

**REGULATION 8
ORGANIC COMPOUNDS
RULE 53
VACUUM TRUCK OPERATIONS**

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**REGULATION 8
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RULE 53
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(Adopted April 18, 2012)

8-53-100 GENERAL

8-53-101 Description: The purpose of this rule is to limit the emissions of organic compounds from the use of vacuum trucks to move materials at petroleum refineries, bulk plants, bulk terminals, marine terminals, and organic liquid pipeline facilities.

8-53-102 Applicability: This rule applies to the following facilities:

- 102.1 Petroleum refineries;
- 102.2 Bulk plants;
- 102.3 Bulk terminals;
- 102.4 Marine terminals;
- 102.5 Organic liquid pipeline facilities.

8-53-103 Exemption, Emergencies: Vacuum trucks responding to spills, equipment failures, and other emergency situations shall be exempt from the requirements of this rule, provided that (1) use of equipment capable of complying with the rule would delay the response, and (2) the delay would pose a risk of significant harm to facility equipment, personnel, the public, or the environment.

8-53-104 Limited Exemption, Positive Displacement Pump or Gravity Feed Loading: A loading event in which gravity or a positive displacement pump is used to move regulated materials into a vacuum truck shall be exempt from the requirements of Sections 8-53-301 and 8-53-501.

8-53-105 Exemption, Secondary Treatment Processes: Vacuum truck activities at secondary treatment processes, as defined in Regulation 8, Rule 8, Section 208, shall be exempt from this rule.

8-53-200 DEFINITIONS

8-53-201 Air Mover: A specialized type of vacuum truck that uses a combination of vacuum and air flow to load a variety of material types into the truck.

8-53-202 Affected Facility: A facility to which this rule applies pursuant to Section 8-53-102.

8-53-203 Aviation Gas: Gasoline suitable for use in piston-driven aircraft.

8-53-204 Background Concentration: The ambient concentration of TOC determined at least 3 meters (10 feet) upwind from the vacuum truck blower exhaust, as determined by a hydrocarbon analyzer pursuant to Section 8-53-501.

8-53-205 Bulk Plant: A distribution facility that is subject to Regulation 8, Rule 39 or to Section 302 of Regulation 8, Rule 6.

8-53-206 Bulk Terminal: A distribution facility that is subject to Regulation 8, Rule 33 or to Section 301 of Regulation 8, Rule 6.

8-53-207 Control Equipment: Equipment used to reduce TOC emissions from vacuum truck operations in order to comply with emission limits set forth in Section 8-53-301 of this rule, including, but not limited to, carbon adsorption systems, internal combustion engines, thermal oxidizers, refrigerated condenser systems, and liquid scrubbers.

8-53-208 Crude Oil: A naturally occurring mixture consisting predominantly of hydrocarbons and/or sulfur, nitrogen and oxygen derivatives of hydrocarbons that is removed from the earth in a liquid state or is capable of being so removed.

8-53-209 Gasoline: Any petroleum-derived, volatile mixture of hydrocarbons suitable for use as a fuel in a spark-ignited, internal combustion engine.

8-53-210 Gasoline Blending Stock: Any organic liquid used as a component of gasoline, including, but not limited to aromatic or alcohol octane boosters and oxygenates, isomerate, reformate, alkylate, straight run gasoline, cat gasoline, pyrolysis gasoline, FCC gasoline and light hydrocrackate.

- 8-53-211 Loading Event:** The loading at a single location within an affected facility of regulated materials into a vacuum truck or other container through a vacuum truck operation. The resumption of loading at the same location after an interruption shall not be considered a separate loading event.
- 8-53-212 Marine Terminal:** Any facility or structure constructed to load or unload organic liquid bulk cargo into or off of marine tank vessels.
- 8-53-213 Naphtha:** A general term for a variety of crude oil fractions in the gasoline boiling range that are used as feeds and products including but not limited to straight run naphtha, coker naphtha, cat cracked naphtha, and hydrocracked naphtha.
- 8-53-214 Organic Compound:** Any compound of carbon, excluding methane, carbon monoxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate.
- 8-53-215 Organic Liquid Pipeline Facility:** Any pipeline used to transport petroleum, petroleum products, or petroleum product blending stock, along with any associated breakout stations.
- 8-53-216 Petroleum Refinery:** Any facility that processes petroleum products as defined in North American Industry Classification System code number 32411, Petroleum Refineries.
- 8-53-217 Positive Displacement Pump:** Equipment that, for each cycle of operation, draws in fluid at a constant volume and then forces that exact volume of fluid into a discharge line. For the purposes of this rule, a diaphragm pump is considered to be a positive displacement pump.
- 8-53-218 Regulated Material:** A regulated material is any of the following:
 218.1 Gasoline, aviation gasoline, gasoline blending stock, naphtha;
 218.2 Transmix, slop, or any other hydrocarbon mixture that includes a material listed in Section 8-53-218.1 if
 2.1 For a mixture without significant water content, the true vapor pressure of the mixture is greater than 25.8 mmHg (0.5 psia) as determined pursuant to Section 8-53-602, or
 2.2 For a mixture with significant water content, the water content is less than 90% as determined pursuant to Section 8-53-603.
 Crude oil is not a regulated material.
- 8-53-219 Slop:** Any mixture of petroleum materials that does not meet product specifications and may not be used or distributed without further processing.
- 8-53-220 Total Organic Compounds (TOC):** Organic compounds and methane.
- 8-53-221 Transmix:** A mixture of hydrocarbons resulting from (1) the sequential transmission of batches of materials through a pipeline and mixing at the interface between different materials, or (2) the collection for re-refining of material that is not loaded, typically because it does not meet a fuel specification or has become contaminated.
- 8-53-222 Vacuum Truck:** Portable equipment with an affixed barrel or tank that relies on the creation of a pressure differential, typically through use of a pump or blower, to pneumatically load materials into the barrel or tank of the equipment.
- 8-53-223 Vacuum Truck Operation:** The movement of regulated material into a vacuum truck or into any other container through use of a vacuum truck. For purposes of this rule, the use of other means, typically gravity feed or an auxiliary pump, to push or pull materials into a vacuum truck shall be considered a vacuum truck operation.
- 8-53-300 STANDARDS**
- 8-53-301 Emission Limit:** Effective April 1, 2013, for any loading event, the owner or operator of a facility subject to this rule shall control emissions to meet the requirements of Section 8-53-301.1 or, as an alternative, the requirements of Section 8-53-301.2.
 301.1 The TOC concentration does not exceed 500 ppmv, expressed as methane (C1), above background, as measured at the exhaust outlet of a vacuum truck operation or, if an auxiliary control device is used to control emissions from a vacuum truck operation, at the exhaust outlet of the control device unless:
 1.1 A second concentration reading taken within 60 seconds fails to confirm the exceedance, or

1.2 A second concentration reading taken within 60 seconds confirms a TOC concentration in excess of 500 ppmv, but the loading event is shut down within 3 minutes after the second reading.

301.2 TOC emissions are controlled with an abatement device with an abatement efficiency of at least 95 percent.

8-53-302 Liquid Leaks: Effective April 1, 2013, for any loading event, the owner or operator of a facility subject to this rule shall not use a vacuum truck or associated equipment that leaks liquid at a rate in excess of three drops per minute unless the leak is discovered by the operator and eliminated within 3 minutes of discovery or unless the loading event is shut down within 3 minutes of the discovery of the leak. This does not apply to disconnect leaks provided procedures for minimizing disconnect leaks are used.

8-53-303 Vapor Leaks: Effective April 1, 2013, for any loading event, the owner or operator of a facility subject to this rule shall not use a vacuum truck or associated abatement device that leaks organic vapor in excess of 500 ppmv, expressed as methane (C₁), above background unless the leak is discovered by the operator and minimized to a concentration below 500 ppmv within 3 minutes after discovery or unless the loading event is shut down within 3 minutes after the discovery of the leak.

8-53-304 Unloading of Regulated Material: Effective April 1, 2013, the owner or operator of a facility subject to this rule shall meet the following requirements for unloading of regulated material from a vacuum truck at the facility where the vacuum truck was loaded:

304.1 Regulated material shall be unloaded into a tank, vessel or sump that meets the control requirements in Regulation 8, Rule 5 or Regulation 8, Rule 8, or

304.2 If regulated material is unloaded into a tank, vessel or sump that does not meet the control requirements of Regulation 8, Rule 5 or Regulation 8, Rule 8, regulated material shall be unloaded using a submerged fill pipe that complies with the submerged fill pipe discharge requirements of Regulation 8, Rule 5, Section 302 and promptly pumped into storage.

8-53-400 ADMINISTRATIVE REQUIREMENTS

8-53-401 Loading Event Schedule Reporting Requirements: Effective April 1, 2013, upon request by the APCO or the designee of the APCO, the owner or operator of an affected facility subject to this rule shall provide a list of scheduled loading events and the following information, if available at the time of request, for each event:

401.1 Loading event start date and time;

401.2 Facility name, plant number (if applicable), and source number (if applicable), tank, pipeline, or reservoir address, and equipment location;

401.3 Vacuum truck company name, owner/operator's name, and telephone number;

401.4 Control equipment company name, control equipment type, operator's name and telephone number if the control equipment is operated by someone other than the vacuum truck owner/operator; and,

401.5 Tank, pipeline, box, container, or reservoir capacity, estimated volume and type of material to be loaded.

The list shall include loading events that are scheduled within thirty (30) days. The list shall be provided to District staff within three (3) working days and may be provided via hard copy or electronically. Changes to loading event schedules shall be reported to District staff no less than 24 hours prior to loading events.

8-53-500 MONITORING AND RECORDS

8-53-501 Emissions Monitoring Requirement: Effective April 1, 2013, the owner or operator of an affected facility using a vacuum truck operation shall monitor and record emissions as follows:

501.1 To demonstrate compliance with Section 8-53-301.1 when controlling TOC emissions from a vacuum truck operation with technology other than a carbon adsorption system, emission concentrations from the control device shall be measured using the method specified in Section 8-53-601 and recorded as follows:

- 1.1 Conduct one measurement for each loading event before the vacuum truck is approximately 20% full. Conduct an additional measurement before the vacuum truck is approximately 60% full. If a vacuum truck is already 20% full prior to a loading event, conduct an initial measurement as soon as possible after the start of the loading event and an additional measurement before the vacuum truck is approximately 60% full. If a vacuum truck is already 60% full prior to a loading event, conduct one measurement as soon as possible after the start of the loading event.
- 1.2 Record the information required by Section 8-53-502.
- 501.2 To demonstrate compliance with Section 8-53-301.1 when controlling TOC emissions from a vacuum truck operation with a carbon adsorption system, emission concentrations from the control device shall be measured using the method specified in Section 8-53-601 and recorded as follows:
 - 2.1 Commence emission measurements within 2 minutes of startup for each loading event. Additional measurements shall be performed approximately every 10 minutes during loading thereafter;
 - 2.2 When a TOC stream is switched to a back-up or replacement carbon vessel, a new TOC emission measurement must occur within 2 minutes of the carbon vessel replacement.
 - 2.3 Record the information required by Section 8-53-502.
- 501.3 To demonstrate compliance with Section 8-53-301.2, the owner or operator of an affected facility shall perform a source test verifying the required abatement efficiency during the vacuum truck operation or, for abatement devices that combust emissions to achieve the required efficiency, the owner or operator may instead show that a source test on the abatement device verifying the required abatement efficiency was completed within the 12 months prior to the commencement of the vacuum truck operation.
- 501.4 An alternative monitoring plan may be submitted and approved by the APCO.
- 501.5 The owner or operator of an affected facility shall retain records and lists required by this Section for two years and shall make them available for inspection by the APCO upon request.

8-53-502 Recordkeeping Requirement: A person subject to this rule shall keep the following records:

- 502.1 Effective April 1, 2013, record the following information for each loading event:
 - 1.1 The date, time of commencement, and duration of the loading event;
 - 1.2 The type and volume of regulated materials loaded;
 - 1.3 Whether loading was by vacuum, positive displacement pump, or gravity;
 - 1.4 Where vacuum truck control equipment or external control equipment is used, record the make and model of the control equipment, the results of the emission measurements required by Section 8-53-501, and the make, model, and serial number of the device used to measure the TOC concentrations;
 - 1.5 Where loading was by positive displacement pump, the make and model of the pump.
- 502.2 Effective April 1, 2013, record the daily volume of crude oil and oil recovered from centrifuging that is loaded into vacuum trucks.
- 502.3 Effective April 1, 2013, keep records if the owner or operator of an affected facility chooses to perform a true vapor pressure analysis or a percent volume analysis to determine whether material loaded is a regulated material pursuant to Section 8-53-218.
- 502.4 The owner or operator of an affected facility shall maintain complete copies of source test reports required by Section 8-53-501.3.
- 502.5 The owner or operator of an affected facility shall retain records required by this Section for two years and shall make them available for inspection by the APCO upon request.

8-53-600 MANUAL OF PROCEDURES

- 8-53-601 Measurement of TOC Concentrations:** Measurements of TOC concentration for determining compliance with the limit set forth in Section 301 of this rule shall be conducted in accordance with USEPA Reference Methods 21 or 25A; or BAAQMD Manual of Procedures, Volume IV, ST-7, Non-methane Organic Carbon Sampling. If USEPA Reference Method 21 is used to determine compliance, the portable analyzer shall use flame ionization detection and shall meet the specifications and performance criteria of, and shall be calibrated in accordance with, EPA Reference Method 21 (40 CFR 60, Appendix A). Noncompliance established by any one of the specified test methods shall constitute a violation of this rule.
- 8-53-602 Analysis of Materials, True Vapor Pressure:** Materials sampled pursuant to Section 8-53-218.2.1, shall be analyzed for true vapor pressure at loading temperature as prescribed in the Manual of Procedures, Volume III, Lab Method 28: Determination of Vapor Pressure of Organic Liquids from Storage Tanks.
- 8-53-603 Analysis of Materials, Percent Water Volume:** Materials sampled pursuant to Section 8-53-218.2.2 shall be analyzed as prescribed in ASTM D96: Test Methods for Water and Sediment in Crude Oil by Centrifuge Method (Field Procedure), ASTM D1796: Water and Sediment in Fuel Oils by the Centrifuge Method (Laboratory Procedure) or ASTM D6304: Karl Fisher Water in Petroleum Products. Alternatively, percent water volume may be observed and calculated from a mixed, representative sample collected as specified by ASTM D4057: Standard Practice for Manual Sampling of Petroleum and Petroleum Products and allowed to settle in a graduated cylinder.
- 8-53-604 Determination of Abatement Efficiency:** Abatement efficiency of an abatement device shall be determined as specified in the Manual of Procedures, Volume IV, ST-7 or by EPA Method 25 or 25A. Noncompliance established by any one of the specified test methods shall constitute a violation of the rule.