

**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 FACILITY**

**INDEX**

**SECTION 100 – GENERAL**

- 101 PURPOSE
- 102 APPLICABILITY
- 103 EXEMPTIONS

**SECTION 200 – DEFINITIONS**

- 201 CARGO TANK
- 202 CONTAINER
- 203 EXCESS ORGANIC LIQUID DRAINAGE
- 204 EXTERNAL FLOATING ROOF STATIONARY STORAGE TANK
- 205 GASOLINE
- 206 INTERNAL FLOATING ROOF STATIONARY STORAGE TANK WITH  
FIXED COVERING
- 207 LEAK FREE
- 208 ORGANIC LIQUID
- 209 ORGANIC LIQUID DISTRIBUTION FACILITY
- 210 STATIONARY STORAGE TANK
- 211 SUBMERGED FILL
- 212 TRUE VAPOR PRESSURE (TVP)
- 213 VAPOR BALANCE SYSTEM
- 214 VAPOR COLLECTION/PROCESSING SYSTEM
- 215 VAPOR LOSS CONTROL SYSTEM
- 216 VAPOR TIGHT

**SECTION 300 – STANDARDS**

- 301 ORGANIC LIQUID STATIONARY STORAGE TANK REQUIREMENTS
- 302 VAPOR LOSS CONTROL SYSTEM
- 303 EQUIPMENT MAINTENANCE AND REPAIR

304 GENERAL REQUIREMENTS FOR THE TRANSFER OF ORGANIC LIQUID

**SECTION 400 – ADMINISTRATIVE REQUIREMENTS**

401 ORGANIC LIQUID (NON-GASOLINE) STATIONARY STORAGE TANK INSPECTIONS

402 MONTHLY ORGANIC LIQUID TRANSFER EQUIPMENT LEAK INSPECTIONS

403 ORGANIC LIQUID (NON-GASOLINE) STORAGE TANK INSPECTIONS-AVAILABILITY TO CONTROL OFFICER

404 OTHER AGENCIES' REQUIREMENTS

**SECTION 500 – MONITORING AND RECORDS**

501 MONITORING FOR LEAK

502 VAPOR PRESSURE RECORDS

503 LEAK INSPECTION RECORDS

504 COMPLIANCE INSPECTIONS

505 RECORDS RETENTION

506 COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE

**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 FACILITY**

**SECTION 100 – GENERAL**

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

**102 APPLICABILITY:** This rule is applicable to the bulk storage and transfer of any organic liquid (non-gasoline) with a true vapor pressure (TVP) greater than 0.5 psia at an organic liquid distribution facility. 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 Total Exemptions:** For the purposes of this rule, the following are exempt from this rule:

- a. Gasoline facilities subject to Rule 351 of these rules;
- b. Gasoline, including aviation gasoline, kerosene, diesel fuel, asphalt and heavier distillate oils and fuel oils;
- c. Fuel consumed or dispensed at the facility directly to user such as fleet refueling, that support the operation of the facility;
- d. Hazardous waste;
- e. Wastewater or ballast water; and
- f. Any non-crude oil liquid with an annual average TVP less than 0.7 kilopascals (0.1 psia). [40 CFR §63.2406]

**103.2 Partial Exemptions:**

- a. Stationary storage tanks and containers with a capacity of less than 250 gallons (946.35 L) are exempt from Section 301 and 302 of this rule.
- b. An organic liquid distribution facility built prior to October 2, 1978, is not required to have a vapor loss control system at the transfer rack when all of the following are complied with:

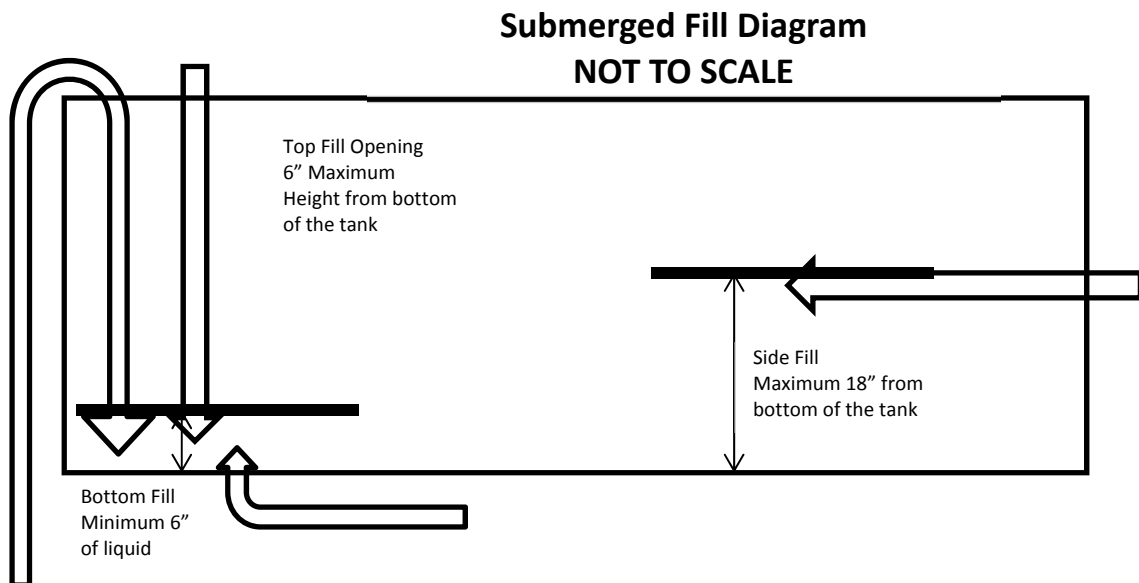
- (1) The distribution facility transfers less than 120,000 gallons (454,800 l) of organic liquid (non-gasoline) into cargo tanks in any consecutive 30-day period.
  - (2) Any organic liquid distribution facility that becomes subject to all of the provisions of this rule by exceeding the threshold in Section 103.2(b)(1) of this rule, will remain subject to the rule provisions even if its output later falls below the threshold.
  - (3) Keep current records of amount of organic liquid transferred and keep them readily accessible to the Department upon request for at least five (5) years.
  - (4) Transfer organic liquid using submerged fill only.
  - (5) The owner or operator of the organic liquid distribution facility shall observe all parts of the transfer and shall discontinue the transfer if any liquid or vapor leaks are observed.
- c. **Submerged Fill:** An organic liquid (non-gasoline) storage tank is exempt from the requirement that a submerged fill discharge pipe be fully submerged when:
- (1) The tank is being drained completely.
  - (2) The tank is being initially filled or filled after being completely drained.
- d. A stationary pressure tank maintaining working pressure sufficient at all times to prevent organic vapor loss to the atmosphere is exempt from Section 302 of this rule.
- e. An owner or operator is exempt from the requirement that the roof be floating when the tank is being drained completely and when it is being filled, as long as both processes are accomplished continuously and as rapidly as practicable.
- f. The owner or operator is exempted from the requirements for secondary seals and the secondary seal gap criteria when performing gap measurements or inspections of the primary seal.
- g. **Opening of Hatches, Vent Valves or Other Vapor Sealing Devices:**
- (1) A hatch, vent valve or other vapor sealing device may be opened for vacuum relief on a cargo tank or rail car when the organic liquid is in the process of being transferred from the cargo tank or rail car into a storage tank. Reclose hatch, vent valve or other vapor sealing device at the completion of the transfer process.
  - (2) When VOC vapors from organic liquids are present within a cargo tank, authorized government agents as well as owners or operators and their contractors may open vapor containment equipment while performing operations required by these Maricopa County Air Pollution Control Regulations or by other statutory entities, but shall be restricted as follows unless otherwise approved in advance by the Control Officer:
    - (a) Wait at least three (3) minutes after transfer is complete or cargo tank has come to a complete stop before opening hatch or other vapor seal.
    - (b) Reclose hatch or other vapor sealing device within 3 minutes of opening.

- (c) Limit wind speed at opened hatch or other opened sealing device to not more than three (3) mph (1.34 m/sec).

**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, the definitions in this rule take precedence.

- 201 CARGO TANK:** 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 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]
- 203 EXCESS ORGANIC LIQUID DRAINAGE:** More than 10 milliliters (0.34 fluid ounces or 2 teaspoonsful) of organic liquid lost from the end of a fill hose (or vapor hose if one is in use) in the process of connecting or disconnecting the hose; or any quantity of organic liquid escaping out the end of such a hose that wets any area(s) on the ground having an aggregate area greater than 113 square inches, or the perimeter of which would encompass a circle of 12 inches (30.5 cm) diameter.
- 204 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.
- 205 GASOLINE:** Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol that meets both of the following conditions:
- 209.1** Has a Reid vapor pressure between 4.0 and 14.7 psi (200-760 mm Hg.), as determined by ASTM D323-15a; and
- 209.2** Is used as a fuel for internal combustion engines. [40 CFR 63.11100]
- 206 INTERNAL FLOATING ROOF STATIONARY STORAGE TANK WITH FIXED COVERING:** A stationary storage tank with a floating cover or roof that rests upon or is floated upon the liquid being contained, and that also 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.
- 207 LEAK FREE:** A condition in which there is no organic liquid escape or seepage of more than 3 drops per minute from organic liquid storage, handling, and ancillary equipment, including, but not limited to, seepage and escapes from above ground fittings.

- 208 **ORGANIC LIQUID:** Any organic compound which exists as a liquid under any actual conditions of use, transport or storage. For the purposes of this rule, gasoline is not considered an organic liquid.
- 209 **ORGANIC LIQUID DISTRIBUTION 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]
- 210 **STATIONARY STORAGE TANK:** Any tank, reservoir or other container used to store, but not transport, organic liquids.
- 211 **SUBMERGED FILL:** Any organic liquid discharge pipe or nozzle which meets at least one of the applicable specifications:
- 211.1 **Top-Fill or Bottom-Fill:** The end of the discharge pipe or nozzle is totally submerged when the liquid level is six (6) inches (15 cm) from the bottom of the tank.
- 211.2 **Side-Fill:** At its highest point within the storage tank, the end of the discharge pipe or nozzle is totally submerged when the liquid level is eighteen (18) inches (46 cm) from the bottom of the tank.
- 211.3 **API Standard 650 Compliant:** A floating roof storage tank meets the submerged fill requirements in this rule, if the discharge pipe or nozzle meets both of the following requirements:
- Is kept completely submerged, including when the roof rests on its legs, except when the tank is being emptied completely and refilled; and
  - Is designed and installed according to the API Standard 650.



- 212 TRUE VAPOR PRESSURE (TVP):** Absolute vapor pressure of a liquid at its existing temperature of storage and handling.
- 213 VAPOR BALANCE SYSTEM:** A system of vapor tight piping, hoses, equipment and devices which collect and return displaced vapors between a cargo tank and a storage tank.
- 214 VAPOR COLLECTION/PROCESSING SYSTEM:** A vapor loss control system consisting of a vapor gathering subsystem capable of collecting the organic vapors and organic gases plus a second subsystem capable of processing such vapors and gases, preventing at least 95 percent of the volatile organic compounds entering it from entering the atmosphere.
- 215 VAPOR LOSS CONTROL SYSTEM:** A system for reducing emissions to the atmosphere, consisting of an abatement device and a collection system, which achieves the abatement efficiency or emission limit during the transfer operation at an organic liquid distribution facility.
- 216 VAPOR TIGHT:** A condition in which a suitable detector at the site of (potential) leakage of vapor shows less than 10,000 ppmv when calibrated with methane or the detector shows less than 1/5 lower explosive limit (LEL) when calibrated with a gas specified by the manufacturer and used according to the manufacturer's instructions.

## **SECTION 300 – STANDARDS**

### **301 ORGANIC LIQUID STATIONARY STORAGE TANK REQUIREMENTS:**

#### **301.1 All Stationary Storage Tanks with a Capacity Greater than 250 Gallons (946 L):**

An owner or operator of a stationary storage tank with a capacity greater than 250 gallons (946 l) shall store organic liquid with a TVP of 0.5 psia (26 mm Hg) or more in a stationary storage tank meeting all of the following:

- a. Each stationary storage tank has a fill pipe that is maintained leak free and vapor tight when organic liquid is not in the process of being transferred.
- b. Each stationary storage tank has a permanently installed submerged fill pipe. 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 (6) inches (15 cm) of the tank bottom shall be used to fill the tank.
- c. Each fixed roof stationary storage tank has a pressure/vacuum valve that complies with both Section 301.1(c)(1) and 301.1(c)(2) of this rule. An owner or operator shall:
  - (1) Install a pressure/vacuum vent valve that is either:
    - (a) Set within ten percent (10%) of the tank's maximum, safe working-pressure; or
    - (b) Set at least at 0.5 psia (25.9 mm Hg) or per manufacturer's recommendation.
  - (2) Maintain the pressure/vacuum vent in good working order.

**301.2 Organic Liquid Stationary Storage Tanks with a Capacity of 20,000 Gallons (75,700L) to Less Than 40,000 Gallons (151,400 L):** An owner or operator of an organic liquid stationary storage tank with a capacity between 20,000 gallons (75,700 l) but less than 40,000 gallons (151,400 l), shall store organic liquids with a TVP equal to or greater than 0.5 psia but less than or equal to 11.0 psia ( $26 \geq \text{mmHg} \leq 569$ ) in a stationary storage tank meeting all of the following requirements:

- a. The stationary storage tank shall:
  - (1) Be maintained leak free.
  - (2) Be maintained vapor tight.
  - (3) Be equipped with at least one of the vapor loss control systems specified in Section 301.2(b) of this rule.
- b. An owner or operator shall install and maintain at least one of the following vapor loss control systems as described in Section 302 of this rule:
  - (1) Install and maintain a vapor recovery system which collects and returns displaced vapors to the cargo tank using vapor-tight fittings and lines; or
  - (2) Install and maintain an external floating roof stationary storage tank; or
  - (3) Install and maintain an internal floating roof stationary storage tank with a fixed cover; or
  - (4) Install and maintain a vapor collection/processing system.

**301.3 Organic Liquid Stationary Storage Tanks with a Capacity Equal to or Greater than 40,000 Gallons (151,400 L):** An owner or operator of an organic liquid stationary storage tank with a capacity equal to or greater than 40,000 gallons (151,400 l) shall store organic liquids with a TVP equal to or greater than 0.5 psia but equal to or less than 11.0 psia ( $26 \geq \text{mmHg} \leq 569$ ) in a stationary storage tank meeting all of the following requirements, unless such stationary storage tank is equipped with at least one of the vapor loss control systems described in Section 302 of this rule:

- a. Install and maintain an external floating roof stationary storage tank; or
- b. Install and maintain an internal floating roof stationary storage tank with a fixed cover; or
- c. Equip the stationary storage tank with a vapor collection/processing system as described in Section 302 of this rule.

**301.4 Organic Liquid Stationary Storage Tanks Storing Liquids Having a TVP Greater Than 11 PSIA:** An owner or operator shall place, store, or hold organic liquid with a TVP greater than 11.0 psia (569 mm Hg) in a stationary storage tank that meets at least one of the vapor loss control methods specified below:

- a. Maintain a working pressure in the stationary storage tank that is sufficient at all times to prevent organic vapor loss to the atmosphere.
- b. Equip the stationary storage tank with a vapor collection/processing system as described in Section 302 of this rule.



**Table 350-1**  
**Summary of Organic Liquid (Non-Gasoline) Stationary Storage Tank VOC Emission**  
**Control Requirements**

<b>True Vapor Pressure of Organic Liquid in Tank</b>			
	0.5 ≥ psia < 1.5 (26 ≥ mm Hg < 77.5)	1.5 ≥ psia ≤ 11.0 (77.5 ≥ mm Hg ≤ 569)	> 11.0 psia (> 569 mm Hg)
<b>Tank Capacity</b>	Applicable Rule 350 Section:	Applicable Rule 350 Section:	Applicable Rule 350 Section:
All organic liquid (non-gasoline) stationary storage tanks >250 gallons	Section 301.1	Section 301.1	Section 301.4
All organic liquid (non-gasoline) storage tanks 20,000 gallons to <40,000 gallons	Section 301.1	Section 301.1 and Section 301.2	Section 301.4
All organic liquid (non-gasoline) storage tanks ≥40,000 gallons	Section 301.1	Sections 301.1 and Section 301.3	Section 301.4

**302 VAPOR LOSS CONTROL SYSTEM:**

**302.1 External Floating Roof Stationary Storage Tanks:** An external floating roof stationary storage tank must meet the following requirements:

- a. The owner or operator of an external floating roof stationary storage tank and vapor balance system, or vapor collection/processing system, or vapor loss control system shall properly install, properly maintain and properly operate the equipment.
- b. The owner or operator of an external floating roof stationary storage tank shall operate an external floating roof tank subject to the provisions of this rule, except for tanks having metallic shoe primary seals onto which secondary seals were installed prior to July 13, 1988, and unless a secondary seal extends from the roof to the tank shell (a rim-mounted seal) and is not attached to the primary seal.
- c. **External Floating Roof Requirements:**
  - (1) The floating roof shall rest on and be supported by the surface of the liquid contents.
  - (2) The floating roof shall be equipped with a continuous primary seal to close the space between the roof eave and tank wall, except as provided in Section 103.2 of this rule.
  - (3) The floating roof shall 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 302.1(d) of this rule.
- d. **Secondary Seal Requirements:**
  - (1) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge or primary seal and the tank wall, except as provided in Section 302.1(d)(2) of this rule.

- (2) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 1.0 square inch per foot (21.2 cm<sup>2</sup> per meter) of tank diameter. Determinations of gap area shall only be made at the point(s) where the gaps exceed one eighth (1/8) inch (3 mm). The width of any portion of any gap shall not exceed one half (1/2) inch (1.27 cm).
- (3) Stationary storage tanks constructed after July 13, 1988, shall have a secondary seal that is rim-mounted.

**e. External Floating Roof Openings:**

- (1) Floating roof tanks subject to the provisions of Section 302.1 of this rule shall have no visible holes, tears or other openings in the seal or in any seal fabric.
- (2) The accumulated area of gaps between a tank's wall and primary seal shall not exceed ten (10) square inches per foot of tank diameter (212 cm<sup>2</sup> per meter).
- (3) The width of any portion of any gap shall not exceed one and one half (1½) inches (3.8 cm).
- (4) Where applicable, all openings except drains shall be equipped with a cover seal or lid.
- (5) Where applicable, the cover seal or lid shall be in a closed position at all times, except when the system is in actual use.
- (6) Automatic bleeder vents shall be closed at all times, except when the roof is floated off or landed on the roof leg supports.
- (7) Rim vents, if provided, shall be set to open only when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

**302.2 Internal Floating Roof Stationary Storage Tanks with Fixed Covering:** An internal floating roof stationary storage tank and its appurtenances shall meet the applicable requirements as follows:

- a. The owner or operator of an internal floating roof stationary storage tank and associated emission control equipment shall properly install, maintain and operate the equipment.
- b. Organic liquid stationary storage tanks for which construction, reconstruction or modification commenced after July 23, 1984, must 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 and Rule 370 of these rules.
- c. All stationary storage tanks not subject to Section 302.2(b) of this rule must comply with one of the following:

- (1) Sections of 40 CFR Part 60, Subpart Kb that are not addressed in Section 302.2(b) of this rule; 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 302.2(d) of this rule, and meet at least one of the following requirements:
  - (a) Have a contact-type roof resting completely on the liquid surface.
  - (b) Have a liquid mounted seal.
  - (c) Have two seals, a primary and a secondary.

**d. Internal Floating Roof Openings:**

- (1) Floating roof tanks subject to the provisions of Section 302.2 of this rule shall have no visible holes, tears or other openings in the seal or in any seal fabric.
- (2) The accumulated area of gaps between a tank's wall and primary seal shall not exceed ten (10) square inches per foot of tank diameter (212 cm<sup>2</sup> per meter).
- (3) The width of any portion of any gap shall not exceed one and one half (1½) inches (3.8 cm).
- (4) Where applicable, all openings except drains shall be equipped with a cover seal or lid.
- (5) Where applicable, the cover seal or lid shall be in a closed position at all times, except when the system is in actual use.
- (6) Automatic bleeder vents shall be closed at all times, except when the roof is floated off or landed on the roof leg supports.
- (7) Rim vents, if provided, shall be set to open only when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

**302.3 Vapor Collection/Processing System:** This vapor loss control system consists of a vapor gathering subsystem capable of collecting the organic vapors and organic gases plus a second subsystem capable of processing such vapors and gases, preventing at least 95 percent by weight of the volatile organic compounds entering it from escaping to the atmosphere.

- a. An owner or operator of an organic liquid distribution facility that has an organic liquid throughput greater than 600,000 gallons (2,271,247 l) in any consecutive 30-day period, shall install, operate and maintain a vapor loss control system.
- b. The vapor processing subsystem shall be vapor-tight except for the designated exhaust.
- c. Any tank gauging or sampling device on a tank, vented to such a vapor loss control system, shall be equipped with a vapor-tight cover which shall be closed at all times except during gauging or sampling procedures.

- d. All pressure-vacuum vent valves shall be constructed and maintained in a vapor-tight condition except when the operating pressure exceeds the valve release setting.

**303 EQUIPMENT MAINTENANCE AND REPAIR:** The owner or operator of an organic liquid distribution facility shall:

**303.1** Maintain the equipment associated with the storage and transfer of organic liquid to be all of the following:

- a. Leak free;
- b. Vapor tight; and
- c. In good working order.

**303.2** Repair and Retest: The owner or operator of a vapor loss control system that exceeds the standards of this rule shall notify the Control Officer immediately and observe the following time schedule for corrective action:

- a. Concentrations at or above the lower explosive limit must be brought into compliance within 24 hours of detection.
- b. For vapor collection/processing equipment subject to gas-tight standard, leak concentrations exceeding 10,000 ppm but less than 50,000 ppm as methane shall be brought into compliance within 5 days of detection.
- c. Except as the Control Officer otherwise specifies, a leak source must be tested after presumed leak-correction within fifteen (15) minutes of recommencing use. If leak standards are exceeded in this test, the use of the leak-correction equipment shall be discontinued until correction is verified by retesting.

**304 GENERAL REQUIREMENTS FOR THE TRANSFER OF ORGANIC LIQUID:** The owner or operator of an organic liquid distribution facility shall comply with the following:

**304.1 Transfer of Organic Liquid into Stationary Storage Tanks:**

- a. Comply with Section 303.1 of this rule.
- b. Verify the proper connection to a vapor balance system or other vapor loss control systems prior to an organic liquid transfer at facilities that utilize a vapor balance system.
- c. Verify the proper disconnection from a vapor balance system or other vapor loss control systems at the completion of an organic liquid transfer at facilities that utilize a vapor balance system.
- d. Minimize spills during storage and transfer of organic liquids.
- e. Clean up spills as expeditiously as practicable.
- f. Cover all open organic liquid containers when not in use.
- g. Minimize organic liquid sent to open waste collection systems that collect and transport organic liquid to reclamation and recycling devices, such as oil/water separators.

### 304.2 Transfer of Organic Liquids into Cargo Tanks:

- a. Verify that the cargo tank has been demonstrated to be vapor tight.
- b. Verify the proper connection to a vapor balance system or other vapor loss control systems prior to an organic liquid transfer.
- c. Verify the proper disconnection from a vapor balance system or other vapor loss control systems at the completion of an organic liquid transfer.
- d. Minimize spills during storage and transfer of organic liquids.
- e. Clean up spills as expeditiously as practicable.
- f. Cover all open organic liquid containers when not in use.
- g. Minimize organic liquid sent to open waste collection systems that collect and transport organic liquid to reclamation and recycling devices, such as oil/water separators.

## SECTION 400 – ADMINISTRATIVE REQUIREMENTS

### 401 ORGANIC LIQUID (NON-GASOLINE) STATIONARY STORAGE TANK INSPECTIONS

#### 401.1 Inspections of External Floating Roof Stationary Storage Tanks:

- a. The owner or operator of any external floating roof stationary storage tank subject to this rule shall visually inspect the tank and seals at least once every six (6) months to determine ongoing compliance with the applicable standards of this rule pertaining to the tank. Determinations of secondary seal gap area on external floating roof stationary storage tanks shall be made only once per year. Records of these inspections shall be maintained and shall be made available to the Control Officer upon request.
- b. **Annual and Empty Tank Inspection:** The owner or operator of any stationary storage tank which uses an external floating roof to meet the vapor loss control system requirements of this rule shall conduct a visual inspection each time the external floating roof stationary storage tank is emptied and degassed or at least once a year. The visual inspection shall include all of the following:
  - (1) Verify the secondary seal covers the space between the roof edge and the tank.
  - (2) Measure the gaps between the tank wall and the secondary seal. The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm<sup>2</sup> (3.29 square inches) per meter of tank diameter and the width of any portion of any gap shall not exceed 1.27 cm (0.2 inch).
  - (3) Verify there are no holes, tears, or other openings in the seal or seal fabric.
- c. **Five-Year, Full Circumference Inspections of External Floating Roof Stationary Storage Tanks:** The owner or operator of any external floating roof stationary storage tank of 20,000 gallons (75,700 l) or more storing organic liquids (non-gasoline) shall conduct a complete inspection of the external floating roof tank each time the tank is emptied and degassed or at least once every five

(5) years. This inspection can be performed while the tank is in service. The inspection shall include all of the following:

- (1) Perform a complete inspection of the organic liquid (non-gasoline) storage tank as described in Section 401.1(a) of this rule.
- (2) Perform a complete inspection of the primary seal and floating roof.
- (3) Measure gap areas and maximum gap. The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 21.2 cm<sup>2</sup> (39.9 square inches) per meter of tank diameter and the width of any portion of any gap shall not exceed 3.81 cm (0.59 inch).

**401.2 Inspections of Internal Floating Roof Stationary Storage Tanks with a Fixed Covering:**

- a. The owner or operator of any internal floating roof stationary storage tank subject to this rule shall visually inspect the tank and seals at least once every six (6) months to determine ongoing compliance with the applicable standards of this rule pertaining to the tank. Records of these inspections shall be maintained and shall be made available to the Control Officer upon request.
- b. The owner or operator of any stationary storage tank which uses an internal floating roof to meet the vapor loss control system requirements of this rule shall conduct a visual inspection each time the internal floating roof stationary storage tank is emptied and degassed or at least once a year. The visual inspection can be made through manholes or rood hatches and shall include all of the following:
  - (1) The internal floating roof shall not have an accumulation of liquid on the roof.
  - (2) The seal shall be attached.
  - (3) The seal shall not have any holes or tears.

**401.3 Five Year Inspection and Empty Tank Inspection:** The owner or operator of any stationary storage tank which uses an internal floating roof to meet the vapor loss control system requirements of this rule shall conduct a visual inspection each time the internal floating roof stationary storage tank is emptied and degassed or at least once every five (5) years. The visual inspection shall include all of the following:

- a. The internal floating roof shall be free of any defects.
- b. The primary seal shall not have any holes, tears or other openings.
- c. The secondary seal if one is in service, shall not have any holes, tears or other openings.
- d. Gaskets shall prevent liquid surfaces from exposure to atmosphere.
- e. The slotted membrane shall not have more than a ten percent (10%) open area.

**402 MONTHLY ORGANIC LIQUID TRANSFER EQUIPMENT LEAK**

**INSPECTIONS:** The owner or operator shall perform monthly inspections, while organic liquid is being transferred, for liquid and vapor leaks and for faulty equipment. Monthly inspections leak detection methods can include one or more of the following methods:

- 402.1 Incorporation of sight, sound, smell and/or touch.
- 402.2 Use of a combustible gas detector (CGD) or organic vapor analyzer (OVA) pursuant to Section 501 of this rule.
- 402.3 Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3, use of a soap solution pursuant to Section 501 of this rule.
- 402.4 Use of an optical gas imaging instrument calibrated according to manufacturing specifications and used according to Section 501 of this rule.

**403 ORGANIC LIQUID (NON-GASOLINE) STORAGE TANK INSPECTIONS-AVAILABILITY TO CONTROL OFFICER:**

**403.1 Annual Inspections of External Floating Roof Tanks:** The owner or operator of any stationary storage tank which uses an external floating roof to meet the vapor loss control system requirements of this rule shall make the primary seal envelope and the secondary seal available for unobstructed inspection by the Control Officer 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.

**403.2 Annual Inspections of Internal Floating Roof Tanks:** The owner or operator of any stationary storage tank which uses an internal floating roof to meet the vapor loss control system requirements of this rule shall make the entire tank including the internal floating roof available for inspection prior to filling. The internal floating roof shall be made available for visual inspection through the manholes or roof hatches on the fixed covering on an annual basis.

**403.3 Five-Year, Full Circumference Inspections:** The owner or operator of a floating roof stationary storage tank of 20,000 gallons (75,700 l) or more storing organic liquids (non-gasoline) shall make the primary seal envelope available for inspection by the Control Officer for its full length every five (5) years. This inspection can be performed while the tank is in-service. However, if the secondary seal is removed or if the tank is drained and cleaned by the owner or operator for any reason, it shall be made available for such inspection at that time. The owner or operator shall provide notification to the Control Officer no less than seven (7) working days prior to removal of the secondary seal.

**404 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**

## 501 MONITORING FOR LEAKS

### 501.1 Combustible Gas Detector (CGD) or Organic Vapor Analyzer (OVA)-Test

**Procedure:** During the transfer of organic liquids into a cargo tank, the peripheries of all potential sources of leakage at the organic liquid distribution facility are checked with a CGD or OVA as follows:

- a. **Calibration:** Within four (4) hours prior to monitoring, the CGD or OVA shall be properly calibrated for a 20 percent lower explosive limit (LEL) response or to 10,000 ppm with methane.
- b. **Probe Distance:** The probe inlet shall be one (1) inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be one (1) inch (2.5 cm) from the leak source when the highest detector reading is being determined for a discovered leak. When the probe is obstructed from moving within one (1) inch (2.5 cm) of an actual or potential leak source, the closest practicable probe distance shall be used.
- c. **Probe Movement:** The probe shall be moved slowly, not faster than 1.6 inches per second (4 centimeters per second). 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.
- d. **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.
- e. **Wind:** Wind shall be blocked as much as possible from the space being monitored. The monthly inspections leak detection tests required by Section 402 of this rule shall be valid only when wind speed in the space being monitored is five (5) mph or less.
- f. **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.

### 501.2 Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3:

- a. Spray a soap solution over all potential leak sources. 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.
- b. Observe the potential leak sites to determine if any bubbles are formed.
  - (1) If no bubbles are observed, the source is presumed to have no detectable vapor leaks.
  - (2) If any bubbles are observed, the instrument techniques of Section 501.1 of this rule shall be used to determine if a vapor leak exists.

### 501.3 Optical Gas Imaging: A certified operator of a calibrated optical gas imaging device may use an optical gas imaging instrument to identify vapor leaks. If a vapor



leak is detected, the instrument techniques listed in Section 501.1 of this rule shall be used to determine if a vapor leak exists.

**501.4** Any instrument used for the measurement of organic compound concentration shall be calibrated according to manufacturer's instructions or in accordance with EPA Reference Method 21 as incorporated by reference in Maricopa County Air Pollution Control Regulations, Appendix G, Incorporated Materials.

**502 TVP RECORDS:** The owner or operator of an organic liquid distribution facility shall keep accurate records listed in Section 502 of this rule.

**502.1** An owner or operator shall keep accurate records of organic liquids stored in each stationary storage tank subject to this rule.

**502.2** The temperature of the contents of each stationary storage tank subject to this rule shall be determined and recorded using at least one of the following methods:

- a. 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.
- b. 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 monthly AP 42, Section 7.1 emission estimation procedures for each stationary storage tank.

**502.3** The TVP of each organic liquid in each stationary storage tank subject to this rule shall be recorded at least once each month.

**503 LEAK INSPECTION RECORDS:** The owner or operator of an organic liquid distribution facility shall keep a log documenting each leak inspection. The log shall include the items listed below:

**503.1** The owner or operator shall sign the log at the completion of each monthly inspection for equipment leaks.

**503.2** Each monthly inspection log shall contain a list, summary description or diagram(s) showing the location of all equipment at the organic liquid distribution facility.

**503.3** Each monthly inspection log shall include any maintenance that occurred.

**503.4** Each annual inspection log shall include any maintenance that occurred.

**503.5** These records shall be kept a minimum of five (5) years.

**503.6** Additional Record Requirements for Use of Optical Gas Imaging Instruments: 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.

**504 COMPLIANCE INSPECTIONS:** The Control Officer, at any time, may monitor a cargo tank's vapor collection/processing system, an organic liquid transfer rack's vapor loss

control system, an organic liquid distribution facility, or a vapor collection/processing system for vapor leaks by the test methods described in Section 506 of this rule.

**505 RECORDS RETENTION:** Records and information required by this rule shall be retained for at least five (5) years.

**506 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.

**506.1 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). An owner or operator may use an Optical Gas Imaging instrument to comply with the alternative work practice requirements in 40 CFR 40.18(g) instead of using the 40 CFR 60, Appendix A-7, Method 21 monitor to identify leaking equipment.
- i. AP 42, Fifth Edition, Volume I, Chapter 7: Liquid Storage Tanks, November 2006, errata August 2012.

**506.2 California Air Resources Board (CARB)-Test Procedure:**

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

**506.3 ASTM**

- a. ASTM D2879-10 Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope.

- b. ASTM D6420-99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry.

**506.4 American Petroleum Institute:** API STD 650 Welded Tanks for Oil Storage, Twelfth Edition, Includes Errata 1 (2013), Errata 2 (2014), and Addendum 1 (2014).