

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

**RULE 352  
GASOLINE CARGO TANK TESTING AND USE**

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

**RULE 352  
GASOLINE CARGO TANK TESTING AND USE**

**SECTION 100 – GENERAL**

- 101 PURPOSE:** To limit emissions of volatile organic compounds (VOC) from gasoline cargo tanks.
- 102 APPLICABILITY:** This rule applies to any gasoline cargo tank which is used to load gasoline within Maricopa County, and to all persons who own, operate, maintain, repair, or test such a gasoline cargo tank.
- 103 PARTIAL EXEMPTIONS:**
- 103.1** This rule does not apply to a gasoline cargo tank when loading the following fuels:
- a. Aviation gasoline loaded at airports.
  - b. Diesel.
  - c. Liquefied petroleum gas (LPG).
- 103.2** A gasoline cargo tank is exempt from the Maricopa County (MC) Vapor Tightness Test requirements of Section 301 of this rule, if the gasoline cargo tank meets the requirements in Sections 103.1(a), (b), or (c) of this rule.
- a. A gasoline cargo tank is exempt from the MC Vapor Tightness Test requirements of Section 301 of this rule, if the gasoline cargo tank meets all of the following conditions:
    - (1) The gasoline cargo tank was placed in operation before July 13, 1988; and
    - (2) The gasoline cargo tank transported gasoline within Maricopa County before January 1, 1998; and
    - (3) The gasoline cargo tank never loads at a gasoline terminal; and
    - (4) The gasoline cargo tank serves only farm tanks or those non-resale gasoline dispensing operations having a yearly throughput not exceeding 120,000 gallons of gasoline, verified by monthly records pursuant to Section 500 of this rule; and
    - (5) The owner or operator of the gasoline cargo tank submits a signed affidavit to the Control Officer documenting compliance with Sections 103.1(a) through 103.1(c) of this rule; and
    - (6) The owner or operator has a complete copy of the signed affidavit available in the gasoline cargo tank for inspection by a bulk gasoline plant operator or

the Control Officer. Maricopa County will not issue a decal to any gasoline cargo tank claiming this exemption.

- b. A gasoline cargo tank is exempt from the MC Vapor Tightness Test requirements of Section 301 of this rule, if at least one of the following conditions is met:
  - (1) The gasoline load originated solely outside of Arizona.
  - (2) The gasoline load originated within Maricopa County but is not delivered within Maricopa County.
- c. A gasoline cargo tank is exempt from the MC Vapor Tightness Test requirements of Section 301 of this rule, if the owner or operator of a gasoline cargo tank provides documentation from another agency that attests to the vapor integrity of the gasoline cargo tank and complies with Section 401.2 of this rule.

**103.3** An owner or operator of a gasoline cargo tank exempted by Section 103.2(a) of this rule is allowed to incidentally purge gasoline vapors from the gasoline cargo tank as a passive result of loading, or briefly when lids or ports must be open for inspection.

**103.4 Opening Hatches on Gasoline Cargo Tanks:**

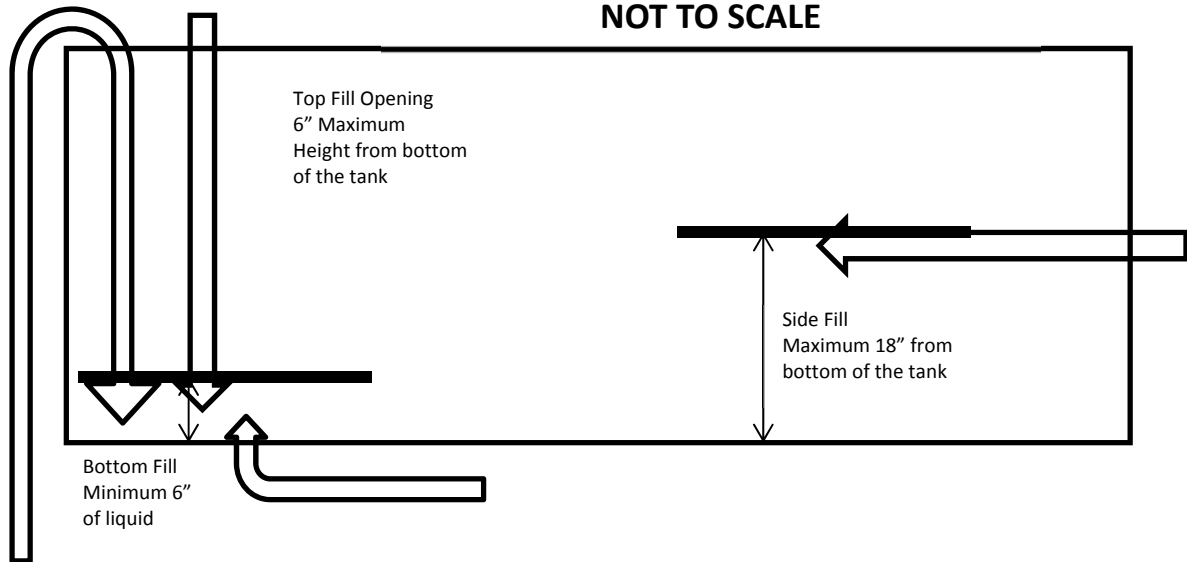
- a. Owners or operators, their contractors, and authorized government agents may open vapor containment equipment on a gasoline cargo tank while performing operations required by governmental agencies, but shall be restricted as follows, unless approved in advance by the Control Officer:
  - (1) Wait at least 3 minutes before opening its hatch or other vapor seal on a gasoline cargo tank:
    - (a) When loading of gasoline is complete.
    - (b) After a gasoline cargo tank has come to a complete stop.
  - (2) Reclose hatch or other sealing device within 3 minutes of completing the required procedures.
  - (3) Limit wind speed at opened hatch or other opened sealing device to not more than 3 mph (1.34 m/sec), using a barrier if necessary.
- b. **Loading:** Hatches of a gasoline cargo tank may be open for monitoring to prevent overflow during the period that the gasoline cargo tank is loading gasoline from a tank or other source, if so required by a local fire code or other ordinance.
- c. **Connecting Coaxial Fittings:** Requirements for first connecting a vapor recovery hose before a gasoline cargo tank loading hose do not apply to coaxial vapor recovery connection fittings.

**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 AVIATION GASOLINE (AVGAS):** A type of gasoline used to fuel a piston engine aircraft.
- 202 BULK GASOLINE PLANT:** Any gasoline storage and distribution facility that meets all of the following:
- 202.1** Loads gasoline from a pipeline, rail, or gasoline cargo tank into a stationary storage tank;
  - 202.2** Loads gasoline from the stationary storage tank into gasoline cargo tanks for transport to gasoline dispensing facilities; and
  - 202.3** Has a gasoline throughput of less than 20,000 gallons per day. Gasoline throughput shall be the maximum calculated design throughput which may be limited by compliance with an enforceable condition under Federal, State, or local law, and discoverable by the Control Officer.
- 203 BULK GASOLINE TERMINAL:** Any gasoline storage and loading facility that meets all of the following:
- 203.1** Loads gasoline from a pipeline, rail, or gasoline cargo tank into a stationary storage tank;
  - 203.2** Loads gasoline from the stationary storage tank into gasoline cargo tanks for transport to gasoline dispensing facilities; and
  - 203.3** Has a gasoline throughput of 20,000 gallons per day or greater. Gasoline throughput shall be the maximum calculated design throughput which may be limited by compliance with an enforceable condition under Federal, State, or local law, and discoverable by the Administrator and any other person.
- 204 COAXIAL VAPOR BALANCE SYSTEM:** A type of vapor balance system in which the gasoline vapors are removed through the same fill pipe connection as which the fuel is delivered.
- 205 DUAL-POINT VAPOR BALANCE SYSTEM:** A type of vapor balance system in which the storage tank is equipped with an entry port for a gasoline fill pipe and a separate exit port for a vapor connection.
- 206 EXCESS GASOLINE DRAINAGE:** More than 10 milliliters (2 teaspoonsful) of liquid gasoline lost from the end of a loading hose or vapor hose in the process of connecting or disconnecting a gasoline loading hose; or any quantity of gasoline 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. This does not include drainage into a fill pipe's spill containment receptacle.
- 207 GASOLINE:** Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol having a Reid vapor pressure between 4.0 and 14.7 psi (200–760 mm Hg.) as determined by Section 505 of this rule, and which is used as a fuel for internal combustion engines.

- 208 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. This includes any hoses the gasoline cargo tank carries through which deliveries must be made.
- 209 GASOLINE DISPENSING FACILITY:** 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.
- 210 GASOLINE VAPORS:** Vapors, originating from liquid gasoline, that are usually found in mixture with air. Included are any droplets of liquid gasoline or of gasoline-vapor condensate that are entrained by the vapor.
- 211 LEAK FREE:** Having no single liquid gasoline leak of more than 3 drops per minute from a gasoline cargo tank, including fill hose(s) and vapor hose(s), but not including the disconnecting or connecting of either a gasoline hose from a gasoline fill line or a vapor hose from a vapor line.
- 212 MARICOPA COUNTY (MC) 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 Section 501 of this rule.
- 213 PURGING:** Removing, cleaning, or scouring out gasoline vapors from all or a portion of a gasoline cargo tank by active or passive means and emitting the vapors into the atmosphere.
- 214 STAGE 1 VAPOR RECOVERY SYSTEM (VR SYSTEM):** Any piping, hoses, equipment, and/or devices which are used to collect, store, or process gasoline vapors displaced by the loading of gasoline and also by the unloading of gasoline into a vapor laden gasoline cargo tank.
- 215 SUBMERGED FILL:** Any discharge pipe or nozzle which meets the applicable specification as follows:
- 215.1 Top-Fill or Bottom-Fill:** The end of the discharge pipe or nozzle is totally submerged when the liquid level is six inches (15 cm) from the bottom of the tank.
  - 215.2 Side-Fill:** At its highest point within the storage tank less 2,000,000 gallon capacity, the end of the discharge pipe or nozzle is totally submerged when the liquid level is 18 inches (46 cm) from the bottom of the tank.

**Submerged Fill Diagram  
NOT TO SCALE**



- 216 **SWITCH LOADING:** Loading diesel fuel into a gasoline cargo tank whose previous load was gasoline; or loading any liquid not subject to this rule into a gasoline cargo tank whose previous load was gasoline.
- 217 **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 is used according to the manufacturer's instructions.

**SECTION 300 – STANDARDS**

**301 GASOLINE CARGO TANK REQUIREMENTS:**

- 301.1 **Gasoline Cargo Tank Integrity:** In Maricopa County, an owner or operator of a gasoline cargo tank shall not store or transport gasoline in or otherwise use or operate any gasoline cargo tank unless:
  - a. The gasoline cargo tank is designed and maintained to be vapor tight and leak free.
  - b. The gasoline cargo tank passes the MC Vapor Tightness Test unless exempted by Section 103 of this rule.
  - c. A valid, permanently mounted Maricopa County Vapor Tightness Certification decal is clearly displayed near the front right (passenger) side of the gasoline cargo tank, if not exempted by Section 103 of this rule.
- 301.2 **MC Vapor Tightness Test:** A gasoline cargo tank shall pass the MC Vapor Tightness Test before loading gasoline within Maricopa County, unless exempted by Section 103 of this rule.
  - a. **Testing:** The MC Vapor Tightness Test shall be performed according to Section 501 of this rule.

- (1) Scheduling and notification of a gasoline cargo tank MC Vapor Tightness Test shall be done in accordance with Section 401.1 of this rule.
- (2) A tester shall record the results of the MC Vapor Tightness Test according to Section 502.2 of this rule.
- (3) If a gasoline cargo tank does not pass all three (3) subtests of the MC Vapor Tightness Test as listed in Section 502.2 of this rule, the gasoline cargo tank shall be repaired, retested, and pass all 3 subtests in the same testing period within 15 days of initial testing.

**b. Maricopa County Vapor Tightness Certification Decal:** An owner or operator of a gasoline cargo tank shall:

- (1) Comply with Sections 401.1 and 401.2 of this rule for notification and registration requirements to obtain a valid Maricopa County Vapor Tightness Certification decal after passing the MC Vapor Tightness Test; and
- (2) Each gasoline cargo tank shall clearly display a valid Maricopa County Vapor Tightness Certification decal that is permanently mounted near the front on the right (passenger) side of the gasoline cargo tank, unless exempted by Section 103 of this rule.

### **301.3 Purging:**

- a. An owner or operator is allowed to purge gasoline vapors from a gasoline cargo tank if the following conditions are met:
  - (1) VOC emissions shall be reduced at least 90% by weight, including capture and processing, by a control device having a Maricopa County Air Pollution Permit; and
  - (2) Such purging shall be done only after all loading valves are opened and any liquid gasoline outflow is captured in a container having an attached lid which is kept closed when not receiving or pouring gasoline.
- b. An owner or operator of a gasoline cargo tank shall not purge gasoline vapors from such tank as a passive result of switch loading, except for gasoline cargo tanks exempted by Section 103 of this rule.

## **302 LOADING OF GASOLINE:**

**302.1 Loading of Gasoline into a Gasoline Cargo Tank from a Bulk Plant:** An owner or operator of a gasoline cargo tank shall only load gasoline at a bulk gasoline plant loading rack when the following conditions are met:

- a. The gasoline cargo tank integrity is maintained and verified by:
  - (1) The display of a Maricopa County Vapor Tightness Certification decal on the gasoline cargo tank; or
  - (2) An affidavit per Section 103.2(a)(6) of this rule is readily available.
- b. A vapor recovery hose shall be connected prior to the connection of any gasoline loading hose at any bulk loading rack.



- c. Connect an additional vapor recovery hose before connecting any additional gasoline loading hose, unless an assisted vapor recovery system is serving the vapor hose that is already connected.
- d. Disconnect loading hoses and vapor recovery hoses in such a way as to prevent excess gasoline drainage (more than 2 teaspoonsful) from escaping from the hose in one connect/disconnect cycle.
- e. Use a bucket or other effective capture device to catch any gasoline dripping during the connection or disconnection of both the gasoline loading hose from the gasoline cargo tank and the vapor hose from the loading dock's vapor receiving pipe.
  - (1) Spills and any gasoline that is deposited in or on an area other than within the gasoline cargo tank shall be collected and contained. This can include, but is not limited to, the correct use of buckets and/or absorbent material designed for the purpose and the correct disposal of the collected gasoline.
  - (2) Any gasoline that escapes, spills, or leaks must be collected and contained in a manner that will prevent evaporation into the atmosphere.

**302.2 Loading of Gasoline at a Bulk Terminal:** An owner or operator of a gasoline cargo tank shall only load gasoline at a gasoline bulk terminal when the following conditions are met:

- a. The gasoline cargo tank integrity shall be maintained and verified by the display of a Maricopa County Vapor Tightness Certification decal on the gasoline cargo tank.
- b. A vapor recovery hose shall be connected prior to the connection of any gasoline loading hose at any bulk loading rack.
- c. Connect an additional vapor recovery hose before connecting any additional gasoline loading hose, unless an assisted vapor return system is serving the vapor hose that is already connected.
- d. Disconnect loading hoses and vapor recovery hoses in such a way as to prevent excess gasoline drainage (more than 2 teaspoonsful) from escaping from the hose in one connect/disconnect cycle.
- e. Use a bucket or other effective capture device to catch any gasoline dripping during the connection or disconnection of both the gasoline loading hose from the gasoline cargo tank and the vapor hose from the loading dock's vapor receiving pipe.
  - (1) Spills and any gasoline that is deposited in or on an area other than within the gasoline cargo tank shall be collected and contained. This can include, but is not limited to, the correct use of buckets and/or absorbent material designed for the purpose and the correct disposal of the collected gasoline.
  - (2) Any gasoline that escapes, spills, or leaks must be collected and contained in a manner that will prevent evaporation into the atmosphere.

**302.3 Loading of Gasoline into a Stationary Gasoline Storage Tank at a Non-Retail Gasoline Dispensing Facility:** An owner or operator of a gasoline cargo tank shall

only load gasoline at a non-retail gasoline dispensing facility when the following conditions are met:

- a. The gasoline cargo tank integrity is maintained and verified by:
  - (1) The display of a Maricopa County Vapor Tightness Certification decal on the gasoline cargo tank; or
  - (2) An affidavit per Section 103.2(a)(6) of this rule is readily available.
- b. A vapor recovery hose shall be connected prior to the connection of any gasoline loading hose if the stationary gasoline storage tank is configured to include a vapor return connection.
- c. Vapor Recovery Systems Having Remote Vapor Return Lines: If a gasoline cargo tank's vapor recovery hose is connected to a vapor return line that is not part of a dual-point vapor balance system, then there shall not be more than one gasoline loading hose connected to the gasoline cargo tank, and no additional hoses connected to a fill pipe.
- d. An owner or operator shall not remove the lid of a fill pipe unless every other fill pipe either has a lid fastened in place or a loading hose connecting it to the gasoline cargo tank.
- e. A portable fill pipe shall be used to load gasoline into any stationary gasoline storage tank that is not equipped with a permanent submerged fill pipe.
- f. Restriction on Multiple Connections: A gasoline cargo tank shall not simultaneously have more than one gasoline loading hose connected, unless each loading hose is connected to a gasoline cargo tank's dual-point vapor balance system that already has a vapor recovery hose connecting it to the gasoline cargo tank.
- g. A loading hose and a vapor recovery hose shall be thoroughly drained into the gasoline cargo tank before disconnecting the gasoline cargo tank from the gasoline cargo tank's fittings.
- h. The loading hoses and vapor recovery hoses shall be disconnected in such a way as to prevent excess gasoline drainage (more than 2 teaspoonsful) from escaping from the hose in one connect/disconnect cycle.
- i. A bucket or other effective capture device shall be used to catch any gasoline dripping during the connection or disconnection of both the gasoline loading hose from the gasoline cargo tank and the vapor hose from the loading dock's vapor receiving pipe.
  - (1) Spills and any gasoline that is deposited in or on an area other than within the gasoline cargo tank shall be collected and contained. This can include, but is not limited to, the correct use of buckets and/or absorbent material designed for the purpose and the correct disposal of the collected gasoline.
  - (2) Any gasoline that escapes, spills, or leaks must be collected and contained in a manner that will prevent evaporation into the atmosphere.

- j. An owner or operator of a gasoline cargo tank shall only load gasoline into a stationary gasoline storage tank when:
  - (1) The stationary gasoline storage tank is equipped with a vapor return poppetted valve.
  - (2) Any locked cap can be removed.
  - (3) The stationary gasoline storage tank does not have any broken or damaged fitting that prevent the correct connection of a loading hose or a vapor hose.

**302.4 Loading of Gasoline into a Stationary Gasoline Storage Tank at a Retail**

**Gasoline Dispensing Facility:** An owner or operator of a gasoline cargo tank shall only load gasoline at a retail gasoline dispensing facility when the following conditions are met:

- a. The gasoline cargo tank integrity shall be maintained and verified by the display of a Maricopa County Vapor Tightness Certification decal on the gasoline cargo tank.
- b. An owner or operator of a gasoline cargo tank shall only load gasoline into a stationary gasoline storage tank when:
  - (1) The stationary gasoline storage tank is equipped with a vapor return poppetted valve.
  - (2) Any locked cap can be removed.
  - (3) The stationary gasoline storage tank does not have any broken or damaged fitting that prevent the correct connection of a loading hose or a vapor hose.
- c. An owner or operator shall not load gasoline to a stationary gasoline storage tank at a retail gasoline dispensing facility unless a vapor hose is first connected from the gasoline cargo tank to a vapor return-line serving the stationary gasoline storage tank.
- d. Vapor Recovery Systems Having Remote Vapor Return Lines: If a gasoline cargo tank's vapor hose is connected to a vapor return line that is not part of a dual-point vapor balance system, then there shall not be more than one gasoline delivery hose connected to the gasoline cargo tank, and no additional hoses connected to a fill tube.
- e. An owner or operator shall not remove the lid of a fill tube unless every other fill tube either has a lid fastened in place or a delivery hose connecting it to the gasoline cargo tank.
- f. Restriction on Multiple Connection: A gasoline cargo tank shall not simultaneously have more than one gasoline delivery hose connected, unless each delivery hose is connected to a gasoline cargo tank's dual-point vapor balance system that already has a vapor hose connecting it to the gasoline cargo tank.
- g. Thoroughly drain a loading hose and a vapor recovery hose into the gasoline cargo tank before disconnecting it from the gasoline cargo tank's fittings.
- h. Disconnect a loading hose from a stationary gasoline storage tank before disconnecting the vapor recovery hose.

- i. Disconnect Loading hoses and vapor recovery hoses in such a way as to prevent excess gasoline drainage (more than 2 teaspoonsful) from escaping from the hose in one connect/disconnect cycle.
- j. Spills and any gasoline that are deposited in or on an area other than within the gasoline cargo tank shall be collected and contained. This can include, but is not limited to, the correct use of buckets and/or absorbent material designed for the purpose, and the correct disposal of the collected gasoline.

## SECTION 400 – ADMINISTRATIVE REQUIREMENTS

**401 MARICOPA COUNTY (MC) VAPOR TIGHTNESS TEST:** Testing required by Section 301.2 of this rule, shall be conducted by the owner or operator of the gasoline cargo tank. The Control Officer may at any time observe the tests. An owner or operator shall comply with the following provisions:

**401.1 Notification of Required Testing:** The owner, operator, or tester shall notify the Control Officer as follows for each gasoline cargo tank being tested to meet requirements of Section 301.2 of this rule:

- a. Contact the Control Officer during normal business hours of the Department at least 4 hours prior to gasoline cargo tank vapor tightness testing.
- b. Provide an estimated start time that is no more than 1 hour prior to actual gasoline cargo tank vapor tightness testing start time.
- c. Except for weekend testing, the Control Officer shall be notified no more than 72 hours prior to gasoline cargo tank vapor tightness testing.
- d. For weekend testing, the notification shall be given, along with the date of testing, prior to 2 PM on Friday (or Thursday, if Friday is a County holiday).
- e. Give the location of the testing.
- f. Any testing that is performed in the 8 hour period between 9 PM and 5 AM is not valid for purposes of satisfying Section 301.2 of this rule requirements, except if the Control Officer gives specific, advance permission for a particular occasion.

**401.2 Registration:** To obtain a Maricopa County Vapor Tightness Certification decal, ~~to~~ the following information shall be submitted to the Control Officer for each gasoline cargo tank that passes the required gasoline cargo tank vapor tightness test:

- a. A completed “MARICOPA COUNTY VAPOR TIGHTNESS CERTIFICATION DECAL APPLICATION” (application) that includes, at a minimum, all of the following information required by Section 502.2 of this rule.
- b. A completed copy of the “Maricopa County Air Quality Department Gasoline Cargo Tank Vapor Tightness “Certification Check List” (checklist), and
- c. The annual fee remittance as listed in Rule 280.
- d. Upon receipt of the completed application, checklist and fee remittance, a Maricopa County Vapor Tightness Certification decal will be issued by the Control Officer.

**401.3 Expiration:**

- a. A Maricopa County Vapor Tightness Certification decal that is issued to a gasoline cargo tank that passed its test in the 4-month period between March 1 through June 30 shall expire at 11:59 PM on June 30 of the following year.
- b. A Maricopa County Vapor Tightness Certification decal that is issued to a gasoline cargo tank that passed its test in the period after June 30 of the previous year and before March 1 of the current year shall expire at 11:59 PM on June 30 of the following year.

**401.4 Lost, Defaced or Destroyed Maricopa County Vapor Tightness Certification Decal:**

- a. An owner or operator shall notify the Control Officer immediately if a valid Maricopa County Vapor Tightness Certification decal is lost, defaced, or destroyed.
- b. The Control Officer may require a demonstration of need for decal replacement.
- c. If Rule 280 so provides, the Control Officer may charge a fee for reissue or substitute issue of a lost, defaced, or destroyed Maricopa County Vapor Tightness Certification decal, if the Control Officer determines that the Department is not at fault.

**402 INSTALLATION OF CONTROL DEVICE:** An owner or operator of a gasoline cargo tank testing operation who chooses to comply with the Section 301.3 of this rule purging provisions through the use of a control device shall submit an application for a Maricopa County Air Pollution Control Permit and an Operation and Maintenance Plan for the control device.

**SECTION 500 – RECORDS AND MONITORING**

**501 MARICOPA COUNTY (MC) GASOLINE CARGO TANK VAPOR TIGHTNESS TESTING REQUIREMENT:**

- 501.1** Each gasoline cargo tank shall pass all of the vapor tightness tests in the listed order of Section 501.1 of this rule, using the same vapor hose during each test as will be used for loading. If more than one vapor recovery hose is used for loading, the sequence of tests shall be performed for each vapor hose.
- a. **Pressure Test:** Lose no more than 1.0 inch (25.4 mm) of water column in 5.0 minutes, when pressurized to a gauge pressure of 18 inches (45.7 cm) of water in 2 consecutive runs according to procedures in subsections 5.1.1 through 5.2.7 of EPA Method 27, as incorporated by reference in Section 505 of this rule; and
  - b. **Vapor Valve Loss Test:** Lose no more than 5.0 inches (127 mm) of water column in 5.0 minutes, measured in the vapor system after the gasoline cargo tank compartments are first collectively pressurized to a gauge pressure of 18 inches (45.7 cm) of water and then the vapor valves are closed, per Section 504.2 of this rule; and

- c. **Vacuum Test:** Gain no more than 1.0 inch (25.4 mm) of water column in 5.0 minutes, when initially evacuated to a gauge pressure of 6 inches (15.2 cm) of water, in 2 consecutive runs, per subsections 5.3.1 through 5.3.7 of EPA Method 27, as incorporated by reference in Section 505 of this rule.
- d. **Pressure Instability:** A test is invalidated if during the positive pressure test or the vapor valve loss test, more than ½ inch water pressure is gained. A test is invalid if during the vacuum test the vacuum is increased by more than minus ½ inch.

**501.2** A gasoline cargo tank shall be repaired, retested, and pass all three (3) subtests in the same testing period within 15 days of testing if it does not pass all three (3) subtests of Section 501.1 of this rule.

## **502 RECORDKEEPING AND REPORTING REQUIREMENTS:**

**502.1** The owner or operator of a gasoline cargo tank subject to this rule shall maintain records of all certification, testing, and repairs.

- a. Such records must be maintained in a legible, readily available condition for at least 5 years after the date the testing and repair is completed.
- b. Upon verbal or written request by the Control Officer, records shall be provided 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** The records of the gasoline cargo tank vapor tightness certification testing required by Section 301.2 of this rule, must be recorded in both of the following documents: “Maricopa County Vapor Tightness Certification Decal Application” and the “Maricopa County Air Quality Department Gasoline Cargo Tank Vapor Tightness Certification Check List”. Pressure and vacuum shall be recorded to no less than the nearest quarter inch or half-centimeter of water column. The minimum requirements for each of these 2 documents follow:

- a. For the “Maricopa County Vapor Tightness Certification Decal Application”:
  - (1) Owner's name and address.
  - (2) The manufacturer’s gasoline cargo tank serial number.
  - (3) The gasoline cargo tank unit number.
  - (4) The location of the test.
  - (5) The time of the test.
  - (6) The date of the test.
  - (7) For the pressure test, two (2) readings: the change in pressure (in inches of water) for Run 1 and the change in pressure for Run 2.
  - (8) For the vapor-valve loss test one (1) reading: the total change in pressure during the test.
  - (9) For the vacuum test, two (2) readings: the total change in vacuum during Run 1 and the same for Run 2.

- (10) The signature of the person conducting the vapor tightness test.
- b. The “Maricopa County Air Quality Department Gasoline Cargo Tank Vapor Tightness Certification Check List” shall contain at least the following information:
  - (1) Owner's name and address.
  - (2) Manufacturer’s gasoline cargo tank serial number.
  - (3) The gasoline cargo tank unit number.
  - (4) The gasoline cargo tank capacity.
  - (5) Whether the gasoline cargo tank was purged of gasoline vapors.
  - (6) The location of the test.
  - (7) The time of the test.
  - (8) The date of the test.
  - (9) Initial testing information:
    - (a) The time the test began.
    - (b) The initial pressure in inches of water.
    - (c) The finish time of the test.
    - (d) The final pressure of the test.
    - (e) The pressure change between the start and end of the test.
    - (f) If the initial pressure test failed:
      - (i) Record one set of readings in the row “Initial Test.”
      - (ii) Record the elapsed time if the pressure reached zero before five (5) minutes.
      - (iii) Record any repairs conducted.
  - (10) Testing Information for each test:
    - (a) The time the test began.
    - (b) The initial pressure in inches of water.
    - (c) The finish time of the test.
    - (d) The final pressure of the test; and
    - (e) The pressure change between the start and end of the test.
  - (11) The date of the next leakage test if the set of three (3) subtests are not all passed.
  - (12) The signature of the person conducting the vapor tightness test.

**503 MONITORING FOR LEAKS:** The Control Officer may at any time monitor a gasoline cargo tank, including the vapor collection system, for vapor and liquid leaks to ascertain if it is vapor tight and leak free. The Control Officer shall follow the test procedure in Section

503.1 of this rule and shall use one or more of the methods in Sections 503.2 and 503.3 of this rule to determine vapor tight and leak free conditions:

**503.1 Combustible Gas Detector (CGD) or an Organic Vapor Analyzer (OVA)-Test Procedure:**

- a. **Calibration:** Within four (4) hours prior to monitoring, the CGD or OVA shall be properly calibrated for a 20 percent 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 annual leak detection test required by Section 401 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 gasoline vapor is detected, that fact shall be entered into the record.

**503.2 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 503.1 of this rule, shall be used to verify if a vapor leak exists.

**503.3 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 503.1 of this rule shall be used to verify if a vapor leak exists.



**504 COMPLIANCE**

- 504.1 Pressure and Vacuum Tests:** The tests to determine compliance with Section 501.1 of this rule shall be performed according to EPA Method 27-Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure Vacuum Test, except that the definition of gasoline shall be according to this rule.
- 504.2 Test of Internal Vapor Valves:** The tests to determine compliance with Section 501.1 of this rule, shall be performed immediately after successfully passing the pressure subtest, without performing any intervening maintenance or repair on the vapor valves.
- 504.3** Confirmation of a vapor leak detected on a gasoline cargo tank during loading shall be determined by properly deploying a pressure tap adapter that conforms to Method 27 provisions, and demonstrating the leak according to Section 503 of this rule, while the pressure is less than 20 inches of water column.
- 504.4** Pursuant to Section 203, Reid vapor pressure shall be determined using ASTM D323-15a: Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).

**505 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.

- 505.1 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 instead of a 40 CFR part 60, Appendix A-7, Method 21 to monitor for equipment volatile organic compound leaks.
- 505.2** EPA Method 21-Determination of Volatile Organic Compound Leaks.
- 505.3** EPA Method 27-Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test.
- 505.4** ASTM D323-15a: Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).