

BOARD MEETING DATE: November 1, 2024

AGENDA NO. 22

**PROPOSAL:** Determine That Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, Is Exempt from CEQA; and Amend Rule 1173

**SYNOPSIS:** Rule 1173 applies to refineries, chemical plants, oil and gas production fields, and others. Proposed Amended Rule 1173 (PAR 1173) establishes enhanced leak detection using optical gas imaging and more stringent control requirements including lower leak standards. PAR 1173 will address Community Emission Reduction Plan objectives from the AB 617 community Wilmington, Carson, West Long Beach. PAR 1173 also refines repair schedules and includes contingency measures to fulfill federal requirements.

**COMMITTEE:** Stationary Source, August 16, 2024, Reviewed

**RECOMMENDED ACTIONS:**

Adopt the attached Resolution:

1. Determining that Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants is exempt from the requirements of the California Environmental Quality Act; and
2. Amending Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants.

Wayne Natri  
Executive Officer

SR:MK:MM:RC:AS

---

**Background**

Rule 1173 was adopted on July 7, 1989, to reduce VOC emissions from components at specific facilities and to consolidate three existing rules. Since adoption, Rule 1173 has been amended five times to lower certain leak standards, to expand applicability to

additional facility types and heavy liquids, to enhance monitoring requirements, and to address administrative issues. Rule 1173 was last amended in 2009. Currently, Rule 1173 applies to more than 200 refineries, chemical plants, lubricating oil and grease re-refiners, marine terminals, oil and gas production fields, natural gas processing plants and pipeline transfer stations and affects approximately 2.6 million components and points of fugitive VOC emissions.

On September 6, 2019, the South Coast AQMD Governing Board adopted the AB 617 Wilmington, Carson, West Long Beach (WCWLB) Community Emissions Reduction Plan (CERP). The WCWLB CERP includes an air quality objective that seeks to further reduce fugitive VOC emissions through rule amendments to enhance VOC leak detection and repair requirements. The WCWLB CERP considered more rapid leak detection and response enabled by advanced air measurements and lowering allowable emissions from on-site equipment.

On December 2, 2022, the South Coast AQMD Governing Board adopted the 2022 AQMP to achieve attainment of the ozone National Ambient Air Quality Standards (NAAQS). The 2022 AQMP includes Control Measure FUG-01: Improved Leak Detection and Repair (LDAR) which proposes implementing the use of advanced LDAR technologies including optical gas imaging (OGI) devices for earlier detection of VOC emissions from leaks. The 2022 AQMP also committed to include contingency measures in rulemaking to partially satisfy federal Clean Air Act (CAA) contingency requirements for applicable ozone NAAQS in the South Coast AQMD's jurisdiction.

### **Proposal**

Proposed Amended Rule 1173 (PAR 1173) further reduces VOC emissions from components by: 1) requiring optical gas imaging inspections monthly; 2) lowering VOC leak standards for component category light liquid pumps and compressors from 500 ppm to 400 ppm; 3) lowering VOC leak standards for fittings, valves, and other devices from 500 ppm to 100 ppm; and 4) formalizing inspection requirements and lowering leak standards for fin fans to 100 ppm, all effective January 1, 2026. PAR 1173 also simplifies the leak repair schedule, updates threshold for Notice of Violation, and requires electronic reporting. In addition, PAR 1173 contains three contingency measures to be implemented sequentially, if needed: 1) further lowers VOC leak standard for component category light liquid pumps and compressors to 300 ppm; 2) increases OGI inspections to every two weeks; and 3) further lowers VOC leak standards for component category fittings, valves, and other devices to 50 ppm.

### **Public Process**

PAR 1173 was developed through a public process. A Working Group was formed, which included representatives from industry, consultants, and community and environmental groups. Four working group meetings were held on: February 28, 2024; April 24, 2024; June 12, 2024; and July 11, 2024. Staff also met individually with

stakeholders and visited sites affected by the proposed amended rule. In addition, a Public Workshop was held on July 26, 2024, to present PAR 1173, cost-effectiveness, and receive public comment.

### **Emission Reductions**

Implementation of PAR 1173 is expected to result in emission reductions of 2.03 tons per day of VOC beginning January 1, 2026.

### **Key Issues**

Through the rulemaking process, staff has worked with stakeholders to address and resolve issues. Two resolved issues were fin fan plug applicability and delay of repair of essential components. Staff is not aware of any remaining key issues.

### **California Environmental Quality Act**

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, PAR 1173 is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062 and is included as Attachment H to this Board Letter. If PAR 1173 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 Assessment**

Approximately 2.61 million components at 203 facilities are subject to PAR 1173 requirements, with the majority of the facilities classified under the sector of Oil and Gas Extraction per North American Industrial Classification System. Of the 203 affected facilities, up to 117 facilities may qualify as small businesses based on various small business definitions. The key provisions of PAR 1173 that would have cost impacts for the affected facilities include: 1) establishing more stringent VOC leak standards for light liquid pumps and compressors as well as valves, fittings, fin fans and other components; 2) requiring monthly OGI inspections; and 3) repairing or replacing the detected leaking components. The total present value of compliance costs of implementing PAR 1173 over the 2026 – 2035 period is estimated to be \$135.73 million and \$112.88 million for a 1 percent and 4 percent discount rate, respectively. The average annual compliance costs of PAR 1173 are estimated to range from \$14.43 million to \$14.47 million for a 1 percent to 4 percent real interest rate, respectively. Implementing PAR 1173 is expected to result in 16 net jobs gained annually on average over the 2026 – 2035 period. Overall, the impact of PAR 1173 on production cost and delivered prices in South Coast AQMD region is expected to be minimal. The Final Socioeconomic Impact Assessment is included as Attachment I to this Board Letter.

### **AQMP and Legal Mandates**

Under 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. PAR 1173 partially implements the 2022 AQMP Control Measure FUG-01: Improved Leak Detection and Repair by requiring monthly monitoring of components with the use of OGI technology.

PAR 1173 also implements objectives stated in the WCWLB CERP to reduce fugitive VOC emissions. Additionally, PAR 1173 updates BARCT requirements by establishing more stringent leak standards pursuant to Health and Safety Code section 40920.6.

In addition, PAR 1173 introduces contingency measures to partially satisfy federal CAA Section 182(c)(9) that requires that ozone nonattainment areas classified as “serious” or above provide for contingency measures to be implemented if the area fails to meet any applicable milestone. PAR 1173 introduces three contingency measures to fulfill ozone attainment plan requirements for the applicable NAAQS.

### **Implementation and Resource Impact**

Existing staff resources are adequate to implement the proposed amended rule.

### **Attachments**

- A. Summary of Proposal
- B. Key Issues and Responses
- C. Rule Development Process
- D. Key Contacts List
- E. Resolution
- F. PAR 1173
- G. Final Staff Report
- H. Notice of Exemption from CEQA
- I. Final Socioeconomic Impact Assessment
- J. Board Presentation

**ATTACHMENT A**  
**SUMMARY OF PROPOSAL**

Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants

Purpose

- Contains a new purpose to establish contingency measures in the South Coast Air Basin for applicable ozone standards

Applicability

- Contingency measures become applicable upon approval by U.S. EPA

South Coast AQMD Inspection Procedures

- Effective January 1, 2026, lower violation standard from 50,000 to 10,000 ppm
- Effective January 1, 2026, visible vapors detected with optical gas imaging (OGI) by South Coast AQMD personnel subject to Notice to Violation

Identification Requirements

- Tagging of leaking components required until repaired

Self Inspection Requirements

- Weekly audio-visual-olfactory (AVO) inspections for unmanned facilities
- Effective January 1, 2026, monthly OGI inspections of all components
- Effective January 1, 2026, annual Method 21 analyzer inspections of all fin fans
- OGI inspections now also considered when determining relaxation of quarterly Method 21 analyzer inspections to annual frequency

Leak Standards and Repair Requirements

- New leak standards and repair schedule effective January 1, 2026
- Leak standard for valves, fittings, and other devices lowered from 500 ppm to 100 ppm
- Leak standard for compressors and pumps (light liquid) lowered from 500 ppm to 400 ppm
- Leak standard for fin fans set at 100 ppm with separate repair schedule
- Simplified repair schedule to repair components above the violation standard within 1 calendar day and those above the leak standard but below the violation standard within 14 calendar days
- Limited delay of repair for a small percentage of valves, fittings, compressors, or pumps (light liquid) below 500 ppm until outage or turnaround

- Components with visible leaks dripping liquid must be repaired within 1 calendar day or, if inaccessible, within 14 calendar days
- Components with visible vapors detected with OGI must be repaired within 1 calendar day or, if inaccessible or below violation standard, within 14 calendar days
- For fin fans, all leaks above 5,000 ppm must be repaired within 14 calendar days. A limited percentage of fin fan leaks under 5,000 ppm may be delayed until outage or turnaround

#### Atmospheric Process PRD Requirements

- Threshold removed from requirement to conduct a failure analysis and implement corrective actions following a release from an atmospheric process PRD in order to maintain stringency with federal requirements
- Mitigation fee in lieu of connecting atmospheric process PRDs to vapor recovery or control system adjusted from \$350,000 to \$625,000 with annual California Consumer Price Index adjustment

#### Recordkeeping and Reporting Requirements

- Electronic reporting to dedicated email address Rule1173Reports@aqmd.gov or other electronic formats to be developed

#### Test Methods

- Additional test methods approved

#### Ozone Contingency Measures

- Within 60 days of finding of nonattainment or failure of reasonable further progress, implementation sequentially of a contingency measure
- Stage 1: Lowered leak standard for compressors and pumps (light liquid) from 400 ppm to 300 ppm
- Stage 2: Increased OGI inspection frequency from monthly to every two weeks
- Stage 3: Lowered leak standard for valves, fittings, and other devices from 100 ppm to 50 ppm

#### Exemptions

- Unsafe component inspections and repair exempt until safe to do so

#### Interim Procedures and Requirements

- Existing violation standards, leak standards, and repair periods in effect until January 1, 2026

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

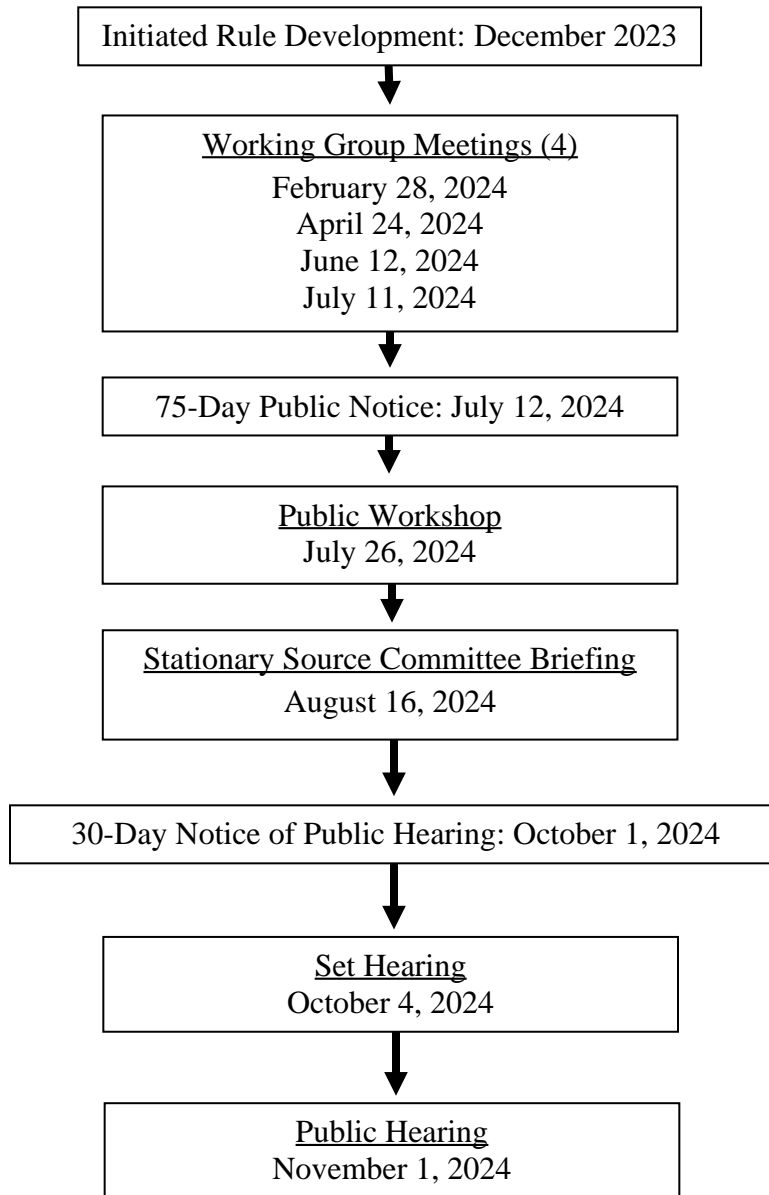
Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and  
Releases from Components at Petroleum Facilities and Chemical Plants

Throughout the rulemaking process, staff worked with stakeholders to resolve key issues. Staff is not aware of any key remaining issues.

**ATTACHMENT C**

**RULE DEVELOPMENT PROCESS**

**Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants**



11 months spent in rule development  
One (1) Public Workshop  
One (1) Stationary Source Committee Meeting  
Four (4) Working Group Meetings



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

ALAMITOS COMPANY  
ALTAIR PARAMOUNT LLC  
AMVAC CHEMICAL CORP  
ANTERRA SERVICES INC  
ARROWHEAD OPERATING INC  
BEACON ENERGY SERVICES INC  
BLUE LAKE ENERGY  
BRAYTON-HODGES PETROLEUM INC  
BRIDGE ENERGY LLC  
BRIDGE POINT CARSON LLC  
BRINDLE & THOMAS  
BROWNSTEIN  
CALIFORNIA RESOURCES LONG BEACH INC  
CALNEV PIPE LINE LLC  
CALNRG OPERATING LLC  
CHEVRON PRODUCTS CO  
CITY OF HUNTINGTON BEACH  
CITY OF NEWPORT BEACH  
COLUMBINE ASSOCIATES  
COOPER & BRAIN INC  
CREE OIL LTD  
DCOR LLC  
DEIST  
E & T LLC  
E&B NATURAL RESOURCES MANAGEMENT CORP  
EQUILON ENTERPRISES LLC

EVONIK  
HELLMAN PROPERTIES LLC  
HERLEY OLIVE HOLDINGS, LLC  
HERLEY-KELLY CO  
HONOR RANCHO WAYSIDE CANYON HOLDINGS LLC  
INEOS COMPOSITES  
INEOS POLYPROPYLENE LLC  
J AND J OPERATORS LLC  
JOHN THOMAS, THOMAS OILERS  
KINDER MORGAN MATERIALS SERVICES LLC  
KONICA-MINOLTA  
LEONARD 1&2 LLC  
LINN WESTERN OPERATING INC  
MARATHON PETROLEUM  
MONTROSE AIR QUALITY SERVICES LLC  
OLD-FIELD AND ASSOCIATES  
OLYMPUS TERMINALS LLC  
OPTIMA CONSERVATION RESOURCES, LLC  
PACIFIC COAST ENERGY COMPANY LP  
PACIFIC PALMS PETROLEUM LLC  
PACIFIC PIPELINE SYSTEM LLC  
PARAMOUNT PIPELINE, LLC  
PETRO DIAMOND TERMINAL CO  
PHILLIPS 66 COMPANY  
PIER OIL CO  
PLASKOLITE INC  
PLEGEL OIL COMPANY INC  
POWER RUN OIL LLC  
RANCHO LPG HOLDINGS LLC

REICHHOLD LLC  
RIBOST TERMINAL LLC  
ROSECRANS ENERGY  
S&C OIL CO  
SAMPSON OPERATORS  
SENTINEL PEAK RESOURCES CALIFORNIA LLC  
SFPP LP  
SHADOW WOLF ENERGY, LLC  
SHELL USA INC  
SIGNAL HILL PETROLEUM INC  
SO CAL HOLDING LLC  
TEAM INC  
TEG OIL AND GAS USA INC  
TERMO COMPANY  
TESORO REFINING & MARKETING CO LLC  
THE LANSDALE COMPANY  
THE TERMO COMPANY  
THUMS LONG BEACH CO  
TIDELANDS OIL PRODUCTION CO  
TJ INVESTMENTS TOM SCOTT DBA  
TORRANCE REFINING COMPANY LLC  
UNIVAR SOLUTIONS USA INC  
VALERO  
VEOLIA E.S. TECHNICAL SOLUTIONS LLC  
VOPAK INC  
WESTERN STATES PETROLEUM ASSOCIATION  
WG HOLDINGS SPV LLC  
WORLD OIL RECYCLING  
ZENITH ENERGY WEST COAST TERMINALS LLC

## 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 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, is exempt from the requirements of the California Environmental Quality Act (CEQA).**

**A Resolution of the South Coast AQMD Governing Board amending Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants.**

**WHEREAS**, the South Coast AQMD Governing Board finds and determines that Proposed Amended Rule 1173 is 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(1) and has conducted a CEQA review and analysis of Proposed Amended Rule 1173 pursuant to such program (South Coast AQMD Rule 110); and

**WHEREAS**, the South Coast AQMD Governing Board finds and determines that after conducting a review of the proposed project in accordance with CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA, and CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA, that Proposed Amended Rule 1173 is exempt from CEQA; and

**WHEREAS**, the South Coast AQMD Governing Board finds and determines that since Proposed Amended Rule 1173 will achieve VOC emission reductions through making VOC leak standards more stringent and by requiring frequent optical gas imaging inspections, which can be accomplished without physical modifications, it can be seen with certainty that implementation of Proposed Amended Rule 1173 would not cause a significant adverse effect on the environment; therefore, Proposed Amended Rule 1173 is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption; and

**WHEREAS**, the South Coast AQMD staff has prepared a Notice of Exemption for Proposed Amended Rule 1173 that is completed in compliance with CEQA Guidelines Section 15062 – Notice of Exemption; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that the Final Socioeconomic Impact Assessment of Proposed Amended Rule 1173 is

## ATTACHMENT E

consistent with the March 17, 1989 Governing Board Socioeconomic Resolution for rule amendment; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that the Final Socioeconomic Impact Assessment for Proposed Amended Rule 1173 is consistent with the provisions of Health and Safety Code Sections 40440.8, 40728.5, and 40920.6; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1173 will result in net jobs gained, minimal impact to production costs and delivered prices in the South Coast AQMD region, and increased costs to the affected industries, yet such costs are considered to be reasonable; and

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

**WHEREAS**, the South Coast AQMD staff conducted a Public Workshop on July 26, 2024 regarding Proposed Amended Rule 1173; and

**WHEREAS**, Proposed Amended Rule 1173 and supporting documentation, including but not limited to, the Notice of Exemption, Final Staff Report, and Final Socioeconomic Impact Assessment 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 (codified as section 30.5(4)(D)(i) of the Administrative Code), that modifications to Proposed Amended Rule 1173 subdivision (c) and paragraph (l)(1) since the Notice of Public Hearing was published, referencing Rule 1302 to better define the applicable facilities and clarifying that the interim repair periods may be applicable in the exemptions, are not so substantial as to significantly affect the meaning of Proposed Amended Rule 1173 within the meaning of Health and Safety Code Section 40726 because: (a) the changes do not impact emission reductions, (b) the changes do not affect the number or type of sources regulated by the rule, (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

## ATTACHMENT E

**WHEREAS**, Proposed Amended Rule 1173 will be submitted to California Air Resources Board (CARB) and United States Environmental Protection Agency (U.S. EPA) for inclusion into the State Implementation Plan; 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 1173 to implement Best Available Retrofit Control Technology, partially implement Control Measure FUG-01 of the 2022 Final Air Quality Management Plan, address an objective contained in the Wilmington, Carson, West Long Beach Community Emission Reduction Plan, and partially satisfy federal Clean Air Act Section 182(c)(9) contingency measure requirements for ozone nonattainment areas classified as “serious” or above; and

**WHEREAS**, the South Coast AQMD Governing Board has determined, pursuant to Health and Safety Code Section 40001(c), that there is a problem that Proposed Amended Rule 1173 will alleviate, namely the failure to attain national ambient air quality standards for ozone, and that the rule will promote the attainment of state and federal ambient air quality standards; 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, 39650 et. seq., 40000, 40001, 40440, 40441, 40702, 40725 through 40728.5, 40920.6, and 41508; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1173 is written and displayed so that its meaning can be easily understood by the persons directly affected by it; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1173 is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1173 does not impose the same requirements as any existing state or federal regulations, and the proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, South Coast AQMD; and

## ATTACHMENT E

**WHEREAS**, the South Coast AQMD Governing Board, in amending Rule 1173, references the following statutes which the South Coast AQMD hereby implements, interprets or makes specific: Assembly Bill 617, Health and Safety Code Sections 39002, 40001, 40406, 40702, 40440(a), 40725 through 40728.5, 40920.6, and 41511; 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 the South Coast AQMD's comparative analysis of Proposed Amended Rule 1173 is included in the Final Staff Report; and

**WHEREAS**, the Public Hearing has been properly noticed in accordance with all 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 law; and

**WHEREAS**, the South Coast AQMD Governing Board specifies the Planning, Rule Development, and Implementation Manager overseeing the rule development for Proposed Amended Rule 1173 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

**NOW, THEREFORE BE IT RESOLVED**, that the South Coast AQMD Governing Board does hereby determine, pursuant to the authority granted by law, that Proposed Amended Rule 1173 is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption. This information has been 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 Proposed Amended Rule 1173; 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 1173 as set forth in the attached, and incorporated herein by reference.

**BE IT FURTHER RESOLVED**, that the South Coast AQMD Governing Board requests that Proposed Amended Rule 1173 be submitted for inclusion in the State Implementation Plan; and

**ATTACHMENT E**

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby directed to forward a copy of this Resolution and Proposed Amended Rule 1173 and supporting documentation to CARB for approval and subsequent submittal to the U.S. EPA for inclusion into the State Implementation Plan.

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

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



**PROPOSED AMENDED RULE 1173 CONTROL OF VOLATILE ORGANIC  
COMPOUND LEAKS AND RELEASES FROM COMPONENTS AT  
PETROLEUM FACILITIES AND CHEMICAL PLANTS**

*[Rule index to be added after Amendment]*

(a) Purpose

This rule is intended to control ~~v~~Volatile ~~o~~Organic ~~e~~Compound (VOC) ~~l~~Leaks from ~~e~~Components, ~~and~~ ~~r~~Releases from ~~a~~Atmospheric ~~p~~Process ~~p~~Pressure ~~r~~Relief ~~d~~Devices (PRDs), and establish Contingency Measures for applicable ozone standards for the reduction of VOC.

(b) Applicability

(1) ~~\_\_\_\_\_~~ This rule applies to ~~components at~~ ~~r~~Refineries, ~~e~~Chemical ~~p~~Plants, ~~l~~Lubricating ~~o~~Oil and ~~g~~Grease ~~r~~Re-refiners, ~~m~~Marine ~~t~~Terminals, ~~o~~Oil and ~~g~~Gas ~~p~~Production ~~f~~Fields, ~~n~~Natural ~~g~~Gas ~~p~~Processing ~~p~~Plants, and ~~p~~Pipeline ~~t~~Transfer ~~s~~Stations.

(2) ~~\_\_\_\_\_~~ Subdivision (k) shall not become applicable until the effective date of final and full approval by the United States Environmental Protection Agency (U.S. EPA) of the California State Implementation Plan (SIP) as meeting the Contingency Measure requirements of the Clean Air Act Sections 172(c)(9) and 182(c)(9) for the South Coast Air Basin regarding the 2008 and 2015 ozone National Ambient Air Quality Standards (NAAQS).

(c) Definitions:

For the purpose of this rule the following definitions shall apply:

(1) ~~\_\_\_\_\_~~ ATMOSPHERIC PROCESS PRD is a PRD located on process equipment other than storage tanks or pipelines used to transport material and that vents to atmosphere.

(2)(1) ~~\_\_\_\_\_~~ BACKGROUND is the ambient concentration of total organic compounds (TOC) in the air at least one (1) meter upwind of the Component to be inspected, determined according to the test method in paragraph (j)(1).

(3)(2) ~~\_\_\_\_\_~~ CHEMICAL PLANT is any facility, as defined in Rule 1302, engaged in producing chemicals; and/or manufacturing products by chemical processes, as described by North American Industry Classification System (NAICS) subsector 3252 – Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing or similar. Any facility or operation that has 282 as the first three digits in its Standard Industrial Classification Code as defined in the Standard Industrial Classification Manual is included in this definition.

- ~~(4)~~(3) COMMERCIAL NATURAL GAS is a mixture of hydrocarbons, with at least 80 percent methane by volume and less than ten ~~(10)~~ percent by weight VOC, determined according to test methods specified in paragraph (j)(2).
- ~~(5)~~(4) COMPONENT is ~~any v~~Valve, ~~f~~Fitting, ~~p~~Pump, ~~e~~Compressor, ~~PRD~~pressure-relief device, ~~Fin~~ Fan, or other device (diaphragm, ~~h~~Hatch, sight-glass, ~~and~~ meter) in VOC service. ComponentsThey are further classified as:
- (A) MAJOR COMPONENT is ~~any~~ 4-inch or larger ~~v~~Valve, ~~any~~ 5-hp or larger ~~p~~Pump, ~~any~~ ~~e~~Compressor, ~~and~~ ~~any~~ 4-inch or larger ~~PRD~~pressure-relief device, ~~or a~~ Fin Fan.
- (B) MINOR COMPONENT is ~~any~~ ~~e~~Component which is not a ~~m~~Major ~~e~~Component.
- ~~(6)~~(5) COMPRESSOR is a device used to compress ~~gas/es and/or~~ vapors by the addition of energy, and includes all associated Connectors, Flanges, and Compressor Seals~~components used for connecting and sealing purposes~~.
- ~~(7)~~ COMPRESSOR SEAL is associated with a Compressor and is used to prevent escape of gas/vapor and introduction of atmosphere.
- ~~(8)~~ CONNECTOR is a nonwelded connection to, from, or between pipes or piping details without flanged ends, typically threaded and screwed together.
- ~~(9)~~ CONTINGENCY MEASURE (CM) is a control strategy to further reduce VOC emissions if the South Coast Air Basin fails to comply with the requirements specified in Clean Air Act, Sections 172(c)(9) and 182(c)(9) regarding the 2008 and 2015 ozone NAAQS. These requirements are making reasonable further progress (RFP), attaining the applicable ozone NAAQS by a specified attainment date, and meeting any applicable milestones.
- ~~(10)~~ ESSENTIAL COMPONENT is a Component that cannot be isolated from the fluid stream and can only be taken out of service by shutdown of the Process Unit that it serves.
- ~~(6)~~ FACILITY is a refinery, chemical plant, lubricating oil and grease re-refiner, marine terminal, oil and gas production field, natural gas processing plant, or pipeline transfer station.
- ~~(7)~~ FIELD GAS means feed-stock gas entering the natural gas processing plant.
- ~~(11)~~ FIN FAN is a device used to reduce temperature of process fluid by use of heat exchange with air, and includes all associated Fin Fan Plugs, Connectors, and Flanges.

- (12) FIN FAN PLUG is a threaded plug located opposite a cooling tube on plug-type header boxes to provide access for inspection and cleaning of individual cooling tubes.
- (13)(8) FITTING is a device used to terminate, attach, or connect pipes or piping details, including but not limited to flanges and threaded connections. Fittings include piping couplings (Flange or Connector), blind Flanges, plugs, and caps.
- (14) FLANGE is a nonwelded connection between pipes or piping details with flanged ends, joined by bolting and equipped with a gasket, seal, or other means that provides a barrier to potential leakage.
- (15)(9) HATCH is any covered opening system that provides access to a tank, container, or vessel.
- (16)(10) HEAVY LIQUID is any liquid with ten (10) percent or less VOC by volume evaporated at 150°C (302°F), determined according to test methods specified in paragraph (j)(2)-or-(j)(3).
- (17)(11) INACCESSIBLE COMPONENT is any eComponent located over five (5) meters above ground when access is required from the ground; or any eComponent located over two (2) meters away from a platform when access is required from the platform; or any eComponent which would require the elevation of a monitoring personnel higher than two (2) meters above permanent support surfaces.
- (18)(12) INSPECTION is a survey of eComponents, using an appropriate analyzer, according to the test method in paragraph (j)(1), for the purpose of determining compliance with this rule, and may be either of the following and is further classified as:
- (A) AUDIO-VISUAL-OLFACTORY (AVO) OPERATOR INSPECTION is a survey of eComponents by the owner or operator, or their contractor, by hearing, by sight, and by smell.
- (B) OPTICAL GAS IMAGING (OGI) INSPECTION is a survey of multiple Components using an OGI Device, viewable from a Platform, ground level, or vantage point, by the owner or operator, or their contractor.
- (C) ANALYZER INSPECTION is a survey of individual Component potential sources of Leaks using an appropriate analyzer in accordance with the test method in paragraph (j)(1) by the owner or operator, or their contractor.
- (D)(B) SOUTH COAST AQMD DISTRICT INSPECTION is a survey of eComponents using an appropriate analyzer, OGI Device, or other means by South Coast AQMD District personnel, or their authorized representatives.

- (19)(13) LEAK is ~~the dripping of either heavy or light liquid; or the~~ emission and detection of a concentration of TOC above ~~b~~Background, determined according to the test method in paragraph (j)(1).
- (20)(14) LIGHT LIQUID is ~~any~~ liquid with more than ten (10) percent VOC by volume evaporated at 150°C (302°F), determined according to the test method specified in paragraph (j)(2).
- (21)(15) LUBRICATING OIL AND GREASE RE-REFINER is a facility, as defined in Rule 1302, engaged in the blending, compounding, and re-refining of lubricating oils and greases from ~~purchased~~ mineral, animal, and vegetable materials, as described by NAICS code 324191 – Petroleum Lubricating Oil and Grease Manufacturing or similar defined in Standard Industrial Classification Code 2992. Petroleum refineries engaged in the production of lubricating oils and greases are classified in Standard Industrial Classification Code 2911 and therefore are not included in this definition.
- (22)(16) MARINE TERMINAL is a facility, as defined in Rule 1302, engaged in, ~~equipment or structure constructed to handle~~ the loading or unloading of organic liquid into or out of marine tank vessels, as described by NAICS code 424710 – Petroleum Bulk Stations and Terminals, NAICS code 488320 – Marine Cargo Handling, or similar defined as in Standard Industrial Classification Codes 4226 and 5171.
- (23)(17) NATURAL GAS PROCESSING PLANT is a facility, as defined in Rule 1302, engaged in the separation of natural gas liquids from ~~field feed stock gas~~ and/or fractionation of the liquids into natural gas products, such as ethane, propane, butane, and natural gasoline, as described by NAICS code 211130 – Natural Gas Extraction or similar. -Excluded from the definition are compressor stations, dehydration units, sweetening units, field treatment, underground storage facilities, liquefied natural gas units, and ~~field feed stock gas~~ gathering systems unless these ~~facilities~~entities are located at a ~~n~~Natural gGas ~~p~~Processing pPlant.
- (24)(18) OIL AND GAS PRODUCTION FIELD is a facility, as defined in Rule 1302, engaged in ~~on which~~ crude petroleum and natural gas production and handling ~~are conducted~~, as described by NAICS subsector 211 – Oil and Gas Extraction or similar defined in the Standard Industrial Classification Manual as Industry No. 1311, Crude Petroleum and Natural Gas.
- (25) OPTICAL GAS IMAGING (OGI) DEVICE is an infrared camera with a detector capable of visualizing gases in the 3.2-3.4 micrometer waveband.

- (26) OUTAGE is an unscheduled shutdown of a Process Unit for more than 24 hours for maintenance and Repair work or other reasons.
- ~~(27)~~(19) PIPELINE TRANSFER STATION is a facility, as defined in Rule 1302, which handles the transfer and storage of petroleum products or crude petroleum in pipelines as described by NAICS code 486110 – Pipeline Transportation of Crude Oil, NAICS code 486910 – Pipeline Transportation of Refined Petroleum Products, or similar.
- ~~(28)~~(20) PLATFORM is any raised, permanent, horizontal surface for the purpose of gaining access to eComponents.
- ~~(29)~~(21) PRESSURE RELIEF DEVICE (PRD) is a pressure relief valve (PRV) or a rRupture dDisc, and includes all associated Connectors and Flanges.
- ~~(30)~~(22) PRESSURE RELIEF VALVE (PRV) is associated with a PRD and a device which is automatically actuated by upstream static pressure to the atmosphere (atmospheric PRV) or to a control device, and used for safety or emergency purposes.
- ~~(23) PROCESS PRD is a PRD located on process equipment other than storage tanks or pipelines used to transport material.~~
- (31) PROCESS UNIT is an assembly of Components and other devices connected by pipes to process feed or raw materials and to produce intermediate or final products. Process Units can operate independently if supplied with sufficient materials and sufficient storage for products.
- ~~(32)~~(24) PUMP is a device used to transport Light Liquids or Heavy Liquids fluids by the addition of energy, and includes all associated Connectors, Flanges, and Pump Seal components used for connecting or sealing purposes.
- (33) PUMP SEAL is associated with a Pump and is used to prevent escape of Light Liquids or Heavy Liquids and to prevent introduction of atmosphere.
- ~~(34)~~(25) REFINERY is a facility, as defined in Rule 1302, engaged in producing gasoline, aviation gasoline, kerosene, distillate fuel oils, residual fuel oils, biofuels, asphalt, and lubricants and also producing aliphatic and aromatic chemicals as by-products, through fractionation or straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking or other processes, as described by NAICS code 324110 – Petroleum Refineries, NAICS code 324199 – All Other Petroleum and Coal Products Manufacturing, or NAICS code 325199 – All Other Basic Organic Chemical Manufacturing, or similar that processes petroleum, as defined in the Standard Industrial Classification Manual as Industry No. 2911, Petroleum Refining.

- ~~(35)~~(26) RELEASE is any VOC emission to the atmosphere from an atmospheric PRD caused by an increase in upstream pressure. A Leak caused by improper reseating of the a PRV PRD is not a Release release.
- ~~(36)~~(27) REPAIR is corrective action for the purpose of eliminating or reducing Leaks, Visible Leaks, or Visible Vapors and includes washing, tightening, repacking, lubricating, resealing, or replacing Components, piping, or other devices. Repair that may involve the temporary removal or taking out of service of a eComponent or PRV.
- ~~(37)~~(28) RUPTURE DISC is associated with a PRD and is a diaphragm held between fFlanges for the purpose of isolating VOC from the atmosphere or from a downstream PRV pressure relief valve.
- (38) SOUTH COAST AIR BASIN is the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County as defined in California Code of Regulations, Title 17, Section 60104.
- ~~(39)~~(29) TAMPER-PROOF is means that all the data collected is shall be encrypted such that it cannot be modified.
- ~~(40)~~(30) TELLTALE INDICATOR is a device installed in conjunction with a PRD, indicating whether a rRelease has occurred.
- ~~(41)~~(31) TOTAL ORGANIC COMPOUNDS (TOC) is the concentration of gaseous organic compounds determined according to the test method in paragraph (j)(1).
- ~~(42)~~(32) TURNAROUND is a scheduled shutdown of a pProcess uUnit for maintenance and rRepair work.
- ~~(43)~~(33) VALVE is a device that regulates or isolates the fluid flow in a pipe, tube, or conduit by means of an external actuator, and includes all associated Connectors and Flanges.
- (44) VISIBLE LEAK is the excessive dripping of process fluid from a Component in VOC service. A Visible Leak may be any one of the following:
- (A) More than three (3) drops per minute from a Component in Light Liquid service.
  - (B) More than three (3) drops per minute from an Inaccessible Component in Heavy Liquid service.
  - (C) More than three (3) drops per minute and the emission of VOC greater than 100 ppm detected using an appropriate analyzer in accordance with the test method in paragraph (j)(1) from an accessible Component in Heavy Liquid service.

(45) VISIBLE VAPORS is TOC vapor leakage detected with an OGI Device, when operated and maintained in accordance with manufacturer training or certification, or equivalent California Air Resources Board (CARB) training, user manuals, specifications, and recommendations.

(46)(34) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(d) South Coast AQMD Inspection Procedures~~Leak Standards~~

(1) Effective January 1, 2026, the owner or operator of a facility shall be in violation of this rule if South Coast AQMD personnel detect using an appropriate analyzer in accordance with the test method in paragraph (j)(1) a Component exceeding the applicable standard listed in Table 1 – Violation Standards:

**TABLE 1 – VIOLATION STANDARDS**

<u>Component Service</u>	<u>Violation Standard</u>
<u>Light Liquid or Gas/Vapor</u>	<u>10,000 ppm</u>
<u>Heavy Liquid</u>	<u>500 ppm</u>

(2) The owner or operator of a facility shall be in violation of this rule if South Coast AQMD personnel detect a Component with a Visible Leak.

(3) Effective January 1, 2026, the owner or operator of a facility shall be in violation of this rule if South Coast AQMD personnel detect a Component with Visible Vapors, unless the owner or operator concurrently demonstrates, or no later than one (1) calendar day after detection for an Inaccessible Component, using an appropriate analyzer in accordance with the test method in paragraph (j)(1) or another method approved by the Executive Officer to the satisfaction of South Coast AQMD personnel that the Component is not exceeding the applicable standard listed in Table 1 – Violation Standards.

~~(1) The operator of a facility subject to this rule shall be in violation of this rule if District inspection detects any:~~

~~(A) Light liquid leak of more than three drops per minute;~~

~~(B) Leak greater than 50,000 ppm from a component in light liquid/gas/vapor service;~~

~~(C) Leak greater than 500 ppm from a component in heavy liquid service; or~~

~~(D) Leak within any continuous 24-hour period and numbering in excess of the Leak Thresholds for that component listed below in Table 1, if it is:~~

- (i) — A leak from a component in light liquid /gas/vapor service, greater than 10,000 ppm; or
- (ii) — A leak from an atmospheric PRD, greater than 200 ppm; or
- (iii) — A leak from a pump in heavy liquid service, greater than 100 ppm.

**TABLE 1. — LEAK THRESHOLDS**

<b>Component Type</b>	<b>Max. No. of Leaks for 200 or less components inspected</b>	<b>Max No. of Leaks for &gt; 200 components inspected</b>
Valves	1	0.5% of number inspected
Pumps	2	1% of number inspected
Compressors	1	1
Atmospheric PRDs	1	1
Threaded Pipe Connectors	1	0.5% of number inspected
Other Components	1	1

The maximum number of leaks in Table 1 shall be rounded upwards to the nearest integer, where required.

- (4)(E) ~~The owner or operator of a facility shall be in violation of this rule if South Coast AQMD personnel observe~~ Open-ended lines and Valves located at the end of lines that are not sealed with a blind flange, plug, cap, or a second closed Valve at all times, except during operations requiring process fluid flow through the open-ended line.
- (2) — ~~For the purpose of determining an oil and gas production facility’s compliance with the leak standards specified in subparagraphs (d)(1)(B), (d)(1)(C), and (d)(1)(D), the operator of the facility may request a written approval from the Executive Officer to adjust a leak measurement to exclude methane and ethane, provided:~~
  - (A) — ~~The operator submits a plan identifying the components to be included under paragraph (d)(2);~~
  - (B) — ~~The operator demonstrates the methane and ethane content of the line product is 50 percent or more by volume, as determined by a District approved laboratory, according to the test method in paragraph (j)(2);~~
  - (C) — ~~The demonstration is based on a sampling and analysis of a representative sample obtained on a semiannual basis in accordance with the schedule and sample size approved by the Executive Officer; and~~



~~(D) — A copy of the analysis results with laboratory analysis is provided upon request by the Executive Officer.~~

~~(E) — The operator of a Title V facility shall submit an application for permit modification to incorporate the approval under paragraph (d)(2) in the Title V permit.~~

(e) Identification Requirements

The owner or operator shall:

- (1) Physically identify clearly and visibly all ~~m~~Major ~~e~~Components, except Fin Fans, in ~~L~~ight ~~L~~iquid/ or gas/vapor service, and all ~~p~~Pumps in ~~h~~Heavy ~~L~~iquid service, and, effective January 1, 2026, all Fin Fans in VOC service, for ~~i~~nspection, ~~r~~Repair, ~~r~~eplacement, and recordkeeping purposes.
- (2) Clearly identify all ~~m~~Major ~~e~~Components, except Fin Fans, in ~~h~~Heavy ~~L~~iquid service other than ~~p~~Pumps subject to paragraph (e)(1), and ~~m~~Minor ~~e~~Components, in ~~P~~iping and ~~I~~nstrumentation (~~P&I~~)-flow diagrams, and/or group them together functionally for ~~i~~nspection, ~~r~~Repair, ~~r~~eplacement, and recordkeeping purposes.
- (3) Submit the information required to identify ~~e~~Components in ~~h~~Heavy ~~L~~iquid service, as required by paragraphs (e)(1) and (e)(2), for approval by the Executive Officer ~~on or before September 1, 2003~~.
- (4) Any change(s) in ~~m~~Major ~~e~~Component identification shall require prior written approval from the Executive Officer.
- (5) Physically identify clearly and visibly each Component under Repair near the source of leakage with physical identification larger and of a different color than that used in accordance with paragraph (e)(1) and maintain such Components physically identified until Repair is complete.

(f) Self~~Operator~~ Inspection Requirements

- (1) The owner or operator of a facility, except for unmanned Oil and Gas Production Fields and unmanned Pipeline Transfer Stations, shall conduct an AVO Inspection of all accessible Pumps, Compressors, and Atmospheric Process PRDs at least once per operating shift, and no more than 12 hours between AVO Inspections. The owner or operator of an unmanned Oil and Gas Production Field or an unmanned Pipeline Transfer Station shall conduct an AVO Inspection of all accessible Pumps, Compressors, and Atmospheric Process PRDs at least once per calendar week.

~~(1) — The operator shall:~~

- (A) ~~Audio visually inspect all accessible pumps, compressors, and atmospheric PRDs once during every eight hour operating period, except for unmanned oil and gas production fields and unmanned pipeline transfer stations.~~
- (2) Effective January 1, 2026, the owner or operator of a facility shall conduct an OGI Inspection of Components at least once per calendar month, unless a Component will be out of service for more than 14 calendar days of the calendar month due to Outage or Turnaround.
- (A) The owner or operator conducting an OGI Inspection shall complete a manufacturer's certification or training program, or equivalent CARB training for the OGI Device used to conduct the Inspection.
- (B) The owner or operator conducting an OGI Inspection shall operate and maintain the OGI Device in accordance with the manufacturer's specifications and recommendations.
- (C) In lieu of an OGI Inspection, the owner or operator may elect to use an alternative Inspection method approved in writing by U.S. EPA that is equivalent or more stringent than an OGI Inspection. The owner or operator seeking to use an alternative Inspection method shall submit the written approval from U.S. EPA to the Executive Officer for their review and independent approval.
- (3) The owner or operator of a facility shall conduct an Analyzer Inspection:
- (A)(B) ~~Inspect Quarterly, of all accessible eComponents, except Fin Fans, in HLight HLiquid/ or gas/vapor service, and all pPumps in hHeavy HLiquid service quarterly, with pumps in heavy liquid service beginning July 1, 2003.~~
- (B)(C) Inspect Annually, of all iInaccessible eComponents, except Fin Fans, in HLight HLiquid/ or gas/vapor service annually and, effective January 1, 2026, all Fin Fans in VOC service.
- (D) ~~At any refinery with more than 25,000 components:~~
- (i) ~~At the time of operator inspection, simultaneously record in an electronic format all component inspections beginning January 1, 2004, and~~
- (ii) ~~Operate and maintain the electronic recording instrument according to manufacturer's specifications.~~
- (C)(E) After every Release inspect an atmospheric from a PRD within one (1) calendar day and an additional Analyzer Inspection reinspect it within 14 calendar days after every release.

- ~~(D)(F)~~ After every Repair of a Component ~~Inspect all repaired or replaced components~~ within 30 calendar days of Repair the repair or replacement.
- ~~(E)~~ Using an electronic recording instrument, operated and maintained according to manufacturer's specifications, to simultaneously record all readings in an electronic format, at a Refinery with more than 25,000 Components.
- ~~(4)(2)~~ The owner or operator may apply for written approval from the Executive Officer to change the Analyzer ~~i~~Inspection frequency for each type of accessible eComponent ~~other than PRD in light liquid/gas/vapor service at a facility, except pumps and compressors,~~ as required in subparagraph (f)(3)(A)~~(1)(B)~~ from quarterly to annually, provided that all accessible eComponents of that type at ~~the~~that facility have been successfully operated and maintained for five consecutive calendar quarters with no Visible liquid ~~i~~Leaks, no Visible Vapors, ~~of more than three drops per minute, and with no~~ iLeaks greater than 10,000 ppm ~~not exceeding the applicable standard~~ Leak Thresholds, by component type, listed in Table 1 Violation Standards.
- ~~(3)~~ The operator may apply for written approval from the Executive Officer to change the inspection frequency for all accessible atmospheric PRDs in light liquid/gas/vapor at a facility, as required in subparagraph (f)(1)(B), from quarterly to annually, provided that all atmospheric PRDs at that facility have been successfully operated and maintained for five consecutive quarters with no liquid leaks of more than three drops per minute and with leaks greater than 200 ppm not exceeding the Leak Thresholds listed in Table 1.
- ~~(4)~~ The operator may apply for written approval from the Executive Officer to change the inspection frequency for pumps in heavy liquid service at a facility, as required in subparagraph (f)(1)(B), from quarterly to annually, provided that all pumps in heavy liquid service at that facility have been successfully operated and maintained for five consecutive quarters, with leaks greater than 100 ppm not exceeding the Leak Thresholds listed in Table 1 for pumps.
- (5) The owner or operator shall submit documentation prior to the change in ~~i~~Inspection frequency, as per paragraphs ~~(f)(2), (f)(3) and (f)(4)~~, for written approval from the Executive Officer.
- (6) The owner or operator shall revert to a quarterly ~~i~~Analyzer Inspection frequency for a eComponent type, should AVO Inspection, OGI Inspection, the annual Analyzer~~operator~~ ~~i~~Inspection, or South Coast AQMD~~District~~ ~~i~~Inspection

~~detect~~ show any of the following, ~~leaks in excess of the thresholds applicable to the~~  
~~e~~Component type, listed below, either:

- (A) ~~Light liquid A Visible l~~Leak; ~~of more than three drops per minute, or~~
- (B) ~~Visible Vapors; or~~
- (C)(B) ~~A~~ Leaks exceeding the ~~applicable standard~~maximum number of leaks, by  
 component type, listed in Table 1 – ~~Violation Standards~~.for:
  - (i) ~~Components in light liquid/gas/vapor service, greater than 10,000~~  
 ppm,
  - (ii) ~~Pumps in heavy liquid service, greater than 100 ppm,~~
  - (iii) ~~Atmospheric PRDs, greater than 200 ppm.~~

(g) Leak Standards and Repair~~Maintenance~~ Requirements

Effective January 1, 2026:

- (1) The owner or operator of a facility shall Repair all Components exceeding the  
applicable standard listed in Table 2 – Component Leak Standards:

**TABLE 2 - COMPONENT LEAK STANDARDS**

<u>Component Type</u>	<u>Leak Standard</u>
<u>Compressor or Pump (Light Liquid)</u>	<u>400 ppm</u>
<u>Pressure Relief Device (PRD)</u>	<u>200 ppm</u>
<u>Pump (Heavy Liquid)</u>	<u>100 ppm</u>
<u>Valve, Fitting, or other device (diaphragm, Hatch, sight-glass, meter)</u>	<u>100 ppm</u>
<u>Fin Fan</u>	<u>100 ppm</u>

- (2) For a Component other than a Fin Fan exceeding the applicable standard listed in  
Table 2 – Component Leak Standards, the owner or operator shall:

- (A) If the Component exceeds the applicable standard listed in Table 1 –  
Violation Standards, no later than one (1) calendar day after detection,  
either:
  - (i) Demonstrate the Component does not emit Visible Vapors using an  
OGI Device; or
  - (ii) Demonstrate the Component does not exceed the applicable  
standard listed in Table 1 – Violation Standards using an appropriate  
analyzer in accordance with the test method in paragraph (j)(1); and
- (B) Within 14 calendar days of detection, complete Repair of the Component  
below the applicable standard listed in Table 2 – Component Leak

Standards, except for a limited number of Essential Components, rounded up to the next whole number of Essential Components listed in Table 3 – Limited Delay of Repair and as determined on the last calendar day of each calendar quarter, provided each such Essential Component does not exceed the applicable standard listed in Table 3 – Limited Delay of Repair and Repair is completed no later than the end of the next Outage or Turnaround, whichever comes first, for the Process Unit that includes each such Essential Component:

**TABLE 3 – LIMITED DELAY OF REPAIR**

<u>Essential Component Type</u>	<u>Delay Leak Standard</u>	<u>Total Number Allowed</u>
<u>Valve or Fitting</u>	<u>500 ppm</u>	<u>0.05% of facility total number of Valves and Fittings</u>
<u>Compressor or Pump (Light Liquid)</u>	<u>500 ppm</u>	<u>0.05% of facility total number of Compressors and Pumps (Light Liquid)</u>

- (3) For a Visible Leak from an accessible Component other than a Fin Fan, the owner or operator shall, no later than one (1) calendar day after detection, eliminate the Visible Leak.
- (4) For a Visible Leak from an Inaccessible Component other than a Fin Fan, the owner or operator shall:
  - (A) Within 24 hours of detection, electronically notify the Executive Officer in an approved format, or in writing via Rule1173Reports@aqmd.gov if no format is approved; and
  - (B) Within 14 calendar days of detection, eliminate the Visible Leak.
- (5) For Visible Vapors from an accessible Component other than a Fin Fan, the owner or operator shall, no later than one (1) calendar day after detection, either:
  - (A) Eliminate the Visible Vapors; or
  - (B) Demonstrate the Component does not exceed the applicable standard listed in Table 1 – Violation Standards using an appropriate analyzer in accordance with the test method in paragraph (j)(1) and, within 14 calendar days of detection, complete Repair of the Component below the applicable standard listed in Table 2 – Component Leak Standards.
- (6) For Visible Vapors from an Inaccessible Component other than a Fin Fan, the owner or operator shall:
  - (A) Within 14 calendar days of detection, eliminate the Visible Vapors; and

- (B) If Visible Vapors are not eliminated within seven (7) calendar days of detection, within eight (8) calendar days of detection electronically notify the Executive Officer in an approved format, or in writing via Rule1173Reports@aqmd.gov if no format is approved.
- (7) For either a Fin Fan exceeding the applicable standard listed in Table 2 – Component Leak Standards, a Visible Leak from a Fin Fan, or Visible Vapors from a Fin Fan, the owner or operator shall:
  - (A) No later than 14 calendar days after detection, either:
    - (i) Demonstrate the Fin Fan does not emit Visible Vapors using an OGI Device; or
    - (ii) Demonstrate the Fin Fan does not Leak at a rate exceeding 5,000 ppm using an appropriate analyzer in accordance with the test method in paragraph (j)(1); and
  - (B) No later than the end of the next Outage or Turnaround, whichever comes first, of the Process Unit that includes the Fin Fan, complete Repair of the Fin Fan below the applicable standard listed in Table 2 – Component Leak Standards.
- (8) As determined on the last calendar day of each calendar quarter, the owner or operator of a facility with a Fin Fan shall not allow more than 1% of the facility total number of Fin Fan Plugs, rounded up to the next whole number, to leak at a rate exceeding the applicable standard listed in Table 2 – Component Leak Standards.

The operator shall:

- (1) ~~Repair, replace or remove a leaking component as soon as practicable but no later than the time period specified in Table 2, Repair Periods. For each calendar quarter, the operator may extend the repair period, as specified in Table 2, for a total number of leaking components, not to exceed 0.05 percent of the number of components inspected during the previous quarter, by type, rounded upward to the nearest integer where required.~~

**TABLE 2. — REPAIR PERIODS**

<b>Type of Leak</b>	<b>Time Period</b>	<b>Extended Repair Period</b>
Light liquid/gas/vapor component leaks greater than 500 ppm but no more than 10,000 ppm	7 Calendar Days	7 Calendar Days
Heavy liquid component leaks greater than 100 ppm but no more than 500 ppm	7 Calendar Days	7 Calendar Days

Type of Leak	Time Period	Extended Repair Period
Heavy liquid leak greater than 3 drops per minute and greater than 100 ppm but no more than 500 ppm	7 Calendar Days	
Any leak greater than 10,000 ppm but no more than 25,000 ppm	2 Calendar Days	3 Calendar Days
Atmospheric PRD leaks greater than 200 ppm but no more than 25,000 ppm	2 Calendar Days	3 Calendar Days
Any leak greater than 25,000 ppm	1 Calendar Day	
Heavy liquid component leaks greater than 500 ppm	1 Calendar Day	
Light liquid leaks greater than 3 drops per minute	1 Calendar Day	

(2) — Replace a component or parts thereof with Best Available Control or Retrofit Technology (BACT or BARCT), or vent it to an air pollution control device approved by the Executive Officer, after it has been subjected to five repair actions within a continuous twelve month period for:

- (A) — A light liquid leak of greater than three drops per minute,
- (B) — A leak greater than 10,000 ppm or
- (C) — A leak greater than 200 ppm for an atmospheric PRD.

(3) — The reporting provisions of Rule 430 shall not be applicable to components being repaired or replaced under the provisions of this rule, except compressors.

(h) Atmospheric Process PRD Requirements

(1) The owner or operator of a Refinery shall continuously monitor a Atmospheric Process PRDs located on process equipment by installing t Tamper-proof electronic valve monitoring devices capable of recording the duration of each r Release and quantifying the amount of VOC the compounds released, according to the following schedule:

(A) — For a refinery with less than 50 atmospheric process PRDs:

- (i) — Install monitoring devices on 50 percent of all atmospheric process PRDs by January 1, 2009; and
- (ii) — Install monitoring devices on the remaining atmospheric process PRDs by July 1, 2009.

(B) — For a refinery with more than 50 atmospheric process PRDs:

- ~~(i) — Install monitoring devices on 20 percent of all atmospheric process PRDs by January 1, 2009,~~
- ~~(ii) — Install monitoring devices on 40 percent of all atmospheric process PRDs by July 1, 2009; and~~
- ~~(iii) — Install monitoring devices on the remaining atmospheric process PRDs by July 1, 2010.~~
- ~~(C) — In conjunction with the requirements of subparagraphs (h)(1)(A) and (h)(1)(B), the operator of a refinery shall continue to monitor all atmospheric process PRDs by use of electronic process control instrumentation that allows for real time continuous parameter monitoring or telltale indicators until such time that the operator of a refinery has demonstrated compliance with subparagraphs (h)(1)(A) and (h)(1)(B).~~
- ~~(D) — Notwithstanding the requirements of subparagraphs (h)(1)(A) and (h)(1)(B), the operator of a refinery may delay the installation of the tamper proof electronic valve monitoring devices to no later than the next scheduled turnaround following June 1, 2007 for that process unit PRD(s), provided that the operator demonstrates to the satisfaction of the Executive Officer that the installation at an earlier date is not feasible or constitutes a safety hazard.~~
  - ~~(A)(E) Notwithstanding the requirements of subparagraphs (h)(1)(A) and (h)(1)(B), for any atmospheric process PRD, the owner or operator of a Refinery may continue to use Tamper-proof electronic Valve monitoring devices in combination with continuous parameter monitoring or Tamper-proof electronic Valve monitoring devices and Telltale indicators for any Atmospheric Process PRD that in combination can record the duration of each Release and quantify the amount of the compounds released, provided that the owner or operator demonstrates on or before July 1, 2010 the compliance dates in subparagraphs (h)(1)(A) and (h)(1)(B) to the satisfaction of the Executive Officer that the combination of Tamper-proof electronic Valve monitoring devices, continuous parameter monitoring, or Telltale indicators represents the actual process conditions at the location of the Atmospheric Process PRD Release to the atmosphere.~~
  - ~~(B)(F) The requirements of subparagraphs (h)(1)(A) and (h)(1)(B) This requirement does not apply to a Atmospheric Process PRDs that will be connected in such a manner as to direct all gases and vapors that can be released by an Atmospheric Process PRD to a VOC vapor recovery or control system, no later than the next scheduled turnaround after~~



~~December 31, 2008, for that process equipment or unit associated with those atmospheric process PRD(s). The operator of a refinery must submit a revised compliance plan no later than December 31, 2008, that identifies the applicable atmospheric process PRD(s) and the schedule for connecting the atmospheric process PRD(s) to a VOC recovery or control system. Until such time that the atmospheric process PRD(s) are connected to a VOC vapor recovery or control system, the operator shall monitor all atmospheric process PRDs by use of electronic process control instrumentation that allows for real time continuous parameter monitoring or telltale indicators.~~

~~(C)(G) The requirements of subparagraphs (h)(1)(A) through (h)(1)(F) This requirement does not apply to a Atmospheric pProcess PRDs in Heavy lLiquid service that rRelease to drains subject to and are regulated under Rule 1176, provided that the owner or operator demonstrates to the satisfaction of the Executive Officer that all rReleasesd-material meets the definition of hHeavy lLiquid.~~

- (2) The owner or operator of a eChemical pPlant shall monitor aAtmospheric pProcess PRDs ~~located on process equipment by either one~~ of the following options:
  - (A) Install and maintain tTamper-proof electronic valve-monitoring devices capable of recording the duration of each rRelease and quantifying the amount of VOCeompounds released on twenty percent of the aAtmospheric pProcess PRD inventory. ~~The operator shall install the electronic valve monitoring devices during the first turnaround after December 31, 2003; or~~
  - (B) Use of electronic process control instrumentation that allows for real time continuous parameter monitoring, ~~starting July 1, 2004,~~ and tTelltale iIndicators for the aAtmospheric pProcess PRDs where parameter monitoring is not feasible. ~~The telltale indicators shall be installed no later than December 31, 2004.~~
- (3) The owner or operator of a lLubricating oOil and gGrease rRe-refiner or a mMarine tTerminal shall monitor aAtmospheric pProcess PRDs by use of either electronic process control instrumentation that allows for real time continuous parameter monitoring, ~~starting January 1, 2009,~~ or and tTelltale indicators for the aAtmospheric pProcess PRDs where parameter monitoring is not feasible. ~~The telltale indicators shall be installed no later than December 31, 2007.~~
- (4) ~~By December 31, 2007,~~ tThe owner or operator shall submit to the Executive Officer ~~Distriet~~ a compliance plan or a revised compliance plan, containing the inventory of aAtmospheric pProcess PRDs by size, set pressure and location, and

indicate the option(s) chosen to comply with paragraphs (h)(1), (h)(2), ~~and~~ (h)(3), as applicable. If applicable, the owner or operator shall indicate the process parameter selected for continuous monitoring and the justification for such selection.

- (5) Following any ~~Release~~ from an ~~Atmospheric Process~~ PRD ~~in excess of 500 pounds of VOC in a continuous 24-hour period~~, the owner or operator shall conduct a failure analysis and implement corrective actions within 30 days to prevent the reoccurrence of similar ~~Releases~~.
  - (6) At a ~~Refinery~~ with a ~~crude oil~~ throughput greater than 20,000 barrels per day, the owner or operator shall, as soon as practicable but no later than the next first Turnaround following the requirement to connect becomes effective, connect all ~~Atmospheric Process~~ PRDs serving that equipment to a vapor recovery or control system following either:
    - (A) Two (2) a second Releases, each in excess of 500 pounds of VOC in a continuous 24-hour period, within any five (5) year period from any Atmospheric Process PRD serving the same piece or pieces of equipment;  
or
    - (B) Any Release in excess of 2,000 pounds of VOC in a continuous 24-hour period, from any Atmospheric Process PRD serving the same piece or pieces of equipment.
  - (7) In lieu of complying with paragraph (h)(6), an owner or operator may elect to pay a mitigation fee of ~~\$625,000~~\$350,000 to the Executive Officer~~District~~ for ~~any Releases described by exceeding the thresholds in subparagraphs (h)(6)(A) or (h)(6)(B)~~ and any subsequent ~~Release in excess of 500 pounds of VOC in a continuous 24-hour period within a five (5) year period~~. Effective July 1 of each calendar year after [Date of Amendment], the mitigation fee shall be automatically adjusted by the change in the annual average California Consumer Price Index for All Urban Consumers against calendar year 2024, as defined in California Health and Safety Code §40500.1(a). Within 90 days of the release, the owner or operator shall notify the Executive Officer, in writing, of the election to pay the current mitigation fee and submit payment as requested by the Executive Officer.
- (i) Recordkeeping and Reporting Requirements
- (1) The owner or operator shall record all Leaks, Visible Leaks, Visible Vapors, Repairs, Components awaiting Repair, and Inspections, ~~as required in subdivision (f)~~, in an electronic format approved by the Executive Officer and

submit those records electronically to the Executive Officer in an approved format, or in writing via Rule1173Reports@aqmd.gov if no format is approved, as quarterly or annual ~~i~~Inspection reports to the Executive Officer no later than 30 days after the end of each calendar quarter or no later than 60 days after the end of the calendar year, respectively. ~~Upon request by the Executive Officer, the operator shall include in the report the reason for extending the repair period for any component, as allowed in paragraph (g)(1). The operator shall submit the records in an electronic format approved by the Executive Officer and they shall be certified in writing by the facility official responsible for the inspection and repair program.~~

- (2) The owner or operator shall include in all records of ~~operator i~~Inspection and repair, at a minimum, the eComponent identification and type, Repair service, location, Leak rate, and date and time of ~~i~~Inspection. The owner or operator shall maintain these records ~~at the facility~~ for a period of at least ~~two (2) years or five (5) years for a Title V facility and~~ make them made available to the Executive Officer, upon request.
- (3) The owner or operator of a ~~r~~R~~e~~finery, ~~e~~C~~h~~emical ~~p~~l~~a~~nt, ~~L~~ubricating ~~o~~il and ~~g~~rease ~~r~~e-refiner, or ~~m~~Marine ~~t~~erminal shall:
  - (A) Notify the Executive Officer, by telephone to 800-CUT-SMOG or any another District approved method approved by the Executive Officer, of any ~~a~~A~~t~~m~~s~~pheric ~~p~~ro~~c~~ess PRD ~~r~~e~~r~~ease ~~in excess of the reportable quantity limits as stipulated in 40 CFR, Part 117, Part 302 and Part 355, including any release in excess of 100 pounds of VOC, within one (1) hour of such occurrence or within one (1) hour of the time the owner or operatorsaid person knew or reasonably should have known of its occurrence;~~
  - (B) Submit a written failure analysis report to the Executive Officer within 30 days following notification of an ~~a~~A~~t~~m~~s~~pheric ~~p~~ro~~c~~ess PRD ~~r~~e~~r~~ease, providing the following information:
    - (i) PRD type, size and location.
    - (ii) Date, time, and duration of the ~~PRD r~~Release event.
    - (iii) Types of VOC released and individual amounts, in pounds, including supporting calculations.
    - (iv) Cause of the ~~atmospheric process PRD r~~Release event.
    - (v) Corrective actions taken to prevent a subsequent ~~PRD r~~Release.
  - (C) Submit quarterly reports electronically to the Executive Officer in an approved format, or in writing via Rule1173Reports@aqmd.gov if no format is approved, for all monitored ~~a~~A~~t~~m~~s~~pheric ~~p~~ro~~c~~ess PRDs to

comply with paragraphs (h)(1), (h)(2), and (h)(3), if applicable, in an electronic format approved by the Executive Officer, indicating the parameter(s) monitored as a function of time, no later than 30 days after the end of each calendar quarter.

(D) ~~Keep~~ Maintain records of the process parameter(s) monitored ~~for a period of five years, where elected to comply with paragraphs (h)(1), (h)(2), and (h)(3), if applicable, for a period of at least five (5) years~~ and make them available to the Executive Officer, upon request.

(4) The reporting provisions of Rule 430 shall not be applicable to Components being Repaired under the provisions of this rule, except Compressors.

(j) Test Methods

(1) Measurements of ~~H~~L leak concentrations shall be conducted according to the ~~United States Environmental Protection Agency (U.S. EPA) Reference Method 21~~ using an appropriate analyzer calibrated with methane. The analyzer shall be calibrated before ~~i~~Analyzer Inspection each day.

(2) The VOC content shall be determined according to ASTM Methods D 1945, D 7833, or D 2163 for gases, South Coast SCAQMD Method 304-91 for liquids. The percent VOC of a liquid evaporated at 150°C (302°F) shall be determined according to ASTM Method D 86.

(3) The flash point of ~~h~~H Heavy ~~L~~L liquids shall be determined according to ASTM Method D 93.

~~(4) Equivalent Test Methods~~

(4) The A owner or operator person may use another method to determine compliance with this rule provided it is demonstrated to be equivalent and approved in writing by the Executive Officers of the District, the California Air Resources Board (CARB), and the Regional Administrator of the U.S. EPA, Region IX, or their designees.

(k) Ozone Contingency Measures ~~Other Rules and Regulation Applicability~~

~~In case of conflict between the provisions of this rule and any other rule, the provisions of the rule which more specifically applies to the subject shall prevail.~~

(1) On and after 60 days following the effective date of a final rule by U.S. EPA that the conditions described in Clean Air Act Sections 172(c)(9) and 182(c)(9) have occurred in the South Coast Air Basin regarding the 2008 or 2015 ozone NAAQS, the applicable CM specified in paragraph (k)(2) shall be implemented.

(2) CMs shall be implemented sequentially after issuance of each final rule:

Stage 1 CM

(A) The owner or operator of a facility within the South Coast Air Basin shall Repair a Compressor or Pump (Light Liquid) detected above 300 ppm, instead of 400 ppm as listed in Table 2 – Component Leak Standards.

Stage 2 CM

(B) The owner or operator of a facility within the South Coast Air Basin shall conduct an OGI Inspection of Components at least once every two (2) calendar weeks, instead of at least once per calendar month as specified in paragraph (f)(2), unless a Component will be out of service for more than seven (7) calendar days of the two (2) calendar week period due to Outage or Turnaround.

Stage 3 CM

(C) The owner or operator of a facility within the South Coast Air Basin shall Repair a Valve, Fitting, or other device (diaphragm, Hatch, sight-glass, meter) detected above 50 ppm, instead of 100 ppm as listed in Table 2 – Component Leak Standards.

(1) Exemptions

(1) ~~The requirements/provisions of this rule shall not apply to the following Components if to the following cases, where the owner or operator/person seeking the exemption shall supply the proof of the applicable criteria of the applicable criteria to the satisfaction, upon request, of the Executive Officer for the following cases:~~

(A) ~~Components which present a safety hazard for iInspection or Repair, as documented and established in a safety manual or policy, previously, or with the prior written approval of the Executive Officer, except that the owner or operator shall inspect/monitor these eComponents for iLeaks when it is safe to do so. Upon detection of a leak, tThe owner or operator shall rRepair or replace the eComponent(s) as soon as the repairs or replacement in accordance with subdivisions (g) or (m), as applicable, from the date Repair can be carried out safely.~~

(B) ~~Components being rRepaired or replaced during/within the specified repair or replacement time period, as given in subdivisions (g) or (m), as applicable Table 2, provided such Components are physically identified in accordance with paragraph (e)(5).~~

- (C) Components exclusively handling ~~e~~Commercial ~~n~~Natural ~~g~~Gas.
  - (D) Components exclusively handling fluids with a VOC content of ten (10) percent by weight or less, determined according to test methods specified in paragraph (j)(2).
  - (E) Components incorporated in lines, while operating under negative pressures.
  - (F) Components totally contained or enclosed such that there are no VOC emissions into the atmosphere.
  - (G) Components buried below ground.
  - (H) Pressure/-vacuum vent ~~v~~Valves on storage tanks.
  - (I) Storage tank ~~h~~Hatches subject to Rule 1178.
- (2) The ~~requirements~~provisions of subdivisions (h) and (i) and paragraphs ~~(i)(2)~~ and ~~(i)(3)~~ shall not apply to PRDVs installed for protection from overpressure due to variation in ambient temperature provided that they are vented to drains or back into the pipeline. The owner or operator~~A person seeking an exemption under this paragraph~~ shall supply proof of the applicable criteria to the satisfaction, upon request, of the Executive Officer.
- (3) The provisions of Rules 466, 466.1, and 467 shall not apply to facilities subject to this rule.
- (4) The provisions of paragraph (e)(1) and subdivision (f) shall not apply to components handling liquids with a flash point greater than 121°C (250°F), as determined according to the test method specified in paragraph (j)(3).
- (5) The requirements of paragraphs (h)(6) and (h)(7) shall not apply to Atmospheric PRD ~~r~~Releases from Refineries demonstrated to the satisfaction of the Executive Officer that resulted from natural disasters, acts of war or terrorism, or external power curtailment beyond the Refinery's control, excluding power curtailment due to an interruptible service agreement, ~~shall not be subject to the provisions of paragraphs (h)(6) and (h)(7). The owner or operator of the Refinery seeking exemption shall supply proof of the applicable criteria to the satisfaction, upon request, of the Executive Officer.~~
- ~~(6) Except for the requirements of subdivision (e), the requirements of this rule shall not become effective as to lubricating oil and grease re-refiners and to marine terminals until December 31, 2007. Lubricating oil and grease re-refiners and marine terminals shall comply with the requirements of subdivision (e) no later than September 30, 2007.~~

(6) The requirements of paragraph (f)(2), clause (g)(2)(A)(i), and clause (g)(7)(A)(i) to conduct an OGI Inspection shall not apply on days the owner or operator determines that it is unsafe to conduct an OGI Inspection from a Platform or vantage point capable of inspecting Components, provided that the reasons and dates the OGI Inspection was not conducted is documented. The owner or operator shall resume OGI Inspection on the first day determined to be safe. The owner or operator seeking exemption shall supply proof of the applicable criteria to the satisfaction, upon request, of the Executive Officer.

(m) Interim Procedures and Requirements

(1) Prior to January 1, 2026, the owner or operator of a facility shall be in violation of this rule if South Coast AQMD personnel detect using an appropriate analyzer in accordance with the test method in paragraph (j)(1) a Component exceeding the applicable standard listed in Table 4 – Interim Violation Standards:

**TABLE 4 – INTERIM VIOLATION STANDARDS**

<u>Component Service</u>	<u>Interim Violation Standard</u>
<u>Light Liquid and Gas/Vapor</u>	<u>50,000 ppm</u>
<u>Heavy Liquid</u>	<u>500 ppm</u>

(2) Prior to January 1, 2026, the owner or operator of a facility shall Repair all Components exceeding the applicable standard listed in Table 5 – Interim Leak Standards as soon as practicable but no later than the time period specified in Table 6 – Interim Repair Periods:

**TABLE 5 - INTERIM LEAK STANDARDS**

<u>Component Type</u>	<u>Interim Leak Standard</u>
<u>Compressor or Pump (Light Liquid)</u>	<u>500 ppm</u>
<u>Pressure Relief Device (PRD)</u>	<u>200 ppm</u>
<u>Pump (Heavy Liquid)</u>	<u>100 ppm</u>
<u>Valve, Fitting, or other device (diaphragm, Hatch, sight-glass, meter)</u>	<u>500 ppm</u>

**TABLE 6 - INTERIM REPAIR PERIODS**

<b><u>Type of Leak or Visible Leak</u></b>	<b><u>Interim Repair Period</u></b>
<u>Leak greater than 25,000 ppm;</u> <u>Leak or Visible Leak (Heavy Liquid) greater than 500 ppm; or</u> <u>Visible Leak (Light Liquid)</u>	<u>1 calendar day</u>
<u>Leak greater than 10,000 ppm but no greater than 25,000 ppm; or</u> <u>Leak greater than 200 ppm but no greater than 25,000 ppm from</u> <u>component type PRD</u>	<u>5 calendar days</u>
<u>Visible Leak (Heavy Liquid) greater than 100 ppm but no greater than</u> <u>500 ppm</u>	<u>7 calendar days</u>
<u>Leak (Light Liquid or gas/vapor) greater than 500 ppm but no greater</u> <u>than 10,000 ppm; or</u> <u>Leak (Heavy Liquid) greater than 100 ppm but no greater than 500 ppm</u>	<u>14 calendar days</u>



# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

## Final Staff Report

### Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants

November 2024

#### Deputy Executive Officer

Planning, Rule Development, and Implementation  
Sarah L. Rees, Ph.D.

#### Assistant Deputy Executive Officer

Planning, Rule Development, and Implementation  
Michael Krause

#### Planning and Rules Manager

Planning, Rule Development, and Implementation  
Mike Morris

Author: Areio Soltani – Air Quality Specialist

#### Contributors:

Jason Aspell – Deputy Executive Officer  
Ben Blackburn – Air Quality Engineer I  
Bettina Burleigh Sanchez – Senior Air Quality Engineer  
Paul Caballero – Supervising Air Quality Inspector  
Bhaskar Chandan – Senior Air Quality Manager  
Emily Chau – Senior Air Quality Engineer  
Fortune Chen – Program Supervisor  
Li Chen – Supervising Air Quality Engineer  
Jack Cheng – Senior Enforcement Manager  
Erwin dela Cruz – Supervising Air Quality Engineer  
Eduardo Esparza – Supervising Air Quality Inspector  
Bahareh Farahani, Ph.D. – Program Supervisor  
Monica Fernandez-Neild – Supervising Air Quality Engineer  
Zhulin (Angela) Han – Air Quality Engineer II  
George Illes – Senior Air Quality Manager  
Gregory Jacobson – Senior Air Quality Engineer  
Stephen Jiang – Air Quality Engineer II  
Belinda Kavin – Air Quality Specialist  
Farzaneh Khalaj, Ph.D. – Air Quality Specialist  
George Lamont – Staff Specialist  
Rhonda Laugeson – Air Quality Analysis and Compliance Supervisor  
Josephine Lee – Senior Deputy District Counsel  
Sang-Mi Lee – Planning and Rules Manager  
Shannon Lee – Senior Air Quality Manager  
Thomas Lee – Supervising Air Quality Engineer

Jospeh Liaw – Supervising Air Quality Inspector  
Terrence Mann – Deputy Executive Officer  
Khang Nguyen – Supervising Air Quality Engineer  
Philip Nguyen - Air Quality Engineer II  
Tracy Nguyen – Air Quality Engineer II  
Kevin Ni – Program Supervisor  
David Ono – Senior Air Quality Manager  
Kevin Orellana – Senior Enforcement Manager  
Brad Paddock - Principal Air Quality Chemist  
Bullington Pham – Air Quality Inspector III  
Payam Pakbin, Ph.D. – Atmospheric Measurements Manager  
Olga Pikelnaya – Implementation Manager  
Eric Praske – Program Supervisor  
Barbara Radlein – Planning and Rules Manager  
Pavan Rami – Program Supervisor  
Ningqing Ran – Senior Air Quality Chemist  
Valerie Rivera – Assistant Air Quality Specialist  
Diana Thai – Program Supervisor  
Xian-Liang (Tony) Tian, Ph.D. – Program Supervisor  
Jessica Torres – Senior Staff Specialist  
Osiris Torres – Senior Air Quality Engineer  
Han Tran – Air Quality Analysis and Compliance Supervisor  
Uyên-Uyên Võ – Planning and Rules Manager  
Jillian Wong, PhD – Assistant Deputy Executive Officer  
Victor Yip – Assistance Deputy Executive Officer

Reviewed By: Rodolfo Chacon – Program Supervisor  
Erika Chavez – Senior Deputy District Counsel

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

Chair: VANESSA DELGADO  
Senator (Ret.)  
Senate Rules Committee Appointee

Vice Chair: MICHAEL A. CACCIOTTI  
Councilmember, South Pasadena  
Cities of Los Angeles County/Eastern Region

**MEMBERS:**

CURT HAGMAN  
Supervisor, Fourth District  
County of San Bernardino

GIDEON KRACOV  
Governor's Appointee

PATRICIA LOCK DAWSON  
Mayor, Riverside  
Cities of Riverside County Representative

LARRY MCCALLON  
Mayor Pro Tempore, Highland  
Cities of San Bernardino County

HOLLY J. MITCHELL  
Supervisor, Second District  
County of Los Angeles

VERONICA PADILLA-CAMPOS  
Speaker of the Assembly Appointee

V. MANUEL PEREZ  
Supervisor, Fourth District  
County of Riverside

NITHYA RAMAN  
Councilmember, Fourth District  
City of Los Angeles Representative

CARLOS RODRIGUEZ  
Councilmember, Yorba Linda  
Cities of Orange County

JOSÉ LUIS SOLACHE  
Mayor, Lynwood  
Cities of Los Angeles County/Western Region

DONALD P. WAGNER  
Supervisor, Third District  
County of Orange

**EXECUTIVE OFFICER:**

WAYNE NASTRI

## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	EX-1
CHAPTER 1: BACKGROUND	
INTRODUCTION.....	1-1
OVERVIEW OF COMPONENTS.....	1-1
BACKGROUND.....	1-3
REGULATORY HISTORY.....	1-4
AFFECTED FACILITIES AND EQUIPMENT.....	1-5
PUBLIC PROCESS.....	1-5
COMMERCIAL NATURAL GAS DISCUSSION.....	1-6
CHAPTER 2: BARCT ASSESSMENT	
BARCT ANALYSIS APPROACH.....	2-1
ASSESSMENT OF SOUTH COAST AQMD REGULATORY REQUIREMENTS...	2-2
ASSESSMENT OF EMISSION LIMITS FOR EXISTING UNITS.....	2-2
OTHER REGULATORY REQUIREMENTS.....	2-3
ASSESSMENT OF POLLUTION CONTROL TECHNOLOGIES.....	2-4
INITIAL BARCT EMISSION LIMIT AND OTHER CONSIDERATIONS.....	2-5
COST-EFFECTIVENESS AND INCREMENTAL COST-EFFECTIVENESS ANALYSES.....	2-6
BARCT EMISSION LIMIT RECOMMENDATION SUMMARY.....	2-18
CHAPTER 3: SUMMARY OF PROPOSALS	
INTRODUCTION.....	3-1
PROPOSED AMENDED RULE STRUCTURE.....	3-1
PROPOSED AMENDED RULE 1173.....	3-1
CHAPTER 4: IMPACT ASSESSMENTS	
INTRODUCTION.....	4-1
EMISSION REDUCTIONS.....	4-1
COST-EFFECTIVENESS.....	4-2
INCREMENTAL COST-EFFECTIVENESS.....	4-3
SOCIOECONOMIC IMPACT ASSESSMENT.....	4-4
CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA).....	4-4
DRAFT FINDINGS UNDER HEALTH & SAFETY CODE SECTION 40727.....	4-4
COMPARATIVE ANALYSIS.....	4-5
APPENDIX A: RESPONSE TO PUBLIC COMMENTS	
PUBLIC WORKSHOP COMMENTS.....	A-1
COMMENT LETTERS.....	A-6

## **EXECUTIVE SUMMARY**

Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants (Rule 1173) controls volatile organic compound (VOC) leaks from components and releases from atmospheric process pressure relief devices. Rule 1173 applies to refineries, chemical plants, lubricating oil and grease re-refiners, marine terminals, oil and gas production fields, natural gas processing plants, and pipeline transfer stations.

Proposed Amended Rule (PAR) 1173 was developed to implement the Wilmington, Carson, West Long Beach (WCWLB) Community Emission Reductions Plan (CERP) and the 2022 Air Quality Management Plan Control Measure FUG-01: Improved Leak Detection and Repair. The objective of PAR 1173 is to further reduce VOC emissions from components by: 1) lowering VOC leak standards for light liquid pumps and compressors as well as fittings, valves, and other devices; 2) formalizing inspection requirements and lower leak standards for fin fans; and 3) requiring optical gas imaging (OGI) inspections monthly. PAR 1173 affects approximately 2.6 million components and points of fugitive VOC emissions at approximately 203 facilities. The control strategies are expected to reduce VOC emissions by 740.1 tons per year or 2.03 tons per day. The overall cost-effectiveness of PAR 1173 is \$18,800 per ton of VOC reduced.

Additionally, PAR 1173 will introduce three contingency measures to partially satisfy Clean Air Act contingency requirements for applicable ozone National Ambient Air Quality Standards in the South Coast AQMD's jurisdiction. The contingency measures, if all triggered, are expected to further reduce VOC emissions by 217.9 tons per year or 0.60 tons per day.

Development of PAR 1173 was conducted through a public process. Four Working Group meetings were held on February 28, 2024, April 24, 2024, June 12, 2024, and July 11, 2024. The Working Group is composed of representatives from businesses, environmental groups, public agencies, and consultants. A Public Workshop was held on July 26, 2024, where the proposed amended rule language was presented to the general public and stakeholders, and comments were received. Staff also conducted multiple site visits as part of this rulemaking process.

## **CHAPTER 1: BACKGROUND**

---

**INTRODUCTION**

**OVERVIEW OF COMPONENTS**

**BACKGROUND**

**REGULATORY HISTORY**

**AFFECTED FACILITIES**

**PUBLIC PROCESS**

**COMMERCIAL NATURAL GAS DISCUSSION**

## INTRODUCTION

Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants applies to refineries, chemical plants, lubricating oil and grease re-refiners, marine terminals, oil and gas production fields, natural gas processing plants and pipeline transfer stations. The purpose of Rule 1173 is to reduce and control volatile organic compound (VOC) from leaks from components and from releases from atmospheric process pressure relief devices (PRDs). Proposed Amended Rule (PAR) 1173 is needed to further reduce VOC from components using new smart leak detection and repair (LDAR) technology and through other practical and innovative strategies.

## OVERVIEW OF COMPONENTS

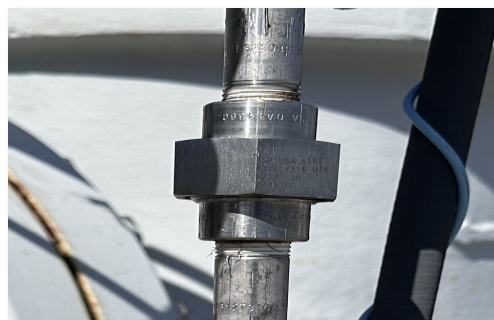
Components are used throughout facilities that extract, process, transmit, and store fluids, including fluids that contain VOCs. As opposed to piping, components may be assembled from parts and often contain moving parts and other points of failure and thus are more likely to develop leaks to allow the escape of VOC to atmosphere. Components are grouped together by design and purpose:

### Fittings

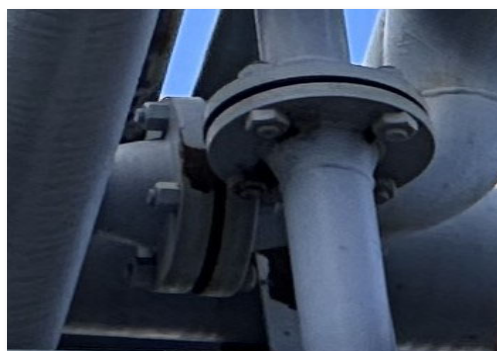
A fitting is a device used to terminate, attach, or connect pipes or piping details. Fittings may be divided into two types: connectors or flanges. Facilities reported to South Coast AQMD that they conducted more than 1.7 million inspections of fittings during the fourth quarter of calendar year 2023.

Connectors are nonwelded connections of pipes or piping details, typically threaded and screwed together. Another type of connector is a compression fitting. Examples of connector-type fittings are couplings, elbows, tees, plugs, or caps. See Figure 1-1.

Flanges are nonwelded connections of pipes or piping details with flanged ends that do not fit inside one another, unlike connectors. Instead, flanges are joined together by bolting and are equipped with a gasket, seal, or other means to provide a barrier from leakage. See Figure 1-2.



**Figure 1-1 - Connector**



**Figure 1-2 - Two flanges**

### Valves

A valve is a device that regulates or isolates the flow of fluid in a pipe, tube, or conduit by means of an external actuator, and includes all associated connectors and flanges. Figure 1-3 shows a photo of a typical valve used in industrial applications with two potential sources of leakage: one at the valve stem and a second at the associated flange. Based on submitted reports, staff estimated that there are approximately a half-million valves in South Coast AQMD in light liquid or gas/vapor VOC service.



**Figure 1-3 - Valve**

### Pumps and Compressors

Pumps and compressors are devices used to move fluids with the addition of energy. Devices used to move liquids, including light liquids and heavy liquids, are referred to as pumps and devices used to move gas/vapor are referred to as compressors. These devices increase the pressure of the fluid to facilitate movement and to overcome friction. Pumps and compressors use seals to minimize introduction of atmosphere into the fluid stream on the suction side and minimize loss of VOC to atmosphere on the pressure side. Pumps and compressors may also have associated connectors and flanges to join to the fluid stream. Per industry reports, staff estimated that there are approximately 8,000 pumps in light liquid service, 2,200 pumps in heavy liquid service, and 600 compressors in South Coast AQMD. See Figure 1-4.



**Figure 1-4 - Pump**

### Pressure Relief Devices (PRDs)

A pressure relief device, or PRD, is a device, used in situations to rapidly decrease pressure in fluid streams by venting to atmosphere or venting to a control device such as a flare or a vapor recovery system. Typically, PRDs are used as safety devices and are not supposed to be operated on a continuous basis. PRDs operate automatically, either actuated by an upstream static pressure that exceeds a predetermined value or through the rupturing of a membrane disc by excess pressure. PRDs comprise a pressure relief valve (PRV), one or more rupture discs, or some combination of these. PRDs also include all associated connectors or flanges. Figure 1-5 shows a PRD with associated threaded connectors. Facilities subject to Rule 1173 reported a total of approximately 6,300 PRDs in service, venting to atmosphere or venting to control devices.



**Figure 1-5 - PRD**

### Fin Fans

A fin fan is a form of an air-cooled heat exchanger, used to reduce the temperature of a fluid stream by forcing ambient air over an array of tubes containing a fluid. See Figure 1-6. Many fin fan heat exchangers can be found installed in elevated settings to allow for unobstructed air flow.

Access to the tubes to perform maintenance is provided by fin fan plugs, located on opposite ends of each tube. Fin fan plugs are identified by their row and column on a fin fan. See Figure 1-7. Previously, a fin fan plug, a type of threaded plug, was considered a component, specifically as a type of fitting, by South Coast AQMD. To improve clarity, fin fans themselves are now identified as a type of component, and includes fin fan plugs and all other associated connectors and flanges. Based on reported data and estimation, staff believes that there are approximately 450 fin fans in VOC service in South Coast AQMD and estimates that there are approximately 252,000 fin fan plugs.



Figure 1-6 - Fin Fan (Source: linkedin.com)



Figure 1-7 - Fin Fan Plugs

### Other Devices

In addition to these types of components previously discussed, four (4) other component types are identified in Rule 1173 and are collectively referred to as “other”: 1) diaphragm; 2) hatch; 3) sight-glass; and 4) meter. Staff estimates that “other” devices make up approximately 122,000 components in South Coast AQMD. See Figure 1-8

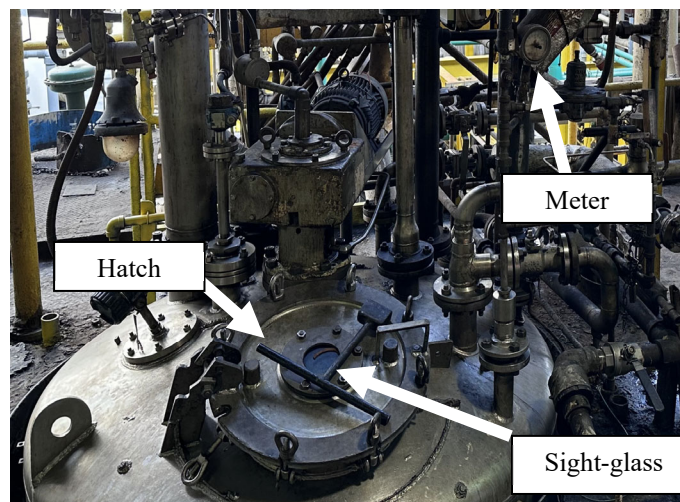


Figure 1-8 – Several other devices (hatch, sight-glass, meter)

## BACKGROUND

### *Contingency Measure SIP Revision*

The U.S. Environmental Protection Agency (U.S. EPA) requires areas that do not meet a National Ambient Air Quality Standard (NAAQS or standard) to develop and submit a State Implementation Plan (SIP) for approval. SIPs are used to show how the region will meet the standard. Regions must attain NAAQS by specific dates or face the possibility of sanctions by the federal government and other consequences under the Clean Air Act (CAA). This can result in



stricter restrictions for permitting new projects and the loss of federal highway funds. The South Coast AQMD SIPs are developed within the agency’s Air Quality Management Plans (AQMPs).

In August 2018, the U.S. EPA designated the Basin as “extreme” nonattainment and the Coachella Valley as “severe-15” nonattainment for the 2015 8-hour ozone standard. The South Coast Air Basin (Basin) includes large areas of Los Angeles, Orange, Riverside, and San Bernardino counties. The Coachella Valley is the desert portion of Riverside County in the Salton Sea Air Basin. “Extreme” nonattainment areas must attain this standard by August 2038 and “severe” nonattainment areas must attain by August 2033.

#### *Control Measures in the 2012, 2016, and 2022 Final AQMPs*

On December 2, 2022, the South Coast AQMD Governing Board adopted the 2022 AQMP to achieve attainment for ozone. The 2022 AQMP is focused on attaining the 2015 8-hour ozone standard of 70 parts per billion (ppb) by 2037 for the Basin and 2032 for the Coachella Valley. The 2022 AQMP contains five proposed VOC measures for stationary sources, including FUG-01: Improved Leak Detection and Repair. FUG-01 proposes implementing the use of advanced LDAR technologies including optical gas imaging (OGI) devices, open path detection devices, and gas sensors for earlier detection of VOC emission from leaks.

The 2022 AQMD also made reference to incorporate co-benefits with reductions in greenhouse gas (GHG) emissions, such as methane and ethane, in order provide climate change assistance.

#### *California Assembly Bill 617 and Community Emission Reductions Plans*

In addition, Assembly Bill (AB) 617 was signed into California law in July 2017 and focuses on addressing local air pollution in environmental justice (EJ) communities. On September 27, 2018, the California Air Resources Board (CARB) designated 10 communities across the state to implement community plans for the first year of the AB 617 program. One of those communities was the Wilmington, Carson, West Long Beach (WCWLB) community.

In September 2019, the South Coast AQMD Governing Board adopted the Community Emission Reductions Plan (CERP) for the WCWLB community, outlining the actions and commitments by the Community Steering Committee (CSC), the South Coast AQMD, and the CARB, to reduce air pollution in the WCWLB community. Among the objectives of the WCWLB CERP include reducing fugitive VOC emissions as described in Chapter 5b Action 2. The WCWLB CERP identifies Rule 1173 and proposes reductions be achieved through rule amendments to detect and address VOC leaks. The CERP considered more rapid leak detection and response enabled by advanced air measurements and lowering allowable emissions from on-site equipment, such as emission concentrations.

## **REGULATORY HISTORY**

Rule 1173 was originally adopted on July 7, 1989 and subsequently amended on several occasions:

### **1989 Rule Adoption**

Rule 1173 was developed to reduce fugitive emissions from certain components, specifically valves, pumps, compressors, pressure relief devices (PRDs), diaphragms, fittings, sight-glasses, and meters located at certain facilities, specifically refineries, chemical plants, oil and gas fields, natural gas processing plants, and pipeline transfer stations. Rule 1173 was intended to phase out then-Rules 466, 466.1, and 467, which had been applicable to a more limited number of

components at some of the target facilities. Rule 1173 implemented the 1988 AQMP Control Measure #88-B-13.

### **1990 Amendments**

The 1990 amendments to Rule 1173 were primarily administrative in nature. Upon notification by U.S. EPA that certain rules submitted to the State Implementation Plan (SIP), including Rule 1173, controlling emissions of VOC contain provisions that are not consistent with federal policies, the South Coast AQMD initiated rulemaking to correct 34 of the 90 identified deficiencies in 24 different rules. The 1990 amendments modified Rule 1173's VOC definition and deleted outdated compliance dates.

### **1994 Amendments**

The 1994 amendments to Rule 1173 were also administrative changes. U.S. EPA identified three rules submitted to the SIP, including Rule 1173, with deficiencies. South Coast AQMD initiated rulemaking to correct these SIP deficiencies and PAR 1173 (1994) modified the definition for inaccessible components, modified approval of equivalent test methods, revised unsafe component exemption, added definition for exempt compounds, and made other minor clarifications.

### **2002 Amendments**

The 2002 amendments to Rule 1173 proposed further reductions of fugitive VOC emissions from components at facilities by requiring an inspection and repair program for heavy liquids, reducing the leak threshold and time to repair components in light liquid service, and requiring capture and control of PRD releases or payment of a mitigation fee. This amendment implemented portions of 1997/99 AQMP Control Measures FUG-04 and FUG-05.

### **2007 Amendments**

The 2007 amendments to Rule 1173 expanded the number of facilities subject to the rule by including lubricating oil and grease re-refiners and marine terminals. The amendment also required the implementation of an enhanced atmospheric PRD monitoring program at refineries. It implemented portions of Control Measure FUG-05 – Emission Reductions from Fugitive VOC Sources, of the 2003 AQMP.

### **2009 Amendments**

The 2009 amendments to Rule 1173 were administrative in nature correcting internal rule references to address the installation schedule for continuous monitors for atmospheric process PRDs and exemptions.

## **AFFECTED FACILITIES AND EQUIPMENT**

PAR 1173 affects approximately 2.6 million components and points of fugitive VOC emissions at approximately 203 facilities operating as refineries, chemical plants, lubricating oil and grease re-refiners, marine terminals, oil and gas production fields, natural gas processing plants and pipeline transfer stations.

## **PUBLIC PROCESS**

Development of PAR 1173 was conducted through a public process. Four Working Group meetings were held on February 28, 2024, April 24, 2024, June 12, 2024, and July 11, 2024. The Working Group is composed of representatives from businesses, environmental groups, public agencies, and consultants. The purpose of the Working Group meetings is to discuss proposed

concepts and work through the details of South Coast AQMD's proposal. Additionally, a Public Workshop was held on July 26, 2024. The purpose of the Public Workshop was to present the proposed amended rule language to the general public and stakeholders, and to solicit comments. Staff also conducted multiple site visits as part of this rulemaking process.

### **COMMERCIAL NATURAL GAS DISCUSSION**

As noted earlier in *Background*, staff is tasked with looking for co-benefits with GHG programs. Currently in Rule 1173, commercial natural gas, comprising methane and ethane with trace amounts of odorant gases, is exempted under Rule 1173, despite methane being a known greenhouse gas. Throughout working group meetings, site visits, and other meetings, staff exchanged with a variety of representatives to find common ground and build consensus around best management practices to reduce emissions of this GHG. After careful consideration and deliberation, staff concluded that requirements for commercial natural gas, comprised almost exclusively as methane and ethane and defined in Rule 102 as not to be considered VOCs, are not within the scope of Rule 1173 regarding VOC leaks and releases and left in place the existing exemption for commercial natural gas.

## **CHAPTER 2: BARCT ASSESSMENT**

---

**BARCT ANALYSIS APPROACH**

**ASSESSMENT OF SOUTH COAST AQMD REGULATORY  
REQUIREMENTS**

**ASSESSMENT OF EMISSION LIMITS FOR EXISTING UNITS**

**OTHER REGULATORY REQUIREMENTS**

**ASSESSMENT OF POLLUTION CONTROL TECHNOLOGIES**

**INITIAL BARCT EMISSION LIMIT AND OTHER CONSIDERATIONS**

**COST-EFFECTIVENESS AND INCREMENTAL COST-  
EFFECTIVENESS ANALYSES**

**BARCT EMISSION LIMIT RECOMMENDATION**

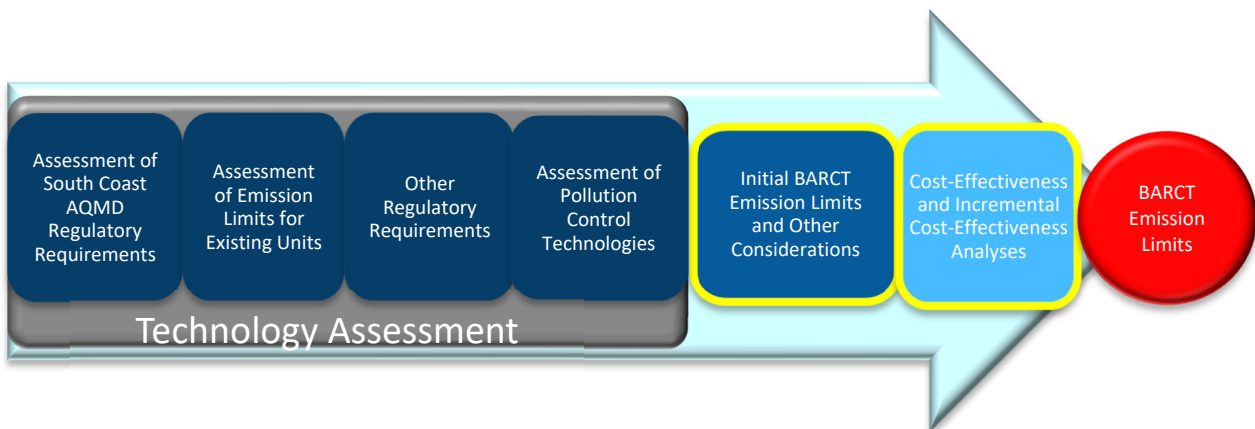
## BARCT ANALYSIS APPROACH

PAR 1173 rule development was initiated in response to objectives in the WCWLB CERP for enhanced leak detection and to partially implement Control Measure FUG-01 in the 2022 Final AQMP. Additionally, South Coast AQMD periodically assesses rules to ensure that Best Available Retrofit Control Technology (BARCT) is reflected in rule requirements. To address community member objectives, partially implement Control Measure FUG-01, and ensure that Rule 1173 reflects BARCT, a BARCT assessment was conducted to identify the potential to further reduce emissions from components.

BARCT is defined in the Health & Safety Code Section 40406 as “an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.” Consistent with state law, BARCT emission limits take into consideration environmental impacts, energy impacts, and economic impacts. The BARCT analysis approach follows a series of steps conducted for each equipment category.

The steps for BARCT analysis consist of:

- Assessment of South Coast AQMD Regulatory Requirements
- Assessment of Emissions Limits for Existing Units
- Other Regulatory Requirements
- Assessment of Pollution Control Technologies
- Initial BARCT Emission Limits and Other Considerations
- Cost-Effectiveness and Incremental Cost-Effectiveness Analyses
- BARCT Emission Limit



The BARCT assessment included a review of leak detection technologies and emission reduction strategies. Newer leak detection technologies were reviewed including OGI devices, gas sensors, and open path detection. Leak detection methods were also analyzed with varying inspection frequencies. Lower leak standards for various types of components were also reviewed. Staff analyzed the potential to reduce emissions from leaks with enhanced leak detection technologies and reduce emissions from facility operations by establishing more stringent requirements for existing components.

As part of the technology assessment, a cost-effectiveness analysis was conducted for technologies with potential to reduce emissions. A cost-effectiveness analysis determines the cost per ton of pollutant reduced. In the 2022 AQMP, a cost-effectiveness threshold of \$36,000 per ton of VOC reduced was established. After adjusting for inflation, the cost-effectiveness threshold is \$40,170 per ton of VOC reduced (2023 U.S. Dollars). An incremental cost-effectiveness analysis was also conducted for proposed controls and monitoring methods to establish BARCT, if applicable, and is discussed in Chapter 4.

## ASSESSMENT OF SOUTH COAST AQMD REGULATORY REQUIREMENTS

Rule 1173 applies to specific types of components at seven categories of facilities. Leaking components emit VOC through openings such as threaded connections, gaskets, seals, and other points of contact that degrade over time and require periodic monitoring to identify leakage, performance maintenance, and possible replacement of components to minimize emissions. Rule 1173 currently requires audio-visual inspections of certain components every 8 hours, quarterly analyzer leak checks for accessible components and annual analyzer leak checks for inaccessible components in accordance with U.S. EPA Method 21. Since the last non-administrative amendments to Rule 1173 in 2007, there have been advancements in the availability of leak monitoring technology including OGI devices, gas sensors, and open path detection. These technologies are included in the BARCT assessment.

## ASSESSMENT OF EMISSION LIMITS FOR EXISTING UNITS

Rule 1173 currently has a variety of emission limits based on the type of component and type of service of the component. In addition, South Coast AQMD also completed an evaluation of the federal Lowest Achievable Emission Rate (LAER) requirement for major polluting facilities as well as the Best Available Control Technology (BACT) for new or modified petroleum refineries regarding fugitive VOC emission sources. Known as a LAER/BACT Determination, those emission limits, expressed in ppm, are also summarized in the Table 2-1 below:

Table 2-1 Emission Limits			
Regulation	Rule 1173 (ppm)		LAER/BACT (ppm)
	Light Liquid or Gas/Vapor	Heavy Liquid	Light Liquid or Gas/Vapor
Valve, Fitting, Other*	500	100	200
PRDs	200	100	200
Pump, Compressor	500	100	N/A
*Fitting also includes fin fan plugs. Other includes diaphragms, hatches, sight-glasses, and meters			

Regarding advanced leak monitoring technologies, Rule 1173 currently does not have an advanced leak monitoring requirement, such as OGI. Other South Coast AQMD rules, specifically Rules 1178, 463, and 1148.1 have advanced monitoring frequencies summarized in the Table 2-2 below:

Table 2-2 Monitoring Requirements in Other South Coast AQMD Rules			
Regulation	Rule 1178	Rule 463	Rule 1148.1
OGI Monitoring Requirement	Every two weeks	Monthly	Monthly

### OTHER REGULATORY REQUIREMENTS

Staff reviewed rules and regulations from other air districts including Bay Area AQMD, San Joaquin Valley Air Pollution Control District (APCD), and Santa Barbara County APCD. The inspections are conducted with analyzers and no rule in other air districts requires the use of advanced monitoring equipment like OGI. Those emission limits, expressed in ppm, are summarized in the Table 2-3 below:

Table 2-3 Leak Standards in Other Air Districts (expressed in ppm)						
Air District	Bay Area	San Joaquin Valley			Santa Barbara County	
Regulation	Rule 8-18	Rule 4409	Rule 4455	BACT	Rule 331	BACT
Valve, Fitting	100	500	L: 200 G/V: 400	100	1,000	100
Other*	100	500	L: 500 G/V: 1,000	100	1,000	100
Pump, Compressor	500	500	L: 500 G/V: 1,000	100	1,000	100
PRD	500	L: 200 G/V: 400	L: 100 G/V: 200	100	1,000	100

\*Other includes diaphragms, hatches, sight-glasses, and meters (L = liquid, G/V = gas/vapor)

On November 20, 2023, Bay Area AQMD released a draft with proposed amendments to their Rule 8-18, including lowering some leak standards to 50 ppm. On September 4, 2024, amendments to Bay Area AQMD Rule 8-18 were adopted that do not include a 50 ppm leak standard.

### ASSESSMENT OF POLLUTION CONTROL TECHNOLOGIES

Multiple leak detection technologies and methods were considered to reduce the emissions impact from leaks from components. A review of continuous monitoring technologies including fixed gas

sensor networks and open path device systems was conducted. Periodic monitoring with handheld optical gas imaging devices was also reviewed.

Continuous monitoring solutions using open path detection and fixed gas sensor networks were assessed in 2023 for PAR 1178 rulemaking and again in 2024 for PAR 463 rulemaking regarding tanks. It was determined that the best solution for monitoring tanks is to require periodic monitoring with handheld OGI devices due to their ability to detect small and large leaks at varying distances. In regard to monitoring components, the advantage of handheld OGI devices versus open path and gas sensor methods is accentuated. Continuous monitoring systems are limited in their ability to detect smaller leaks because they are installed at a distance from the source of emissions. Depending on the detection technology of the continuous monitoring system, a leak may go undetected unless the leak is significantly large at the source. With gas sensors or open path devices, the leak may go undetected if it does not make contact with the fixed sensor or emitted open path beam. Therefore, continuous monitoring systems with sensors that must come in contact with the VOC vapor may not be the most effective technologies to reduce the emissions impact from component leaks. Another drawback to requiring continuous monitoring systems is delayed implementation due to plan approval and installation timeframes. Staff assessed that the advanced monitoring technology most suitable to identify sources of leaks at the component level is handheld OGI devices.

### *Periodic Monitoring with Optical Gas Imaging*

An optical gas imaging camera uses infrared technology capable of visualizing vapors. Optical gas imaging cameras have different detectors capable of visualizing a variety of gas wavelengths. VOC wavelengths are in the 3.2-3.4 micrometer waveband.



**Figure 2-1: View with naked eye compared to view with an OGI camera**

The difference in views is shown in Figure 2-1.



OGI cameras with the ability to detect or visualize in this waveband range contain a cryocooler that is integrated into the sensor and increases the sensitivity of the camera to detect smaller leaks. OGI cameras are widely used as a screening tool for leak detection purposes and have continuous monitoring capability. Fixed OGI systems have been implemented at well sites and compression stations for continuous emissions monitoring. Handheld OGI cameras, as seen in Figure 2-2, are used widely by leak detection service providers as well as facilities for periodic monitoring.



**Figure 2-2- OGI camera**

Fixed OGI cameras may not catch all leaks that can be identified during an inspection where a portable OGI device is manually operated. Fixed OGI cameras are limited in the number of angles viewed and would likely be stationed further away from an emissions source compared to a person conducting an inspection with a portable OGI device. Stationary and portable devices both have the capability to detect large leaks, however, there is greater chance that smaller leaks would be identified with a manual field inspection than with a stationary camera because components can be monitored in close proximity using portable devices such as handheld OGI cameras and toxic vapor analyzers (TVA).

## INITIAL BARCT EMISSION LIMIT AND OTHER CONSIDERATIONS

### Leak Standards

After review of other pending and finalized leak standards in other air districts, staff considered the following leak standards as initial BARCT emission limits with several other incremental leak standards for determination of cost-effectiveness and incremental cost-effectiveness, summarized in the Table 2-4 below. As noted in Chapter 1, to ensure clarity, staff has bifurcated fin fan plugs from other types of fittings and classified these under a newly-defined component type “Fin Fan”.

Table 2-4 Initial BARCT Limits	
Component Type	Initial BARCT Leak Standard (ppm)
Valve, Fitting, Other*	50
Pump (Light Liquid), Compressor	50
PRD	50
Fin Fan	50
*Other includes diaphragms, hatches, sight-glasses, and meters	

### OGI Inspection Frequency

After review of other South Coast AQMD rules requiring OGI device inspection, staff considered weekly OGI inspection as the initial BARCT limit with several other less frequent inspection schedules for determination of cost-effectiveness and incremental cost-effectiveness.

## COST-EFFECTIVENESS AND INCREMENTAL COST-EFFECTIVENESS ANALYSES

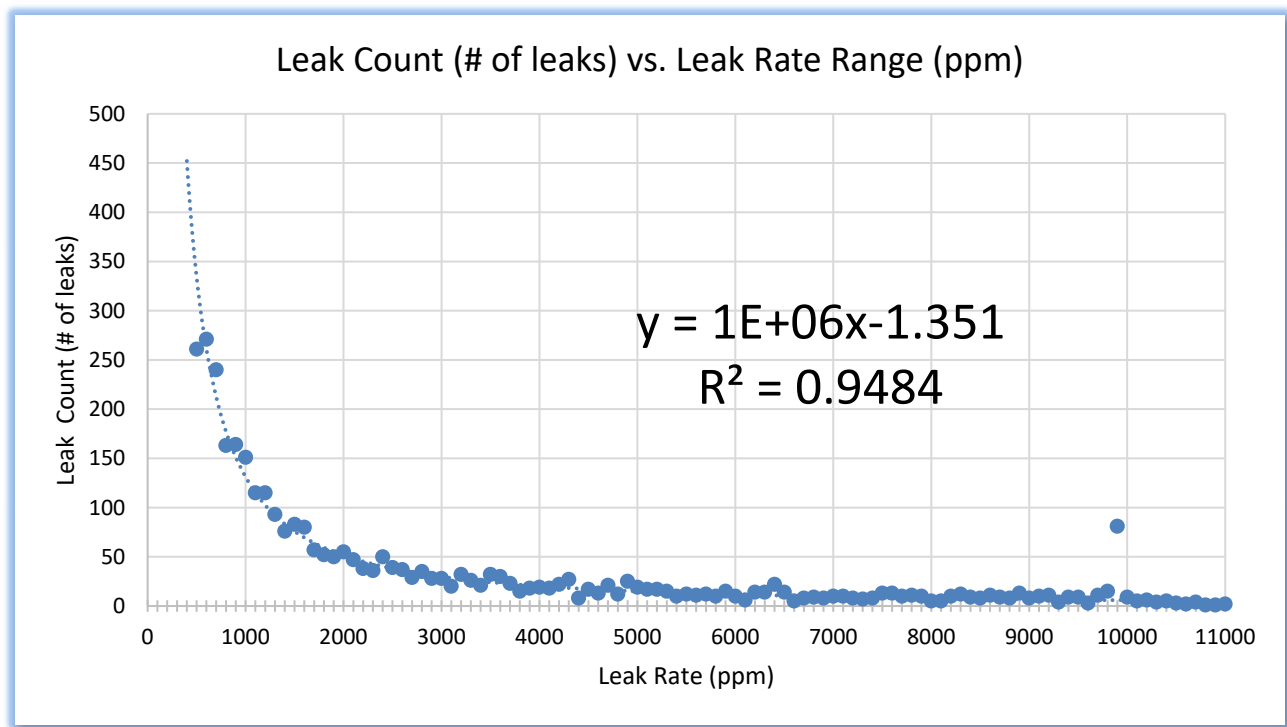
### Leak Standards

Lower leak standards are expected to increase the number of leaks detected above the leak standard, leading to increased maintenance and repair cost. Lower leak standards are also expected to decrease the baseline fugitive VOC emissions from components in compliance with the leak standards. To understand how many more leaks are to be expected and the VOC emission rate of components in compliance, staff studied Rule 1173 leak reports submitted to South Coast AQMD.

Rule 1173 requires recordkeeping of component leaks and repairs, and further requires facilities to submit these records quarterly, as Rule 1173 Component Leak Report (Form C) and Rule 1173 Statistics Summary Sheet (Form D). Staff examined all leak reports submitted for calendar year 2023, 4<sup>th</sup> quarter. For each grouping of components, the distribution of leak values above the leak standard was counted. The component groups demonstrated certain trends when examined for power trendlines, as demonstrated in the Figures 2-3, 2-4, 2-5, and 2-6 below. For component type fin fan, leak reports regarding fittings were used for trends.

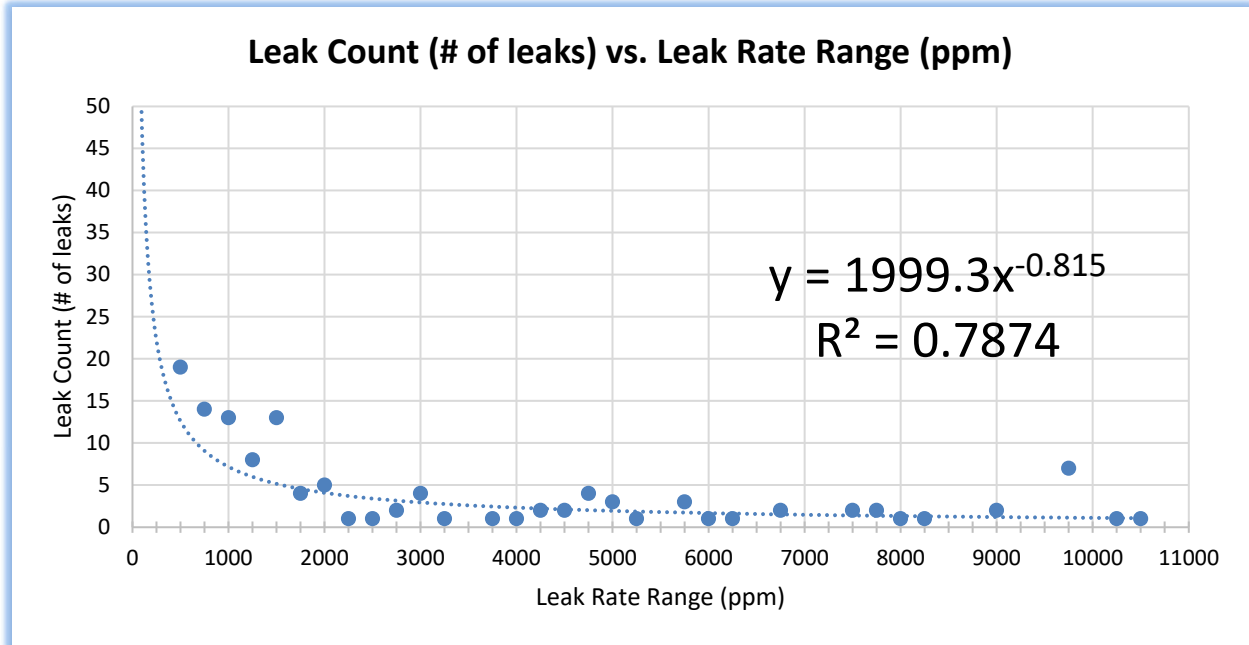
**Figure 2-3 Distribution of Valve, Fitting, Other Leaks**

Range: 500 ppm to 11,000 ppm, Grouping: by 100



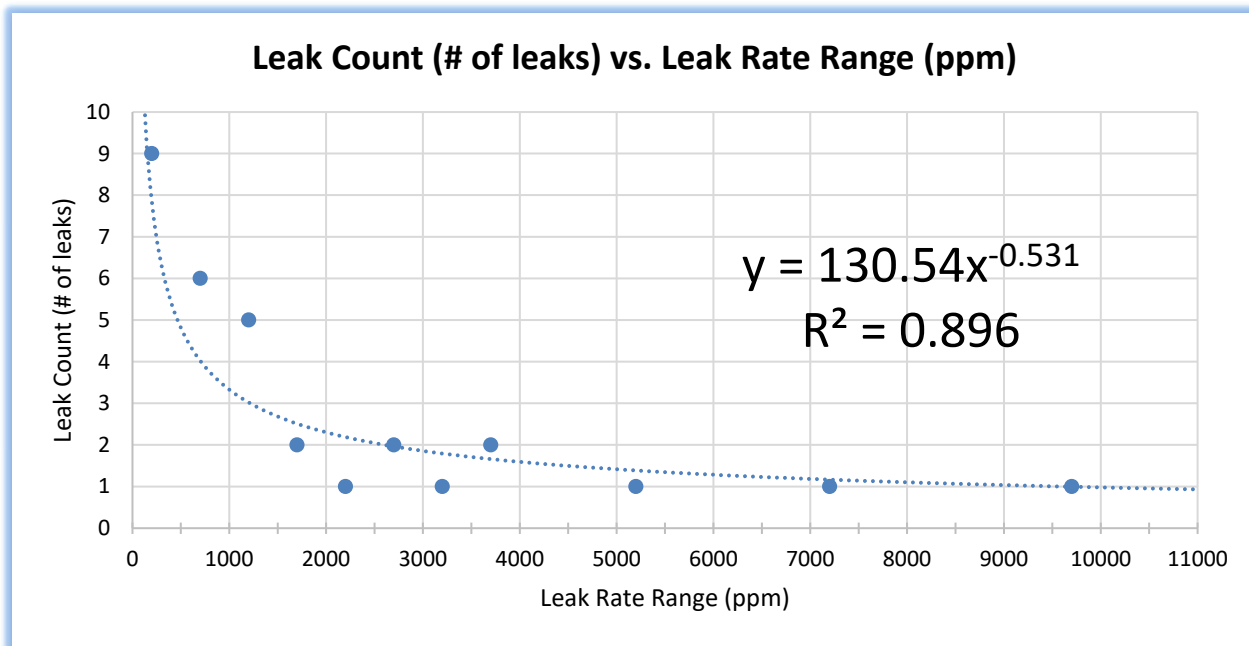
**Figure 2-4 Distribution of Pump (Light Liquid), Compressor Leaks**

Range: 500 ppm to 11,000 ppm, Grouping: by 250



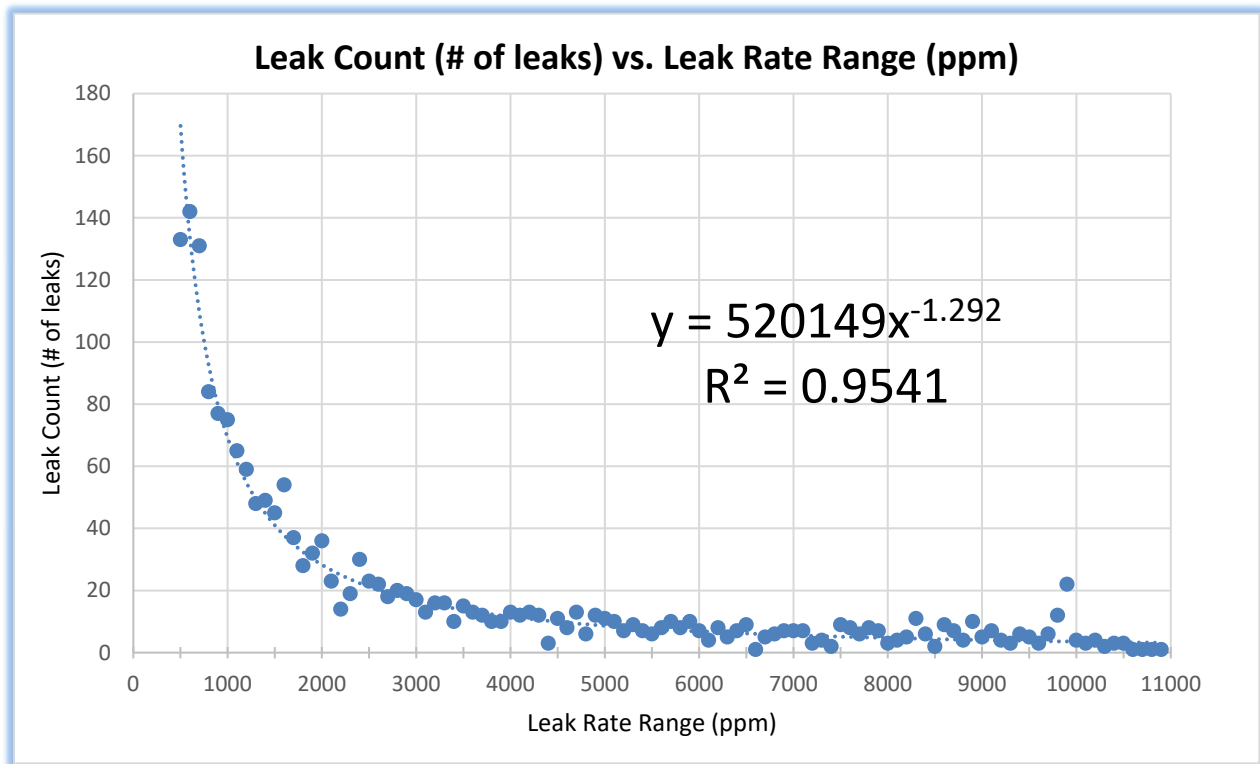
**Figure 2-5 Distribution of PRD Leaks**

Range: 200 ppm to 11,000 ppm, Grouping: by 500



**Figure 2-6 Distribution of Fin Fan Leaks (from Fitting data)**

Range: 500 ppm to 11,000 ppm, Grouping: by 100



These curves and power trendlines are able to predict, with relatively high confidence, the number of additional leaks estimated above a leak standard at differing leak values:

Fitting, Valve, Other:

$$\text{Additional quarterly leaks at leak value} = 10^6 \times (\text{leak value})^{-1.351}$$

Pump (Light Liquid) and Compressor:

$$\text{Additional quarterly leaks at leak value} = 1999.3 \times (\text{leak value})^{-0.815}$$

PRD:

$$\text{Additional quarterly leaks at leak value} = 130.54 \times (\text{leak value})^{-0.531}$$

Fin Fan:

$$\text{Additional quarterly leaks at leak value} = 520,149 \times (\text{leak value})^{-1.292}$$

For example, for component type fitting, valve, other, at a leak value of 400 ppm, 305 additional leaks are estimated each quarter at that leak value range. Therefore, 1,220 additional leaks are

estimated each year at a leak standard of 400 ppm. At a leak value of 300 ppm, 455 additional leaks are estimated each quarter at that leak value range. At a leak value of 300 ppm,  $305 + 405 = 755$  additional leaks are expected in the 300 and 400 leak value range. Thus, 3,020 additional leaks are estimated each year at a leak standard of 300 ppm. Additional leak estimates are listed below in Table 2-5 for various lower leak standards:

Table 2-5 Estimated Additional Leaks Per Year				
Leak Standard (ppm)	Fitting, Valve, Other	Pump (Light Liquid), Compressor	PRD	Fin Fan (as expressed in Fin Fan Plugs)
500	Current leak standard	Current leak standard		Current leak standard
400	1,220	60		106
300	3,020	136		325
200	6,136	244	Current leak standard	649
100	14,080	432	44	1,444
50	34,344	760	76	4,547

Each of these estimated additional leaks has a cost associated with its repair. In 2023, San Joaquin Valley APCD amended their VOC component rules, including Rules 4409 and 4455. The Staff Report<sup>1</sup> for that rulemaking contains Table C-4: *Constant in Quantifying Repairing and Replacing Components* which itemized component replacement costs, percentage needing repair versus replacement, repair labor costs, and average repair or replacement times. To determine if the San Joaquin Valley APCD method is appropriate for South Coast AQMD, staff compared prevailing wage rates in Los Angeles County for various crafts and classifications as published by the California Department of Industrial Relations and found all average hourly wages for trade groups expected to perform repair to be less than the hourly rate used by San Joaquin Valley APCD (\$133/hour). Cost of materials is expected to be similar statewide. These costs were shared with stakeholders to receive feedback. Applying the San Joaquin Valley APCD method to the distribution of leaks detected in South Coast AQMD for calendar year 2023, 4<sup>th</sup> quarter yields a cost for each component type of repair as seen in Table 2-6 below. For repair of fin fan plugs, staff spoke with stakeholders and industry sources and determined average repair cost for a fin fan plug while in operation. For repair of fin fan plugs during process unit shutdown, staff employed the same repair cost as component type Fitting, Valve, Other:

<sup>1</sup> <https://ww2.valleyair.org/media/vptf4eg2/gb-item.pdf>

Table 2-6 Repair Cost by Component Type				
Fitting, Valve, Other	Pump (Light Liquid), Compressor	PRD	Fin Fan, during operation	Fin Fan, during shutdown
\$711.56	\$5,486.10	\$5,541.40	\$10,000.00	\$711.56

Multiplying the number of estimated leaks by the cost of repair for each leak yields the annual additional cost of implementing each lower leak standard, summarized in the Table 2-7 below. For fin fans, staff assumed that additional leaks detected would be repaired during periods of process unit shutdown:

Table 2-7 Estimated Annual Cost of Lower Leak Standards				
Leak Standard (ppm)	Fitting, Valve, Other	Pump (Light Liquid), Compressor	PRD	Fin Fan
500	Current leak standard	Current leak standard		Current leak standard
400	\$868,000	\$329,000		\$75,000
300	\$2,149,000	\$746,000		\$231,000
200	\$4,366,000	\$1,339,000	Current leak standard	\$462,000
100	\$10,019,000	\$2,370,000	\$244,000	\$1,027,000
50	\$24,438,000	\$4,169,000	\$598,000	\$2,411,000

To determine baseline fugitive VOC emissions from components in compliance with PAR 1173, staff estimated VOC emissions using methods in South Coast AQMD Annual Emission Reporting (AER) document *Guidelines for Reporting VOC Emissions from Component Leaks*, revised February 2015<sup>2</sup>, specifically Method 2 – Correlation Equation Method. Based on California Air Pollution Control Officers Association (CAPCOA)-revised 1995 U.S. EPA correlation equations and factors for refineries and marketing terminals, it provides a method to estimate VOC emissions based on component type and screening value in ppm.

Similar to the estimated annual cost at various leak standards, estimate average screening values at various leak standards should be developed. Looking again at the estimated additional leaks at

<sup>2</sup> <http://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/guidelreportvocemiscomleaks.pdf>

each leak standard, staff developed an estimated average screening value based on a weighted average of estimated leak counts at each leak standard by the formula:

$$\begin{aligned} & \textit{Estimated Average Screening Value @ Leak Standard (ppm)} \\ &= \frac{\sum(\textit{leak value} \times \textit{number of leaks at leak value})}{\sum \textit{number of leaks at leak value}} \end{aligned}$$

For example, for component type fitting, valve, other, at a leak value of 500 ppm, there were 261 actual leaks at that leak value range in calendar year 2023, 4<sup>th</sup> quarter. At a leak value of 400 ppm, 305 additional leaks are estimated each quarter at that leak value range. At 300 ppm, 450 additional leaks are estimated. And at 200, 100, and 50 ppm, 779, 1,986, and 5,066 leaks are estimated, respectively. Thus, the estimated average screening value for a 500 ppm leak standard is 112 ppm as calculated below:

$$\begin{aligned} & \textit{Estimated Average Screening Value @ 500 ppm} \\ &= \frac{(500 \times 261) + (400 \times 305) + (300 \times 450) + (200 \times 779) + (100 \times 1,986) + (50 \times 5,066)}{261 + 305 + 450 + 779 + 1,986 + 5,066} \end{aligned}$$

For the lowest leak standard considered, 50 ppm, the leak standard is used at the estimated average screening value. Estimated average screening values associated with each leak standard are listed in Table 2-8 below:

Table 2-8 Estimated Average Screening Value				
Leak Standard (ppm)	Fitting, Valve, Other (ppm)	Pump (Light Liquid), Compressor (ppm)	PRD (ppm)	Fin Fan (ppm)
500	112	169		113
400	101	136		104
300	90	114		92
200	78	91	103	79
100	64	68	70	63
50	50	50	50	50

The number of components reported to South Coast AQMD in calendar year 2023, 4<sup>th</sup> quarter are or are estimated to be as listed in Table 2-9:

Table 2-9 Number of Components by Type	
Component Type	Components in South Coast AQMD
Valve	498,640
Fitting (Connectors and Flanges)	1,720,410
<ul style="list-style-type: none"> <li>Connector (assumed 90% of Fittings)</li> </ul>	<i>1,548,370 (estimated)</i>
<ul style="list-style-type: none"> <li>Flange (assumed 10% of Fittings)</li> </ul>	<i>172,040 (estimated)</i>
Other (diaphragms, hatches, sight-glasses, and meters)	122,390
Pump (Light Liquid)	7,950
Compressor	640
PRD	6,350
<ul style="list-style-type: none"> <li>Fin Fan Plug (assumed 560 fin fan plugs per fin fan and 450 estimated fin fans)</li> </ul>	<i>252,000 (estimated)</i>

Estimating baseline fugitive VOC emissions from each component category at various leak standards using AER Method 2 yields the following table, Table 2-10:



Table 2-10 Baseline Annual VOC emissions (in tons)				
Leak Standard (ppm)	Fitting, Valve, Other	Pump (Light Liquid), Compressor	PRD	Fin Fan (as expressed in Plugs)
500	1,529.2	96.3		120.7
400	1,419.3	84.1		113.5
300	1,306.0	75.4		103.7
200	1,177.0	65.5	10.5	92.7
100	1,021.4	54.7	8.2	78.5
50	855.0	45.1	6.6	66.2

With estimated annual cost for each leak standard and estimated emission reductions derived from the difference between baseline annual VOC emissions, the following tables, Tables 2-11 through 2-14, present cost-effectiveness and incremental cost-effectiveness for each category of component:

Table 2-11 Cost-effectiveness and Incremental Cost-effectiveness for Fitting, Valve, Other					
	400 ppm	300 ppm	200 ppm	100 ppm	50 ppm
Estimated cost per year	\$868,000	\$2,149,000	\$4,366,000	\$10,019,000	\$24,438,000
VOC Emission Reduction (tons)	109.9	223.2	351.2	507.8	674.2
Cost-Effectiveness (per ton VOC)	\$7,900	\$9,600	\$12,400	\$19,700	\$36,200
Incremental Cost-Effectiveness (per ton VOC)		\$11,300	\$17,300	\$36,100	\$86,600

Table 2-12 Cost-effectiveness and Incremental Cost-effectiveness for Pump (Light Liquid), Compressor					
	400 ppm	300 ppm	200 ppm	100 ppm	50 ppm
Estimated cost per year	\$329,000	\$746,000	\$1,339,000	\$2,370,000	\$4,169,000
VOC Emission Reduction (tons)	12.2	20.9	30.8	41.6	51.2
Cost-Effectiveness (per ton VOC)	\$27,000	\$35,600	\$43,500	\$56,900	\$81,500
Incremental Cost-Effectiveness (per ton VOC)		\$47,700	\$60,100	\$94,900	\$189,000

Table 2-13 Cost-effectiveness and Incremental Cost-effectiveness for PRD		
	100 ppm	50 ppm
Estimated cost per year	\$244,000	\$598,000
VOC Emission Reduction (tons)	2.3	3.9
Cost-Effectiveness (per ton VOC)	\$106,500	\$154,200
Incremental Cost-Effectiveness (per ton VOC)		\$223,100

Table 2-14 Cost-effectiveness and Incremental Cost-effectiveness for Fin Fan					
	400 ppm	300 ppm	200 ppm	100 ppm	50 ppm
Estimated cost per year	\$75,000	\$231,000	\$462,000	\$1,027,000	\$2,411,000
VOC Emission Reduction (tons)	7.2	16.9	27.9	42.2	54.5
Cost-Effectiveness (per ton VOC)	\$10,500	\$13,700	\$16,500	\$24,400	\$44,300
Incremental Cost-Effectiveness (per ton VOC)		\$15,900	\$21,000	\$39,800	\$112,700

Based on leak standards that are both cost-effective and incrementally cost-effective, the proposed BARCT limits are as follows in Table 2-15:

Table 2-15 Proposed Component Leak Standards			
Component Type	Leak Standard (ppm)	Cost-Effectiveness (per ton VOC)	Incremental Cost-Effectiveness (per ton VOC)
Fitting, Valve, Other	100	\$19,700	\$36,100
Pump	400	\$27,000	\$0
Pressure Relief Device	200	\$0	\$0
Fin Fan	100	\$24,400	\$39,800

### OGI Inspection Frequency

Frequent OGI inspections are expected to increase capital costs as more cameras are likely to be needed, and further increase recurring costs for maintenance of the camera and labor by trained operators. However, frequent OGI inspections are expected to catch more leaks and reduce VOC emissions associated with larger leaks.

To build a model to determine cost-effectiveness and incremental cost-effectiveness, staff used several assumptions regarding OGI cameras. First, manufacturers of OGI cameras claim that they are capable of inspecting 10,000 components per day. While some facilities may approach that efficiency, some may not. Thus, staff conservatively estimated that each OGI camera will be used

to inspect 5,000 components per operating day. For South Coast AQMD's 2.6 million components, including an estimated 252,000 fin fan plugs, the number of OGI cameras needed to implement the inspection schedule is listed in the table 2-15 below:

Table 2-16 OGI Camera Needed for PAR 1173				
	Every 2 Months	Monthly	Every 2 Weeks	Weekly
OGI cameras	13	25	53	105

Regarding capital costs, staff assumed the average cost per camera to be \$120,000, consistent with rulemaking for Rule 463, amended in June 2024. OGI cameras have an expected life span of 10 years, and annual maintenance and associated shipping costs are documented to be \$4,874. Labor costs for implementation are \$413.88 per operating day, inflation-adjusted from a \$400 figure used in the PAR 1178 rulemaking. In accordance with South Coast AQMD practice to use the Discounted Cash Flow method to account for capital costs, with an interest rate of 4% and life of equipment of 10 years yields  $PVF_{(4,10)} = 8.11$ . Thus, the Present Value of each OGI camera over 10 years is calculated at \$1,005,478, or \$100,548 per year. The cost associated with various inspection frequencies is listed in the table 2-16 below:

Table 2-17 OGI Inspection Cost by Frequency				
	Every 2 Months	Monthly	Every 2 Weeks	Weekly
Total Cost over 10 years	\$13,333,000	\$25,137,000	\$54,713,000	\$108,394,000
Annual Cost	\$1,333,000	\$2,514,000	\$5,471,000	\$10,839,000

To estimate emissions associated with leaks detectable with an OGI device, staff reviewed again the calendar year 2023, 4<sup>th</sup> quarter leak reports. Manufacturers of OGI cameras report that their devices are capable of detecting leaks in the 2,000 ppm to 5,000 ppm range. Staff took a conservative approach and determined the number of leaks at or above 5,000 ppm extrapolated per year. To determine the emissions associated with these leaks, staff again referred to the South Coast AQMD AER guidance document and employed the specific leak emission factor based on component type. There are two leak emission factors: one based on a pegged factor at 10,000 ppm and one based on a pegged factor at 100,000 ppm. Staff used the lower, more conservative factor in calculations.

At present, leaks are detected using U.S. EPA Method 21 equipment at a frequency of once per calendar quarter. Assuming these leaks persist for one-half of the time between inspections, or 45 days, estimates of current annual emissions from larger leaks that could be detected by OGI cameras are listed below in Table 2-17. For leaks associated with fin fan plugs, persistence time is estimated to be a half-year as most fin fan plugs are considered inaccessible components and thus are inspected annually instead of quarterly.

Table 2-18 Estimated Leaks and Emissions Reductions from Use of OGI								
	Connector	Flange	Valve	Pump Seal	Other	Compressor	PRD	Fin Fan
Annual Leaks	2,286	254	928	100	436	44	28	268
Emission Factor (lb/hr)	0.066	0.209	0.141	0.196	0.181	0.181	0.181	0.066
Emissions (tons/year)	81.5	28.7	70.7	10.6	42.6	4.3	2.7	38.7

The total amount of VOC emissions associated with leaks greater than 5,000 ppm is estimated at 279.8 tons per year.

VOC emissions associated with these larger leaks can be reduced with more frequent inspections using OGI devices. The emissions and associated reductions with each OGI inspection schedule are listed in the Table 2-19 below:

Table 2-19 OGI Emission Reductions by Inspection Frequency				
	Every 2 Months	Monthly	Every 2 Weeks	Weekly
Leak Emissions (tons/year)	167.1	83.5	39.0	19.5
Emission Reduction (tons/year)	112.7	196.2	240.8	260.3

Combining the costs with the associated emission reduction, Table 2-20 presents cost-effectiveness and incremental cost-effectiveness of each implementation schedule:

Table 2-20 OGI Cost-Effectiveness and Incremental Cost-Effectiveness by Inspection Frequency				
	Every 2 Months	Monthly	Every 2 Weeks	Weekly
Annual Cost	\$1,333,000	\$2,514,000	\$5,471,000	\$10,839,000
Emission Reduction (tons/year)	112.7	196.2	240.8	260.3
Cost-Effectiveness (per ton VOC)	\$11,800	\$12,800	\$22,700	\$41,600
Incremental Cost-Effectiveness (per ton VOC)		\$14,100	\$66,400	\$275,400

OGI component inspection frequency every month was found to be cost-effective and incrementally cost-effective.

### BARCT EMISSION LIMIT RECOMMENDATION SUMMARY

Based on the BARCT assessment, staff proposes to lower the leak standard for component category fitting, valve, other to 100 ppm, lower the leak standard for component category pump (light liquid), compressor to 400 ppm, set leak standards for fin fans to 100 ppm, and set an OGI inspection frequency of monthly. Table 2-21 below shows the cost-effectiveness for proposed requirements:

Table 2-21 BARCT Assessment Summary	
Proposed Requirement	Cost-Effectiveness (\$/ton)
100 ppm leak standard for component type fitting, valve, other	\$19,700
200 ppm leak standard for pressure relief devices	\$0 (No change)
400 ppm leak standard for component type pump (light liquid), compressor	\$27,000
100 ppm leak standard for component type fin fan	\$24,400
OGI component inspection frequency every month	\$12,800

## **CHAPTER 3: SUMMARY OF PROPOSALS**

---

**INTRODUCTION**

**PROPOSED AMENDED RULE STRUCTURE**

**PROPOSED AMENDED RULE 1173**

## INTRODUCTION

PAR 1173 lowers leak standards for certain types of components and adds OGI inspection requirements on components. PAR 1173 also includes ozone contingency measures to comply with federal requirements.

The following information describes the structure of PAR 1173 and explains the provisions incorporated from other source-specific rules. New provisions and any modifications to provisions that have been incorporated are also explained. PAR 1173 also includes grammatical and editorial changes for clarity.

## PROPOSED AMENDED RULE STRUCTURE

PAR 1173 will contain the following subdivisions:

- (a) Purpose*
- (b) Applicability*
- (c) Definitions*
- (d) South Coast AQMD Inspection Procedures*
- (e) Identification Requirements*
- (f) Self Inspection Requirements*
- (g) Leak Standards and Repair Requirements*
- (h) Atmospheric Process PRD Requirements*
- (i) Recordkeeping and Reporting Requirements*
- (j) Test Methods*
- (k) Ozone Contingency Measures*
- (l) Exemptions*
- (m) Interim Procedures and Requirements*

## PROPOSED AMENDED RULE 1173

### **Subdivision (a) Purpose**

The purpose of this rule is expanded to include reference to contingency measures to fulfill federal requirements and partial implementation of the 2022 AQMP.

### **Subdivision (b) Applicability**

The types of facilities applicable to this rule are not changed as a result of PAR 1173. Additional language was added to ensure subdivision (k) *Ozone Contingency Measures* is applicable upon approval by U.S. EPA.

### **Subdivision (c) Definitions**

Several definitions were added, deleted, or substantially modified for clarity and consistency. Subdivision-wide, definitions of each applicable facility type have been updated from older Standard Industrial Classification (SIC) code references to newer North American Industry Classification System (NAICS) code references. Note: NAICS codes are included for guidance only and are not meant to be a criterion for determining applicability. Other key definition changes are discussed below:



- 
- *Atmospheric Process PRD* – replaces existing definition for Process PRD for consistency with usage in rule language.
  - *Component* – modified to incorporate newly-defined “Fin Fan” component type.
  - *Compressor Seal* – added to fully explain the part of a compressor used for sealing purposes.
  - *Connector* – added to fully explain a type of fitting connection and part of other components.
  - *Contingency Measure* – added to implement federal requirements.
  - *Essential Component* – added to implement limited delay of repair provision for certain types of components that cannot be isolated.
  - *Facility* – definition deleted.
  - *Field Gas* – definition deleted.
  - *Fin Fan* – added to increase clarity and ensure accurate reporting.
  - *Fin Fan Plug* – added to increase clarity and ensure accurate reporting.
  - *Fitting* – modified to increase clarity and include examples.
  - *Flange* – added to fully explain a type of fitting connection and parts of other components or other equipment for connection and access for cleaning, inspection, and modification.
  - *Inspection* – modified to trifurcate existing “Operator Inspection” sub-definition into three new sub-definitions:
    - Audio-Visual-Olfactory (AVO) Inspection, by hearing, by sight, and by smell,
    - Optical Gas Imaging (OGI) Inspection, of multiple components simultaneously from a platform, ground level, or a vantage point, and
    - Analyzer Inspection, of individual components potential sources of leaks. Some elements of components, such as piping itself or fin fan tubes, are not considered potential sources of leaks.
  - *Leak* – modified to remove reference to liquid leaks.
  - *Optical Gas Imaging (OGI) Device* – added to implement OGI inspection requirements.
  - *Outage* – added to implement limited delay of repair and fin fan repair schedule, complementing defined term “turnaround”. A process unit temporarily in suspense and not in shutdown, with a fluid stream in recirculation such as in “hot standby mode”, does not meet the definition of an outage. In addition, a process unit shutdown lasting less than 24 hours does not meet the definition of an outage, consistent with federal regulations.
  - *Process PRD* – definition deleted and replaced by Atmospheric Process PRD definition.
  - *Process Unit* – added to ensure clarity and implement limited delay of repair and fin fan repair schedule
  - *Pump Seal* – added to fully explain the part of a pump used for sealing purposes.
  - *Refinery* – modified to ensure refineries that produce refined products but may use non-petroleum-based feedstock be and continue to be considered refineries.
  - *Repair* – modified to include newly-defined visible leaks and visible vapors and clarify that Repair may include replacing components and other actions.
  - *South Coast Air Basin* – added to implement federal requirements related to contingency measures.
  - *Visible Leak* – added by bifurcation from existing leak definition and clarified.
  - *Visible Vapors* – added to implement OGI inspection requirements.
-

Note: On October 24, 2008, South Coast AQMD issued a compliance advisory regarding Rule 1173 providing guidance regarding the term “encrypted” used within the definition of *tamper-proof*. In that context, encrypted was explained to include transmission and handling of the signal from the field device to the base radio. If the handling of the data from the base radio to the data storage device is wireless, that transmission shall be encrypted, and the data transmitted and stored within the data storage unit shall be labeled by date and time (i.e., data are date stamped). If the handling of the data from the base radio to the data storage device is transmitted through a hard-wired communication connection, then such equipment shall be considered *tamper-proof* as required by Rule 1173 if the data transmitted and stored within the data storage unit is labeled by date and time (i.e., data are date stamped). In addition, all changes to data transmitted from field device to the base radio and from the base radio to the data storage unit must be documented and available to the Executive Officer upon request.

#### **Subdivision (d) South Coast AQMD Inspection Procedures**

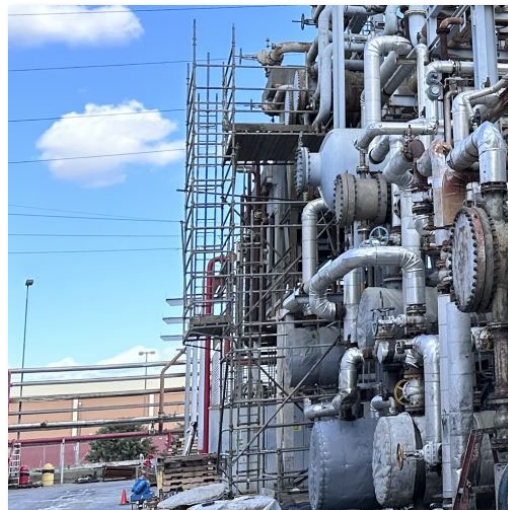
Formerly titled *Leak Standards*, PAR 1173 modifies existing South Coast AQMD (formerly referred to as “District” in rule language) inspection procedures. The former provisions have been moved to subdivision (m) – *Interim Procedures and Requirements*. Effective January 1, 2026, PAR 1173 reduces the violation standard for components in light liquid and gas/vapor service from the existing 50,000 ppm violation standard to a new 10,000 ppm violation standard and places this new violation standard and the existing 500 ppm violation standard for heavy liquids in new Table 1 – *Violation Standards*.

PAR 1173 also clearly identifies visible leaks, both light liquid and heavy liquid, as subject to Notice of Violation. Further, PAR 1173 replaces the existing Table 1 – *Leak Thresholds* violation pathway with a new OGI-based violation pathway pertaining to visible vapors from components in VOC service. Upon detection of visible vapors by South Coast AQMD personnel using an OGI device, PAR 1173 provides a pathway for the owner or operator to not be subject to a Notice of Violation for these visible vapors if able to concurrently demonstrate, using a Method 21 analyzer, that the component is emitting below the violation standard at the time of the visible vapors.

For inaccessible components, the owner or operator may demonstrate that the component is emitting below the violation standard within one (1) day. Staff believes with the use of extension probes, ladders, and lifts, one (1) day is sufficient to access inaccessible components with an analyzer for the purpose of determining VOC leak rate of components with visible vapors. In that demonstration, South Coast AQMD personnel need not be present, but the owner or operator must comply with U.S. EPA Method 21 procedures using an analyzer in calibration with proper documentation, such as monitoring logs and photographs. In either case, an owner or operator will

still be subject to a Notice of Violation if South Coast AQMD personnel, using an analyzer, finds that the leak exceeds violation standards, despite the findings from an owner or operator analyzer.

Note: The term *inaccessible component* is defined within Rule 1173 and refers to “permanent support surfaces” in that definition. Temporary scaffolding, as shown in Figure 3-1, or various forms of personnel lifts do not meet the definition of a “permanent support surface”, even if scaffolding remains onsite unconstructed or if lifts are available onsite.



**Figure 3-1 - Temporary scaffolding**

The provisions in the former paragraph (d)(2), which allowed a facility to adjust a leak measurement to exclude methane and ethane, have been removed.

#### **Subdivision (e) Identification Requirements**

PAR 1173 requires all major components, including fin fans, be tagged clearly and visibly and minor components to be identified in piping and instrumentation flow diagrams. PAR 1173 adds an additional tagging requirement for leaking components under repair. Individual fin fan plugs are not required to be tagged unless leaking.

#### **Subdivision (f) Self Inspection Requirements**

Formerly titled *Operator Inspection Requirements*, PAR 1173 sets and revises inspection schedules for the owner or operator.

AVO inspections of pumps, compressors, and atmospheric PRDs are required once per operating shift and are to occur no more than 12 hours apart, except at unmanned oil and gas production fields and pipeline transfer stations, those that are typically without onsite personnel during operations. Those unmanned facilities are now required to perform AVO inspections at least weekly. Previously, audio-visual inspection was required every eight hours and there was no requirement for those unmanned facilities.

Beginning January 1, 2026, OGI inspection of components in VOC service is required monthly, unless a component will be out of VOC service for more than 14 days of the month due to outage or turnaround. As noted in Chapter 2, the manufacturers of OGI devices report these are capable of inspecting up to 10,000 components per operating day. The nature of inspection with an OGI device differs from that with a Method 21 analyzer. While a Method 21 analyzer uses a component-by-component approach, OGI devices inspect multiple components at once. Staff does not expect operators to take a component-by-component approach with OGI devices. The operator of the OGI device must be trained to operate and maintain the device in accordance with manufacturer’s specifications. Visible vapors detected shall be repaired per subdivision (g) and recorded per subdivision (i).

In lieu of an OGI inspection, an alternative inspection method may be used if approved by U.S. EPA and the Executive Officer. Other agencies, such as the state of Colorado Department of Public Health & Environment (CDPHE), have several approved alternative inspection methods. Referred to as an Alternative Approved Instrument Monitoring Method (AIMM)<sup>1</sup>, they are for use by oil and gas facilities in that jurisdiction. If one of the methods were also approved by U.S. EPA, they may also be used in South Coast AQMD jurisdiction if approved.

Analyzer inspections by U.S. EPA Method 21 will continue to be conducted quarterly, with inaccessible components inspected annually. Beginning January 1, 2026, fin fans, including fin fan plugs, will be inspected with a Method 21 analyzer annually. Facilities may also continue to seek an alternative annual inspection schedule for certain categories of components. Existing rule language provides a path of relaxation of quarterly analyzer inspection towards annual analyzer inspection if certain analyzer and AVO inspection performance metrics are met and maintained. This rule language has been updated to include visible vapors detected with OGI camera in the same performance metrics and are now a criterion for approval or disapproval of an alternative annual inspection schedule. Staff also considered a path towards relaxation of monthly OGI inspection, as suggested by stakeholders. After careful consideration, staff did not include a path towards relaxation of monthly OGI inspection in these rule amendments because there is insufficient data to demonstrate relaxation is warranted.

Staff was also asked to consider alternative inspection schedules for certain types of “leakless” components, such as bellow-seal valves or magnetically-driven, or “mag-drive”, pumps. Staff encourages the use of these technologies in replacement of components, but, similar to OGI inspection, staff does not have data regarding the performance of these under an LDAR program. In future amendments, with sufficient data, relaxation of inspection frequencies of so-called “leakless” components may be justified.

#### **Subdivision (g) *Leaks Standards and Repair Requirements***

Formerly titled *Maintenance Requirements*, PAR 1173 revises leak standards at which the owner or operator must repair a component, effective January 1, 2026. The component category comprising types valve, fitting, and other device (diaphragm, hatch, sight-glass, or meter) must be repaired when above 100 ppm, formerly 500 ppm. Pumps in light liquid service and compressors must be repaired when above 400 ppm, also formerly 500 ppm. Two other categories of component, PRD and pump in heavy liquid service, remain at their existing leak standard of 200 ppm and 100 ppm, respectively. In addition, a new category of component is identified, fin fan, with a leak standard of 100 ppm. Leak standards are listed in Table 2 – *Component Leak Standards*.

Staff received feedback, data, and reports from several stakeholders regarding the impacts of lowering leak standards. Stakeholders reported that lowering leak standards would result in additional shutdowns to fix leaks. Minimizing additional startups and shutdowns is a key concern for South Coast AQMD, as evident by Rule 429.1 regarding Startup and Shutdown Provisions at Petroleum Refineries and Related Operations. In jurisdictions with a 100 ppm leak standard such as Bay Area AQMD, San Joaquin Valley APCD, or Santa Barbara County APCD, those jurisdictions allow for a delay of repair until the next scheduled shutdown to minimize additional

---

<sup>1</sup> <https://cdphe.colorado.gov/oil-and-gas-compliance-and-recordkeeping/approved-instrument-monitoring-method-aimm-for-oil-gas>

shutdowns. Staff is sensitive to impacts of additional shutdowns, not only for excess VOC emissions associated with shutdown and startup, but also oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), particulate matter (PM), oxides of sulfur (SO<sub>x</sub>), and other air contaminants. The impacts of recent shutdowns and startups reported to staff are summarized below:

Table 3-1 Impacts of Recent Shutdowns and Startups						
Occurrence	VOC (tons)	PM (tons)	NO <sub>x</sub> (tons)	CO (tons)	SO <sub>x</sub> (tons)	Opacity
2020Q3 Event	2.86	0.10	0.29	1.58	0.99	N/A
2020Q3 Event	3.35	0.11	0.18	1.57	0.32	N/A
2023Q1 Event	0.31	0.01	0.03	0.15	0.06	N/A
2023Q1 Event	N/A	N/A	2.32	8.04	1.05	> 140 hrs over 20%
2024Q2 Event	0.01	0.01	0.22	2.34	N/A	N/A
2024Q2 Event	N/A	N/A	0.20	N/A	0.07	N/A
Average	1.09	0.04	0.54	2.28	0.41	In excess of 20%

To minimize the possibility of PAR 1173 resulting in additional shutdowns and excess emissions associated with startup and shutdown, PAR 1173 allows for a limited number of valves and fittings, and pumps (light liquid) and compressors, to delay repair until the next shutdown of process unit that includes the component, expressed in Table 3 – *Limited Delay of Repair*. The allowable percentage of valves and fittings, and pumps (light liquid) and compressors, is 0.05%, respectively, lower than other jurisdictions. The allowable leak rate for both component categories is 500 ppm, also lower than other jurisdictions. The allowable period of delay for both component categories is until scheduled shutdown or unscheduled shutdowns longer than 24 hours, which is also stricter than other jurisdictions.

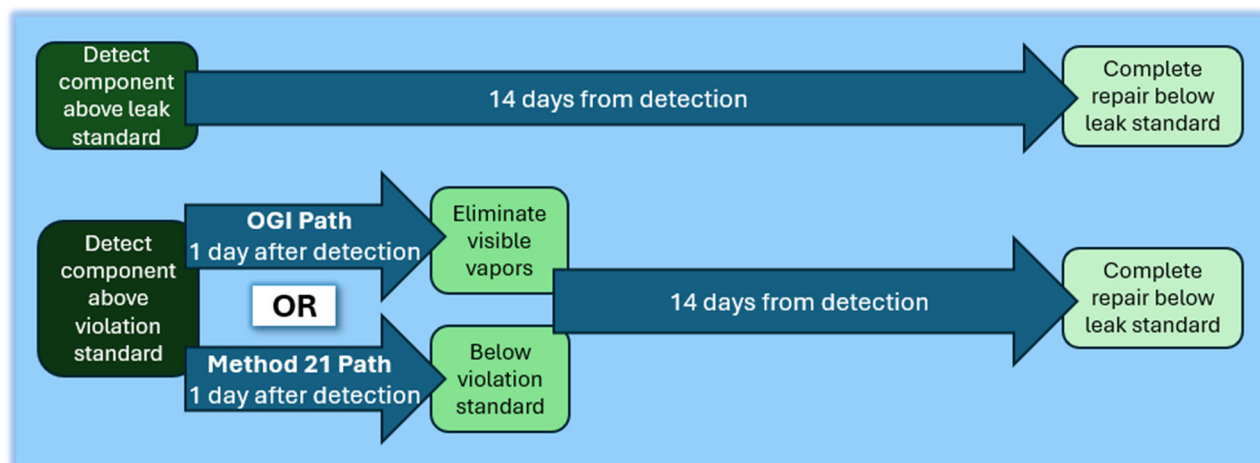
To determine unrealized VOC reductions associated with delay of repair, staff calculated VOC emission factors using Method 2 – Correlation Equation Method from the South Coast AQMD AER document. Using this method, staff determined the worst case scenario for valves and fittings: a flange component type emitting VOC at 500 ppm instead of 100 ppm. In this scenario, the component would emit 4.75 lbs of VOC per year. If each reporting facility were to allow 0.05% of valves and fittings, calculated to be 1,256 for all of South Coast AQMD, exclusively in the form of flanges to emit at 500 ppm instead of 100 ppm, unrealized VOC reductions are expected to be

3.0 tons of VOC per year or less than 0.01 tons of VOC per day. Using the same approach, the worst case scenario for a pump (light liquid) or compressor is a pump emitting VOC at 500 ppm instead of 400 ppm. The pump would emit 6.07 lbs of additional VOC per year. If each reporting facility were to allow 0.05% of its pumps or compressors to leak, there would be 178 for all of South Coast AQMD. For 178 pumps allowed to leak at 500 ppm instead of 400 ppm, unrealized VOC reductions are expected to be 0.54 tons VOC per year or about 0.001 tons VOC per day.

In comparison, a single startup/shutdown event on average generates 1.09 tons of VOC, 0.04 tons of PM, 0.54 tons of NO<sub>x</sub>, 2.28 tons of CO, 0.41 tons of SO<sub>x</sub>, and excess visible emissions. In the worst case, a startup/shutdown event was shown to generate 3.35 tons of VOC.

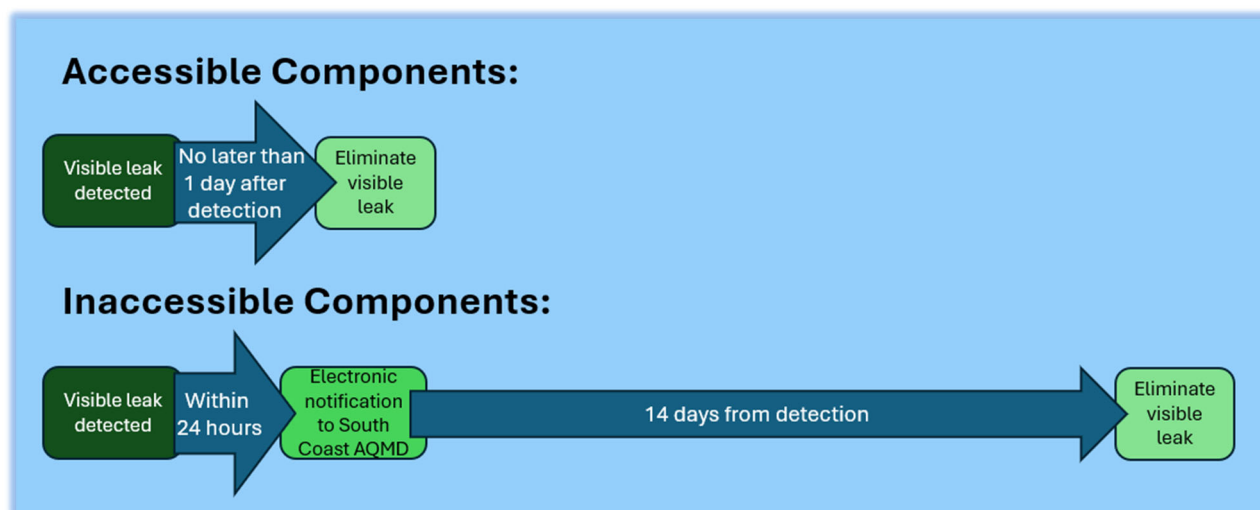
Staff also received feedback regarding applicable leak standards to different potential leak points, sometimes referred to as “subcomponents”. Components may contain multiple points of potential leakage. As noted in Chapter 1, a valve should be checked for leaks in at least two locations: at the valve stem and at the associated flange, and the 100 ppm leak standard for “Valve, Fitting, or other device” would apply. For a compressor or light liquid pump, each associated seal, connector, and flange should be checked for leaks and the 400 ppm leak standard for “Compressor or Pump (Light Liquid)” would apply for each of those potential leak sources. Lastly, for a PRD, each associated PRV, rupture disc, connector, and flange should be checked for leaks and the 200 ppm leak standard for “Pressure Relief Device (PRD)” would apply for each of these.

PAR 1173 deletes existing Table 2 – *Repair Periods*, reorganized as Table 6 – *Interim Repair Periods*, and adds repair schedules for leaks above a leak standard, visible leaks, and visible vapors with special consideration for fin fans. For components in VOC service, other than fin fans, above the applicable leak standard, the component must be repaired below the Table 2 – *Component Leak Standard* within 14 days of detection. For components above the applicable violation standard (10,000 ppm for light liquid or gas/vapor service, 500 ppm for heavy liquid service), within 1 calendar day, the leak must be reduced below the violation standard in Table 1 – *Violation Standards* or no longer be visible using an OGI camera. The component must be completely repaired below the applicable leak standard in Table 2 - *Component Leak Standards* within 14 days of detection, as shown below.



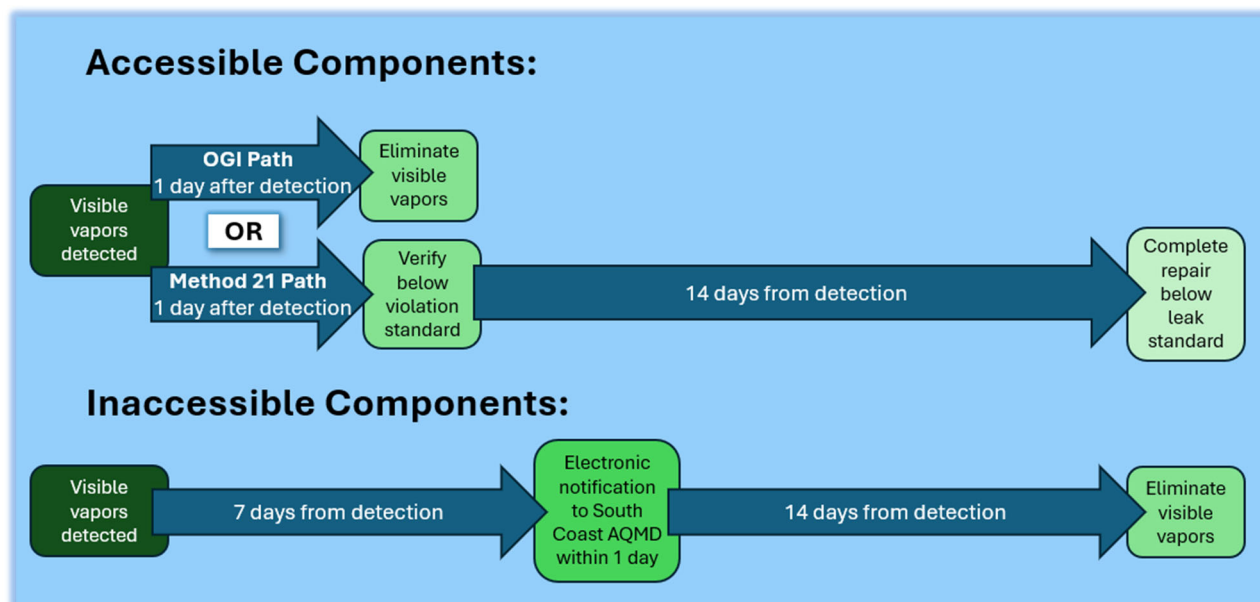
**Figure 3-2 – Repair pathways for leaks above standard detected via analyzer inspection**

For components in VOC service with visible leaks, other than fin fans, the visible leak must be eliminated by the next day. An operator finding a visible leak from an inaccessible component shall electronically notify the South Coast AQMD via [Rule1173Reports@aqmd.gov](mailto:Rule1173Reports@aqmd.gov) within 24 hours, and eliminate the visible leak within 14 days, as shown below.



**Figure 3-3 – Repair pathway for accessible and inaccessible visible leaks detected via AVO inspection or other means**

For components in VOC service with visible vapors, other than fin fans, the visible vapors must be eliminated by the next day. Alternatively, if visible vapor is determined to be below the violation standard in Table 1 – *Violation Standards*, repair instead must be completed within 14 days. An operator detecting visible vapors from an inaccessible component shall eliminate visible vapors within 14 days. If visible vapors are not eliminated within seven (7) calendar days of detection, the operator shall notify South Coast AQMD within eight (8) calendar days of detection electronically, or to [Rule1173Reports@aqmd.gov](mailto:Rule1173Reports@aqmd.gov) if approved, as shown below.

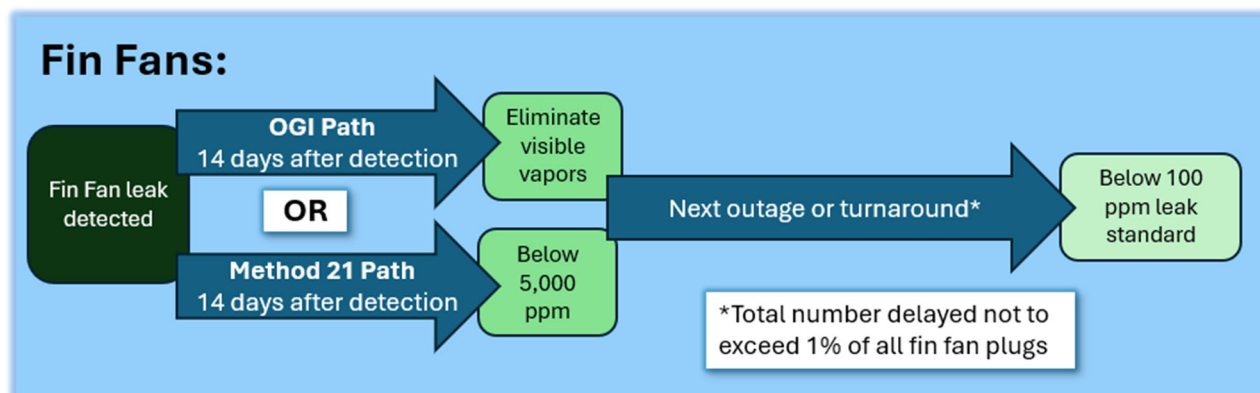


**Figure 3-4 – Repair pathways for accessible and inaccessible visible vapors detected via OGI inspection**

Lastly, for fin fans, because of the unique nature of fin fan plugs, PAR 1173 proposes a different approach to the repair schedule of fin fans. Stakeholders reported that to safely repair a fin fan plug while in operation, an engineered clamp must be designed and manufactured over several days to fit around the leaking fin fan plug. A heat-resistant sealant is injected and forms a seal around the plug, reducing leakage. The number of clamps that can be installed is limited by other clamps and other equipment nearby. Additionally, fin fans are often inaccessible, high off of ground level with access only by ladders, scaffolding, or lifts. By their nature as air-cooled heat exchangers, the surrounding air has elevated temperatures, posing additional challenges.

Staff is sensitive to these valid concerns. PAR 1173 requires repair of fin fans within 14 days to reduce leaks to below 5,000 ppm or eliminate visible vapors. For leaks between 100 ppm and 5,000 ppm, repair may be delayed until the next outage or turnaround, but these may not exceed 1% of all facility fin fan plugs. In the worst case scenario, delaying repair on 1% of fin fan plugs at 5,000 ppm, estimated to be as many as 2,520 out of 252,000 operating fin fan plugs, results in unrealized VOC emission reductions above the 100 ppm leak standard of 14.7 tons of VOC per year (0.04 tons per day). As shown in Chapter 2, a fin fan leak standard of 100 ppm results in VOC reductions of 42.2 tons per year.





**Figure 3-5 – Repair pathway for fin fan leaks detected**

### **Subdivision (h) Atmospheric Process PRD Requirements**

PAR 1173 removes obsolete rule language with achievement dates in the past. PAR 1173 also removes the 500 lbs VOC emission threshold for releases from atmospheric process PRDs to conduct a failure analysis and implement corrective actions, in order to align with federal requirements. PAR 1173 also updates the existing mitigation fee, added in 2002 at \$350,000, to account for inflation. The mitigation fee is now set at \$625,000 with annual adjustment for inflation based on the California Consumer Price Index (CPI), similar to the mechanism in Rule 320. The amount of the mitigation fee would be determined based on the date of the release event that triggered the mitigation fee. For releases that occur prior to July 1, the mitigation fee will be the revised fee as calculated on July 1 of the preceding year. For releases that occurred prior to the date of rule amendment, the original mitigation fee of \$350,000 would apply. The California CPI for the current year may be found here: <https://www.dir.ca.gov/oprl/CPI/PresentCCPI.PDF>. Historic California CPI from years 1955 to present may be found here: <https://www.dir.ca.gov/OPRL/CPI/EntireCCPI.PDF>.

For example, if a release triggering a mitigation fee were to occur on August 15, 2027, the owner or operator would refer to the annual average California CPI for All Urban Consumers for calendar year 2026, typically published in early 2027. Hypothetically, assume a value of 348.601. Next, obtain the annual average California CPI for All Urban Consumers for calendar year 2024. Assume a value of 335.122 for this example. Next, calculate a conversion factor by dividing the current value against the 2024 value, per the formula:

$$\text{Conversion Factor} = \frac{\text{Most recent annual average California CPI}}{\text{Calendar year 2024 annual average California CPI}}$$

For the example, the value would be (348.601 / 335.122) or 1.040. Multiple the mitigation fee by the conversion factor to obtain the current mitigation fee. For this example, the adjusted mitigation fee would be (1.040 \* \$625,000) or \$650,000.

### **Subdivision (i) Recordkeeping and Reporting Requirements**

PAR 1173 requires electronic reporting, including via email to [Rule1173Reports@aqmd.gov](mailto:Rule1173Reports@aqmd.gov) as the default method or web-based submission portals to be developed by South Coast AQMD

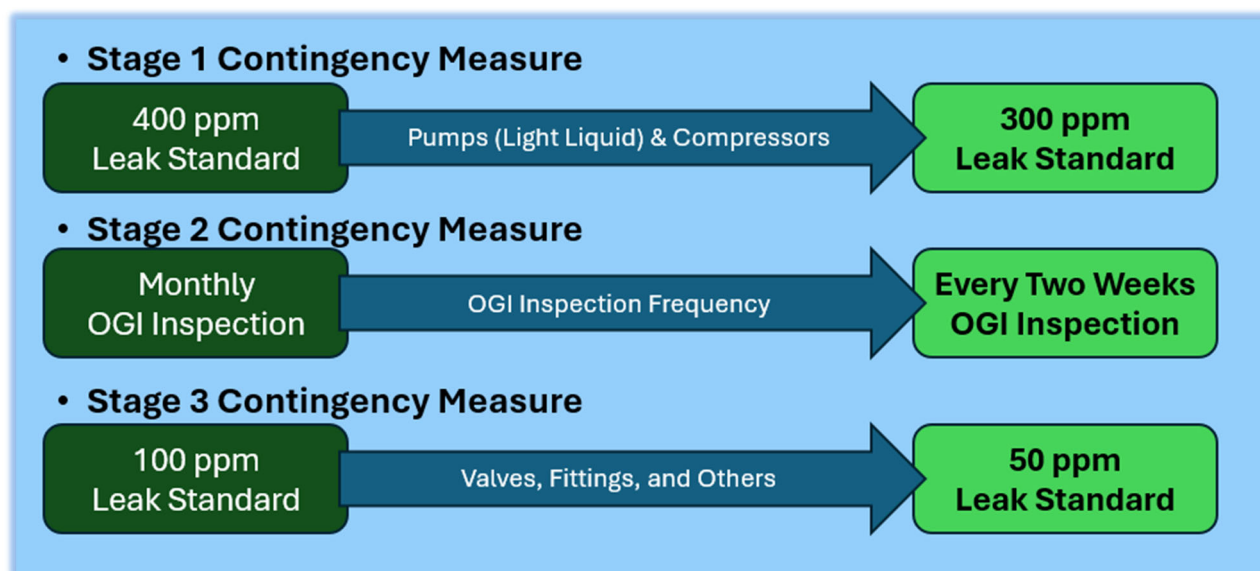
similar to U.S. EPA's Central Data Exchange (CDX) or CARB's California Electronic Greenhouse Gas Reporting Tool (Cal e-GGRT). Electronic reporting applies to all notifications and reports including leaks from inaccessible components, OGI inspection reporting, and reports regarding delay of repair. PAR 1173 also now requires five years of recordkeeping to be maintained to align with federal requirements. In addition, existing rule language regarding applicability of reporting of equipment breakdowns pursuant to Rule 430 has been moved from subdivision (g).

#### **Subdivision (j) Test Methods**

PAR 1173 updates the acceptable test methods to determine VOC content of gases by allowing ASTM Methods D 7833 and D 2163, along with the existing approved ASTM Method D 1945.

#### **Subdivision (k) Ozone Contingency Measures**

PAR 1173 deletes the entirety of the existing obsolete subdivision, formerly titled *Other Rules and Regulation Applicability*, and repurposes it for ozone contingency measures in the South Coast Air Basin to comply with federal requirements.



**Figure 3-6 – Ozone contingency measure pathway**

These contingency measures would only be implemented in the event that the U.S. EPA determines that the South Coast AQMD has failed to meet a reasonable further progress (RFP) milestone or to attain an ozone NAAQS, after amendments to Rule 1173 are approved by U.S. EPA to be included into the SIP. These contingency control measures are necessary as part of comprehensive efforts to timely attain ozone standards. The contingency measures would be triggered upon the issuance of a final determination by the U.S. EPA that the South Coast AQMD has failed to comply with either of the following requirements:

1. Meet any ozone RFP requirement in an attainment plan approved in accordance with section 51.1012; or
2. Attain the applicable ozone NAAQS by the applicable attainment date.

PAR 1173 includes three contingency measures for the South Coast Air Basin. The measures shall be implemented sequentially, starting with the Stage 1 contingency measure, then layering the Stage 2 contingency measure and then Stage 3 contingency measure if triggered, effective 60 days after issuance of each final determination. The first contingency measure reduces the leak standard of pumps to 300 ppm. Triggering the first contingency measure will result in an estimated additional 8.8 tons per year of VOC reduction. The second contingency measure will increase the frequency of OGI inspections to every two calendar weeks. Triggering the second contingency measure will result in an estimated additional 44.5 tons per year of VOC reduction. The third contingency measure will reduce the leak standard for valves, fittings, and other devices to 50 ppm. Triggering the third contingency measure will result in an estimated additional 166.4 tons per year of VOC reduction.

Contingency measures should provide for emission reductions approximately equivalent to either one year's worth of air quality improvement or one year's worth (OYW) of reductions needed for RFP in the years following RFP milestone and attainment years. While the proposed amendments in Rule 1173 satisfy a 'triggering mechanism' requirement set by the U.S. EPA, the reductions from the rule alone are not adequate to satisfy the OYW of progress, which is calculated as the percentage of the base year emission inventory (EI) the annual rate of reductions represents of either NO<sub>x</sub> or VOC (or combined) per year. See the equation below for an example.

$$\frac{(\text{base year EI} - \text{attainment year EI})}{(\text{attainment year} - \text{base year})} \div \text{base year EI} \times \text{attainment year EI} = \text{OYW of Progress}$$

Contingency measures are required to result in emission reductions within one year of a final action by the U.S. EPA. It would be challenging to implement more stringent requirements, achieving additional NO<sub>x</sub> or VOC reductions, in rules involving other traditional sources within the mandated one-year time period. Retrofitting or replacement of existing equipment with newer technologies or equipment, or any permitting provisions would likely take more than one year to effectively implement. Conversely, the proposed amendment to Rule 1173 does not require permitting of units, does not require units be retrofitted or replaced, and does not require reformulation or development of new products. Consequently, Rule 1173 is well suited for contingency provisions since implementing lower leak standards or higher frequency OGI monitoring could be implemented in less than 60 days following the triggering of a contingency measure with resulting emission reductions occurring in less than one year.

Based on the above analysis, the South Coast AQMD will satisfy, in part, the contingency requirements ~~for set in~~ CAA section 172(c)(9) and the U.S. EPA's Ozone Implementation Rule with these proposed amendments to Rule 1173. PAR 1173 provides contingency measures to be triggered if the South Coast Air Basin fails to meet RFP or attain the applicable ozone standards (2008 & 2015 8-hour ozone NAAQS) by the applicable date. The emission reductions anticipated from PAR 1173, in conjunction with reductions from existing rules and regulations, are expected to achieve the reductions equivalent to or more than OYW of progress. In the future, South Coast AQMD will consider preparing a State Implementation Plan revision that includes an infeasibility justification for contingency measures that achieve less than OYW of reductions. ~~PAR 1173 addresses the contingency measures for RFP and attainment for the applicable ozone standards (2008 & 2015 8-hour ozone NAAQS).~~

**Subdivision (l) Exemptions**

PAR 1173 expands on an existing exemption for safety to exempt unsafe repairs and clarifies that the schedule for repair does not begin until the component is safe to repair. PAR 1173 also adds an exemption for unsafe OGI inspections. If the owner or operator conducting an OGI inspection at a facility determines that it is unsafe to climb a platform or other area due to safety concerns such as wind or slippery surfaces from rain, the facility is not required to conduct an inspection from the area. An OGI inspection must be conducted the first day the owner or operator determines it safe to do so. An owner or operator is required to document the date that a required inspection was not completed and the reason.

**Subdivision (m) Interim Procedures and Requirements**

PAR 1173 adds interim procedures and requirements from the date of rule amendment until January 1, 2026, for what leaks are subject to a Notice of Violation and when to repair components, expressed as Table 4 – *Interim Violation Standards*, Table 5 – *Interim Leak Standards*, and Table 6 – *Interim Repair Periods*, respectively. These interim procedures and requirements largely reflect existing procedures and requirements in Rule 1173.

## **CHAPTER 4: IMPACT ASSESSMENTS**

---

**INTRODUCTION**

**EMISSION REDUCTIONS**

**COSTS AND COST-EFFECTIVENESS**

**INCREMENTAL COST-EFFECTIVENESS**

**SOCIOECONOMIC IMPACT ASSESSMENT**

**CALIFORNIA ENVIRONMENTAL QUALITY ACT**

**DRAFT FINDINGS UNDER HEALTH & SAFETY CODE SECTION 40727**

**COMPARATIVE ANALYSIS**

## INTRODUCTION

Impact assessments were conducted as part of PAR 1173 rule development to assess the environmental and socioeconomic implications. These impact assessments include emission reduction calculations, cost-effectiveness and incremental cost-effectiveness analyses, a socioeconomic impact assessment, and a California Environmental Quality Act (CEQA) analysis. Staff prepared draft findings and a comparative analysis pursuant to Health and Safety Code Sections 40727 and 40727.2, respectively.

## EMISSION REDUCTIONS

PAR 1173 achieves VOC emission reductions largely through two strategies: 1) lowering VOC leak standards for components to reduce baseline VOC emissions associated with components in compliance with the rule; and 2) reducing the persistence of larger VOC leaks by requiring OGI inspections more frequently than current analyzer inspections to reduce VOC emissions associated with components not in compliance with the rule.

For a detailed analysis of the projected VOC emission reductions, please refer to Chapter 2 and Chapter 3. Total VOC emission reductions from the proposed amended rule are 2.03 tons per day. A summary of the expected VOC emission reductions is listed in Table 4-1.

Table 4-1 Emission Reductions from Proposed <u>Amended</u> Rule		
Proposed Requirement	VOC Emission Reductions (tons per year)	VOC Emission Reductions (tons per day)
Lower leak standard for component type valve, fitting, other to 100 ppm	507.8	1.39
Valve, fitting delay of repair offset	(3.0)	(0.01)
Lower leak standard for component type fin fan to 100 ppm	42.2	0.12
Fin Fan delay of repair offset	(14.7)	(0.04)
Lower leak standard for component type pump (light liquid), compressor to 400 ppm	12.2	0.03
Pump (light liquid), compressor delay of repair offset	(0.5)	(< 0.01)
Monthly OGI Inspection of all components in VOC service	196.2	0.54
Overall	740.1	2.03

Below is a summary of expected additional VOC emission reductions for contingency measures:

Table 4-2 Emission Reductions from Contingency Measures		
Contingency Measure	Additional VOC Emission Reductions (tons per year)	Additional VOC Emission Reductions (tons per day)
Lower leak standard for component type pump (light liquid), compressor from 400 ppm to 300 ppm	8.8	0.02
OGI Inspection every two weeks of all components in VOC service	44.5	0.12
Lower leak standard for component type valve, fitting, other from 100 ppm to 50 ppm	166.4	0.46
Overall	219.8	0.60

### COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires a cost-effectiveness analysis when establishing BARCT requirements. The cost-effectiveness of a control is measured in terms of the control cost in dollars per ton of air pollutant reduced. The costs for the control technology include purchasing, installation, operation, maintenance, and permitting. Emission reductions were calculated for each requirement and based on estimated baseline emissions. The 2022 AQMP established a cost-effectiveness threshold of \$36,000 per ton of VOC reduced. After adjusting for inflation, the cost-effectiveness threshold is \$40,170 per ton of VOC reduced (2023 U.S. Dollars). A cost-effectiveness that is greater than the threshold of \$40,170 per ton of VOC reduced requires additional analysis and a hearing before the Governing Board on costs.

The cost-effectiveness is estimated based on the present value of the retrofit cost, which was calculated according to the capital cost (initial one-time equipment and installation costs) plus the annual operating cost (recurring expenses over the useful life of the control equipment multiplied by a present worth factor). Capital costs are one-time costs that cover the components required to assemble a project. Annual costs are any recurring costs required to operate equipment. Costs for this proposal were obtained from available literature, vendors, and facilities.

Details regarding costs and cost-effectiveness determinations are included in Chapter 2. The overall cost-effectiveness of the proposed amended rule is \$18,800 per ton of VOC reduced. The cost-effectiveness for each proposed requirement and the overall cost-effectiveness is summarized in the Table 4-3 below.

Table 4-3 Summary of Cost-Effectiveness			
Proposed Requirement	Annualized Cost	Annual VOC Reductions (tons per year)	Cost-Effectiveness (\$/ton)
Lower leak standard for component type valve, fitting, other to 100 ppm	\$10,019,000	507.8	\$19,700
Lower leak standard for component type pump (light liquid), compressor to 400 ppm	\$329,000	12.2	\$27,000
Lower leak standard for component type fin fan to 100 ppm	\$1,027,000	42.2	\$24,400
Monthly OGI Inspection of all components in VOC service	\$2,514,000	196.2	\$12,800
Delay of repair offsets	\$0	(18.2)	\$0
Overall	\$13,889,000	740.1	\$18,800

### INCREMENTAL COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for BARCT rules or emission reduction strategies when there is more than one control option which would achieve the emission reduction objective of the proposed amendments, relative to ozone, CO, SO<sub>x</sub>, NO<sub>x</sub>, and their precursors. Since volatile organic compounds are precursors to ozone, an incremental cost-effectiveness analysis is required for controls proposed to limit VOC emissions. Incremental cost-effectiveness is the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control options as compared to the next less expensive control option.

Incremental cost-effectiveness is calculated as following:

$$\text{Incremental Cost} \cdot \text{Effectiveness} = \frac{\text{Cost of Option 2} - \text{Cost of Option 1}}{\text{Benefit of Option 2} - \text{Benefit of Option 1}}$$

Details regarding costs and incremental cost-effectiveness determinations are included in Chapter 2. The incremental cost-effectiveness for each next more stringent proposed requirement is summarized in the Table 4-4 below.



Table 4-4 Summary of Incremental Cost-Effectiveness			
Next More Stringent Proposed Requirement	Incremental Annualized Cost	Incremental Annual VOC Reductions (tons per year)	Incremental Cost-Effectiveness (\$/ton)
Further lowering leak standard for component type valve, fitting, other from 100 ppm to 50 ppm	\$14,419,000	166.5	\$86,600
Further lowering leak standard for component type fin fan from 100 ppm to 50 ppm	\$1,384,000	12.3	\$112,700
Further lowering leak standard for component type pump (light liquid), compressor from 400 ppm to 300 ppm	\$417,000	8.8	\$47,700
More frequent OGI Inspection, from monthly to every two weeks	\$2,958,000	44.5	\$66,400

## SOCIOECONOMIC IMPACT ASSESSMENT

~~A socioeconomic impact assessment has been conducted and was released for public review and comment as a separate document at least 30 days prior to the South Coast AQMD Governing Board Hearing for PAR 1173, which is scheduled for November 1, 2024 (subject to change).~~

A Draft Socioeconomic Impact Assessment for PAR 1173 was released for public review and comment on October 1, 2024. The Final Socioeconomic Impact Assessment is available in the November 1, 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 1173) is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption ~~will be~~ has been 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 & SAFETY CODE SECTION 40727

### Requirements to Make Findings

Health and Safety Code Section 40727 requires that the Governing Board 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. In order to determine compliance with Health and Safety Code Section 40727, Health and Safety Code Section 40727.2

requires a written analysis comparing the proposed amended rule with existing regulations, if the rule meets certain requirements.

#### **Necessity**

A need exists to amend PAR 1173 to implement best available retrofit control technology, emission reduction strategies recommended in the WCWLB CERP as part of the AB 617 commitment, and Control Measure FUG-01 in the 2022 Final AQMP, and contingency measures for the 2008 and 2015 ozone NAAQS.

#### **Authority**

The South Coast AQMD obtains its authority to adopt, amend, or repeal rules and regulations pursuant to Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, 40920.6, and 41508.

#### **Clarity**

PAR 1173 is written or displayed so that its meaning can be easily understood by the persons directly affected by them.

#### **Consistency**

PAR 1173 is in harmony with and not in conflict with or contradictory to existing statutes, court decisions, or state or federal regulations.

#### **Non-Duplication**

PAR 1173 will not impose the same requirements as any existing state or federal regulations. The proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

#### **Reference**

In amending this rule, the following statutes which the South Coast AQMD hereby implements, interprets or makes specific are referenced: Health and Safety Code Sections 39002, 40001, 40406, 40702, 40440(a), and 40725 through 40728.5.

### **COMPARATIVE ANALYSIS**

Under Health and Safety Code Section 40727.2, the South Coast AQMD is required to perform a comparative written analysis when adopting, amending, or repealing a rule or regulation. The comparative analysis is relative to existing federal requirements, existing or proposed South Coast AQMD rules and air pollution control requirements and guidelines which are applicable to components. Table 4-5 below is a comparison of PAR 1173 to federal fugitive emission rules. There are no other South Coast AQMD rules pertaining to components subject to PAR 1173. Also included, table 4-6 below is a comparison of PAR 1173 to other air district fugitive emission rules.

<b><u>Table 4-5 – Comparison of PAR 1173 to federal and other South Coast AQMD fugitive emission rules</u></b>		
<b><u>Regulation</u></b>	<b><u>PAR 1173</u></b>	<b><u>40 CFR 60 VV/VVa, 40 CFR 60 GGG/GGGa, &amp; 40 CFR 63 CC</u></b>
<b><u>Applicability</u></b>	<ul style="list-style-type: none"> <li>• <u>Refineries</u></li> <li>• <u>Chemical Plants</u></li> <li>• <u>Re-refiners</u></li> <li>• <u>Marine Terminals</u></li> <li>• <u>Oil and Gas Production Fields</u></li> <li>• <u>Natural Gas Processing Plants</u></li> <li>• <u>Pipeline Transfer Stations</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>Refineries</u></li> <li>• <u>Chemical Plants</u></li> <li>• <u>Onshore natural Gas Processing Plants</u></li> </ul>
<b><u>Inspection Requirements</u></b>	<ul style="list-style-type: none"> <li>• <u>Monthly via OGI for all components</u></li> <li>• <u>Quarterly via Method 21 for accessible components</u></li> <li>• <u>Annually via Method 21 for inaccessible components</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>Monthly via Method 21 or alternative methods for pumps in light liquid service and valves in light liquid or gas/vapor service</u></li> </ul>
<b><u>Leak Standards</u></b>	<ul style="list-style-type: none"> <li>• <u>100 ppm for most components</u></li> <li>• <u>200 ppm for PRDs</u></li> <li>• <u>400 ppm for pumps (light liquid) and compressors</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>10,000 ppm for most components</u></li> <li>• <u>500 ppm for PRDs</u></li> </ul>
<b><u>Repair Schedule for visible vapors or other large leaks</u></b>	<u>1 day</u>	<u>15 days</u>
<b><u>Failure Analysis or similar</u></b>	<u>For any release from atmospheric process PRD</u>	<u>For any release from atmospheric process PRD</u>
<b><u>Recordkeeping and Reporting</u></b>	<ul style="list-style-type: none"> <li>• <u>Recordkeeping required</u></li> <li>• <u>Quarterly reporting</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>Recordkeeping required</u></li> <li>• <u>Semi-annual reporting</u></li> </ul>
<b><u>Ozone Contingency Measures</u></b>	<u>Yes</u>	<u>No</u>

**Table 4-6 – Comparison of PAR 1173 to other air district fugitive emission rules**

<b>Rule</b>	<b>PAR 1173</b>	<b>8-18</b>	<b>4409</b>	<b>4455</b>	<b>331</b>
<b>Jurisdiction</b>	South Coast AQMD	Bay Area AQMD	San Joaquin Valley APCD		Santa Barbara APCD
<b>Applicability</b>	<ul style="list-style-type: none"> <li>• Refineries</li> <li>• Chemical Plants</li> <li>• Re-refiners</li> <li>• Marine Terminals</li> <li>• Oil and Gas Production Fields</li> <li>• Natural Gas Processing Plants</li> <li>• Pipeline Transfer Stations</li> </ul>	<ul style="list-style-type: none"> <li>• Refineries</li> <li>• Chemical Plants</li> <li>• Bulk Plants</li> <li>• Bulk Terminals</li> </ul>	<ul style="list-style-type: none"> <li>• Light crude Production Facilities</li> <li>• Natural Gas Production Facilities</li> <li>• Natural Gas Processing Facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Petroleum Refineries</li> <li>• Gas Liquids Processing Facilities</li> <li>• Chemical Plants</li> </ul>	<ul style="list-style-type: none"> <li>• Refineries</li> <li>• Chemical Plants</li> <li>• Oil and Gas Production Fields</li> <li>• Oil and Gas Processing Plants</li> <li>• Pipeline Transfer Stations</li> </ul>
<b>Requirements</b>					
<b>Leak Standard</b>					
<i>Valve &amp; Fitting</i>	100 ppm	100 ppm	500 ppm	200-400 ppm	1,000 ppm
<i>Other devices</i>	100 ppm	100 ppm	500 ppm	500-1,000 ppm	1,000 ppm
<i>Pump (Light) &amp; Compressor</i>	400 ppm	500 ppm	500 ppm	500-1,000 ppm	1,000 ppm
<i>Pump (Heavy)</i>	100 ppm				
<i>PRD</i>	200 ppm	500 ppm	200-400 ppm	100-200 ppm	1,000 ppm
<i>Fin Fan</i>	100 ppm	None	None	None	None
<b>Repair Schedule</b>	1-14 days	7-15 days	1-7 days	1-14 days	1-14 days
<b>Liquid Leak Repair Schedule</b>	1 day	7 days	1 day	1 day	1 day
<b>OGI Inspection</b>	Required	Not required	Referenced	Referenced	Not required
<i>OGI Inspection Frequency</i>	Monthly	N/A	Not required	Not required	N/A
<b>Delay of Repair</b>					

<i>Valve &amp; Fitting</i>	Allowed until outage or turnaround • 0.05% of total • 500 ppm max	Allowed until turnaround, 5 years max • 0.15% of total • 10,000 ppm max			
<i>Other devices</i>	Not allowed	Not allowed			
<i>Pump (Light) &amp; Compressor</i>	Allowed until outage or turnaround • 0.05% of total • 500 ppm max	Allowed until turnaround, 5 years max • 0.5% of total • 10,000 ppm max	Allowed until turnaround, 1 year max • No cap • No max	Allowed until turnaround, 1 year max • No cap • No max	Allowed until turnaround, 1 year max • No cap • No max
<i>Pump (Heavy)</i>	Not allowed				
<i>PRD</i>	Not allowed	Allowed until turnaround, 5 years max • 0.5% of total • 10,000 ppm max			
<i>Fin Fan</i>	Allowed until outage or turnaround • 1% of total • 5,000 ppm max	N/A	N/A	N/A	N/A
<b>Recordkeeping and Reporting</b>	• Inspection, leak, and PRD reporting • 5 year retention	• Inspection, leak, and PRD reporting • 5 year retention	• Limited leak reporting only • 5 year retention	• PRD release reporting only • 5 year retention	• Reporting not required • 2 year retention
<b>Ozone Contingency Measures</b>	Yes	No	No	No	No

## **APPENDIX A: RESPONSE TO COMMENTS**

---

**PUBLIC WORKSHOP COMMENTS  
COMMENT LETTERS**

## Public Workshop Comments

### Public Workshop Commenter #1 – Neal Davenport, Davenport Engineering

The commentor requested the following:

- 1-A) Clarity regarding cost effectiveness for OGI for facilities with fewer than 5,000 components.
- 1-B) Consideration for exemption or other consideration for facilities with fewer than 5,000 components.

### Staff Response to Public Workshop Commenter #1

- 1-A) Cost effectiveness for OGI may be calculated for facilities with fewer than 5,000 components using the same assumptions used in the BARCT assessment of OGI inspection, scaled for the number of components present on site. For example, for a facility with 2,500 components, monthly OGI inspection is expected to cost approximately \$2,400 per year. VOC emission reductions associated with these 2,500 components, identifying large VOC leaks monthly instead of quarterly, are expected to be 376 lbs, or 0.19 tons, per year. Cost effectiveness is expected to be \$12,800 per ton of VOC emission reduction.

For facilities with fewer than 5,000 components, staff expects these facilities to contract OGI inspection to a third-party or, if multiple smaller facilities are all under common ownership, they may choose to purchase their own OGI camera and inspect multiple facilities in one operating day. The choice to contract OGI inspections or purchase an OGI device is a business decision up to each individual owner or operator as PAR 1173 does not require an OGI device to be maintained onsite at a facility.

Also, these smaller facilities with components in VOC service subject to PAR 1173 are often subject to other South Coast AQMD rules already requiring OGI inspection including Rule 463 regarding VOC storage tanks and Rule 1148.1 regarding oil and gas production wells. Staff expects these facilities to take advantage of synergies between these VOC rules and may perform OGI inspections of VOC storage tanks, oil and gas production wells, and components in VOC service by the same contractors or the same OGI device and personnel, lowering the actual cost effectiveness in real world practice.

- 1-B) Staff is sensitive to the concerns of small business and facilities with fewer than 5,000 components. PAR 1173 does not require facilities to own or to maintain an OGI camera onsite and make a large capital investment over \$100,000. Staff has identified several contractors already performing OGI inspection in the South Coast air basin which may be more appropriate for the needs of a small operator. Additionally, the same leak detection equipment can be utilized over several rules (Rule 463, Rule 1148.1, Rule 1178) to help reduce costs.

### Public Workshop Commenter #2 – Jessica Paquette, Matrix Oil

The commentor expressed the following:

- 2-A) Concerns regarding cost assumptions, especially those from San Joaquin Valley APCD.
- 2-B) Interest in pilot study using laser detection for methane leaks instead of OGI inspection.

**Staff Response to Public Workshop Commenter #2**

- 2-A) Staff has evaluated cost assumptions from San Joaquin Valley APCD and refined several cost assumptions. First, staff has compared prevailing wage rates in Los Angeles County for various crafts and classifications as published by the California Department of Industrial Relations and found all average hourly wages for trade groups expected to perform repair to be less than the hourly rate used by San Joaquin Valley APCD (\$133/hour). Second, several cost assumptions have been refined as a result of stakeholder feedback, including adjusting the cost of annual OGI maintenance, the daily labor cost to operate OGI devices, and the cost of fin fan plug repair while in operation.
- 2-B) This rulemaking project evaluated several “smart LDAR” technologies, including open path laser detection, gas sensors, and OGI. For the purpose of detecting leaks from the more than 2.6 million components in South Coast AQMD, OGI was found to be the most appropriate. PAR 1173 does contain a provision that in lieu of OGI inspection, another approach may be used if approved by U.S. EPA and the Executive Officer.

**Public Workshop Commenter #3 – Derek Marin, Vista Paint Corporation**

The commentor requested the following:

- 3-A) Correct the NAICS code associated with facility type Chemical Plant to 3252.
- 3-B) Ensure that non-VOCs like water are not captured within the definition of heavy liquid, which is defined as less than ten (10) percent VOC by volume.

**Staff Response to Public Workshop Commenter #3**

- 3-A) Rule language has been updated to reflect NAICS code 3252 - Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing.
- 3-B) PAR 1173 exempts components handling fluids with a VOC content of ten (10) percent by weight or less, thus a non-VOC liquid like water would not be considered a heavy liquid.

**Public Workshop Commenter #4 – Alok Das, World Oil Recycling**

The commentor expressed the following:

- 4-A) Eliminate the requirement for OGI monitoring in months when quarterly analyzer inspection will also be taking place as it is redundant.
- 4-B) More transparency regarding rule changes with side-by-side rule language comparison between existing rule language and new rule language in presentations.

**Staff Response to Public Workshop Commenter #4**

- 4-A) Staff leaves in place monthly OGI inspection without exemption. Monthly OGI inspection without exemption was found to be cost-effective and incremental cost-effective. Many, but not all, facilities have inaccessible components which are inspected annually, not quarterly, and those specific components would require OGI inspection if they were not inspected by analyzer in a given calendar month. This increases the complexity and burden of compliance on facilities to keep track of which components need and do not need OGI inspection each month. In addition, staff has noted many contractors routinely carry an



OGI device to help locate leaks when performing analyzer inspections, so staff feels monthly OGI inspection requirements reflects existing best management work practice and performed a BARCT assessment on this practice.

- 4-B) Staff appreciates this feedback regarding presentations and already incorporates side-by-side rule language comparison between existing rule language and new rule language in drafts of rule language with tracked changes.

#### **Public Workshop Commenter #5 – Oscar Espino-Padron, Earth Justice**

The commentor requested the following:

- 5-A) For staff to respond to written recommendations regarding PAR 1173 submitted by Earth Justice together with Communities for a Better Environment, Center for Biological Diversity, California Communities Against Toxics, and the Del Amo Action Committee.
- 5-B) Clarification regarding the triggering of ozone contingency measures.

#### **Staff Response to Public Workshop Commenter #5**

- 5-A) The comment letter from Earth Justice and others along with associated responses to those written comments are located later in this Appendix.
- 5-B) Ozone contingency measures (CMs) come into effect after publication by U.S. EPA of that the South Coast Air Basin has failed to comply with the 2008 or 2015 ozone NAAQS, either by not making RFP, failing to attain either NAAQS, or failing to meet a milestone. Three (3) ozone CMs are listed in PAR 1173 and CMs are triggered sequentially with the Stage 1 CM occurring first, Stage 2 CM second (with Stage 1 CM still in effect), and lastly Stage 3 CM last (with all CMs in effect).

#### **Public Workshop Commenter #6 – Greg Busch, AltAir Paramount**

The commentor expressed the following:

- 6-A) Consideration for flexibility for OGI inspection for smaller facilities with fewer components.

#### **Staff Response to Public Workshop Commenter #6**

- 6-A) See Response 1-B2.

#### **Public Workshop Commenter #7 – “Pearl”, Resident of West Long Beach**

The commentor expressed the following:

- 7-A) Concerns about fuels transition plans and phase out infrastructure.

#### **Staff Response to Public Workshop Commenter #7**

- 7-A) PAR 1173 does not address fuels transitions plans or phase out infrastructure. Details regarding fuels transition plans and related infrastructure can be found in the 2022 Air Quality Management Plan.

---

**Public Workshop Commenter #8 – Ramine Ross, Western States Petroleum Association (WSPA)**

The commentor requested the following:

- 8-A) Clarification of expectations of newly defined term “OGI Inspection”.
- 8-B) Additional time for discussion of key issues.

**Staff Response to Public Workshop Commenter #7**

- 8-A) Staff expects OGI inspections to differ from analyzer inspections. While analyzer inspections utilize U.S. EPA Method 21 and are performed component-by-component, OGI inspections are expected to observe multiple components simultaneously and not individual components.
- 8-B) South Coast AQMD has rescheduled this project from its original October 2024 Governing Board meeting to the November 2024 Governing Board meeting to allow additional discussion.

**Public Workshop Commenter #9 – Kristy Monji-Chung, NV5**

The commentor requested the following:

- 9-A) Additional information regarding CARB OGI training.
- 9-B) Costs associated with ongoing OGI training.

**Staff Response to Public Workshop Commenter #9**

- 9-A) At the present time, the California Air Resources Board offers OGI training to regulators only, such as CARB or South Coast AQMD staff, and not to the regulated community.
- 9-B) According to OGI device manufacturers, the cost of operator training is included in the capital cost of the OGI device. PAR 1173 does not require annual or periodic operator training and as such, costs associated with OGI training are not included in the analysis.

**Public Workshop Commenter #10 – Julia May, Communities for a Better Environment (CBE)**

The commentor expressed the following:

- 10-A) Support for previous comments by Earth Justice and “Pearl”. Commentor also expressed, based on monitoring, that actual VOC emissions may be underreported and U.S. EPA emission factors may be underestimating VOC emissions. Commentor also stated costs associated with repair may be overestimated and operators may save money by reducing leaks and reducing product loss.
- 10-B) Possible cost savings associated with OGI inspection versus analyzer inspection.
- 10-C) Evaluation of impact of reduction of benzene and other toxics associated with leak reduction.

**Staff Response to Public Workshop Commenter #10**

- 10-A) Staff appreciates these comments. Regarding VOC calculations, staff did not rely on original U.S. EPA factors and equations and instead relied on the most current and best available factors and correlation equations available, consistent with past rulemaking projects concerning Rule 1173. The methods employed were from document “Guidelines for Reporting VOC Emissions from Component Leaks” last revised in 2015 for the purposes of South Coast AQMD Annual Emission Reporting. The document comprises refinements of “California Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities”, dated February 1999, prepared by the California Air Pollution Control Officers Association (CAPCOA) and CARB. In turn, many of that document’s factors and correlation equations are derived with refinements from U.S. EPA Protocol, dated November 1995, entitled “1995 Protocol for Equipment Leak Emission Estimates”.
- 10-B) As staff is leaving in place the existing analyzer inspection requirements, staff did not identify a cost reduction associated with OGI inspection versus analyzer inspection. In future rulemaking, if supported by data and technology improvements, OGI inspection may someday reduce or replace analyzer inspection and realize cost savings.
- 10-C) Staff expects some co-benefits in the form of reduction of benzene and other toxics by reducing VOC emissions. Toxic emission reductions are not subject to cost-effectiveness and are not including in the cost-effectiveness or incremental cost-effectiveness analyses.

**Public Workshop Commenter #1 – Mr. Davenport**

The commentor requested the following:

- 1-C) Clarity regarding possible trigger dates for ozone contingency measures.

**Staff Response to Public Workshop Commenter #1**

- 1-C) These contingency measures would only be implemented in the event that U.S. EPA determines that South Coast AQMD has failed to meet an RFP milestone or has failed to attain an ozone NAAQS. Staff expects U.S. EPA to issue a final determination regarding attainment with the 2008 ozone NAAQS no sooner than 2032 and a determination for the 2015 ozone NAAQS no sooner than 2037. In addition, while contingency measures could also be triggered for failure to meet an RFP milestone, South Coast AQMD has never failed to meet an RFP milestone in its history and remains confident it will not in the foreseeable future.

## Comment Letters

### Comment Letter #1



**Ramine Ross**  
Senior Manager, Southern California Region

July 10, 2024

**Michael Morris**  
Planning and Rules Manager  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Via e-mail at: [mmorris@aqmd.gov](mailto:mmorris@aqmd.gov)

***Re: SCAQMD Proposed Amended Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants: WSPA Comments on Working Group Meeting #3 & Working Group Meeting #4***

Dear Mr. Morris,

Western States Petroleum Association (WSPA) appreciates the opportunity to participate in the rulemaking process for the South Coast Air Quality Management District (SCAQMD or District) Proposed Amended Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants (PAR 1173). The stated purpose of this rulemaking is to revise the current leak standards and leak detection and repair (LDAR) program requirements established in Rule 1173 in response to control measures proposed in the 2022 Air Quality Management Plan (AQMP) and objectives listed in the State Assembly Bill 617 (AB 617) Community Emission Reduction Plan for the Wilmington, Carson, West Long Beach (WCWLB) community.<sup>1,2</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 PAR 1173.

WSPA offers the following comments following the third Working Group Meeting held on June 12, 2024.<sup>3</sup> WSPA is also providing comment in advance of the fourth Working Group Meeting, which is scheduled for July 11, 2024.<sup>4</sup>

<sup>1</sup> SCAQMD PAR 1173 Working Group Meeting #1. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-wgm-1.pdf?sfvrsn=12>.

<sup>2</sup> Community Emissions Reduction Plan, Wilmington, Carson, West Long Beach. Available at: <https://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/ceqp/final-cep-wcwb.pdf?sfvrsn=8>.

<sup>3</sup> SCAQMD PAR 1173 Working Group Meeting #3. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-wgm3.pdf?sfvrsn=8>.

<sup>4</sup> SCAQMD PAR 1173 Working Group Meeting #4. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-wgm4.pdf?sfvrsn=6>.

July 10, 2024  
Page 2

Comment  
1-1)

1. WSPA remains concerned about the District's intended use of Optical Gas Imaging (OGI) technologies with the proposed amended rule and seeks additional clarity on how OGI inspections will be utilized.

While WSPA supports the use of OGI as a sensor technology for enhanced leak detection, the technology has operability concerns, including but not limited to:

- Wide and varied detection thresholds, currently ranging between 2,000 and 5,000 parts per million (ppm). Note that OGI only sees VOC as "smoke" above the detection threshold, it cannot quantify the concentration.
- Sensitive to environmental factors such as wind, heat, and humidity.
- Does not work in low light conditions, limiting monitoring time during winter.
- Varied reading quality as the technology is generally dependent on the ability and judgement of the operator, which impacts the reliability and repeatability of results.
- In a congested piping complex, it could be difficult to locate the leak source.

Because of these concerns, WSPA seeks additional discussion on how these considerations will be addressed as part of the proposed OGI inspection program.

The presentation slides for Working Group Meeting #4 detail an initial rule framework. Under Subdivision (g), Staff is proposing a 1-hour requirement for electronic notification to SCAQMD following the detection of visible leaks and vapors.<sup>5</sup> After a detection, facilities must undergo a number of activities immediately following to help address the detection, and notification within 1 hour of detection may not be feasible. WSPA recommends that PAR 1173 notification provisions be consistent with those in the recently adopted Rule 1178, which state that an owner/operator notify SCAQMD within 24 hours after the inspection is completed.<sup>6</sup>

Comment  
1-2)

2. SCAQMD has proposed revised leak standards for components, repair of which may need to be delayed depending on the component. Additionally, as touched upon in Working Group Meeting #3, the detection of leaks by OGI in unsafe or otherwise inaccessible areas could necessitate a delay of repairs until proper scaffolding and support infrastructure can be erected. The rule must include language that allows for delay of repair in such situations.

SCAQMD has proposed revised leak standards as follows:<sup>7</sup>

Component Type	Current Rule 1173 Standard (ppm)	Proposed Amended Rule 1173 Standard (ppm)
Valves and Fittings	500	100
Pumps and Compressors	500	400
Pressure Relief Devices	200	200

<sup>5</sup> Ibid.

<sup>6</sup> SCAQMD Rule 1178(h)(2)(A). Available at: <https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1178.pdf?sfvrsn=4>.

<sup>7</sup> SCAQMD PAR 1173 Working Group Meeting #3. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-wqm3.pdf?sfvrsn=8>.

July 10, 2024  
Page 3

SCAQMD has acknowledged that delay of repair for components is allowed in other air districts in order to reduce emissions associated with shutdown and startup operations.<sup>8</sup> SCAQMD reported it had conducted an evaluation of variance petitions and concluded that delay of repair for components appears unnecessary.<sup>9</sup> This evaluation has not been presented to stakeholders so the scope or methodology used is unknown. Furthermore, the District's analysis was inherently based on the current leak standard (i.e., not the current proposal). Staff have not considered whether a lower leak standard would impact the necessity for delay of repair provisions.

In Working Group Meeting #3, SCAQMD noted that scaffolding is in place for required Method 21 inspections.<sup>10</sup> However, OGI cameras may find leaks in locations where there is a lack of safe access to the component. Time would be needed to safely erect scaffolding before such a repair could be completed.<sup>11</sup> Once access is gained, a Method 21 inspection should be conducted to quantify the leak, and repair of the component should follow the existing Rule 1173 Table 2 timelines.

Additionally, for components that are determined to be accessible, WSPA recommends that the District consider a subsequent Method 21 inspection following an OGI inspection when visible vapors are detected, such that the repair timeline of the identified leaking component can then follow the existing Rule 1173 Table 2 timelines. SCAQMD should also consider a timeframe allowance for this Method 21 inspection to be completed, in order to allow an additional inspector with the proper equipment to be deployed.

WSPA recommends that the District work with refineries to develop a delay of repair provision that includes a critical analysis of what is necessary based on revised leak standards and a feasible timeline for safe access to leaking components identified by OGI.

Comment  
1-3)

- 3. Staff's methane provisions would impose a direct compliance obligation on a pollutant for which SCAQMD does not have the regulatory authority. These are incorrectly labeled as a co-benefit and should be removed from the proposed rule.

In the development of regulations, a co-benefit is a secondary benefit that is achieved indirectly through the primary regulatory action. For example, a regulation with the intended purpose of reducing NOx criteria pollutant emissions from diesel-fired engines would likely generate a co-benefit from the reduction of toxic air contaminants achieved by the same action taken to reduce NOx emissions. Staff's methane proposal does not qualify as a co-benefit because it would impose direct compliance obligations on methane emissions; not merely recognize a co-benefit resultant from a volatile organic compound (VOC) compliance obligation. SCAQMD notes in Working Group Meeting #3:<sup>12</sup>

<sup>8</sup> Ibid.  
<sup>9</sup> Ibid.  
<sup>10</sup> Ibid.  
<sup>11</sup> Ibid.  
<sup>12</sup> Ibid.

July 10, 2024  
Page 4

"Components in natural gas service would likely be inspected via OGI inevitably due to their close proximity to VOC components, adding de minimis [sic] burden."

WSPA does not believe that to be the case. Besides the fact that natural gas components are not always co-located with VOC components (for example a natural gas fired boiler), there will be a burden to routinely monitor them. There could be thousands of components in a refinery, which will need to be tagged and identified. We acknowledge that facilities may choose on their own to monitor natural gas components as a good practice. However, the District is proposing that facilities would be required to repair leaking components in natural gas service where the leaks are detected by OGI, thus adding a direct compliance obligation for natural gas. These actions would make natural gas a regulated compound under PAR 1173 and would not qualify as a co-benefit. Requiring such actions would be inappropriate under PAR 1173, and the District should maintain the current rule exemption for components exclusively handling commercial natural gas.<sup>13</sup>

Comment  
1-4)

4. **The District must maintain an appropriate process for this rulemaking development by holding technical workshops to detail and gather stakeholder feedback on any significant technical revision to the proposed amended rule prior to the release of the draft rule language. In addition to the technical elements of this proposed rule, SCAQMD must develop and discuss the expected timeline for implementation of these proposals before the draft rule language is released.**

At Working Group meetings for recent rulemakings, Staff have stated that the goals of the stakeholder input process include:<sup>14</sup>

- To receive input from stakeholders throughout the rulemaking process, with early input important for providing Staff the opportunity to work towards resolving issues;
- To develop a proposal that all facilities can comply with and that meets the objectives of the proposed rule or proposed amended rule; and
- To encourage facilities to meet with Staff to discuss any concerns, unique situations, etc.

It is important that District staff allow sufficient time for stakeholder input during key steps in the rulemaking process, especially during the development of proposals, to ensure that the proposals meet the intended purpose of the rulemaking in a technically feasible and cost-effective manner. Although complications that may be revealed through this process could cause delay the rulemaking from the District's intended timeline, it is more beneficial for the

<sup>13</sup> SCAQMD Rule 1173(i)(1)(C). Available at: <https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1173.pdf?sfvrsn=4>

<sup>14</sup> SCAQMD Proposed Amended Rules 1147, 1100, and Proposed Rule 1147.1, Working Group Meeting #1. February 28, 2019. Available at: [https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1147.2-1147-1100/part1147\\_wg1\\_02202019\\_final.pdf?sfvrsn=2](https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1147.2-1147-1100/part1147_wg1_02202019_final.pdf?sfvrsn=2).

SCAQMD Proposed Amended Rule 1178, Working Group Meeting #1. March 17, 2021. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1178/part1178-wgm1-final.pdf?sfvrsn=6>.

SCAQMD Proposed Rule 1460, Working Group Meeting #1. March 16, 2022. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1460/proposed-rule-1460-wgm-1-03162022.pdf?sfvrsn=15>.

SCAQMD Proposed Amended Rule 1180, Working Group Meeting #1. January 25, 2023. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/rule-1180---wgm-1---final-version.pdf?sfvrsn=40>.

July 10, 2024  
Page 5

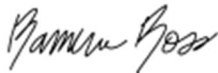
District to have implemented robust and fully developed proposals rather than risk future administrative and technical challenges that may otherwise occur.

The proposed programs are complex and resource intensive, and their overall costs will depend on the timeline for implementation. SCAQMD has not yet discussed the timeline under which these actions would be phased in or otherwise need to be implemented by facilities. The proposed timeline must be presented to stakeholders prior to release of Draft Rule Language so that stakeholders have the ability to provide feedback on the feasibility of the District proposal.

To allow for continued thoughtful discussion on these issues, WSPA is requesting that Staff be allowed more time to develop the 75-day package. Working backwards from an October Governing Board presentation, the planned release of the 75-day package is currently slated for late July. WSPA is appreciative to Staff for all the work and discussion that has been completed so far – site visits, stakeholder meetings, Working Group Meetings, etc. However, as shared in this letter, there are still significant concerns on the feasibility, implementation and cost in the proposed rule concepts that need to be explored and discussed further.

WSPA appreciates the opportunity to provide these comments related to PAR 1173. 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 [ross@wspa.org](mailto:ross@wspa.org).

Sincerely,



Cc: Wayne Nastri, Executive Officer, SCAQMD  
Sarah Rees, Deputy Executive Officer, SCAQMD  
Michael Krause, Assistant Deputy Executive Officer, SCAQMD  
Rodolfo Chacon, Program Supervisor, SCAQMD  
Areio Soltani, Air Quality Specialist, SCAQMD  
Mayor Pro Tem Larry McCallon, Stationary Source Committee Chair  
Ron Ketcham, Board Assistant  
Debra Mendelsohn, Board Assistant  
Supervisor Holly Mitchell, Stationary Source Committee Vice Chair  
Lorraine Lundquist, Board Assistant  
Patty Senecal, Senior Director, WSPA



**Staff Responses to Comment Letter #1**

- 1-1) To address operability concerns, the proposed amended rule requires OGI operators to be trained. Also see staff response to Public Workshop Comment 8-1 regarding OGI inspection expectations. Regarding notification to South Coast AQMD of visible leaks and visible vapors, staff has revised requirements. For the case of visible vapors, notification is required only in the case of inaccessible visible vapors not repaired within 7 days. For the case of visible leaks, notification is required only in the case of inaccessible visible leaks and notification is now required within 12 hours instead of one (1) hour.
- 1-2) Minimizing additional startups and shutdowns is a key concern for South Coast AQMD, as evident by Rule 429.1 regarding Startup and Shutdown Provisions at Petroleum Refineries and Related Operations. Staff is sensitive to impacts of additional shutdowns, not only for excess VOC emissions associated with shutdown and startup, but also oxides of nitrogen (NOx), carbon monoxide (CO), particulate matter (PM), oxides of sulfur (SOx), and other air contaminants. As a result, PAR 1173 now includes delay of repair provisions for component type valve or fitting, which comprise 99% of all reported components, component type pump (light liquid) or compressor, as well as fin fans and associated fin fan plugs.
- 1-3) Staff has removed all draft commercial natural gas provisions and requirements from PAR 1173. While staff is cognizant that the South Coast AQMD Governing Board, as expressed through the 2022 AQMP, asked staff to look for co-benefits with greenhouse gas programs in various rulemaking projects, staff concluded because the primary constituents of commercial natural gas, methane and ethane, are explicitly exempted as VOCs in Rule 102, including non-VOCs in a VOC rule is not appropriate at the present time.
- 1-4) South Coast AQMD has rescheduled this project from its original October 2024 Governing Board meeting to the November 2024 Governing Board meeting to allow additional discussion.

## Comment Letter #2

COMMUNITIES  
FOR A BETTER  
ENVIRONMENT  
established 1978



July 26, 2024

VIA: ELECTRONIC MAIL ONLY (mkrause@aqmd.gov)

South Coast Air Quality Management District  
Attn: Michael Krause, Assistant Deputy Executive Officer  
21865 Copley Drive  
Diamond Bar, California 91765

Re: **South Coast AQMD Proposed Amended Rule 1173 (Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants)**

Dear Mr. Krause:

The undersigned organizations submit this comment letter regarding South Coast AQMD Proposed Amended Rule (PAR) 1173. Additionally, we may provide further comments after the public workshop scheduled for today, July 26. As you know, component leaks are the largest source of VOC emissions at petroleum refineries, including hazardous VOCs that are known to cause cancer and other health harms. The proposed updates to this regulation are critical to reducing VOC emissions in the region, particularly for communities in Wilmington, Carson, and West Long Beach exposed daily to VOC releases from routine oil refinery operations. In fact, staff calculations determined the proposed updates to Rule 1173 would reduce VOC emissions by as much as 680.7 tons per year, or 1.86 tons per day. While we appreciate the District's diligent efforts to complete updates to this rule, we offer the following important recommendations to strengthen the proposed rule:

- **The District must provide additional clarity regarding reinspections under PAR 1173 subparagraph (f)(3)(D), which requires that a facility conduct an analyzer inspection “[a]fter every Repair of a Component within 30 days of Repair.”**

Under PAR 1173 subparagraph (g)(2)(B), a facility is required to repair a component within “14 calendar days of detection.”<sup>1</sup> For this reason, operators must take a contemporaneous leak measurement after conducting a repair to

<sup>1</sup> Existing Rule 1173 subparagraph (g)(1) (Table 2 – Repair Periods) provides repair timeframes. Operators are then required to “[i]nspect all repaired or replaced components within 30 days of the repair or replacement” under subparagraph (f)(1)(F).

Comment  
2-1)

confirm the leak has been controlled within the required 14-day timeframe. After conducting the repair and confirming the leak rate is below applicable thresholds, under PAR 1173 subparagraph (f)(3)(D), a facility must then conduct a follow-up inspection within 30 days of the repair—which could take place after this 14-day repair period—to confirm the effectiveness of the corrective action. Based on quarterly inspection reports, however, refineries are not conducting and logging these reinspections. In its rule and staff report, the District must clarify how these reinspections should be conducted. The District must also note that reinspections are required to occur within 30 calendar days of the repair.

Comment  
2-2)

- The District must provide automatic inflation adjustments for mitigation fees required under PAR 1173 subparagraph (h)(6), which applies when a facility elects not to connect all atmospheric process PRDs to a vapor recovery or other control system.

Under PAR 1173 subparagraph (h)(6), the District is proposing to raise mitigation fees for VOC releases from \$350,000 to \$625,000 to adjust for inflation. A facility is required to notify the District that it intends to pay a mitigation fee rather than utilize vapor recovery or other control systems. The District, however, does not provide a mechanism that automatically adjusts for inflation, meaning that any increases in mitigation fees would require additional rulemaking. This would create delays in implementing mitigation fees and undermine their purpose to deter significant releases of VOCs. In fact, the District recently recognized this issue in updating mitigation fees under Rule 1118—in that rulemaking, the District noted “adjusting mitigation fees annually utilizing the consumer price index going forward serves as a deterrent to flaring and incentivize[s] facilities to minimize flaring emissions.”<sup>2</sup>

Comment  
2-3)

- The District must clarify the implementation of ozone contingency measures under PAR 1173 subparagraph (k) to avoid any confusion as to when these measures must be implemented by facilities subject to this regulation.

Under PAR 1173 subparagraph (k), the District proposes three ozone contingency measures that would be implemented “upon the issuance of a final determination by U.S. EPA that the South Coast Air Basin has failed to comply

<sup>2</sup> South Coast AQMD, *Staff Report - Proposed Amended Rule 1118 – Control of Emissions from Refinery Flares* (Mar. 2024), <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1118/par-1118-draft-staff-report-april-5-2024.pdf?sfvrsn=32> [<https://perma.cc/8E9U-4P3C>].

Comment  
2-4)

with” either “an RFP requirement in an approved attainment plan for the 2008 or 2015 ozone NAAQS” or attainment of “the 2008 or 2015 ozone NAAQS by the applicable date.” PAR 1173 subparagraph (2)(A) then provides that each individual contingency measure would be “effective 60 days after issuance of each final determination.” The amended rule then lists the three contingency measures without elaborating on how each of these measures would be phased in based on two attainment deadlines. The District should clarify how it expects these measures will be implemented to avoid any ambiguity.

- **The District must incorporate third-party audit requirements to ensure that all components at these facilities are identified and properly inspected for compliance with PAR 1173 emission limits.**

PAR 1173 does not provide additional measures to ensure that facilities are complying. The District cannot rely solely on facilities to self-report and on occasional onsite inspections by District staff. At a minimum, the District must require periodic third-party compliance audits of LDAR programs that include verification monitoring of a subset of components, review of quarterly inspection records, component identification procedures, data management procedures, calibration methods, training in monitoring techniques, identification of omitted components, and misclassification of components. These are common issues in LDAR programs that are often unaddressed. The audit report should be made publicly available and submitted to the District for review. The audits should provide detailed findings and a schedule to address any deficiencies identified by the contractor.

\*\*\*

We appreciate your consideration of these concerns and recommendations. We hope that staff will address these issues in the proposed amended rule.

Sincerely,

Oscar Espino-Padron  
Senior Attorney  
Earthjustice Los Angeles Office

Julia May  
Senior Scientist  
Communities for a Better Environment

Maya Golden-Krasner  
Deputy Director  
Climate Law Institute  
Center for Biological Diversity

Jane Williams  
Executive Director  
California Communities Against Toxics

Cynthia Babich

3 of 4

Founder and Director  
Del Amo Action Committee

cc: Mike Morris, Planning & Rules Manager (mmorris@aqmd.gov)  
Rodolfo Chacon, Program Supervisor (rchacon@aqmd.gov)  
Areio Soltani, Air Quality Specialist (asoltani@aqmd.gov)

**Staff Responses to Comment Letter #2**

- 2-1) The requirement of PAR 1173 to inspect following repair is identical in intent to existing Rule 1173, with only minor changes in rule language for phrasing and to replace previously undefined terms with newly-defined term “repair”. Staff has revised rule language to read “30 calendar days” for additional clarity.
- 2-2) PAR 1173 now includes an automatic adjustment of the mitigation fee based on the California Consumer Price Index. The language is consistent with South Coast AQMD Rule 320 which provides an automatic adjustment for the fees set forth in Regulation III.
- 2-3) See staff response to Public Workshop Comments 1-3 and 5-2 regarding ozone contingency measures.
- 2-4) Staff believes that South Coast AQMD personnel conducting periodic inspections with OGI devices and Method 21 analyzers as well as review of facility records provides sufficient oversight of owner or operator self-inspections. While some facilities do utilize third-party contractors, staff does not see a need to require it within the rule.

### Comment Letter #3



Ramine Ross  
Senior Manager, Southern California Region

August 8, 2024

Michael Morris  
Planning and Rules Manager  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Via e-mail at: [mmorris@aqmd.gov](mailto:mmorris@aqmd.gov)

**Re: SCAQMD Proposed Amended Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants: WSPA Comments on Preliminary Draft Rule Language and Preliminary Draft Staff Report**

Dear Mr. Morris,

Western States Petroleum Association (WSPA) appreciates the opportunity to participate in South Coast Air Quality Management District (SCAQMD or District) Proposed Amended Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants (PAR 1173). The stated purpose of this rulemaking is to revise the current leak standards and leak detection and repair (LDAR) program requirements established in Rule 1173 in response to control measures proposed in the 2022 Air Quality Management Plan (AQMP) and objectives listed in the State Assembly Bill 617 (AB 617) Community Emission Reduction Plan for the Wilmington, Carson, West Long Beach (WCWLB) community.<sup>1,2</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 PAR 1173.

WSPA offers the following comments following release of the Preliminary Draft Rule Language and Preliminary Draft Staff Report (PDSR) on July 19, 2024.<sup>3,4</sup>

<sup>1</sup> SCAQMD PAR 1173 Public Workshop. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-pw.pdf?sfvrsn=8>

<sup>2</sup> Community Emissions Reduction Plan, Wilmington, Carson, West Long Beach. Available at: <https://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/cecp/final-ecrp-wcwb.pdf?sfvrsn=8>

<sup>3</sup> Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants. July 19, 2024 Draft. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-preliminary-draft-rule-language-par-1173-clean.pdf?sfvrsn=6>

<sup>4</sup> Preliminary Draft Staff Report. Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plant. July 2024. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-preliminary-draft-staff-report-par-1173.pdf?sfvrsn=8>

August 8, 2024  
Page 2

Comment  
3-1)

1. Based on the proposed changes to the definition of "Fitting" in PAR 1173, it appears that SCAQMD intends for the rule to apply to fin fan plugs, a type of component that does not fall under the current Rule 1173. WSPA does not believe fin fan plugs should be subject to the rule. Staff has not contemplated the additional population of components that this would bring under the rule, nor the increased cost of inspecting and repairing the components.

The proposed revisions to the definition for Fitting would broaden the set of fittings that are subject to the rule to arguably include fin fan plugs. Fin fan plugs are a type of heat exchanger, and heat exchangers have not historically been subject to the rule. If brought under the rule, this would introduce a significant number of new components into facilities' LDAR inventories. There would be increased costs associated, not only with more Method 21 inspections and OGI inspections, but also for repairs of these components, many of which cannot be isolated for repair or repaired during service due to the high temperatures and pressures of operation. The increased costs associated with inspecting and repairing these components must be considered in Staff's cost-effectiveness analysis, along with the increased emissions that can result from the startup/shutdown necessary to perform repairs. If Staff incorporates these costs and emissions into their analysis and determines the 100-ppm threshold to still be cost-effective, then WSPA would request additional delay-of-repair provisions specific to fin fan plugs to allow repair to occur during the next scheduled turnaround.

Comment  
3-2)

2. The proposals to require identification on all Major Components and quarterly Analyzer Inspections on all Accessible Components, as well as the proposal to remove the exemption for components exclusively handling fluids with a VOC content of ten percent or less, could potentially bring hundreds of thousands of new components under PAR 1173 that have previously not been included. The costs associated with these requirements would be vastly different than what has been represented in the District's analyses to date. The existing exemptions for heavy liquid components should be retained.

The existing Rule 1173 specifies that quarterly Method 21 analyses (i.e., Analyzer Inspections) be conducted for all Accessible Components in vapor or light liquid service and all pumps in heavy liquid service; other components in heavy liquid service are not included under this requirement, as stated in Section (f)(3). The same is true for identification requirements under Section (e) for Major Components. The District's proposal to revise these requirements to remove the exception for non-pump heavy liquid components would bring thousands of new components under the rule. This, in combination with the proposal to remove the exemption for components exclusively handling fluids with a VOC content of ten percent or less (Section (l)(1)(D)) and the exemption for components handling liquids with a flash point greater than 250 °F (Section (l)(4)), would effectively require Method 21 inspections on all heavy liquid components currently exempt from Rule 1173.

Removing these exemptions would result in a dramatic expansion of the rule and would require each facility to hire several new employees to handle tagging, updating Piping and



August 8, 2024  
Page 3

Instrumentation Diagrams (P&IDs), conducting the inspections, and repairing components. The costs associated with these requirements would be significantly greater than what has been suggested in the District's analyses to date. The existing exemptions in Rule 1173 for Heavy Liquid components should be retained and the existing definition of Heavy Liquid in PAR 1173(c)(13) should retain reference to the test method listed in Section (j)(3) - ASTM Test Method D93.

Comment  
3-3)

3. **There are going to be situations where addressing a repair is unsafe, inaccessible, or infeasible to be completed within the proposed 14 calendar days. The rule must include language that allows for a sufficient delay of repair in such situations.**

SCAQMD has acknowledged that delay of repair for essential equipment or critical components is allowed in other air districts in order to reduce emissions associated with shutdown and startup operations.<sup>5</sup> SCAQMD reported it had conducted an evaluation of past variance petitions before the South Coast Hearing Board and concluded that delay of repair for essential equipment of critical components seemed to be unnecessary.<sup>5</sup> SCAQMD has not presented this evaluation to stakeholders so the scope and approach employed is not known, nor is the methodology used to reach the presented conclusion. The District's analysis was necessarily contingent on the current leak standard (i.e., not the current proposal) since that is what any prior variance records would have reflected. Staff's analysis has not considered whether the lower leak standard proposed for critical components under PAR 1173 would have impacted the necessity for a delay of repair provision.

WSPA recommends that the District work with facilities to develop a delay of repair provision that includes a critical analysis of what is necessary based on revised leak standards and a feasible timeline for safe access to leaking components identified by OGI.

Comment  
3-4)

4. **WSPA remains concerned about the District's intended use of Optical Gas Imaging (OGI) technologies as a mechanism for determining compliance with PAR 1173. Facilities should have the opportunity to conduct a focused Method 21 inspection in instances where OGI has identified a positive detection.**

While WSPA supports the use of OGI as a technology for enhanced leak detection, the technology has wide detection thresholds, currently ranging between 2,000 and 5,000 parts per million (ppm) and is also very sensitive to environmental factors such as heat and humidity. The reading quality using OGI technology is also dependent on the skills and judgement of the operator, which can impact the reliability and repeatability of results. Taken together, this technology is not suitable as a direct mechanism for determining compliance. Rather, following detection of a leak exceeding the proposed Component Leak Standards, Staff should consider allowing facilities to first confirm the leak using Method 21 before the 14-day repair timeline automatically starts. If facilities can demonstrate via Method 21 that a leak falls below the applicable standard, then no repair would be needed. If, however, the

<sup>5</sup> Ibid.  
<sup>6</sup> Ibid.

August 6, 2024  
Page 4

leak is confirmed to exceed the applicable standard, then the 14-day repair timeline would begin.

Comment  
3-5)

5. WSPA recommends that the proposed language in PAR 1173(f)(2) and 1173(k)(2)(B) be adjusted to remove the requirement for inspection of "each component" during OGI inspection, so as not to imply that OGI inspections must be conducted on an individual basis for all components subject to the rule.

As defined in PAR 1173, an OGI Inspection is a survey of components. An OGI Inspection can function as a survey of just one component at a time or several components at once. For the purpose of efficiency, facilities should not be required to conduct individual OGI Inspections on a component-by-component basis. As such, WSPA suggests that the proposed language in Sections (f)(2) and (k)(2)(B) should be adjusted to remove the phrase "of each Component".

Comment  
3-6)

6. SCAQMD has not explained why electronic notification should be required when Visible Vapors are detected from Inaccessible Components, as proposed in PAR 1173(g)(6). Submitting a notification for every visible leak detected would be very time-consuming. WSPA requests removal of this requirement. Facilities would prefer to indicate leaks using leak tags at ground level, or by an alternative method to be designated by the facility.

Comment  
3-7)

7. Staff have not provided a basis for including the proposed contingency measures in PAR 1173. Staff have also not provided an explanation for how including these more stringent control levels comports with the District's Health & Safety Code obligations for establishment of BARCT. Staff should provide justification for including these measures or remove them from PAR 1173.

The District has included three Contingency Measures (CMs) in PAR 1173, which are proposed to be implemented upon determination by USEPA that the South Coast Air Basin has failed to meet certain federal air quality requirements. Staff has arbitrarily selected what these CMs would entail, without demonstrating the basis. As presented at the Public Workshop held on July 26, 2024, Staff found that the CMs were not incrementally cost-effective.<sup>7</sup> This is documented in Staff's PDSR analysis, which presented incremental cost-effectiveness values ranging from \$47,700 to \$115,600 per ton of VOC emissions reduced. Given these conclusions, these CMs should not have been included in PAR 1173. Per the California Health and Safety Code (HSC), BARCT measures must be technically feasible, and demonstrated to be cost-effective on both an absolute and an incremental basis. Deeming these as "contingency measures" does not avoid this obligation.

<sup>7</sup> SCAQMD PAR 1173 Public Workshop. Available at: <https://www.sqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-pw.pdf?sfvrsn=3>

August 8, 2024  
Page 5

Comment  
3-8)

8. Staff is proposing to remove from the rule the applicability of reporting provisions of Rule 430, as provided for in Section (g)(3). Stakeholders deserve an understanding for this decision.

Staff is proposing to remove from the rule the applicability of reporting provisions of Rule 430. WSPA is unaware of which Working Group meeting(s) this was discussed in, and it does not appear to be included in the PDSR. WSPA requests an explanation from Staff on the reason for the proposal to remove this provision from the rule.

Comment  
3-9)

9. WSPA does not understand why the phrase “to the satisfaction of South Coast AQMD personnel” is included in Section (d)(3) when an approved test method is used to demonstrate that a component is not exceeding the Violation Standards. WSPA suggests removing this phrase in this section of the proposed amended rule.

PAR 1173(d)(3) includes the following phrase: “...in accordance with the test method in paragraph (j)(1) to the satisfaction of South Coast AQMD personnel”. If a leak test is done according to the referenced test method (i.e., Method 21), then why would District personnel need to deem the results satisfactory? WSPA suggests removing “to the satisfaction of South Coast AQMD personnel” from this section. Additionally, WSPA requests that the District consider allowing additional time for facilities to conduct these types of demonstrations for Inaccessible Components, such as three days.

Comment  
3-10)

10. Where the District relies on existing standards in other air districts to support proposed leak standards in PAR 1173, associated conditions from the referenced rules should also be included.

The District has cited Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 18 – Equipment Leaks as a reference for similar proposed leak standards in PAR 1173. However, SCAQMD has not proposed the same repair timelines as in the BAAQMD rule. The BAAQMD standard consists of several inter-related provisions and exemptions that were adopted collectively under the rule. SCAQMD cannot select some parts of the BAAQMD rule (e.g., the leak standards) for PAR 1173 and not the corresponding provisions/exemptions as these together dictate the stringency. If SCAQMD is to align with the BAAQMD rule as support for certain leak standards under PAR 1173, Staff should ensure that the related provisions align as well.

Comment  
3-11)

11. WSPA suggests that Staff consider retaining the phrase “atmospheric process PRD” in Sections (i)(3)(A) and (i)(3)(B), where it has been stricken in the proposed amended rule. This would retain the clarity that the phrase provides.

Comment  
3-12)

12. WSPA objects to the proposed removal of the exemption in Rule 1173(l)(3), which states that the provisions of Rules 466, 466.1, and 467 shall not apply to facilities subject to Rule 1173. These sources should be covered under one rule only, to avoid conflicting regulation. Staff has not initiated rulemaking processes for Rules 466, 466.1, and 467 to align them with proposed amendments to Rule 1173, so removing

August 8, 2024  
Page 6

**this exemption could lead to confusion and conflicting requirements for applicable sources.**

In addition to the above comments, WSPA requests responses to the following clarifying questions about PAR 1173:

Comment  
3-13)

1. In Section (m) of the Preliminary Draft Rule Language, the District proposes interim violation standards and leak thresholds what would apply during the time period after rule adoption through October 1, 2025. However, no interim repair timelines are specified. Is the intention during this interim period to require repair within one day or within 14 days, as proposed in Section (g)?

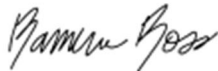
Comment  
3-14)

2. Many proposed amendments to the rule reference "electronic" notification requirements. The language implies that this requirement would begin upon rule adoption, but Staff have not included instructions on how or where these reports would be submitted, or what format they would take, or what electronic systems SCAQMD would need to develop to accommodate such reporting. Can Staff please provide more detail about the electronic notifications to clarify? WSPA would also recommend that SCAQMD consider a phase-in period (i.e., after rule adoption) to ensure that whatever guidance and/or systems are needed can be put into place.

As described in these comments, several significant technical issues persist. Additional time for this rulemaking will be needed to discuss and resolve the significant technical issues remaining, so WSPA requests that Staff consider proposing the Set Hearing date for this rule to February 2025; it is currently scheduled for September 6, 2024.

WSPA appreciates the opportunity to provide these comments related to PAR 1173. 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 [ross@wspa.org](mailto:ross@wspa.org).

Sincerely,



Cc: Wayne Nastri, Executive Officer, SCAQMD  
Sarah Rees, Deputy Executive Officer, SCAQMD  
Michael Krause, Assistant Deputy Executive Officer, SCAQMD  
Rodolfo Chacon, Program Supervisor, SCAQMD  
Areio Soltani, Air Quality Specialist, SCAQMD  
Mayor Pro Tem Larry McCallon, Stationary Source Committee Chair  
Ron Ketcham, Board Assistant  
Debra Mendelsohn, Board Assistant  
Supervisor Holly Mitchell, Stationary Source Committee Vice Chair  
Lorraine Lundquist, Board Assistant  
Patty Senecal, Senior Director, WSPA

---

**Staff Responses to Comment Letter #3**

- 3-1) After internal discussion, staff concluded that fin fan plugs meet the definition of a fitting component. However, in an effort to improve clarity, PAR 1173 has been revised to clearly and unambiguously identify fin fans as a type of component and their associated fin fan plugs as subject to leak inspection and repair requirements of PAR 1173. As noted in your comment, because of the nature of fin fans, staff has crafted a unique fin fan repair schedule with consideration for delay of repair.
- 3-2) Rule language has been revised to more closely align with existing rule intent and language.
- 3-3) PAR 1173 has been revised to include delay of repair for certain categories of components in certain situations. Additionally, PAR 1173 updates an existing exemption, that delayed inspections due to safety, to include repairs. See also Response to Comment Letter 1-2.
- 3-4) PAR 1173 has been revised to include a Method 21 pathway for leaks detected using an OGI device.
- 3-5) PAR 1173 has been revised, including in Definitions, to emphasize the nature of OGI inspections of multiple components simultaneously in contrast with the nature of analyzer inspections of individual components.
- 3-6) PAR 1173 has been revised to require electronic notification of inaccessible visible vapors if repair is not complete within seven (7) calendar days. Staff expects almost all inaccessible visible vapors, even accounting for time to safety erect scaffolding or other access equipment, to be eliminated within seven (7) calendar days and in the few extraordinary cases when that is not possible, electronic notification to South Coast AQMD is warranted.
- 3-7) Under the Clean Air Act, South Coast AQMD is obligated in its air quality plans to establish contingency measures in the event of nonattainment or failure to make reasonable further progress towards attainment. In the most recent air quality plan, the 2022 AQMP, South Coast AQMD committed to include contingency measures in rulemaking. The three contingency measures within PAR 1173 all are cost-effective but are not incrementally cost-effective, and therefore are only included as contingency measures.
- 3-8) In an effort to strike obsolete language, this provision was inadvertently removed. Existing rule language is now retained and moved to subdivision (i) *Recordkeeping and Reporting Requirements*.
- 3-9) The language “to the satisfaction of South Coast AQMD personnel” is consistent with phrasing in existing Rule 1173 and is used throughout PAR 1173. Its usage here is to ensure that South Coast AQMD personnel remain the final arbitrator when deciding whether or not to issue a Notice of Violation. For example, if presented with evidence from a Method 21 analyzer that was not within calibration, South Coast AQMD should not accept this less than credible evidence.
- PAR 1173 has been revised to allow for additional time for inaccessible components: one (1) calendar day.
- 3-10) As part of rulemaking, a survey of other air district regulations is performed and a comparative analysis is presented in working group meetings as well as staff reports. BARCT assessments and other analyses were performed on feasible control measures for
-

- consideration in rulemaking projects. Associated conditions are considered but are not mandatory when conducting the BARCT assessment.
- 3-11) In an effort to strike obsolete language, this provision was inadvertently removed. Existing rule language is now retained.
- 3-12) In an effort to strike obsolete language, this provision was inadvertently removed. Existing exemptions are now retained.
- 3-13) PAR 1173 has been updated for clarity. During the interim period, repair must be performed on components exceeding the applicable leak standard in Table 5 – *Interim Leak Standards* according to the repair schedule in Table 6 – *Interim Repair Periods*, found in subdivision (m) *Interim Procedures and Requirements*.
- 3-14) PAR 1173 has been revised to incorporate an email address, Rule1173Reports@aqmd.gov, and also provides for other means of electronic notification when they are developed. Staff also plans to release updated Rule 1173 forms in the near future. In addition, South Coast AQMD is in the process of developing a Rule 1173 web-based submission portal similar to U.S. EPA’s Central Data Exchange (CDX) or CARB’s California Electronic Greenhouse Gas Reporting Tool (Cal e-GGRT).

**Comment Letter #4**

September 13, 2024

South Coast Air Quality Management District  
21865 Copley Dr.  
Diamond Bar, CA 91765

Via email: [asoltani@aqmd.gov](mailto:asoltani@aqmd.gov)

Re: Comments on Proposed Amendments to Rule 1173

Dear Areio:

California Independent Petroleum Association (CIPA) provides the following comments relating to the proposed amendments to South Coast AQMD (the District) Rule 1173, "Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants."

CIPA is a non-profit, non-partisan trade association representing over 300 independent crude oil and natural gas producers, royalty owners, and service and supply companies operating in California. Our members represent approximately 70% of California's total oil production and 90% of California's natural gas production. Since 1976 the association has kept the political, regulatory, and public policy interests of independent oil and gas producers at the forefront of its agenda. CIPA represents the diverse interests of its membership before the California State Legislature, the United States Congress, and numerous federal, state, and local regulatory agencies. The association is an advocate of free market principles, eliminating duplicative regulation, stimulating recovery of domestic resources and improving the industry's public image.

Benefits to air quality in the South Coast AQMD that are projected from these amendments will be minimal in nature, not having a significant impact on air quality in the LA Basin resulting from increased frequency of inspections and lowering of leak thresholds. Data provided by CIPA members indicates that the total leaks detected from "valves, fittings and other components" represented leaks detected from only 0.18% for all "valves, fittings and other components" inspected during calendar year 2023. These inspections were conducted at typical small oil and gas production facilities, not refineries or chemical plants.

Oil and gas producers in California continue to endure a barrage of regulations from many agencies, making it more expensive and difficult to conduct business. On a cumulative basis these regulations add many dollars to the cost of lifting a barrel of oil out of the ground. The proposed amendments add to this conundrum with a minor increase in air quality. Actual cost and time in complying with the proposed increase in inspection frequency will burden California's small producers even further.

For many small producers it will not be feasible to purchase, maintain and have personnel to support the operation of an OGI camera, thus making it necessary to contract this service with a third party. Contracting for this service and an increased inspection frequency will place a significant financial burden on small oil and gas operators.

**Comments**

4-1)

4-2)

4-3)

4-4)

CIPA's comments are summarized below:

- Increased inspection frequency will financially and operationally burden small oil and gas operators.
- Lowering leak detection thresholds will cause additional liabilities for small producers.
- Cost associated with increased inspections and lower leak detection thresholds will further exacerbate compliance for small oil and gas producers.
- CIPA respectfully requests consideration in maintaining current leak detection thresholds and inspection frequency for small oil and gas producers.

Thank you for this opportunity to comment on the proposed amendments to Rules 1173. CIPA looks forward to your responses and the opportunity to work with SCAQMD in amending the rules to achieve cost effective and practical compliance while improving air quality in the Los Angeles Basin area.

Best regards,



Trent R. Rosenlieb  
CIPA LA Basin Project Lead



**Staff Responses to Comment Letter #4**

- 4-1) Monthly OGI inspection of components was found to be cost-effective for all facilities subject to the rule. As a result, staff is not modifying the OGI inspection frequency in PAR 1173. Staff is sensitive to impacts on small business and performed a detailed Socioeconomic Impact Assessment for PAR 1173. In that assessment, consideration was given to the impacts on small businesses. Staff would also like to note that these small businesses may already be subject to other rules that require OGI inspections such as Rules 463 and 1148.1 and may already have access to OGI devices.
- 4-2) Staff agrees that there are costs associated with the control measures proposed in PAR 1173 to achieve VOC emission reductions. A detailed BARCT assessment was performed and found that the costs to achieve VOC emission reductions meet the cost-effectiveness thresholds set by the South Coast AQMD Governing Board. In addition, while more leaks are expected to be found under self-inspection, these are expected, if properly repaired, to reduce the number of leaks found by South Coast AQMD inspection and in turn reduce enforcement actions.
- 4-3) See Response 4-2.
- 4-4) South Coast AQMD is currently classified as in “extreme nonattainment” with respect to ozone standards, the highest level of noncompliance identified by U.S. EPA and a classification shared with only one other air district in the United States. South Coast AQMD is obligated by federal and state law to make reasonable further progress towards attainment with clean air goals including ozone NAAQS. VOC is one of the chief contributors to ozone formation and thus South Coast AQMD is obligated to reduce VOC emissions, including fugitive VOC emissions from refineries, oil and gas producers, and other facilities subject to Rule 1173. South Coast AQMD will continue to propose lower leak standards whenever it is cost-effective in accordance with South Coast AQMD Governing Board guidelines.

## Comment Letter #5



LONG BEACH CORPORATE OFFICE  
P.O. Box 2767, Long Beach, CA 90801  
562.595.7401 562.426.2730  
MAIN FAX  
www.TERMOCO.com

September 13, 2024

SCAQMD Governing Board  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Areio Soltani  
Air Quality Specialist  
Via Email: [asoltanti@aqmd.gov](mailto:asoltanti@aqmd.gov)

Re: Concerns Regarding Proposed Amendments to Rule 1173

Dear Members of the SCAQMD Governing Board,

On behalf of The Termo Company, I am writing to express our concerns regarding the Proposed Amended Rule 1173 and its potential impact on small, family-owned businesses like Termo. After careful review, we believe that the proposed changes would impose significant operational and financial burdens on our operations, without yielding proportional environmental benefits.

Comment  
5-1)

#### Economic Burden and Operational Costs

The proposed monthly inspections would introduce significant additional costs. Our estimates indicate that contracting services such as Montrose for all our facilities could cost us around \$135,500 annually. Alternatively, purchasing and maintaining our own Optical Gas Imaging (OGI) camera would require an initial investment of \$70,000, with an additional \$17,600 in recurring costs each year. Additionally, with the recent adoption of Rule 463, which mandates biweekly inspections of tank farms, we are likely to incur further expenses by purchasing an OGI camera to meet these new requirements. While we are prepared to make necessary investments, the efficiency and cost-effectiveness of our operations could be impacted by these changes, potentially diverting resources from other critical areas that also contribute to our overall environmental performance.

Comment  
5-2)

#### Inconsistent Leak Standards Across Agencies

The proposed reduction of leak standards - lowering the threshold for compressors and pumps from 500 ppm to 400 ppm, and for valves and fittings from 500 ppm to 100 ppm - is significantly stricter than those enforced by other regulatory agencies, such as the U.S. Environmental Protection Agency (EPA). Maintaining consistency across different regulatory frameworks is crucial for our operations, as it allows us to apply uniform maintenance and inspection protocols. The current 500 ppm threshold is already stringent and effective, and further reductions would only complicate compliance without offering substantial environmental gains.

Comment  
5-3)

#### Technical and Practical Limitations

The proposed thresholds present significant technical challenges, particularly for valves, fittings, and other components that are not designed to meet such low leak thresholds. For example, achieving leak rates below 400 ppm for equipment like stuffing boxes is nearly impossible due to their design. Retrofitting or replacing these components to comply with a 100 ppm standard is not always feasible due to design limitations and the high costs associated with such upgrades. Achieving and maintaining

THE TERMO COMPANY 3275 Cherry Avenue, Long Beach, CA 90807 562.595.7401  
┆ MAIN

Page 2

the proposed lower leak rates would require advanced, expensive equipment and more frequent inspections, which would strain resources and increase operational complexities.

Comment  
5-4)

**Proactive Measures in Place**

At Termo, we are committed to maintaining the highest environmental standards. We have equipped our field workers with handheld monitoring devices, enabling them to detect and repair leaks as soon as they are identified. We follow a routine maintenance schedule and conduct both quarterly and periodic LDAR (including the ad hoc use of OGI). This proactive approach demonstrates our commitment to minimizing leaks without the need for stricter regulations.

Comment  
5-5)

**Successful Compliance Under Current Standards**

Our facilities have consistently demonstrated strong compliance with the current Rule 1173. In 2023, our largest facilities maintained exceptionally low leak detection rates, with only 0.08% to 0.12% of inspected components showing leaks. Even with our smaller facilities, we achieved similarly low leak rates. Notably, one of our facilities detected no leaks at all throughout the year.

These results underscore our proactive approach to maintaining and inspecting components, proving that our current protocols effectively minimize leaks. Given our excellent track record, we believe that the proposed stricter rules are unnecessary and could impose undue operational burdens without significantly improving environmental outcomes.

In conclusion, we urge the SCAQMD Governing Board to consider the disproportionate impact these proposed amendments would have on small, family-owned businesses like ours. We are fully committed to environmental stewardship and believe that the current Rule 1173 standards are sufficient to protect air quality without imposing additional hardships on operators who are already complying effectively.

Thank you for your consideration.

Sincerely,



**Brenna Junkermier**  
Regulatory & Environmental Compliance Specialist  
The Termo Company

**Staff Responses to Comment Letter #5**

- 5-1) See Response 4-2. Regarding purchasing of OGI devices, staff prepared a detailed cost-effectiveness analysis as part of the BARCT assessment process and found it to be cost-effective in accordance with South Coast AQMD Governing Board guidelines. In addition, as noted in your comment, other South Coast AQMD rules such as Rules 463 and 1148.1 also require OGI inspection and PAR 1173 was crafted so that the same OGI device may be used to comply with those other rules.
- 5-2) See Response 4-4. Regarding compliance with federal regulations, staff crafted PAR 1173 to ensure stringency with federal regulations to be at least as stringent if not more stringent. Compliance with PAR 1173 should ensure that owners and operators are also complying with federal regulations.
- 5-3) Stuffing boxes, wellheads, and well cellars are subject to Rule 1148.1 which has different leak standards than PAR 1173. Staff is aware that the lower 100 ppm leak standard may pose a challenge to facilities and therefore PAR 1173 retains current leak standards in the interim to allow for a phase-in period of more than one (1) year. PAR also introduces a limited delay of repair for essential components to allow for repair or replacement of components at the next shutdown of the process unit, if needed. Staff is aware of the additional costs associated with monthly OGI inspection and performed a detailed cost-effectiveness analysis in the BARCT assessment and found the proposal to be cost-effective.
- 5-4) Staff appreciates these proactive measures in place and incorporates these types of best management practices into the proposed amended rule.
- 5-5) Existing Rule 1173 contains provisions to relax quarterly Method 21 analyzer inspections to annual analyzer inspections for some categories of components when superior leak performance is demonstrated. PAR 1173 has retained these provisions and the facilities referenced may qualify for these provisions to reduce operational burdens and costs. Also, see Response 4-4.

## Comment Letter #6



Ramine Ross  
Senior Manager, Southern California Region

September 16, 2024

Michael Morris  
Planning and Rules Manager  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Via e-mail at: mmorris@aqmd.gov

**Re: SCAQMD Proposed Amended Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants: WSPA Comments on Revised Preliminary Draft Rule Language**

Dear Mr. Morris,

Western States Petroleum Association (WSPA) appreciates the opportunity to participate in South Coast Air Quality Management District (SCAQMD or District) Proposed Amended Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants (PAR 1173). The stated purpose of this rulemaking is to revise the current leak standards and leak detection and repair (LDAR) program requirements established in Rule 1173 in response to control measures proposed in the 2022 Air Quality Management Plan (AQMP) and objectives listed in the State Assembly Bill 617 (AB 617) Community Emission Reduction Plan for the Wilmington, Carson, West Long Beach (WCWLB) community.<sup>1,2</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 PAR 1173.

On September 4, 2024, SCAQMD released Revised Preliminary Draft Rule Language.<sup>3</sup> WSPA offers the following comments:

Comment  
6-1)

1. PAR 1178(c) Definitions

WSPA requests clarification of the definition of an “outage” in (c)(26).

(c)(26): Outage

<sup>1</sup> SCAQMD PAR 1173 Public Workshop. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-pw.pdf?sfvrsn=5>

<sup>2</sup> Community Emissions Reduction Plan, Wilmington, Carson, West Long Beach. Available at: <https://www.aqmd.gov/docs/default-source/ab-617-ab-136/steering-committees/wilmington/cerp/final-cerp-wcwb.pdf?sfvrsn=5>

<sup>3</sup> Revised Preliminary Draft Rule Language, Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plant. September 2024. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-revised-pdri-par-1173.pdf?sfvrsn=5>

September 16, 2024

Page 2

WSPA requests that the District provide additional language to clarify what situations qualify as an unscheduled shutdown for "other reasons." As a possible solution, WSPA recommends that SCAQMD include a definition for "Process Unit Shutdown" which mirrors the definition of that term found in 40 CFR 60.481 Subpart VV as follows:<sup>4</sup>

[New Section]

*PROCESS UNIT SHUTDOWN means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be accomplished. The following are not considered process unit shutdowns:*

*(1) An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours.*

*(2) An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown.*

*(3) The use of spare equipment and technically feasible bypassing of equipment without stopping production.<sup>5</sup>*

Comment  
6-2)

## 2. PAR 1173(d), South Coast AQMD Inspection Procedures

Section (d)(3) states that the owner or operator of a facility shall be in violation of the rule if SCAQMD personnel detect a component with visible vapors unless, for an inaccessible component, the owner or operator demonstrates compliance with an appropriate analyzer within one calendar day after detection. WSPA requests that up to three (3) calendar days be allowed to conduct an analyzer test on inaccessible components before a Notice of Violation is issued.

As described in PAR 1173(d)(3), a facility can be found in violation of the rule if a component with visible vapors is detected by South Coast AQMD personnel unless the owner or operator can demonstrate that the component is not exceeding the applicable standard using an appropriate analyzer to the satisfaction of South Coast AQMD personnel. However, conducting an analyzer test on inaccessible components may require the setup of additional equipment such as scaffolding. WSPA requests that the District allow a facility up to three days to conduct the analyzer test to allow sufficient time to complete the setup and testing of inaccessible components.

Comment  
6-3)

## 3. PAR 1173(e) Identification Requirements

<sup>4</sup> 40 CFR Part 60, Subpart VV. Available at: <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-VV>.

<sup>5</sup> 40 CFR 60.481 Subpart VV. May 16, 2024. Available at: <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-VV/section-60.481>. Accessed September 2024.

September 16, 2024

Page 3

**WSPA requests that the requirement for all components under repair be conspicuously physically identified with tag that can be easily viewed from a distance to be altered to be less subjective.**

PAR1173(e)(5) requires that the owner or operator conspicuously physically identify all components under repair with a tag to be easily viewed from a distance and maintain such components conspicuously tagged until repair is complete. The word "conspicuously" is subjective and does not provide facilities with a clear understanding of what physical identification will be deemed conspicuous. It also may not be possible for a tag to be easily viewed from a distance, and the actual distance is not defined. For example, if a Component under Repair is located on a platform, a person walking through the site at ground level may not be able to view the tag.

Comment  
6-4)

#### 4. PAR 1173(f) Self Inspection Requirements

**WSPA requests that facilities be allowed to bypass the monthly Optical Gas Imaging (OGI) inspection during months when the quarterly analyzer inspection is completed.**

Section (f)(2) requires a monthly OGI inspection for all components. PAR 1173(f)(3) requires a quarterly analyzer inspection for all accessible components and an annual analyzer inspection of all inaccessible components. WSPA proposes that facilities be allowed to bypass the OGI inspection in months when the quarterly Analyzer Inspection is completed.

Comment  
6-5)

#### 5. PAR 1173 (g) Leak Standards and Repair Requirements

**Section (g) of PAR 1173 outlines the leak standards for each component type, allowance for delay of repair, and requirements for notification and repair of components with visible leaks and visible vapors. WSPA requests that the requirements be updated to provide clarity.**

##### (g)(2): Components other than Fin Fans Exceeding Applicable Standards

PAR 1173(g)(2)(B) states that repair of an essential component must be completed no later than the end of the next Planned Outage or Turnaround. WSPA requests that the delay of repair completion deadline be based on the next turnaround date or process unit shutdown date. An outage is defined as an unscheduled shutdown in PAR 1173(c)(26), therefore a facility cannot anticipate an outage. Without the necessary planning the facility may not have the required parts on site to be able to replace or repair an Essential Component during the unplanned shutdown. It may take longer to safely purge, clean, and clear the equipment for repair. WSPA supports the completion of a delay of repair by a Turnaround, but the completion of a delay of repair by an outage would leave facilities open to a violation due to the inability to complete a repair during an unscheduled event.

Table 3 within this section defines the delay leak standard and total number of delays of repair allowed for essential component types. However, only valves or fittings are included

September 16, 2024

Page 4

in the table. WSPA requests that all essential components, including valves, fittings, pumps, and compressors, be added to this row of the table to clarify that these standards are applicable to all essential components. WSPA also requests that a second row be added to this table for fin fan components.

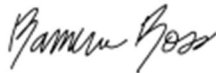
Comment  
6-6)

(g)(4): Visible Leaks from an Inaccessible Component other than a Fin Fan

PAR 1173(g)(4) requires that facilities notify SCAQMD of a visible leak from an inaccessible component before the end of the operating shift, not to exceed 12 hours of the detection. WSPA requests that SCAQMD extend the timeline for notification to within 24-hours of the detection of the leak and remove the requirement to notify before the end of the operating shift.

WSPA appreciates the opportunity to provide these comments related to PAR 1173. 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 [ross@wspa.org](mailto:ross@wspa.org).

Sincerely,



Cc: Wayne Natri, Executive Officer, SCAQMD  
Sarah Rees, Deputy Executive Officer, SCAQMD  
Michael Krause, Assistant Deputy Executive Officer, SCAQMD  
Rodolfo Chacon, Program Supervisor, SCAQMD  
Areio Soltani, Air Quality Specialist, SCAQMD  
Patty Senecal, Senior Director, WSPA



---

**Staff Responses to Comment Letter #6**

- 6-1) The intent of the verbiage “other reasons” is to be as inclusive as possible and to not exclude any possible shutdowns of process units within the meaning of “outage”. Staff examined delay of repair provisions in Bay Area AQMD, San Joaquin Valley APCD, and Santa Barbara County APCD rules. In those air districts, delay of repair was limited by time, by one (1) or five (5) years. Staff took a different approach as strict time limits could require facilities to have forced shutdowns to comply with rule requirements and excess emissions associated with shutdown and startup procedures. Instead, PAR 1173 looks to take advantage of unscheduled shutdowns of process units for any reason to perform delayed repair, not just scheduled shutdowns, known as turnaround. After careful review, staff has revised the definition of “outage” to mean an unscheduled shutdown of a process unit of more than 24 hours, consistent with federal regulation 40 CFR 60.481 Subpart VV. In addition, the Staff Report also clarifies that a process unit temporarily held in suspense with a recirculating fluid stream, known as “hot standby mode”, does not meet the definition of an outage.
- 6-2) The structure of PAR 1173 is unique from other South Coast AQMD rules in that compliance and enforcement procedures are elements of rule text. As such, the rule text must allow South Coast AQMD’s Compliance and Enforcement Division to operate an efficient and effective program. After discussion with that division, allowing one (1) calendar day was deemed sufficient to present evidence to South Coast AQMD personnel to not be subject to a Notice of Violation. Staff believes with the use of extension probes, ladders, and lifts, one (1) day is sufficient to access inaccessible components with an analyzer for the purpose of determining VOC leak rate of components with visible vapors. It should be noted that even if a Notice of Violation is issued, facilities still retain their right to due process and may present their own credible evidence during the settlement process of Notices of Violation.
- 6-3) Staff agrees that the verbiage “conspicuously” may be subject to interpretation. As such, PAR 1173 has been updated to more closely align with existing rule language and requires these repair tags to be “larger and of a different color” than other tags to remove ambiguity.
- 6-4) See Response to Comment 4-A.
- 6-5) As noted in Response to Comment 6-1, PAR 1173 has revised the definition of outage to mean an unscheduled shutdown of a process unit lasting more than 24 hours. Staff believes that this will remove the vast majority of unscheduled shutdowns caused by brief interruptions of power or other reasons. Staff also believes, in an effort to reduce fugitive VOC emissions, facilities should take advantage of these longer unscheduled shutdowns to remove ongoing sources of fugitive VOC emissions. Facilities could utilize a best management practice of maintaining onsite spare component parts for components identified and tagged under delay of repair, in the event that an unscheduled shutdown of a process unit lasting more than 24 hours occurs.

Staff has revised Table 3 – *Limited Delay of Repair* to now include a limited number of essential components of type compressor or pump (light liquid), in order to reduce the likelihood of excess emissions associated with shutdown and startup of process units.

Staff did not list component type fin fan (or associated fin fan plugs) in Table 3 – *Limited Delay of Repair* because the table applies to components referenced in paragraph (g)(2). Paragraph (g)(2) states in pertinent part: “For a Component other than a Fin Fan...”.

- 6-6) PAR 1173 has been revised to require reporting of inaccessible visible leaks to South Coast AQMD within 24 hours of detection.

ATTACHMENT H



**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 1173 – CONTROL OF VOLATILE ORGANIC COMPOUND LEAKS AND RELEASES FROM COMPONENTS AT PETROLEUM FACILITIES AND CHEMICAL PLANTS**

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)**

---

**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

---

**Project Title:** Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants

---

**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.

---

**Description of Nature, Purpose, and Beneficiaries of Project:** Rule 1173 was amended in response to objectives in the Wilmington, Carson, West Long Beach Community Emission Reductions Plan and to implement the 2022 Air Quality Management Plan Control Measure FUG-01: Improved Leak Detection and Repair, both of which are committed to improved leak detection requirements in South Coast AQMD rules. Proposed Amended Rule 1173 (PAR 1173) proposes further reduction of volatile organic compound (VOC) emissions from components by requiring the use of enhanced leak detection technology at greater frequencies and establishing lower leak standards. PAR 1173 also introduces contingency measures to partially satisfy federal Clean Air Act contingency requirements for applicable ozone National Ambient Air Quality Standards in the South Coast AQMD’s jurisdiction. PAR 1173 includes the following provisions that would: 1) make VOC leak standards more stringent for light liquid pumps and compressors as well as valves, fittings, and other devices to reduce baseline VOC emissions associated with those components; 2) require optical gas imaging (OGI) inspections monthly; 3) introduce contingency measures as defined by the federal Clean Air Act; 4) update recordkeeping and reporting requirements; 5) add two new test methods; and 6) formalize inspection requirements and make VOC leak standards more stringent for fin fans. PAR 1173 is expected to reduce VOC emissions by 740.1 tons per year or 2.03 tons per day, which would benefit public health.

---

**Public Agency Approving Project:** South Coast Air Quality Management District  
**Agency Carrying Out Project:** South Coast Air Quality Management District

---

**Exempt Status:** CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption

---

**Reasons why project is exempt:** South Coast AQMD, as Lead Agency, has reviewed the proposed project (PAR 1173) 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. Since the focus of PAR 1173 is to achieve VOC emission reductions through more stringent VOC leak standards and by requiring frequent OGI inspections, which can be accomplished without physical modifications, it can be seen with certainty that implementation of PAR 1173 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.

---

**Date When Project Will Be Considered for Approval (subject to change):**  
South Coast AQMD Governing Board Public Hearing: November 1, 2024

---

<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 1173 Contact Person:</b> Areio Soltani	<b>Phone Number:</b> (909) 396-3318	<b>Email:</b> <a href="mailto:asoltani2@aqmd.gov">asoltani2@aqmd.gov</a>	<b>Fax:</b> (909) 396-3982
--	--	---	-------------------------------

---

**Date Received for Filing:** \_\_\_\_\_ **Signature:** (Signed and Dated Upon Board Approval)  
Kevin Ni  
Program Supervisor, CEQA  
Planning, Rule Development, and Implementation

**ATTACHMENT I**

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**Final Socioeconomic Impact Assessment For:  
Proposed Amended Rule 1173 – Control of Volatile Organic Compound  
Leaks and Releases from Components at Petroleum Facilities and  
Chemical Plants**

**November 2024**

**Deputy Executive Officer**

Planning, Rule Development, and Implementation  
Sarah L. Rees, Ph.D.

**Assistant Deputy Executive Officer**

Planning, Rule Development, and Implementation  
Michael Krause

**Planning and Rules Manager**

Planning, Rule Development, and Implementation  
Barbara Radlein

---

**Authors:**

Valerie Rivera – Assistant Air Quality Specialist  
Daniel Penoyer – Air Quality Specialist

**Contributors:**

Michael Morris – Planning and Rules Manager  
Areio Soltani – Air Quality Specialist  
Chris Yu – Assistant Air Quality Specialist

**Reviewed By:**

Xian-Liang (Tony) Tian, Ph.D. – Program Supervisor  
Erika Chavez – Senior Deputy District Counsel

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

Chair: VANESSA DELGADO  
Senator (Ret.)  
Senate Rules Committee Appointee

Vice Chair: MICHAEL A. CACCIOTTI  
Councilmember, South Pasadena  
Cities of Los Angeles County/Eastern Region

**MEMBERS:**

CURT HAGMAN  
Supervisor, Fourth District  
County of San Bernardino

GIDEON KRACOV  
Governor's Appointee

PATRICIA LOCK DAWSON  
Mayor, Riverside  
Cities of Riverside County Representative

LARRY MCCALLON  
Mayor Pro Tem, Highland  
Cities of San Bernardino County

HOLLY J. MITCHELL  
Supervisor, Second District  
County of Los Angeles

VERONICA PADILLA-CAMPOS  
Speaker of the Assembly Appointee

V. MANUEL PEREZ  
Supervisor, Fourth District  
County of Riverside

NITHYA RAMAN  
Councilmember, Fourth District  
City of Los Angeles Representative

CARLOS RODRIGUEZ  
Councilmember, Yorba Linda  
Cities of Orange County

JOSÉ LUIS SOLACHE  
Mayor, Lynwood  
Cities of Los Angeles County/Western Region

DONALD P. WAGNER  
Supervisor, Third District  
County of Orange

**EXECUTIVE OFFICER:**

WAYNE NASTRI

**TABLE OF CONTENTS**

**EXECUTIVE SUMMARY ..... ES-1**

**INTRODUCTION..... 1**

**LEGISLATIVE MANDATES ..... 1**

**AFFECTED FACILITIES ..... 2**

**SMALL BUSINESS ..... 3**

**COMPLIANCE COST..... 5**

    Capital and One-Time Costs ..... 5

    Recurring Costs ..... 6

    Total Compliance Cost..... 7

**MACROECONOMIC IMPACTS ON THE REGIONAL ECONOMY ..... 11**

    Impact of PAR 1173..... 11

    Regional Job Impacts ..... 12

    Price Impact and Competitiveness ..... 14

**REFERENCES..... 15**

## 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 1173 (PAR 1173) has been developed to further reduce VOC emissions from components at affected facilities by requiring the use of enhanced leak detection technology at greater frequencies and establishing more stringent ~~lower~~ VOC leak standards. Additionally, PAR 1173 will introduce Ozone Contingency Measures to partially satisfy the federal Clean Air Act contingency requirements for applicable ozone National Ambient Air Quality Standards (NAAQS) in the South Coast AQMD’s jurisdiction. A socioeconomic impact assessment has been conducted accordingly, and the following presents a summary of the analysis and findings.

**Key Elements of PAR 1173** PAR 1173 would further reduce fugitive VOC emissions by establishing ~~lower~~ more stringent VOC leak standards for components at affected facilities and by requiring monthly optical gas imaging (OGI) inspections to find and repair VOC leaks from components more quickly.

**Affected Facilities and Industries** PAR 1173 is applicable to approximately 2.61 million components at 203 facilities located in the South Coast AQMD jurisdiction, with 164 facilities in Los Angeles County, 34 facilities in Orange County, and five facilities in San Bernardino County. According to the North American Industrial Classification System (NAICS), 150 of the 203 facilities are classified under the Oil and Gas Extraction industry (NAICS 211); 23 facilities are classified under the Pipeline Transportation industry (NAICS 486); 12 facilities are classified as Petroleum and Coal Products Manufacturers (NAICS 324); eight facilities are classified under the Wholesale Trade industry (NAICS 42); seven facilities are classified as Chemical Manufacturers (NAICS 325); and three facilities are classified under the Support Activities for Transportation industry (NAICS 488).

A small business analysis was conducted for the facilities affected by PAR 1173. The following table presents the number of affected facilities that qualify as a small business based on varying definitions:



Definition	Number of Facilities
South Coast AQMD Rule 102	17
South Coast AQMD's Small Business Assistance Office	65
U.S. Small Business Administration	117

### Assumptions for the Analysis

The key requirements of PAR 1173 that would have cost impacts for the affected facilities include: 1) establishing more stringent ~~lowering~~ VOC leak standards for light liquid pumps and compressors as well as valves, fittings, fin fans, and other components; 2) requiring monthly OGI inspections to detect leaking components; and 3) repairing or replacing detected leaking components.

Approximately 2.61 million components at 203 affected facilities would be subject to the proposed leak standards and OGI inspections required by PAR 1173. The analysis assumed that an additional 61 pump seals or compressor seals and 15,525 fittings, valves, fin fans or other components will require repair or replacement annually to comply with the proposed amendments.

OGI inspections would be required to begin in 2026. Accordingly, the analysis assumed that the annual recurring costs associated with the maintenance of OGI cameras, OGI inspection labor, and the repair or replacement of identified leaking components will also begin in 2026.

### Compliance Costs

Over the forecast period from 2026 to 2035, the total present value of the compliance costs is estimated at \$135.73 million and \$112.88 million for a 1 percent and 4 percent discount rate, respectively. The average annual compliance costs of PAR 1173 are estimated to range from \$14.43 million to \$14.47 million for a 1 percent to 4 percent real interest rate, respectively. The following table presents a summary of the average annual compliance costs of PAR 1173 by cost category.

Cost Categories	Average Annual Cost of PAR 1173 (2026 – 2035)	
	1% Real Interest Rate	4% Real Interest Rate
<b>Capital/One-time Costs</b>		
OGI Camera	\$313,610	\$355,647
<b>Recurring Costs</b>		
OGI Camera Maintenance	\$121,850	\$121,850
OGI Inspection Labor	\$2,608,200	\$2,608,200
Fittings, Valves, Fin Fans, and Other Components Replacement Material Cost	\$714,150	\$714,150
Fittings, Valves, Fin Fans, and Other Components Replacement or Repair Labor	\$10,339,650	\$10,339,650
Pump Seals and Compressor Seals Replacement Material Cost	\$10,126	\$10,126
Pump Seals and Compressor Seals Replacement Labor	\$324,520	\$324,520
<b>Total</b>	<b>\$14,432,106</b>	<b>\$14,474,143</b>

Using a 4 percent real interest rate, the analysis indicates that roughly 71% of the annual average compliance cost would result from the labor needed to repair or replace fittings, valves, fin fans, and other components, followed by labor to conduct OGI inspections (18%), replacement material costs of fittings, valves, fin fans, and other components (5%), and OGI camera purchases (3%).

### Job Impacts

Direct costs and corresponding revenues of PAR 1173 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 from 2026 to 2035.

When the compliance cost is annualized using a 4 percent real interest rate, the REMI analysis forecasts 16 net jobs gained annually in the four-county economy on average over the forecast period, relative to the baseline forecast. The 16 annual jobs gained represent approximately 0.0001 percent of total annual jobs in the four-county area.

The largest job gain is projected to occur in 2026, when OGI cameras are purchased, and component inspections begin. In 2026, PAR 1173 is projected to result in 76 jobs gained relative to the baseline scenario

according to the REMI model simulation.

**Competitiveness  
and Price  
Impacts**

The overall impact of PAR 1173 on production cost and delivered prices in the region is not expected to be substantial. In the Petroleum and Coal Products Manufacturing Industry (NAICS 324), which bears the majority of the compliance costs associated with PAR 1173, the REMI model projects an average increase of 0.01 percent in relative delivered prices over the forecast period. In addition, the relative cost of production for the Petroleum and Coal Products Manufacturing Industry (NAICS 324) is forecasted to increase by 0.01 percent on average relative to the baseline scenario, suggesting that the impact of the implementation of PAR 1173 on the competitiveness of the Petroleum and Coal Products Manufacturing Industry (NAICS 324) and the rest of the economy is minimal.

## INTRODUCTION

Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants applies to refineries, chemical plants, lubricating oil and grease re-refiners, marine terminals, oil and gas production fields, natural gas processing plants and pipeline transfer stations. The purpose of Rule 1173 is to reduce and control volatile organic compound (VOC) emissions from leaking components and releases from atmospheric process pressure relief devices (PRDs). Rule 1173 was adopted in August 1989 and last amended in 2009.

The objective of PAR 1173 is to further reduce VOC emissions from components at affected facilities by requiring the use of enhanced leak detection technology at greater frequencies and establishing ~~lower~~ more stringent leak standards. Specifically, PAR 1173 seeks to establish the following key proposed requirements: 1) more stringent ~~lowering~~ VOC leak standards for fittings, valves, fin fans, and certain other components to reduce baseline VOC emissions associated with those components; 2) more stringent ~~lowering~~ VOC leak standards for pumps (light liquid service) and compressors to reduce baseline VOC emissions associated with those components; 3) requiring monthly OGI inspections to detect leaking components; and 4) reducing the repair period for bringing leaking components into compliance. Additionally, PAR 1173 proposes Ozone Contingency Measures as defined by the federal Clean Air Act (CAA) Section 172(c)(9) as “specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the national primary ambient air quality standard by the attainment date.” CAA Section 182(c)(9) further requires that ozone nonattainment areas classified as “serious” or worse provide contingency measures to be implemented if the area fails to meet any applicable milestone.<sup>1</sup>

Upon implementation, PAR 1173 would affect approximately 2.61 million components at 203 facilities in the South Coast AQMD jurisdiction. The term component is defined as a valve, fitting, pump, compressor, pressure relief device (PRD), fin fan, or other device (diaphragm, Hatch, sight-glass, meter) in VOC service.

## LEGISLATIVE MANDATES

The legal mandates directly related to the socioeconomic impact assessment of PAR 1173 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.

---

<sup>1</sup> For more information and background on the Ozone Contingency Measures PAR 1173 seeks to establish please see Chapter 3 Proposed Amended Rule 1173 Section of Draft Staff Report for PAR 1173, <https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1173>. The Final Staff Report is located in Attachment G of the November 1, 2024 Governing Board package for PAR 1173, which upon posting, will be available 72 hours prior to the Governing Board meeting at <https://www.aqmd.gov/home/news-events/meeting-agendas-minutes>.

### **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. A cost-effectiveness analysis was conducted for PAR 1173 and can be found in Chapter 2 of the PAR 1173 Final-Draft Staff Report.<sup>2</sup>

### **AFFECTED FACILITIES**

The implementation of PAR 1173 would affect approximately 2.61 million components at 203 facilities in the South Coast AQMD jurisdiction, with 164 facilities in Los Angeles County, 34 facilities in Orange County, and five facilities in San Bernardino County. There are no affected facilities in Riverside County.

The majority of the affected facilities are in the Oil and Gas Extraction industry (74 percent), followed by the Pipeline Transportation industry (11 percent), and the Petroleum and Coal

---

<sup>2</sup> South Coast AQMD, Draft Staff Report for Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, <https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1173>, accessed September 2024. The Final Staff Report is located in Attachment G of the November 1, 2024 Governing Board package for PAR 1173, which upon posting, will be available 72 hours prior to the Governing Board meeting at <https://www.aqmd.gov/home/news-events/meeting-agendas-minutes>.

Products Manufacturing industry (6 percent) as presented in Table 1. While the majority of the affected facilities are in the Oil and Gas Extraction industry, most of the components are located at facilities in the Petroleum and Coal Products Manufacturing industry.

**Table 1**  
**Affected Facilities by Industry**

NAICS	Industry Name	Number of Facilities	Percentage of Facilities
211	Oil and Gas Extraction	150	74%
486	Pipeline Transportation	23	11%
324	Petroleum and Coal Products Manufacturing	12	6%
42	Wholesale Trade	8	4%
325	Chemical Manufacturing	7	3%
488	Support Activities for Transportation	3	1%
<b>Total</b>		<b>203</b>	<b>100%</b>

### 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 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 United States (U.S.) Small Business Administration 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 NOx; and 3) is a small business as defined by the U.S. Small Business Administration. Based on firm revenue and employee count, the U.S. Small Business Administration definition of a small business varies by six-digit NAICS codes.<sup>3</sup> For example, according to the U.S. Small Business Administration definition, a business with less than 1,250 employees in the sector of Crude Petroleum Extraction (NAICS 211120) is classified as a small business, while a business in the Petroleum Refineries (NAICS 324110) sector is considered a small business with less than 1,500 employees.

South Coast AQMD mostly relies on Dun and Bradstreet data to conduct small business analyses for private companies. In cases where the Dun and Bradstreet data are unavailable or unreliable, other external data sources such as Manta, Hoover, LinkedIn, and company website data will be used. The determination of data reliability is based on data quality confidence codes in the Dun

<sup>3</sup> U.S. Small Business Administration, 2023 Small Business Size Standards, <https://www.sba.gov/document/support-table-size-standards>, accessed March 29, 2024.

and Bradstreet data as well as staff’s discretion. Revenue and employee data for publicly owned companies are gathered from Securities and Exchange Commission (SEC) filings. Since subsidiaries under the same parent company are interest-dependent, the revenue and employee data of a facility’s parent company will be used for the determination of its small business status. Staff excluded three government-owned facilities from the small business analysis, resulting in a total of 200 commercially owned facilities for consideration. This exclusion allows the analysis to concentrate specifically on private sector entities, as government-owned facilities operate under different funding structures and would not be considered businesses. Employment and revenue estimates from 2024 Dun and Bradstreet data as well as other external sources are available for 169 facilities.<sup>4</sup> Note that although the employment and revenue data for some facilities are unknown or missing, the current data used for this small business analysis represent the most thorough and accurate information obtainable as of the publication date of this final draft report. The number of affected facilities that are small businesses based on each of the three definitions is presented in Table 2:

**Table 2**  
**Number of Affected Small Business Facilities Based on Various Definitions**

Definition	Number of Facilities
South Coast AQMD Rule 102	17
South Coast AQMD's Small Business Assistance Office	65
U.S. Small Business Administration	117

Note that staff was unable to conduct a small business analysis based on the 1990 CAAA definition of a small business as most of the facilities are not required to submit annual emission reports pursuant to South Coast AQMD Rule 222, and therefore, a facility’s small business status under this definition cannot be determined.<sup>5</sup>

<sup>4</sup> Staff utilized Dun and Bradstreet data, as well as cross-referencing with previous small business assessments for other South Coast AQMD rules to find information on affected facilities revenue, employee count, and parent companies; however, for some facilities this information was unavailable as of the publication date of this final draft report.

<sup>5</sup> South Coast AQMD, Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II, <https://www.aqmd.gov/docs/default-source/rule-book/reg-ii/Rule-222.pdf>, accessed April 11, 2024.

## COMPLIANCE COST

The key provisions in PAR 1173 that would have cost impacts for the affected facilities include: 1) ~~establishing more stringent~~ ~~lowering~~ VOC leak standards for fittings, valves, fin fans, and other components; 2) ~~establishing more stringent~~ ~~lowering~~ VOC leak standards for pumps (light liquid service) and compressors; 3) requiring monthly OGI inspections to detect leaking components; and 4) repairing or replacing detected leaking components.

PAR 1173 would require one-time investments in OGI cameras. In addition, the affected facilities would also incur recurring operating and maintenance (O&M) costs for OGI cameras, labor costs for OGI inspections, material costs associated with replacement of leaking components, and labor costs for the repair or replacement of leaking components. The compliance costs for PAR 1173 are forecasted for a 10-year period from 2026 to 2035 to annualize costs associated with the purchase of OGI cameras over the 10-year useful life of the cameras.

Costs assumptions for PAR 1173 were obtained from a variety of different sources including industry estimates, vendor quotes, the San Joaquin Valley Air Pollution Control District (APCD) rulemaking of their VOC component rules, and the South Coast AQMD Rules 463 and 1178 development.<sup>6,7,8</sup> All the costs discussed in this Socioeconomic Impact Assessment are presented in 2023 dollars. The estimation procedure and assumptions for each cost category are discussed in the following sections.

### Capital or One-Time Costs

#### OGI Cameras

PAR 1173 requires monthly OGI inspections to detect leaking components. An OGI camera is defined as an infrared camera with a detector capable of visualizing gases in the 3.2-3.4 micrometer waveband.<sup>9</sup> This assessment assumes that affected facilities will purchase OGI cameras and that existing employees will perform inspections. Approximately 2.61 million components at 203 facilities would be subject to the OGI monitoring requirement. Staff estimated that an OGI camera operator will be able to inspect 5,000 components per operating day. Staff considers this a conservative estimate, as stakeholders have indicated that inspection of 10,000 components per day is feasible at some larger facilities. Approximately 25 OGI cameras would be needed to implement the monthly OGI inspections at all 203 affected facilities, based on the following calculation.

---

<sup>6</sup> San Joaquin Valley APCD, June 2023, Governing Board Meeting Agenda No. 12, Adopt Proposed Amendments to District Leak Detection and Repair Rules 4401, 4409, 4455, 4623, and 4624, [https://www.valleyair.org/Board\\_meetings/GB/agenda\\_minutes/Agenda/2023/June/final/12.pdf](https://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2023/June/final/12.pdf), accessed August 2024.

<sup>7</sup> South Coast AQMD, June 2024, Governing Board Meeting Agenda No. 25, Rule 463 – Organic Liquid Storage, <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2024/2024-Jun7-025.pdf>, accessed August 2024.

<sup>8</sup> South Coast AQMD, September 2023, Governing Board Meeting Agenda No. 34, Rule 1178 - Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities, <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2023/2023-Sep1-034.pdf> accessed September 2024.

<sup>9</sup> South Coast AQMD, Draft Rule Language for Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, <https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1173>, accessed September 2024. The Final Rule Language for PAR 1173 is located in Attachment F of the November 1, 2024 Governing Board package, which upon posting, will be available 72 hours prior to the Governing Board meeting at <https://www.aqmd.gov/home/news-events/meeting-agendas-minutes>.



$$25 \text{ Cameras} = \frac{2.61 \text{ Million Components}}{(5,000 \text{ components per operating day} * 21 \text{ operating days per month})}$$

The average purchase price per camera is estimated to be \$120,000 with an anticipated equipment lifetime of 10 years, based on manufacturer quotes and consistent with the Rule 463 rulemaking. The total capital cost attributed to OGI cameras is estimated to be \$3,000,000 for 25 OGI cameras.

In practice, many affected facilities already own OGI cameras due to overlapping OGI inspection requirements related to South Coast AQMD Rules 1178, 463, and 1148.1. Additionally, some facilities may choose to contract with third parties for OGI inspections and forego purchasing cameras. Based on feedback from affected facilities, the rate for contracting third-party OGI inspections is approximately \$0.26 per component, making the total price dependent on the number of components at the affected facility.<sup>10</sup> However, due to the uncertainty regarding which facilities already own cameras or will engage third-party services, this analysis assumes that the purchase of 25 additional cameras will satisfy the OGI inspection requirement associated with PAR 1173.

## Recurring Costs

### OGI Camera Maintenance

OGI cameras would require annual maintenance and calibration to ensure equipment performance. According to feedback from stakeholders, the annual OGI maintenance cost is approximately \$4,874 per camera and is anticipated to begin in 2026 when the OGI cameras are purchased. The total annual cost of OGI camera maintenance is estimated to be \$121,850 for all 25 cameras.

OGI camera maintenance will be performed by affected facilities if they choose to purchase cameras and perform inspections in house. However, affected facilities that choose to contract with third parties will not directly bear this cost.

### OGI Inspection Labor

PAR 1173 will require the affected facilities to perform monthly OGI inspections to detect leaks. Following the same methodology as in the Rule 463 rulemaking, this analysis assumes that inspections are conducted by employees of the affected facilities at a wage rate of \$52 per hour. Assuming eight hours per workday, 21 workdays per month, and a total of 25 cameras in operation, this yields a total annual inspection cost of approximately \$2.6 million.

OGI inspection labor will be performed by employees at the affected facilities if they choose to purchase cameras and perform inspections in house. However, affected facilities that choose to contract with third parties will not directly bear this cost.

### Material Cost of Replacing Pump Seals and Compressor Seals

This analysis assumes that all pump seals and compressor seals with detected leaks above the thresholds set by PAR 1173 will need to be replaced. Based on leak data reported pursuant to the

---

<sup>10</sup> It is important to note that the number of components at the affected facilities varies significantly, ranging from as few as one component to as many as 342,965 components. On average, the 203 affected facilities have approximately 11,562 components each. This variation can greatly impact the overall cost of contracting third-party OGI inspections, as facilities with more components will incur higher expenses.

existing Rule 1173, approximately 61 additional pump seals and compressor seals would need to be replaced annually to comply with PAR 1173. Consistent with estimates from the San Joaquin Valley APCD rulemaking, pump seals and compressor seals cost approximately \$166 per unit on average, resulting in a total cost of \$10,126 per year.

#### **Material Cost of Replacing Fittings, Valves, Fin Fans, and Other Components**

Fittings, valves, fin fans, and other components with detected leaks above the thresholds set by PAR 1173 will need to be either repaired or replaced. Each year, roughly 15,525 of these components will have leak rates greater than the thresholds based on leak data reported under the existing Rule 1173. Consistent with estimates from industry and the San Joaquin Valley APCD rulemaking, fittings, valves, fin fans, and other components are assumed to cost approximately \$46 per unit on average, resulting in a total cost of \$714,150 per year.

#### **Labor for Pump Seals, Compressor Seals, Fittings, Valves, Fin Fans, and Other Components Replacement or Repair**

This analysis assumes that the labor for replacing or repairing components will be performed by employees of the affected facilities at a wage rate of \$133 per hour, consistent with the approach used in the San Joaquin Valley APCD rulemaking and comparable to current Los Angeles County prevailing wage rates. The \$133 per hour wage reflects the highly skilled labor force which is required to replace these components. Pump seals and compressor seals are anticipated to require 40 hours of labor per replacement, and 61 replacements are expected, resulting in a total cost of \$324,520 per year. Fittings, valves, fin fans, and other components are expected to require varying amounts of time depending on the type of component and whether it will require repair or replacement. This analysis assumes that it would take five hours on average to repair or replace these components, resulting in a labor cost of \$666 per leak. For the estimated 15,525 annual leaks, this translates to an annual labor cost of \$10.3 million.

#### **Total Compliance Cost**

The total compliance cost includes all the estimated costs over a 10-year forecast period, from 2026 to 2035. For the calculation of the present value of total compliance costs, all the annual compliance costs will be discounted to 2024, the anticipated first year PAR 1173 is adopted.<sup>11</sup> The total present value of the compliance costs is estimated at \$135.73 million and \$112.88 million for a 1 percent and 4 percent discount rate, respectively. The average annual compliance costs of PAR 1173 are estimated to range from \$14.43 million to \$14.47 million for a 1 percent to 4 percent real interest rate, respectively.<sup>12</sup> Table 3 presents the estimated present value and average annual compliance cost of PAR 1173 by cost categories.

---

<sup>11</sup> To find the present value of a stream of future payments, a discount rate will be used to reflect the idea that costs borne in the future are worth less than the costs incurred in the present period.

<sup>12</sup> Real interest rate is defined as the nominal interest rate adjusted for inflation, reflecting the true cost of borrowing.

**Table 3**  
**Total Present Value and Average Annual Estimated Costs of PAR 1173**

Cost Categories	Present Value Worth (2024)		Annual Average (2026-2035)	
	1% Discount Rate	4% Discount Rate	1% Real Interest Rate	4% Real Interest Rate
<b>Capital Costs</b>				
OGI Camera	\$3,335,090	\$2,773,669	\$313,610	\$355,647
<b>Recurring Costs</b>				
OGI Camera Maintenance	\$1,142,652	\$950,301	\$121,850	\$121,850
OGI Inspection Labor	\$24,458,472	\$20,341,191	\$2,608,200	\$2,608,200
Fittings, Valves, Fin Fans, and Other Components Replacement Material Cost	\$6,696,963	\$5,569,612	\$714,150	\$714,150
Fittings, Valves, Fin Fans, and Other Components Replacement or Repair Labor	\$96,960,370	\$80,638,292	\$10,339,650	\$10,339,650
Pump Seals and Compressor Seals Replacement Material Cost	\$94,956	\$78,972	\$10,126	\$10,126
Pump Seals and Compressor Seals Replacement Labor	\$3,043,195	\$2,530,911	\$324,520	\$324,520
<b>Total</b>	<b>\$135,731,699</b>	<b>\$112,882,947</b>	<b>\$14,432,106</b>	<b>\$14,474,143</b>

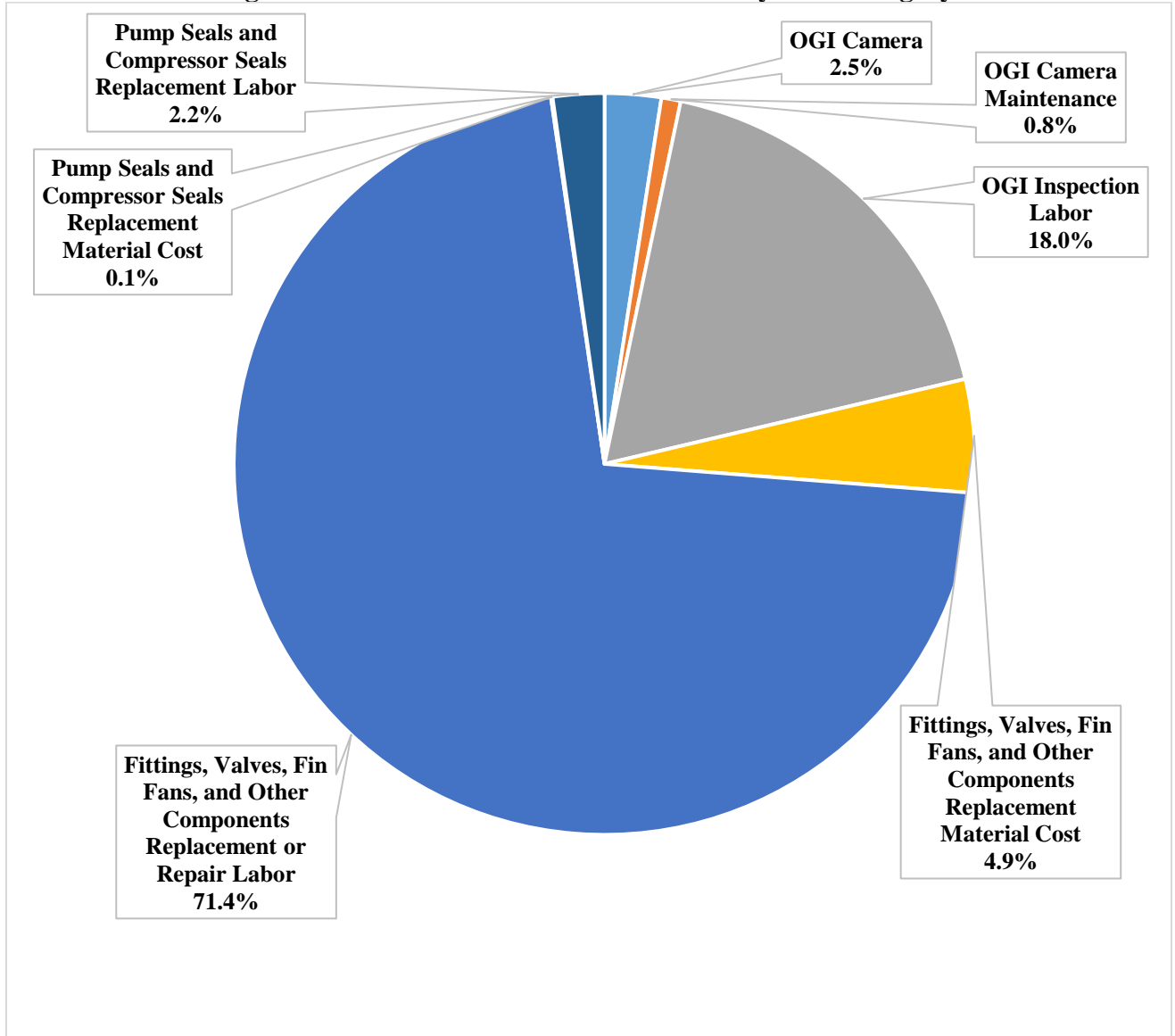
To better assess specific compliance burdens for different industries, Table 4 presents the breakdown of the total average annual compliance costs reported in Table 3 across various industries. The Petroleum and Coal Products Manufacturing sector (NAICS 324) is expected to incur the largest share of the total average annual compliance costs, which is estimated to be \$10.25 million or 71 percent of the total average annual cost. The sectors of Oil and Gas Extraction (NAICS 211) and Pipeline Transportation (NAICS 486) have the second- and third-largest shares of total annual cost, with an estimated total average annual compliance cost of \$2.84 million and \$864 thousand, respectively.

**Table 4**  
**Average Annual Compliance Cost by Industry**

Industry Name (NAICS)	Annual Average Cost (2026-2035)	Share of Total Annual Average Cost per Industry
Petroleum and Coal Products Manufacturing (324)	\$10,246,193	71%
Oil and Gas Extraction (211)	\$2,836,598	20%
Pipeline Transportation (486)	\$863,657	6%
Wholesale Trade (42)	\$278,413	2%
Chemical Manufacturing (325)	\$167,360	1%
Support Activities for Transportation (488)	\$81,922	1%
<b>Total</b>	<b>\$14,474,143</b>	<b>100%</b>

Figure 1 presents the estimated average annual compliance costs of PAR 1173 by expense categories. The expense for fittings, valves, fin fans, and other components replacement or repair labor accounts for 71% – the largest share of the average annual compliance cost, followed by labor costs for conducting OGI inspections (18%), the material cost of replacing fittings, valves, fin fans, and other components (5%), and OGI camera purchases (3%).

**Figure 1**  
**Average Annual Estimated Costs of PAR 1173 by Cost Category**



## MACROECONOMIC IMPACTS ON THE REGIONAL ECONOMY

The Regional Economic Models, Inc (REMI) PI+ v3 model was used to assess the socioeconomic impacts of PAR 1173.<sup>13</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>14</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 amended rule 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 PAR 1173

This assessment is performed relative to a baseline “business as usual” forecast where PAR 1173 would not be implemented. The analysis assumes that the affected facilities would finance the capital and one-time costs described above at a 4 percent interest rate, and that these one-time costs are amortized over the useful life of each piece of equipment.

Direct costs of PAR 1173 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 2026-2035 period. Direct effects of PAR 1173 include the purchase of OGI cameras, labor costs for OGI inspections and replacement or repair of leaking components, and the material costs to replace leaking components as discussed in the previous compliance cost section.

Under the existing Rule 1173, facilities report the number of affected components to South Coast AQMD. This analysis uses the number of components reported by facilities in each industry to proportionally allocate the total costs of PAR 1173 across industries. For example, since 1.9 million of the total 2.61 million components are located at facilities in the Petroleum and Coal Products Manufacturing industry, the analysis assumes this industry incurs roughly 71% of the total cost. Similarly, these costs at the industry level are further allocated across four counties within South Coast AQMD region based on the location of affected facilities.

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 5 lists the 70-sector NAICS codes used in REMI model that would either incur a direct cost or directly benefit from the compliance spending.

---

<sup>13</sup> Regional Economic Modeling Inc. (REMI). Policy Insight® for the South Coast Area (70-sector model). Version 3. 2023.

<sup>14</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 5**  
**Industries Incurring or Benefitting from Compliance Costs**

Source of Compliance Cost	REMI Industries Incurring Compliance Cost (NAICS)	REMI Industries Benefitting from Compliance Spending (NAICS)
OGI Cameras	Oil and Gas Extraction (211) Pipeline Transportation (486) Petroleum and Coal Products Manufacturing (324) Wholesale Trade (42) Chemical Manufacturing (325) Support Activities for Transportation (488)	Computer and Electronic Products Manufacturing (334)
OGI Camera Maintenance		
OGI Inspection Labor		
Fittings, Valves, Fin Fans, and Other Components Replacement or Repair Labor		N/A*
Pump Seals and Compressor Seals Replacement Labor		
Fittings, Valves, Fin Fans, and Other Components Replacement Material Cost		Fabricated Metal Product Manufacturing (332)
Pump Seals and Compressor Seals Replacement Material Cost		Machinery Manufacturing (333)

\*Labor for OGI inspections, Pump Seals and Compressor Seals Replacement, and Fittings, Valves, Fin Fans, and Other Components Replacement or Repair is modeled as additional compensation in each affected industry, reflecting the assumption that this work would be completed by existing employees of affected facilities working more hours.

### Regional Job Impacts

When the compliance cost is annualized using a 4 percent real interest rate, the REMI model projects that there would be 16 jobs gained annually on average over the 2026 – 2035 period, relative to the baseline forecast. The net job gains are likely due to the modeled compensation increases for employees in the affected industries, which will have spillover benefits for the market demand of other industries such as food services and retail, while the incremental costs borne by capital-intensive industries like the petroleum and coal products manufacturing sector have relatively smaller impacts on their employment.

The Oil and Gas Extraction, Pipeline Transportation, and Petroleum and Coal Products Manufacturing industries are forecasted to forego three jobs, one job, and one job, respectively, on average over the forecast period. The net job losses are likely due to these sectors incurring the biggest share of PAR 1173 compliance costs, therefore being the most affected sectors. Table 6

presents the forecasted jobs foregone or added for selected years in the sectors with the largest magnitude of average annual job impacts. The “All Other Industries” row in Table 6 shows the sum of job impacts for all the other industries except the 11 selected industries presented in the table.

**Table 6**  
**Projected Job Impacts of PAR 1173 for Selected Industries and Years**

<b>Industry (NAICS)</b>	<b>2026</b>	<b>2030</b>	<b>2035</b>	<b>Annual Average</b>	<b>Baseline Number of Jobs</b>	<b>% of Baseline Jobs</b>
<b>Oil and gas extraction (211)</b>	-1	-4	-4	-3	7,510	-0.043342%
<b>Construction (23)</b>	10	-3	-10	-3	531,695	-0.000474%
<b>Pipeline transportation (486)</b>	0	-1	-2	-1	1,006	-0.133019%
<b>Professional, scientific, and technical services (54)</b>	3	-1	-4	-1	981,069	-0.000108%
<b>Petroleum and coal products manufacturing (324)</b>	0	-1	-1	-1	5,803	-0.012865%
<b>State and Local Government (92)</b>	2	0	-2	0	943,855	-0.000005%
<b>Food services and drinking places (722)</b>	4	2	1	2	727,901	0.000295%
<b>Real estate (531)</b>	6	2	1	2	732,474	0.000332%
<b>Retail trade (44-45)</b>	7	2	1	3	941,011	0.000270%
<b>Personal and laundry services (812)</b>	4	2	2	3	389,013	0.000663%
<b>Ambulatory health care services (621)</b>	9	6	5	6	662,102	0.000921%
<b>All Other Industries</b>	32	7	0	9	6,156,354	0.000146%
<b>All Industries</b>	76	11	-14	16	12,079,792	0.000131%

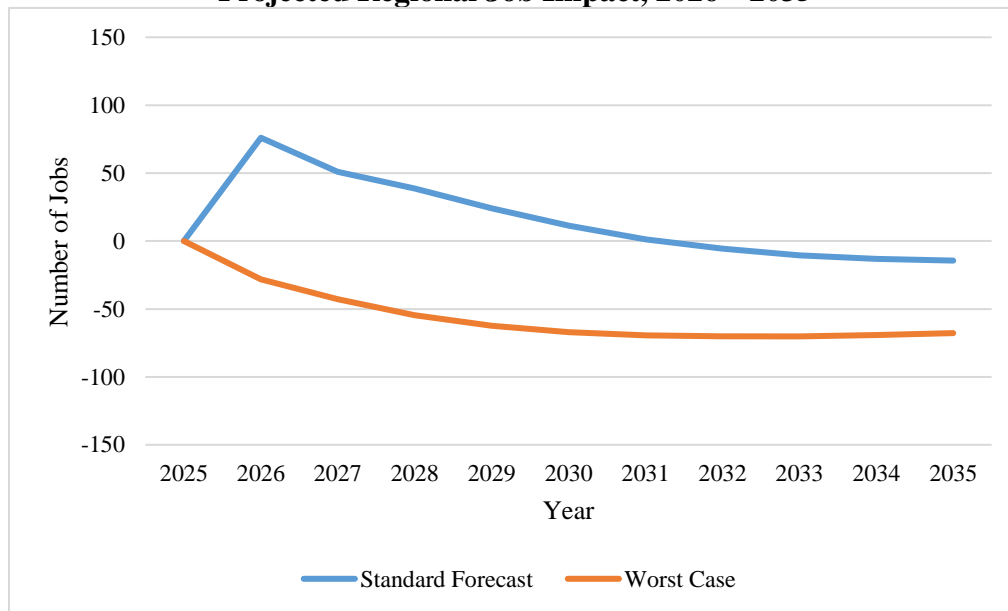
Note: Totals may not sum due to rounding.

In addition, in 2013, South Coast AQMD contracted with Abt Associates Inc. to review the South Coast AQMD socioeconomic assessments for Air Quality Management Plans and individual rules with the goal of providing recommendations that could enhance South Coast AQMD's socioeconomic analyses. In 2014, Abt Associates Inc. published a report which included a recommendation for South Coast AQMD to enhance socioeconomic analyses by testing major assumptions through conducting a scenario analysis. As such, South Coast AQMD generally includes an alternative worst-case scenario in Socioeconomic Impact Assessments which analyzes a scenario that assumes the affected facilities would purchase all feasible monitoring equipment



and services from providers located outside of the South Coast AQMD’s jurisdiction.<sup>15</sup> This scenario assumes that OGI inspections and replacement/repair labor is done by contractors outside the region, and that all components and OGI cameras are purchased from suppliers outside the region. In simple terms, this alternative worst-case scenario only models the impacts of the costs of compliance with PAR 1173 while excluding the revenues which would benefit equipment and 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. This worst-case scenario would result in an annual average of approximately 60 jobs foregone relative to the baseline scenario. The 60 jobs foregone represent a small portion of the average forecasted baseline jobs in the regional economy at an estimated 0.0005 percent. Figure 2 presents the projected regional job impacts over the 2026 – 2035 period for both the standard and the worst-case forecasts.

**Figure 2**  
**Projected Regional Job Impact, 2026 – 2035**



**Price Impact and Competitiveness**

The impact of PAR 1173 on production costs and delivered prices in the region is not expected to be substantial. In the Petroleum and Coal Products Manufacturing Industry, which bears the majority of compliance costs associated with PAR 1173, the REMI model projects an average increase in relative delivered prices of 0.01 percent over the forecast period. The relative cost of production for the Petroleum and Coal Products Manufacturing Industry is also forecasted to increase by 0.01 percent on average relative to the baseline scenario. The small magnitude of the change in production cost and delivered price suggests that the impact of implementing PAR 1173 on consumers and firms in South Coast AQMD region should be minimal.

<sup>15</sup> Abt Associates Inc., August 2014, Review of the SCAQMD Socioeconomic Assessments, Chapter 6, Section 3, <https://www.aqmd.gov/docs/default-source/Agendas/aqmp/scaqmd-report---review-socioeconomic-assessments.pdf>, accessed April 2, 2024.

## **REFERENCES**

Abt Associates Inc., August 2014, Review of the SCAQMD Socioeconomic Assessments, Chapter 6, Section 3, <https://www.aqmd.gov/docs/default-source/Agendas/aqmp/scaqmd-report---review-socioeconomic-assessments.pdf>.

Regional Economic Modeling Inc. (REMI), Policy Insight® for the South Coast Area (70-sector model). Version 3, 2023.

San Joaquin Valley APCD, June 2023, Governing Board Meeting Agenda No. 12, Adopt Proposed Amendments to District Leak Detection and Repair Rules 4401, 4409, 4455, 4623, and 4624, [https://www.valleyair.org/Board\\_meetings/GB/agenda\\_minutes/Agenda/2023/June/final/12.pdf](https://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2023/June/final/12.pdf).

South Coast AQMD, April 2023, Rule 222 – Filling Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II, <https://www.aqmd.gov/docs/default-source/rule-book/reg-ii/Rule-222.pdf>.

South Coast AQMD, June 2024, Governing Board Meeting Agenda No. 25, Rule 463 - Organic Liquid Storage, <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2024/2024-Jun7-025.pdf>.

South Coast AQMD, September 2023, Governing Board Meeting Agenda No. 34, Rule 1178 - Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities, <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2023/2023-Sep1-034.pdf>.

South Coast AQMD, September 2024, Draft Rule Language for Proposed Amended Rule 1173 - Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, <https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1173>.

South Coast AQMD, September 2024, Draft Staff Report for Proposed Amended Rule 1173 - Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, <https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1173>.

United States Small Business Administration, March 2023, Table of Small Business Size Standards, <https://www.sba.gov/document/support-table-size-standards>.



Source: <https://www.hpc-industrial.com>

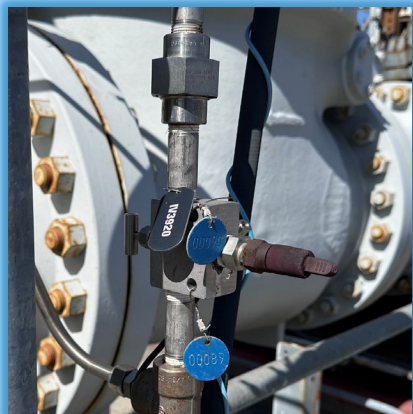


Source: <https://flir.com>

# **Proposed Amended Rule 1173 - *Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants***

Board Meeting  
November 1, 2024

# Rule 1173 Background



- Rule 1173 first adopted in 1989
  - Last amended in 2009
- Reduces fugitive volatile organic compound (VOC) emissions from 2.6 million components and points of leakage
  - Applicable to more than 200 refineries, oil and gas production sites, and others
- Rule development initiated to improve leak detection to:
  - Address air quality objectives in the AB 617 Wilmington, Carson, West Long Beach (WCWLB) Community Emissions Reduction Plan (CERP)
  - Partially implement control measure FUG-01 – Improved Leak Detection and Repair from the 2022 Air Quality Management Plan (AQMP)
  - Partially implement Clean Air Act contingency measure requirements for ozone National Ambient Air Quality Standards

# Key Amendment – Optical Gas Imaging



- Currently, most components are inspected **quarterly** using a Toxic Vapor Analyzer (TVA)
  - Using a TVA, components are checked one-by-one
- PAR 1173 proposes enhanced leak detection by requiring **monthly** optical gas imaging (OGI)
  - Using OGI, many components can be scanned at once to catch large leaks faster
- Estimated to reduce VOC emissions by **0.54 tons per day**

# Key Amendment – Lower Leak Standards

Component Category	Existing Leak Standard (ppm)	Proposed Lower Leak Standard (ppm)	Net VOC Emission Reduction (tons per day)
Valve, Fitting, Other	500 → 100	100	1.38
Fin Fan (formerly fin fan plugs, a type of fitting)	500 → 100	100	0.08
Pump (Light Liquid), Compressor	500 → 400	400	0.03

- Staff completed a Best Available Retrofit Control Technology (BARCT) assessment on existing leak standards
- Net VOC emission reduction includes offsets from delay of repair
- Combined, lower leak standards expected to reduce VOC emissions by **1.49 tons per day (tpd)**

# Other Key Amendments



## Fin Fan Plugs

- Established individualized category
- Provided specialized repair timeline
- Updated leak standard to 100 ppm



## Limited Delay of Repair

- Cap of 0.05% of components until shutdown
- Average shutdown causes 1.09 tons VOC
- At most 0.05 tpd unrealized VOC reduction

# Ozone Contingency Measures



**Stage 1 CM**  
Pumps, Compressors



**Stage 2 CM**  
OGI Frequency



**Stage 3 CM**  
Valves, Fittings, Others

- Required by federal Clean Air Act and 2022 AQMP for certain rules
- Contingency measures (CMs) implemented sequentially, in order of increasing total annual cost
  - CM #1 – Reduces leak standard for compressors or pumps in light liquid service from 400 ppm to 300 ppm
  - CM #2 – Increases OGI inspection frequency for components from monthly to every two weeks
  - CM #3 – Reduces leak standard for valves, fittings, or other identified equipment from 100 ppm to 50 ppm
- Effective 60 days after listed final determinations by U.S. EPA of ozone non-attainment or lack of reasonable further progress (RFP)



# Cost-Effectiveness and Emission Reductions

Proposed Requirement	Cost-Effectiveness* (\$/ton VOC reduced)	Incremental Cost-Effectiveness* (\$/ton VOC reduced)	VOC Emission Reduction (tons per day)
100 ppm standard (valve, fitting, other)	\$19,700	\$36,100	1.38
Monthly OGI Inspection	\$12,800	\$14,100	0.54
100 ppm standard (fin fan)	\$24,400	\$39,800	0.08
400 ppm standard (LL pump, compressor)	\$27,000	N/A	0.03
<b>Overall</b>	<b>\$18,800</b>	<b>N/A</b>	<b>2.03</b>

\* Cost-Effectiveness Threshold per 2022 AQMP: \$40,168/ton VOC

# Socioeconomic Impact Assessment

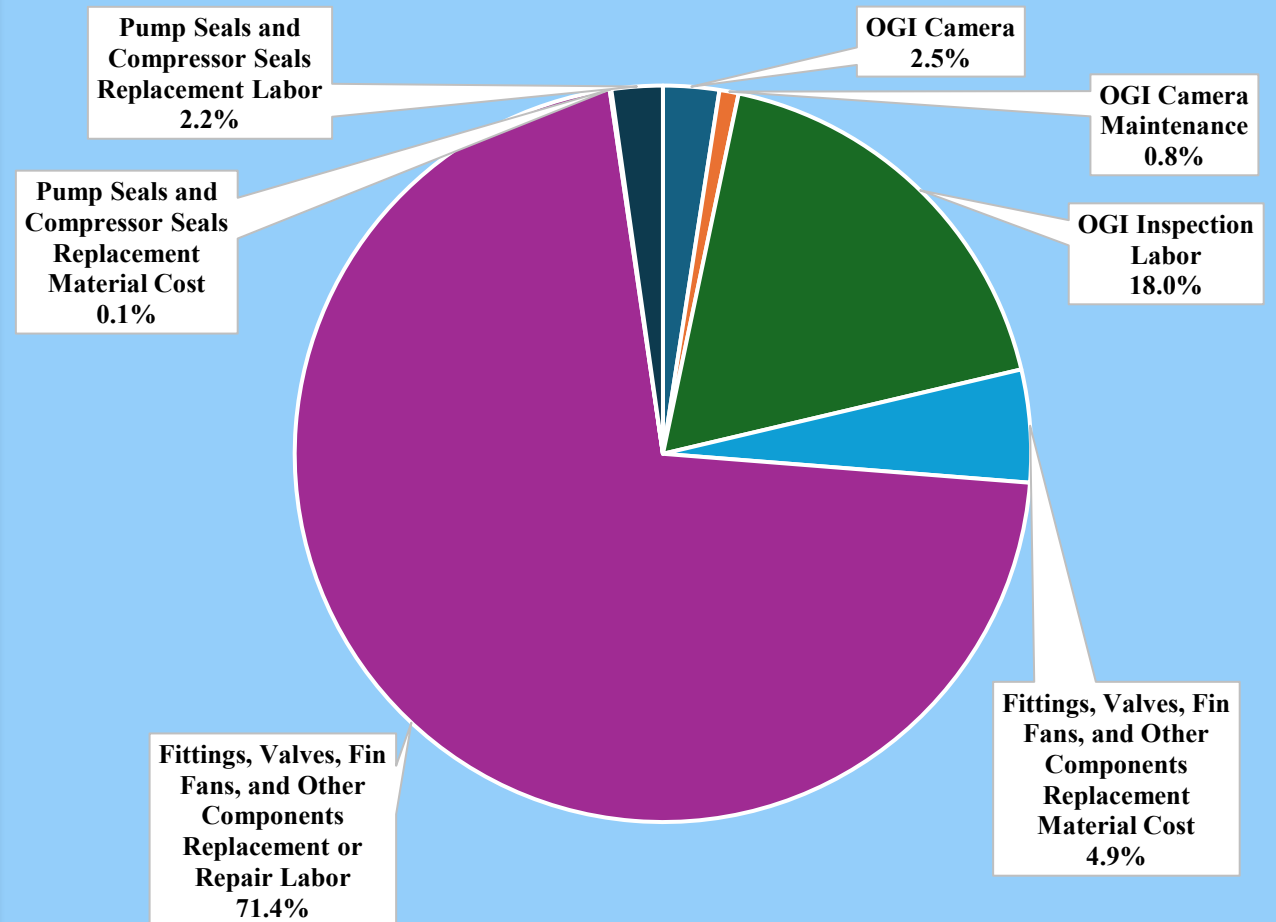
## • Compliance Costs

- Average annual cost ranges from \$14.43 million to \$14.47 million using a real interest rate from 1% to 4%, respectively

## • Job Impacts

- 16 net jobs gained annually on average from 2026 to 2035

**Average Annual Compliance Cost by Category**



# Staff Recommendation

## Adopt Resolution:

- Determining that PAR 1173 is exempt from the requirements of the California Environmental Quality Act
- Amending Rule 1173

