring requirements is to keep the community informed about refinery and refinery-related emissions. The intent is to monitor the full impacts of the petroleum refineries. Hydrogen plants are integral to petroleum refinery processes and in many cases, the hydrogen plants are within the boundary of the petroleum refinery; therefore, the air pollutant concentrations are captured by the existing petroleum refinery fenceline monitors. In the case of the two Air Product facilities in the Carson and Wilmington area, the air pollutant concentrations from those facilities are not captured by the existing petroleum refineries fenceline monitors.

One concern regarding ~~the existing~~ fenceline monitoring regulations is that ~~the~~ petroleum refineries tend to sell off parts of the refinery to other entities and, therefore, the full impact of potential air pollutant concentrations that cross the facilities' fenceline are not being measured, reported, or addressed. This is the case for the Air Products facility adjacent to the Valero refinery. That hydrogen plant was at one time owned by the refinery. Requiring the fenceline and community monitoring requirements to encompass ~~the~~ petroleum refineries and ~~the~~ related facilities such as hydrogen plants will address this inequity between ~~the~~ different refineries (that do or do not sell off parts of itself) and provide a comprehensive ~~comprehensive~~ fenceline and community monitoring systems to help inform the community of potential air pollutant concentrations.

Regarding the cost, staff recognizes there is a high cost to install and operate a fenceline monitoring system; however, fenceline air monitoring systems are an important tool to provide the public with essential information. Fenceline monitoring systems at related facilities are not required to monitor for metals and black carbon, and according to staff's 2023 cost estimation for fenceline monitoring stations, the cost for two Air Products facilities in Carson and Wilmington with one open path monitor, considering the size of the facilities, falls considerably below the \$10 million mark. The staff estimated cost per facility per open path monitor is around \$710,000. Staff further notes that Air Products' most recent AER report indicates higher emissions at both facilities compared to terminals that will be subject to the rule. In addition, all facilities have the option to propose excluding certain air pollutants from their FAMP ~~if they~~ and provide ~~sufficient~~ justification. Thus, if Air Products can demonstrate in their FAMP that specific air pollutants are not emitted from the facility, that will be considered when the FAMP is evaluated which could help reduce the cost of the fenceline monitoring system installation and operation.



## COMMENT LETTER #9



December 4, 2023

**VIA: ELECTRONIC MAIL ONLY**

**Attn:** Michael Krause, Assistant DEO (mkrause@aqmd.gov)  
Heather Farr, Planning and Rules Manager (hfarr@aqmd.gov)

**Re: Comments on Proposed Amended Rule 1180 and Proposed Rule 1180.1**

Dear Mr. Krause and Ms. Farr,

East Yard Communities for Environmental Justice and Earthjustice submit these comments on Proposed Amended Rule 1180 and Proposed Rule 1180.1. The proposed rules implement critical updates to monitoring practices and address deficiencies in the existing refinery fenceline and community air monitoring program. But the Air District's eleventh-hour proposal to exempt certain tank terminals from the proposed rules undermines both the fundamental purpose of the proposed rules and community trust in the Air District.

Over the past year, East Yard Communities for Environmental Justice and Earthjustice have diligently worked with Air District staff to advocate for significant improvements to the current refinery fenceline and community air monitoring program. Staff adopted many of these improvements in the most recent versions of the proposed rules posted on October 6, 2023. Based on those versions of the proposed rules, East Yard Communities for Environmental Justice and Earthjustice submitted a letter to the Governing Board on November 9, 2023, in support of the proposed rules.

Given this year-long collaboration and dialogue with Air District staff on the proposed rules, we were surprised and disappointed when staff proposed a new exemption in its presentation to the Stationary Source Committee on November 17, 2023. Staff had never introduced this "low emission-based capacity exemption" in previous meetings and working groups. Staff's decision to introduce the exemption in the final stages of the rulemaking contradicts any sincere commitment to transparency and meaningful public engagement.

In addition to undermining community confidence in the Air District, the "low emission-based capacity exemption" also undermines a driving force behind the proposed rules to close air monitoring gaps. Instead, the "low emission-based capacity exemption" creates air monitoring gaps that deny communities critical information that can impact their health and

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safety. The three facilities that currently fall under the exemption pollute in communities already overburdened with multiple sources of pollution. In this setting, the Air District should aggressively push for comprehensive monitoring requirements rather than exemptions.

For these reasons, we ask the Air District to remove the “low emission-based capacity exemption” and advance strong proposed rules without delay that center the input and concerns that community members have consistently shared with staff throughout the rulemaking process.

9-1

Respectfully submitted,

Byron Chan, Senior Attorney  
**Earthjustice**

Cindy Donis, Community Organizer  
Jan Victor Andasan, Community Organizer  
**East Yard Communities for Environmental Justice**

cc: Yanrong Zhu, Program Supervisor ([yzhu1@aqmd.gov](mailto:yzhu1@aqmd.gov))  
Mojtaba Moghani, Ph.D., AQ Specialist ([mmoghani@aqmd.gov](mailto:mmoghani@aqmd.gov))  
Jennifer Vinh, AQ Specialist ([jvinh@aqmd.gov](mailto:jvinh@aqmd.gov))

## Response to Comment Letter #9

### *Response to Comment 9-1:*

Staff included an exemption for certain tank terminals (based on low emissions)~~low emission based tank terminals~~ which was not explicitly discussed in the last Working Group Meeting, held on October 12, 2023; however, at that meeting, staff did discuss that several sites were still being evaluated for applicability particularly for refinery-related. By way of background, staff initially proposed to only include related facilities under common ownership to address ~~the~~ Marathon Petroleum Refinery's situation. Marathon Petroleum Refinery~~who~~ did not include their related tank terminals and the sulfur recover plant in their fenceline air monitoring plan. However, to better align with proposed Senate Bill 674, staff adjusted the applicability provision to include related facilities regardless of the ownership just prior to the release of the preliminary draft rule and staff report on August 18<sup>th</sup>. Senate Bill 674 was moved to inactive status on September 14<sup>th</sup>; however, staff did not return to the original applicability provision, instead focused on making the applicability provision align with the original intent of the Senate Bill 647 by including facilities whose primary operations are largely to support ~~the~~ petroleum refineries.

Staff reviewed all potential related facilities adjacent to the petroleum refineries and several new facilities were initially included, and some were subsequently removed, as discussed in the public workshop, the preliminary draft staff report, and working group meeting held in October. Staff found that several tank terminals located adjacent to the petroleum refineries do not have operations that primarily relate to the refineries. The Long Beach port is located near the refineries in the Wilmington/Carson and some terminals receive the majority of their product from refineries outside of the South Coast AQMD through the port. That led staff to the change in definition for related facilities with an emphasis to that a related facility must have include more than 50 percent of product direct or indirect input or output must be from the Rule 1180 petroleum refineries. In addition, staff identified some small terminals that have some related operations with ~~the~~ Rule 1180 refineries, which varies from year to year, but have low capacities, low emissions, and a small footprint. One such facility is Torrance Meters, staff included that facility in the preliminary draft staff report but excluded the facility and discussed the reasons for excluding the facility in the October Working Group meeting. That facility is located on a contiguous property; however, they do not have above ground storage tanks and have a low potential for emissions. Another example of a small terminal is Rancho Holdings, which is a facility staff had not identified or presented until the October 12<sup>th</sup> Working Group Meeting. That facility emits a fraction of the emissions of a petroleum refinery. The other two small terminals are both owned by Marathon. One is Tesoro Logistics Terminal Truck Loading Rack, a small truck loading facility with existing fenceline monitors on the entire east side of the facility. Staff discussed this facility in previous Working Group Meetings and in the preliminary draft staff report that the facility likely can demonstrate adequate coverage with the existing monitors. The last one is Tesoro Logistics Product Terminal, another very small terminal where ~~product~~ finished product is received via a pipeline from the refinery. Staff proposed the low emission 310,000 barrel exemption based on the low emissions of these facilities. Further, many of the smaller terminals already have monitors in place on several sides of their fenceline, which provide coverage to detect any potential air pollutant emissions from the terminals. There are also community monitoring systems in place.

While staff is proposing to exempt these facilities from the fenceline requirement in ~~Rule~~ PAR 1180, these facilities are subject to the most stringent regulations in the nation. VOC emissions

from tank terminals are regulated by South Coast AQMD Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities (Rule 1178) and Rule 463 – Organic Liquid Storage (Rule 463). Rule 1178 applies to the storage tanks at petroleum refineries and was just amended September 1, 2023, to enhance the requirements to include optical gas imaging (OGI) sensing for leak detection that must be conducted on a weekly basis for tank farms. Prior to this amendment, facilities were only required to use handheld analyzers to monitor for leaks on a quarterly or semi-annual basis. OGI cameras can find larger leaks more efficiently, resulting in faster repair timelines and reduced emissions. The OGI requirements take effect beginning July 1, 2024, well before fenceline monitoring could be installed. In addition, staff is in the process of amending Rule 463, which applies to the non-petroleum refinery tank terminals. Staff is proposing to include similar OGI requirements for those tanks which will significantly improve the ability to detect and mitigate any potential leak. Both rules contain control measures including best available rim seal systems and covers or sleeves on all roof components that are gasketed, bolted, or equipped with wipers to reduce emissions from openings. Fixed roofs are required to be converted to an internal or external floating roof tank or vented to a fuel gas system or an emission control system with at least 95 percent control efficiency. External floating roof tanks at facilities subject to Rule 1178 were required to be retrofit with domes if storing material with true vapor pressure of three psia or greater.

**COMMENT LETTER #10**

**ROB BONTA**  
*Attorney General*



*State of California*  
**DEPARTMENT OF JUSTICE**

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December 22, 2023

Mojtaba Moghani, Ph.D.  
Jennifer Vinh  
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RE: Proposed Amended Rule 1180 and Proposed Rule 1180.1

Dear Dr. Moghani and Ms. Vinh:

Thank you for the opportunity to submit comments on the South Coast Air Quality Management District's (AQMD) Proposed Amended Rule 1180 and Proposed Rule 1180.1 (Rules Package). The California Attorney General's Office (AGO) reviewed the various draft rules released in June, August, and October of 2023, as well as the final draft rule texts released on December 5, 2023. The AGO writes to express its support for passage of the Rules Package, to request certain clarifications, and to suggest recommendations for improvement.<sup>1</sup>

The Rules Package would bring the AQMD's refinery air monitoring regulations into compliance with statutory petroleum refinery air monitoring regulations contained at California Health and Safety Code section 42705.6 (the Refinery Statute).<sup>2</sup> The Refinery Statute requires air districts and petroleum refineries to install and operate air pollution control monitoring stations along the fencelines of refineries and within adjacent communities to monitor refinery emissions. As the Fresno Superior Court confirmed in a case challenging another air district's refinery air monitoring rules, the Refinery Statute does not provide or authorize exemptions from the air

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<sup>1</sup> The Attorney General submits these comments pursuant to his independent power and duty to protect the environment and natural resources of the State. (Cal. Const., art. V, § 13; Gov. Code, §§ 12511, 12600-12612; *D'Amico v. Bd. of Medical Examiners* (1974) 11 Cal.3d 1, 14-15.)

<sup>2</sup> Health & Saf. Code, § 42705.6.

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monitoring requirements.<sup>3</sup> In addition, the air districts' selection of chemicals to be monitored must have a rational basis and be supported by substantial evidence.<sup>4</sup> The purposes of the Refinery Statute are to gather data on air pollution near refineries in order to estimate the "associated pollutant exposures and health risks and [to determine] trends in air pollutant levels over time," and to evaluate "the quantity of fugitive emissions, gas leaks, and other air emissions from the refinery."<sup>5</sup>

The Rules Package would remove an unauthorized exemption for refinery facilities with less than 40,000 barrel-per-day (bpd) crude oil refining capacity, bringing AQMD's refinery air monitoring rules into compliance with the Refinery Statute. With removal of the exemption, AQMD's air monitoring regulations will apply to all petroleum refineries in the agency's jurisdiction, consistent with the text of the Refinery Statute. In addition, the Rules Package will expand the list of pollutants to be monitored by refineries. The Rules Package thus will provide important updates to ensure that the AQMD's refinery air monitoring regulations fulfill the Refinery Statute's objectives. In addition, the Rules Package would add new requirements to the air monitoring regulations that would significantly expand the scope of the data collected, improve responses to emissions incidents, and ultimately provide better information and protection to the frontline communities living adjacent to these facilities. Notably, the Rules Package will apply the AQMD's air monitoring requirements to several new types of facilities, such as biofuels refining facilities, refinery-related facilities, and storage tank terminals. We commend the AQMD for making these efforts.

While we generally support AQMD's adoption of the Rules Package, we respectfully recommend improvements and clarifications to strengthen the Rules Package. First, we recommend clarification on certain items, such as whether the requirements of the Rules Package apply to "asphalt plants" as defined in the regulations. Second, we recommend some measures to strengthen the Rules Package if feasible, such as full perimeter fence-line monitoring and more defined audit protocols and timelines. Finally, we recommend that AQMD avoid using categorical exemptions or limitations to exclude facilities from the Rules Package, particularly for smaller storage tank terminals. Instead, AQMD should conduct analyses of facilities' processes, emissions, and potential public health effects to determine if they should be exempt from all or part of the regulations.

## **I. BACKGROUND**

### **A. State-Mandated Refinery Air Monitoring: The Refinery Statute**

In January 2017, the California Legislature enacted the Refinery Statute to address air

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<sup>3</sup> Statement of Decision and Judgment, *Comite Civico del Valle, et al. v. San Joaquin Unif. Air Pollution Control Dist.*, Case No. 20CECG01008 (Cal. Super. Ct., Fresno County, Sept. 17, 2021).

<sup>4</sup> *Ibid.*

<sup>5</sup> Health & Saf. Code, § 42705.6, subs. (a)(1)-(2).

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pollution exposure in communities living near petroleum refineries.<sup>6</sup> The Refinery Statute requires air districts and petroleum refineries to install and operate air pollution monitoring stations along the fencelines of petroleum refineries and within adjacent communities to monitor refineries' emissions. The monitoring data must be made publicly available as quickly as possible.<sup>7</sup> Districts must develop guidance regarding monitoring equipment and the locations and operation of the monitoring stations.<sup>8</sup> These requirements were effective as of January 1, 2020.<sup>9</sup>

The Refinery Statute was adopted after a series of explosions, fires, and extensive flaring events at multiple refineries statewide prompted widespread concern about emissions from refineries, particularly for the neighboring frontline communities.<sup>10</sup> The legislation sought to improve understanding of, and responses to, refinery emissions by gathering data regarding emissions trends, release incidents, and associated exposure rates; and by requiring consistent notifications to the public and regulators to inform responses and mitigation strategies when emissions are hazardous.<sup>11</sup> Access to this information is critical for neighboring communities; the refineries, which are among the largest sources of pollutant emissions, are predominantly located in low-income communities and communities of color that are disproportionately affected by pollution and related health hazards.<sup>12</sup>

In March 2019, the Office of Environmental Health Hazard Assessment (OEHHA) published a report entitled, "Analysis of Refinery Chemical Emissions and Health Effects" (OEHHA Report). The OEHHA Report identified the most common pollutants emitted from petroleum refineries, analyzed their toxicities and health effects, and recommended a list of 18 pollutants for monitoring at petroleum refineries based on toxicity, average levels of emissions, and their involvement in refinery processes.<sup>13</sup>

## **B. Judicial Application of the Refinery Statute's Requirements**

In December 2019, the San Joaquin Valley Unified Air Pollution Control District (San Joaquin APCD) adopted regulations to implement the Refinery Statute's requirements. Although the Refinery Statute does not authorize any exemptions to its requirements, San Joaquin APCD's

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<sup>6</sup> Assem. Bill No. 1647 (2017-2018 Reg. Sess.), Muratsuchi.

<sup>7</sup> Health & Saf. Code, § 42705.6, subd. (d).

<sup>8</sup> *Id.* at subds. (b), (c).

<sup>9</sup> *Ibid.*

<sup>10</sup> Assem. Floor Analysis, Assem. Bill No. 1647 (2017-2018 Reg. Sess.) Sept. 11, 2017, p. 2.

<sup>11</sup> *Ibid.*

<sup>12</sup> *Ibid.* The Statute's Assembly Floor Analysis notes that the largest refineries are located in Carson, El Segundo, Torrance, and Wilmington in Los Angeles County; in Richmond, Martinez, and Rodeo in Contra Costa County; and in Benicia in Solano County. (*Ibid.*) Most of these communities have been ranked in the top 15% of communities statewide for their exposure to pollution burdens. (See CalEnviroScreen 4.0, <[https://experience.arcgis.com/experience/11d2f52282a54ccebca67428e6184203/page/CalEnviroScreen-4\\_0/](https://experience.arcgis.com/experience/11d2f52282a54ccebca67428e6184203/page/CalEnviroScreen-4_0/)> (as of Dec. 3, 2023).)

<sup>13</sup> OEHHA, Analysis of Refinery Chemical Emissions and Health Effects (Mar. 20, 2019), p. vi; <<https://oehha.ca.gov/air/analysis-refinery-chemical-emissions-and-health-effects>> (as of Dec. 3, 2023).

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regulations contained two exemptions: (1) total exemptions for facilities “not currently engaged in refining crude oil;” and (2) partial exemptions for facilities refining less than 40,000-bpd to monitor for a smaller list of air pollutants compared to other facilities. These provisions effectively exempted all of the refineries in the San Joaquin APCD’s jurisdiction from monitoring for the full suite of pollutants ostensibly required by the regulations.

A coalition of community groups filed suit challenging the regulations in March 2020 in Fresno County Superior Court. The lawsuit alleged that the exemptions were not authorized by the Refinery Statute, and were arbitrary, capricious, and lacking in evidence. The AGO intervened in the lawsuit in support of the community groups in September 2020, and the superior court ruled in favor of petitioners and the AGO in September 2021. The court confirmed that the Refinery Statute does not authorize exemptions from the Statute’s monitoring requirements, and that the selection of chemicals to be monitored must be supported by evidence.<sup>14</sup> The court rescinded San Joaquin APCD’s exemptions and directed the district to draft revised regulations complying with the Refinery Statute and that were supported by evidence.

### C. South Coast AQMD’s Current Rule 1180 & Related Litigation

AQMD first adopted Rule 1180 in December 2017. Like the San Joaquin APCD’s initial regulations, the current version of Rule 1180 contains exclusions that are not authorized by the Refinery Statute. Current Rule 1180 is applicable only to petroleum refineries capable of refining over 40,000-bpd of crude oil. Additionally, Current Rule 1180 requires refineries to monitor for only half of the pollutants recommended by the OEHHA Report, and does not apply to facilities producing non-crude oil feedstock such as biofuels facilities, which can also emit harmful pollutants. East Yard Communities for Environmental Justice (East Yard) filed a lawsuit against AQMD in December 2022 raising similar claims to those raised in the San Joaquin APCD litigation. The parties settled the litigation with AQMD agreeing to produce draft rules by November 2023 and to hold hearings to adopt a final rule by January 2024.<sup>15</sup>

## II. DISCUSSION

AQMD’s current refinery air monitoring regulations at Rule 1180 are inconsistent with the Refinery Statute because they exempt certain refineries and arbitrarily limit the list of pollutants required for monitoring. The Rules Package would rectify these problems: the amendments will remove the 40,000-bpd exemption, apply the monitoring requirements to all petroleum refineries in the AQMD’s jurisdiction, and require monitoring for the majority of the pollutants recommended for monitoring by the OEHHA Report. Additionally, The Rules Package will provide for monitoring at new types of facilities, such as refinery-related and non-crude oil

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<sup>14</sup> Statement of Decision and Judgment, *supra* fn. 3.

<sup>15</sup> Stipulation Re Settlement and Req. for Continuing Jurisdiction; and Order, at Ex. 2, pp. 3-4, *East Yard Cmty. For Env’tl. Justice v. South Coast Air Quality Mgmt. Dist.*, No. 22-STCP-04398 (Cal. Super. Ct., Los Angeles County, May 5, 2023).



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facilities, provide new public notification thresholds and methods, and require new response measures to emissions incidents to ensure corrective actions are taken when appropriate. These new measures enhance and expand AQMD's refinery air monitoring program, consistent with the Refinery Statute's data-gathering and public notification purposes. We urge adoption of the Rules Package, but request clarification of certain items and offer recommendations for improvement. We request clarification regarding the 50 percent throughput threshold for refinery-related facilities and on requirements for "asphalt plants;" recommend full perimeter fence-line monitoring and more defined audit protocols; and urge AQMD to avoid using categorical exemptions to exclude facilities from the Rules Package, especially small tank farms

#### **A. The Rules Package Will Remove the Improper 40,000-bpd Exemption**

The current Rule 1180 exempts petroleum refineries with a maximum refining capacity of 40,000-bpd from compliance with its requirements. However, the plain text of the Refinery Statute does not provide any exemptions for refineries based on daily crude oil processing capacity (or any other reason). The Refinery Statute provides that "the owner or operator of a *petroleum refinery* shall develop, install, operate, and maintain a fence-line monitoring system...."<sup>16</sup> The remainder of the text refers to petroleum refineries generally, and does not classify or exempt any refineries based on type, capacity, activity, output, or any other factor. The text is devoid of any exemptions from the Refinery Statute's requirements, and it does not reference refineries' barrel-per-day capacities at all, indicating that refining capacity is not key to its provisions. The Refinery Statute does not envision exclusion of refineries with less than 40,000-bpd refining capacity from air monitoring requirements, and so the current Rule 1180 exemption contravenes the Refinery Statute.

Moreover, the exemption lacks evidentiary support. There are no explanations provided for the exemption overall, and neither is there any explanation for why the threshold figure of 40,000-bpd specifically was selected. The December 2017 Governing Board meeting minutes for the current Rule 1180 suggest that AQMD intended Rule 1180 to apply only to large refineries that produce transportation fuel,<sup>17</sup> but there is no basis for this limitation, if intended. The Refinery Statute does not limit its provisions to large refineries producing transportation fuels, but rather applies to "petroleum refineries" overall. AQMD also does not explain why emissions from smaller refineries are less harmful than emissions from larger facilities, nor why emissions from production of transportation fuels are more harmful than emissions from production of other refinery products. The proposed amendments to Rule 1180 would rectify these problems by eliminating the 40,000 barrel-per-day exemption altogether, which we support. The amendments will ensure that all of the petroleum refineries in the AQMD's jurisdiction will be subject to the district's air monitoring regulations, as the Refinery Statute requires.

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<sup>16</sup> Health & Saf. Code, § 42705.6, subd. (c) (emphasis added).

<sup>17</sup> SCAQMD, Agenda Item No. 1: Minutes of the December 1, 2017 Governing Board Meeting (Jan. 5, 2018), at p. 12, <<http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2018/2018-jan5-001.pdf?sfvrsn=5>> (as of Dec. 3, 2023).

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### **B. The Rules Package Will Expand Monitoring for a Broader Suite of Chemicals Recommended by OEHHA**

The Rules Package will require monitoring by default for the majority of the chemicals recommended for monitoring by the OEHHA Report. These changes will remedy flaws with the limited list of chemicals identified for monitoring in the current Rule 1180.

There are problems with the list of chemicals currently required for monitoring by Rule 1180. First, the list excludes eight of the 16 chemicals recommended by the OEHHA Report without explanation. Second, the list includes 10 chemicals that were *not* recommended by the OEHHA Report. There is minimal explanation of why any of these chemicals were selected, and those explanations address only four of the ten compounds.<sup>18</sup> Finally, OEHHA released a finalized OEHHA Report in March 2019, but AQMD did not update the Rule 1180 list to account for revisions in the final report.

The Rule Package rectifies these problems by requiring most facilities to monitor for 16 of the 18 pollutants recommended by the OEHHA Report, requiring facilities without fluidized catalytic cracking units (FCCUs) to monitor for 13 of the 18 pollutants, and by providing reasoned explanations for deviations from the OEHHA Report's recommendations.<sup>19</sup> AQMD explained that black carbon is not on the OEHHA Report list, but black carbon is a "species" of particulate matter 2.5, which *is* included in both the OEHHA Report list and in the new monitoring requirements.<sup>20</sup> Additionally, the December 2023 Final Draft Staff Report (Staff Report) observes that facilities not operating FCCUs emit far lower amounts of cadmium, manganese, and nickel.<sup>21</sup> Refinery-related facilities and terminals are therefore exempted from monitoring these compounds because they do not operate FCCUs. Finally, neither sulfuric acid nor diethanolamine remain vaporous long enough to reach refinery fencelines if emitted.<sup>22</sup> AQMD staff has committed to performing a public technology assessment every five years to assess real-time monitoring technologies and protocols, quality control measures, pollutants to be

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<sup>18</sup> SCAQMD, Staff Report: Proposed Rule 1180—Refinery Fenceline and Community Air Monitoring (Dec. 1, 2017), App. A, p. A-73; Att. B., <<http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2017/2017-dec1-031.pdf?sfvrsn=5>> (as of Dec. 3, 2023).

<sup>19</sup> SCAQMD, Proposed Amended Rule 1180 (Dec. 5, 2023), p. PAR 1180-22, Table 1, <<http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/draft-par-1180---december-2023.pdf?sfvrsn=8>>; SCAQMD Proposed Rule 1180.1 (Dec. 5, 2023), p. PR 1180.1-18, Table 1, <<http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/draft-pr-1180-1---december-2023.pdf?sfvrsn=8>> (both as of Dec. 4, 2023).

<sup>20</sup> SCAQMD, Draft Staff Report: Proposed Amended Rule 1180 and Proposed Rule 1180.1 (Dec. 5, 2023), p. 2-22, <<http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/draft-staff-report-for-par-1180-and-1180-1.pdf?sfvrsn=8>> (as of Dec. 4, 2023) (hereafter, Final Draft Staff Report); see also U.S. EPA, What are the Parts of Particulate Matter, and How Do They Relate?, Feb. 6, 2023, <<https://www.epa.gov/air-emissions-inventories/what-are-parts-particulate-matter-and-how-do-they-relate>> (as of Dec. 4, 2023).

<sup>21</sup> Final Draft Staff Report, *supra* fn. 20, at p. 2-29.

<sup>22</sup> *Id.* at pp. 2-20 to 2-21.

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monitored, as well as monitoring fees.<sup>23</sup>

#### *Recommendations*

The current version of the rules seemingly require only one monitoring station at minimum per facility, and it is difficult to understand how “fenceline” coverage can be achieved with only one fenceline monitoring station per facility.<sup>24</sup> We suggest that facilities be required to provide full perimeter coverage of their sites, unless evidence demonstrates that full perimeter monitoring is infeasible or unnecessary.

10-1

### **C. The Rules Package Expands Monitoring at Refinery-Related Facilities and Non-Crude Oil Facilities**

The Rules Package would extend Rule 1180’s coverage to facilities currently exempted, such as refineries processing fewer than 40,000-bpd of crude oil, as well as refinery-related operations located contiguous or adjacent to refineries, such as tank terminals, sulfur recovery plants, and asphalt production facilities.<sup>25</sup> Monitoring requirements would also be applied to refineries processing non-crude oil feedstocks, such as renewable fuels and biofuels. Eight facilities would be newly subject to the regulations under these amendments.<sup>26</sup> We support expansion of the regulations to cover these previously excluded facilities, as discussed below.

#### **1. Addition of Contiguous or Adjacent Refinery-Related Facilities**

The Rules Package would expand the refinery air monitoring program to also cover refinery-related facilities located “contiguous or adjacent” to refineries, and which receive more than 50 percent of their input from, or throughput to, those refineries.<sup>27</sup> Such facilities include electricity-generating facilities, hydrogen production plants, sulfuric acid and sulfur recovery plants, and crude oil and petrochemical product tank terminals.<sup>28</sup> These changes would apply the air monitoring regulations to new types of facilities, and would result in five new individual facilities being added to the monitoring program.<sup>29</sup>

The addition of these five related facilities is important for several reasons. First, these facilities emit *tons* of reactive organic gases, total organic gases, carbon monoxide, nitrogen

<sup>23</sup> *Id.* at p. 2-30.

<sup>24</sup> Proposed Amended Rule 1180, *supra* fn. 19, at p. 1180-4, subd. (d)(1)(C); Proposed Amended Rule 1180.1, *supra* fn. 19, at p. 1180.1-3, subd. (d)(1)(C).

<sup>25</sup> Final Draft Staff Report, *supra* fn. 20, at pp. 2-1, 2-2 to 2-7, 4-2.

<sup>26</sup> *Id.* at pp. 5-1 to 5-2, Tables 5-1 and 5-2.

<sup>27</sup> Proposed Amended Rule 1180, *supra* fn. 19, at pp. PAR 1180-2, subd. (c)(4).

<sup>28</sup> *Ibid.*

<sup>29</sup> Final Draft Staff Report, *supra* fn. 20, at p. 5-1, Table 5-1.

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oxides, and particulate matter emissions annually.<sup>30</sup> Second, these facilities involve inherently hazardous processes: hydrogen production produces carbon dioxide (CO<sub>2</sub>) and methane emissions;<sup>31</sup> sulfur recovery plants produce nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and total hydrocarbons emissions;<sup>32</sup> and tank terminals frequently produce fugitive releases of volatile organic compounds (VOCs) that can amount to almost half of a refinery's total emissions.<sup>33</sup> Finally, inclusion of these refinery-related facilities in the monitoring regulations furthers the legislative purposes of the Refinery Statute. The Statute requires monitoring of "petroleum refineries," of which these facilities are components. Moreover, monitoring of these refinery-related facilities furthers the Statute's goals of gathering data useful for measuring emissions, pollutant trends, associated exposure rates over time, and for identifying fugitive leaks and emissions from petroleum refining operations.<sup>34</sup> By gathering more data from these sources, the information provided to regulators and the public will be more accurate and thorough, thereby producing better public health responses.

Relatedly, AQMD explains that "contiguous or adjacent" will be defined using an EPA definition finding that facilities were "contiguous or adjacent" if they were "interdependent or linked in some sense."<sup>35</sup> This is a broad and holistic definition, and we commend the AQMD's decision to use this definition. AQMD's broader definition encompasses more facilities and is thereby more informative to, and protective of, nearby communities. The definition reinforces the goals of the Refinery Statute by providing residents with more detailed and actionable

<sup>30</sup> Emissions data sourced for each terminal from CARB's AB 2588 Air Toxics Hot Spots 2021 Facility Emissions data (<<https://ww2.arb.ca.gov/applications/facility-search-engine>>). In 2021 alone, the Tesoro Sulfur Recovery Plant (Facility ID 151798) emitted 159 tons (318,000 lbs.) of carbon monoxide (CO); 48 tons (96,000 lbs.) of nitrogen oxides (NO<sub>x</sub>); 37 tons (74,000 lbs.) of total organic gases (TOG); 33 tons (66,000 lbs.) of particulate matter (PM), and 28 tons (56,000 lbs.) of reactive organic gases (ROG)—about 305 tons (610,000 lbs.) of total emissions. The other four facilities reported similar, albeit lower, figures for 2021: *Kinder Morgan Liquids Terminal* (Facility ID 800057)—75 tons TOG, 60 tons ROG, 7 tons CO, 2 tons NO<sub>x</sub>; *Air Products Wilmington* (Facility ID 101656)—25 tons NO<sub>x</sub>, 15 tons TOG, 8 tons ROG, 5 tons PM; *Air Products Carson* (Facility ID 3417)—19 tons TOG, 17 tons NO<sub>x</sub>, 14 tons ROG, 5 tons PM; and the *Tesoro Logistics/Carson Crude Terminal* (Facility ID 174694)—12.8 tons TOG, 10.5 tons ROG, 0.3 tons NO<sub>x</sub>.

<sup>31</sup> U.S. EPA, Hydrogen in Transportation (Oct. 2023), <<https://www.epa.gov/greenvehicles/hydrogen-transportation>> (as of Dec. 5, 2023).

<sup>32</sup> U.S. EPA, Air Emissions Factors and Quantification, AP 42, Fifth Edition, Vol. 1, Ch. 8: Inorganic Chemical Industry (Jan. 9, 2023), Section 8.13.4, p. 8.13-5, <[https://www.epa.gov/sites/production/files/2020-09/documents/8.13\\_sulfur\\_recovery.pdf](https://www.epa.gov/sites/production/files/2020-09/documents/8.13_sulfur_recovery.pdf)> (as of Dec. 5, 2023).

<sup>33</sup> Earthjustice, *Crossing the Fenceline: Critical Reforms to California's Petroleum Refinery Emissions Monitoring Law* (Oct. 12, 2022), p. 18, <<https://earthjustice.org/feature/refinery-emissions-monitoring-law-reform-california>> (as of Dec. 5, 2023).

<sup>34</sup> Health & Saf. Code, § 42705.6, subs. (a)(1)-(2).

<sup>35</sup> Final Draft Staff Report, *supra* fn. 20, at p. 2-2, fn. 5 (citing U.S. EPA, Applicability of Title V Permitting Requirements to Gasoline Bulk Terminals Owned by Williams Energy Ventures, Inc. (May 19, 1999), pp. 4-6, <<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKewjb3KbCoauBAXULFDQIHZxOCQcQFnoECBAQAQ&url=https%3A%2F%2Fwww.epa.gov%2Fsites%2Fdefault%2Ffiles%2F2015-08%2Fdocuments%2Fwe1999.pdf&usg=AOvVaw3C17sdgYkakHd3y8WUPM-q&opi=89978449>> (as of Sept. 14, 2023)).

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information about pollution trends, exposure risks, and fugitive releases associated with nearby refineries.

### *Recommendations*

AQMD’s definition of refinery-related facilities as a facility with 50 percent-or-more throughput connected to an adjacent refinery appears to reflect AQMD’s assessment that those facilities are so intrinsically linked to a refinery’s operation as to be considered part of the refinery.<sup>36</sup> However, this definition does not appear to account for the facilities’ emissions or potential for emission exposure to nearby frontline communities. Table 2-1 in the Staff Report lists all the refinery-related facilities considered for monitoring by AQMD, including the five facilities ultimately excluded.<sup>37</sup> AQMD excludes Vopak Terminal and Olympus Terminal because neither has operations related to local refineries exceeding 50 percent.<sup>38</sup> However, these facilities can still produce hundreds of pounds of toxic chemical emissions annually.<sup>39</sup> Two other facilities, Tesoro’s Carson Products Terminal and its Wilmington Terminal Truck Loading Rack are excluded because “they are much smaller in tank capacity...with a lower potential for air emissions.”<sup>40</sup> AQMD asserts that smaller tank terminals with less than 310,000-barrel storage capacity report fewer emissions than terminals with greater capacity,<sup>41</sup> but the facilities’ own emissions data does not consistently confirm this assertion. For instance, CARB’s data for the Tesoro Carson Product Terminal indicates that the facility produced tons of emissions in 2021, contrary to the AQMD’s pounds-per-year figures for 2022.<sup>42</sup> CARB reports even higher 2021 emissions for the Wilmington Terminal Truck Loading Rack.<sup>43</sup> Finally, AQMD’s 2022 data for Rancho LPG Holdings indicates that it also produces tons of criteria pollutant emissions.<sup>44</sup>

10-2

<sup>36</sup> Final Draft Staff Report, *supra* fn. 20, at p. 2-2.

<sup>37</sup> *Id.* at p. 2-4, Table 2-1.

<sup>38</sup> Vopak Terminal reportedly stores only petroleum shipped in from overseas. *Id.* at p. 2-5.

<sup>39</sup> Emissions data for Olympus Terminal sourced from U.S. EPA’s Toxics Release Inventory (TRI), <[https://edap.epa.gov/public/extensions/TRIToxicsTracker\\_embedded/TRIToxicsTracker\\_embedded.html](https://edap.epa.gov/public/extensions/TRIToxicsTracker_embedded/TRIToxicsTracker_embedded.html)>, EPA TRI Facility ID 90802LNGBC1004P (587 lbs. in 2022). Vopak Terminal apparently does not report data to the EPA or CARB, and AQMD’s most recent emissions data for this facility is from 2015 (3 tons (6,000 lbs.) VOCs, 302 lbs. NOx, 74 lbs. CO) (see SCAQMD Facility Information Detail (F.I.N.D.) Tool, <<https://xappprod.aqmd.gov/find/>>, Facility ID 21482).

<sup>40</sup> Final Draft Staff Report, *supra* fn. 20, at p. 2-5.

<sup>41</sup> *Id.* at p. 2-4.

<sup>42</sup> CARB 2021 Facility Emissions data, Facility ID 174703: 7.9 tons (15,800 lbs.) TOG; 6.5 tons (13,000 lbs.) ROG; 1.3 tons (2,600 lbs.) CO—about 15.7 tons (31,400 lbs.) of total emissions in 2021. However, AQMD reports only 500 lbs. of VOC emissions for this facility in 2022. (Final Draft Staff Report, *supra* fn. 20, at p. 2-4.)

<sup>43</sup> *Id.* at Facility ID 167981: 19 tons (38,000 lbs.) CO; 6 tons (12,000 lbs.) TOG; 5 tons (10,000 lbs.) ROG; 4.6 tons (9,200 lbs.) NOx—about 34.6 tons (69,200 lbs.) of total emissions in 2021. However, AQMD reports only 1,200 lbs. of emissions for this facility in 2022. (Final Draft Staff Report, *supra* fn. 20, at p. 2-4.)

<sup>44</sup> SCAQMD F.I.N.D. Tool, Facility ID 158910: 1.095 tons (2,190 lbs.) CO; 1.064 tons (2,128 lbs.) VOCs; 0.749 tons (1,498 lbs.) NOx; 0.161 tons (322 lbs.) SOx; and 0.093 tons (186 lbs.) of PM—about 6,138 lbs. of emissions in 2022. However, AQMD reports only about 1,169 lbs. of emissions for this facility for the same year. (Final Draft Staff Report, *supra* fn. 20, at p. 2-4.)

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Notably, while these emissions are generally lower than emissions from the facilities covered by the regulations, this discrepancy is not universal nor does it appear to be significant in some cases.<sup>45</sup>

AQMD should consider whether other factors, aside from just throughput connected to a single refinery alone, should be considered in determining the application of the Rules Package. AQMD could establish multiple factors that each independently could trigger monitoring requirements for adjacent and contiguous facilities, such as (1) throughput that is connected to a single or multiple refineries in the region; (2) known, estimated, or anticipated emissions levels from the facility; or (3) facility processes that may result in emissions of chemicals of concern. This more individualized approach would ensure that AQMD's refinery air monitoring requirements meet the broad legislative purpose underlying the Refinery Statute of gathering data to measure pollution trends, identify refinery incidents, provide actionable data to neighboring communities, and protect public health. An individualized analysis would also allow facilities the ability to demonstrate on a case-by-case basis that they should be exempted from the regulations based on their lack of connection to a local refinery and/or their emissions.

10-2

## 2. Non-Crude Oil Refining Facilities

The Rules Package would expand the requirements of the monitoring program to facilities refining biofuels or other non-crude oil feedstock. As more facilities transition to refining renewable fuels, this expansion is an important improvement to AQMD's regulations. The explicit purposes of the Refinery Statute are to gather data "useful for estimating associated pollutant exposures and health risks and in determining trends in air pollutant levels," and "for detecting or estimating the quantity of fugitive emissions, gas leaks, and other air emissions" from refineries.<sup>46</sup> These goals are not inherently tied to just emissions from crude oil processing, and apply just as readily to emissions from non-crude oil refining facilities. Indeed, the non-crude oil refining facilities at issue reported significant emissions in 2021 and 2022, including tons of toxic organic gases (TOG), reactive organic gases (ROG), nitrogen oxides (NOx), particulate matter (PM), carbon oxides (CO) and sulfur oxides (SOx), and hundreds (sometimes thousands) of pounds of other chemicals, per year.<sup>47</sup> Expanding air monitoring requirements to

<sup>45</sup> Compare, for example, the excluded Wilmington Terminal Truck Loading Rack, total 34.6 tons (69,200 lbs.) in 2021, to the included Tesoro Logistics/Carson Crude Terminal, total 23.6 tons (47,200 lbs.) in 2021.

<sup>46</sup> Health & Saf. Code, § 42705.6, subds. (a)(1)-(2).

<sup>47</sup> Emissions data sourced for each facility from CARB's 2021 emissions data and EPA's TRI program. *AltAir Paramount, LLC*: CARB 2021 Facility ID 187165 (26 tons (52,000 lbs.) TOG; 25 tons (50,000 lbs.) NOx; 19 tons (38,000 lbs.) ROG; 17.6 tons (35,200 lbs.) PM; and 8.6 tons (17,200 lbs.) CO—about 96.2 tons (192,400 lbs.) in 2021), EPA TRI Facility ID 90723PRMNT14700 (3,709 lbs. of toxic chemical emissions in 2022); *LTR dba World Oil Refining*: CARB 2021 Facility ID 800080 (27 tons (54,000 lbs.) NOx; 18.5 tons (37,000 lbs.) CO; 17.4 tons (34,800 lbs.) SOx; 15.7 (31,400 lbs.) tons TOG; 14 tons (28,000 lbs.) PM; and 12 tons (24,000 lbs.) ROG—about 104.6 tons (209,200 lbs.) in 2021), EPA TRI Facility ID 90280LNDYT9301S (774 lbs. of toxic chemical emissions in 2022); *Valero Wilmington Asphalt Plant*: CARB 2021 ID 800393 (18.8 tons (37,600 lbs.) TOG; 12.7 tons (25,400 lbs.) ROG; 7 tons (14,000 lbs.) CO; and 6.7 tons (13,400 lbs.) NOx—about 45.2 tons (90,400 lbs.) in 2021), EPA TRI ID 90744HNTWY1651A (337 lbs. of toxic chemical emissions in 2022).

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cover these facilities will produce much more detailed and expansive information about local air emissions for residents than is currently provided by AQMD’s refinery air monitoring program, and we strongly support adoption of these measures.

#### *Recommendations*

We request clarifications on certain items in Proposed Rule 1180.1 and suggest some modifications to the draft regulation. First, the draft rule defines both “asphalt plant” and “refinery,” but it is not clear whether the rule places monitoring requirements on “asphalt plants.”<sup>48</sup> We recommend that AQMD revise the draft rule to clarify that the requirements apply to “asphalt plants.” This would be consistent with AQMD’s intent—the Staff Report explains several times that facilities producing asphalt from crude oil will be subject to Proposed Rule 1180.1<sup>49</sup> Moreover, the two asphalt facilities included in Proposed Rule 1180.1 produced tons of pollutant emissions in both 2021 and 2022.<sup>50</sup> These emissions must be monitored to fulfill the purpose of the Refinery Statute, namely, gathering data to measure pollutant emissions, exposure rates, and health effects over time. As such, AQMD should make clear that the rules’ requirements apply to “asphalt plants.”

10-3

Second, we recommend that AQMD refrain from relying solely on Occupational Safety and Health Administration (OSHA) Standard Industry Classification Code 2911 (SIC Code 2911) to determine whether a facility is subject to the Rules Package generally. The Staff Report asserts that the Refinery Statute applies only to facilities classified under SIC Code 2911.<sup>51</sup> However, neither the Refinery Statute’s text nor any of the accompanying legislative materials discuss the SIC system. Indeed, the Refinery Statute could apply to multiple facilities categorized under the SIC system’s “Major Group 29,” which applies to “petroleum refining and related industries,” and includes both SIC Code 2911 facilities and other related facilities.<sup>52</sup>

This issue is illustrated in AQMD’s exclusion of World Oil Recycling (DeMenno-Kerdoon) from the regulations. AQMD proposed to exclude this facility because it was classified

<sup>48</sup> Proposed Rule 1180.1, *supra* fn. 19, pp. PR 1180.1-1 to PR 1180.1-2.

<sup>49</sup> Final Draft Staff Report, *supra* fn. 20, at pp. ES-1; 1-4; 2-1; 2-9 to 2-10; 2-30 to 2-33; 4-4; 5-2; App. A, p. A-1.

<sup>50</sup> 2021 Emissions: CARB 2021 Emissions data: *Valero Wilmington Asphalt Plant* (Facility ID 800393)—18.8 tons (37,600 lbs.) TOG; 12.7 tons (25,400 lbs.) ROG; 7 tons (14,000 lbs.) CO; and 6.7 tons (13,400 lbs.) NOx—about 45.2 tons (90,400 lbs.) in 2021. *LTR dba World Oil Refining* (Facility ID 800080)—27.2 tons (54,400 lbs.) NOx; 18.5 tons (37,000 lbs.) CO; 17.4 tons (34,800 lbs.) SOx; 15.7 tons (31,400 lbs.) TOG; 14.2 tons (28,400 lbs.) PM, and 12 tons (24,000 lbs.) ROG—about 105 tons (210,000 lbs.) in 2021. 2022 Emissions: SCAQMD F.I.N.D. Tool: *Valero Wilmington Asphalt Plant* (Facility ID 800393)—7.2 tons (14,400 lbs.) CO; 6.6 tons (13,200 lbs.) NOx; 4.8 tons (9,600 lbs.) VOCs; 0.85 tons (1,700 lbs.) PM; and 0.25 tons (500 lbs.) SOx—about 19.7 tons (39,400 lbs.) in 2022. *LTR dba World Oil Refining* (Facility ID 800080)—30.6 tons (61,200 lbs.) NOx; 23.5 tons (47,000 lbs.) SOx; 14.4 tons (28,800 lbs.) CO; 11.6 tons (23,200 lbs.) VOCs; and 11.1 tons (22,200 lbs.) PM—about 91.2 tons (182,400 lbs.) in 2022.

<sup>51</sup> Final Draft Staff Report, *supra* fn. 20, at pp. ES-1, 1-1, 2-1, 2-9; 2-10; 3-1; App. A, pp. A-1, A-25.

<sup>52</sup> U.S. Occupational Safety and Health Admin. (OSHA), SIC Manual, Major Group 29: Petroleum Refining and Related Industries, <<https://www.osha.gov/data/sic-manual/major-group-29>> (as of Dec. 6, 2023).

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under SIC Code 2992, not 2991.<sup>53</sup> Notably, SIC Code 2992 classifies facilities refining and processing lubricating oils and greases “from purchased mineral, animal, and vegetable materials,” and may apply to certain alternative feedstock facilities. It is not clear why this facility is excluded when it is AQMD’s intent to include refineries processing alternative feedstock, such as biofuels, in the regulations. Nor does AQMD describe World Oil Recycling’s emissions profile—the facility released tons of pollutants in 2021 and 2022, and has an emissions profile substantially similar to other facilities that are subject to the rule.<sup>54</sup> But the facility is excluded from the proposed monitoring regulations solely because it is classified under SIC Code 2992 rather than SIC Code 2911. This outcome would undermine the Refinery Statute’s data-gathering and public notification goals—the public would not have access to this facility’s emissions data, nor that of any other facility classified under any SIC code other than SIC Code 2911, and would not be able to assess these facilities’ emission trends over time and the associated public health risk exposure. For these reasons, we urge AQMD to refrain from using classification under SIC Code 2911 as the sole determinative factor for whether a facility will be subject to the air monitoring regulations.

10-3

### 3. New Tank Terminal Exemption

AQMD unveiled a previously undisclosed potential exemption to the Rules Package at the Stationary Source Committee meeting on November 17.<sup>55</sup> The exemption excludes storage tank terminals with storage capacity of 310,000 barrels or less from the regulations altogether.<sup>56</sup> AQMD’s Staff Report explains that these smaller terminals emit only two-to-seven percent of the VOC emissions of a standard petroleum refinery, and that many are located adjacent to refineries with installed fence-line monitoring systems, or already have their own monitoring systems.<sup>57</sup> AQMD further notes that tank farms are also regulated under other AQMD rules applicable to storage tank VOC emissions and for organic liquid storage.<sup>58</sup> Notably, AQMD contends that tank terminals with storage capacity below 310,000 barrels reported fewer emissions than larger tank farms.<sup>59</sup> This exemption removes three facilities from the regulations.

10-4

There are several reasons why this exemption is concerning. First, there does not appear

<sup>53</sup> Final Draft Staff Report, *supra* fn. 20, at p. 2-10.

<sup>54</sup> 2021 Emissions: CARB Emissions data, Facility ID 800037: 18.6 tons (37,200 lbs.) NOx; 11.9 tons (23,800 lbs.) TOG; 5.6 tons (11,200 lbs.) ROG; and 3.2 tons (6,400 lbs.) CO—about 39.3 tons (78,600 lbs.) in 2021. 2022 Emissions: SCAQMD F.I.N.D. Tool, Facility ID 800: 18.82 tons (37,640 lbs.) NOx; 5.1 tons (10,200 lbs.) VOCs; 2.7 tons (5,400 lbs.) CO; 2.6 tons (5,200 lbs.) PM; and 0.23 tons (460 lbs.) SOx—about 29.5 tons (59,000 lbs.) in 2022.

<sup>55</sup> SCAQMD, November 17, 2023, Stationary Source Committee Presentation (Nov. 17, 2023), Agenda Item No. 1, slide 5, <<http://www.aqmd.gov/docs/default-source/Agendas/ssc/ssc-agenda-11-17-2023.pdf?sfvrsn=12>> (as of Dec. 6, 2023).

<sup>56</sup> Proposed Amended Rule 1180, *supra* fn. 19, at p. PAR 1180-21, subd. (n)(2).

<sup>57</sup> Final Draft Staff Report, *supra* fn. 20, at p. 2-4.

<sup>58</sup> *Ibid.*

<sup>59</sup> *Ibid.*



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to be a logical relationship between the exemption and emissions from these facilities. Indeed, Table 2-1 of the Staff Report shows that there is no correlation between storage tank capacity and emissions—the lowest-emitting facilities on the chart, Vopak and Olympus terminals, have some of the *largest* storage capacities of all the facilities considered.<sup>60</sup>

Second, as discussed above, the three tank terminals excluded from the regulations each emit tons of pollutants annually, contrary to some of the figures in the Staff Report.<sup>61</sup> Because these tank terminals do in fact generate significant emissions comparable to other tank terminals, excluding them based on size alone does not make sense. Even if these terminals' emissions of VOCs specifically are a fraction of those from petroleum refineries, that fact does not lead to the conclusion that VOC emissions from these facilities are not significant, nor that other, non-VOC emissions are not worth monitoring.

10-4

For these reasons, we urge AQMD to remove the new tank terminal exemption, and to adopt procedures to evaluate tank terminal emissions on a case-by-case basis instead. This arrangement would serve the purposes of the Refinery Statute and the monitoring regulations by collecting data from a significant emissions source to evaluate pollution trends and provide notifications and information about those emissions to the public. A case-by-case evaluation would also provide tank terminals with fewer emissions the opportunity to demonstrate that they should be excluded from the monitoring requirements,<sup>62</sup> or that they already have sufficient fenceline monitoring and reporting systems in place and new systems are not necessary.

#### **D. The Rules Package Includes Critical New Public Notification Health-Based and Historic Thresholds**

The Rules Package proposes new public notification thresholds based on health-based or historically averaged data for each pollutant. Emissions exceeding these thresholds would require notifications to the public and subsequent root cause analyses, audits, corrective action plans, and reporting. The health-based notification thresholds are based on OEHHA reference exposure levels (RELs), federal National Ambient Air Quality Standards (NAAQS), or California Ambient Air Quality Standards (CAAQS). For pollutants without such health-based standards, the notification thresholds are based on the historic quarterly maximum one-hour emissions for each

<sup>60</sup> *Id.* at p. 2-4, Table 2-1.

<sup>61</sup> *Tesoro Logistics Carson Product Terminal*: 2021 CARB data, Facility ID 174703: 7.9 tons (15,800 lbs.) TOG; 6.5 tons (13,000 lbs.) ROG; 1.3 tons (2,600 lbs.) CO—about 31,400 lbs. of total emissions in 2021. However, AQMD reports only 500 lbs. of VOC emissions for this facility in 2022. (Final Draft Staff Report, *supra* fn. 20, at p. 2-4.) *Wilmington Truck Loading Rack*: 2021 CARB data, Facility ID 167981: 19 tons (38,000 lbs.) CO; 6 tons (12,000 lbs.) TOG; 5 tons (10,000 lbs.) ROG; 4.6 tons (9,200 lbs.) NO<sub>x</sub>—about 69,200 lbs. of total emissions in 2021. However, AQMD reports only 1,200 lbs. of emissions for this facility in 2022. (*Ibid.*) *Rancho LPG Holdings*: SCAQMD F.I.N.D. Tool, Facility ID 158910: 1.095 tons (2,190 lbs.) CO; 1.064 tons (2,128 lbs.) VOCs; 0.749 tons (1,498 lbs.) NO<sub>x</sub>; 0.161 tons (322 lbs.) SO<sub>x</sub>; and 0.093 tons (186 lbs.) of PM—about 6,138 lbs. of emissions in 2022. However, AQMD reports only about 1,169 lbs. of emissions for this facility for the same year. (*Ibid.*)

<sup>62</sup> Proposed Amended Rule 1180, *supra* fn. 19, at p. PAR 1180-21, subd. (n).

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pollutant.<sup>63</sup>

Some stakeholders expressed concern about the historically based notification thresholds selected by AQMD for pollutants without health-based thresholds, and suggest removing the five pollutants without health-based thresholds—particulate matter (PM), naphthalene, polycyclic aromatic hydrocarbons (PAHs), cadmium, and manganese—from the regulations altogether.<sup>64</sup> We strongly oppose this suggestion—the OEHHA Report analyzed the health effects of all refinery-related pollutants, and concluded that these five pollutants were among the most frequently emitted and hazardous of refinery emissions.<sup>65</sup> AQMD’s use of the historic quarterly maximum one-hour emissions for these chemicals from the refineries as notification thresholds is reasonable for those chemicals without health-risk exposure levels.<sup>66</sup>

**E. The Rules Package Includes Important New Emissions Response Requirements: Root Cause Analyses, Audits, Corrective Actions, and Recordkeeping**

The Rules Package contains new measures to improve responses to emissions incidents, including root cause analyses, audits, corrective actions, and recordkeeping requirements. We strongly support these measures, which will increase accountability for pollution incidents and operational problems.

First, the Rules Package contains much-improved public notification requirements. Within 15 minutes of a pollutant being emitted above notification thresholds, a facility must send a public notification to the community describing the incident, including the name of the emitting facility, the location, date, and time of the emission; as well as the pollutant name and a link to the pollutant’s information on an OEHHA database.<sup>67</sup> Facilities are also required to send a follow-up notification after the pollutant is again consistently measured below notification levels for 30 minutes, and must include information about the amount and duration of the emission.<sup>68</sup> Facilities must also operate webpages that display historical and real-time monitoring data and various reports, and provide options for residents to opt into or out of notifications, to select e-mail and/or text message notifications, and to submit feedback to the facility.<sup>69</sup>

These measures are vital, because the Refinery Statute explicitly requires collection of

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<sup>63</sup> Final Draft Staff Report, *supra* fn. 20, at pp. 2-21, 2-25, Table 2-8.

<sup>64</sup> Western States Petroleum Assn., Letter to AQMD Re Proposed Amended Rule 1180 and Proposed Rule 1180.1 (Aug. 15, 2023), p. 3, <<http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/comment-letter-from-western-states-petroleum-association.pdf?sfvrsn=6>> (as of Dec. 6, 2023).

<sup>65</sup> OEHHA Report, *supra* fn. 13, at p. vi.

<sup>66</sup> *Assn. of Irrigated Residents v. San Joaquin Valley Unif. Air Pollution Cont. Dist.* (2008) 168 Cal.App.4th 535, 548-549 (courts defer to agencies’ expert scientific and policy judgments).

<sup>67</sup> Proposed Amended Rule 1180, *supra* fn. 19, p. PAR 1180-10.

<sup>68</sup> *Id.* at p. PAR 1180-11.

<sup>69</sup> *Id.* at pp. PAR 1180-8 to PAR 1180-11.

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real-time air monitoring data, maintaining records of that data, and provision of this data to the public “as quickly as possible on a publicly accessible format.”<sup>70</sup> Moreover, collection of real-time and historical data in a publicly accessible format furthers the purposes of the Refinery Statute’s air monitoring requirements: gathering data that would allow regulators and residents to estimate pollution emissions, exposure trends, and health risks over time, and to detect fugitive releases and other emissions incidents from facilities.<sup>71</sup> For these reasons, we strongly support these public notification measures.

Second, a facility must perform a “root cause analysis” within 24 hours of an emissions incident exceeding a notification threshold, in order to identify the origin of the incident.<sup>72</sup> The facility must then implement corrective actions, if any, within 24 hours of identification of the root cause of the emission.<sup>73</sup> A report must be provided to AQMD within 14 days of identification of the root cause, and post the report on the facility’s public notification website.<sup>74</sup> Facilities are required to provide a further provide a report on any corrective actions taken to AQMD and posted on the webpage within 28 days thereafter.<sup>75</sup> These are practical and reasonable requirements that would ensure that the data collected per the regulations are translated into actionable outcomes beneficial for facilities and neighboring residents alike.

Some stakeholders have expressed concerns that these root cause analysis requirements are beyond the scope of AQMD’s refinery air monitoring regulations.<sup>76</sup> These concerns can be addressed. Initially, the stakeholders concede that facilities are *already* required to perform root cause analyses for equipment repairs,<sup>77</sup> and so procedures and resources are already in place for these types of studies. Moreover, as noted above, requiring root cause analyses make the data collected per the regulations actionable, in that they will improve facilities’ operations and reduce neighboring communities’ exposure to pollution. The root cause analyses also further the Refinery Statute’s goal of collecting data to analyze trends in pollution levels and emissions incidents. Finally, the AQMD is statutorily authorized to adopt more stringent measures than those required by the Refinery Statute.<sup>78</sup>

Third, new auditing procedures are included in the Rules Package. Facilities must

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<sup>70</sup> Health & Saf. Code, § 42705.6, subd. (d).

<sup>71</sup> *Id.* at subds. (a)(1)-(2).

<sup>72</sup> Proposed Amended Rule 1180, *supra* fn. 19, p. PAR 1180-16.

<sup>73</sup> *Ibid.*

<sup>74</sup> *Ibid.*

<sup>75</sup> *Id.* at p. PAR 1180-17.

<sup>76</sup> Western States Petroleum Assn., Letter to AQMD Re Proposed Amended Rule 1180 and Proposed Rule 1180.1 (Nov. 2, 2023), pp. 5-7, <[http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/wspa-par-1180\\_pr-1180-1\\_comment-letter-2\\_110223.pdf?sfvrsn=6](http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/wspa-par-1180_pr-1180-1_comment-letter-2_110223.pdf?sfvrsn=6)> (as of Dec. 4, 2023).

<sup>77</sup> *Id.* at p. 6.

<sup>78</sup> Health & Saf. Code, § 42708 (“This chapter shall not prevent any local or regional authority from adopting monitoring requirements more stringent than those set forth in this chapter...”).

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conduct regular audits of their fenceline monitoring systems, and these audits must be conducted by a qualified independent auditor selected as part of a larger audit protocol “approved by the [AQMD’s] Executive Officer.”<sup>79</sup> The regular audits are required every three years after installation of the applicable fenceline monitoring equipment.<sup>80</sup> If an audit report identifies deficiencies, the facility must prepare a corrective action plan within two months to address them—these corrective actions must be implemented within six months after the corrective action plan is approved, and a follow-up audit must be performed within one month after completing the corrective action plans.<sup>81</sup> We strongly support these auditing requirements. As with the root causes analysis requirements discussed above, the auditing provisions make the data collected under the AQMD’s refinery air monitoring program actionable, in that they will improve operations at facilities and reduce pollution exposure for neighboring communities.

Finally, facilities must retain records of all information required by the regulations for at least five years, and must produce any records to AQMD upon request.<sup>82</sup> Facilities must also publish quarterly reports to their websites that include emissions and incident data, quality assurances, and information about equipment updates, among other items.<sup>83</sup> We support these measures.

#### *Recommendations*

We recommend additional measures to strengthen these proposals. First, we would recommend that the “audit protocol” described by the rules be explicitly described, to replace the opaque requirement that the audits be conducted “according to an audit protocol approved by the Executive Officer.”<sup>84</sup> Additional description of the procedures to select independent auditors and to conduct audits would address concerns raised by several stakeholders.<sup>85</sup>

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Second, we recommend that initial audits of fenceline monitoring systems occur no later than six months after the systems are installed. The Rules Package currently requires an initial audit after as long as one year following installation, a schedule that would allow for months of potentially incorrect data to accumulate. Indeed, one provision of AQMD’s Rules Package would unacceptably postpone an initial audit to as late as January 1, 2029, almost five years after the

<sup>79</sup> Proposed Amended Rule 1180, *supra* fn. 19, at p. PAR 1180-13; Proposed Rule 1180.1, *supra* fn. 19, at p. PR 1180.1-10.

<sup>80</sup> Proposed Amended Rule 1180, *supra*, at p. PAR 1180-13; Proposed Rule 1180.1, *supra*, at p. PR 1180.1-10.

<sup>81</sup> *Id.* at pp. PAR 1180-14 to 1180-15; *Id.* at pp. PR 1180.1-10 to 1180.1-11.

<sup>82</sup> *Id.* at PAR 1180-16; *Id.* at p. PR 1180.1-12.

<sup>83</sup> *Id.* at p. PAR 1180-19 to 1180-20; *Id.* at p. PR 1180.1-16

<sup>84</sup> *Id.* at pp. PAR 1180-13; *Id.* at p. PR 1180.1-10.

<sup>85</sup> Western States Petroleum Assn., Nov. 2, 2023 letter, *supra* fn. 76, at p. 7; Earthjustice, et al., Letter to AQMD Re Proposed Amended Rule 1180 and Proposed Rule 1180.1 (Aug. 8, 2023), p. 2, <<http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/earthjustice-comments-on-proposed-rules-1180-and-1180-1.pdf?sfvrsn=6>> (as of Dec. 4, 2023).

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anticipated adoption of the Rules Package.<sup>86</sup>

Third, we recommend that the data collected from fence-line and community monitoring systems not only be publicly reviewable online, but that the data also be in a format that is available for downloading without restrictions. This would allow stakeholders to more easily access, process, and study the air quality data. Relatedly, we recommend that facilities retain more than five years of data—one of the main purposes of the Refinery Statute is to gather data necessary to assess emission trends over time, and a five-year period may not provide enough data to accomplish this goal.

10-5

### III. CONCLUSION

Thank you for the opportunity to submit comments on the AQMD's Rules Package. The Rules Package would bring the AQMD's refinery air monitoring regulations into compliance with statutory petroleum refinery air monitoring regulations. The Rules Package would also add new requirements to the air monitoring regulations that would significantly expand the scope of the data collected, improve responses to emissions incidents, and ultimately provide better information and protection to the frontline communities living adjacent to these facilities. We commend the AQMD for making these efforts, and urge adoption of the Rules Package with recommendations discussed herein incorporated to the degree feasible.

Sincerely,



DAVIN A. WIDGEROW  
Deputy Attorney General

For ROB BONTA  
Attorney General

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<sup>86</sup> Proposed Amended Rule 1180, *supra* fn. 19, at p. PAR 1180-13, subd. (j)(3)(A).

**Response to Comment Letter #10**

Staff appreciates the support voiced by California Department of Justice (DOJ) in favor of Proposed Amended Rule 1180 and Proposed Rule 1180.1. This rulemaking process addresses the East Yard Communities for Environmental Justice lawsuit against South Coast AQMD (Case No. 22STCP04398). Staff has also reviewed the lawsuit filed by Comité Progreso de Lamont and others in Fresno County Superior Court regarding SJVAPCD's regulations. The South Coast AQMD is not bound by the SJVAPCD decision; however, PAR 1180 and PR 1180.1 will address issues identified in the South Coast AQMD and SJVAPCD lawsuit, in addition to other updates.

*Response to Comment 10-1:*

All PAR 1180 and PR 1180.1 facilities are required to ensure adequate coverage for their entire facility perimeter. This entails installing open path or point monitors, as necessary, to meet the requirement for adequate coverage as outlined in the rules. For the rule analysis, staff estimated one open path sensor and some point monitors for each PAR 1180 related facility and multiple open path sensors and some point monitors for each PR 1180.1 refinery. . For rule implementation, a facility needs to demonstrate adequate fenceline coverage in their new or revised FAMP, which will be submitted to staff for a more in-depth assessment before an approval, partial approval, or disapproval is issued.

*Response to Comment 10-2:*

As background, initially, staff proposed monitoring only facilities under common ownership in response to Marathon Petroleum Refinery's exclusion of related tank terminals and a sulfur recovery plant from the air monitoring plan. Later, in alignment with Senate Bill 674, the scope was widened to include related facilities irrespective of ownership. Even though the bill became inactive on September 14<sup>th</sup>, staff maintained this expanded scope, focusing on aligning with the original intent of Senate Bill 674 by including facilities whose primary operations are largely to support petroleum refineries.

Staff reviewed all potential related facilities adjacent to the petroleum refineries. Several new facilities were initially considered, but were subsequently removed, as discussed in the public workshop, the preliminary draft staff report, and working group meeting held in October. Staff found that several tank terminals located adjacent to the petroleum refineries do not have operations that primarily relate to the refineries. In addition, staff identified some small terminals that have some related operations with Rule 1180 refineries, which varies from year to year, but have low capacities, low emissions, and a small footprint. Further, many of the smaller terminals already have monitors in place on several sides of their fenceline as well as near-by community monitors in place, which provide coverage to detect any potential air pollutant emissions from the terminals.

Please see Response to Comment 9-1 and Chapter 2 analysis for more details with regards to the proposed definition for related facilities (having more than 50 percent of product input or output, directly or indirectly, from or to the Rule 1180 petroleum refineries) and the 310,000 barrel tank capacity exemption for terminals.

The comment letter underscores the importance of considering multiple factors before exempting initially identified related facilities. It is essential to note that our criteria are designed after considering various factors beyond capacity alone, such as low emissions and small footprint.

Furthermore, the exemption considered the presence of existing monitors along multiple sides of their fenceline, ensuring comprehensive coverage for potential air pollutant detection. The proposed amended rule for fenceline monitoring mandates sending notifications promptly about any exceedances of health-based standards or informational-based thresholds through various channels. Community monitoring systems complement these efforts, ensuring continual monitoring of air pollutants within communities.

As the primary objective of this rulemaking process is to monitor refinery operations and operations related to refinery activities, the greater than 50 percent criterion effectively identifies facilities closely associated with local refinery operations, assessed on a case-by-case basis, and as documented by related facilities. For instance, one related facility could not substantiate that their terminal operates at or below 50 percent input or output from or to local refineries. Moreover, estimates from local refineries suggested greater than 50 percent input or output from or to local refineries; hence the facilities remain subject to the rule.

*Response to Comment 10-3:*

PR 1180.1 applies to asphalt plants, and they are subject to the monitoring requirements in the rule. PR 1180.1 states that the rule applies to “Refineries that refine crude oil, Alternative Feedstocks, or both crude oil and Alternative Feedstocks, including, but not limited to, Asphalt Plants including their successors.” An asphalt plant is defined in PR 1180.1 as a facility permitted to process petroleum, that primarily produce asphaltic material as defined in the Standard Industrial Classification Manual as Industry No. 2911. It should be differentiated from facilities that use asphalt oil in their production. PAR 1180 and PR1180.1 do not only apply to facilities classified under SIC Code 2911. The rules also apply to related facilities and refineries of alternative feedstocks, respectively. For further clarification, please refer to Response to Comment #PWM-1b and Response to Comment 3-3.

*Response to Comment 10-4:*

The total emissions from exempted terminals range between 0.2 and 0.6 tons per year, with VOC emissions contributing the most to the total. As previously mentioned in Response to Comment 10-2, when creating the exemption, staff reviewed each potential related facility. As previously mentioned in Response to Comment 10-2, when creating the exemptions, staff reviewed each potential related facility, taking into account the emissions of related facilities detailed in the staff report, adequate fenceline coverage, and sufficient community air monitors to detect concentration increases resulting from the operations of exempted related facilities. The exemption threshold of 310,000 barrels reflects the through a comprehensive analysis, staff identified three small terminals that would be exempt pursuant to the 310,000 barrel exemption. Those smaller terminals have a low potential for emissions and are regulated under other South Coast AQMD rules (e.g., Rule 1178 and Rule 463) for emission control. In addition, air monitoring systems are in place on several sides of their fenceline operated by adjacent petroleum refineries and community air monitoring stations.

*Response to Comment 10-5:*

Staff is planning to cause a third party to develop an audit protocol for the independent audit of fenceline air monitoring systems. The South Coast AQMD selected National Physical Laboratory (NPL) through a Request for Proposals (RFP# P2022-13) to conduct the first independent audit of all fenceline air monitoring systems subject to Rule 1180, and to develop an audit protocol. Staff

expects the initial audit to be initiated by January 1, 2025, for facilities with existing fenceline air monitoring systems. This initial audit will establish an audit protocol for auditors and standardize future audits for facilities subject to both PAR 1180 and PR 1180.1. For new systems operating for facilities with new fenceline air monitoring systems, under new FAMPs, staff estimates the initial audit will be conducted one year following the installation of the new fenceline air monitoring systems because auditors need sufficient information to have a systematic evaluation of the entire fenceline air monitoring system to ensure the data meets the stringent quality control and quality assurance criteria. In addition to independent audits, facilities conduct quarterly and semi-annual internal audit according to their QAPP. NPL will commence the initial audit by January 1, 2025, for the fenceline air monitoring systems of all seven existing Rule 1180 petroleum refineries. Considering the scale of work, staff expects NPL will require one year to complete the audit of all systems. The proposed due date, January 1, 2029, for petroleum refineries to cause the next independent audit is consistent with the schedule for other PAR 1180 and PR 1180.1 facilities to conduct recurring independent audit every three years.

Pursuant to subparagraph (d)(1)(H) in both PAR 1180 and PR 1180.1, facilities are required to make the most recent five calendar years of electronic historical data available in an easily downloadable, accessible, and interpretable electronic format to the public. Pursuant to paragraph (h)(1) in both PAR 1180 and PR 1180.1, facilities are required to maintain a web-based data display and notification program to display and store at least five calendar years of the most recent data collected from the fenceline air monitoring systems.



**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**Final Socioeconomic Impact Assessment For:**

**Proposed Amended Rule 1180 – Fenceline and Community Air Monitoring For Petroleum Refineries and Related Operations, Proposed Rule 1180.1 – Fenceline and Community Air Monitoring For Other Refineries, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines**

**December 2023**

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## EXECUTIVE SUMMARY

On March 17, 1989, the South Coast Air Quality Management District (South Coast AQMD) Governing Board adopted a resolution which requires an analysis of the economic impacts associated with adopting and amending rules and regulations. In addition, Health and Safety Code Section 40440.8 requires a socioeconomic impact assessment for any proposed rule, rule amendment, or rule repeal which “will significantly affect air quality or emissions limitations.” Lastly, Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for a proposed rule or amendment which imposes Best Available Retrofit Control Technology (BARCT) or “all feasible measures” requirements relating to emissions of ozone, carbon monoxide (CO), sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOC), and their precursors.

Proposed Amended Rule 1180 (PAR 1180), ~~and Proposed Rule 1180.1 (PR 1180.1)~~, and the Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines have been developed to enhance air quality monitoring and provide public access to information about pollutants in the vicinity of refineries and a socioeconomic impact assessment has been conducted accordingly. The following presents a summary of the analysis and findings of the socioeconomic impact assessment:

### **Key Elements of PAR 1180 and PR 1180.1**

PAR 1180 would require real-time fenceline air monitoring at or near the property boundaries of petroleum refineries and related facilities and establish a fee schedule to fund installation and operation of refinery-related community air monitoring systems in nearby communities. PR 1180.1 would establish similar requirements for other refineries which were previously exempt from Rule 1180. The socioeconomic impacts of PAR 1180 and PR 1180.1 are assessed jointly in this report.

### **Affected Facilities and Industries**

PAR 1180 and PR 1180.1 would affect 15 facilities which are all located in Los Angeles County within South Coast AQMD’s jurisdiction. PAR 1180 would affect 12 out of the 15 facilities, seven of which were originally regulated by Rule 1180, and five facilities that qualify as related operations which will be newly subject to PAR 1180. The three remaining facilities would be subject to PR 1180.1. The following summarizes the operations of the 15 affected facilities:

#### PAR 1180 Facilities:

- Seven facilities refine petroleum;
- Two facilities operate as petroleum bulk stations and terminals;
- One facility manufactures chemicals;
- Two facilities manufacture industrial gases.

#### PR 1180.1 Facilities

- Two facilities refine petroleum; and
- One facility refines alternative feedstocks.

**Assumptions for the Analysis**

The key requirements of PAR 1180 and PR 1180.1 that will have cost impacts for the affected facilities include: 1) construction of new community and fenceline monitoring sites for newly affected facilities; 2) investment in new air quality monitoring equipment at existing fenceline and community sites and newly constructed monitoring sites; 3) additional labor for equipment installation and operation; 4) ongoing calibration and maintenance; and 5) independent system audits by third parties.

Specifically, PAR 1180 would require the installation of additional monitoring devices for existing fenceline air monitoring systems and the payment to fund additional monitoring devices for existing community stations. Newly installed monitors would analyze a larger set of pollutants than those currently in operation in accordance with existing rule 1180. PAR 1180 would also expand the applicability provision to include refinery-related operations occurring at contiguous or adjacent properties and will require the installation of new fenceline air monitoring systems and payment to fund new community stations to monitor those air pollutants.

PR 1180.1 would require facilities that were previously exempt from Rule 1180 to install new fenceline monitoring systems. PR 1180.1 also establishes a fee schedule to cover the cost of conducting community air monitoring in nearby communities.

The analysis assumes that the required investments and fees to implement these provisions would start to occur in: 1) 2025 for facilities that were previously subject to Rule 1180 requirements; and 2) 2026 for facilities newly subject to PAR 1180 and PR 1180.1 requirements due to later compliance deadlines. The actual timing of spending and fee payment may differ slightly from the schedule presented in this analysis depending on the time required to submit and review the FAMP, install the monitoring systems, and submit community air monitoring fees. Any difference in job impacts caused by differences in timing of fee payments or investment are expected to be minimal. Compliance costs are forecasted over the period from 2025 to 2045, reflecting an assumed 20-year useful life of the monitoring equipment and that installations of monitoring equipment at the facilities newly subject to PAR 1180 and PR 1180.1 will be installed one year later than the installations occurring at facilities that were previously subject to Rule 1180 requirements. The one-time and capital costs were amortized over the useful lifetime of the monitoring equipment while the recurring compliance costs are modeled in the year in which they occur.

**Compliance Costs**

The total present value of the compliance costs of the proposed project is estimated at \$165.71 million and \$122.05 million with a 1% and 4% discount rate, respectively. The average annual compliance costs of PAR 1180 and PR 1180.1 are estimated to range from \$8.88 million to \$9.27 million, for a 1% and 4% interest rate, respectively. The following table presents a summary of the average annual cost of the proposed project by cost category.

Cost Categories	Annual Average Cost of PAR 1180 and PR 1180.1 (2025 – 2045)	
	1% Interest Rate	4% Interest Rate
<b>Capital Costs</b>		
Community - Air Monitoring Station Container	\$10,451	\$13,477
Community - Site Preparation and Construction	\$26,127	\$33,691
Community - Monitoring Equipment	\$345,791	\$445,904
Community - Data System	\$7,838	\$10,107
Community - Technical Labor	\$39,504	\$50,941
Community - South Coast AQMD Staff Labor	\$133,694	\$172,401
Fenceline - Air Monitoring Station Container	\$25,082	\$32,344
Fenceline - Site Preparation and Construction	\$62,705	\$80,859
Fenceline - Monitoring Equipment	\$497,719	\$641,819
Fenceline - Data System	\$18,811	\$24,258
Fenceline - Third-Party Technical Labor	\$54,344	\$70,078
Fenceline - Plan Development and Review	\$121,111	\$156,175
<b>Recurring Costs</b>		
Community - Electricity	\$157,000	\$157,000
Community - Site Lease	\$95,238	\$95,238
Community - Lavatory Rental	\$34,286	\$34,286
Community - Calibration and Maintenance Parts	\$458,810	\$458,810
Community - Communications and Information Technology (IT) Services	\$214,286	\$214,286
Community - Technical Labor	\$722,857	\$722,857
Community - South Coast AQMD Staff Labor	\$2,504,762	\$2,504,762
Fenceline - Electricity	\$625,429	\$625,429
Fenceline - Calibration and Maintenance Parts	\$709,667	\$709,667
Fenceline - Communications and IT Services	\$342,857	\$342,857
Fenceline - Third-Party Technical Labor	\$1,216,571	\$1,216,571
Fenceline - Independent Audit	\$453,333	\$453,333
<b>Total</b>	<b>\$8,878,272</b>	<b>\$9,267,149</b>

The analysis indicates that South Coast AQMD Staff Labor and Third-party Technical Labor will comprise approximately 29% and 22% of the total annual cost of the proposed project, respectively. The petroleum and coal products manufacturing industry (NAICS 324) is expected to incur about 72% of total average annual cost.

The analysis also indicates that out of the 15 affected facilities, none meet the definition of a small business pursuant to either South Coast AQMD Rule 102 – Definition of Terms, South Coast AQMD’s Small Business Assistance Office (SBAO), or the federal 1990 Clean Air Act Amendments (CAAA).

**Job Impacts**

Direct costs and corresponding revenues of the proposed project are used as inputs to the Regional Economic Models, Inc (REMI PI+) model to assess job impacts and secondary/induced impacts for all the industries in the four-county economy on an annual basis through 2045. The forecasted time horizon used in the REMI model is the period from 2025 to 2045.

When the compliance cost is annualized using a 4% interest rate, seven net jobs are projected to be added to the regional economy on average over the period between 2025 and 2045 relative to the baseline forecast. This increase in jobs is mainly attributable to the capital-intensive nature of the affected businesses, while industries which benefit from the proposed project are relatively labor intensive. Thus, businesses in those industries are likely to hire more workers in response to an increase in demand for their services.

The largest job impacts occur in 2025 and 2026, when equipment suppliers will benefit from the capital expenditures. The REMI model forecasts 104 additional jobs in the regional economy in 2025 and 2026, relative to the baseline scenario. Job impacts are minor throughout the rest of the forecast period.

**Competitiveness and Price Impacts**

The overall impacts of the proposed project on production cost and delivered prices in the region are not expected to be substantial because the results of the analysis conducted using the REMI Model indicate that implementation of the proposed project will have a maximum single-year increase of 0.013% in the cost of production for the Petroleum and Coal Products Manufacturing industry in the four-county region, and a maximum increase of 0.012% in the delivered price. The single-year maximum cost and price increases are expected to take place in 2027.

## INTRODUCTION

In 2017, the South Coast AQMD Governing Board adopted Rule 1180 which required: 1) real-time fenceline air monitoring for certain air pollutants at the property boundary of major petroleum refineries; 2) air quality data to be disseminated to the public; and 3) established a fee schedule to fund air quality monitoring in nearby communities. Petroleum refineries with a maximum process capacity of less than 40,000 barrels of crude oil per day and facilities which refine alternative feedstocks were exempt from Rule 1180.

PAR 1180, and PR 1180.1, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines have been developed to enhance air quality monitoring and provide public access to information about pollutants in the vicinity of refineries. Specifically, PAR 1180 seeks to: 1) expand the list of pollutants that affected facilities are required to monitor; 2) broaden the applicability provision to include several facilities with operations related to petroleum refineries; and 3) eliminate the exemption for petroleum refineries with a maximum capacity to process less than 40,000 barrels per day of crude oil or alternative feedstocks.

Specifically, PAR 1180 will require real-time fenceline air monitoring systems and establish a fee schedule to fund refinery-related community air monitoring systems that provide the public with air quality information about various pollutants including particulate matter (PM), naphthalene, toluene, and other VOCs, and certain metals at or near the property boundaries of petroleum refineries and in nearby communities. Requirements for monitoring additional pollutants and the expansion of the rule's applicability to include refinery-related operations that occur on contiguous properties including, but not limited to, sulfur recovery plants and terminals are also included in PAR 1180.

PR 1180.1 would establish similar requirements as PAR 1180 for facilities which are currently exempt from Rule 1180. Specifically, PR 1180.1 would establish a fee structure to fund community monitoring systems and would require owners and operators to monitor and publish air quality data at the fenceline of affected facilities. Owners and operators of facilities subject to PR 1180.1 would be required to monitor the same pollutants as those listed in PAR 1180 with the exception of certain pollutants including black carbon and metals.

Amendments to the Rule 1180 Refinery Fenceline Air Monitoring Guidelines (which is proposed to be renamed as Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines) are also necessary to clarify that they apply to both Rule 1180 and PR 1180.1 and reflect the proposed changes in PAR 1180. However, the Proposed Amended Rule 1180 and Rule 1180.1 Monitoring Plan Guidelines do not have direct socioeconomic impacts, but rather inform the compliance cost estimates in this report.

Seven petroleum refineries are currently subject to Rule 1180 and have been operating fenceline monitoring systems since the second quarter of 2020. These facilities also currently pay the annual operating and maintenance fees to South Coast AQMD for the existing community monitoring stations required by Rule 301 – Permitting and Associated Fees. PAR 1180 will broaden the applicability of the rule to include five additional facilities with operations related to petroleum



refineries including sulfur recovery plants, terminals, and hydrogen production plants. These five additional facilities would be required to install fenceline monitoring systems and pay fees associated with the construction and operation of additional community monitoring stations. PR 1180.1 would require three facilities, two refineries which process asphalt oil and one refinery that processes alternative feedstocks, to install fenceline monitoring systems and includes a fee schedule to cover South Coast AQMD's cost to design, develop, install, operate, and maintain refinery-related community air monitoring systems in nearby areas.

Costs associated with fenceline monitoring requirements in PAR 1180 and PR 1180.1 are paid directly by affected facilities to equipment suppliers and service providers, and these monitoring sites are maintained by the affected facilities. Community air monitoring sites are administered by South Coast AQMD. The capital investments and ongoing operating and maintenance will be conducted by South Coast AQMD, the expenses of which will be covered by the fees levied on affected facilities as defined in in PAR 1180 and PR 1180.1. For the purpose of the socioeconomic impact assessment and in the REMI model, fees paid by facilities for community monitoring are treated as if they are paid directly to equipment and service providers. For certain labor expenses, South Coast AQMD is assumed to be the supplier modeled in REMI.

Some of the cost estimates in this socioeconomic impact assessment may be slightly larger than those presented in the Draft Staff Report. The costs presented in this document reflect a conservative approach by applying upper bound estimates to account for uncertainty in certain costs.

Capital and other one-time costs at newly constructed monitoring facilities include a container to house the monitoring equipment, site preparation and construction expenses, monitoring equipment, data systems and IT infrastructure, and technical labor. Recurring costs include electricity, land leases, regular maintenance and calibration of monitoring devices, data storage and visualization, and labor.

In addition to the community and fenceline monitoring systems, all affected facilities would be required to: 1) develop and submit a Fenceline Air Monitoring Plan (FAMP) to the South Coast AQMD for review and approval; and 2) conduct periodic independent audits of the fenceline system. The FAMP is a compliance plan which details the instrumentation, maintenance, quality control, backup systems, auditing, and data reporting methods. Audits are required to be conducted by an independent third party every three years. Audits are intended to identify any deficiencies in the monitoring system and quality assurance procedures.

## **LEGISLATIVE MANDATES**

The legal mandates directly related to the socioeconomic impact assessment of PAR 1180 and PR 1180.1 include South Coast AQMD Governing Board resolutions and various sections of the Health and Safety Code.

### **South Coast AQMD Governing Board Resolution**

On March 17, 1989, the South Coast AQMD Governing Board adopted a resolution that requires an analysis of the economic impacts associated with adopting and amending rules and regulations that considers all of the following elements:

- Affected industries;
- Range of probable costs;
- Cost-effectiveness of control alternatives; and
- Public health benefits.

### **Health and Safety Code Requirements**

The state legislature adopted legislation which reinforces and expands the South Coast AQMD Governing Board resolution requiring socioeconomic impact assessments for rule development projects. Health and Safety Code Section 40440.8, which went into effect on January 1, 1991, requires a socioeconomic impact assessment for any proposed rule, rule amendment, or rule repeal which "will significantly affect air quality or emissions limitations."

To satisfy the requirements in Health and Safety Code Section 40440.8, the scope of the socioeconomic impact assessment should include all of the following information:

- 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; and
- Necessity of adopting, amending, or repealing the rule in order to attain state and federal ambient air quality standards.

Health and Safety Code Section 40728.5, which went into effect on January 1, 1992, requires the South Coast AQMD Governing Board to: 1) actively consider the socioeconomic impacts of regulations; 2) make a good faith effort to minimize adverse socioeconomic impacts; and 3) include small business impacts. To satisfy the requirements in Health and Safety Code Section 40728.5, the socioeconomic impact assessment should include the following information:

- Type of industries or business affected, including small businesses; and
- Range of probable costs, including costs to industry or business, including small business.

Finally, Health and Safety Code Section 40920.6, which went into effect on January 1, 1996, requires an incremental cost-effectiveness analysis for a proposed rule or amendment which imposes Best Available Retrofit Control Technology (BARCT) or "all feasible measures"

requirements relating to emissions of ozone, carbon monoxide (CO), sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), VOC, and their precursors. However, since PAR 1180 and PR 1180.1 do not include new BARCT requirements, Health and Safety Code Section 40920.6 does not apply to the proposed project.

### **AFFECTED FACILITIES**

PAR 1180 and PR 1180.1 would affect 15 facilities which are all located in Los Angeles County within South Coast AQMD's jurisdiction. PAR 1180 would affect 12 out of the 15 facilities, seven of which were originally regulated by Rule 1180 and five facilities that qualify as related operations which will be newly subject to PAR 1180. The three remaining facilities would be affected by PR 1180.1. The following summarizes the affected facilities by their North American Industry Classification System (NAICS) code:

- Ten facilities refine petroleum (NAICS 324110);
- Two facilities operate as petroleum bulk stations and terminals (NAICS 424710);
- One facility manufactures chemicals (NAICS 325180); and
- Two facilities manufacture industrial gases (NAICS 325120)

Table 1 presents the facilities, NAICS codes, sectors, and applicable rule for the facilities affected by the proposed project.

**Table 1**  
**Affected Facilities by NAICS Codes**

Facility Name	NAICS	Industry	Applicable Rule
Tesoro Carson	324110	Petroleum Refineries	Facilities Currently Subject to Rule 1180
Tesoro Wilmington	324110	Petroleum Refineries	
Chevron U.S.A, Inc. (El Segundo)	324110	Petroleum Refineries	
Phillips 66 Company (Carson)	324110	Petroleum Refineries	
Phillips 66 Company (Wilmington)	324110	Petroleum Refineries	
PBF Energy, Torrance Refining Company (Torrance)	324110	Petroleum Refineries	
Valero Energy (Wilmington)	324110	Petroleum Refineries	
Tesoro Sulfur Recovery Plant (SRP)	325180	Other Basic Inorganic Chemical Manufacturing	Facilities Newly Subject to PAR 1180
Tesoro Logistics, Carson Crude Terminal	424710	Petroleum Bulk Stations and Terminals	
Air Products Carson	325120	Industrial Gas Manufacturing	
Air Products Wilmington	325120	Industrial Gas Manufacturing	
Kinder Morgan Liquids Terminals LLC	424710	Petroleum Bulk Stations and Terminals	
AltAir Paramount	324110	Petroleum Refineries	Facilities Newly Subject to PR 1180.1
Lunday-Thagard (World Oil Refining)	324110	Petroleum Refineries	
Valero Wilmington Asphalt Plant	324110	Petroleum Refineries	

### **SMALL BUSINESS**

The South Coast AQMD 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. The South Coast AQMD also defines “small business” for the purpose of qualifying for access to services from the South Coast AQMD’s Small Business Assistance Office (SBAO) as a business with an annual receipt of \$5 million or less, or with 100 or fewer employees. In addition to the South Coast AQMD’s definition of a small business, the federal Small Business Administration (SBA) and the federal 1990 Clean Air Act Amendments (1990 CAAA) each have their own definition of a small business.

The 1990 CAAA classifies a business as a “small business stationary source” if it: 1) employs 100 or fewer employees; 2) does not emit more than 10 tons per year of either VOC or NO<sub>x</sub>; and 3) is a small business as defined by the SBA. Based on firm revenue and employee count, the SBA

definition of a small business varies by six-digit NAICS codes.<sup>1</sup> For example, according to the SBA definition, a business with less than 1,500 employees in the sector of Petroleum Refineries is classified as a small business, while a business in the Petroleum Bulk Stations and Terminals (NAICS 424710) sector is considered a small business with only 225 employees.

South Coast AQMD generally relies on Dun & Bradstreet data to conduct small business analyses on private companies. In cases where the Dun & Bradstreet revenue and/or employee data are unreliable, other external data sources such as Manta, Hoover, and LinkedIn are used. The determination of data reliability is based on data quality confidence codes in the Dun & Bradstreet data as well as staff's discretion. Revenue and employee data for publicly owned companies is gathered from Securities and Exchange Commission (SEC) filings. Since subsidiaries under the same parent company are interest-dependent, the revenue and employee count of each facility's parent company is used for determining its small business status. Staff obtained reliable revenue and employee data for 14 of the 15 affected facilities. For the facility for which reliable revenue data was not available, the revenue of the facility was estimated based on publicly available information on throughput and the commodity prices of the facility's final products. None of the affected facilities or their parent companies meet the definition of a small business under South Coast AQMD's Rule 102, the SBAO definition, or the 1990 CAAA definition.<sup>2</sup>

Table 2 presents the estimated average annual compliance cost of each facility, the annual revenue of each facility's parent company, and the average annual compliance cost as a percent of revenue of each parent. The ratio of average annual compliance costs to the gross annual revenues are expected to be less than one percent for all affected facilities.

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<sup>1</sup> U.S. Small Business Administration, Table of Small Business Size Standards, March 17, 2023. [https://www.sba.gov/sites/sbagov/files/2023-06/Table%20of%20Size%20Standards\\_Effective%20March%2017%2C%202023%20%282%29.pdf](https://www.sba.gov/sites/sbagov/files/2023-06/Table%20of%20Size%20Standards_Effective%20March%2017%2C%202023%20%282%29.pdf), accessed November 16, 2023.

<sup>2</sup> Based on facility-level data on NOx and VOC emissions for calendar year 2022.

**Table 2**  
**Projected Ratio of Average Annual Compliance Costs**  
**to the Gross Annual Revenues of Parent Companies**

<b>Parent Company Designation</b>	<b>Total Annual Compliance Cost</b>	<b>Total Annual Revenue (\$MM)</b>	<b>% of Revenue</b>
<b>Parent Company 1</b>	<b>\$1,882,658</b>	<b>\$178,240</b>	<b>0.00%</b>
Facility A	\$505,815	-	
Facility B	\$322,845		
Facility H	\$590,054		
Facility I	\$463,943		
<b>Parent Company 2</b>	<b>\$608,073</b>	<b>\$235,920</b>	<b>0.00%</b>
Facility C	\$608,073	-	
<b>Parent Company 3</b>	<b>\$635,561</b>	<b>\$169,990</b>	<b>0.00%</b>
Facility D	\$317,780	-	
Facility E	\$317,780		
<b>Parent Company 4</b>	<b>\$540,670</b>	<b>\$46,860</b>	<b>0.00%</b>
Facility F	\$540,670	-	
<b>Parent Company 5</b>	<b>\$1,514,895</b>	<b>\$171,190</b>	<b>0.00%</b>
Facility G	\$370,176	-	
Facility O	\$1,144,719		
<b>Parent Company 6</b>	<b>\$1,180,109</b>	<b>\$12,700</b>	<b>0.01%</b>
Facility J	\$590,054	-	
Facility K	\$590,054		
<b>Parent Company 7</b>	<b>\$463,943</b>	<b>\$19,200</b>	<b>0.00%</b>
Facility L	\$463,943	-	
<b>Parent Company 8</b>	<b>\$1,295,981</b>	<b>N/A*</b>	<b>N/A*</b>
Facility M	\$1,295,981	-	
<b>Parent Company 9</b>	<b>\$1,145,259</b>	<b>\$128</b>	<b>0.89%</b>
Facility N	\$1,145,259	-	
<b>Total</b>	<b>\$9,267,149</b>	<b>\$834,228</b>	

\*Reliable revenue data was not available for this facility and its parent company. Based on permitted throughput and market prices for the products this facility produces, staff estimates that total annual compliance costs would be less than 1% of revenue.

## **COMPLIANCE COST**

The proposed project would require one-time investments in air monitoring devices, site preparation, labor, information technology (IT) infrastructure, FAMP development and review, and recurring costs for periodic recalibration, maintenance, utilities, technical labor, site leases, lavatory rental, and independent audits. Direct costs of the proposed project vary between existing Rule 1180 facilities, facilities newly subject to PAR 1180, and PR 1180.1 facilities.

The list of monitored air pollutants in Rule 1180 is based on the September 2017 Office of Environmental Health Hazard Assessment (OEHHA) draft report “Analysis of Refinery Chemical Emissions and Health Effects.” In 2019, after the adoption of Rule 1180, OEHHA finalized the report and expanded the list of chemicals.<sup>3</sup> The list of the monitored pollutants can be found in the PAR 1180 and PR 1180.1 Draft Staff Report. For the seven facilities previously covered by Rule 1180, PAR 1180 requires investment in new monitoring equipment at pre-existing fenceline and community stations to monitor the expanded list of pollutants in the finalized 2019 OEHHA report. These seven facilities (petroleum refineries) will not need to construct any new fenceline monitoring stations or pay for the construction of any additional community monitoring stations for the petroleum refineries. For the related facilities with common ownership with a petroleum refinery, the petroleum refinery understands they will pay for the construction and operating fees associated with those related facilities.

For the five facilities newly subject to PAR 1180 that operate on contiguous or adjacent properties, at least one new open path fenceline monitoring station will need to be installed per facility. South Coast AQMD would also construct two new community air monitoring sites, the costs of which will be shared amongst these five facilities newly subject to PAR 1180. The types of pollutants monitored at each of these two new community sites would vary based on the operations conducted at these five facilities. Specifically, one new community station would only monitor VOC and hydrogen sulfide (H<sub>2</sub>S) emissions. The costs associated with the VOC + H<sub>2</sub>S-only station would be split evenly between two petroleum terminal facilities. A separate new community station capable of monitoring the full list of pollutants in PAR 1180 (except for black carbon and metals) would be constructed and costs shared by the remaining three facilities newly subject to PAR 1180.

PR 1180.1 would require the construction of three new community air monitoring sites, one for each of the three facilities that will be subject to the rule. Each facility would be responsible for paying fees associated with the construction and recurring costs for a single community monitoring station according to the fee schedule in PR 1180.1. These facilities would also be required to install fenceline monitoring systems. The largest facility that would be subject to PR 1180.1 is expected to install three open path fenceline monitoring stations and the remaining two facilities are expected to install two open path fenceline monitoring stations at each facility. The analysis for PR 1180.1 facilities overestimates the cost because it included black carbon and metals monitoring, which is not required by PR 1180.1.

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<sup>3</sup> OEHHA, Analysis of Refinery Chemical Emissions and Health Effects, Table 1, pp. 2-5, March 20, 2019, <https://oehha.ca.gov/media/downloads/faqs/refinerychemicalsreport032019.pdf>, accessed November 22, 2023.

The deadline to complete the installation and begin operation of the fenceline monitoring systems for Rule 1180 facilities (current and newly applicable facilities), and PR 1180.1 facilities is 15 months and two years after the approval of the FAMP, respectively. Facilities which already have an approved FAMP are required to submit a revised FAMP within ~~nine~~seven calendar months of rule adoption. Facilities which are newly subject to PAR 1180 and PR 1180.1 facilities are required to submit a FAMP within one year of rule adoption. For the purposes of this socioeconomic impact assessment, compliance spending is assumed to occur in 2025 for facilities previously subject to Rule 1180 and in 2026 for facilities newly subject to PAR 1180 and PR 1180.1.

South Coast AQMD's Monitoring and Analysis Division (MAD) maintains the South Coast AQMD's community monitoring network. The cost estimates provided in this report for both fenceline and community monitoring stations are based on data from South Coast AQMD's existing community monitoring sites, as well as from recent quotes provided by device manufacturers. The actual realized costs will largely depend on site-specific factors and business decisions made by the facilities subject to PAR 1180 and PR 1180.1. This socioeconomic impact analysis represents the costs as realistically as possible and takes into consideration many factors that would ultimately determine what price a business would pay to implement a monitoring plan. The procedure and assumptions for each cost estimate are discussed in the next section. All the estimated costs are in 2023 U.S. dollars.

## **Capital and One-Time Costs**

### **Monitoring Equipment**

PAR 1180 requires additional monitoring equipment at existing fenceline and community sites to monitor the additional pollutants that were incorporated into OEHHA's 2019 updated list of chemicals. Analyzer cost estimates for these facilities are based on the number of existing monitoring stations and the unit cost of new analyzers that will be installed at these sites. This analysis assumes that upgrades to existing monitoring stations will include a PM2.5 and PM10 analyzer, a Speciated Metals analyzer, and a Zero Air Generator and Dilution System, totaling \$305,000 per station.

Facilities newly subject to PAR 1180 and PR 1180.1 would be required to purchase analyzers capable of monitoring all the air pollutants required by the rules. One community monitoring site will not need to monitor the entire list of air pollutants since the facilities located in its community do not emit certain pollutants. Specifically, one community station would only need to monitor VOC and H2S and as such, will not be equipped with monitors for PM2.5, PM10, black carbon (BC), or metals. Table 3 summarizes the cost per analyzer that was relied upon to estimate the facilities' analyzer costs. Total analyzer costs were calculated by multiplying the cost per analyzer by the estimated number of analyzers required for each fenceline or community system. The number of new analyzers required at each facility ranges from eight to 20, depending on facility size, complexity, and line of site at the fenceline. The one-time total analyzer costs across community and fenceline monitoring stations are estimated to be \$16.1 million.



**Table 3**  
**Monitoring Equipment Unit Costs**

Analyzer	Full Monitoring Station	VOC and H2S Only Monitoring Station
H2S Analyzer	\$20,000	\$20,000
PM2.5 and PM10 Analyzer	\$60,000	N/A*
BC Analyzer	\$30,000	N/A*
Speciated Metal Analyzer	\$220,000	N/A*
Optical Multi-Pollutant Analyzers	\$250,000	\$250,000
Open Path Monitor	\$250,000	\$250,000
Auto-Gas Chromatograph (Auto-GC)	\$80,000	\$80,000
Met Station	\$20,000	\$20,000
Zero Air Generator and Dilution System	\$25,000	\$25,000

\*Not required for a station that only monitors VOC and H2S

### Data Systems

Each community and fenceline monitoring station would require computer hardware to log, store, and transmit air quality data. The facilities subject to existing Rule 1180 already have the required data systems installed at fenceline and community monitoring stations and thus, will not incur additional costs for these systems. Contiguous facilities not previously subject to Rule 1180 and facilities that would be newly subject to PR 1180.1 would need to pay for the installation of data systems at each fenceline and community monitoring site. Based on costs incurred at existing community sites, the data system cost per monitoring station is estimated to be \$30,000 and the total cost of data systems will be \$510,000 for the 17 prospective new monitoring stations.

### Technical Labor

New analyzers need to be installed, calibrated, and tested by trained employees from the equipment manufacturer. The facilities previously subject to Rule 1180 would have lower installation costs, as most of the monitoring hardware has already been installed and calibrated.

For facilities previously subject to Rule 1180, this analysis assumed a technical labor cost of \$25,000 per monitoring station based on the average installation cost per monitor at existing community monitoring sites. For new stations that require the full set of monitoring hardware to be installed, this analysis assumed a labor cost of \$50,000 per station. Technical labor for maintaining a station which only monitors VOC and H2S is assumed to be \$31,000 per station. The total installation-related technical labor costs were estimated to be \$1.8 million.

### Monitoring Station Containers

The proposed project requires the construction of new fenceline and community monitoring stations for facilities subject to PR 1180.1 and facilities operating at contiguous properties which are newly subject to PAR 1180. According to cost data from the existing community monitoring network, these monitoring sites are housed in metal containers which cost approximately \$40,000

per container. The total cost for monitoring station containers across the 17 new monitoring stations is estimated to be \$680,000.

### **Site Prep and Construction**

The proposed project requires the construction of new fenceline and community monitoring stations for facilities subject to PR 1180.1 and facilities operating at contiguous properties which are newly subject to PAR 1180. Site preparation for each of these monitoring stations involves installing electricity connections, pouring a concrete foundation, and surrounding the monitoring station container with fencing. According to cost data from existing community monitoring sites, the cost is estimated to be \$100,000 per station. Total site preparation and construction costs of the proposed project are estimated to be \$1.7 million for the 17 new monitoring stations.

### **South Coast AQMD Staff Labor**

South Coast AQMD staff labor is required for the installation and setup of new community monitoring sites and the addition of new analyzers at pre-existing community sites. The labor requirements estimated by the South Coast AQMD's Monitoring and Analysis Division for full stations and stations which only monitor VOC and H2S are summarized in Table 4. Based on fully burdened salary rates from FY 2023 – 2024<sup>4</sup>, the cost will be \$170,000 per full station and \$105,000 for the station that only monitors VOC and H2S. The fully burdened rates for Air Quality Instrument Specialists, Senior Air Quality Instrument Specialists, Air Quality Specialists, and Program Supervisors are \$100.18, \$106.14, \$116.03, and \$132.68 per hour, respectively. Total one-time South Coast AQMD staff labor costs are estimated to be \$2.6 million.

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<sup>4</sup> South Coast AQMD, Draft Staff Report for Proposed Amended Regulation III – Fees; and Proposed Amended Rule 1480 – Ambient Monitoring and Sampling of Metal Toxic Air Contaminants, Table B-1, p. 55, April 2022, <http://www.aqmd.gov/docs/default-source/planning/reg-iii/regiii-dsr-2022-040122-final-clean.pdf>, accessed November 28, 2023.

**Table 4**  
**One-Time South Cost AQMD Staff Labor Demands**

Position	Installation Responsibilities	Labor Requirements (months)	
		Full Station	VOC and H2S-Only Station
Air Quality Instrument Specialist	<ol style="list-style-type: none"> <li>Monitoring equipment installation;</li> <li>Data system installation/integration; and</li> <li>Testing</li> </ol>	4	2
Senior Air Quality Instrument Specialist		2	2
Air Quality Specialist	<ol style="list-style-type: none"> <li>Review, analyze, validate monitoring data ; and</li> <li>Prepare monitoring plans and reports</li> </ol>	2	0.5
Program Supervisor	<ol style="list-style-type: none"> <li>Manage technical and professional staff; and</li> <li>Draft and review reports</li> </ol>	1	1

### Plan Development and Review

All facilities subject to either PAR 1180 or PR 1180.1 are required to submit a Fenceline Air Monitoring Plan (FAMP) to South Coast AQMD. The FAMP is intended to provide detailed information on: 1) the type of monitoring equipment each facility plans to install; 2) the location where the equipment will be sited; 3) the pollutants to be monitored; and 4) the maintenance schedules and quality control measures to be implemented, etc. These plans are expected to be developed in cooperation with equipment installers and third-party consultants and the related costs will range between \$13,000 and \$547,000 depending on facility size and complexity. During rule development for the existing Rule 1180 in 2017, the FAMP development and review would cost, on average, \$0.28 per barrel of throughput according to quotes from service providers. To estimate FAMP development and review costs for the currently proposed project, this rate was adjusted for inflation to \$0.39 per barrel of annual throughput. Inflation adjustments are made based on Marshall and Swift cost indexes from Corelogic.<sup>5</sup> Facilities which are newly subject to PAR 1180 have shorter fencelines and less complicated operations than facilities currently subject to Rule 1180, and thus are expected to install relatively simple monitoring systems that should not require substantial cost for plan development. For this reason, FAMP development and review is estimated to cost \$13,000 per facility based on costs for systems of similar size and complexity. Total FAMP development and review costs are estimated at \$2.3 million.

<sup>5</sup> July 2023 Quarterly Cost Indexes, Equipment – National average, Marshall Valuation Service Cost Manual, Section 98, p. 7. <https://www.corelogic.com/>

## **Recurring Costs**

### **Electricity**

Based on data from existing community monitoring stations, electricity costs and power pole rental are expected to total \$12,600 per monitoring station per year. For facilities previously subject to Rule 1180, an incremental electricity cost of \$1,260 per additional analyzer is assumed based on the average electricity cost per analyzer of existing monitoring stations. Electricity costs are expected to total \$16.4 million over the forecast period.

### **Site Lease**

Site leasing expenses only apply to community monitoring sites, as fenceline sites are contained within each affected facility's perimeter. Annual leasing costs are estimated to be \$20,000 per community monitoring station, based on average lease rates of existing sites. For facilities previously subject to Rule 1180, there are no incremental land lease costs since these leasing costs are already paid in accordance with Rule 1180. The total incremental land lease costs from the proposed project will be \$2.0 million for the five additional community monitoring stations over the forecast period.

### **Lavatory Rental**

Community monitoring stations are required to have a lavatory on site. Based on rental rates at existing community sites, the annual cost of lavatory rental is estimated to be \$7,200 per monitoring station. For facilities previously subject to Rule 1180, there are no incremental lavatory rental costs since these leasing costs are already paid in accordance with Rule 1180. The total cost of lavatory rental over the forecast period is expected to be \$720,000.

### **Calibration Gases and Maintenance Parts**

Monitoring devices periodically need to be recalibrated which requires the use of various consumable gases and parts. Based on data from existing community monitoring sites, these annual recalibration and maintenance costs are estimated to be \$35,000 per new monitoring station. For sites previously subject to Rule 1180, The total calibration and maintenance expenses are expected to be \$24.5 million over the forecast period.

### **Technical Labor**

Technical labor is periodically required for the calibration and repairs of analyzers which involves specialized support from instrument manufacturers for maintenance, troubleshooting, technical support, regular calibration checks, sensor replacements, warranty services, and other ongoing needs. Based on costs from existing community sites, technical labor will cost \$60,000 annually for full community and fenceline monitoring stations and \$48,000 annually for the station which only monitors VOC and H2S. Based on average labor costs per analyzer at existing monitoring stations for facilities previously subject to Rule 1180, the incremental labor costs are estimated to be \$6,000 per analyzer. The total technical labor costs will be \$40.7 million over the forecast period.

### South Coast AQMD Staff Labor

South Coast AQMD staff from the Monitoring and Analysis Division will incur total labor expenses of \$530,000 to operate a station with the full set of monitoring equipment and \$245,000 to operate a station that only monitors VOC and H2S. These estimates are based on the labor demands for existing community sites administered by South Coast AQMD’s Monitoring and Analysis Division. The estimated labor demands for each type of monitoring station are summarized in Table 5. The total cost of South Coast AQMD staff labor is expected to be \$52.6 million over the forecast period.

**Table 5  
Recurring South Coast AQMD Staff Labor Demands**

Position	Duties	Labor Requirements (months)	
		Full Monitoring Station	VOC and H2S Only Monitoring Station
Air Quality Instrument Specialist	1. Maintenance and repair; 2. Recordkeeping and data backups; and	12	6
Senior Air Quality Instrument Specialist	3. Operate monitoring and meteorological equipment	3	3
Air Quality Specialist	1. Review, analyze, validate monitoring data; and 2. Prepare monitoring plans and reports	12	3
Program Supervisor	1. Manage technical and professional staff; and 2. Draft and review reports	1	1

### Communications and IT Services

Both community and fenceline monitoring stations require services to transmit, store, and visualize air quality data, as well as web services to make it available to the public. Facilities previously impacted by Rule 1180 have minimal incremental communications or IT expenses as the web-based fenceline data display and notification program has already been established and these costs were accounted for in the original Rule 1180. New facilities impacted by PAR 1180 and PR 1180.1 are expected to incur \$45,000 for IT and communication expenses annually per facility. The total cost for communications and IT services is estimated to be \$11.7 million over the forecast period.

### Independent Audits

Facilities newly subject to PAR 1180 and those subject to PR 1180.1 would be required to contract an independent third party to audit the fenceline air monitoring system within one year after installation and every three years thereafter. Existing Rule 1180 facilities (petroleum refineries) would be required to contract an independent third party to audit the fenceline air monitoring

system by January 1, 2029, and every three years thereafter. The initial audits to systems of petroleum refineries are expected to be initiated in 2024 by National Physical Laboratory (NPL) contracted by the South Coast AQMD. The audits are intended to identify potential deficiencies in the monitoring system and quality controls. Based on average auditing costs at existing Rule 1180 facilities, the cost is estimated at \$170,000 per audit. Existing Rule 1180 facilities operate substantially more complicated fenceline monitoring systems than facilities newly subject to PAR 1180, implying that \$170,000 per audit is likely a conservative estimate of these costs. The total auditing cost is estimated to be \$9.5 million over the forecast period.

### **Total Compliance Cost**

All estimates of the compliance costs are presented in 2023 dollars. The average cost includes the estimated amortized capital expenses and recurring compliance expenses averaged over the period from 2025 to 2045 reflecting the 20-year assumed useful life of new assets and the staggered first year of spending between facilities newly subject to PAR 1180 and PR 1180.1 and facilities currently subject to Rule 1180. The present value of total compliance costs are discounted to 2024, the anticipated year of rule adoption.

The total present value of compliance cost is estimated at \$165.71 million and \$122.05 million for a 1% and 4% discount rate, respectively.<sup>6</sup> The average annual compliance costs of PAR 1180 and PR 1180.1 are estimated to range from \$8.88 million to \$9.27 million for a 1% and 4% interest rate, respectively. Table 6 presents the estimated present value of compliance and the average annual compliance cost of the proposed project by expense categories.

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<sup>6</sup> In 1987, South Coast AQMD staff began to calculate cost-effectiveness of control measures and rules using the Discounted Cash Flow method with a discount rate of four percent. Although not formally documented, the discount rate is based on the 1987 real interest rate on 10-year Treasury Notes and Bonds, which was 3.8 percent. The maturity of 10 years was chosen because typical equipment life is 10 years; however, a longer equipment life would not have corresponded to a much higher rate -- the 1987 real interest rate on 30-year Treasury Notes and Bonds was 4.4 percent. Since 1987, the four percent discount rate has been used by South Coast AQMD staff for all cost-effectiveness calculations, including BACT analysis, for the purpose of consistency. Thus, the incremental cost reported in this assessment was annualized using a real interest rate of four percent as the discount rate. As a sensitivity test, a real interest rate of one percent will also be used, which is closer to the prevailing real interest rate.

**Table 6**  
**Total Present Value and Average Annual Estimated Costs of PAR 1180 and PR 1180.1**

Cost Categories	Present Value (2024)		Annual Average (2025 – 2045)	
	1% Discount Rate	4% Discount Rate	1% Interest Rate	4% Interest Rate
<b>Capital Costs</b>				
Community - Air Monitoring Station Container	\$252,822	\$184,911	\$10,451	\$13,477
Community - Site Preparation and Construction	\$632,056	\$462,278	\$26,127	\$33,691
Community - Monitoring Equipment	\$8,403,817	\$6,231,047	\$345,791	\$445,904
Community - Data System	\$189,617	\$138,683	\$7,838	\$10,107
Community - Technical Labor	\$961,989	\$717,456	\$39,504	\$50,941
Community - AQMD Staff Labor	\$3,255,666	\$2,428,082	\$133,694	\$172,401
Fenceline - Air Monitoring Station Container	\$606,774	\$443,787	\$25,082	\$32,344
Fenceline - Site Preparation and Construction	\$1,516,935	\$1,109,467	\$62,705	\$80,859
Fenceline - Monitoring Equipment	\$12,092,433	\$8,957,840	\$497,719	\$641,819
Fenceline - Data System	\$455,080	\$332,840	\$18,811	\$24,258
Fenceline - Technical Labor	\$1,320,871	\$979,660	\$54,344	\$70,078
Fenceline - Plan Development and Review	\$2,956,898	\$2,221,905	\$121,111	\$156,175
<b>Recurring Costs</b>				
Community - Electricity	\$2,954,161	\$2,182,240	\$157,000	\$157,000
Community - Site Lease	\$1,786,688	\$1,306,762	\$95,238	\$95,238
Community - Lavatory Rental	\$643,208	\$470,434	\$34,286	\$34,286
Community - Calibration and Maintenance Parts	\$8,631,076	\$6,370,825	\$458,810	\$458,810
Community - Communications and IT Services	\$4,020,049	\$2,940,215	\$214,286	\$214,286
Community - Technical Labor	\$13,601,602	\$10,047,751	\$722,857	\$722,857
Community - AQMD Staff Labor	\$46,989,905	\$34,367,845	\$2,504,762	\$2,504,762
Fenceline - Electricity	\$11,780,593	\$8,732,504	\$625,429	\$625,429
Fenceline - Calibration and Maintenance Parts	\$13,346,696	\$9,843,036	\$709,667	\$709,667
Fenceline - Communications and IT Services	\$6,432,078	\$4,704,344	\$342,857	\$342,857
Fenceline - Technical Labor	\$22,880,050	\$16,873,776	\$1,216,571	\$1,216,571
Fenceline - Independent Audit	\$8,463,581	\$6,112,140	\$453,333	\$453,333
<b>Total</b>	<b>\$165,711,064</b>	<b>\$122,047,689</b>	<b>\$8,878,272</b>	<b>\$9,267,149</b>

Figure 1 presents the estimated average annual compliance costs of the proposed project by expense category. South Coast AQMD staff labor, Technical Labor, Calibration and Maintenance Parts, and Monitoring Equipment account for the largest portions of the annual compliance cost at 29%, 22%, 13%, and 12%, respectively.

**Figure 1**  
**Total Estimated Costs of the PAR 1180 and PR 1180.1 by Expense Category**

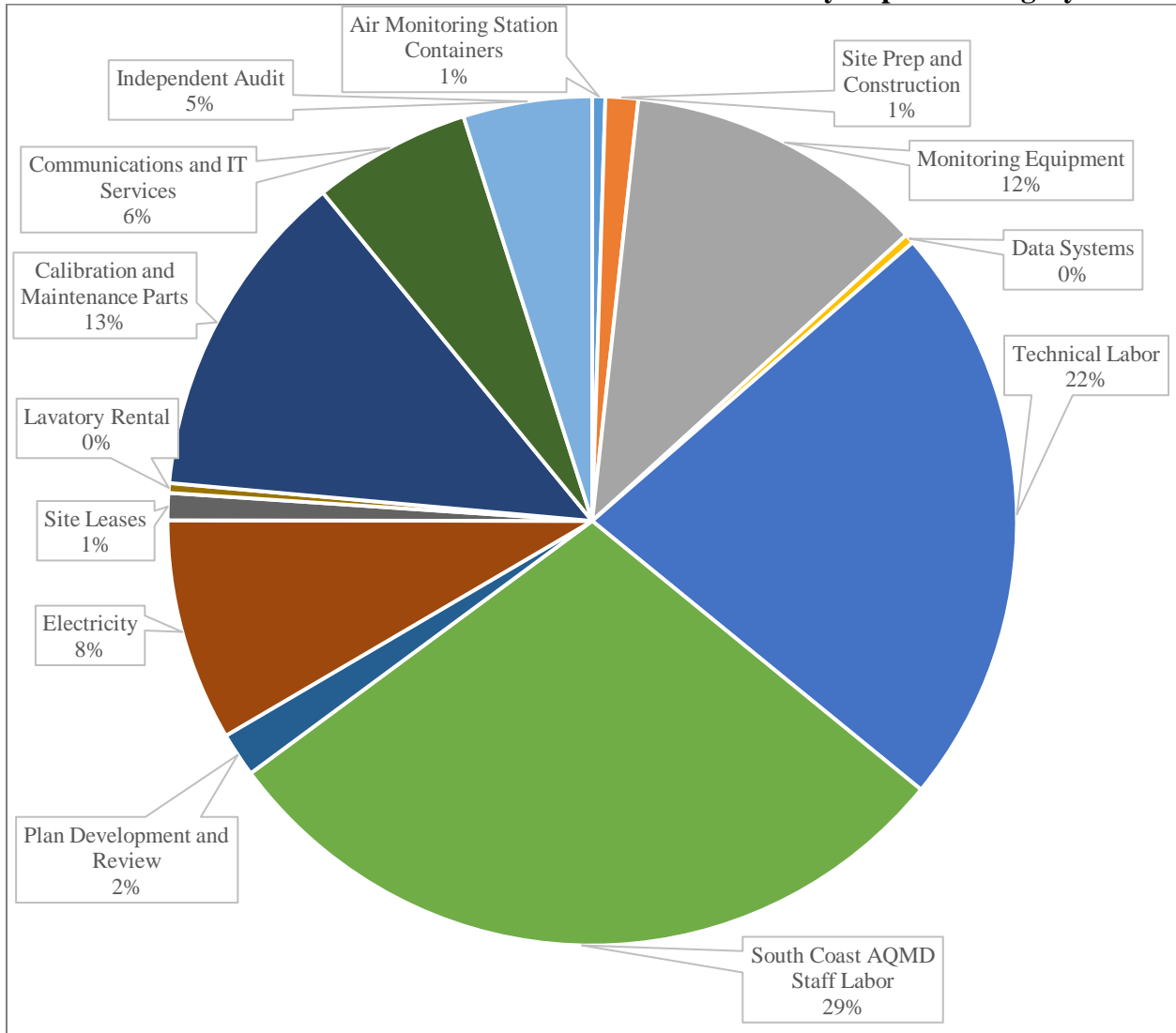




Table 7 presents the total fenceline, community, and average annual compliance costs for PAR 1180 and PR 1180.1 by facility over the 2025 – 2045 period. Community monitoring costs account for roughly 53% of total average annual cost. The estimated average annual compliance cost for 12 out of the 15 affected facilities is less than \$600,000, while the remaining three facilities are expected to incur an estimated average annual compliance cost ranging from \$1.1 million to \$1.3 million.

**Table 7**  
**Projected Total and Average Annual Compliance Costs by Affected Facilities**  
**(2025 – 2045)**

<b>Facility Designation</b>	<b>Total Fenceline Cost</b>	<b>Total Community Cost</b>	<b>Total Fenceline and Community Cost</b>	<b>Average Annual Cost (2025 - 2045)</b>
A	\$5,963,968	\$4,658,155	\$10,622,123	\$505,815
B	\$4,450,001	\$2,329,750	\$6,779,751	\$322,845
C	\$8,111,387	\$4,658,155	\$12,769,542	\$608,073
D	\$4,343,636	\$2,329,750	\$6,673,386	\$317,780
E	\$4,343,636	\$2,329,750	\$6,673,386	\$317,780
F	\$6,695,921	\$4,658,155	\$11,354,076	\$540,670
G	\$5,443,943	\$2,329,750	\$7,773,693	\$370,176
H	\$4,799,543	\$7,591,600	\$12,391,143	\$590,054
I	\$4,799,543	\$4,943,262	\$9,742,805	\$463,943
J	\$4,799,543	\$7,591,600	\$12,391,143	\$590,054
K	\$4,799,543	\$7,591,600	\$12,391,143	\$590,054
L	\$4,799,543	\$4,943,262	\$9,742,805	\$463,943
M	\$11,470,875	\$15,744,719	\$27,215,594	\$1,295,981
N	\$8,305,710	\$15,744,719	\$24,050,429	\$1,145,259
O	\$8,294,390	\$15,744,719	\$24,039,109	\$1,144,719
<b>Total</b>	<b>\$91,421,184</b>	<b>\$103,188,946</b>	<b>\$194,610,130</b>	<b>\$9,267,149</b>

## MACROECONOMIC IMPACTS ON THE REGIONAL ECONOMY

The Regional Economic Models, Inc (REMI) PI+ v3 model was used to assess the socioeconomic impacts of the proposed rule.<sup>7,8</sup> The model links the economic activities in the counties of Los Angeles, Orange, Riverside, and San Bernardino, and 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>

It should be noted that the REMI model is not designed to assess impacts on individual operations. The model was used to assess the impacts of the proposed project on various industries that make up the local economy. Cost impacts on individual operations were assessed outside of the REMI model and were aggregated to the 70-sector NAICS code level to be used as inputs into the REMI model.

### Impact of Proposed Project

This assessment is performed relative to a baseline (“business as usual”) forecast where the proposed project would not be implemented. The analysis assumed that the 15 affected facilities would finance the capital and installation costs of monitoring equipment at a 4% interest rate, and that these one-time costs are amortized and incurred over the 20-year useful life of the monitoring equipment.

Direct costs of the proposed project are used as inputs to the REMI model which uses this information to assess secondary and induced impacts for all the industries in the four-county economy on an annual basis over the 2025-2045 period. Direct effects of the proposed project include the site construction, equipment, communications, labor, and other costs discussed in the compliance cost section above.

While the compliance expenditures that are incurred by affected facilities would increase their cost of doing business, the purchase of required equipment and services would increase the sales and subsequent spending of businesses in various sectors, some of which may be located in South Coast AQMD’s jurisdiction. Table 8 lists the 70-sector NAICS codes modeled in REMI that would incur either direct cost or direct benefit from compliance spending.

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<sup>7</sup> Regional Economic Modeling Inc. (REMI). Policy Insight® for the South Coast Area (70-sector model). Version 3. 2023.

<sup>8</sup> REMI v3 has been updated based on The U.S. Economic Outlook for 2021-2023 from the University of Michigan’s Research Seminar in Quantitative Economics (RSQE) release on May 21, 2021, The Long-Term Economic Projections from CBO (supplementing CBO’s March 2021 report, The 2021 Long-Term Budget Outlook), and updated BEA data for 2020 (revised on May 27, 2021).

<sup>9</sup> Within each county, producers are made up of 156 private non-farm industries and sectors, 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>.)

**Table 8**  
**Industries Incurring and Benefitting from Compliance Costs/Spending**

Source of Compliance Cost	REMI Industries Incurring Compliance Costs (NAICS)	REMI Industries Benefitting from Compliance Spending (NAICS)
Air Monitoring Station Container	Petroleum and Coal Products Manufacturing (324) Chemical Manufacturing (325) Wholesale Trade (42)	<i>Capital:</i> Fabricated Metal Product Manufacturing (332)
Site Preparation and Construction		<i>Capital:</i> Construction (23)
Monitoring Equipment		<i>Capital:</i> Computer and Electronic Product Manufacturing (334)
Data System		<i>Capital:</i> Wholesale Trade (42)
Technical Labor		<i>Capital and Recurring:</i> Professional, Scientific and Technical services (54)
South Coast AQMD Staff Labor		<i>Capital and Recurring:</i> State and Local Government (92)
Electricity		<i>Recurring:</i> Utilities (22)
Site Lease		<i>Recurring:</i> Varies, not modeled
Lavatory Rental		<i>Recurring:</i> Waste Management and Remediation Services (562)
Calibration and Maintenance		<i>Recurring:</i> Wholesale Trade (42)
Communications and IT		<i>Recurring:</i> Internet Publishing and Broadcasting; ISPs, Search Portals and Data Processing; Other Information Services (518-519)
Independent Audit		<i>Recurring:</i> Professional, Scientific and Technical Services (54)

### Regional Job Impacts

When the compliance cost is annualized using a 4% real interest rate, the REMI model projects that there will be seven additional jobs on average over the 2025 – 2045 period relative to the baseline forecast. The State and Local Government, Professional, Scientific and Technical Services, and Computer and Electronic Product Manufacturing industries are expected to gain seven, seven, and one job, respectively on average relative to the baseline forecast. The anticipated job gains reflect the capital-intensive nature of the affected facilities, characterized by a substantial proportion of equipment/machinery relative to labor, and the relatively small compliance costs as a percentage of revenue. In contrast, the Professional, Scientific, and Technical Services industry

that will benefit from the proposed project is relatively labor-intensive, implying labor demand would respond more strongly to the resulting increase in demand for these services. In 2025 and 2026, the years when the Computer and Electronic Product Manufacturing, Construction, and Professional Scientific and Technical Services industries earn the most revenue, the REMI model projects that the regional economy would gain 104 jobs in each year relative to the baseline forecast. The REMI model also predicts a small gain of 16 jobs in the year 2027, followed by small net job changes, ranging from four job gains to nine foregone jobs, over the remainder of the forecast period. Table 9 presents the expected foregone or additional jobs at different years in the forecast period for the 10 industries with the greatest average annual job impacts. The “All Industries” row includes the full set of 70 industrial sectors modeled in the REMI software including the 10 selected industries presented in the table.

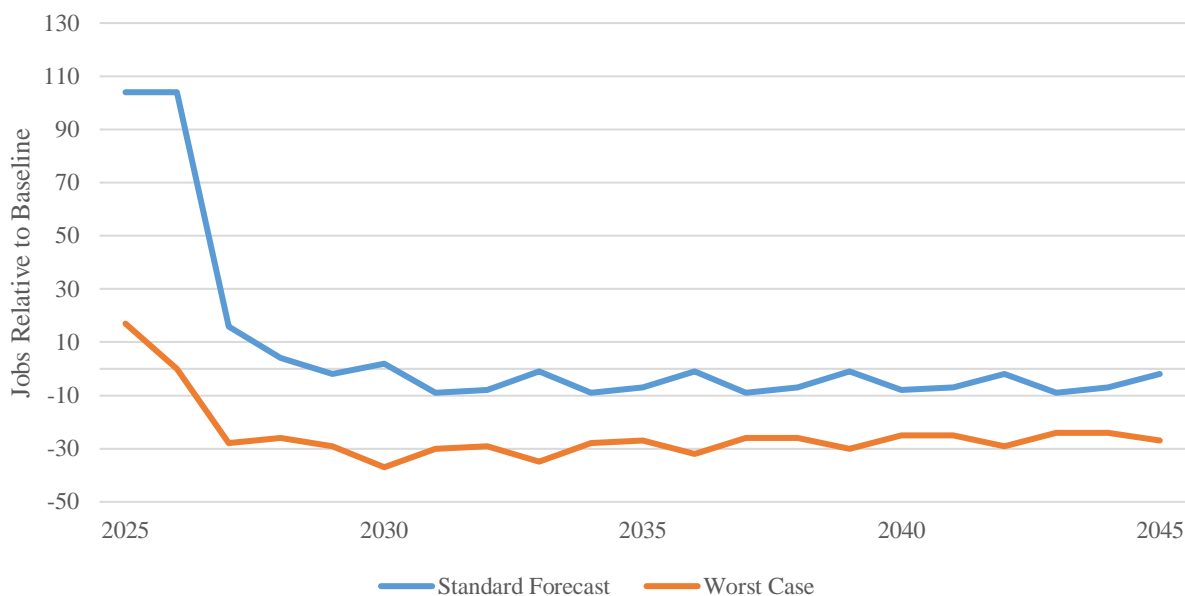
**Table 9**  
**Projected Job Impacts of PAR 1180 and PR 1180.1 for Select Industries by Year**

Industry (NAICS)	2025	2030	2035	2040	2045	Annual Average (2025-2045)	Baseline Number of Jobs (Average, 2025-2045)	Percent Relative to Baseline
State and Local Government (92)	11	8	5	4	4	7	947,530	0.00%
Professional, Scientific and Technical Services (54)	22	11	3	3	6	7	966,231	0.00%
Computer and Electronic Product Manufacturing (334)	11	0	0	0	0	1	118,754	0.00%
Wholesale Trade (42)	5	1	1	0	0	1	415,153	0.00%
Warehousing and Storage (493)	1	-1	-1	-1	-1	-1	145,796	0.00%
Truck Transportation (484)	0	-1	-1	-1	-1	-1	107,084	0.00%
Petroleum and Coal Products Manufacturing (324)	0	-1	-1	-1	-1	-1	5,791	-0.02%
Chemical Manufacturing (325)	9	-6	-3	-2	-1	-2	42,806	0.00%
Construction (23)	0	-2	-2	-2	-2	-2	514,941	0.00%
Retail trade (44-45)	5	-4	-3	-2	-2	-2	802,514	0.00%
<b>All Industries</b>	<b>104</b>	<b>2</b>	<b>-7</b>	<b>-8</b>	<b>-2</b>	<b>7</b>	<b>11,436,960</b>	<b>0.00%</b>

Based on Abt Associate’s 2014 recommendation to enhance socioeconomic analysis by testing major assumptions through conducting scenario analysis, this document contains an analysis of an alternative worst-case scenario where the affected facilities would purchase all feasible monitoring

equipment and services from providers located outside of the South Coast AQMD’s jurisdiction. Electricity and South Coast AQMD staff labor revenues were included in this scenario, as these costs cannot reasonably be purchased from other suppliers located outside of South Coast AQMD’s jurisdiction. In short, this alternative worst-case scenario only models the impacts of the costs of compliance with the proposed project with a small subset of the revenue realized by associated service providers. This hypothetical scenario is designed to test the sensitivity of the embedded assumptions in the REMI model about how compliance costs and revenues would be distributed inside and outside of South Coast AQMD’s jurisdiction. In practice, construction and technical labor are likely to be provided by local companies. This worst-case scenario would result in an annual average of approximately 25 jobs foregone relative to the baseline scenario. The 25 jobs foregone represent 0.0002% of the average forecasted baseline jobs in the regional economy. Figure 2 presents the projected regional job impacts over the 2025–2045 period for both the standard and the worst-case forecasts.

**Figure 2**  
**Projected Regional Job Impact, 2025 – 2045**



**Price Impact and Competitiveness**

The impact of the proposed project on production costs and delivered prices in the region is not expected to be significant. According to the REMI Model, the proposed project is projected to increase the relative delivered price of products produced by the Petroleum and Coal Products Manufacturing industry by 0.009% on average over the forecast period, and a maximum of 0.012% in 2027. The relative cost of production for the Petroleum and Coal Products Manufacturing industry is forecasted to increase by 0.0010% on average relative to the baseline scenario, with a maximum increase of 0.013% occurring in 2027.

Given the small potential increase in delivered prices the proposed project is not expected to affect the ability of firms to compete with producers located outside of South Coast AQMD's jurisdiction. Further, the proposed project is also not expected to substantially affect the competitive positioning between firms within South Coast AQMD's jurisdiction, as the proposed project will affect all local producers similarly.

## **REFERENCES**

Regional Economic Modeling Inc. (REMI). Policy Insight® for the South Coast Area (70-sector model). Version 3, 2023.

SBA Small Business and Standard Size

[https://www.sba.gov/sites/sbagov/files/2023-06/Table%20of%20Size%20Standards Effective%20March%202017%2C%202023%20%282%29.pdf](https://www.sba.gov/sites/sbagov/files/2023-06/Table%20of%20Size%20Standards%20Effective%20March%202017%2C%202023%20%282%29.pdf)

2019 OEHHA Analysis of Refinery Chemical Emissions and Health Effects

<https://oehha.ca.gov/air/analysis-refinery-chemical-emissions-and-health-effects>

South Coast AQMD Regulation III – Fees; and Proposed Amended Rule 1480 – Ambient Monitoring and Sampling of Meal Toxic Air Contaminants

<http://www.aqmd.gov/docs/default-source/planning/reg-iii/regiii-dsr-2022-040122-final-clean.pdf>

July 2023 Quarterly Cost Indexes, Equipment – National average, Marshall Valuation Service cost manual, section 98, p. 7 <https://www.corelogic.com>

ATTACHMENT K



**South Coast  
Air Quality Management District**

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

**SUBJECT: NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT**

**PROJECT TITLE: PROPOSED AMENDED RULE 1180 – FENCELINE AND COMMUNITY AIR MONITORING FOR PETROLEUM REFINERIES AND RELATED FACILITIES; PROPOSED RULE 1180.1 – FENCELINE AND COMMUNITY AIR MONITORING FOR OTHER REFINERIES; AND PROPOSED AMENDED RULE 1180 AND RULE 1180.1 FENCELINE AIR MONITORING PLAN GUIDELINES**

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the South Coast Air Quality Management District (South Coast AQMD), as Lead Agency, has prepared a Notice of Exemption pursuant to CEQA Guidelines Section 15062 – Notice of Exemption for the project identified above.

If the proposed project is approved, the Notice of Exemption will be filed for posting with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino Counties. The Notice of Exemption will also be electronically filed with the State Clearinghouse of the Governor’s Office of Planning and Research for posting on their CEQAnet Web Portal which may be accessed via the following weblink: <https://ceqanet.opr.ca.gov/search/recent>. In addition, the Notice of Exemption will be electronically posted on the South Coast AQMD’s webpage which can be accessed via the following weblink: <http://www.aqmd.gov/nav/about/public-notices/ceqa-notices/notices-of-exemption/noe---year-2024>.



**NOTICE OF EXEMPTION FROM THE  
CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)**

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**To:** County Clerks for the Counties of Los Angeles, Orange, Riverside and San Bernardino; and Governor’s Office of Planning and Research – State Clearinghouse

**From:** South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

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**Project Title:** Proposed Amended Rule 1180 – Fenceline and Community Air Monitoring for Petroleum Refineries and Related Facilities, Proposed Rule 1180.1 – Fenceline and Community Air Monitoring for Other Refineries, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines

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**Project Location:** The proposed project is located within the South Coast Air Quality Management District’s (South Coast AQMD) jurisdiction, which includes 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 portion of the Salton Sea Air Basin and the non-Palo Verde, Riverside County portion of the Mojave Desert Air Basin.

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**Description of Nature, Purpose, and Beneficiaries of Project:** Proposed Amended Rule 1180 (PAR 1180) applies to petroleum refineries that primarily produce transportation fuels, including gasoline, diesel, and jet fuel and facilities with operations related to petroleum refineries located on contiguous or adjacent properties (related facilities). Proposed Rule 1180.1 (PR 1180.1) applies to refineries that refine crude oil and/or alternative feedstocks that are not subject to PAR 1180. PAR 1180 and PR 1180.1 have been developed to: 1) address a lawsuit filed against South Coast AQMD (Los Angeles Superior Court, Case No. 22STCP04398) because of an exemption for refineries with capacities less than 40,000 barrels per day; 2) enhance air quality monitoring by requiring real-time monitoring for additional air pollutants for PAR 1180 and require real-time monitoring for criteria pollutants, toxic air containments, and other pollutants for PR 1180.1; and 3) improve data accessibility by the public. Specifically, PAR 1180 includes requirements for: 1) conducting air monitoring at additional facilities; 2) monitoring certain air pollutants identified in the Office of Environmental Health Hazard Assessment report, “Analysis of Refinery Chemical Emissions and Health Effects,” finalized in March 2019, where feasible; 3) establishing notification thresholds for additional air pollutants; 4) conducting a specific cause analysis when air pollutants are detected above a notification threshold; 5) recovering community air monitoring costs via a fee schedule; 6) requiring an independent audit and corrective action plan for deficiencies identified by independent audit; and 7) providing additional specifications for compliance schedule, web-based fenceline data display and notification program, and quarterly reports. PAR 1180 also updates definitions and clarifies rule language. PR 1180.1 focuses on smaller refineries, which were previously exempted by Rule 1180, and implements community and fenceline air monitoring requirements similar to PAR 1180. In addition, Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines includes updates for consistency with PAR 1180 and PR 1180.1. The monitoring features of the proposed project will provide information that will assist facility operators to detect air emission leaks early, so that the leaks or upset conditions can be quickly repaired and mitigated. Implementation of the proposed project will not result in quantifiable emission reductions, though indirect emissions benefits may be realized.

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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 15061(b)(3) – Common Sense Exemption  
CEQA Guidelines Section 15306 – Information Collection

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**NOTICE OF EXEMPTION FROM CEQA (concluded)**

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**Reasons why project is exempt:** South Coast AQMD, as Lead Agency, has reviewed the proposed project (PAR 1180, PR 1180.1, and Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines) 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. Because the potential preparation of monitoring sites and installation of monitoring equipment may be achieved via minimal construction equipment, it can be seen with certainty that implementing the proposed project would not cause a significant adverse effect on the environment. Therefore, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption. Further, the proposed project will enhance air quality monitoring and collect data and would not result in a serious or major disturbance to an environmental resource. Thus, the proposed project is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15306 – Information Collection. Finally, there is no substantial evidence indicating that any of the exceptions to the categorical exemption pursuant to CEQA Guidelines Section 15300.2 apply to the proposed project.

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**Date When Project Will Be Considered for Approval (subject to change):**

South Coast AQMD Governing Board Public Hearing: January 5, 2024

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<b>CEQA Contact Person:</b> Farzaneh Khalaj, Ph.D.	<b>Phone Number:</b> (909) 396-3022	<b>Email:</b> <a href="mailto:fkhalaj@aqmd.gov">fkhalaj@aqmd.gov</a>	<b>Fax:</b> (909) 396-3982
<b>PAR 1180 and PR 1180.1 Contact Person:</b> Mojtaba Moghani, Ph.D.	<b>Phone Number:</b> (909) 396-2527	<b>Email:</b> <a href="mailto:mmoghani@aqmd.gov">mmoghani@aqmd.gov</a>	<b>Fax:</b> (909) 396-3982

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**Date Received for Filing:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

*(Signed and Dated Upon Board Approval)*

Kevin Ni  
Acting Program Supervisor, CEQA  
Planning, Rule Development, and  
Implementation



**Proposed Amended Rule 1180  
(PAR 1180)**

**Fenceline and Community Air Monitoring for  
Petroleum Refineries and Related Facilities**

**Proposed Rule 1180.1  
(PR 1180.1)**

**Fenceline and Community Air Monitoring for  
Other Refineries**

**Governing Board Meeting  
January 5, 2024**



# Background on South Coast AQMD Rule 1180

Rule 1180 was adopted in December 2017

- Applicable to all major petroleum refineries

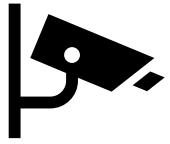
Requires facilities to:

- Conduct real-time fenceline monitoring
- Display-monitoring data and provide notifications when air pollutants are above thresholds
- Fund community air monitoring operated by South Coast AQMD

Intent is to measure air pollutants from the petroleum refineries at the fenceline and in surrounding communities



# Fenceline and Community Monitoring



Consists of open path monitors, point source monitors, and data system



Monitors specific criteria pollutants and air toxics



Provides real-time or near real-time emissions data to the public



# PAR 1180 and PR 1180.1 Rulemaking Process



## Five Working Group Meetings starting January 2023

- One Community Working Group Meeting



## 21+ Meetings with Stakeholders

- Community Steering Committee meeting with AB 617 community (WCWLB)



## Released Draft Documents:

1. PAR 1180
2. PR 1180.1
3. Fenceline Air Monitoring Plan Guidelines
4. Staff Report
5. Socioeconomic Impact Assessment

5 versions



## Public Workshop

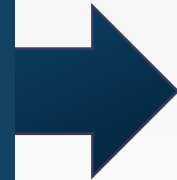
- Daytime session
- Evening session to accommodate community participation

# Need for PAR 1180 and PR 1180.1

## Basis for Amendments

Lawsuit against South Coast AQMD in 2022

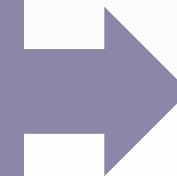
- Alleged violation of Health & Safety Code 42705.6 because of the 40,000 barrels per day exemption
- Settlement committed South Coast AQMD to hold Governing Board hearing on proposed amendment by January 5, 2024



## Staff Proposal

- Amend Rule 1180 to remove 40,000 barrels per day exemption
- Adopt Proposed Rule 1180.1 to require similar air monitoring for three smaller refineries

Office of Environmental Health Hazard Assessment (OEHHA) Released Final Report on Petroleum Refinery Emissions in 2019



- Update refinery-related air pollutants to reflect final OEHHA report, where feasible

# PAR 1180 and PR 1180.1 Applicability



Rule 1180 currently includes the seven major petroleum refineries



PAR 1180 adds five petroleum related facilities :

- Two tank terminals
- Two hydrogen productions plants
- One sulfur recovery plant



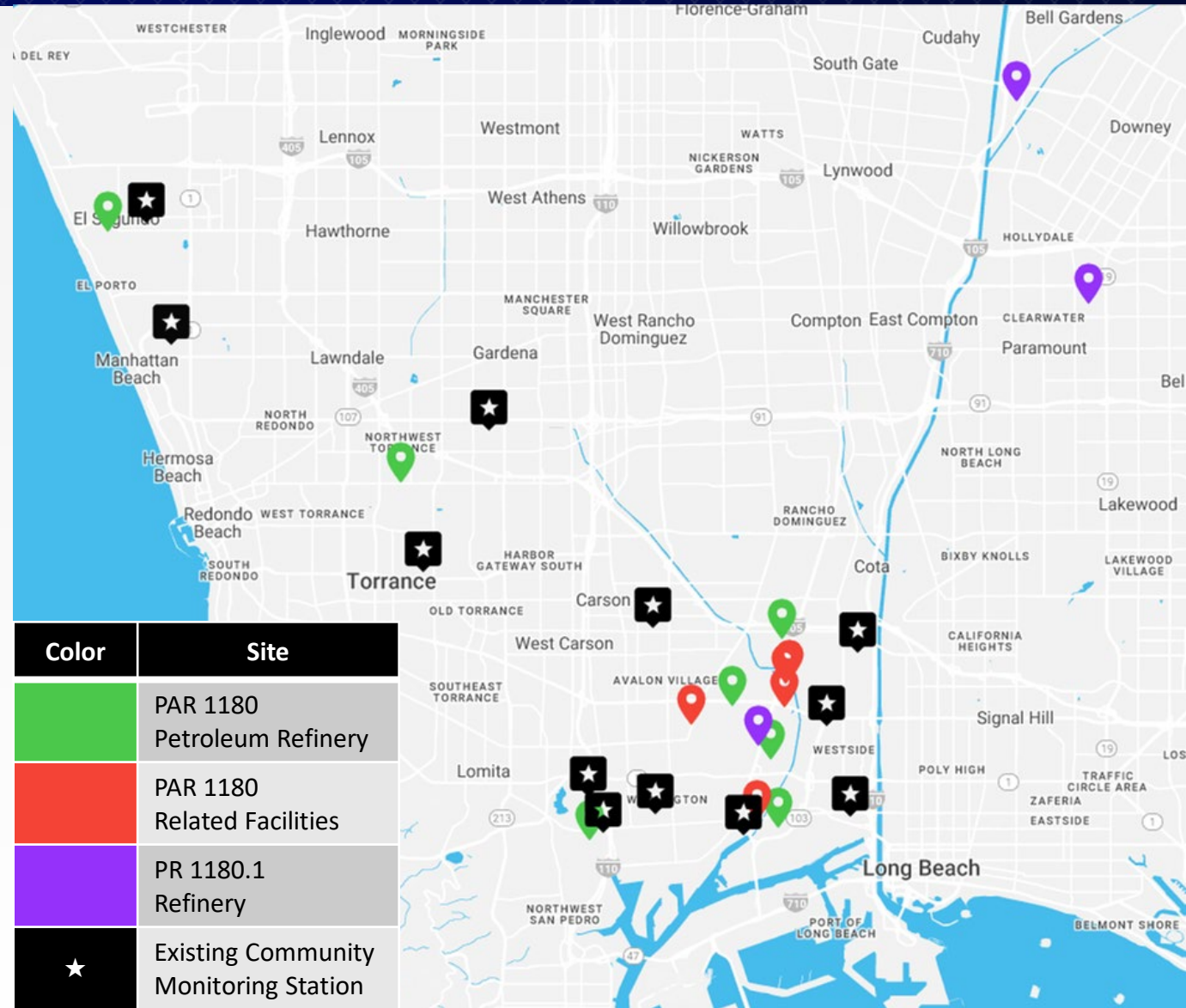
PR 1180.1 includes three smaller refineries

- Two asphalt refineries
- One refinery that processes alternative feedstocks



Currently 12 community monitoring stations

- Map does not show new stations – locations must be identified and secured





# Key New Requirements

## Web-Based Fenceline Data Display and Notification Program

- Text-based notifications, in addition to email notifications
- Follow-up notifications if significant increase from initial notification
- Historical data available on webpage

## Specific Cause Analysis

- Facility must determine cause if pollutant above notification threshold
- Corrective action and reinspection, if applicable

## Independent Audit

- Third party audit once every three years
- If deficiencies, requires corrective action plan

# Compliance Schedule

Submit a new or revised fenceline air monitoring plan (plan) after rule adoption

**PAR 1180**

Within seven months for a facility with an existing plan

**PAR 1180 and PR 1180.1**

Within 12 months for a facility without an existing plan

Complete installation and begin operation

**PAR 1180**

No later than 15 months after plan approval or partial approval

**PR 1180.1**

No later than 24 months after plan approval or partial approval

## Status Update/ Technology Check-in



Resolution includes technology and applicability check-in



Evaluation by January 1, 2029, and every five years thereafter to assess:

- Need for monitoring equipment upgrades
- Availability of new real-time air monitoring technologies
- If additional facilities should be subject to Rule 1180 or Rule 1180.1

# Estimated One-time Cumulative Capital Cost for Additional Air Monitoring Systems

## PAR 1180 costs

- Existing refineries
  - Monitors for new air pollutants
- New related facilities
  - Fenceline monitoring systems
  - Two new community stations (One full station and one VOC/H2S)

## PR 1180.1 costs

- Fenceline monitoring systems
- At least three new community monitoring stations

	Fenceline Monitoring		Community Monitoring	
	PAR 1180	PR 1180.1	PAR 1180	PR 1180.1
Existing Facilities	\$5.5MM	N/A	\$4MM	N/A
New Facilities	\$3.5MM	\$5MM	\$1.5M	\$3.5MM
Total Cost	\$14MM		\$9M	
	\$23MM			

- *Socioeconomic Impact Assessment Report indicates:*
  - 104 jobs will be created annually in 2025 and 2026
  - 7 jobs will be created annually on average over 2025 to 2045

# Key Remaining Issue #1

## *Stakeholders expressed concern with exemption for smaller terminals*

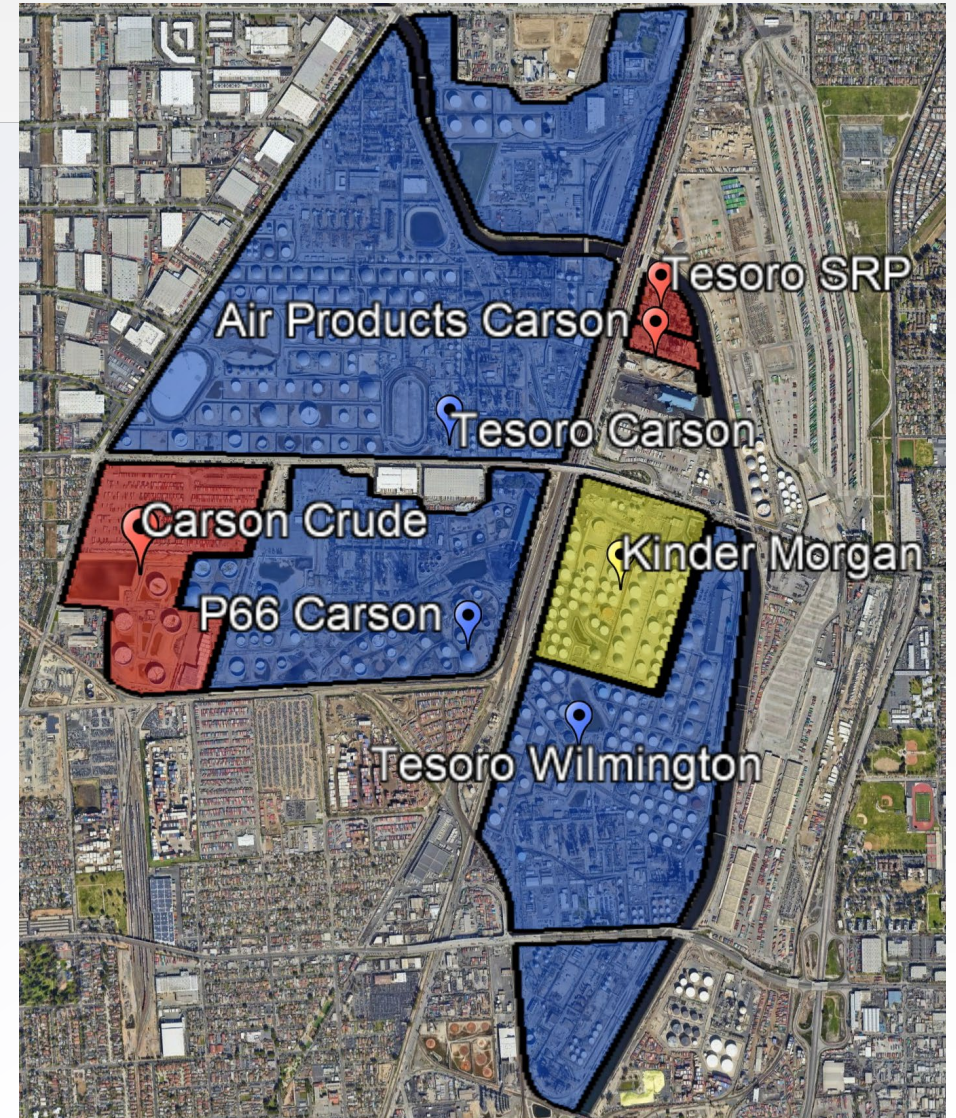
- Smaller terminals have low emissions potential
  - VOC emissions of 1-2 lbs/day
  - Smaller tanks than PR 1180 and PAR 1180.1 tanks
- Air monitoring systems in place on several sides of their fenceline operated by adjacent petroleum refineries
  - Community air monitoring stations in the neighborhood
- Tanks regulated under Rule 1178 and Rule 463
  - Required to perform optical gas imaging and other periodic monitoring



# Key Remaining Issue #2

*Kinder Morgan stated they should not be subject to Rule 1180 because they do not meet definition of “related facility”*

- Rule 1180 defines a related facility as having more than 50 percent of product directly or indirectly to or from Rule 1180 petroleum refineries
- Kinder Morgan provided documentation shows they receive 45.8 percent of their product input **directly** from petroleum refineries
- Staff confirmed that a considerable quantity of product Kinder Morgan receives comes **indirectly** from Rule 1180 petroleum refineries through local terminals
- Kinder Morgan will have 12 months to either develop a fenceline air monitoring plan or definitively demonstrate they do not meet rule threshold



# Key Remaining Issue #3

*Stakeholders would like to exclude metal pollutants and pollutants not routinely measured above detection limits*

- Metal pollutants are included in the 2019 OEHHA report as priority pollutants to monitor at petroleum refineries
- Metals are emitted at low levels but have high toxicity
  - Refineries report metals in their Annual Emission Reports
- Fenceline and community monitoring systems are intended to measure pollutant concentrations during routine and non-routine operations
  - Air pollutant concentrations can be significantly higher during non-routine or upset conditions
  - High density populations located near the facility fenceline
  - Fenceline air monitoring systems need to be maintained to measure non-routine emissions



# Staff Recommendations

## Adopt the Resolution:



Determining that

- Proposed Amended Rule 1180;
- Proposed Rule 1180.1; and
- Proposed Amended Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines

are exempt from the requirements of the California Environmental Quality Act; and



- Amend Rule 1180 – Fenceline and Community Air Monitoring for Petroleum Refineries and Related Facilities;
- Adopt Rule 1180.1 – Fenceline and Community Air Monitoring for Other Refineries; and
- Amend the Rule 1180 and Rule 1180.1 Fenceline Air Monitoring Plan Guidelines