SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Preliminary Draft Staff Report

Proposed Amended Rule 461 – Gasoline Storage and Dispensing

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EXECUTIVE SUMMARY

Rule 461 – Gasoline Transfer and Dispensing applies to the transfer of gasoline from any tank truck trailer, or railroad tank car into a stationary storage tank, and from any stationary storage tank into any motor vehicle fuel tank. This rule applies to all facilities that have certain storage capacity to transfer and dispense gasoline. In general, gasoline transfer and storage equipment must be certified by the California Air Resources Board (CARB). Staff is proposing amendments to Rule 461 – Gasoline Transfer and Dispensing to provide a streamlined recordkeeping compliance option for non-retail operators dispensing gasoline exclusively into motor vehicles equipped with Onboard Refueling Vapor Recovery (ORVR) systems. ORVR is a vehicle-integrated fuel vapor emission control system designed to capture volatile organic compounds (VOCs) released during refueling and not escape into the ambient air.

Rule 461 requires all gasoline dispensing equipment, including nozzles, hoses, and underground storage tank components, to be CARB-certified and routinely tested to ensure proper operation and leak prevention. The rule also requires Phase I vapor recovery systems, which control emissions during fuel delivery to storage tanks, and Phase II vapor recovery systems, which control emissions during vehicle refueling, to be properly installed and maintained.

As part of the 2008 amendments, Rule 461 established an alternative compliance option allowing owners or operators of gasoline dispensing facilities to dispense gasoline into fleet vehicles without installing CARB-certified Phase II Enhanced Vapor Recovery (EVR) systems, provided that fueling is limited exclusively to motor vehicles equipped with ORVR systems and owned or directly controlled by the facility operator. This compliance option includes additional recordkeeping requirements. Under the existing provisions of Rule 461 subparagraph (c)(4)(E), facility operators utilizing this compliance option must maintain detailed fuel dispensing records for each individual vehicle per fuel episode.

Proposed amendments to Rule 461 would streamline recordkeeping requirements for operators whose fleets consist exclusively of ORVR-equipped motor vehicles by allowing documentation of total daily fuel dispensing quantities in aggregate in lieu of recording fuel dispensed on a per vehicle basis. Operators would continue to be required to maintain a daily inventory list of vehicles present on-site. The proposed amendments will maintain essential recordkeeping requirements to support compliance while addressing stakeholder requests to reduce the administrative workload. The proposed amendments also include an editorial correction and the removal of an outdated provision which has been superseded by state reporting requirements.

The proposed amendments to Rule 461 (PAR 461) are administrative in nature and will not result in emission reductions or additional costs. PAR 461 will be developed through a public process. A Public Workshop for PAR 461 will be held on June 24, 2026.

CHAPTER 1: BACKGROUND

INTRODUCTION

Rule 461 – Gasoline Transfer and Dispensing is applicable to the transfer of gasoline from any tank truck trailer, or railroad tank car into a stationary storage tank, and from any stationary storage tank into any motor vehicle fuel tank. Rule 461 controls VOC and toxic air contaminant (TAC) emissions during the filling of storage tanks and when dispensing gasoline from stationary gasoline dispensing facilities.

Rule 461 mandates that all equipment, including nozzles, hoses, and underground storage tank components, be certified by CARB and regularly tested for leaks and performance. The rule requires Phase I (transfer from delivery vehicle to storage tank) and Phase II (transfer from storage tank to motor vehicle) systems to be installed and maintained to prevent leaks.

EVR regulations became state law on April 1, 2001. All Gasoline Dispensing Facilities (GDFs) were to be equipped with Phase I EVR systems to capture displaced gasoline vapor from being released to the atmosphere during the transfer of gasoline from the cargo tank to gasoline storage tanks. Phase II EVR systems are certified to several new standards, including ORVR compatibility, more stringent spillage and "dripless nozzle" requirements, in-station diagnostics, and storage tank pressure limits.

There are approximately 4,200 retail GDFs and 4,400 non-retail GDFs permitted for operation within the South Coast AQMD jurisdiction.

For non-retail facilities dispensing fuel to only motor vehicles equipped with ORVR systems, Rule 461 provides an alternative compliance option which allows the owner or operator of a non-retail gasoline dispensing station to dispense gasoline into their fleet motor vehicles without installation of Phase II EVR. This alternative compliance option requires the owner or operator to demonstrate that the gasoline dispensed is only to motor vehicles equipped with ORVR and includes daily recordkeeping requirements on a per vehicle basis.

REGULATORY HISTORY

Gasoline is a source of VOCs and TACs. Due to gasoline's high volatility and vapor pressure, it readily evaporates into the atmosphere, and effective control of gasoline vapors is essential to minimize fugitive emissions of VOCs and TACs to reduce potential impacts on public health.

Rule 461

Rule 461 was originally adopted on January 9, 1976, and has since been amended twenty times to strengthen controls on VOCs and TACs. The most recent amendment, adopted on January 7, 2022, relocated provisions governing mobile fueling operations into a separate Rule 461.1 in response to the growth of on-demand retail fueling services.

The 2008 amendment for Rule 461 introduced an alternative to compliance with requirements for installation of CARB certified Phase II EVR systems for fleets. The amendment allowed the owner or operator of a gasoline dispensing facility to dispense gasoline into their fleet motor vehicles provided they:

- Use existing CARB-certified Phase II vapor recovery system with vapor return lines blocked off;
- Only dispense into motor vehicles that are equipped with ORVR and are owned or under direct control by the operator; and
- Maintain additional recordkeeping.

Federal and State Regulations

In 1993, the U.S. Environmental Protection Agency (EPA) adopted the On-board Diagnostic (OBD II) System for passenger cars and light-duty trucks and eventually for heavy-duty gasoline vehicles up to 14,000 gross vehicle weight rating (GVWR). OBD II is designed to monitor the performance of systems such as engine and emission control systems. OBD II also monitors the evaporative emissions control system, which includes ORVR. ORVR is designed to share the same vapor lines, purge valves, purge lines and an activated carbon canister as the other engine systems and emission control systems.

Section 182(b)(3) of the federal Clean Air Act (CAA) requires GDFs located within Moderate, Serious, Severe, and Extreme ozone nonattainment areas to install and operate Phase II vapor recovery control systems on gasoline dispensing equipment. The U.S. EPA initiated the phased implementation of ORVR systems in vehicles as summarized in Table 1 below.

TABLE 1-1: ORVR PHASE-IN SCHEDULE[1, 2]

Vehicle Class	40% Fleet	80% Fleet	100% Fleet
Passenger Vehicles	1998	1999	2000
Light Duty Trucks & Medium Duty Vehicles (0-6000 lbs GVWR)	2001	2002	2003
Medium Duty Vehicles (6001-8500 lbs GVWR)	2004	2005	2006

ORVR systems were first introduced for 1998 model-year motor vehicles and are required pursuant to Title 13 of the California Code of Regulations, Section 1978,[3] and Title 40 of the Code of Federal Regulations, Part 86.[4] U.S. EPA finalized the ORVR standards on April 6, 1994, with implementation beginning in 1998. CARB approved the adoption of ORVR standards on June 29, 1995, which were formally adopted by Executive Order G-96-026 on April 24, 1996.

[1] California Air Resources Board. (2000, February 4). Staff report: Initial statement of reasons for proposed amendments to the vapor recovery certification and test procedures for gasoline loading and motor vehicle gasoline refueling at service stations. https://ww2.arb.ca.gov/sites/default/files/barcu/regact/march2000evr/evrisor.pdf
[2] South Coast AQMD. (2012, April). PAR 461—Gasoline transfer and dispensing: Attachment F - Final staff report. https://www.aqmd.gov/docs/default-source/agendas/governing-board/2012/2012-apr6-041.pdf
[3] Cal. Code Regs. tit. 13, § 1978. (2022, August 25). Standards and Test Procedures for Vehicle Refueling Emissions.
[4] United States Environmental Protection Agency. (2026, May 15). 40 CFR Part 86. https://www.ecfr.gov/current/title-40/part-86

THE NEED FOR PROPOSED AMENDED RULE 461

For operators opting for the alternative compliance option of dispensing gasoline exclusively to motor vehicles equipped with ORVR systems in lieu of installation of CARB certified Phase II EVR systems, Rule 461 subparagraph (c)(4)(E) requires the facility operator to maintain detailed fuel dispensing records for each individual vehicle, including:

- Date of refueling episode;
- Quantity of fuel dispensed into each motor vehicle; and
- Each refueled motor vehicle's make, model, model year, and identification number.

For stakeholders operating large and continuously changing fleets comprised of relatively new vehicles, such as rental vehicle companies, daily recordkeeping for total gasoline dispensed would be a viable alternative to the existing requirement of *per vehicle* fuel dispensing records while reducing administrative workload on those operators. The proposed amendments to Rule 461 would retain the option for daily recordkeeping per vehicle while providing an additional option for owners or operators of non-retail GDFs to record daily aggregate fuel throughput for the fleet.

In addition, subdivision (h), which required reporting in accordance with Rule 1402, is now superseded by state reporting requirements under CARB's Emissions Inventory Criteria Guideline (EICG) to fulfill their Criteria Air Pollutants and Toxic Air Contaminants Reporting (CTR)[5].

EQUIPMENT OVERVIEW

Phase I, Phase II, and ORVR systems are designed to reduce VOC emissions generated during gasoline transfer operations. As shown in Figure 1-1, Phase I systems capture vapors displaced during fuel deliveries from tanker trucks to underground storage tanks. Phase II systems capture vapors released during vehicle refueling at gasoline dispensers. ORVR systems, installed directly on vehicles, capture and store refueling vapors in an onboard carbon canister. Since 2006, all new light-duty vehicles have been equipped with ORVR technology, substantially reducing the need for conventional Phase II vapor recovery systems[6].

Phase I [7]

A Phase I vapor recovery system is a required air pollution control system pursuant to Rule 461. The system captures gasoline vapors generated during the transfer of fuel from delivery trucks to underground or aboveground storage tanks by using a sealed, vapor-tight connection that routes displaced vapors back to the delivery vehicle, thereby minimizing the release of smog-forming emissions into the atmosphere. As shown in Figure 1-1, when a tanker truck refills a gasoline aboveground storage tank, the incoming fuel forces existing fumes out. Instead of escaping into the air, these vapors are captured and sent back to the tanker.

[5] California Air Resources Board. (2022, January). Regulation for the Reporting of Criteria Air Pollutants and Toxic Air Contaminants. https://ww2.arb.ca.gov/sites/default/files/2022-02/Unofficial%20CTR_Jan2022_0.pdf

[6] South Coast AQMD. (2012, April) PAR 461 Final Staff Report. https://www.aqmd.gov/docs/default-source/agendas/governing-board/2012/2012-apr6-041.pdf

[7] South Coast AQMD. (2013, November). Above Ground Storage Tanks – Standing Loss Control and Phase I EVR Requirement. https://www.aqmd.gov/docs/default-source/compliance/Gas-Dispensing/ast-outreach-presentation.pdf

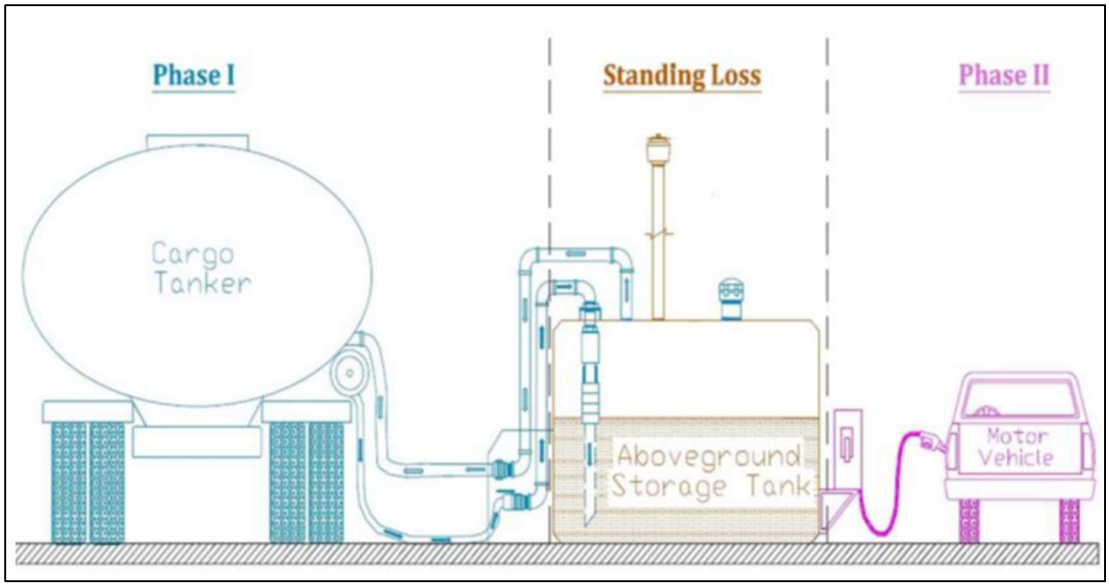
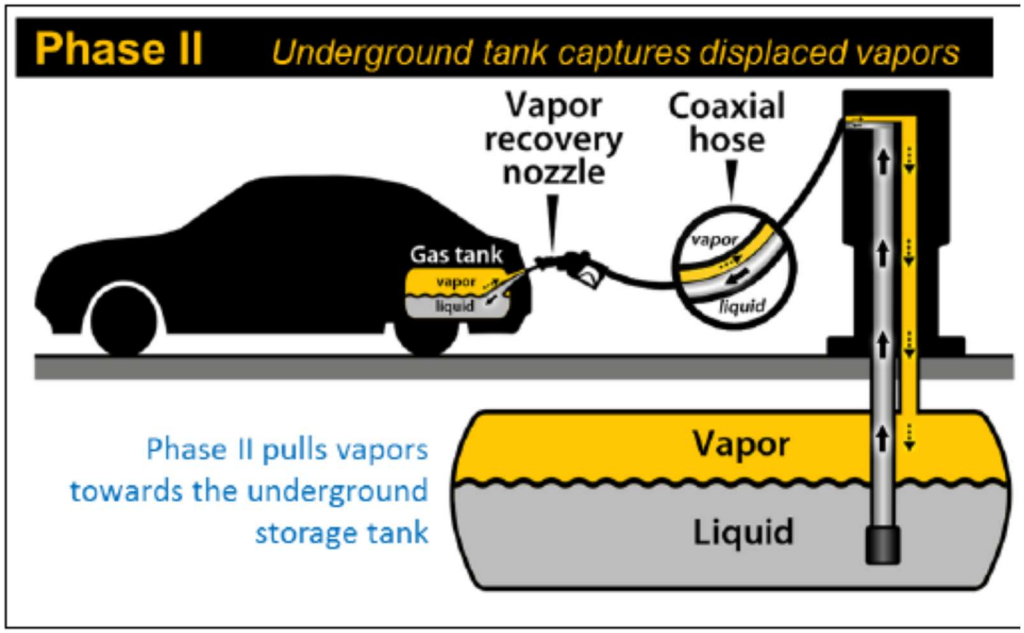


Figure 1-1: Phase I and Phase II Vapor Recovery Systems with an Aboveground Storage Tank

Phase II EVR[8]

Phase II EVR is a system designed to capture displaced vapors that emerge from inside a vehicle's fuel tank, when gasoline is dispensed into the tank. As shown in Figure 1-2, during refueling, vapors are pulled from the gasoline tank to the underground storage tank for a vehicle that is not equipped with ORVR that is fueled with Phase II EVR.



[8] South Coast AQMD. Draft Staff Report, Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants. (2017, August). https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1401/par1401_dsr_080217.pdf

Figure 1-2: Phase II Vapor Recovery UST Captures Displaced Vapors

On-board Refueling Vapor Recovery Systems[8]

ORVR systems are required on all new passenger, light duty and medium duty vehicles as of the 2006 model year. Motor vehicles equipped with ORVR systems use an on-board activated carbon canister to capture displaced gasoline vapor from re-fueling without returning the vapor to the stationary storage tanks.

As shown in Figure 1-3, an ORVR system captures the gasoline vapors that are displaced during refueling and stores those vapors in a canister filled with activated carbon. When the vehicle engine is started, gasoline vapors stored in the canister are purged and burned in the engine. The carbon bed achieves an average control efficiency of 95% as determined by CARB.[9]

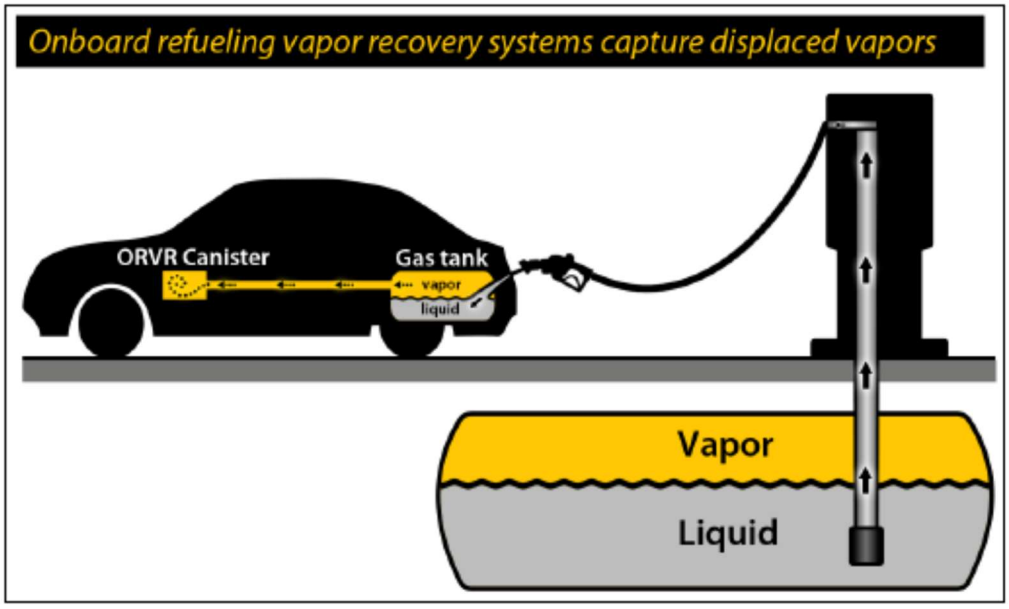


Figure 1-3: Onboard Refueling Vapor Recovery System Capture Displaced Vapors

Figure 1-4 provides a more detailed view of the fuel tank and the modified fillpipe on a vehicle equipped with ORVR. As shown in Figure 1-4, the ORVR system has mechanisms (i.e. a narrowed fillpipe to form a liquid barrier and a mechanical valve at the end of the fillpipe) to prevent vapor within a vehicle fuel tank from escaping via the fillpipe of the vehicle to the Phase II controls. The vapor that would have otherwise escaped through the fillpipe to the Phase II controls is instead directed to a carbon canister contained within the vehicle, which is the actual means of emission control of the ORVR system, to adsorb hydrocarbons contained in the displaced vapor.

[9] California Air Resources Board. ARB 2013 Gasoline Dispensing Facility Phase II ORVR Emission Factor Update - South Coast AQMD Rule 1401 Working Group. (2017, August 16). https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1401/par1401_wg4carb_081617.pdf

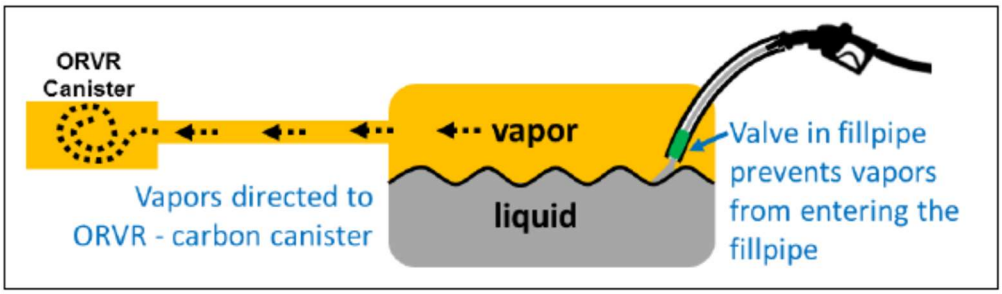


Figure 1-4: Onboard Refueling Vapor Recovery System Capture Displaced Vapors

PUBLIC PROCESS

The development of PAR 461 will be conducted through a public process. A Public Workshop will be held on June 24, 2026, where South Coast AQMD staff will present the proposed amended rule language to the public and stakeholders and solicit comments.

CHAPTER 2: SUMMARY OF PROPOSAL

INTRODUCTION

PROPOSED AMENDED RULE 461

INTRODUCTION

PAR 461 includes an alternative recordkeeping option for fleet operators of ORVR-equipped vehicles to record daily fuel dispensing quantity in aggregate in lieu of existing requirements in subparagraph (c)(4)(E) for fuel dispensed per vehicle.

The following information summarizes the proposed amendments for PAR 461. Any modifications to provisions that have been incorporated are explained. PAR 461 also includes an editorial change for a typographical error.

PROPOSED AMENDED RULE 461

Subdivision (c) ─ Equipment and Operation Requirements

Incorrect Numbering ─ Clause (c)(1)(B)(vi)
Due to a typographical error, clause (c)(1)(B)(vi) was incorrectly numbered as the sixth item under subparagraph (c)(1)(B). The clause has been corrected to reflect (c)(1)(B)(iv).

Content of Record Keeping Requirement for Non-Retail Gasoline Transfer and Dispensing Facilities ─ Subparagraph (c)(4)(E)
The owner/operator of a non-retail gasoline transfer and dispensing facility that exclusively fuels ORVR-equipped vehicles may elect to utilize a CARB-certified non-vapor recovery dispensing component that complies with paragraph (c)(4). Under the current requirements of subparagraph (c)(4)(E), facilities selecting this option are required to maintain records documenting the date, quantity of fuel dispensed into each motor vehicle, and the motor vehicle's make, model, model year, and vehicle identification number (VIN).

For stakeholders operating large and continuously changing fleets comprised of relatively new vehicles, such as rental vehicle companies, daily recordkeeping for total gasoline dispensed would be a viable alternative to the existing requirement of per vehicle fuel dispensing records while reducing administrative workload on those operators. The proposed amendments to Rule 461 would retain the option for daily recordkeeping per vehicle, now located in clause (c)(4)(E)(i), while providing an additional option for owners or operators of non-retail GDFs to record daily aggregate fuel throughput for the fleet, located in clause (c)(4)(E)(ii). Both options require the operator to maintain a list of fueled vehicles, including each motor vehicle's make, model, model year, and VIN.

For facilities who wish to utilize the new aggregate fuel recordkeeping option proposed for subparagraph (c)(4)(E), a permit modification must be submitted to South Coast AQMD prior to implementing this alternative recordkeeping option due to existing conditions in the GDF permit to operate. For a facility to comply with the new recordkeeping option in PAR 461 clause (c)(4)(E)(ii), the existing permit condition will need to be modified to reflect the requirement prior to the transition.

Subdivision (h) ─ Rule 1402 Inventory Requirements

Subdivision (h) was first introduced on April 21, 2000 to require inventory reporting in accordance with Rule 1402. However as of January 1, 2022, facilities are now required to report emissions data as part of CARB's EICG and CTR requirements, and thus the subdivision has been superseded by the state reporting program and will be removed from Rule 461.

CHAPTER 3: IMPACT ASSESSMENTS

IMPACT OF RULE AMENDMENT

CALIFORNIA ENVIRONMENTAL QUALITY ACT

SOCIOECONOMIC IMPACT ASSESSMENT

DRAFT FINDINGS UNDER THE HEALTH AND SAFETY CODE

COMPARATIVE ANALYSIS

IMPACT OF RULE AMENDMENT

Impact assessments were conducted as part of PAR 461 rule development to assess environmental and socioeconomic implications. These impact assessments include costs, emission reductions, socioeconomic impacts, and CEQA analysis. Staff prepared draft findings pursuant to Health and Safety Code Sections 40727 and 40727.2, respectively. The proposed amendments to Rule 461 are administrative. There will not be additional emission reductions from implementing PAR 461. The provisions in PAR 461 are not expected to impose any additional costs.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) and South Coast AQMD's certified regulatory program (Public Resources Code Section 21080.5, CEQA Guidelines Section 15251(l), and South Coast AQMD Rule 110), the South Coast AQMD, as lead agency, is currently reviewing the proposed project (PAR 461) to determine if it will result in any potential adverse environmental impacts. Appropriate CEQA documentation will be prepared based on the analysis.

SOCIOECONOMIC IMPACT ASSESSMENT

A socioeconomic impact assessment is not required by Health and Safety Code Sections 40440.8 and 40728.5 because the proposed amendments to Rule 461 contain administrative changes that will not significantly affect air quality or emission limitations, and thus, will not result in significant socioeconomic impacts.

DRAFT FINDINGS UNDER THE HEALTH AND SAFETY CODE

Requirements to Make Findings

Health and Safety Code Section 40727 requires that the Governing Board make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report. In order to determine compliance with Health and Safety Code Section 40727, Health and Safety Code Section 40727.2 requires a written analysis comparing the proposed amended rule with existing regulations, if the rule meets certain requirements.

Necessity

A need exists to amend PAR 461 to include an option for fleet operators of ORVR-equipped vehicles to record daily aggregated fuel dispensing quantity in lieu of existing requirements in subparagraph (c)(4)(E) for fuel dispensed per vehicle.

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 461 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

Consistency

PAR 461 is in harmony with and not in conflict with or contradictory to existing statutes, court decisions, or state or federal regulations.

Non-Duplication

PAR 461 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, 40702, 40440(a), and 40725 through 40728.5.

COMPARATIVE ANALYSIS

PAR 461 does not impose a new or more stringent emissions limit or standard, or a new or more stringent monitoring, reporting, or recordkeeping requirement. Therefore, consistent with Health and Safety Code Section 40727.2(g), no comparative analysis is required.