SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Staff Report
Proposed Amended Rule 462 – Organic Liquid Loading

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EXECUTIVE SUMMARY

Rule 462 – Organic Liquid Loading (Rule 462) controls emissions of volatile organic compounds (VOCs) during the loading of organic liquids into transport vessels. Rule 462 applies to approximately 53 facilities that conduct organic liquid loading within South Coast AQMD's jurisdiction.

Proposed Amended Rule 462 (PAR 462) was developed to implement the 2022 Air Quality Management Plan (AQMP) Control Measure FUG-01 – Improved Leak Detection and Repair. The objective of PAR 462 is to further reduce VOC emissions from organic liquid loading by: 1) requiring monthly optical gas imaging (OGI) inspections; 2) requiring periodic source tests on all Class A facilities' vapor control systems; and 3) reducing VOC limits for vapor control systems. Reducing the VOC limit is expected to reduce VOC emissions from vapor control systems at Class A facilities by 50%, or 0.30 ton VOC per day. Introducing OGI inspections are expected to reduce VOC emissions by 0.04 ton per day. The combined VOC emission reductions for PAR 462 are 0.34 ton per day. The overall cost-effectiveness of PAR 462 is $32,600 per ton of VOC reduced.

Additionally, PAR 462 will introduce a contingency measure 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 measure, if triggered, would require more frequent OGI inspections and is expected to further reduce VOC emissions by 0.05 ton per day.

Development of PAR 462 was conducted through a public process. Two Working Group meetings were held on November 6, 2024, and March 5, 2025. The Working Group is composed of representatives from businesses, environmental groups, public agencies, and consultants. A Public Workshop was held on April 2, 2025. The purpose of the Public Workshop is 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.

CHAPTER 1: BACKGROUND

INTRODUCTION

Rule 462 – Organic Liquid Loading seeks to control emissions of volatile organic compounds (VOCs) originating from bulk terminals and other facilities that load organic liquids into tank trucks, trailers, or railroad tank cars. An example of a bulk terminal is shown in Figure 1.1. The transfer of organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater, such as gasoline or ethanol, is subject to Rule 462 while the transfer of less volatile organic liquids, such as diesel or jet fuel, is not subject to Rule 462. Likewise, the transfer of organic liquids from gasoline storage and dispensing facilities, colloquially known as gas stations, to motor vehicles and their associated fuels tanks is subject to Rule 461 – Gasoline Transfer and Dispensing. However, some facilities both dispense gasoline to motor vehicles and transfer gasoline or other organic liquids to tank trucks for dispensing to motor vehicles or aircraft, gasoline-fired equipment, intermediate storage tanks, or other uses. For those specific types of facilities, both Rules 461 and 462 apply.

Figure 1.1 – Tank Trucks at a Bulk Terminal

Proposed Amended Rule (PAR) 462 seeks to further reduce VOC emissions from bulk terminals by requiring advanced leak detection and repair (LDAR) technology and reducing the VOC limit of vapor control systems. Additional proposed amendments to Rule 462 include specifying source test requirements of vapor control systems at Class A facilities, establishing contingency measures, adding new and updated definitions, and implementing other minor changes for consistency and clarity.

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.

In August 2018, the U.S. EPA designated the South Coast Air Basin (Basin) as "extreme" nonattainment and the Coachella Valley as "severe-15" nonattainment for the 2015 8-hour ozone standard. The 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 the 2015 8-hour ozone standard by August 2038 and "severe" nonattainment areas must attain it by August 2033.

In March 2024, the South Coast AQMD Governing Board approved the Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard which focused on satisfying the requirement for contingency measure elements.[1] Contingency measures are defined by 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 above provide for contingency measures to be implemented if the area fails to meet any applicable milestone.

South Coast AQMD is amending Rule 462 to introduce a contingency measure for the 2008 and 2015 8-Hour Ozone Standard that would require more frequent enhanced leak detection inspections with optical gas imaging (OGI) devices to facilitate leak detection and repair. Emission reductions would be achieved by identifying leaks more quickly and repairing them. Triggers are included if a nonattainment area fails to attain the NAAQS by the applicable attainment date or fails to meet a reasonable further progress (RFP) milestone, as identified by U.S. EPA. If such an event occurs, the contingency measure would implement a more stringent OGI inspection frequency within 60 days of the effective date of the U.S. EPA finding.

Control Measures in the 2012, 2016, and 2022 Air Quality Management Plans (AQMPs)

Control Measure FUG-03 – Further Reductions of Fugitive VOC Emissions in the 2012 Final AQMP identifies the implementation of advanced leak detection technologies, including OGI, as a method to reduce the emissions impact from leaks. The 2016 Final AQMP included Control Measure FUG-01 – Improved Leak Detection and Repair to utilize advanced remote sensing technologies to allow for faster identification and repair of leaks from equipment at oil and gas sites and other facilities that are currently required to maintain an LDAR program. The 2022 AQMP also included Control Measure FUG-01 – Improved Leak Detection and Repair to reduce VOC emissions from fugitive leaks from process and storage equipment. PAR 462 partially

[1] https://www.aqmd.gov/home/air-quality/air-quality-management-plans/other-state-implementation-plan-(sip)-revisions/coachella-valley-contingency-measure-sip-revision

implements Control Measure FUG-01 that commits to improved leak detection requirements in South Coast AQMD rules, including Rule 462.

REGULATORY HISTORY

Rule 462 was originally adopted on January 9, 1976 at the South Coast AQMD's first Governing Board Meeting, signifying the importance of this rule and these sources of emissions (see Figure 1.2). Subsequently, Rule 462 was amended a total of six (6) times:

Figure 1.2 – Example of a Vapor Recovery System

1978 and 1979 Amendments

The first and second amendments to Rule 462 in May 1978 and October 1979, respectively, addressed the control efficiencies of vapor recovery and/or disposal systems. The 1979 amendment established a VOC emissions limit of 0.65 pound per thousand gallons transferred based on recommendations from the California Air Resources Board (CARB).

1986 Amendment

On March 2, 1984, South Coast AQMD Regulation IX, Subpart XX – Standards of Performance for Bulk Gasoline Terminals[2], was adopted to set a VOC emissions limit of 0.29 pounds per thousand gallons of organic liquid transferred for new or modified loading facilities with a daily throughput of 20,000 gallons or greater. In 1986, Rule 462 was reviewed for further VOC emission reduction potential through application of the New Source Performance Standards (NSPS) emission limit. This resulted in a subsequent amendment to Rule 462 which instituted a VOC emission limit of 0.29 pounds per thousand gallons for Class A facilities (20,000 gallons or more loaded per day).

[2] This regulation is no longer in effect and is not part of the South Coast AQMD portion of the SIP.

1990 Amendment

The 1990 amendment to Rule 462 was primarily an administrative amendment to delete an outdated compliance schedule.

1995 Amendment

The 1995 amendment implemented Control Measure #94FUG-01 of the 1994 AQMP, which was adopted to comply with the California and Federal Clean Air Acts. The amendment reduced the VOC emission limit from 0.29 to 0.08 pounds VOC per 1,000 gallons of organic liquid transferred in Class A facilities as required under the Code of Federal Regulations (CFR) Title 40, Part 63, Subpart R (National Emission Standards for Gasoline Distribution Facilities). This amendment also clarified rule language to enhance enforceability.

1999 Amendment

The 1999 amendment addressed a vapor leak measurement issue identified by U.S. EPA by amending the definition of facility vapor leak to align with U.S. EPA Method 21. The amendment also provided a compliance mechanism for the vapor recovery systems that do not require CARB certification pursuant to Health and Safety Code Section 41954. The Approval Procedure for Vapor Recovery Systems of Bulk Plants was included as Appendix A to this rulemaking. Other changes included clarifying the backpressure requirement for Class A facilities and the vapor leak requirement for transfer vessels.

AFFECTED FACILITIES

PAR 462 affects approximately 53 facilities within the South Coast AQMD's jurisdiction. Of these, 20 facilities are Class A facilities. Class A facilities load 20,000 gallons or more of organic liquids on any one day. There are 20 Class A facilities subject to Rule 462 that are considered major sources of emissions and hold federally enforceable Title V facility operating permits[3]. The remaining 33 facilities subject to Rule 462 do not meet the applicability requirements for Title V permits and are either Class B facilities or Class C facilities. Class B facilities generally load no more than 20,000 gallons of gasoline per day[4]. Staff identified 31 Class B facilities. Class C facilities were constructed prior to January 9, 1976, and load no more than 4,000 gallons of

[3] Emission thresholds for Title V applicability are specified in Rule 3001 – Applicability

[4] Rule 462 defines Class B facility as any facility which was constructed before January 9, 1976 and loads more than 4,000 gallons (15,140 liters) but not more than 20,000 gallons (75,700 liters) of gasoline on any one day into any tank truck, trailer, or railroad tank car; or which was constructed before January 9, 1976 and loads not more than 4,000 gallons (15,140 liters) of gasoline on any one day, but more than 500,000 gallons (1,892,500 liters) of gasoline in any one calendar year, into any tank truck, trailer, or railroad tank car; or which was constructed after January 9, 1976 and loads not more than 20,000 gallons (75,700 liters) of gasoline on any one day into a tank truck, trailer or railroad tank car.

gasoline per day and no more than 500,000 gallons in any one calendar year. Staff identified two Class C facilities.

PUBLIC PROCESS

The development of PAR 462 was conducted through a public process. Two Working Group Meetings were held on November 6, 2024 and March 5, 2025. Stakeholders include representatives from the community, environmental organizations, industry representatives, and government agencies. Staff also met individually with industry stakeholders and visited sites affected by the rule development process. A Public Workshop meeting was held on April 2, 2025, where staff presented the proposed amended rule to the general public and stakeholders, and solicited comments.

CHAPTER 2: BARCT ASSESSMENT

INTRODUCTION

ADVANCED LEAK DETECTION AND REPAIR

VAPOR CONTROL SYSTEMS

FACILITY LEAK THRESHOLD

BARCT EMISSION LIMITS

INTRODUCTION

As part of the rule development process, staff conducted a Best Available Retrofit Control Technology (BARCT) assessment of equipment subject to PAR 462. The purpose of a BARCT assessment is to identify potential emission reductions from specific equipment and to establish an emission limit consistent with state law.

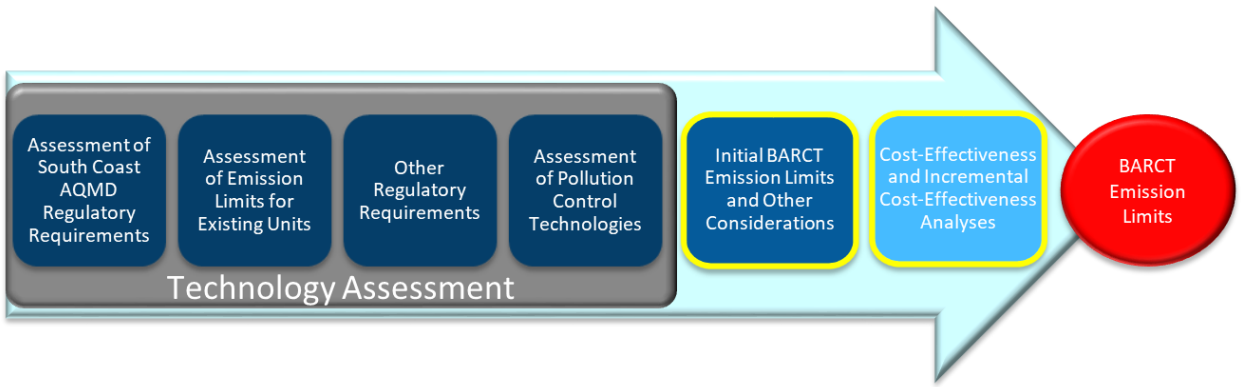
Under Health and Safety Code Section 40406, BARCT is defined as:

> "… 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."

The BARCT assessment for this rule development consisted of a multi-step analysis. The first four steps represent the technology assessment. First, staff evaluated current South Coast AQMD regulatory requirements. Second, staff assessed emission limits for existing units. Third, staff reviewed rules and regulations of other air districts and agencies to identify emission limits that exist for similar equipment. In the final step of the technology assessment, staff assessed pollution control technologies to determine what degree of reduction could be achievable for the affected sources. Based on the technology assessment and additional considerations, initial emission limits were proposed.

Staff then calculated the cost-effectiveness of the proposals. The calculations consider the cost to meet the initial BARCT emission limit and the emission reductions that would occur from implementing technology that could meet the initial BARCT emission limit. An incremental cost-effectiveness analysis is conducted if multiple control technology options are identified that meet the emission reduction objective. Based on the evaluation of information, BARCT emission limits are recommended. See Figure 2-1 below for a graphical representation of the BARCT assessment process.

Figure 2.1 – BARCT Assessment Process



In this rulemaking effort, staff proposed the following BARCT requirements to be incorporated into PAR 462:

(1) Adding the use of enhanced monitoring and leak detection techniques
(2) Reducing emission limits for vapor recovery systems and/or vapor disposal systems from 0.08 pounds VOC per thousand gallons (10 grams per 1,000 liters) of organic liquid transferred to 0.04 pounds VOC per thousand gallons (5 grams per 1,000 liters) transferred

ADVANCED LEAK DETECTION AND REPAIR

- *Assessment of Current South Coast AQMD Regulatory Requirements*

Rule 462 requires quarterly inspections with an organic vapor analyzer (OVA) calibrated with methane per U.S. EPA Reference Method 21 to inspect components and equipment (See Figure 2.2). An OVA is capable of measuring a variety of organic vapors using flame ionization detection (FID) technology and it provides a concentration value of the organic vapor.

Figure 2.2 – Example of an OVA Analyzer

In lieu of a quarterly OVA inspection, Rule 462 allows facilities to conduct a monthly leak inspection via sight, sound, and smell as a detection method.

- *Assessment of Emission Limits of Existing Units*

The use of OGI equipment does not have an emission limit relevant to this analysis. As such, no assessment of emission limits of existing units is required.

- *Other Regulatory Requirements*

Staff reviewed rules and regulations from other air districts and agencies and noted that the use of enhanced monitoring techniques was limited. One example of enhanced leak detection technology is OGI.

San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4624 – Transfer of Organic Liquid, does not require OGI inspections. However, subsection 6.3.8.1, requires that after June 30, 2024, all leaks detected with OGI be measured by U.S. EPA Method 21 within two calendar days of initial OGI leak detection.[5] Quarterly inspections by U.S. EPA Method 21 are required.

Figure 2.3 – Example of Camera

Bay Area Air Quality Management District (Bay Area AQMD) Regulation 8, Rule 33 – Gasoline Bulk Terminals and Gasoline Cargo Tanks was amended on November 3, 2021, but does not reference OGI inspection requirements. Gasoline bulk terminal owners or operators are required to develop and submit a monitoring, inspection, notification, and reporting plan for approval.

Under U.S. EPA – Title 40, Chapter 1, Subchapter C, Part 60, Subpart XXa – Standards of Performance for Bulk Gasoline Terminals that Commenced Construction, Modification, or Reconstruction After June 10, 2022, the use of an OGI camera is required quarterly for all pumps and valves, and annually for all connectors.[6] Leak detection thresholds are quantified using an OVA or equivalent device.

- *Assessment of Pollution Control Technologies*

OGI equipment does not control pollution directly but is a tool that can be used to identify emissions. As such, no assessment of pollution control technology is required for adding the use of enhanced monitoring and leak detection techniques. However, a discussion on current enhanced monitoring and leak detection technologies is included.

Continuous monitoring solutions using open path detection and fixed gas sensor networks were assessed in 2023 for the Rule 1178 rulemaking. It was determined that the best solution for monitoring tanks is to require periodic monitoring with handheld OGI devices due to their ability to identify small and large leaks. Continuous monitoring systems are limited in their ability to detect smaller leaks because they are installed at a distance. Depending on the detection technology of the continuous monitoring system, a leak may need to be significantly large at the source to be detected and has the potential to go undetected. Another drawback to requiring continuous monitoring systems is the delayed implementation timeline due to the plan approval and installation timeframes.

[5] San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4624 – Transfer of Organic Liquid, subsection 6.3.8.1: https://ww2.valleyair.org/media/kgalm4y4/rule-4624.pdf, p. 4624-12, accessed on February 24, 2025.

[6] U.S. EPA – Title 40, Chapter 1, Subchapter C, Part 60, Subpart XXa – Standards of Performance for Bulk Gasoline Terminals that Commenced Construction, Modification, or Reconstruction After June 10, 2022: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-XXa, accessed on February 24, 2025.

Optical Gas Imaging

Figure 2.4 – OGI Camera Imaging

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

The cameras are widely used as a screening tool for leak detection purposes and have continuous monitoring capability. Handheld OGI cameras are used widely by leak detection service providers as well as facilities for periodic monitoring.

Open Path Sensors

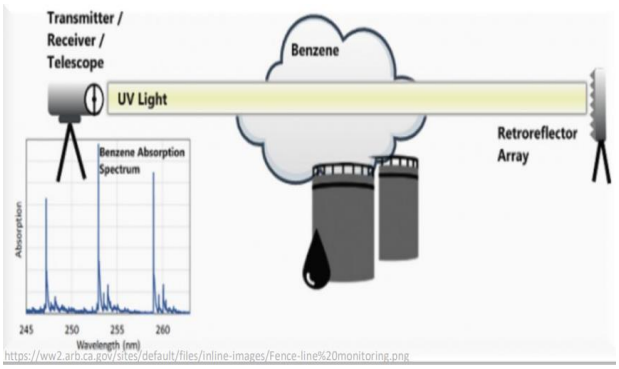


Figure 2.5 – Example of Open Path Technology

Open path detection devices emit beams that detect VOCs (See Figure 2.5). For VOCs to be detected with an open path device, the VOCs must contact the beam. Open path detection devices can detect gas concentrations in the parts per billion range and from distances as far as 300 meters away from a source, with some models advertised as having a measurement distance of 1,000 meters. One open path device can cover multiple paths and also speciate VOCs. A significant limitation to leak detection using these devices is the requirement for VOCs to contact the emitted beam. This provides a risk for VOCs to go undetected if they travel on a path that does not intercept the beam. Another drawback to open path detection is the dilution factor. VOCs originating from a tank may need to travel hundreds of feet before contacting the emitted beam. The concentration of VOC may dilute so significantly that VOCs are undetectable by the time they reach the emitted beam.

Fixed Gas Sensors

Fixed gas sensors have the capability to continuously monitor for VOC emissions and are installed as fixed applications (See Figure 2.6). Concentrations of VOC detected with fixed gas sensors are in the parts per million by volume (ppmv) range depending on the sensor and have a maximum detection range of about 50-100 ppmv. Like open path devices, gas sensors can only detect emissions when VOCs contact the fixed sensor. Leaks from a source must be significant to be detected by a fixed gas sensor due to the dilution factor. According to one supplier, it is estimated that a leak with a concentration of 72,000 ppmv is detectable by a gas sensor 100 feet away. A leak with a concentration of 18,000 ppmv is detectable by a gas sensor 50 feet away.

Figure 2.6 – Example of a Fixed Gas Sensor

- *Initial BARCT Emission Limits and Other Considerations*

Staff determined that the advanced monitoring technology most suitable to identify sources of leaks at organic liquid loading facilities is handheld OGI devices. Other South Coast AQMD rules, specifically Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities, Rule 463 – Organic Liquid Storage, Rule 1148.1 – Oil and Gas Production Wells, and Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, have OGI inspection requirements summarized in the table below:

Table 2.1 Monitoring Requirements in Other South Coast AQMD Rules

Regulation	**Rule 1178**	**Rule 463**	**Rule 1148.1**	**Rule 1173**
OGI Monitoring Requirement	Weekly	Every 2 Weeks	Monthly	Monthly

Facilities subject to Rule 462 may also be subject to Rules 1173 and 463 which have a monthly and every two-week OGI inspection requirement, respectively. OGI inspections are proposed as a PAR 462 requirement for consistency with other South Coast AQMD rule requirements and therefore can reduce cost impacts to facilities for OGI devices, training, and other costs.

- *Costs and Cost-Effectiveness*

Costs were obtained from OGI camera vendors and from owners and operators of affected facilities with handheld OGI cameras. An OGI camera costs approximately $120,000. Maintenance is estimated to cost $1,500 per year. Staff analyzed cost-effectiveness for organic liquid loading facility inspections at increasing frequencies using OGI devices, assuming owner or operator ownership of the cameras. The results are the following:

Table 2.2 Cost-Effectiveness of OGI Inspection Frequencies		
	Monthly	Every Two Weeks
Total Cost over 10 Years ($)	$4,628,902	$6,702,100
Total Emission Reductions (tons/10 years)	146	182.5
Cost-Effectiveness ($ / ton VOC)	$31,700	$36,700
Incremental Cost-Effectiveness ($ / ton VOC)	N/A	$56,800

As shown in Table 2.2, monthly OGI inspections and OGI inspections every two weeks are below the cost-effectiveness threshold[7], but the incremental cost-effectiveness of OGI inspections every two weeks is above the cost-effectiveness threshold. Staff proposes OGI inspections monthly, as the frequency is both cost-effective and incrementally cost-effective. Refer to Chapter 4 for details on costs and cost-effectiveness.

VAPOR CONTROL SYSTEMS

- *Assessment of Current South Coast AQMD Regulatory Requirements*

Currently, Rule 462 has an emission limit of 0.08 pounds VOC per thousand gallons of organic liquid transferred for vapor recovery systems and/or vapor disposal systems at Class A facilities. Class B facilities are required to recover at least 90% of displaced vapors with a vapor recovery system and/or vapor disposal system. Class C facilities are not required to have vapor recovery and/or vapor disposal systems. Rule 462 does not require periodic demonstration of this emission limit with source testing.

- *Assessment of Emission Limits for Existing Units*

Staff assessed reducing emission limits for vapor recovery systems and/or vapor disposal systems for Class A facilities from 0.08 pounds VOC per thousand gallons (10 grams per 1,000 liters) of organic liquid transferred to 0.04 pounds VOC per thousand gallons (5 grams per 1,000 liters). Initial review of source tests indicate that facilities are already meeting a proposed new limit of 0.04 pounds VOC per thousand gallons of organic liquid transferred. In addition, some facilities already have existing emission limits lower than 0.08 pounds VOC per thousand gallons organic liquid transferred in permits to operate.

[7] The 2022 AQMP established a cost-effectiveness threshold of $36,000 per ton of VOC reduced which is updated annually to account for inflation

- *Other Regulatory Requirements*

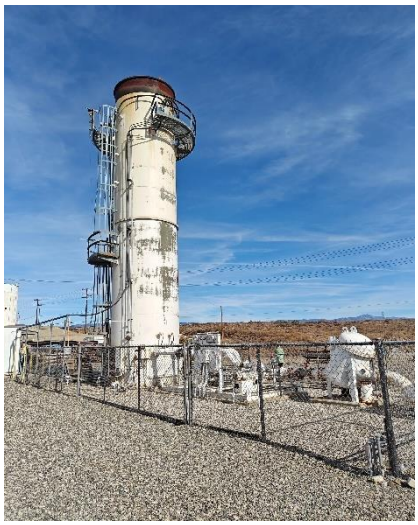


Figure 2.7 – Example of a Vapor Disposal System

During the review of current emission limits for VOC regarding vapor recovery systems and/or vapor disposal systems, staff discovered that the Bay Area AQMD has an organic compound emission limit of 0.04 pounds VOC per thousand gallons of organic liquid loaded[8]. As a component of the 2016 AQMP, South Coast AQMD was required to submit a Reasonably Available Control Technology (RACT) Demonstration to U.S. EPA. In 2014, South Coast AQMD completed this RACT Demonstration and identified BAAQMD's Reg. 8, Rule 33 VOC limit for gasoline bulk terminal and cargo tank operations as more restrictive than Rule 462.[9] Staff assessed the feasibility of reducing this VOC limit as part of the 2016 AQMP control measure development and it was not included as a feasible control measure at that time, primarily due to it being not cost-effective.

- *Assessments of Pollution Control Technologies*

Figure 2.8 - Example of a Vapor Recovery System

During the rule development process, staff visited multiple sites where vapor recovery systems and/or vapor disposal systems were being used to control VOC emissions from gasoline and other organic liquid vapors (See Figure 2.7).

- *Vapor Recovery Systems*

Rule 462 defines a vapor recovery system as a vapor gathering system which is capable of collecting and returning discharged hydrocarbon vapors and gases during the loading of organic liquids into transport vessels, back to a stationary storage container, or into an enclosed process system. A common vapor recovery system utilizes carbon adsorbers and scrubbers to convert organic vapors back into a liquid phase. Typically, two or more carbon beds are used with one bed used for

[8] Bay Area Air Quality Management District Rule 33 – *GASOLINE BULK TERMINALS AND GASOLINE CARGO TANKS*, subsection 8-33-301 https://www.baaqmd.gov/~/media/dotgov/files/rules/refinery-rules-definitions/rg0833_20211103-pdf p. 8-33-5, accessed on February 24, 2025.

[9] South Coast AQMD 2016 AQMP Reasonably Available Control Technology Demonstration, https://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2014/2014-jun6-031.pdf, p. 16, accessed on February 24, 2025.

recovery and removal of vapors and other beds in standby mode or in regenerating mode.

- *Vapor Disposal Systems*

Rule 462 defines a vapor disposal system as a control equipment designed and operated to reduce VOC emissions into the atmosphere. As opposed to vapor recovery systems which convert vapor to liquid, vapor disposal systems destroy organic vapors before entering the atmosphere. Examples of vapor disposal systems include thermal oxides, incinerators, and flares.

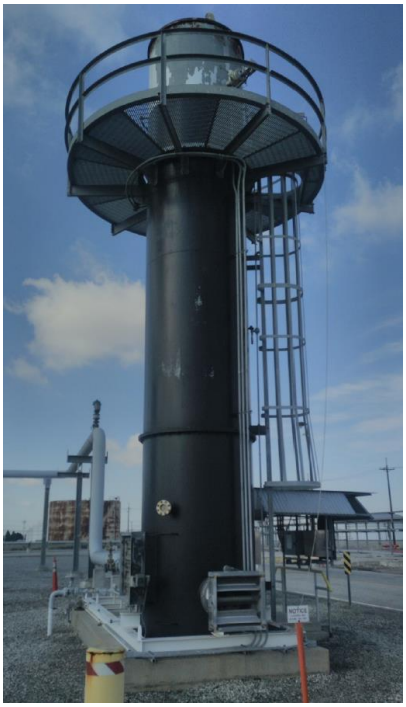


Figure 2.9 - Example of Vapor Disposal System

- *Associated Emissions*

Of the four sites visited, staff determined that all facility vapor systems - both vapor recovery systems and vapor disposal systems - were emitting less than 0.04 pounds VOC per thousand gallons of organic liquid transferred and were demonstrating this standard via source testing every 60 months. In addition, staff conducted a review of the most recent source tests and Annual Emission Reporting (AER) site-specific emission factors for Class A facilities and found that all of the vapor recovery systems and/or vapor disposal systems evaluated were less than 0.04 pounds VOC per thousand gallons of organic liquid transferred.

- *Initial BARCT Emission Limits and Other Considerations*

Based on the technology assessment, staff determined 0.04 pounds VOC per thousand gallons of organic liquid transferred to be the initial BARCT emission limit for vapor recovery systems and/or vapor disposal systems at Class A facilities.

- *Costs and Cost-Effectiveness*

Staff does not foresee costs associated with upgrading control devices as source test data indicates that the 0.04 pounds VOC per thousand gallons of organic liquid transferred emission limit is already achieved in practice at existing facilities, based on review of available source tests and submitted AER site-specific emission factors. However, there are costs associated with updating Title V permits early to incorporate the new VOC limit, which is accounted for in the cost-effectiveness analysis for PAR 462. Rule 3005 – Permit Revisions requires Title V permits to be reopened and revised when regulatory requirements become applicable to a Title V facility with a remaining permit term of three or more years. Title V permit renewals occur every five years. Therefore, staff assumed 60% of Rule 462 Title V facilities will need to submit early Title V revisions to update permits conditions. Staff assumed a change of condition fee to be $4,128.02 per permit based on Rule 301 – Permitting and Associated Fees. Since there are 18 Class A facilities that would require Title V permit modifications (2 facilities already have VOC emission limits below 0.04 pounds VOC per thousand gallons of organic liquid transferred), 60% of those

facilities would amount to approximately 11 affected facilities. Total permit costs for the estimated 11 Class A facilities needing Title V permit revisions are approximately $45,400.

FACILITY LEAK THRESHOLD

Currently, Rule 462 defines a facility vapor leak limit as greater than 3,000 ppm VOC. Staff considered reducing the vapor leak limit but found that Rule 462 is the most stringent leak standard for organic liquid loading facilities as compared to SJVAPCD (10,000 ppm), Bay Area AQMD (3,000 ppm), and U.S. EPA (10,000 ppm). Additionally, after conducting site visits there was no new technology observed that would allow for a lower vapor leak limit. A review of online research did not produce results in finding new technology that could allow a further reduction of the vapor leak limit. Based on the technology assessment staff is not proposing changes to the facility vapor leak limit.

BARCT EMISSION LIMITS

Based on the BARCT assessment, staff proposes monthly OGI inspections and reducing the VOC emission limit for vapor recovery systems and/or vapor disposal systems at Class A facilities to 0.04 pounds VOC per thousand gallons of organic liquid transferred.

CHAPTER 3: SUMMARY OF PROPOSALS

INTRODUCTION

PROPOSED AMENDED RULE STRUCTURE

PROPOSED AMENDED RULE 462

INTRODUCTION

PAR 462 adds OGI inspection requirements for organic liquid loading facilities, requires periodic source testing, and tightens emission standards on vapor control systems. PAR 462 also includes an ozone contingency measure to comply with federal requirements.

The following information describes the structure of PAR 462 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 462 also includes grammatical and editorial changes for clarity.

PROPOSED AMENDED RULE STRUCTURE

PAR 462 will contain the following subdivisions:

(a) Purpose
(b) Applicability
(c) Definitions
(d) Requirements
(e) Compliance Schedule
(f) Compliance Determination/Test Methods
(g) Recordkeeping Requirements
(h) Distribution of Responsibilities
(i) Ozone Contingency Measure
(j) Exemptions

PROPOSED AMENDED RULE 462

Subdivision (a) *Purpose*

The purpose of this rule is expanded to establish contingency measures to fulfill federal requirements.

Subdivision (b) *Applicability*

The applicability of this rule has been reordered from subdivision (c) to subdivision (b) to align with current South Coast AQMD rule structure conventions. Additional language was added to ensure subdivision (i) - Ozone Contingency Measure is applicable upon approval by U.S. EPA.

Subdivision (c) *Definitions*

This subdivision has been reordered from subdivision (b) to subdivision (c) to align with current South Coast AQMD rule structure convention. Several definitions were added, deleted, or substantially modified for clarity and consistency. Key definition changes are discussed below:

- *Background* – updated to remove inaccurate references no longer present in reference method.
- *Contingency Measure* – added to implement federal requirements.

- *Coupler* – added to provide clarity for new residual liquid definition. At two site visits, operators stated that occasionally couplers would contain residual liquid that would be detected by VOC analyzers. Operators expressed concern that South Coast AQMD personnel were inconsistent when allowing removal of residual liquid from the coupler. This definition was added to fully describe which component is allowed to be retested.
- Inaccessible Component – added due to a request from a facility stakeholder and to align with South Coast AQMD Rule 1173 that has this definition and similar inspection requirements.
- *Optical Gas Imaging (OGI) Device* – added to implement OGI inspection requirements. This definition is consistent with other recent South Coast AQMD rules that require OGI inspection, such as Rules 1178, 463, 1148.1, and 1173. Additionally, research found that OGI cameras that operate within the 3.2 – 3.4 micrometer waveband can detect gas leaks by utilizing a special filter that only allows infrared radiation within this narrow wavelength range.
- *Organic Liquid* – added the word 'true' to vapor pressure for clarity as to what type of vapor pressure this rule is referring to, and also for harmonization with storage tank Rules 463 and 1178 that reference true vapor pressure, as the organic liquid that is loaded is typically stored in storage tanks where either Rule 463 or 1178 applies.
- *Residual Liquid* – added to increase clarity and remove ambiguity during South Coast AQMD compliance inspections. After an organic liquid loading event, the liquid product line is disconnected at a coupler. The coupler may have de minimis quantities of organic liquid left as a result of the disconnection and may be detected by an analyzer using U.S. EPA Method 21 or an OGI device. PAR 462 will allow owners or operators the option to remove residual liquid once upon detection before a retest by South Coast AQMD personnel using U.S. EPA Method 21 or an OGI device, as applicable.
- *Transfer Equipment* – updated to increase clarity that transfer equipment is the entire organic liquid pathway from any storage tanks to the transporting vessel and the returning vapor pathway.
- *True Vapor Pressure* – added to provide clarity as to what type of vapor pressure this rule is referring to and also to be consistent with the organic liquids that originate from storage tanks that fall under Rule 463 and/or 1178 that also have the same definition.
- *Visible Vapors* – added to implement OGI inspection requirements.

Subdivision (d) *Requirements*

PAR 462 includes several provisions to further reduce VOC emissions. For Class A facilities, the emission standard for vapor recovery systems and vapor disposal systems is lowered from the existing 0.08 pounds VOC per thousand gallons (10 grams per 1,000 liters) organic liquid transferred standard to a new 0.04 pounds VOC per thousand gallons (5 grams per 1,000 liters) organic liquid transferred standard as described in subparagraph (d)(1)(D). Research conducted by reviewing source tests and conducting site visits found that Class A facilities will be able to meet the new proposed emission limit of 0.04 pounds VOC per thousand gallons (5 grams per 1,000 liters) organic liquid transferred without having perform any control equipment modifications.

Staff received feedback from a stakeholder that they would have difficulty in meeting the proposed VOC limit of 0.04 pounds per thousand gallons over a 15-minute average. Stakeholder data showed a number of 15-minute average values above the proposed VOC limit, which may cause shutdowns of their bulk loading operations. These vapor recovery systems typically operate on a 15-minute cycle where one carbon bed is adsorbing while the other carbon bed is regenerating. The proposed rule does not specify the averaging time to be used. Previous CMS plans have prescribed a 15-minute averaging time and a longer averaging time may be needed to minimize potential shutdowns if the VOC limit is reduced to 0.04 pounds per thousand gallons. Facilities may need to resubmit CMS Plans as needed to minimize potential shutdowns.

Class A facilities will also be required to demonstrate this lower emission standard every 60 months by source testing as described in subparagraph (d)(1)(D). Staff found that for those Class A facility permits reviewed, periodic source test requirements are already required. PAR 462 includes a 60-month periodic source testing requirement to reflect existing permit requirements and to ensure periodic source testing for any new Class A facilities.

Subparagraphs (d)(1)(G) and (d)(2)(F) require transfer equipment to be operated and maintained without visible vapors. The compliance mechanism to determine if there are visible vapors is an OGI inspection.

Staff detected an inconsistency for backpressure requirements for Class B facilities, found in subparagraph (d)(2)(C). This requirement should apply to both vapor recovery systems as well as vapor disposal systems and rule language has been updated.

Subparagraph (d)(6)(A) adds monthly OGI inspection requirements for Class A and B facilities to the existing monthly sight, sound, and smell and quarterly organic vapor analyzer inspection requirements. This new requirement will be effective on August 1, 2026.

Subparagraph (d)(6)(B) includes a minor revision, changing "repaired or replaced within 72 hours" to "repaired or replaced within 3 calendar days." This change was made for consistency with other rules, and after a request was made by a stakeholder.

Subparagraphs (d)(7)(A) and (d)(7)(B) require the owner or operator of the OGI device to be trained to operate and maintain the device in accordance with manufacturer's specifications. In lieu of an OGI inspection, an alternative inspection method may be used if approved by U.S. EPA and the Executive Officer as described in subparagraph (d)(7)(C). Other agencies, such as the state of Colorado Department of Public Health & Environment (CDPHE), have several U.S. EPA approved alternative inspection methods. CDPHE's alternative inspection methods are referred to as an Alternative Approved Instrument Monitoring Method[10] and are used by oil and gas facilities in that jurisdiction. If an alternative inspection method is approved by U.S. EPA, it may also be used in South Coast AQMD jurisdiction if approved by the Executive Officer.

[10] https://cdphe.colorado.gov/oil-and-gas-compliance-and-recordkeeping/approvedinstrument-monitoring-method-aimm-for-oil-gas

Subdivision (d) also includes additional guidance regarding procedures during inspection by South Coast AQMD personnel. As referenced earlier in subdivision (c), subparagraph (d)(8)(A) standardizes retesting of couplers when residual liquid is present. The owners or operators have the option to remove residual liquid from the coupler by wiping, using compressed air, application of cotton swabs, or other means and retest if VOC is detected during a first test. The removal of residual liquid should be prompt, such as within one minute of detection of VOC by OVA or OGI device, or within another acceptable timeframe determined by South Coast AQMD personnel. The intent of subparagraph (d)(8)(A) is to allow an owner or operator to remove de minimis amounts of residual liquid prior to compliance determination by South Coast AQMD personnel, however, the removal of residual liquid cannot unduly delay a compliance inspection.

Visible vapors, if detected by South Coast AQMD personnel, are subject to Notice of Violation. However, as described in subparagraph (d)(8)(B), facility owners or operators may challenge a detected visible vapor by using an analyzer in accordance with U.S. EPA Method 21. If the visible vapor does not meet the definition of a facility vapor leak, defined as 3,000 ppm, a Notice of Violation is not appropriate. Additionally, for any inaccessible component found, the owner or operator would have one (1) calendar day to demonstrate that the visible vapors are not a facility vapor leak.

Subdivision (e) *Compliance Schedule*

PAR 462 updates this subdivision by removing obsolete rule language with past compliance dates. Staff also added rule language to clarify that sending the 30-day written request for CARB certification of new or modified vapor recovery system and/or vapor disposal system is only required if obligated under Health and Safety Code section 41954.[11]

New subparagraph (e)(1)(C) adds a deadline for facilities to submit amendments to their permits for the VOC limit change to 0.04 pounds per thousand gallons organic liquid transferred. This takes into account both Title V and non-Title V facilities.

New subparagraph (e)(1)(D) clarifies that any new or modified Continuous Monitoring System (CMS) requires a CMS Plan to be submitted and approved prior to operation, preventing any CMS from operating without an approved CMS plan.

Subdivision (f) *Compliance Determination/Test Methods*

This subdivision now includes paragraph (f)(8) that details source testing procedures, including submitting source test protocols, complying with the approved terms of a source test protocol, and submission of source testing reports. These source test requirements were based on source test requirements in Rule 1405 – Control of Ethylene Oxide Emissions from Sterilization and Related Operations (Rule 1405). Rule 1405 was recently amended in December 2023. Paragraph (f)(8) also includes deadlines for those facilities that have not already been doing periodic source testing to submit their source test protocols and perform the source test itself.

[11] For additional information regarding CARB certification of vapor recovery for gasoline bulk plants and terminals please refer to: https://ww2.arb.ca.gov/vapor-recovery-bulk-plants-and-terminals

Paragraph (f)(9) was added to specify the test method for determining true vapor pressure.

Subdivision (g) *Recordkeeping Requirements*

Formerly entitled Recordkeeping, subdivision (g) is expanded to include records of OGI inspections and also now requires five (5) years of records to be maintained for major sources, known as Title V facilities. Title V facilities have permits that are valid for five years before a permit renewal is required and contain some of the most stringent recordkeeping requirements, including record retention for five years.

Subdivision (h) *Distribution of Responsibilities*

PAR 462 expands the scope of subdivision (h) to assign responsibility of OGI inspections and source testing to the owner and operator of an organic liquid loading facility.

Subdivision (i) *Ozone Contingency Measure*

To comply with federal requirements, subdivision (i) was added. This contingency measure 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 462 are approved by U.S. EPA to be included into the SIP. This contingency control measure is necessary as part of comprehensive efforts to timely attain ozone standards.

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 462 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 NOx 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 NOx or VOC reductions, in rules involving other traditional sources within the mandated one-year time period. Retrofit or replacement of existing equipment with newer technologies or equipment, or any revisions to permit provisions would likely take more than one year to effectively implement. Conversely, the proposed amendments to Rule 462 to implement OGI inspections do not require permitting of units, do not require units be retrofitted or replaced, and do not require reformulation or development of new products. Consequently, Rule 462 is well suited for contingency provisions as 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, South Coast AQMD will satisfy the contingency requirements set forth in CAA section 172(c)(9) and in the U.S. EPA's Ozone Implementation Rule with these

proposed amendments to Rule 462. PAR 462 provides a contingency measure to be triggered if the Coachella Valley Area fails to meet RFP or attain the applicable ozone standards by the applicable date. The emission reductions anticipated from PAR 462, in conjunction with reductions from existing rules and regulations, are expected to achieve the reductions equivalent to or greater than OYW of progress. PAR 462 addresses the contingency measures for RFP and attainment for the applicable ozone standards (2008 & 2015 8-hour ozone NAAQS).

Subdivision (j) *Exemptions*

Paragraph (j)(1) updates the existing exemption from Notice of Violation to include visible vapors detected by the owner or operator during a self-inspection. The exemption only applies if equipment is repaired or replaced within 3 calendar days pursuant to subparagraph (d)(6)(B).

Paragraph (j)(3) was added to exempt Class C facilities from the monthly OGI inspection requirement. Monthly sight, sound, and smell inspection requirements as well as quarterly OVA inspection requirements remain in effect.

Paragraph (j)(4) was added to exempt Rules 466 and 466.1 both to avoid duplicate inspections and due to those two rules' less stringent leak thresholds of 10,000 PPM relative to Rule 462's leak threshold of 3,000 PPM.

Paragraph (j)(5) was added to exempt equipment that is already subject to Rule 1173 to prevent duplicative monitoring efforts.

CHAPTER 4: IMPACT ASSESSMENTS

INTRODUCTION

Impact assessments were conducted as part of the PAR 462 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 performed a comparative analysis pursuant to Health and Safety Code Sections 40727 and 40727.2, respectively.

EMISSION REDUCTIONS

PAR 462 will establish more stringent control and monitoring requirements at organic liquid loading sites that will result in emission reductions.

Reduction of VOCs for Vapor Recovery Systems and Vapor Disposal Systems

The current emission limit for vapor recovery and vapor disposal systems is 0.08 pounds VOC per thousand gallons of organic liquid transferred. As noted in Chapter 1, there are 20 Class A facilities in South Coast AQMD. Throughput data obtained during facility site visits and AER data revealed that the total throughput from all Class A facilities is approximately 5,525,600,000 gallons of organic liquid transferred per year. The average annual throughput is 276,300,000 gallons from each Class A facility, with an average of 757,000 gallons of organic liquid transferred per day per facility.

The baseline emissions at 0.08 pounds VOC per thousand gallons of organic liquid transferred at the 20 Class A facilities with a daily throughput of 757,000 gallons are calculated as follows:

0.08 / 1,000 x 20 x 757,000 = 1,211 pounds VOC/day
1,211 / 2,000 = 0.61 tons VOC/day

Reducing the emission limit to 0.04 pounds VOC per thousand gallons of organic liquid transferred is expected to reduce VOC emissions by 50% or 0.30 tons VOC/day. As noted earlier, all units reviewed are already meeting this emission limit. Therefore, these emission reductions are not included in the cost-effectiveness analysis. However, the emission reductions associated with a lower emission limit can still be claimed for SIP credit.

OGI Monitoring

Staff is proposing the monthly use of OGI as a tool to identify leaks from equipment regulated by this rule. While OGI devices are not as sensitive as OVA at detecting smaller leaks, larger leaks can be discovered and repaired sooner than through current inspection frequencies and techniques. Staff assumed five major leaks per year based on the average number of leaks identified over the last five years by South Coast AQMD personnel. During the September 2023 amendment to Rule 1178[12], staff determined that leaks from storage tanks contribute 8,000 pounds of VOC per day per leak. While VOC storage tanks and organic liquid loading share common products and are often connected together, the leak rate from storage tanks is different than the leak rate from organic liquid loading facilities. Staff adjusted the leak rate used for PAR 462 to be 97.5% lower than the leak rate used in the September 2023 amendment to Rule 1178, or just 2.5% of the storage tank leak rate. Staff calculated that 2.5% of the 8,000 pounds VOC per day per leak rate used for storage tanks is 200 pounds of VOC per day per leak, which was the VOC leak rate assumed for PAR 462. A leak rate of 200 pounds VOC/day is also consistent with the leak rate used in the 2024 rulemaking for Rule 1148.1.

Based on the current quarterly inspection frequency, staff assumed that an undiscovered leak occurs at a midpoint between inspections, occurring at 45 days. If the inspection frequency is increased to monthly, then staff assumes that an undiscovered leak occurs at a midpoint of 15 days. Comparing the current quarterly inspection frequency using the OVA to the proposed monthly frequency using OGI equipment, staff predicts that a potential leak may be discovered and repaired approximately 30 days sooner, a difference between 45 and 15 days. While there is an optional monthly inspection using sight, sound, and smell, that inspection option is more subjective than using an OGI device and would not monitor certain parts of the product or vapor pathways, such as elevated pipe runs that are at a considerable distance from ground level.

To establish baseline emissions, staff performed the following calculation:

- Five leaks per year from the 51 affected facilities (after excluding the two Class C facilities)
- A leak rate of 200 lbs/day of VOC
- 45 days before a leak is identified
- Calculation – (5 leaks/yr) x (200 lbs VOC/day) x (45 days) x (1 yr/365 day) x (1 ton/2000 lb) = 0.06 ton VOC/day

Using these assumptions, staff estimates baseline emissions of 0.06 ton per day of VOC.

With monthly OGI inspections, staff anticipates a reduction in VOC emissions compared to the baseline. To determine the emission reductions, staff performed the following calculation:

[12] South Coast AQMD Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1178/par-1178-draft-staff-report--final.pdf, p. 4-2, accessed on February 27, 2025.

- Five leaks per year from the 51 affected facilities (after excluding the two Class C facilities)
- A leak rate of 200 lbs/day of VOC
- Discovery of a leak 30 days sooner
- Calculation – (5 leaks/yr) x (200 lbs VOC/day) x (30 days) x (1 yr/365 day) x (1 ton/2000 lbs) = 0.04 ton VOC/day

Using these assumptions, staff estimates emission reductions of 0.04 ton per day of VOC from monthly OGI inspections.

COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires a cost-effectiveness analysis when establishing BARCT requirements. The cost-effectiveness of a potential emission control option 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 are 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, adjusted annually for inflation. A cost-effectiveness that is greater than the threshold of $36,000 per ton of VOC reduced requires additional analysis and a hearing before the Governing Board regarding costs.

The cost-effectiveness is estimated based on the present value of the cost, which are 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 equipment multiplied by a present worth factor).

Cost-Effectiveness (CE) = Present Worth Value (PWV) / Emission Reduction (ER)

PWV = Total Install Cost (TIC) + Present Worth Factor (PWF) x Annual Cost (AC)

$$Present\ Worth\ Factor\ (PWF) = (1 - \frac{1}{(1+r)^n})/r$$

- Interest rate (r)
- Life of equipment (n)

Capital costs are one-time costs, such as equipment purchase and/or installation costs. Annual costs are any recurring costs required to operate equipment. Costs were obtained for OGI monitoring.

OGI Monitoring

Costs for OGI cameras were obtained from vendors and facilities. Capital costs for OGI cameras was conservative, as some organic liquid loading companies already purchased an OGI camera due to OGI inspection requirements in Rules 1178 and 463. Staff was able to obtain further cost information such as maintenance and labor from owners and operators as well as OGI equipment vendors. In addition, South Coast AQMD retains OGI cameras, and training and maintenance cost information was available.

The following information was used to calculate the cost-effectiveness of purchasing and using an OGI camera:

- Approximately 51 organic liquid loading facilities (after excluding the two Class C facilities)
- Cost of an OGI camera = $120,000 with a 10-year life span
- 20 cameras assumed to be needed based on one per company, approximately 20 companies represent the 51 facilities
- Annual maintenance = $1000
- Training = $1,000 every two years ($500 per year)
- In-House labor = 1 person working 8 hours/day at $50/hr = $400/day
- Monthly inspections = 12/year
- Emission reductions = 0.04 tpd VOC

- PWF = 8.111 for a 10-year life expectancy at 4% interest rate
- TIC = $120,000 x 20 cameras = $2,400,000
- AC = ($1000 [maintenance] + $500 [training]) x 20 cameras + (1 person x 8 hr/day x $50/hr x 12 inspections/yr x 51 facilities) [labor] = $274,800 for 20 cameras
- PWV = $2,400,000 + 8.111 x $274,800 = $4,628,902
- ER = (0.04 tpd VOC) x (365 day/yr) x (10 years) = 146 tons VOC
- CE = $4,628,902 / 146 tons VOC reduced = $31,700/ton VOC reduced

The cost-effectiveness for requiring monthly inspections using OGI cameras is calculated to be $31,700/ton VOC reduced.

Table 4-1 – Summary of Cost-Effectiveness				
Proposed Requirement	Cost Over 10 Years	Annualized Cost	Annual Emission Reductions (tons/year)	Cost-Effectiveness ($/ton)
Monthly OGI	$4,628,902	$462,890	14.6	$31,700
More Stringent Vapor Recovery Emission Standard (Title V Permit Revision)	$45,400	$4,540	0	N/A
5-Year Source Test	$80,000	$8,000	N/A	N/A
Overall	$4,754,302	$475,430	14.6	$32,600*

*The overall rule cost-effectiveness includes the Title V permit revision costs associated with reducing the VOC limit for vapor recovery systems. Staff did not include the emission reductions from reducing the VOC limit of vapor control systems as part of the cost-effectiveness analysis as it is assumed facilities are already meeting the proposed standard. As such, the emission reductions are not included in the cost-effectiveness analysis, however, the emission reductions are being submitted for SIP credit.

Staff identified two Class A facilities that were not already conducting periodic source testing and obtained source testing quotes with an average cost of $20,000 per test. With two known facilities, the cost over 10 years is $80,000.

Since the public workshop took place on April 2, 2025, a comment was received by an operator that requested to be exempt from OGI monitoring for his Class C bulk loading operation. Staff reviewed the facility's permit and noted a monthly throughput limit of 15,000 gallons per month of gasoline. A cost-effectiveness study was done based on the permit throughput limit, and on an assumption that there are two active facilities that fall under Class C status. Below is the cost-effectiveness analysis conducted for these two Class C facilities:

- 2 known Class C facilities, 15,000 gal/month x 12 months = 180,000 gal
- 180,000 gal x 2 facilities = 360,000 gal/year throughput for 2 facilities
- 5,525,599,023 gallons is estimated total annual throughput of all Class A facilities
- (360,000 gal/year)/(5,525,599,023 gal/year) = 0.000065 = 0.0065% is throughput difference of the two Class C facilities compared to all Class A facilities
- 14.6 tons/year is expected annual emission reductions
- 0.000065 x 14.6 = 0.001 tons/year = 2 lbs VOC per year

- 20 cameras for 20 companies with maintenance and other costs is estimated to be $4,628,902 over 10 years
- The number of Class C facilities is 10% of the number of Class A, and 10% of $4,628,902 is $462,890 over 10 years
- For the two companies the cost per year is $46,289
- CE = $46,289/0.001 tons/year = $46,289,000 per ton of VOC

For Class C facilities, it would not be cost-effective to conduct monthly OGI inspections and therefore PAR 462 will provide an exemption from monthly OGI inspection requirements for those facilities.

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, SOx, NOx, 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 option as compared to the next less expensive control option.

Incremental cost-effectiveness is calculated as following:

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

Incremental Cost-Effectiveness for OGI Inspections

Staff conducted an incremental cost-effectiveness for OGI inspections, with Option 1 being monthly OGI monitoring and Option 2 being every two weeks OGI monitoring (26 inspections per year):

$$\text{Incremental Cost-Effectiveness} = \frac{\$6{,}702{,}100 - \$4{,}628{,}900}{182.5 \text{ tons} - 146 \text{ tons}}$$

The incremental cost-effectiveness of conducting OGI inspections every two weeks compared to monthly is calculated to be $56,800/ton VOC reduced.

Staff found that it was not incrementally cost-effective to conduct OGI inspections every two weeks and is therefore proposing monthly OGI inspections. As previously noted, OGI inspections would be required every two weeks if and when contingency measures are triggered.

SOCIOECONOMIC IMPACT ASSESSMENT

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 Sections 40440.8 and 40728.5 require a socioeconomic impact assessment for proposed and amended rules resulting in significant impacts to air quality or emission limitations. Thus, this Socioeconomic Impact Assessment has been prepared in accordance with Health and Safety Code and South Coast AQMD Governing Board requirements. The type of industries or businesses affected, and the range of probable costs, are addressed in this chapter. Additional information and analysis on the availability and cost-effectiveness of other technologies considered for the BARCT assessment, discussion of potential emission reductions, and the necessity of amending the rule are included elsewhere in this report.

Introduction

PAR 462 is designed to implement the 2022 AQMP Control Measure FUG-01 – Improved Leak Detection and Repair. The objective of PAR 462 is to further reduce VOC emissions from organic liquid loading. Specifically, PAR 462 would require: 1) monthly OGI inspections; 2) periodic source testing for all Class A facilities' vapor control systems; and 3) reduced VOC limits for vapor control systems. Additionally, PAR 462 will introduce a contingency measure to partially satisfy Clean Air Act contingency requirements for applicable ozone National Ambient Air Quality Standards (NAAQS) in the South Coast AQMD's jurisdiction.

Legislative Mandates

The legal mandates directly related to the socioeconomic impact assessment of PAR 462 include South Coast AQMD Governing Board resolutions and various sections of the Health and Safety Code.

South Coast AQMD Governing Board Resolution

On March 17, 1989, the South Coast AQMD Governing Board adopted a resolution that requires an analysis of the economic impacts associated with adopting and amending rules and regulations that considers all of the following elements:

- Affected industries;
- Range of probable costs;
- Cost-effectiveness of control alternatives; and
- Public health benefits.

Health and Safety Code Requirements

The state legislature adopted legislation which reinforces and expands the South Coast AQMD Governing Board resolution requiring socioeconomic impact assessments for rule development projects. Health and Safety Code Section 40440.8, which went into effect on January 1, 1991, requires a socioeconomic impact assessment for any proposed rule, rule amendment, or rule repeal which "will significantly affect air quality or emissions limitations."

To satisfy the requirements in Health and Safety Code Section 40440.8, the scope of the socioeconomic impact assessment should include all of the following information:

- Type of affected industries;
- Impact on employment and the regional economy;
- Range of probable costs, including those to industry;
- Availability and cost-effectiveness of alternatives to the rule;
- Emission reduction potential; and
- Necessity of adopting, amending, or repealing the rule in order to attain state and federal ambient air quality standards.

However, job impact analyses are not conducted for projects with annual costs below one million U.S. dollars, as the modeling tool is unable to accurately assess macroeconomic effects that are minimal in scale compared to the broader economic forecast.

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, CO, SOx, NOx, VOC, and their precursors. A cost-effectiveness analysis was conducted for PAR 462 and can be found in Chapter 4 of this report.

Affected Facilities and Industries

PAR 462 is applicable to approximately 53 facilities located within the South Coast AQMD jurisdiction, with 26 facilities in Los Angeles County, 13 facilities in San Bernardino County, seven facilities in Riverside County, and seven facilities in Orange County. Table 4-2 presents the distribution of the affected facilities across various industrial sectors under the North American Industrial Classification System (NAICS). As summarized in the table, the majority of the affected facilities are in the Wholesale Trade sector (51 percent), followed by the Utilities sector (30 percent), and the Support Activities for Transportation sector (8 percent).

Table 4-2
Distribution of PAR 462 Affected Facilities across NAICS Sectors

Industry Sector	NAICS Code	Number of Facilities	Percentage of Facilities
Wholesale Trade	42	27	51%
Utilities	22	16	30%
Scenic and sightseeing transportation; Support activities for transportation	487-488	4	8%
Pipeline Transportation	486	3	6%
Petroleum and Coal Products Manufacturing	324	3	6%
	Total	**53**	**100%**

Small Business Analysis

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.[13] The majority of facilities affected by PAR 462 fall within the Petroleum Bulk Stations and Terminals industry (NAICS 424710). According to the U.S. Small Business Administration, businesses in this industry with fewer than 225 employees are classified as small businesses.

South Coast AQMD relies mostly 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 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

[13] U.S. Small Business Administration, 2023 Small Business Size Standards, https://www.sba.gov/document/support-table-size-standards, accessed April 15, 2025.

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.

Employment and revenue estimates from 2024 Dun and Bradstreet data as well as other external sources are available for 52 of the 53 facilities subject to PAR 462. Note that the current data used for this small business analysis represents the most thorough and accurate information obtainable as of the publication date of this draft staff report. The number of affected facilities that qualify as a small business based on each of the four small business definitions is presented in Table 4-3.

Table 4-3: Number of Small Business Based on Various Definitions

Small Business Definitions	Number of Facilities
South Coast AQMD Rule 102	0
South Coast AQMD Small Business Assistance Office	7
U.S. Small Business Administration	9
1990 CAAA	N/A

However, a small business analysis based on the 1990 CAAA definition was not conducted because most affected facilities are either not required to submit annual emission reports pursuant to South Coast AQMD Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II, or the emissions data is missing. Therefore, a facility's small business status under this definition could not be determined.[14]

Compliance Costs

PAR 462 would require a one-time investment in OGI cameras. In addition, 11 Title V facilities would be required to update their permits early to reflect a change of condition, which would involve paying a Change of Condition fee. Affected facilities would also face recurring costs for camera operation and maintenance (O&M), labor expenses for conducting OGI inspections, training costs for personnel to use the OGI equipment, and source testing expenses for facilities not already performing such testing. Compliance costs associated with PAR 462 are projected over a 10-year period, from 2026 through 2035, enabling the annualization of camera purchase costs based on their expected 10-year useful life. All costs presented in this Socioeconomic Impact Assessment are expressed in 2024 dollars. The estimation methods and assumptions for each cost category are outlined in the following sections.

[14] 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 15, 2025.

In practice, many affected facilities already possess OGI cameras due to overlapping inspection requirements in other South Coast AQMD rules such as Rules 463, 1148.1, 1173 and 1178. Additionally, some facilities may opt to contract with third-party providers to conduct OGI inspections instead of purchasing cameras. However, given the uncertainty regarding whether facilities subject to PAR 462 already own cameras or will utilize third-party services, this analysis assumes that the parent company of each affected facility will purchase an OGI camera, incur the associated annual O&M costs, conduct inspections using in-house labor, and cover the cost of required OGI training every two years.

OGI Cameras

PAR 462 requires a monthly OGI inspection to detect leaks from equipment more promptly than what current inspection techniques and frequency provide. OGI cameras can detect vapors from leaking equipment by visualizing a variety of gas wavelengths. Staff determined that monthly OGI inspections would not be cost-effective for two affected Class C facilities; thus, they are not expected to incur related costs. This analysis assumes only 51 of the 53 affected facilities will be subject to OGI-related expenses.[15]

Staff identified approximately 20 parent companies for the 51 affected facilities that will be required to perform OGI inspections per PAR 462. Each parent company is assumed to purchase an OGI camera in 2026, the first year of rule compliance, and that OGI cameras will be used to perform leak inspections at all the affected facilities owned by the parent company. According to vendors and affected facilities, each camera will cost approximately $121,712 and have an anticipated 10-year useful life. The total capital cost attributed to OGI cameras is estimated to be $2,434,240.

Update to Permit Conditions for Title V Affected Facilities

As part of the implementation of PAR 462, there will be costs associated with updating Title V permits to reflect the proposed VOC emission limit of 0.04 pounds per thousand gallons of organic liquid transferred. Rule 3005 – Permit Revisions requires that Title V permits be reopened and revised when new regulatory requirements apply to a facility with three or more years remaining on its permit term.[16] Title V permits are renewed on a five-year cycle; therefore, staff assumes that approximately 60 percent of PAR 462 Title V facilities will need to submit early permit revisions to update permit conditions, as their renewal periods are still several years away. There are 20 affected Title V facilities in total; however, two of these facilities already have VOC emission limits below 0.04 pounds per thousand gallons of organic liquid transferred and therefore do not require permit modifications. This leaves 18 facilities subject to permit revisions. Staff assumed that approximately 60 percent of these 18 facilities, or approximately 11 facilities, will need to submit early Title V permit revisions. This analysis estimated the Change of Condition fee to be

[15] For more information regarding the cost-effectiveness analysis for the two affected Class C facilities please see the Cost-Effectiveness section of this report found in Chapter 4.

[16] South Coast AQMD, 2010, Rule 3005 – Permit Revisions, https://www.aqmd.gov/docs/default-source/rule-book/reg-xxx/rule-3005-permit-revisions.pdf, accessed July 2025.

$4,187 per permit, based on Rule 301 – Permitting and Associated Fees, adjusted to 2024 dollars.[17] The total capital cost is estimated to be $46,057.

OGI Operation & Maintenance (O&M) Costs

OGI cameras would require annual maintenance and calibration to ensure equipment performance. According to feedback from stakeholders, the annual OGI maintenance cost is approximately $1,014 per camera and is anticipated to begin in 2026 – the year when the OGI cameras are expected to be purchased. The total annual cost of OGI camera maintenance is estimated to be $20,280 for all 20 cameras.

OGI Labor Costs

PAR 462 will require the affected facilities to perform monthly OGI inspections to detect leaks. This analysis assumes that inspections will be conducted by existing employees of the affected facilities at a wage rate of approximately $51 per hour, based on cost assumptions used in past rulemaking for PAR 1148.1, adjusted to reflect 2024 dollars. Assuming eight hours per workday, 12 inspections per year, and a total of 20 cameras in operation, the total annual inspection cost would be approximately $97,920.

OGI Training

Training by OGI camera manufacturers is required to ensure proper operation of equipment and is expected to occur every two years at a cost of approximately $1,014 per trainee, based on estimates from prior rulemaking for PAR 1148.1 and adjusted to reflect 2024 dollars. The analysis assumed that one existing employee at each of the 20 parent companies would receive OGI training, resulting in an estimated total cost of $20,280 every two years, or an annual average cost of $10,140.

Periodic Source Testing

PAR 462 will require periodic source testing of vapor control systems at all affected Class A facilities. Staff identified two Class A facilities that are not currently conducting such testing. For these facilities, source testing quotes were obtained, with an average cost of $20,000 per test. Since testing is required once every five years, this results in an average annual cost of $8,000 over the analysis period.

Annual Average Compliance Cost

The estimated costs for implementing PAR 462 over the 2026–2035 period include the following components beginning in 2026:

[17] South Coast AQMD, 2024, Rule 301 – Permitting and Associated Fees, https://www.aqmd.gov/docs/default-source/rule-book/reg-iii/rule-301.pdf, accessed July 2025.

1) Purchase of OGI Cameras – One-time capital expenditure
2) Title V Facilities Permit Condition Update Fees - One-time capital expenditure
3) Annual O&M Costs for OGI – Recurring each year
4) Annual Labor Costs Related to OGI Activities – Recurring each year
5) OGI Training Expenses – Conducted every two years
6) Source Testing – Conducted every five years

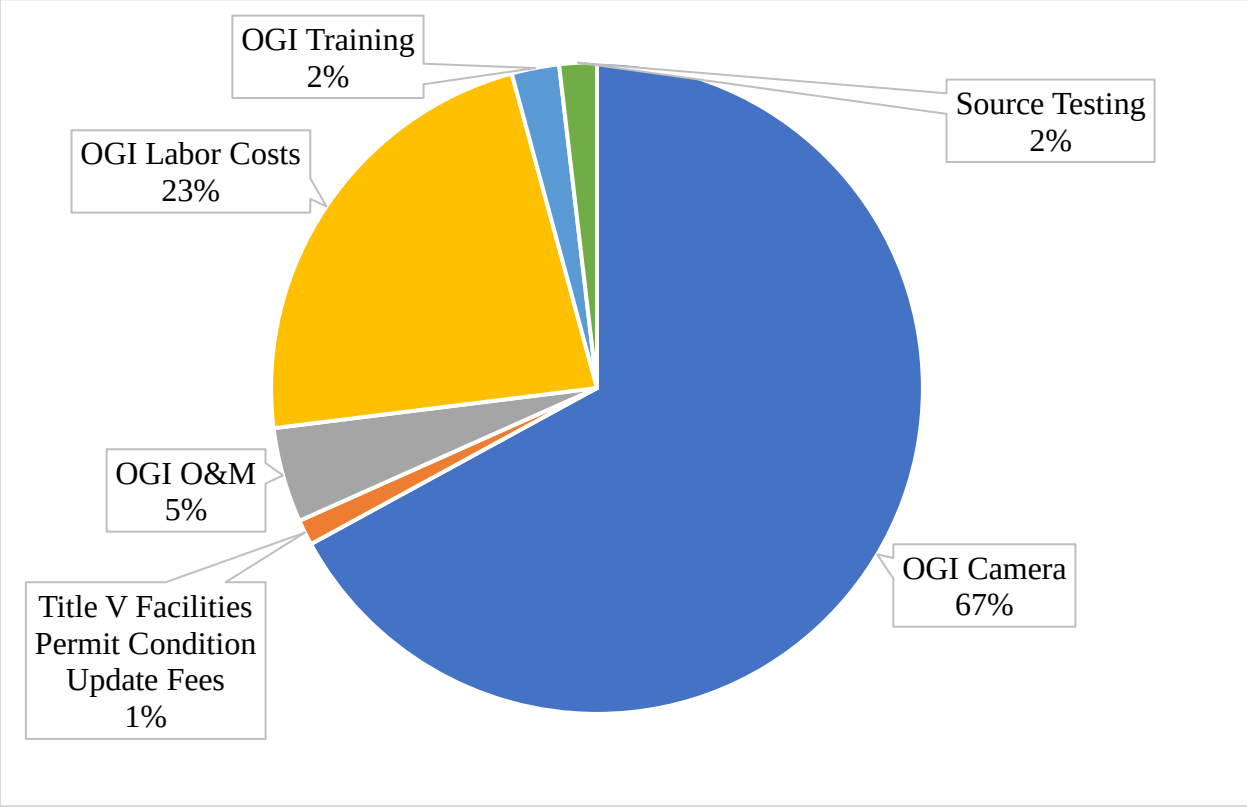
The total present value of the compliance costs of PAR 462 are estimated to be $4.47 million and $3.83 million with a 1 percent and 4 percent discount rate, respectively. The average annual compliance cost of implementing PAR 462 is estimated to range from $433,903 to $472,068 for a 1 percent to 4 percent real interest rate, respectively. Table 4-4 presents both the present value and annual average cost for each equipment category of PAR 462.

Table 4-4: Total Present Value and Average Annual Estimated Costs of PAR 462

	Present Value (2025)		Annual Average Cost of PAR 462 (2026-2035)	
Cost Categories	**1% Discount Rate**	**4% Discount Rate**	**1% Interest Rate**	**4% Interest Rate**
Capital Cost				
OGI Camera	$3,006,517	$2,574,677	$279,914	$317,434
Title V Facilities Permit Condition Update Fees	$51,713	$44,286	$4,815	$5,460
Recurring Costs				
OGI O&M	$211,286	$180,938	$22,308	$22,308
OGI Labor Costs	$1,020,173	$873,641	$107,712	$107,712
OGI Training	$106,169	$92,243	$11,154	$11,154
Source Testing	$76,521	$67,379	$8,000	$8,000
Total	**$4,472,379**	**$3,833,163**	**$433,903**	**$472,068**

Figure 4-1 presents the estimated annual compliance cost of PAR 462 by cost categories. OGI Camera Costs are the largest proportion of the estimated average annual compliance costs (67%), followed by OGI Labor Costs (23%) and OGI O&M (5%).

Figure 4- 1: Average Annual Estimated Costs of PAR 462 by Cost Category (%)



Macroeconomic Impacts on the Regional Economy

Regional Economic Models, Inc. (REMI) developed the Policy Insight Plus Model (PI+ v3), which is a tool that South Coast AQMD typically uses to assess the impacts of rule development projects on the job market, prices, and other macroeconomic variables in the region when the average annual compliance cost is greater than one million current U.S. dollars.[18] However, when the average annual compliance cost of a project is less than one million, the model cannot reliably determine the macroeconomic impacts, because resultant impacts from the project would be too small relative to the baseline economic forecast.

Since the total annual compliance cost of PAR 462 is estimated at $433,903 to $472,068 for a 1% to 4% real interest rate, respectively, which is well below $1 million threshold, a macroeconomic impact analysis was not conducted for PAR 462.

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

CALIFORNIA ENVIRONMENTAL QUALITY ACT ANALYSIS

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project (PAR 462) is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062. If PAR 462 is adopted, 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 Land Use and Climate Innovation.

DRAFT FINDINGS UNDER HEALTH AND SAFETY CODE SECTION 40727

Requirements to Make Findings

Health and Safety Code Section 40727 requires that prior to adopting, amending, or repealing a rule or regulation, 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.

Necessity

A need exists to amend PAR 462 to implement best available retrofit control technology, emission reduction strategies recommended in 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 462 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

Consistency

PAR 462 is in harmony with and not in conflict with or contradictory to existing statutes, court decisions, or state or federal regulations.

Non-Duplication

PAR 462 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 organic liquid loading. Because PAR 462 does impose new inspection and reporting requirements, a comparative analysis was conducted.

Table 4-5: Comparative Analysis

Topic	South Coast AQMD	San Joaquin Valley Air Pollution Control District	Bay Area Air District	U.S. EPA
Rule	• **Rule 462 – Organic Liquid Loading**[19]	• Reviewed Rule 4624 – Transfer of Organic Liquid[20]	• Reviewed Regulation 8, Rule 33[21]	Reviewed Title 40 CFR part 60 Subpart XXa[22] • *1 mg/L follows BACT standards
Applicability	• Organic liquid loading facilities that are defined as Class A, B, or C	• Organic liquid transfer facilities defined as Class 1 or 2	• Gasoline transfer operations at gasoline bulk terminals	• Bulk gasoline terminals
Newly Added Inspection Requirements	• Monthly inspections with OGI camera	• If leak found with OGI camera facility has 2 days to quantify	• Not Applicable	• OGI inspections required quarterly
Other amendments	• Emission reduction from 0.08 to 0.04 pounds of VOC per thousand gallons • Addition of 5-year periodic source tests • Allowing removal of residue from loading rack couplers prior to inspection	• Emission limit of 0.08 pounds of VOC per 1,000 gallons • 5-year periodic source tests • No rule language on residue removal	• Emission limit of 0.04 pounds of VOC per 1,000 gallons for non-methane organic compounds • Annual tests for vapor recovery systems, exemption for emission factor source test if requirement already in Title V permit • No rule language on residue removal	• 10 mg/L for thermal oxidation system, *1 mg/L for new thermal oxidation system • 5-year periodic source tests for facilities complying with mass emission limit • No rule language on residue removal

[19] https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-462
[20] https://ww2.valleyair.org/media/kgalm4y4/rule-4624.pdf
[21] https://www.baaqmd.gov/~/media/dotgov/files/rules/refinery-rules-definitions/rg0833_20211103-pdf
[22] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-XXa#p-60.503a(a)

Topic	South Coast AQMD Rule 462 – Organic Liquid Loading	San Joaquin Valley Air Pollution Control District	Bay Area Air District	U.S. EPA
Leak Standards	• 3,000 PPM	• 10,000 PPM for gasoline • 1,000 PPM for organic liquids	• 3,000 PPM	• 10,000 PPM
Repair Schedule	• Three calendar days	• 72 hours	• 8 hours for connectors & 72 hours for P/V Valves	• 5 – 15 calendar days
Recordkeeping	• Recordkeeping required	• Recordkeeping required	• Recordkeeping Required	• Recordkeeping Required

APPENDIX A – RESPONSES TO COMMENT LETTERS

Comments from Public Workshop

Comment PW-1: Neil Davenport, Davenport Engineering, asked which components are subject to the optical gas imaging (OGI) inspections.

Response: Components that are to be inspected with OGI include: all the components of the liquid loading line between any storage tanks, the liquid pump and the transporting vessel, the vapor return line from the transporting vessel to the storage tank, and the vapor recovery system and/or vapor disposal system. Other rules such as 462 and 1178 have similar OGI requirements for storage tanks and the goal was to require similar OGI requirements for the facility as a whole.

Comment PW-2: Hadley Nolan, SoCalGas, requested that 'true vapor pressure' be specified in the rule for clarification and consistency with other rules such as Rule 463.

Response: Staff researched true vapor pressure and agreed to the addition to clarify the type of vapor pressure this rule is referring to. This is also consistent with storage tank Rules 463 and 1178 that reference true vapor pressure since the organic liquid that is loaded is typically stored in storage tanks where either Rule 463 or 1178 applies.

Comment PW-3: Cinnamon Smith, Kinder Morgan, asked if an already approved protocol is acceptable or would they need to resubmit an updated one.

Response: Staff stated that the source testing requirements are for facilities that have not been conducting periodic source testing. For existing facilities that have been conducting periodic source tests and have an approved source test protocol, a new source test protocol would not be required provided that there are no modifications to the facility's vapor recovery system and/or vapor disposal system.

Comment PW-4: Cinnamon Smith, Kinder Morgan, asked why some rule language has been deleted for continuous monitoring system (CMS) plans in section (e) Compliance Schedule.

Response: Staff stated that the intent for the CMS Plan deletion is due to the fact that the timeline for when those plans were due has long passed but the requirement to have a CMS system still remains in section (d) Requirements.

Comment PW-5: Cinnamon Smith, Kinder Morgan, asked why the rule has a periodic requirement for every five years instead of every sixty months.

Response: Staff sees no issue in changing this requirement from every five years to every sixty months. Staff reviewed permits with Rule 462 air pollution control devices and noted that they had

‘60 month’ language in them. Additionally, by having “monthly” wording, the periodic source test will be restricted to being conducted within that month rather than within the year. The rule language will be updated to every sixty months.

Comment PW-6: Neil Davenport, Davenport Engineering, questioned how the effective date of July 1, 2026 was established for the addition of OGI inspections.

Response: Staff considers one year from rule amendment to be sufficient time for operators to prepare for changes such as for the addition of OGI inspections and is consistent with other rule amendments with similar new requirements. Additionally, staff updated the effective date to August 1, 2026 since the rule was postponed to go to the South Coast AQMD Governing Board from June 6, 2025 to August 1, 2025.

Comment PW-7: Moses Huerta, resident, questioned what constitutes trained personnel for OGI inspections and if that training would be provided by the manufacturer, South Coast AQMD, or internal certification.

Response: The intent is to abide by manufacturer’s recommendations for training and certification. AQMD inspector training for OGI inspections is done through the California Air Resources Board.

Comment Letter 1: Cinnamon Smith, Kinder Morgan, Received 4/16/2025

KINDER MORGAN

Delivering Energy to Improve Lives

Via Email at: jenriquez1@aqmd.gov

April 16, 2025
Jose Enriquez
Air Quality Specialist
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Comments on March 21, 2025 Preliminary Draft Rule Language for Proposed Amended Rule 462, Organic Liquid Loading

Dear Mr. Enriquez:

Kinder Morgan (KM) appreciates the opportunities to participate in the Work Group Meetings and converse with South Coast Air Quality Management District (SCAQMD) Rule Writing Staff (Staff) regarding Proposed Amended Rule (PAR) 462, Organic Liquid Loading. Kinder Morgan operates organic liquid loading facilities located within the South Coast Air Basin that are subject to Rule 462.

SCAQMD PAR 462 Rule Writing Staff released the preliminary draft Rule 462 language and draft Staff report on March 21, 2025. KM respectfully offers the following comments on the draft rule language.

Leak Inspection Requirements

1. **(d)(6)** PAR 462 (d)(6)(A) requires the facility to inspect Transfer Equipment and allows for a monthly frequency using sight, sound, and smell or a quarterly if using an organic vapor analyzer (OVA). The quarterly inspection with an OVA is intended to locate Facility Vapor Leaks in excess of 3,000 ppm as methane above background when measured according to US EPA Method 21 per PAR 462(c)(9). PAR 462 aims to expand the definition of Transfer Equipment such that piping components beyond liquid loading pump would become subject. PAR 462 does not establish sufficient applicability distinction between piping components that will be subject to this Transfer Equipment definition or components subject to Rules 466 and 466.1. KM operates facilities that are subject to Rules 462, 466, and 466.1. Rules 466 and 466.1 require the use of a portable hydrocarbon detection instrument for gaseous leaks of VOC in excess of 10,000 ppm measured as hexane to conduct inspections. Because PAR 462 does not exempt piping components subject to Rule 466 and 466.1, these piping components will require duplicative inspection to comply with the differing inspection methods. KM recommends adding an exemption similar to the exemption in Rule 1173(l)(3) that states "The provisions of Rules 466 and 466.1 shall not apply to facilities subject to this rule." Without this exemption, confusion will be caused when a facility completes a repair of a Facility Vapor Leak/Gaseous Leak and is required to both demonstrate by reinspection using Method 21 and a calibration to hexane that the piping component is no longer leaking and maintain records of each reinspection. 1-1

1001 Louisiana Street, Suite 1000, Houston, TX 77002

Class A Facilities Loading Requirements

1. **(d)(1)** PAR 462 (d)(1)(D) will require Class A Facilities to meet a reduced emissions limit of 0.04 lbs of VOCs per 1000 gallons of Organic Liquid transferred. It should be noted that PAR 462 does not include a timeline for compliance with this limit reduction. PAR 462 maintains the existing requirement from Rule 462 that a Class A Facility be equipped with a California Air Resource Board (CARB) certified Vapor Recovery and/or Vapor Disposal System. As an example, a Class A Facility may have received CARB certification in 2015 following a source test demonstrating compliance with a SCAQMD New Source Review (NSR) emission standard of 0.045 lbs/1000 gallons and ARB standard of 0.29 lbs/1000 gallons. Source testing required by permit conditions would have been completed within the past one or two years. This example facility has not requested modifications to the Vapor Recovery System to require certification through CARB. The current PAR 462 language appears to cause this example facility to no longer have a valid CARB certification and must recertify. KM is concerned that Staff have not considered the impact from this emissions reduction to existing CARB certifications, existing NSR emission standards, or the associated costs to obtain recertification before the next permit-required source test is due. KM recommends a publicly accessible meeting with CARB to evaluate the proposed emission reduction and for Staff to review impacts to the Title V facility operating permits of the 20 Class A Facilities including potential to emit, throughputs, permitting costs, source testing costs, and permitting timeframes. 1-2

Sincerely,

Duncan Sinclair
Director of Operations
Kinder Morgan

cc: Michael Morris, Michael Krause, SCAQMD
Peter Jensen, Nina McAfee, Cinnamon Smith, Kinder Morgan

1001 Louisiana Street, Suite 1000, Houston, TX 77002

Comment 1-1: Staff researched both Rules 466 and 466.1 and acknowledges the potential for duplication of inspections being conducted. Also, staff noted that these two rules were last updated in the 1980s and have less stringent leak thresholds of 10,000 PPM compared to the current leak threshold of 3,000 PPM in PAR 462. The analyzer inspection frequency requirement is identical between the Rule 466 series and PAR 462. Staff also confirmed that Rule 1173 contains an exemption for these two rules. Therefore, staff does not foresee any issues by exempting these two rules, and PAR 462 provides an exemption from Rules 466 and 466.1.

Comment 1-2: Staff has reviewed source tests results from Class A facilities that are subject to Rule 462 and have observed that facilities will be able to meet the new proposed standard of 0.04 pounds of VOCs per thousand gallons of organic liquid transferred without equipment needing to be replaced or upgraded. Staff confirmed with CARB that reducing the VOC threshold to 0.04 pounds of VOC per thousand gallons would not affect facilities' certifications provided that no modifications are done to the facilities' vapor recovery systems.

Comment Letter 2: Hao Jiang, Disneyland Resort, Received 4/15/2025

Hi Mike,

Disneyland Resort permitted and operates a Class "C" gasoline bulk loading facility. The permit limits its throughput to no more than 15,000 gallons per month (equivalent to ≤ 500 gallons per day). Disneyland bulk loading opeartion is subject to Rule 462.

As proposed in current PAR 462, all Rule 462 facilites will be required to conduct Optical Gas Imaging (OGI) testing monthly or biweekly. While OGI is useful for detecting fugitive VOC emissions, requiring OGI to ultra small operations like Disneyland are burdensome and would not be cost effective. As such, I would like to suggest the District including an exemption that only remove OGI requirement from ultra small bulk loading facilities. All other established requirements will still apply.

Suggested laugauge for section (j)(3): "The provision of subparagraph (d)(6) shall not apply to Class "C" facility that load not more than 500 gallons (1,893 liters) of gasoline on any one day and not more than 180,000 gallons in any one calendar year."

Thank you for your consideration.

Hao Jiang, P.E.
Environmental Affairs / Disneyland Resort
TDA 229D1
Anaheim, CA 92802
Hao.jiang@disney.com

Comment 2: A cost-effectiveness calculation was conducted based on the permit throughput limit, and on an assumption that there are two active facilities that fall under Class C status. Below is the cost-effectiveness calculation for these two Class C facilities:

- 2 known Class C facilities, 15,000 gal/month x 12 months = 180,000 gal
- 180,000 gal x 2 facilities = 360,000 gal/year throughput for 2 facilities
- 5,525,599,023 is estimated total annual throughput of all Class A facilities
- (360,000 gal/year)/(5,525,599,023 gal/year) = 0.000065 = 0.0065% is throughput difference of the two Class C facilities compared to Class A facilities
- 14.6 tons/year is expected annual emission reductions
- 0.000065 x 14.6 = 0.001 tons/year = 2 lbs VOC per year

- 20 cameras for 20 companies with maintenance and other costs is estimated to be $4,628,902 over 10 years
- The number of Class C facilities is 10% of the number of Class A facilities, and 10% of $4,628,902 is $462,890 over 10 years
- For the two companies the cost per year is $46,289
- CE = $46,289/0.001 tons/year = $46,289,000 per ton of VOC

For Class C facilities, staff found that it would not be cost-effective to conduct monthly OGI inspections and therefore PAR 462 provides an exemption from monthly OGI inspection requirements for those facilities.

Comment Letter 3: Western States Petroleum Association, Received 6/1/2025

Patty Senecal
Senior Director, Southern California Region

June 2, 2025

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 462, Organic Liquid Loading – WSPA Comments on Preliminary Draft Rule Language

Dear Mr. Morris,

Western States Petroleum Association (WSPA) appreciates the opportunity to participate in the Working Group Meetings (WGMs) for South Coast Air Quality Management District (SCAQMD or District) Proposed Amended Rule 462, Organic Liquid Loading (PAR 462). 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 will be impacted by PAR 462.

SCAQMD released initial preliminary draft rule language for PAR 462 on March 21, 2025.[1]

WSPA offers the following comments on the draft rule language.

1. **The California Health and Safety Code requires the District to ensure that a BARCT standard is technologically feasible and cost-effective. There are several defects in the PAR 462 cost-effectiveness analysis which render it inadequate. First, the District uses extrapolated leak rates for equipment subject to another SCAQMD rule and has not provided documentation to support the number of leaks per year that it assumes would be controlled by the proposal. Additionally, the District's analysis appears based on all 51 facilities subject to PAR 462 being able to meet the proposed requirements but has not provided sufficient evidence to support this conclusion. Further, the cost-effectiveness analysis omits certain compliance costs associated with the proposed rule. WSPA recommends that these issues need to be addressed in the cost-effectiveness analysis.**

   The California Health & Safety Code requires the District, in adopting any Best Available Retrofit Control Technology (BARCT) standard, to ensure the standard is technologically feasible, and take into account "environmental, energy, and economic impacts" to assess the

3-1

[1] Proposed Amended Rule 462, Organic Liquid Loading: Initial Preliminary Draft Rule Language. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-462/preliminary-draft-rule-language-462---organic-liquid-loading_final.pdf?sfvrsn=9899f61_6

Western States Petroleum Association 970 West 190th Street, Suite 304, Torrance, CA 90502 310.808.2146 wspa.org

cost-effectiveness of the proposed control options.[2] Cost-effectiveness is defined as the cost, in dollars, of the control alternative, divided by the emission reduction benefits, in tons, of the control alternative.[3] If the cost per ton of emissions reduced is less than the established cost-effectiveness threshold, then the control method is considered to be cost-effective. If the cost per ton of emissions reduced is higher than the established cost-effectiveness threshold, then the control method is considered to be cost-prohibitive. Cost-effectiveness evaluations need to consider both capital costs (e.g., equipment procurement, shipping, engineering, construction, and installation) and operating costs (including expenditures associated with utilities, labor, and replacement). Currently, the District is applying for a cost-effectiveness threshold of $36,000 per ton of VOC emissions reduced, consistent with the 2022 Air Quality Management Plan (2022 AQMP).[4]

In the PAR 462 PDSR, SCAQMD estimates the leak rate as 200 pounds of VOC per day per leak, which is 2.5% of the storage tank leak rate in Rule 1178 and is consistent with the leak rate used for Rule 1148.1, Oil and Gas Production Wells.[5] Rule 1148.1 establishes this 200 pounds of VOC per day per leak on the basis that it "is expected to be consistent with the type of facilities regulated by this rule"[6], however, Rule 1148.1 is for Oil and Gas Production wells, which are a completely different source category from the Class A Facilities subject to PAR 462. SCAQMD assumes there will be five major leaks per year "based on the average number of leaks found over the last five years" but did not provide documentation in the PAR 462 Preliminary Draft Staff Report (PDSR) to support this assumption.[7] 3-1

Truck loading racks subject to Rule 462 are unique equipment in that they have active visual observations by truck drivers who interact with loading arm and vapor recovery hoses; often this occurs at truck racks 24 hours a day, 365 days a year. Drivers report liquid and vapor leaks to terminal operations to investigate and repair, both because it is an air quality compliance issue and also for their own personal health due to potential vapor exposure to the potential for a vapor leak to ignite. Many terminals have staff complete daily walks, which adds another layer of observation.

SCAQMD needs to provide documentation to support the assumed leak rate and number of leaks for facilities subject to PAR 462.

SCAQMD has proposed a revised standard of 0.04 pound of VOC per thousand gallons for vapor recovery systems (VRSs) and vapor disposal systems (VDSs). The PDSR states that that SCAQMD performed site visits at four subject facilities and the VSRs and VDSs at each of those sites were emitting less than 0.04 pounds of VOC per thousand gallons of organic liquid transferred.[8] The PDSR also states that the District reviewed recent source tests and Annual Emissions Reporting (AER) site specific emission factors for Class A facilities and found that the VRSs and VSDs evaluated were less than the 0.04 pounds of VOC per 3-2

[2] California Health & Safety Code §40406, 40440, 40920.6.
[3] California Health & Safety Code §40920.6.
[4] SCAQMD Draft Final 2022 Air Quality Management Plan. Available at: http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan.
[5] Ibid.
[6] PAR 1148.1 Preliminary Draft Staff Report. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1148.1/par-1148-1-draft-staff-report-final.pdf?sfvrsn=1d128961_8
[7] PAR 462 Preliminary Draft Staff Report. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-462/par-462-preliminary-draft-staff-report_final.pdf?sfvrsn=5899f61_6
[8] Ibid.

thousand gallons of organic liquid transferred.[9] It should be noted that source test results are a good indicator, but are only a snapshot in time, typically of a well-tuned unit at the time of a 5-year source test. WSPA is concerned that the proposed limit may be achievable for carbon VRSs, but not necessarily all vapor combustion units (VCUs) on a continuous basis. Facilities may need to explore new minimum burn temperatures, because the existing temperatures were based on the 0.08 lb/1000 gallon limit and to minimize NOx emissions.

WSPA is concerned for the loss of compliance margin for both VRSs and VCUs. With any piece of operating equipment, emissions are not flat, and there may be data peaks above the 0.04 lb/1000 gallon limit. The District has not provided stakeholders with clear data and information on the number of facilities included in their review or any basis to support the assumed ability of the 51 subject facilities to comply with a lower standard.

WSPA recommends that current Rule 462 source tests and the one-time CARB certification source tests (applicable to a subset of gasoline loading facilities) should be reviewed for all 51 subject facilities to properly understand if facilities would actually be able to comply with a lower standard or would experience new compliance costs under this proposal.

3-2

SCAQMD permits to operate (generally) require a 15-minute averaging time. This averaging time is based on a 1990's WSPA/SCAQMD policy agreement, although the averaging time is not provided in Rule 462, WSPA recommends that permit to operate conditions be thoroughly reviewed to ensure alignment with this rulemaking and 40 CFR Part 63, Subpart R, National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout stations. Subpart R requires compliance based on 6-hour averages. Compliance will be based on 3-hour averages starting in May 2027.[10] The 3-hour averaging time is based on recent rulemaking that involved a significant amount of rigorous technical research by EPA staff and input from affected sources nationwide, the American Petroleum Institute (API), and the International Liquid Terminals Association (ILTA).

The 15-minute averaging time required by SCAQMD permits to operate may be too restrictive for the proposed 0.04 lb/1000 gallon limit. It will likely result in more frequent and lengthy shutdowns and loading disruptions. The District has not demonstrated the limit and averaging time to be technically feasible.

WSPA recommends that averaging times be updated in permits to operate to align with the federal requirements.

3-3

SCAQMD has included no compliance costs associated with upgrading control devices and has only included costs for submission of Title V permit revisions to include the revised limit.[11] If the District did not confirm that all 51 subject facilities can meet this limit, then the District's cost-effectiveness analysis must be completed to include costs for facilities that would need to modify or replace equipment in order to meet the proposed limit. This has not been done.

PAR 462(d)(1)(D) requires that facilities demonstrate compliance with the VOC emission limit by source testing of the VRS and VDS every five years. A carbon VRU recertification test is

3-4

[9] Ibid.
[10] 40 CFR Part 63, Subpart R, National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout stations. Available at: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-63/subpart-R.
[11] PAR 462 Preliminary Draft Staff Report. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-462/par-462-preliminary-draft-staff-report_final.pdf?sfvrsn=5899f61_6

costly because it requires extensive coordination, resources, and 24 hours of throughput volume. The District has not accounted for costs associated with such source tests in the cost-effectiveness analysis.[12] These costs are associated with the new limit and therefore must be accounted for in the cost-effectiveness analysis.

The District has not considered the potential reduction in primary operating vapor units' capacity which would result from the proposed tightening of the VOC limit from 0.08 to 0.04 lb/mgal. 3-4

WSPA recommends that the District confer with equipment manufacturers to understand the operational impact of this change as it will have direct bearing on the compliance cost associated with PAR 462. This information is necessary for the cost-effectiveness analysis.

2. **WSPA appreciates that SCAQMD has recognized included language in PAR 462(d)(8) that allows a facility to remove residual liquid from a coupler prior to retesting by SCAQMD personnel for compliance determinations.** 3-5

3. **PAR 462(f)(8)(D) would require any changes of the source testing schedule to be reported to the District no later than 24 hours prior to testing or within 1 hour of discovery of a change in the schedule. WSPA recommends that this requirement be removed.**

PAR 462(f)(8)(D) would require changes in the source testing schedule to be reported to the District within one hour of the discovery of the change in schedule or no later than 24 hours prior to testing. For example, if the source tester is unable to perform the test at the last minute or there is inclement weather, facilities would be required to notify the District within the hour. This is an onerous and unnecessary requirement. **WSPA requests that this requirement be removed.** 3-6

4. **PAR 462(d) (6)(B) requires a repair time of 72 hours for any Facility Vapor leaks, Liquid Leaks, or Visible Vapors detected. WSPA requests that this be changed to a 3-day repair time requirement to align with recently amended Rule 463, Organic Liquid Storage and Rule 1178, Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities.**

(d)(6)(B): Leak Inspection Requirements

WSPA recommends that the repair time of 72 hours be changed to 3 days to be consistent with recently amended Rule 463, Organic Liquid Storage, and Rule 1178 (Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities). 3-7

Suggested language is presented below:

Each detection of a Facility Vapor Leak, Liquid Leak, or Visible Vapors shall be repaired or replaced within ~~72 hours~~ 3 days. The repaired or replacement component shall be reinspected the first time the component is in operation after the repair or replacement.

[12] Ibid.

The 1979 Rule 462 amendment established a VOC emission limit of 0.65 pounds per thousand gallons.[13] This limit has been lowered several times over the years. The decrease from 0.65 to the current 0.08 pounds represents an 88% reduction from 1978 to 2025 demonstrating WSPA's commitment to working alongside the District to increase the industry's environmental stewardship.

3-8

WSPA appreciates the extended time and opportunity to provide these comments related to PAR 462 and we are open to meeting with Staff to review the data. We look forward to continued discussion of this important rulemaking. If you have any questions, please contact me at (310) 808-2144 or via e-mail at psenecal@wspa.org.

Sincerely,

Patty Senecal

Cc: Wayne Nastri, SCAQMD
Michael Krause, SCAQMD
Rodolfo Chacon, SCAQMD
Jose Enriquez, SCAQMD

[13] PAR 462 Preliminary Draft Staff Report. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-462/par-462-preliminary-draft-staff-report_final.pdf?sfvrsn=5899f61_6.

Comment 3-1: Staff conducted a cost-effectiveness analysis based on the number of Rule 462 leaks reported by the Compliance and Enforcement team. Staff reviewed reported enforcement data for five years, from 2019 through 2023, and found that there was an average of five leaks per year that were identified by inspectors.

Year	Number of Leaks	Leak Concentrations (ppm)
2019	7	5,000 | 16,100 | 13,300 | 100,000 | 10,100 | 4,100 | 21,700
2020	0	
2021	0	
2022	6	10,000 | 36,900 | 8,869 | 6,500 | 4,075 | 11,000
2023	12	17,500 | 4,004 | 40,200 | 34,100 | 9,000 | 1,300 | 80,500 | 74,000 | 79,800 | 78,800 | 11,400 | 13,600
Average number of leaks per year is 5		

Staff used 200 pounds of VOC per day which is a portion of the leak rate used in Rule 1178 and 463. Staff reviewed CAPCOA[23] guidelines document and was not able to use their emission factors due to lack of component count and flow rate data from the facilities. Additionally, since Rule 462 does not require facilities to submit detailed records of their leaks, staff relied on leak information documented in Notices of Violations issued by South Coast AQMD compliance staff. There may be leaks that are not detected by South Coast AQMD compliance staff and the number of leaks could potentially be higher. For these reasons, staff used a portion of the leak rate data used in Rules 1178 and 1148.1.

Comment 3-2: Staff researched the permits for Class A facilities and found that there are approximately 20 facilities that would be affected by the proposed reduction from 0.08 pounds of VOC and not 51 facilities (now updated to 53) as only Class A facilities would be subject to the proposed reduction. Additionally, staff reviewed eighteen Class A facility source tests and found that they all meet the proposed limit of 0.04 pounds per thousand gallons, with some tests showing results as low as 0.0001 pounds of VOC per thousand gallons. Lastly, staff conducted outreach to stakeholders that operate affected equipment and no facility has responded that they cannot meet the new proposed limit with existing equipment.

Comment 3-3: Staff recognizes that there may be difficulty in meeting the proposed VOC limit of 0.04 pounds per thousand gallons over a 15-minute average. Stakeholder data showed a number of 15-minute average values above the proposed VOC limit, which may cause shutdowns of their bulk loading operations. Vapor recovery systems typically operate on a 15-minute cycle where

[23] California Air Pollution Control Officers Association. California Implementation Guidelines For Estimating Mass Emissions Of Fugitive Hydrocarbon Leaks At Petroleum Facilities. https://ww2.arb.ca.gov/sites/default/files/2020-04/CAPCOA%201999.pdf

one carbon bed is adsorbing while the other carbon bed is regenerating. The proposed rule does not specify the averaging time to be used. Previous CMS plans have prescribed a 15-minute averaging time and a longer averaging time may be needed to minimize potential shutdowns if the VOC limit is reduced to 0.04 pounds per thousand gallons. A CMS Plan may need to be resubmitted as needed to minimize potential shutdowns.

Comment 3-4: For facilities that are already conducting periodic source testing, there are no expected changes. For the two facilities that will be required to start performing periodic source testing, staff found the cost to be approximately $20,000 per test. Staff has added this cost into the cost-effectiveness section.

Comment 3-5: Thank you for your comment.

Comment 3-6: Staff agrees with this statement and has removed language regarding the source testing schedule. Staff had previously identified another rule with this source test requirement due to the highly toxic nature of the regulated pollutant. Staff believes the same level of stringency would be overly burdensome if applied to PAR 462.

Comment 3-7: Staff agrees that 72 hours is equivalent to 3 calendar days. Staff has also reviewed the other rules and has updated the rule language for consistency.

Comment 3-8: Thank you for your comment.