

**MARICOPA COUNTY  
AIR POLLUTION CONTROL REGULATIONS  
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 350  
STORAGE AND TRANSFER OF ORGANIC LIQUIDS (NON-GASOLINE) AT AN  
ORGANIC LIQUID DISTRIBUTION (OLD) FACILITY**

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**SECTION 100 – GENERAL**

**101 PURPOSE:** To limit emissions of volatile organic compounds (VOCs) from organic liquids (non-gasoline) during the storage and transfer of an organic liquid at an organic liquid distribution (OLD) facility.

**102 APPLICABILITY:**

**102.1** This rule applies to:

- a. The storage of any organic liquid (non-gasoline) with a maximum true vapor pressure greater than 0.5 psia at an OLD facility.
- b. The transfer of any organic liquid (non-gasoline) with a maximum true vapor pressure greater than 0.5 psia at an OLD facility.

**102.2** Compliance with the provisions of this rule shall not relieve any owner or operator subject to the requirements of this rule from complying with any other federally enforceable New Sources Performance Standards (NSPS) and National Emissions Standards for Hazardous Air Pollutants (NESHAP). In such cases, the most stringent standard shall apply.

**103 EXEMPTIONS:**

**103.1 Stationary Storage Tank or Container with a Capacity of Less Than 250 Gallons:** The owner or operator of a stationary storage tank or container with a capacity of less than 250 gallons shall comply with, at a minimum, the following sections of this rule:

- a. Section 301 (Federal Standards for Organic Liquid Distribution (OLD) Facilities).
- b. Section 302 (General Requirements) when storing organic liquid.
- c. Section 305.1 (General Requirements for the Transfer of Organic Liquids).

**103.2 Submerged Fill:** A submerged fill pipe in a stationary storage tank shall be submerged at all times except:

- a. During the initial fill until the fill pipe is submerged. The process of filling shall be continuous and shall be accomplished as rapidly as possible while minimizing vapors.

- b. When the organic liquid storage tank is in the process of being completely drained and subsequently refilled. The process of emptying and refilling shall be continuous and shall be accomplished as rapidly as possible while minimizing vapors.
- c. When the tank liquid has to be drained below the fill pipe in order to make a repair. The repair is to be made as expeditiously as possible. The process of refilling the organic liquid storage tank to meet the submerged fill pipe requirement shall be continuous and shall be accomplished as rapidly as possible while minimizing vapors.

**103.3 Floating Roof:** The floating roof shall be floating on the liquid surface at all times (i.e., off the roof leg supports) except:

- a. During initial fill until the roof is lifted off leg supports. The process of filling shall be continuous and shall be accomplished as rapidly as possible while minimizing vapors.
- b. When the tank is completely emptied and subsequently refilled. The process of emptying and refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible while minimizing vapors.
- c. When a repair requires that the organic liquid be drained below the level where the roof is floating. The repair work shall be accomplished as rapidly as possible. Upon completion of the repair, the process of refilling the organic liquid storage tank to meet the floating requirement shall be continuous and shall be accomplished as rapidly as possible while minimizing vapors.

**103.4 Seal Gap:** An owner or operator is exempted from the requirements for secondary seals and the secondary seal gap criteria when:

- a. Performing gap measurements.
- b. Inspecting the primary seal.
- c. Conducting repair work on the secondary seal. The repair work shall be accomplished as rapidly as possible.

**103.5 Opening of Hatches, Vent Valves, or Other Vapor Sealing Devices:**

- a. A hatch, vent valve, or other vapor sealing device:
  - (1) May be opened to avoid an unsafe operating condition; and
  - (2) Shall be closed once the unsafe operating condition has been resolved.
- b. When VOC vapors from organic liquids are present within a cargo tank, owners or operators, their contractors, and authorized government agents may open a hatch, vent valve, or other vapor sealing device while performing operations required by these Maricopa County Air Pollution Control Regulations or by other statutory entities, but shall be restricted as follows:
  - (1) Wait at least three (3) minutes after transfer is complete or cargo tank has come to a complete stop before opening the hatch, vent valve, or other vapor sealing device.

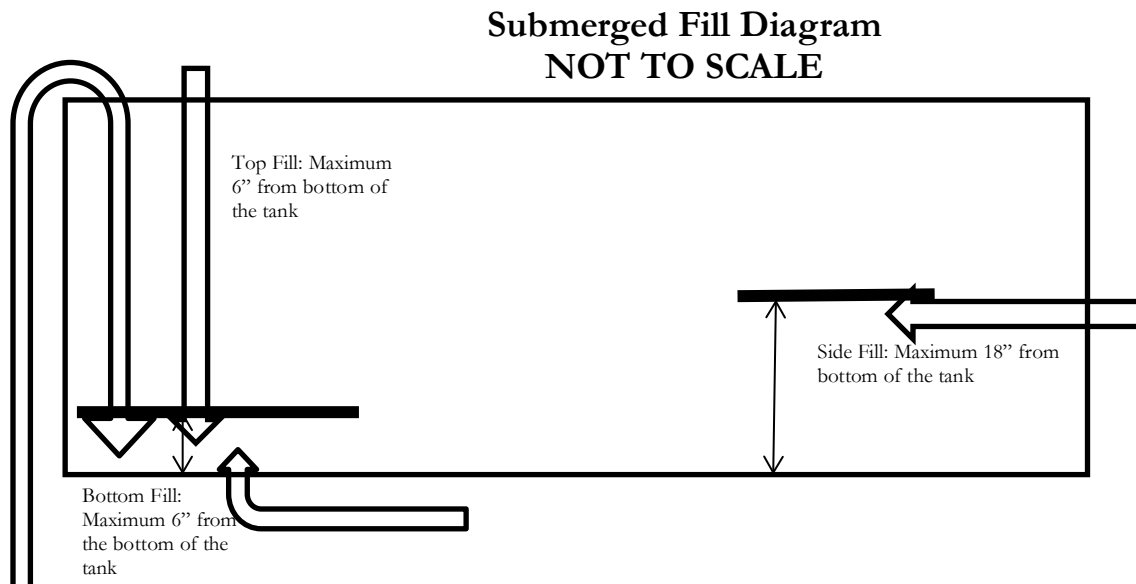
- (2) Reclose the hatch, vent valve, or other vapor sealing device within three (3) minutes of opening.
- (3) Limit wind speed at the opened hatch, vent valve, or other opened vapor sealing device to not more than three miles per hour (3 mph).

**SECTION 200 – DEFINITIONS:** For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County Air Pollution Control Rules and Regulations, the definitions in this rule take precedence.

- 201 CARGO TANK:** A liquid-carrying railcar or a liquid-carrying tank permanently attached and forming an integral part of a motor vehicle or truck trailer. For the purposes of this rule, vacuum trucks used exclusively for maintenance or spill response are not considered cargo tanks. [40 CFR §63.2406]
- 202 CLOSED VENT SYSTEM:** A system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapors from an emission point to a control device. This system does not include the vapor balance system that is part of a cargo tank or the loading arm or hose that is used for vapor return. For transfer racks, the closed vent system begins at, and includes, the first block valve on the downstream side of the loading arm or hose used to convey displaced vapors. [40 CFR § 63.2406]
- 203 CONTAINER:** A portable unit in which a material can be stored, transported, treated, disposed of, or otherwise handled. Examples of containers include, but are not limited to, drums and portable cargo containers known as “portable tanks” or “totes.” [40 CFR §63.2406]
- 204 CONTROL DEVICE:** Any combustion device, recovery device, recapture device, or any combination of these devices used to comply with this rule. Such equipment or devices include, but are not limited to, absorbers, adsorbers, condensers, and combustion devices. Primary condensers, steam strippers, and fuel gas systems are not considered control devices. [40 CFR § 63.2406]
- 205 EXCESS ORGANIC LIQUID DRAINAGE:** The quantity of organic liquid that drains out of the end of an organic liquid loading hose or a vapor recovery hose during the process of connecting or disconnecting that is one or more of the following:
  - 205.1** More than two teaspoonsful (2 tsp) or 0.34 fluid ounces of organic liquid lost from the end of the hose. This does not include drainage into a fill pipe’s spill containment receptacle.
  - 205.2** Wets any area on the ground having an aggregate area greater than 113 square inches (113 in<sup>2</sup>).
  - 205.3** The perimeter of which would encompass a circle of twelve inches (12”) diameter or larger. This does not include drainage into a fill pipe’s spill containment receptacle.

- 206 EXTERNAL FLOATING ROOF STATIONARY STORAGE TANK:** An open top storage tank with a floating roof consisting of a double deck or pontoon single deck that rests upon and is supported by the liquid being contained.
- 207 INTERNAL FLOATING ROOF STATIONARY STORAGE TANK WITH A FIXED ROOF:** A stationary storage tank with a floating cover or roof that rests upon or is floated upon the liquid being contained, and has a fixed roof on top of the tank shell. For the purposes of this rule, an external floating roof stationary storage tank that has been retrofitted with a geodesic dome or other fixed roof shall be considered to be an internal floating roof stationary storage tank with a fixed roof.
- 208 LEAK FREE:** A condition in which there is no organic liquid escape or seepage of more than three (3) drops per minute from organic liquid storage, handling, or ancillary equipment, including, but not limited to, seepage and escapes from above ground fittings. This does not include the disconnecting or connecting of either an organic liquid hose from an organic liquid fill line or a vapor recovery hose from a vapor line.
- 209 MAXIMUM TRUE VAPOR PRESSURE:** The equilibrium partial pressure exerted by the VOCs (as defined in 40 CFR § 51.100) in the stored volatile organic liquid (VOL) at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined by one or more of the following:
- 209.1** In accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks.
  - 209.2** As obtained from standard reference texts.
  - 209.3** As determined by ASTM D2879-83, ASTM D2879-96, or ASTM D2879-97. [40 CFR § 60.111b]
- 210 ORGANIC LIQUID DISTRIBUTION (OLD) FACILITY:** A stationary source that primarily receives and distributes organic liquids that are manufactured and consumed by other parties. This includes the combination of activities and equipment used to store or transfer organic liquids into, out of, or within a plant site regardless of the specific activity being performed. Activities include, but are not limited to, storage, transfer, blending, compounding, and packaging. [40 CFR 63.2406]
- 211 STATIONARY STORAGE TANK:** Any tank or reservoir used to store, but not transport, organic liquids.
- 212 SUBMERGED FILL:** Any organic liquid fill pipe or nozzle extension which meets at least one of the specifications below:
- 212.1 Top-Fill or Bottom-Fill:** The end of the fill pipe or nozzle extension is totally submerged when the liquid level is six (6) inches from the bottom of the tank.
  - 212.2 Side-Fill:** The end of the fill pipe or nozzle extension is totally submerged when the liquid level is eighteen inches (18") from the bottom of the stationary storage tank. A

side-fill pipe that is greater than 18” from the bottom of the stationary storage tank shall remain submerged at all times.



- 213 **SWITCH LOADING:** Loading an organic liquid not subject to this rule into a cargo tank whose previous load was an organic liquid subject to this rule.
- 214 **THROUGHPUT:** The amount of organic liquid received.
- 215 **VAPOR BALANCE SYSTEM:** Vapor loss control equipment that collects organic vapors displaced from the transfer of organic liquid into:
- 215.1 A cargo tank and routes the collected vapors to a stationary organic liquid storage tank; or
  - 215.2 A stationary storage tank and routes the collected vapors to the cargo tank from which the storage tank is loaded; or
  - 215.3 A cargo tank and routes the collected vapors to the cargo tank from which the cargo tank is loaded.
- 216 **VAPOR TIGHT:** A condition at the site of a (potential) vapor leak in which:
- 216.1 An organic vapor analyzer (OVA) shows less than 10,000 ppmv when calibrated with methane; or
  - 216.2 A combustible gas detector (CGD) shows less than one-fifth lower explosive limit (1/5 LEL) when:
    - a. Calibrated with a gas specified by the manufacturer; and
    - b. Used according to the manufacturer’s instructions.

## SECTION 300 – STANDARDS

**301 FEDERAL STANDARDS FOR ORGANIC LIQUID DISTRIBUTION (OLD) FACILITIES:** An owner or operator of an OLD facility shall meet the applicable federal standards set forth in the New Source Performance Standards (NSPS) and the National Emission Standards For Hazardous Air Pollutants (NESHAP). The following federal standards and all accompanying appendices, excluding the authorities that cannot be delegated to the MCAQD, are adopted and incorporated by reference in Rule 360 (New Source Performance Standards) and Rule 370 (Federal Hazardous Air Pollutant Program) of these regulations. The applicable subparts include, but are not limited to the following:

- 301.1** 40 CFR Part 60, Subpart K-Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced after June 11, 1973, and Prior to May 19, 1978;
- 301.2** 40 CFR Part 60, Subpart Ka-Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984;
- 301.3** 40 CFR Part 60, Subpart Kb- Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984; and
- 301.4** 40 CFR Part 63, Subpart EEEE- National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline).
- 301.5** All accompanying appendices, excluding the authorities that cannot be delegated to the MCAQD.

**302 GENERAL REQUIREMENTS:** An owner or operator of an OLD facility shall:

- 302.1** Maintain all containers, storage tanks, and equipment associated with the transfer and storage of organic liquids to be:
  - a.** Leak free.
  - b.** Vapor tight.
  - c.** In good working order.
- 302.2** Install a permanent submerged fill pipe in all stationary storage tanks with a capacity greater than 250 gallons. Where because of government regulation, including, but not limited to, Fire Department codes, such submerged fill pipe cannot be installed, a nozzle extension that reaches within six inches (6") of the tank bottom shall be used to fill the tank.
  - a.** A side-fill pipe that is greater than 18" from the bottom of the stationary storage tank shall remain submerged at all times. Documentation demonstrating the side-fill pipe is submerged at all times shall be made available to the Control Officer during the course of a site visit.
- 302.3** Minimize organic liquid spills.
- 302.4** Clean up spills as expeditiously as practicable.
- 302.5** Cover all open organic liquid containers and storage tanks when not in use.
- 302.6** Properly dispose of any VOC containing material.



**302.7** Minimize the amount of organic liquid sent to waste collection systems that collect and transport organic liquid to reclamation and recycling equipment such as an oil/water separator.

**303 CONTROL OF ORGANIC VAPORS DURING THE STORAGE OF AN ORGANIC LIQUID IN A STATIONARY STORAGE TANK:**

**303.1 Control of Organic Vapors During the Storage of an Organic Liquid in a Fixed Roof Stationary Storage Tank:** The owner or operator of a fixed roof stationary storage tank shall:

**a. Fixed Roof Organic Liquid Stationary Storage Tank with a Capacity of 250 Gallons but less than 40,000 Gallons:** Equip the storage tank with one of the following:

(1) A pressure/vacuum vent valve that meets the following requirements:

(a) Is set per one of the following:

(i) Within ten percent (10%) of the tank's maximum, safe working-pressure.

(ii) At least at 0.5 psi (25.9 mm Hg).

(b) Is maintained in a vapor-tight condition except when the operating pressure exceeds the valve release setting.

(2) A closed vent system with a control device that meets the requirements of Section 304.

(3) An internal floating roof that meets the requirements of Section 303.2.

**b. Fixed Roof Organic Liquid Stationary Storage Tank with a Capacity of 40,000 Gallons or Greater:** Equip the storage tank with one of the following:

(1) A closed vent system with a control device that meets the requirements of Section 304.

(2) An internal floating roof that meets the requirements of Section 303.2.

**c. Fixed Roof Organic Liquid Stationary Storage Tank with a Capacity Greater than 250 Gallons that Stores Liquids Having a Maximum True Vapor Pressure Greater Than 11 PSI (569 mm Hg):**

(1) Maintain a working pressure in the stationary storage tank that is sufficient at all times to prevent organic vapor loss to the atmosphere; or

(2) Equip the stationary storage tank with a closed vent system with a control device that meets the requirements of Section 304.

**303.2 Control of Organic Vapors During the Storage of an Organic Liquid in a Fixed Roof Stationary Storage Tank with an Internal Floating Roof:** An internal floating roof stationary organic liquid storage tank and its appurtenances shall meet the following requirements:

- a. An owner or operator utilizing an internal floating roof stationary organic liquid storage tank to control vapor loss and associated emission control equipment shall properly:
  - (1) Install the equipment.
  - (2) Maintain the equipment.
  - (3) Operate the equipment.
- b. Organic liquid stationary storage tanks for which construction, reconstruction, or modification commenced after July 23, 1984, shall comply with all applicable requirements of the EPA New Source Performance Standard (NSPS), 40 CFR Part 60, Subpart Kb-Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984. This federal standard is adopted and incorporated by reference in Rule 360 (New Source Performance Standards) of these regulations.
- c. All stationary organic liquid storage tanks not subject to Section 303.2(b) shall comply with one of the following:
  - (1) 40 CFR Part 60, Subpart Kb, notwithstanding the type of facility and the date of tank construction, reconstruction or modification; or
  - (2) Have at least one continuous seal which completely covers the space between the roof edge and tank wall, except as provided in Section 303.2(d), and meet at least one of the following requirements:
    - (a) Have a contact-type roof resting completely on the liquid surface; or
    - (b) Have a liquid mounted seal; or
    - (c) Have a primary seal and a secondary seal.
- d. **Internal Floating Roof Openings:**
  - (1) Floating roof tanks shall have no visible holes, tears, or other openings in the seal or in any seal fabric.
  - (2) All openings in a floating roof, except drains, shall be equipped with a cover, seal, or lid.
  - (3) All covers, seals, and lids shall be in a closed position at all times, except when they are in actual use.
  - (4) Automatic bleeder vents shall be closed at all times, except when the roof is floated off of or landed onto the roof leg supports.
  - (5) Rim vents, if provided, shall be set to open only:
    - (a) When the roof is being floated off the roof leg supports; or
    - (b) At the manufacturer's recommended setting.
  - (6) Shall have a slit fabric cover that covers at least 90 percent (90%) of the sample well opening. [40 CFR § 60.112b(a)(1)(vii)]

- (7) The accumulated area of gaps between a tank's wall and primary seal shall not exceed ten square inches per foot (10 in<sup>2</sup>/ft.) of tank diameter.
- (8) The width of any portion of any gap shall not exceed one and one-half inches (1½").

**303.3 Control of Organic Vapors During the Storage of an Organic Liquid in an External Floating Roof Stationary Storage Tank:** An external floating roof stationary organic liquid storage tank and its appurtenances shall meet the following requirements:

- a. An owner or operator utilizing an external floating roof stationary storage tank to control vapor loss shall properly:
  - (1) Install the equipment.
  - (2) Maintain the equipment.
  - (3) Operate the equipment.
- b. **External Floating Roof Requirements:** The floating roof shall:
  - (1) Rest on and be supported by the surface of the liquid contents unless exempted in Section 103.3 (Floating Roof).
  - (2) Be equipped with a continuous primary seal to close the space between the roof eave and tank wall. The primary seal shall meet the requirements of Section 303.3.c (Primary Seal Requirements).
  - (3) Have a continuous secondary seal which is of a design that is in accordance with accepted standards of the organic liquids industry. The secondary seal shall meet the requirements of Section 303.3.d (Secondary Seal Requirements).
- c. **Primary Seal Requirements:**
  - (1) The accumulated area of gaps between a tank's wall and primary seal shall not exceed ten square inches per foot (10 in<sup>2</sup>/ft.) of tank diameter.
  - (2) The width of any portion of any gap shall not exceed one and one-half inches (1½").
- d. **Secondary Seal Requirements:**
  - (1) The secondary seal shall be:
    - (a) Rim-mounted.
    - (b) Not attached to the primary seal.
    - (c) Installed above the primary seal so that it completely covers the space between the roof edge or primary seal and the tank wall.
  - (2) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 1.0 square inch per foot (1 in<sup>2</sup>/ft.) of tank diameter. Determinations of gap area shall only be made at the point(s) where the gaps exceed one eighth inch (1/8"). The width of any portion of any gap shall not exceed one half inch (1/2"). [40 CFR § 60.113b(b)(4)(ii)]

**e. External Floating Roof Openings:**

- (1) Floating roof tanks shall have no visible holes, tears, or other openings in the seal or in any seal fabric.
- (2) All openings, except drains, shall be equipped with a cover, seal, or lid.
- (3) All covers, seals, and lids shall be in a closed position at all times, except when they are in actual use.
- (4) Automatic bleeder vents shall be closed at all times, except when the roof is floated off or landed on the roof leg supports.
- (5) Rim vents, if provided, shall be set to open only:
  - (a) When the roof is being floated off the roof leg supports; or
  - (b) At the manufacturer's recommended setting.

**304 CLOSED VENT SYSTEM WITH A CONTROL DEVICE:** A closed vent system with a control device used to control vapors from an organic liquid stationary storage tank shall meet the following requirements:

- 304.1** Reduce the inlet concentration of VOCs to the control device by at least 95 percent by weight.
- 304.2** Vent the displaced vapors only to the closed vent system with a control device.
- 304.3** Maintain the system to be vapor-tight except for the designated exhaust.
- 304.4** Prevent the vapor processing capacity from being exceeded.
- 304.5** Maintain any diaphragms used in vapor storage tanks to be vapor tight.
- 304.6** Equip any tank gauging or sampling device on a tank with a vapor-tight cover which shall be closed at all times except during gauging or sampling procedures.
- 304.7** Maintain all pressure-vacuum vent valves in a vapor-tight condition except when the operating pressure exceeds the valve release setting.

**305 TRANSFER OF ORGANIC LIQUIDS:**

- 305.1 General Requirements for the Transfer of Organic Liquids:** The owner or operator of an OLD facility and the owner or operator of a cargo tank shall have the responsibility to:
  - a. Ensure all parts of the transfer of the organic liquid are observed at all times.
  - b. Transfer organic liquids using submerged fill.
  - c. Transfer organic liquids in a manner that:
    - (1) Prevents overfills.
    - (2) Prevents excess organic liquid drainage.
  - d. Immediately discontinue the transfer of organic liquid if:
    - (1) A liquid leak is observed.
    - (2) A vapor leak is observed.

- e. Prevent excess organic liquid leak drainage at facilities that use a vapor balance system or a closed vent system by:
    - (1) Verifying the proper connection to the system.
    - (2) Verifying the proper disconnection from the system.
- 305.2 Transfer of Organic Liquids Into or Out of Cargo Tanks:** The owner or operator of an OLD facility shall:
- a. Ensure gauge pressure does not exceed 18 inches (18”) of water (33.6 mm Hg) and vacuum pressure does not exceed six inches (6”) of water (11.2 mm Hg) in the cargo tank during the transfer of organic liquids.
  - b. Demonstrate potential leak sources are vapor tight by using the test procedure described in Section 501 (Monitoring for Leaks).
- 305.3 Transfer of Organic Liquids at an OLD Facility with an Organic Liquid Throughput Less than 600,000 Gallons Per Month:** The owner or operator of an OLD facility shall utilize one of the following vapor loss control methods during the transfer of organic liquids into or out of a stationary storage tank:
- a. A vapor balance system.
  - b. A closed vent system with a control device.
- 305.4 Transfer of Organic Liquids at an OLD Facility with an Organic Liquid Throughput Greater than 600,000 Gallons Per Month or Where Organic Liquid is Received Via Pipeline:** The owner or operator of an OLD facility shall:
- a. Utilize a closed vent system with a control device which reduces the emissions of VOCs to not more than 0.08 pounds per 1000 gallons (0.08 lb. VOC/1000 gal) of organic liquid transferred.
  - b. Verify the cargo tank is vapor tight by one or more of the following:
    - (1) The cargo tank is currently certified in accordance with the U.S. Department of Transportation (DOT) pressure test requirements in 49 CFR Part 180, Continuing Qualification and Maintenance of Packagings. [40 CFR § 63.2346(4)(ii)]
    - (2) The cargo tank is currently certified in accordance with the U.S. Department of Transportation (DOT) pressure test requirements in 49 CFR Part 173.31 (Use of Tank Cars). [40 CFR § 63.2346(a)(4)(ii)]
    - (3) The cargo tank displays a valid Maricopa County Vapor Tightness Certification decal.
- 305.5 Transfer of Organic Liquids From a Cargo Tank Into a Cargo Tank:** The owner or operator of a cargo tank shall utilize a vapor balance system during the loading of organic liquid from an organic liquid cargo tank into an organic liquid cargo tank.
- 305.6 Switch Loading:** The owner or operator of an OLD facility shall use a closed vent system with a control device that:

- a. Reduces the inlet concentration of VOCs to the control device by at least 95 percent by weight.
- b. Reduces VOC emissions to not more than 0.08 pounds VOC per 1000 gallons (0.08 lbs VOC/1000 gal) of liquid loaded.

**306 EQUIPMENT REPAIR AND RETESTING:** The owner or operator of any piping, hoses, equipment, and devices used to collect, transport, store, and/or process organic liquid and/or vapors that exceeds the standards of this rule, shall:

**306.1 Exceedance Notification Schedule:** Notify the Control Officer:

- a. By phone within 24 hours of such exceedance; and
- b. Submit written notice:
  - (1) Within 72 hours from the date of discovery documenting the exceedance of the standards of this rule. The written notice may be submitted by mail, email, facsimile, commercial delivery, or hand delivery.
  - (2) To include:
    - (a) The date and time of the exceedance.
    - (b) A description of the exceedance.
    - (c) Steps taken to mitigate the exceedance.

**306.2 Corrective Action Schedule:** Observe the following time schedule for corrective action:

- a. Concentrations at or above the lower explosive limit shall be brought into compliance within 24 hours of detection.
- b. Leak concentrations exceeding 10,000 ppmv when calibrated with methane, or 1/5 the lower explosive limit of the calibration gas, shall be brought into compliance within five (5) days of detection.
- c. Except as the Control Officer otherwise specifies, a vapor leak source shall be tested after presumed leak-correction within fifteen (15) minutes of recommencing use. If vapor tight standards are exceeded in this test, the use of the faulty equipment shall be discontinued until correction is verified by retesting.

## **SECTION 400 – ADMINISTRATIVE REQUIREMENTS**

### **401 INSPECTION OF A FIXED ROOF ORGANIC LIQUID STATIONARY STORAGE TANK:**

**401.1 Inspection of a Fixed Roof Stationary Organic Liquid Storage Tank Without an Internal Floating Roof:** The owner or operator shall conduct a visual inspection of the tank at least once every six (6) months to ensure the stationary storage tank is:

- a. Leak free.
- b. Vapor tight.

c. In good working order.

**401.2 Inspection of a Fixed Roof Stationary Organic Liquid Storage Tank with an Internal Floating Roof:** The owner or operator shall conduct a visual inspection, through manholes or roof hatches if necessary, at the following frequencies to verify the following:

a. **Six (6) Month Inspection:**

- (1) There are no visible holes, tears, or other openings in the seal or in any seal fabric.
- (2) No visible liquid is on top of the floating roof.
- (3) All covers, seals, and lids are in closed positions at all times except when they are in actual use.
- (4) Automatic bleeder vents are closed at all times except when the roof is floated off of or landed onto the roof leg supports.
- (5) The tank is in compliance with the rule.

b. **Annual Inspection, not to exceed 12 months between inspections:**

- (1) No visible liquid is on top of the floating roof.
- (2) All seals are attached.
- (3) The primary seal does not have any holes, tears, or other openings.
- (4) The secondary seal, if one is in service, does not have any holes, tears, or other openings.

c. **Five (5) Year Inspection and Empty Tank Inspection:** Each time the internal floating roof stationary storage tank is emptied and degassed or at least once every five (5) years, not to exceed 60 months between inspections.

- (1) The internal floating roof does not have any defects.
- (2) The primary seal does not have any holes, tears, or other openings.
- (3) The secondary seal, if one is in service, does not have any holes, tears, or other openings.
- (4) The accumulated area of gaps between the wall of the stationary storage tank and primary seal comply with the requirements in Section 303.2.d(7).
- (5) The width of any portion of any gap complies with the requirements in Section 303.2.d(8).
- (6) Gaskets prevent liquid surfaces from exposure to atmosphere.
- (7) The slotted membrane does not have more than a ten percent (10%) open area.

**402 INSPECTION OF AN EXTERNAL FLOATING ROOF STATIONARY STORAGE TANK:** The owner or operator shall conduct inspections at the following frequencies to verify the following:

**402.1 Six (6) Month Inspection:**

- a. There are no visible holes, tears, or other openings in the seal or in any seal fabric.
- b. No visible liquid is on top of the floating roof.
- c. The floating roof has a continuous primary seal to close the space between the roof eave and tank wall.
- d. The floating roof has a continuous secondary seal.
- e. The tank is in compliance with the rule.

**402.2 Annual Inspection, not to exceed 12 months between inspections:**

- a. The secondary seal covers the space between the roof edge and the tank.
- b. The gaps between the tank wall and the secondary seal comply with the requirements in Section 303.3.d (Secondary Seal Requirements).
- c. There are no holes, tears, or other openings in the seal or seal fabric.

**402.3 Five (5) Year Inspection and Empty Tank Inspection:** Each time the external floating roof stationary storage tank is emptied and degassed or at least once every five (5) years, not to exceed 60 months between inspections. This inspection can be conducted while the tank is in service.

- a. Measurements of the gaps between the primary seal and the tank wall comply with the requirements in Section 303.3.c (Primary Seal Requirements).
- b. Measurements of the gaps between the secondary seal and the tank wall comply with the requirements in Section 303.3.d (Secondary Seal Requirements).
- c. There are no holes, tears, or other openings in the seal or seal fabric.
- d. The external floating roof does not have any defects.

**403 EQUIPMENT LEAK DETECTION INSPECTIONS:** The owner or operator shall conduct equipment leak detection inspections at the following frequencies:

**403.1 Monthly Leak Detection Inspections:** Inspect for liquid leaks, vapor leaks, and faulty equipment while the organic liquid is being transferred. Monthly inspection leak detection methods shall include one or more of the following methods as found in Section 501.1 (Identifying a Potential Vapor Leak):

- a. Incorporation of sight, sound, or smell.
- b. Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3, use of a soap solution.
- c. Use of an optical gas imaging instrument.
- d. Use of a combustible gas detector (CGD).
- e. Use of an organic vapor analyzer (OVA).

**403.2 Annual Leak Detection Inspections (not to exceed 12 months between inspections):** Inspect for liquid leaks, vapor leaks, and for faulty equipment.



Conduct vapor leak inspections following procedures in Section 501.2 (Determining Vapor Tight Status), except that EPA Method 21 shall be used to test for leaks from a closed vent system and control device and its associated piping outside the organic liquid transfer area. Equipment shall conform to the specifications of those test methods cited in Section 504 (Compliance Determination – Test Methods Incorporated by Reference).

**403.3 Leak Detected:** If a leak is detected, follow the corrective action in Section 306 (Equipment Repair and Retesting).

**404 ORGANIC LIQUID STORAGE TANK AND EQUIPMENT LEAK DETECTION INSPECTIONS – AVAILABILITY TO CONTROL OFFICER:**

The owner or operator shall notify the Control Officer of the date, time, and location of the inspections and tests in Sections 404.1, 404.2, and 404.3 no less than seven (7) working days prior to the inspection or test date. The Control Officer shall at their discretion observe the inspection or test.

**404.1 Inspection of a Fixed Roof Organic Liquid Storage Tank with an Internal Floating Roof:** The owner or operator shall make the following parts of the tank available for inspection by the Control Officer at the specified frequencies:

- a. The entire tank, including the internal floating roof, prior to initial filling of the storage tank.
- b. The internal floating roof for visual inspection through the manholes or roof hatches on an annual basis.
- c. The primary seal envelope for its full length every five (5) years on a tank with a capacity of 20,000 gallons or more. This inspection can be performed while the tank is in-service.
- d. The primary seal envelope for its full length on a tank with a capacity of 20,000 gallons or more any time the secondary seal is removed or if the tank is drained and cleaned by the owner or operator for any reason.

**404.2 Inspection of an External Floating Roof Stationary Organic Liquid Storage Tank:** The owner or operator shall make the following parts of the tank available for inspection by the Control Officer at the specified frequencies:

- a. The primary seal envelope and the secondary seal for unobstructed inspection on an annual basis. The primary seal envelope shall be made available for inspection at a minimum of four (4) locations selected along its circumference at random by the Control Officer. If the Control Officer detects a violation as a result of any such inspection, the Control Officer may require such further unobstructed inspection of the seals as may be necessary to determine the seal condition for its entire circumference.
- b. The primary seal envelope for its full length every five (5) years on a tank with a capacity of 20,000 gallons or more. This inspection can be performed while the tank is in-service.

- c. The primary seal envelope for its full length on a tank with a capacity of 20,000 gallons or more any time the secondary seal is removed or if the tank is drained and cleaned by the owner or operator for any reason.

**404.3 Equipment Leak Detection Tests:** The owner or operator shall allow the Control Officer to observe all annual equipment leak detection tests.

**405 OTHER AGENCIES' REQUIREMENTS:** Compliance with this rule does not relieve or otherwise affect the owner's or operator's obligation to comply with any other applicable federal, state, or local legal requirement including, but not limited to, rules promulgated by Arizona Department of Agriculture-Weights and Measures Services Division, local fire department codes, and local zoning ordinances.

**SECTION 500 – MONITORING AND RECORDS:** In addition to any federal testing, monitoring, and recording requirements, an owner or operator of an OLD shall comply with the following:

**501 MONITORING FOR LEAKS:**

**501.1 Identifying a Potential Vapor Leak:** Equipment leak detection inspections, as required in Section 400 (Administrative Requirements), shall be conducted using one or more of the test procedures listed below to identify a potential vapor leak. If a potential vapor leak is detected, refer to Section 501.2 (Determining Vapor Tight Status) to determine a vapor tight status.

- a. For the purposes of identifying a potential vapor leak, the use of sight, sound, or smell are acceptable.
- b. Method 21 – Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3:
  - (1) Spray a soap solution over the potential leak source. The soap solution may be a commercially available leak detection solution or may be prepared using concentrated detergent and water. A pressure sprayer or squeeze bottle may be used to dispense the solution.
  - (2) Observe the potential leak site to determine if any bubbles are formed. If no bubbles are observed, the source is presumed to have no detectable vapor leak.
- c. **Optical Gas Imaging:** An operator of a calibrated optical gas imaging device may use an optical gas imaging instrument to identify a potential vapor leak.
- d. **Combustible Gas Detector (CGD) or Organic Vapor Analyzer (OVA):** An operator of a calibrated CGD or an OVA may use the test procedure described in Section 501.2 (Determining Vapor Tight Status) to identify a potential leak.

**501.2 Determining Vapor Tight Status:** An owner, operator, or Control Officer shall follow the test procedure below to determine the vapor tight status of any piping, hoses, equipment, and devices used to collect, transport, store, or process organic vapors at an OLD facility.

- a. **Combustible Gas Detector (CGD) or Organic Vapor Analyzer (OVA)-Test Procedure:** A CGD or an OVA meeting the specifications and performance

criteria contained in EPA Method 21 and this section shall be used to determine vapor tight status.

- (1) **Calibration:** Calibrate the detector within four (4) hours prior to monitoring, as follows:
    - (a) The CGD shall be:
      - (i) Calibrated with a gas specified by the manufacturer; and
      - (ii) Used according to the manufacturer's instructions.
    - (b) The OVA shall be properly calibrated to 10,000 ppm as methane.
  - (2) **Probe Distance:** The probe inlet shall be:
    - (a) At the surface of the potential leak source when searching for leaks.
    - (b) At the surface of the leak source when the highest detector reading is being determined for a discovered leak.
    - (c) At the closest practical probe distance when the probe is either obstructed from moving on the surface of an actual or potential leak source, or if the source is a rotating shaft.
  - (3) **Probe Movement:** The probe shall be moved slowly, not faster than 1.6 inches per second (1.6"/sec). If there is any meter deflection at an actual or potential leak source, the probe shall be positioned to locate the point of highest meter response.
  - (4) **Probe Position:** The probe inlet shall be positioned in the path of the vapor flow from an actual or potential leak such that the central axis of the probe-tube inlet shall be positioned coaxially with the path of the most concentrated vapors.
  - (5) **Wind:** Wind shall be blocked as much as possible from the space being monitored. Monitoring results shall be valid only when wind speed in the space being monitored is five miles per hour (5 mph) or less.
  - (6) **Data Recording:** The highest detector reading and location for each incidence of detected leakage shall be recorded along with the date and time. If no organic liquid vapor is detected, that fact shall be entered into the record.
- b. **Vapor Leak Detected:** If a vapor leak is detected, follow the corrective action in Section 306 (Equipment Repair and Retesting).

**502 RECORDKEEPING AND REPORTING REQUIREMENTS:** The owner or operator of an OLD facility shall:

- 502.1** Maintain the records and information required by this rule. The records shall be:
- a. Legible.
  - b. Signed by the person performing the activity.
  - c. Retained for at least five (5) years.

- d. Provided to the Control Officer upon verbal or written request, within a reasonable time. If the Control Officer is at the site where requested records are kept, records shall be provided without delay.

**502.2 Storage Tank Inspection and Maintenance Records:** Maintain accurate records for each storage tank that include, but are not limited to the following:

- a. Certifications.
- b. Testing conducted.
- c. Inspections performed.
- d. Repair work conducted.

**502.3 Maximum True Vapor Pressure:**

- a. Keep accurate records of organic liquids stored in each stationary storage tank.
- b. Determine the temperature of the contents of each stationary storage tank by using at least one of the following methods:
  - (1) Take the actual temperature of the contents of the stationary storage tank each week and record the weekly temperature of the contents of each stationary storage tank.
  - (2) Obtain the maximum local monthly average ambient temperature as reported by the National Weather Service and record monthly for each stationary storage tank.
- c. Record the maximum true vapor pressure of each organic liquid in each stationary storage tank at least once each month.

**502.4 Leak Inspection Records:** Keep a log documenting each leak inspection that includes the items listed below:

- a. **Monthly:**
  - (1) A list, summary description, or diagram(s) showing the location of all of the equipment at the OLD facility.
  - (2) A list, summary description, or diagram(s) identifying the equipment that was inspected for leaks.
  - (3) Any maintenance that occurred.
- b. **Annually:** Any maintenance that occurred.

**502.5 Throughput Records:** Record the total monthly throughput of organic liquid by the end of the following month.

**502.6 Additional Record Requirements When Using an Optical Gas Imaging Instrument:** An owner or operator using an optical gas imaging instrument for leak inspections shall date and time stamp the video records of every monitoring event where an optical gas imaging instrument was used.

**502.7 Disposal Records of VOCs:** Maintain records of the type, amount, and method of disposing of VOC containing materials on each day of disposal.

**503 COMPLIANCE INSPECTIONS:** Where applicable, the Control Officer may at any time inspect the following for liquid or vapor leaks:

**503.1** An OLD facility.

**503.2** The loading of an organic liquid.

**503.3** A cargo tank's vapor balance system during the loading of an organic liquid.

**503.4** An organic liquid loading rack.

**503.5** A closed vent system with a control device.

**504 COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE:** The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department.

**504.1 EPA Test Methods:**

- a. EPA Method 2A-Direct Measurement of Gas Volume through Pipes and Small Ducts.
- b. EPA Method 18-Measurement of Gaseous Organic Compound Emissions by Gas Chromatography.
- c. EPA Method 21-Determination of Volatile Organic Compound Leaks.
- d. EPA Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3.
- e. EPA Method 25A-Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer.
- f. EPA Method 25B-Determination of Total Gaseous Organic Concentration Using a Nondispersive Infrared Analyzer.
- g. EPA Method 27-Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure Vacuum Test.
- h. Optical Gas Imaging: Alternative Work Practice for Monitoring Equipment Leaks, 40 CFR § 60.18(g), (h), and (i).
- i. AP 42, Fifth Edition, Volume I, Chapter 7: Liquid Storage Tanks, November 2006, errata August 2012.

**504.2 EPA Approved California Air Resources Board (CARB)-Test Procedure:**

- a. TP-201.1E Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, October 8, 2003.

**504.3 EPA Approved ASTM Standards:**

- a. ASTM 323-06, Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).
- b. ASTM D2879-83, ASTM D2879-96, ASTM D2879-97, or ASTM D2879-10 Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope.
- c. ASTM D6420-99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry.