

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

**RULE 353  
STORAGE AND LOADING OF GASOLINE AT A GASOLINE DISPENSING  
FACILITY (GDF)**

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**MARICOPA COUNTY  
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**RULE 353  
STORAGE AND LOADING OF GASOLINE AT A GASOLINE DISPENSING  
FACILITY (GDF)**

**SECTION 100 – GENERAL**

- 101 PURPOSE:** To limit emissions of volatile organic compounds (VOCs) during storage and loading of gasoline at a gasoline dispensing facility (GDF).
- 102 APPLICABILITY:** This rule applies to the storage and loading of gasoline in a stationary gasoline storage tank at a gasoline dispensing facility (GDF) with a capacity of more than 250 gallons including, but not limited to underground gasoline storage tanks, above ground storage tanks, and those stationary gasoline storage tanks located at airports and marinas.
- 103 EXEMPTIONS:**
- 103.1 Stationary Gasoline Storage Tanks for Farm Operations:** An owner or operator of a stationary gasoline storage tank used exclusively for the dispensing of fuel into agricultural equipment used in normal farm operations is only subject to Sections 302.3 through 302.7.
- 103.2 Vapor Recovery System (VR System):** The VR system provisions of Section 303 (General Requirements For Controlling Gasoline Vapors at a Gasoline Dispensing Facility (GDF)) shall not apply to a gasoline dispensing facility that meets the requirements of 103.2.a. or a stationary gasoline storage tank that meets the requirements of 103.2.b.
- a. Non-Resale Gasoline Dispensing Facility:**
- (1) Has a throughput of less than 120,000 gallons of gasoline in any twelve (12) consecutive calendar months.
  - (2) Does not dispense any resold gasoline.
  - (3) Is equipped with a permanent submerged fill pipe. Where, because of government regulation including, but not limited to, Fire Department codes, a permanent submerged fill pipe cannot be installed, the gasoline shall be loaded into the tank using a nozzle extension that reaches within six inches (6”) of the tank bottom.
  - (4) Shall become subject to the provisions of Section 303 (General Requirements For Controlling Gasoline Vapors at a Gasoline Dispensing Facility (GDF)) by meeting or exceeding the 120,000 gallon throughput in any twelve (12) consecutive calendar months and shall remain subject to such provisions even if annual throughput later falls below this threshold.

**b. Stationary Gasoline Storage Tank:**

- (1) Has a capacity of 1000 gallons or less.
- (2) Was installed prior to October 2, 1978.
- (3) Is equipped with a permanent submerged fill pipe. Where, because of government regulation including, but not limited to, Fire Department codes, a permanent submerged fill pipe cannot be installed, the gasoline shall be loaded into the tank using a nozzle extension that reaches within six inches (6") of the tank bottom.

**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 the Maricopa County Air Pollution Control Rules and Regulations. 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.

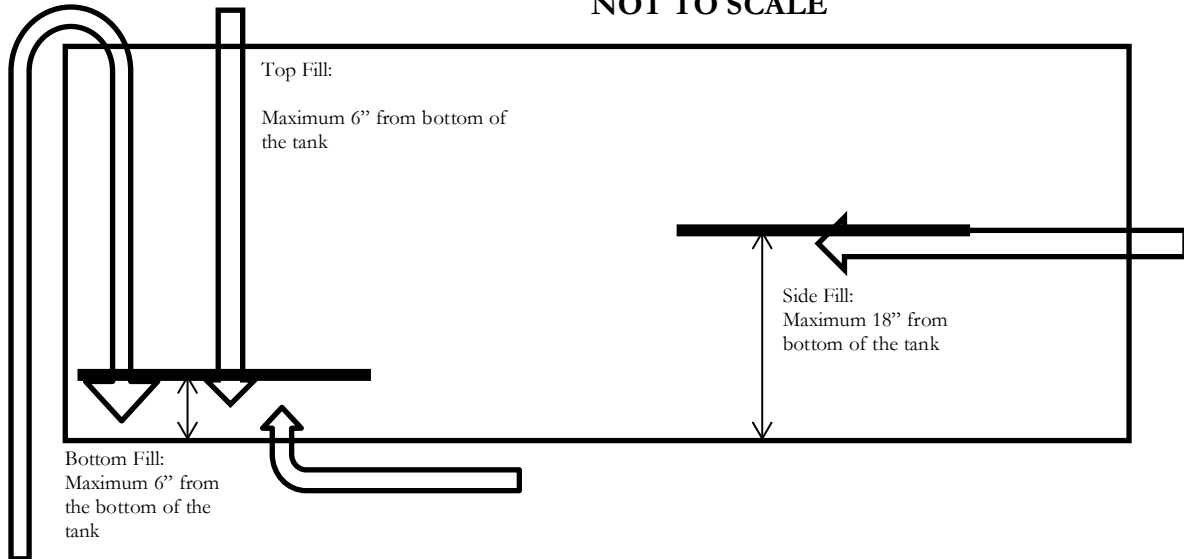
- 201 CARB-CERTIFIED:** A vapor control system, subsystem, or component that has been specifically approved by system configuration and manufacturer's name and model number in an executive order of the California Air Resources Board (CARB), pursuant to Section 41954 of the California Health and Safety Code.
- 202 COAXIAL VAPOR BALANCE SYSTEM:** A type of vapor balance system in which the gasoline vapors are removed through the same fill pipe connection as the fuel is delivered.
- 203 DUAL-POINT VAPOR BALANCE SYSTEM:** A type of vapor balance system in which the stationary gasoline storage tank is equipped with an entry port for a gasoline fill pipe and a separate exit port for a vapor connection.
- 204 EXCESS GASOLINE DRAINAGE:** The quantity of gasoline that drains out of the end of a gasoline loading hose or gasoline vapor recovery hose during the process of connecting or disconnecting that is one or more of the following:
- 204.1** More than 0.34 fluid ounces or two teaspoonsful (2 tsp) of liquid gasoline lost from the end of the gasoline loading hose or gasoline vapor recovery hose. This does not include drainage into a fill pipe's spill containment receptacle.
  - 204.2** Wets any area(s) on the ground having an aggregate area greater than 113 square inches (113 in<sup>2</sup>).
  - 204.3** 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.
- 205 GASOLINE CARGO TANK:** A delivery tank truck or railcar which is loading or unloading gasoline, or which has loaded or unloaded gasoline on the immediately previous load. [40 CFR § 63.11132] This includes any gasoline loading hose(s) the gasoline cargo tank carries through which the loading of gasoline occurs.
- 206 GASOLINE DISPENSING FACILITY (GDF):** Any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine, including a nonroad vehicle or nonroad engine used solely for competition.

These facilities include, but are not limited to, facilities that dispense gasoline into on- and off-road, street, or highway motor vehicles, lawn equipment, boats, test engines, landscaping equipment, generators, pumps, and other gasoline fueled engines and equipment. [40 CFR § 63.11132] This includes all stationary gasoline storage tanks and associated equipment located on one or more contiguous or adjacent properties under the control of the same owner or operator under common control.

- 207 GASOLINE VAPORS:** Vapors, originating from liquid gasoline, that are usually found in mixture with air. Included are any droplets of liquid gasoline or gasoline vapor condensate that are entrained by the vapor.
- 208 LEAK-FREE:** A condition in which there is no liquid gasoline escape or seepage of more than three (3) drops per minute from gasoline storage, handling, or ancillary equipment, including, but not limited to, seepage and escapes from above ground fittings. This does not include any excess gasoline drainage due to the disconnecting or connecting of either a gasoline loading hose from a gasoline fill line or a vapor recovery hose from a vapor line.
- 209 MARICOPA COUNTY VAPOR TIGHTNESS TEST:** The complete pressure, vacuum, and vapor-valve testing of a gasoline cargo tank that is performed according to Maricopa County specifications as described in Rule 352 (Gasoline Cargo Tank Testing and Use) of these rules.
- 210 POPPETTED DRY BREAK:** A type of vapor loss control equipment that opens only by connection to a mating device to ensure that no gasoline vapors escape from the stationary gasoline storage tank before the gasoline vapor recovery line is connected.
- 211 SPILL CONTAINMENT RECEPTACLE:** An enclosed container around:
- 211.1** A gasoline fill pipe that is designed to collect any liquid gasoline spillage resulting from the connection, flow of gasoline during loading, or the disconnection between the gasoline delivery hose and the fill pipe.
  - 211.2** A vapor return riser connection that is designed to collect any liquid gasoline spillage resulting from the connection, the condensation of gasoline vapor during vapor recovery, or the disconnection between the vapor recovery hose and the poppetted valve.
- 212 STATIONARY GASOLINE STORAGE TANK:** Any stationary tank or reservoir used to store, but not transport gasoline. Any such tank that is connected to permanent piping and not moved to another service location within any twelve (12)-month period will be considered a stationary gasoline storage tank.
- 213 SUBMERGED FILL:** Any fill pipe or nozzle extension which meets at least one of the specifications below:
- 213.1 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 stationary gasoline storage tank.
  - 213.2 Side-Fill:** The end of the discharge pipe or nozzle extension is totally submerged when the liquid level is eighteen (18) inches from the bottom of the stationary

gasoline 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.

### Submerged Fill Diagram NOT TO SCALE



- 214 **THROUGHPUT:** The amount of gasoline received.
- 215 **UNDERGROUND STORAGE TANK (UST):** Any one or combination of tanks (including connecting underground pipes) that is used to contain an accumulation of gasoline, and the volume of which (including the volume of gasoline in the underground pipes) is 10 percent or more beneath the surface of the ground. [40 CFR § 280.12]
- 216 **VAPOR BALANCE SYSTEM:** Vapor loss control equipment that collects vapors displaced from the loading of gasoline into:
- 216.1 A gasoline cargo tank and routes the collected vapors to a stationary gasoline storage tank; or
  - 216.2 A stationary gasoline storage tank and routes the collected vapors to the gasoline cargo tank from which the stationary gasoline storage tank is loaded; or
  - 216.3 A gasoline cargo tank and routes the collected vapors to the gasoline cargo tank from which the gasoline cargo tank is loaded.
- 217 **VAPOR LOSS CONTROL EQUIPMENT:** Any piping, vapor recovery hose(s), equipment, or devices which are used to collect, store, and/or process VOC vapors at a bulk gasoline plant, bulk gasoline terminal, gasoline dispensing facility, or any other operation handling gasoline.
- 218 **VAPOR RECOVERY SYSTEM (VR SYSTEM):** At a stationary GDF, the use of installed vapor recovery equipment designed to reduce by at least 95% the VOC vapor that would otherwise be displaced into the atmosphere from a stationary gasoline dispensing tank when gasoline is delivered into the tank by a gasoline cargo tank. This reduction may be

done either by using a vapor balance system or by processing the vapors on site with an emission processing device.

- 219 VAPOR TIGHT:** A condition in which an organic vapor analyzer (OVA) at the site of (potential) leakage of vapor shows less than 10,000 ppmv as methane or a combustible gas detector (CGD) shows less than one-fifth (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 FEDERAL STANDARDS:** An owner or operator of a GDF shall meet the applicable federal standards of performance set forth in the national emission standards for hazardous air pollutants (NESHAP), but not limited to 40 CFR Part 63, Subpart CCCCCC—National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, as adopted and incorporated by reference in Rule 370 (Federal Hazardous Air Pollutant Program) of the Maricopa County Air Pollution Control Regulations.

- 302 GENERAL REQUIREMENTS AT A GASOLINE DISPENSING FACILITY (GDF):** The owner or operator of a GDF shall:

- 302.1** Install a permanent submerged fill pipe. Where because of government regulation, including, but not limited to, Fire Department codes, such a permanent 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.
- 302.2** Maintain all containers, stationary storage tanks, and equipment associated with the storage and loading of gasoline to be:
- a.** Leak-free.
  - b.** Vapor tight.
  - c.** In good working order.
- 302.3** Minimize gasoline spills.
- 302.4** Clean up spills as expeditiously as practicable.
- 302.5** Cover all open gasoline containers and storage tanks when not in use.
- 302.6** Minimize the amount of gasoline sent to waste collection systems that collect and transport gasoline to reclamation and recycling equipment such as an oil/water separator.
- 302.7** Properly dispose of any VOC containing material.

**303 GENERAL REQUIREMENTS FOR CONTROLLING GASOLINE VAPORS AT A GASOLINE DISPENSING FACILITY (GDF):** The owner or operator of a GDF shall:

- 303.1** Install, operate, and maintain a CARB-certified VR System per the applicable CARB Executive Orders including the corresponding CARB approved Installation, Operation and Maintenance Manual.
- 303.2** Install a dual-point vapor balance system for any stationary gasoline storage tank installed or modified after June 16, 1999.
- 303.3** Change out the coaxial vapor balance system to a dual-point vapor balance system with separate fill and vapor connection points whenever the top of the stationary gasoline storage tank is exposed and the vapor port bung is pre-configured to accept vapor recovery piping.
- 303.4** Not reinstall a coaxial vapor balance system if the stationary gasoline storage tank is preconfigured to accept vapor recovery piping.
- 303.5** After November 2, 2016, clearly identify each new or newly installed component with a permanent identification affixed by the certified manufacturer or rebuilder.
- 303.6** Install replacement CARB-certified components that meet at least one of the following:
  - a.** Supplied by the manufacturer as a CARB-certified component.
  - b.** Rebuilt by a person who is authorized by CARB to rebuild that specific CARB-certified component.
  - c.** Meets the manufacturer's specifications as certified by CARB using test methods incorporated by reference in Section 506 (Test Methods Incorporated by Reference).
- 303.7** Install a pressure-vacuum vent valve:
  - a.** Per manufacturer's specifications; and
  - b.** Maintain a pressure-vacuum vent valve per manufacturer's specifications.

**304 GASOLINE STORAGE AND OPERATION REQUIREMENTS:** An owner or operator of a gasoline storage tank with a capacity of more than 250 gallons shall:

- 304.1 Underground Storage Tank (UST):**
  - a.** Equip and maintain the UST according to Section 302 (General Requirements at a Gasoline Dispensing Facility (GDF)) and Section 303 (General Requirements for Controlling Gasoline Vapors at a Gasoline Dispensing Facility (GDF)).
  - b.** Maintain and operate a VR system according to the manufacturer's specifications and the applicable CARB Executive Orders including the corresponding CARB approved Installation, Operation and Maintenance Manual.
  - c.** Equip each fill pipe with gasketed vapor tight cap.
  - d.** Equip each popped dry break with a gasketed vapor tight cap.



- e. Keep each gasketed vapor tight cap in a closed position except when the fill pipe or popped dry break it serves is actively in use.
- f. Ensure the fill pipe assembly, including the fill pipe, fittings and gaskets, is:
  - (1) Intact and not loose.
  - (2) Vapor tight.
- g. Ensure each spill containment receptacle is:
  - (1) Kept vapor tight.
  - (2) Free of standing gasoline.
  - (3) Free of standing liquid.
  - (4) Free of debris.
  - (5) Free of foreign matter.
  - (6) Free of cracks and rust.
  - (7) If the spill containment receptacle is equipped with an integral drain valve to return spilled gasoline to the UST, the drain valve shall be:
    - (a) CARB-certified equipment.
    - (b) Closed except when the valve is actively in use.
    - (c) Vapor tight.
- h. **Fill Pipe Obstructions:**
  - (1) Permanently remove any type of screen and/or other obstruction in a fill pipe assembly unless it is specifically allowed by a Maricopa County Air Pollution Permit or is CARB-certified, as referenced in Section 506 (Test Methods Incorporated by Reference).
  - (2) Temporarily remove a screen or other obstruction that is allowed by a Maricopa County Air Pollution Permit or by CARB prior to inspection by the Control Officer to allow for any measurements required to verify compliance with this rule.

**304.2 Above Ground Storage Tank (AST):**

- a. Equip and maintain the AST according to Section 302 (General Requirements at a Gasoline Dispensing Facility (GDF)) and Section 303 (General Requirements for Controlling Gasoline Vapors at a Gasoline Dispensing Facility (GDF)).
- b. Install and maintain a pressure-vacuum vent valve per manufacturer's specifications.
- c. Equip each fill pipe with a gasketed vapor tight cap.
- d. Maintain all threads, gaskets, and mating surfaces of the fill pipe assembly to:
  - (1) Be intact and not loose.
  - (2) Be maintained leak-free.

- (3) Prevent vapor leakage at the joints of the assembly. Vapor leakage can be identified using one or more of the methods found in Section 501 (Identifying a Potential Vapor Leak).
- e. Keep each gasketed vapor tight cap in a closed position except when actively in use.
- f. **An AST Manufactured Prior to November 2, 2016:** If an AST that was manufactured prior to November 2, 2016, is equipped with a spill containment receptacle, the spill containment receptacle shall be:
  - (1) Kept vapor tight.
  - (2) Free of standing gasoline.
  - (3) Free of standing liquid.
  - (4) Free of debris.
  - (5) Free of foreign matter.
  - (6) Free of cracks and rust.
- g. **An AST Manufactured On or After December 2, 2016:** An AST that was manufactured on or after December 2, 2016, shall be equipped with a spill containment receptacle that is:
  - (1) Kept vapor tight.
  - (2) Free of standing gasoline.
  - (3) Free of standing liquid.
  - (4) Free of debris.
  - (5) Free of foreign matter.
  - (6) Free of cracks and rust.
- h. Ensure any overfill prevention equipment is approved, installed and maintained vapor tight to the atmosphere. Any device mounted within the fill pipe shall be so designed and maintained so that no vapor from the vapor space above the gasoline within the tank can penetrate into the fill pipe or through any of the fill pipe assembly into the atmosphere.

### 305    **LOADING OF GASOLINE:**

**305.1    General Requirements for the Loading of Gasoline:** The owner or operator of a gasoline cargo tank and the owner or operator of the gasoline storage tank shall ensure:

- a. All parts of the gasoline loading process are observed.
- b. Dry break couplings:
  - (1) Are leak-free.
  - (2) Are vapor tight.
  - (3) Automatically and immediately close upon disconnect.

- c. Proper connection of:
  - (1) The vapor recovery hose.
  - (2) The gasoline loading hose.
- d. Gasoline is loaded:
  - (1) Using submerged fill.
  - (2) In a leak free manner.
- e. Appropriate measures are implemented to prevent:
  - (1) Overfill.
  - (2) Excess gasoline drainage.
- f. The loading of gasoline is stopped immediately, and not resumed until the observed issue is repaired, if:
  - (1) A liquid leak is observed.
  - (2) A vapor leak is observed.
- g. Proper disconnection of:
  - (1) The vapor recovery hose to prevent excess gasoline drainage.
  - (2) The gasoline loading hose to prevent excess gasoline drainage.
- h. Use of a bucket or other effective capture device to catch any gasoline dripping during the connection or disconnection of the gasoline loading hose and the vapor recovery hose.
- i. Collection and containment of any gasoline that escapes, drips, spills, or leaks in a manner that will prevent evaporation into the atmosphere.

**305.2** The owner or operator of the gasoline cargo tank shall load gasoline to prevent:

- a. The gauge pressure from exceeding eighteen inches (18”) of water column (33.6 mm Hg) pressure in the gasoline cargo tank.
- b. The vacuum pressure from exceeding six inches (6”) of water column (11.2 mm Hg) in the gasoline cargo tank.

**306 CONTROL OF VOC VAPORS:**

**306.1** Gasoline vapors displaced from a stationary gasoline storage tank during the loading of gasoline, shall be handled by a CARB-certified VR System.

**306.2 Equipment Maintenance and Use Required:**

- a. All vapor loss control equipment shall be:
  - (1) CARB-certified.
  - (2) Installed as required.
  - (3) Operated as recommended by the manufacturer.
  - (4) Maintained to be:

- (a) Leak-free.
  - (b) Vapor tight.
  - (c) In good working order.
- b. Coaxial Vapor Balance Systems: Both spring-loaded and fixed coaxial fill pipes shall be:
  - (1) Maintained according to the standards of their manufacturer(s).
  - (2) Operated so that there is no obstruction of vapor passage from the stationary gasoline storage tank to the gasoline cargo tank.
- c. The owner or operator of a gasoline dispensing facility shall not use a vapor recovery system that has any defects that substantially impair(s) effectiveness of the vapor recovery equipment including, but not limited to:
  - (1) Tank vent pipes that are not the proper height or properly capped with CARB-approved pressure and vacuum vent valves.
  - (2) A vapor recovery system that is not properly installed or maintained as evidenced by the following:
    - (a) Spill containment buckets are cracked, rusted, or not clean and empty of liquid; sidewalls are not attached or are otherwise improperly installed; and drain valves are non-functioning or do not seal.
    - (b) A fill adaptor collar or vapor poppet (dry break) is loose, damaged, or has a fill or vapor cap that is not installed or is missing, broken, or not securely attached.

**306.3** The owner or operator of a gasoline dispensing facility is allowed to have a combination vapor recovery system for any stationary gasoline storage tank installed or modified after June 16, 1999 that, in addition to having a separate dual-point vapor recovery line, also has vapor piping/fittings linking it to one or more (other) stationary gasoline storage tanks at a GDF.

## **SECTION 400 – ADMINISTRATIVE REQUIREMENTS**

**401 INSPECTIONS:** The owner or operator of a GDF shall conduct inspections as indicated below. A record shall be made pursuant to Section 504 (GDF Recordkeeping).

**401.1** The inspection shall include, but is not limited to all of the following:

- a. Verify the spill containment receptacles are:
  - (1) Free of standing gasoline.
  - (2) Free of standing liquid.
  - (3) Free of debris.
  - (4) Free of foreign matter.
  - (5) Free of cracks and rust.

- (6) Equipped with a properly sealing drain valve if the receptacles contain a drain valve.
  - (7) Vapor tight. Determine if a potential vapor leak exists by using one of the test procedures in Section 501 (Identifying a Potential Vapor Leak). If a vapor leak is identified, determine the vapor tight status using the test procedure in Section 502 (Determining Vapor Tight Status).
- b. Verify the external fittings of the fill pipe assembly are:
    - (1) Intact and not loose.
    - (2) Covered with a gasketed cap that fits securely onto the fill pipe.
    - (3) Vapor tight. Determine if a potential vapor leak exists by using one of the test procedures in Section 501 (Identifying a Potential Vapor Leak). If a vapor leak is identified, determine the vapor tight status using the test procedure in Section 502 (Determining Vapor Tight Status).
  - c. Verify the external fittings of the vapor recovery pipe assembly are:
    - (1) Intact and not loose.
    - (2) Covered with a gasketed cap that fits securely onto the fill pipe.
    - (3) Vapor tight. Determine if a potential vapor leak exists by using one of the test procedures in Section 501 (Identifying a Potential Vapor Leak). If a vapor leak is identified, determine the vapor tight status using the test procedure in Section 502 (Determining Vapor Tight Status).
  - d. Verify the poppetted dry break is:
    - (1) Equipped with a vapor tight seal.
    - (2) Covered with a gasketed cap that fits securely onto the poppetted dry break.
    - (3) Closed completely.
    - (4) Vapor tight. Determine if a potential vapor leak exists by using one of the test procedures in Section 501 (Identifying a Potential Vapor Leak). If a vapor leak is identified, determine the vapor tight status using the test procedure in Section 502 (Determining Vapor Tight Status).

**401.2** The inspections shall be conducted:

- a. At least once per calendar week; or
- b. If the GDF receives a load of gasoline less than once per calendar week, upon completion of the receipt of the load of gasoline.

**402 BURDEN OF PROOF:**

**402.1 Proving Exempt Status:** The burden of proof of eligibility for exemption from a provision of this rule is on the owner or operator. An owner or operator seeking such an exemption shall maintain adequate records and furnish them to the Control Officer upon request.

**402.2 Providing Proof of Equipment Compliance:** It is the responsibility of the owner or operator to provide proof, when requested by the Control Officer, that a vapor recovery system or its modifications meet the requirements of this rule.

**403 CARB DECERTIFICATION:** An owner or operator shall not install or reinstall a component related to vapor recovery that has been decertified by CARB.

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

## **SECTION 500 – MONITORING AND RECORDS**

**501 IDENTIFYING A POTENTIAL VAPOR LEAK:** An owner or operator or Control Officer shall follow one or more of the test procedures in Section 501 to identify a potential vapor leak. If a potential vapor leak is detected, refer to Section 502 (Determining Vapor Tight Status) to determine the vapor tight status.

**501.1** For the purposes of identifying a potential vapor leak, the use of sight, sound, or smell are acceptable.

**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 vapor leak site to determine if any bubbles are formed.

**(1)** If no bubbles are observed, the source is presumed to have no detectable vapor leak.

**(2)** If any bubbles are observed, the instrument techniques of Section 502 (Determining Vapor Tight Status) shall be used to verify if a vapor leak exists.

**501.3 Optical Gas Imaging:** An owner or operator of a GDF may use a calibrated optical gas imaging instrument to identify a potential vapor leak.

**501.4 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 502 (Determining Vapor Tight Status) to identify a potential vapor leak.

**502 DETERMINING VAPOR TIGHT STATUS:** An owner or operator or Control Officer shall follow the test procedure in Section 502.1 to determine the vapor tight status of vapor loss control equipment or spill containment equipment at a stationary GDF or on a gasoline cargo tank.

**502.1 Combustible Gas Detector (CGD) or Organic Vapor Analyzer (OVA) - Test**

**Procedure:** Check the peripheries of all potential sources of leakage during the storage and loading of gasoline at the GDF with a CGD or OVA as indicated below. 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.

- a. **Calibration:** Within four (4) hours prior to monitoring, the CGD or OVA shall be properly calibrated for a 20 percent lower explosive limit (20% LEL) response or to 10,000 ppmv with methane.
- b. **Probe Distance:** The probe inlet shall be:
  - (1) At the surface of the potential leak source when searching for leaks.
  - (2) At the surface of the leak source when the highest detector reading is being determined for a discovered leak.
  - (3) 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.
- c. **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.
- 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.
- 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 gasoline vapor is detected, that fact shall be entered into the record.

**503 COMPLIANCE INSPECTIONS:** Any stationary gasoline storage tank located at a GDF that is required by this rule to be equipped with a VR system may be subject to monitoring for vapor tightness and liquid leak tightness during any working hours. Such a tank may be opened for gauging or inspection when gasoline loading operations are not in progress, provided that such tank is part of an open system or is served by a positive-pressure relief valve with a relief setting not exceeding +1/2 lb psi.

**504 GDF RECORDKEEPING:** The owner or operator of each stationary GDF in Maricopa County shall maintain records as follows:

**504.1** Record the gasoline throughput each month by the end of the following month.

**504.2** Record the weekly inspections in a permanent record or log book:

- a. By the end of Saturday of the following week; or
- b. If a GDF receives a load of gasoline less than once per calendar week, record the inspection within three days after the receipt of the load of gasoline.

**504.3** Retain required records for at least five (5) years.

- 504.4** Records of the past twelve (12) months shall be:
- a. Readily accessible.
  - b. Made available, without delay, to the Control Officer upon verbal or written request.

**505 COMPLIANCE DETERMINATION**

**505.1** Control efficiency of vapor loss control equipment shall be determined according to EPA Method 2A and either EPA Method 25A or by EPA approved CARB test methods listed in Section 506 (Test Methods Incorporated by Reference). EPA Method 2B shall be used for vapor incineration devices.

**505.2** Vapor pressure of gasoline shall be determined using ASTM D323 - 06 Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method) or ASTM D4953 - 06, Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method). ASTM D323 - 06 shall be used for gasoline either containing no oxygenates or MTBE (methyl tertiary butyl ether) as the sole oxygenate. ASTM 4953 - 06 shall be used for oxygenated gasoline.

**505.3 Vapor Leaks:**

- a. If a determination of vapor tight status is to be made on a VR system or spill containment equipment at a stationary GDF or on a gasoline cargo tank at the GDF, the test method in Section 502 (Determining Vapor Tight Status) shall be used.
- b. If it has been established that there are no other interfering vapor escapes, it is an exceedance if a reading by the Control Officer from an established vapor escape above 1/5 LEL (or 10,000 ppmv as methane) is sustained for at least five (5) seconds, and the probe is either consistently further than one inch (1") from the source and/or the probe is consistently being moved faster than 1.6 inches per second (1.6"/sec).
- c. The Control Officer may count it as a failure to perform weekly inspections pursuant to Section 401 (Inspections) if foreign material is found in a spill containment receptacle and there is no record of an inspection being performed in the preceding ten (10) days.

**506 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 adopted 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 Methods 2a – Direct Measurement of Gas Volume Through Pipes and Small Ducts, and 2b – Determination of Exhaust-Gas Volume Flow-Rate from Gasoline Vapor Incinerators. (40 CFR Part 60, Appendix A)
- b. EPA Method 21 – Determination of Volatile Organic Compound Leaks. (40 CFR Part 60, Appendix A-7)
- c. EPA Method 21 – Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3
- d. EPA Method 25 – Determination of Total Gaseous Nonmethane Organic Emissions as Carbon. (40 CFR Part 60, Appendix A)
- e. EPA Method 25A – Gaseous Organic Concentration – Flame Ionization. (40 CFR Part 60, Appendix A)
- f. EPA Method 25B – Gaseous Organic Concentration – Infrared Analyzer. (40 CFR Part 60, Appendix A)
- g. EPA Method 27 – Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test. (40 CFR Part 60, Appendix A)
- h. Optical Gas Imaging: Alternative Work Practice for Monitoring Equipment Leaks, 40 CFR § 60.18(g), (h) and (i).

**506.2 EPA Approved ASTM Standards:**

- a. ASTM D323 - 06 Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)
- b. ASTM D4953 – 06 Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method)

**506.3 EPA Approved CARB Certification and Test Procedures:**

- a. California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1B, Static Torque of Rotatable Phase 1 Adaptors, October 8, 2003 edition, California Air Resources Board, P.O. Box 2815, 2020 L. Street, Sacramento, California 95812-2815.
- b. California Air Resources Board Vapor Recovery Test Procedure TP-201.1, Volumetric Efficiency for Phase I Vapor Recovery Systems, adopted April 12, 1996, and amended February 1, 2001, and October 8, 2003.
- c. California Air Resources Board Vapor Recovery Test Procedure TP-201.1A, Determination of Efficiency of Phase I Vapor Recovery Systems of Dispensing Facilities with Assist Processors.
- d. California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1E, Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, October 8, 2003 edition.
- e. California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1C, Leak Rate of Drop Tube/Drain Valve Assembly, October 8, 2003, edition.

- f. California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1D, Leak Rate of Drop Tube Overfill Protection Devices and Spill Container Drain Valves, October 8, 2003 edition.
- g. California Air Resources Board Vapor Recovery Test Procedure TP-201.3, Determination of 2-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities, adopted April 12, 1996, and amended March 17, 1999.
- h. Bay Area Air Quality Management District Source Test Procedure ST-30, Static Pressure Integrity Test—Underground Storage Tanks, adopted November 30, 1983, and amended December 21, 1994.

**506.4 Additional Test Methods:**

- a. San Diego County Air Pollution Control District Test Procedure TP-96-1, March 1996, Third Revision.