Enhanced Regulatory Outreach Program
Maricopa County Air Quality Department

Notice of Stakeholder Workshop

AQ-2015-008-Rule 351
Storage And Loading Of Gasoline At Bulk Plants And Bulk Terminals
Date/Time: Monday, February 22, 2016 at 8:00 am
Location: 1001 N. Central Avenue, Floor 5 Classroom*

The Maricopa County Air Quality Department (department) will conduct a Stakeholder Workshop to discuss proposed revisions to AQ-2015-008- Rule 351.

Initially, the department proposed consolidating Rule 352 into Rule 351. Further discussions determined it would be beneficial to Stakeholders and Staff to retain Rule 351 and Rule 352 as separate rules. Draft Rule 351 to be discussed during this workshop is attached to this announcement. Discussion will focus on:

- Propose to remove gasoline cargo tanker/delivery vessel requirements (Rule 352) as originally proposed
- Propose to revise Section 103 (Exemptions)
- Propose to revise the following definitions:
  - To revise “Bulk Plant” to “Bulk Gasoline Plant”
  - To revise “Bulk Terminal” to “Bulk Gasoline Terminal”
  - To delete “Delivery Vessel”
  - To revise “Dispensing Tank”
  - To revise “Excess Organic Liquid Drainage”
  - To add “External Floating Roof”
  - To revise “Gasoline”
  - To add “Gasoline Cargo Tank”
  - To add “Internal Floating Roof”
  - To revise “Loading Facility”
  - To delete “Offset Fill Line”
  - To revise “Submerged Fill Pipe”
  - To delete “True Vapor Pressure”
  - To revise “Vapor Loss Control Device”
- Propose the following revisions to Section 300:
  - Propose to include requirement to meet applicable federal requirements
  - Propose to include Gasoline Storage Tank Standards
  - Proposed to include Vapor Loss Control System Standards
  - Propose to revise Requirements for Loading Facilities
- Propose to add Gasoline Storage Tank Inspection requirements in Section 400
- Propose to add optical gas imaging instrument as an alternative leak detection method in Section 400
- Propose to delete Section 402 (Compliance Schedule)
- Propose the following revisions to Section 500:
  - To add Monitoring Device requirements
  - To add Vapor Pressure recordkeeping requirements
  - To add Leak Inspection recordkeeping requirements
  - To include full title of test methods
- Propose to revise the following throughout the rule:
  - To revise “No person” to “owner or operator”
  - To change “transfer” to “load”
  - To change “delivery vessels” to “cargo tanks”

Additional information is available on the Enhanced Regulatory Outreach Program (EROP) website (www.maricopa.gov/regulations). The Stakeholder Workshop is an informal meeting for all interested parties, is free of charge and no advance registration or RSVP is required. If you would like to remotely attend this workshop, contact Michelle Mada at (602) 372-1465.

*If you will be attending this workshop in-person, when you arrive at 1001 North Central Avenue, please check-in in Suite #125 then proceed to the Floor 5 classroom. Thank you for participating in the rulemaking process.

REVISIONS ORIGINALLY PROPOSED AT WORKSHOP 1 (JUNE 30, 2015):

- Rule 351 is being split into PROPOSED Rule 350 (Storage and Transfer of Organic Liquids at Organic Liquid Distribution Facilities) and PROPOSED Rule 351 (Storage and Loading of Gasoline at Gasoline Bulk Tanks and Gasoline Terminals)
  - Two distinct industries that have little overlap
  - Current rule requirements that overlap created confusion on which rule section applies to the organic liquid industry and the gasoline industry
  - Organic liquid and gasoline terminology is different
- Use gasoline industry terminology and definitions.
- Move exemptions from R350, Section 310; and Rule 351, Section 305, to PROPOSED New Section 103
- Add the "Availability of Information" to PROPOSED New Section 104

PROPOSED REVISIONS SINCE WORKSHOP 2 (SEPTEMBER 14, 2015):

The Maricopa County Air Quality Department (department) is proposing revisions to Rule 351 (STORAGE OF ORGANIC LIQUIDS AT BULK PLANTS AND TERMINALS). The department initially proposed consolidating Rule 352 into PROPOSED Rule 351. Further discussions determined it would be beneficial to Stakeholders and Staff to maintain Rule 351 and Rule 352 as separate rules. The following revisions are PROPOSED:

- Propose to remove gasoline cargo tanker/delivery vessel requirements (Rule 352) as originally proposed
- Propose to revise Section 103 (Exemptions)
- Propose to revise the following definitions:
  - To revise Bulk Plant to Bulk Gasoline Plant
  - To revise Bulk Terminal to Bulk Gasoline Terminal
  - To delete Delivery Vessel
  - To revise Dispensing Tank
  - To revise Excess Organic Liquid Drainage
  - To add External Floating Roof
  - To revise Gasoline
  - To add Gasoline Cargo Tank
  - To add Internal Floating Roof
  - To revise Loading Facility
  - To delete Offset Fill Line
  - To revise Submerged Fill Pipe
  - To delete True Vapor Pressure
  - To revise Vapor Loss Control Device
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  - Propose to include requirement to meet applicable federal requirements
  - Propose to include Gasoline Storage Tank Standards
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- Propose to add Gasoline Storage Tank Inspection requirements in Section 400
- Propose to add optical gas imaging instrument as an alternative leak detection method in Section 400
- Propose to delete Section 402 (Compliance Schedule)
- Propose the following revisions to Section 500:
  - To add Monitoring Device requirements
  - To add Vapor Pressure recordkeeping requirements
  - To add Leak Inspection recordkeeping requirements
  - To include full title of test methods
- Propose to revise the following throughout the rule:
  - To revise "No person" to "owner or operator"
  - To change "transfer" to "load"
  - To change "delivery vessels" to "gasoline cargo tanks"

NOTE: this document will be referred to as **pr351** as to not confuse it with current rule 351.

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 351
STORAGE AND LOADING OF ~~ORGANIC LIQUIDS~~ GASOLINE AT BULK GASOLINE PLANTS AND BULK GASOLINE TERMINALS

INDEX

NOTE: this document will be referred to as **pr351** as to not confuse it with current rule 351.

~~Revised 07/13/88~~
~~Revised 04/06/92~~
~~Revised 02/15/95~~

Revised 07/13/1988; Revised 04/06/1992; Revised 02/15/1995; and **MM/DD/YYYY**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 351
STORAGE AND LOADING OF ~~ORGANIC LIQUIDS~~ GASOLINE AT BULK PLANTS AND BULK TERMINALS

SECTION 100 - GENERAL

101 **PURPOSE:** To limit emissions of volatile organic compounds from gasoline during the storage and ~~the~~ loading of ~~organic liquids~~ gasoline at bulk gasoline plants and bulk gasoline terminals.

102 **APPLICABILITY:** This rule is applicable to: ~~the transfer of organic liquids having a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under actual loading conditions. It regulates transfers at bulk terminals and bulk plants from stationary storage tanks to delivery vessels and from delivery vessels to stationary storage tanks.~~

102.1 The storage of gasoline in a stationary storage tank at a bulk gasoline plant or bulk gasoline terminal.

102.2 The loading of gasoline from a gasoline cargo tank, railroad tank car or pipeline into or out of a stationary storage tank at a bulk gasoline plant or bulk gasoline terminal.

103 **EXEMPTIONS:**

103.1 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.

103.2 A pressure tank maintaining working pressure sufficient at all times to prevent VOC vapor loss to the atmosphere is exempt from Sections [XXX] of this rule.

103.3 A floating roof is exempt from the requirement that its roof be floating as long as either of the following processes is accomplished continuously and as rapidly as practicable:

a. When the tank is being drained completely.

b. When the tank is being filled.

103.4 **Bulk Gasoline Plants with a Throughput of Less Than 120,000 Gallons Per 30-Day Period:** At bulk gasoline plants built before October 2, 1978, vapor loss control specified in Section 302 is not required at the loading rack when all of the following are complied with:

a. The bulk gasoline plant loads less than 120,000 gallons (454,800 l) of gasoline into gasoline cargo tanks in any consecutive 30-day period. Any bulk gasoline plant that becomes subject to all of the provisions of Section 302 of this rule by exceeding this threshold will remain subject to these provisions even if its throughput later falls below the threshold.

b. Keep current records of amount of gasoline loaded and keep them readily accessible to the Department upon request for at least five (5) years.

c. Load gasoline using submerged fill only.

d. The owners or operators of the bulk gasoline plant shall observe all parts of the gasoline loading process and shall discontinue the gasoline loading if any leaks are observed.

103.5 **Opening Hatches:** When VOC vapors from gasoline are present within a non-exempt cargo tank, authorized government agents, as well as owners or operators and their contractors, may open vapor

containment equipment while performing operations required by Division rules or by other statutory entities, but shall be restricted as follows unless approved in advance by the Control Officer:

a. Wait at least 3 minutes after loading is complete or gasoline cargo tank has stopped before opening hatch or other vapor seal.

b. Reclose hatch or other sealing device within 3 minutes of opening.

c. Limit windspeed at opened hatch or other opened sealing device to not more than 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 ~~BULK PLANT - Any loading facility at which gasoline and/or other organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under any actual storage conditions are received from delivery vessels for storage in on-site stationary tanks, and from which such liquids also are transferred to delivery vessels.~~ **BULK GASOLINE PLANT:** Any gasoline storage and distribution facility that meets all of the following:

201.1 Loads gasoline from a pipeline, rail, or gasoline cargo tank into a stationary storage tank;

201.2 Loads gasoline from the stationary storage tank into gasoline cargo tanks for transport to gasoline dispensing operations; and

201.3 Has a gasoline throughput of less than 20,000 gallons per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal, State, or local law, and discoverable by the Control Officer.

202 **BULK TANK:** Any stationary storage tank serving a loading rack which loads ~~delivery vessels~~ gasoline cargo tanks with ~~organic liquids~~ gasoline.

203 **BULK GASOLINE TERMINAL:** Any ~~primary~~ ~~distributing~~ gasoline storage and loading facility that meets all of the following: ~~which has ever received in any consecutive 30-day period over 600,000 gallons (2,271,180 l) of gasoline and/or other organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under actual storage conditions; or any loading facility where delivery of such liquids to the facility is primarily by pipeline.~~

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 operations; and

203.3 Has a gasoline throughput of 20,000 gallons per day or greater. Gasoline throughput shall be the maximum calculated design throughput as 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~~ ~~DELIVERY VESSEL - Any vehicular-mounted container such as a railroad tank car, tanker truck, tank trailer or any other mobile container used to transport organic liquids.~~

~~205~~ **204** **DISPENSING TANK:** Any stationary tank which dispenses ~~organic liquid fuel~~ gasoline directly into ~~the fuel tanks of motor vehicles including aircraft.~~ a motorized vehicle's fuel tank, dispenses gasoline into an aircraft's fuel tank, or dispenses gasoline into a watercraft's fuel tank that directly fuels its engine(s). ~~This includes aircraft.~~

~~206~~ **205** **EXCESS** ~~ORGANIC LIQUID~~ **GASOLINE DRAINAGE:** More than 10 milliliters (0.34 fluid ounces or 2 teaspoonsful) ~~per disconnect.~~ of liquid gasoline lost from the end of a fill hose or vapor hose in the process of connecting or disconnecting the 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 tube's spill containment receptacle.

206 **EXTERNAL FLOATING ROOF TANK:** An open top stationary storage tank with a floating roof consisting of a double deck or pontoon single deck that rests upon and is supported by the liquid being contained.

207 **FUGITIVE LIQUID LEAK:** An organic liquid leak of more than three drops per minute from any single leak source other than the disconnect operation of liquid fill line and vapor line.

208 **GAS TIGHT:** Having no leak of gaseous organic compound(s) exceeding 10,000 ppm above background when measurements are made using EPA Method 21 with a methane calibration standard.

209 **GASOLINE:** Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol ~~having a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under any actual conditions of storage and handling, and which is~~ that meets all 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 [need method number]; and

209.2 Is ~~and which is~~ used as a fuel for internal combustion engines.

210 **GASOLINE CARGO TANK:** A delivery tank truck or railcar which is loading gasoline or which has loaded gasoline on the immediately previous load.

~~210~~ **211** **GASOLINE DISPENSING OPERATION:** All gasoline dispensing tanks and associated equipment located on one or more contiguous or adjacent properties under the control of the same person or persons under common control.

~~211~~ **212** **GASOLINE LOADING FACILITY:** Any operation or facility such as a gasoline storage tank farm, pipeline terminal, bulk gasoline plant, bulk gasoline terminal loading dock or combination thereof, where ~~organic liquids are transferred or~~ gasoline is loaded into or out of ~~delivery vessels~~ gasoline cargo tanks for future distribution. Included are all related pollutant-emitting activities which are located on one or more contiguous or adjacent properties, and are under the control of the same person or persons under common control.

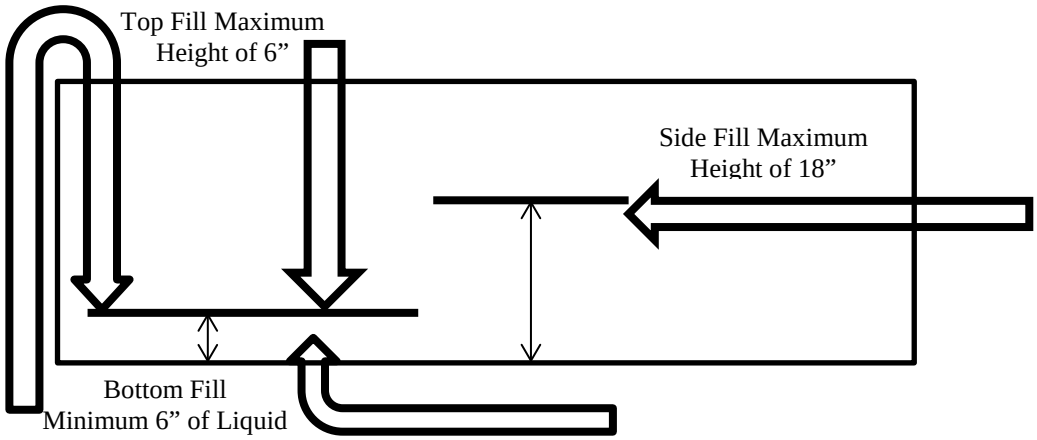
213 **INTERNAL FLOATING ROOF TANK WITH FIXED COVERING:** A stationary storage tank with a floating cover or roof that rests upon or is floated upon the liquid being contained, and that also has a fixed roof on top of the tank shell. An external floating roof tank that has been retrofitted with a geodesic dome or other fixed roof shall be considered to be an internal floating roof tank for the purposes of this rule.

212 **OFFSET FILL LINE:** Any ~~organic liquid fill line (piping and fittings) which contains one or more bends.~~

~~213~~ **214** **ORGANIC LIQUID:** Any organic compound which exists as a liquid under any actual conditions of use, transport or storage.

~~214~~ **215** **STATIONARY STORAGE TANK:** Any tank, reservoir or other container used to store, but not transport, ~~organic liquids~~ gasoline.

~~215~~ **216** **SUBMERGED FILL** ~~PIPE~~**:** ~~Any discharge pipe or nozzle which meets the applicable specification as follows:~~ The end of the discharge pipe or nozzle is totally submerged when the gasoline is loaded.



~~215.1~~ **216.1** **Top-Filled Or Bottom-Filled Tanks:** 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~~ **216.2** **Side-Filled:** 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.

~~216~~ **217** **SWITCH LOADING:** Loading diesel fuel into a ~~delivery vessel~~ gasoline cargo tank whose previous load was gasoline; or loading any organic liquid not subject to this rule into a delivery vessel whose previous load was an organic liquid subject to this rule.

~~210 TRUE VAPOR PRESSURE (TVP): Absolute vapor pressure of a liquid at its existing temperature of storage and handling.~~

218 **VAPOR COLLECTION/PROCESSING SYSTEM:** A vapor loss control device 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.

219 **VAPOR LOSS CONTROL DEVICE:** Any piping, hoses, equipment, and devices which are used to collect, store and/or process organic vapors at a bulk gasoline terminal, bulk gasoline plant, service station or other operation handling gasoline ~~and/or other organic liquids~~.

220 **VAPOR TIGHT:** A condition where no organic vapor leak reaches or exceeds 100 percent of the lower explosive limit at a distance of one inch (2.5 cm) from a leak when measured with a combustible gas detector or an organic vapor analyzer, both calibrated with propane.

SECTION 300 – STANDARDS

301 **FEDERAL STANDARDS OF PERFORMANCE FOR BULK GASOLINE PLANTS AND BULK GASOLINE TERMINALS:** An owner or operator of a bulk gasoline plant or bulk gasoline terminal must meet the applicable federal standards of performance set forth in 40 CFR 60, Subparts K, Ka and Kb; and the national emission standards set forth in 40 CFR 63, Subpart BBBBBB, and all accompanying appendices, excluding the authorities that cannot be delegated to the department. These federal standards are adopted and incorporated by reference in Rule 360 and Rule 370.

302 **GASOLINE STATIONARY STORAGE TANK STANDARDS:**

302.1 **Submerged Fill Pipes:** The owner or operator of a gasoline stationary storage tank shall not allow the loading of gasoline into a stationary storage tank or a gasoline cargo tank unless at least one of the following requirements is met:

a. **Top-Filled Or Bottom-Filled Tanks**: The end of the fill pipe is totally submerged when the liquid level is no more than six inches (15 cm) from the bottom of the tank.

b. **Side-Filled:** The end of the fill pipe is totally submerged when the liquid level is no more than 18 inches (46 cm) from the bottom of the tank.

302.2 **All Gasoline Stationary Storage Tanks With A Capacity Between 250 Gallons And 40,000 Gallons (946 -151,400 L):** An owner or operator of a stationary gasoline storage tank with a capacity greater than 250 gallons (946 l) shall store gasoline in a stationary storage tank meeting all of the following requirements:

a. Each tank has a fill pipe that is always covered with a gasketed seal when gasoline is not in the process of being loaded.

b. Each tank has a permanently installed submerged fill pipe. Where, because of government regulation including, but not limited to, Fire Department codes, such a fill pipe cannot be installed, a nozzle extension that reaches within 6 inches of the tank bottom shall be used to fill the tank.

c. Each fixed roof tank has a pressure/vacuum valve that complies with both Section 302.2.c.i and 302.2.c.ii of this rule. An owner or operator shall:

i. Install a pressure/vacuum vent valve that is either:

(1) Set the within ten percent of the tank's maximum, safe working-pressure; or

(2) Set at least at 0.5 psia (25.8 mm Hg)

ii. Maintain the pressure/vacuum vent in good working order.

d. The tank is equipped with a vapor recovery system which collects and returns displaced vapors to the gasoline cargo tank using vapor-tight fittings and lines; or such tank uses at least one of the vapor loss control methods in Sections 303.1, 303.2, 303.3 or 303.4 of this rule.

302.3 **Gasoline Storage Tanks With A Capacity Equal To Or Greater Than 40,000 Gallons (151,400 L):** An owner or operator of a stationary gasoline storage tanks with a capacity equal to or greater than 40,000 gallons, shall store gasoline in a stationary storage tank unless such storage tank is equipped with at least one of the vapor loss control systems listed below:

a. Install and maintain an external floating roof storage tank; or

b. Install and maintain an internal floating roof storage tank with a fixed cover; or

c. Install and maintain a vapor collection/processing system.

303 VAPOR LOSS CONTROL DEVICE:

303.1 **EXTERNAL FLOATING ROOF STORAGE TANKS:** An external floating roof storage tank must meet the following requirements:

a. The owner or operator of an external floating roof tank and associated emission control equipment shall properly install, properly maintain and operate the equipment.

b. **Floating Roof Requirements:**

i. The floating roof shall rest on and be supported by the surface of the liquid contents~~.~~.

ii. 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 103.3 of this rule.

iii. The floating roof shall have a continuous secondary seal which is of a design that is in accordance with accepted standards of the petroleum industry. The secondary seal shall meet the following requirements~~:~~ of Section 303.1.c of this rule.

c. **Secondary Seal Requirements:**

i. 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.c.ii of this rule. Storage tanks constructed after July 13, 1988, shall have a secondary seal that is rim-mounted. Except for tanks having metallic shoe primary seals onto which secondary seals were installed prior to July 13, 1988, owner or operator shall

operate an external floating roof tank subject to the provisions of this rule unless a secondary seal extends from the roof to the tank shell (a rim-mounted seal) and is not attached to the primary seal.

ii. 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^2 per meter) of tank diameter. Determinations of gap area shall only be made at the point(s) where the gaps exceed 1/8 inch (3 mm). The width of any portion of any gap shall not exceed 1/2 inch (1.27 cm).

d. Floating Roof Openings:

i. Floating roof tanks subject to the provisions of Section 303.1 of this rule shall have no visible holes, tears or other openings in the seal or in any seal fabric.

ii. The accumulated area of gaps between a tank's wall and primary seal shall not exceed 10 square inches per foot of tank diameter (212 cm2 per meter)

iii. The width of any portion of any gap shall not exceed 1½ inches (3.8 cm).

iv. Where applicable, all openings except drains shall be equipped with a cover seal or lid.

v. Where applicable, the cover seal or lid shall be in a closed position at all times, except when the system is in actual use.

vi. Automatic bleeder vents shall be closed at all times, except when the roof is floated off or landed on the roof leg supports.

vii. 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.

303.2 INTERNAL FLOATING ROOF TANKS WITH FIXED COVERING: An internal floating roof tank with fixed coverings and its appurtenances shall meet the applicable requirements as follows:

a. The owner or operator of an internal floating roof tank and associated emission control equipment shall properly install, properly maintain and be operate the equipment.

b. Gasoline 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 K- 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, as incorporated by reference July 1, 2016.

c. All tanks not subject to Section 303.2.b must comply with one of the following:

i. Comply with 40 CFR Part 60, Subpart Kb, notwithstanding the type of facility and the date of tank construction, reconstruction or modification; or

ii. Have at least one continuous seal which completely covers the space between the roof edge and tank wall, except as provided in subsection 309.1, and meet at least one of the following requirements:

(1) Have a contact-type roof resting completely on the liquid surface.

(2) Have a liquid mounted seal.

(3) Have two seals, a primary and a secondary.

d. Floating Roof Openings:

i. Floating roof tanks subject to the provisions of Section 303.2 of this rule shall have no visible holes, tears or other openings in the seal or in any seal fabric.

ii. The accumulated area of gaps between a tank's wall and primary seal shall not exceed 10 square inches per foot of tank diameter (212 cm2 per meter)

iii. The width of any portion of any gap shall not exceed 1½ inches (3.8 cm).

iv. Where applicable, all openings except drains shall be equipped with a cover seal or lid.

v. Where applicable, the cover seal or lid shall be in a closed position at all times, except when the system is in actual use.

vi. Automatic bleeder vents shall be closed at all times, except when the roof is floated off or landed on the roof leg supports.

vii. 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.

303.3 **VAPOR BALANCE SYSTEM:** An owner or operator of a bulk gasoline plant that has an gasoline throughput of 600,000 gallons or less in any consecutive 30-day period, shall install, operate and maintain a vapor balance system.

303.4 **VAPOR COLLECTION/PROCESSING SYSTEM:** This vapor loss control ~~s~~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 a bulk gasoline terminal that has an gasoline throughput greater than 600,000 gallons 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.

303.5 **Equipment Maintenance, Operation and Repair:** The owner or operator of a bulk gasoline plant or bulk gasoline terminal shall:

a. Maintain the equipment associated with the storage and loading of gasoline as follows:

(1) Leak free;

(2) Vapor tight; and

(3) In good working order.

b. 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 and observe the following time schedule in ending such exceedances:

(1) Concentrations at or above the lower explosive limit must be brought into compliance within 24 hours of detection.

(2) Leak concentrations exceeding 10,000 ppm but less than 50,000 ppm as methane for vapor collection/processing equipment subject to gas-tight standard shall be brought into compliance within 5 days of detection.

(3) Except as the Control Officer otherwise specifies, a leak source subject to Section 302.5(b)(1) or Section 302.5(b)(2) of this rule must be tested after presumed leak-correction within 15 minutes of recommencing use; if leak standards are exceeded in this test, the use of the faulty equipment shall be discontinued within 15 minutes until correction is verified by retesting.

~~301 GENERAL REQUIREMENTS FOR LOADING FACILITIES: All bulk terminals and plants must have submerged fill pipes in all tanks over 250 gallons (946 l) storing organic liquids, observe designated procedures and be equipped with applicable equipment as follows:~~

304 **GENERAL REQUIREMENTS FOR THE LOADING OF GASOLINE:** The owner or operator of bulk gasoline tank or bulk gasoline terminal shall comply with the following:

304.1 Loading of Gasoline into Storage Tanks:

a. Comply with Section 302.1 of this rule.

b. Verify the proper connection to a vapor balance system or other vapor loss control systems prior to loading gasoline 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 loading gasoline at facilities that utilize a vapor balance system.

d. Minimize spills during storage and loading of gasoline.

e. Clean up spills as expeditiously as practicable.

f. Cover all open containers of gasoline or gasoline soaked material when not in use.

g. Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

304.2 Loading of Gasoline into Cargo Tankers:

a. Verify that the cargo tanker has a current Maricopa County (MC) Vapor Tightness Test Certification Decal or a signed affidavit indicating an exemption from vapor tightness testing

b. Verify the proper connection to a vapor balance system or other vapor loss control systems prior to the loading of gasoline.

c. Verify the proper disconnection from a vapor balance system or other vapor loss control systems at the completion of loading gasoline.

d. Minimize spills during storage and loading of gasoline.

e. Clean up spills as expeditiously as practicable.

f. Cover all open containers of gasoline and gasoline soaked material when not in use.

g. Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

h. Purging of gasoline vapors and of JP-4 (jet petrol) vapors is prohibited.

~~301 GENERAL REQUIREMENTS FOR LOADING FACILITIES: The owner or operator of a gasoline bulk terminals and plants must have permanently installed submerged fill pipes in all gasoline storage tanks over 250 gallons (946 l), observe designated procedures and be equipped with applicable equipment as follows:~~

~~301.1~~ **304.3 Loading of Gasoline at Bulk Gasoline Terminals:** ~~No person shall load organic liquids having a TVP of 1.5 psia (77.5 mm Hg) or greater into any delivery vessel~~ An owner or operator of a bulk gasoline terminal shall load gasoline from a stationary storage tank at a bulk gasoline terminal if the following conditions are met:

a. ~~unless the vessel and the~~The owner or operator meets all the conditions in Section 304 of this rule; and

b. The gasoline cargo tank bears a current ~~pressure test~~ Maricopa County Air Pollution Vapor Tightness Certification decal issued by the Control Officer; and

b. The terminal uses a vapor collection/processing system which reduces the emissions of volatile organic compounds to not more than .08 pounds per 1000 gallons of such liquids ~~transferred~~loaded (10 grams per 1000 liters). Switch loading shall be subject to this standard. ~~The terminal owner or operator and the operator of the receiving vessel shall act to ensure that the vapor line is connected before such liquids are transferred.~~

~~301.2~~ **304.4 Bulk Gasoline Plant Tanks Over 250 Gallons (>946 L):**

a. ~~Transfer To~~ **Loading of Gasoline Into Bulk Gasoline Plant Tanks:** No person shall ~~transfer~~ load gasoline from a ~~delivery vessel~~ gasoline cargo tank into a bulk gasoline plant tank exceeding 250 gallons (946 l) capacity unless the ~~delivery vessel~~ gasoline cargo tank bears a current ~~county pressure test~~ Maricopa County Air Pollution Vapor Tightness Certification decal and uses a vapor balance system equipped with fittings which are vapor tight; or, alternatively, a vapor loss

control system is used which emits to atmosphere less than 0.6 pound of volatile organic compounds per 1000 gallons ~~transferred~~ loaded (72 grams per 1000 liters).

b. Loading From Bulk Gasoline Plant Tanks: No person shall ~~transfer~~ load gasoline from a bulk plant tank exceeding 250 gallons (946 l) into a ~~delivery vessel~~ gasoline cargo tank unless both the loading rack and ~~delivery vessel~~ gasoline cargo tank use a vapor balance system equipped with fittings which are vapor tight; or, alternatively, a vapor loss control system is used which emits to atmosphere less than 0.6 pounds of volatile organic compounds per 1000 gallons loaded (72 grams per 1000 liters).

~~302~~ **305 OPERATING REQUIREMENTS FOR VAPOR LOSS CONTROL DEVICES:** The owner or operator of a vapor loss control device subject to this rule shall operate the device and ~~organic liquid transfer~~ gasoline loading equipment as follows:

~~302.1~~ **305.1** Loading shall be accomplished in a manner that prevents gauge pressure from exceeding 18 inches of water (33.6 mm Hg) and vacuum from exceeding six inches of water (11.2 mm Hg) in the tank truck. Each owner or operator of a facility shall act to ensure that any vapor recovery system required by this Rule 351 is connected between the ~~delivery vessel~~ gasoline cargo tank and the storage tank during ~~all organic liquid transfers~~ loading of gasoline.

~~302.2~~ **305.2** Loading shall be accomplished in a manner that prevents overfills, fugitive liquid leaks or excess ~~organic liquid~~ gasoline drainage. Owners or operators of bulk gasoline plants and bulk gasoline terminals or operators of ~~delivery vessels~~ gasoline cargo tank shall observe all parts of the ~~transfer~~ loading and shall discontinue ~~transfer~~ loading if any leaks are observed. Measures shall be taken to prevent liquid leaks from the loading device when it is not in use, and to complete drainage before the loading device is disconnected. During loading ~~or unloading~~ operations, potential leak sources shall be vapor tight as demonstrated by the test procedure described in Section 501 of this rule.

~~302.3~~ **305.3** Loading operations which use vapor collection/processing equipment shall be accomplished in such a manner that the displaced vapor and air will be vented only to the vapor collection/processing system, which shall be operated gas-tight and in a manner such that the vapor processing capacity is not exceeded. Diaphragms used in vapor storage tanks shall be maintained gas-tight.

~~302.4~~ **305.4** Vapor ~~transfer lines~~ recovery hoses shall be equipped with fittings that are vapor tight and that automatically and immediately close upon disconnection. Vapor balance systems shall be designed to prevent any vapors collected at one loading rack from passing to another loading rack.

~~303 REPAIR AND RETESTING REQUIREMENT: Except as superseded by Division actions pursuant to the procedures of Rule 100, Section 501 ("Malfunctions"), the owner/operator of a vapor loss control device that exceeds the standards of this rule shall notify the Control Officer and observe the following time schedule in ending such exceedances:~~

~~303.1 Concentrations at or above the lower explosive limit must be brought into compliance within 24 hours of detection.~~

~~303.2 Leak concentrations exceeding 10,000 ppm but less than 50,000 ppm as methane for vapor collection/processing equipment subject to gas-tight standard shall be brought into compliance within 5 days of detection.~~

~~303.3 Except as the Control Officer otherwise specifies, a leak source subject to Sections 303.1 or 303.2 must be tested after presumed leak-correction within 15 minutes of recommencing use; if leak standards are exceeded in this test, the use of the faulty equipment shall be discontinued within 15 minutes until correction is verified by retesting.~~

~~304 EQUIPMENT MAINTENANCE AND OPERATING PRACTICES: All equipment associated with delivery and loading operations shall be maintained to be leak free, vapor tight and in good working order. Gasoline shall not be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation to the atmosphere. Purging of gasoline vapors and of JP-4 (jet petrol) vapors is prohibited.~~

~~305 EXEMPTIONS:~~

~~305.1 Less Than 120,000 Gallons Per 30-Day Period: At bulk plants built before October 2, 1978, vapor loss control specified in Section 301.2b is not required at the outloading rack when all of the following are complied with:~~

~~a. After April 6, 1992, the bulk plant loads less than 120,000 gallons (454,800 l) of gasoline into delivery vessels in any consecutive 30-day period. Any plant that becomes subject to all of the provisions of Section 301.2b by exceeding this threshold will remain subject to these provisions even if its output later falls below the threshold.~~

~~b. Keep current records of amount of gasoline loaded and keep them readily accessible to the Division upon request for at least three (3) years.~~

~~c. Load outgoing gasoline using submerged fill only.~~

~~d. The owners or operators of the bulk plant or the owners or operators of the delivery vessel shall observe all parts of the transfer and shall discontinue the transfer if any leaks are observed.~~

~~305.2 Opening Hatches: When VOC vapors from organic liquids are present within a non-exempt delivery vessel, authorized government agents as well as owners/operators and their contractors may open vapor containment equipment while performing operations required by Division rules or by other statutory entities, but shall be restricted as follows unless approved in advance by the Control Officer:~~

~~a. Wait at least 3 minutes after onloading is complete or delivery vessel has stopped before opening hatch or other vapor seal.~~

~~b. Reclose hatch or other sealing device within 3 minutes of opening.~~

~~c. Limit windspeed at opened hatch or other opened sealing device to not more than 3 mph (1.34 m/sec).~~

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 EQUIPMENT LEAKS:

401.1 The owner or operator shall also perform monthly inspections, while vapor is being transferred, for liquid and vapor leaks and for faulty equipment. In these monthly inspections detection methods incorporating sight, sound, smell and/or touch may be used.

401.2 A log book shall be used and shall be signed by the owner or operator at the completion of each monthly inspection for equipment leaks. A section of the log shall contain a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility.

401.3 Leak detection tests shall be conducted annually by the owner of each bulk loading facility or by a consultant, at the expense of the owner. Testing shall be done according to procedures in Section 501, except that EPA Method 21 shall be used to test for leaks from a vapor collection/ processing unit and its associated piping outside the loading area. Equipment shall conform to the specifications of those test methods cited in Section 504.2. Prior to testing, the owner shall notify the Control Officer of the date, time and location of the testing. The Control Officer or his representatives shall at their discretion observe the tests.

~~402 COMPLIANCE SCHEDULE: By September 30, 1995, the owner or operator of any loading facility which requires modification subject to a requirement of Section 300 of this rule shall submit to the Control Officer for approval an emission control plan and a schedule for achieving compliance with all requirements by April 30, 1996. The plan shall specify the date of completion of each major step leading to compliance.~~

402 GASOLINE STORAGE TANK INSPECTIONS:

402.1 ANNUAL INSPECTIONS OF EXTERNAL FLOATING ROOF TANKS: The owner or operator of any tank which uses an external floating roof to meet the vapor loss control 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 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.

402.2 **ANNUAL INSPECTIONS OF INTERNAL FLOATING ROOF TANKS:** The owner or operator of any tank which uses an internal floating roof to meet the vapor loss control requirements of this rule shall make the entire tank including the internal floating roof available for inspection prior to filling. It shall be made available for visual inspection through the manholes or roof hatches on the fixed covering on an annual basis. Roofs which practicably can be walked on shall annually be made available for hands-on inspection.

402.3 **FIVE-YEAR, FULL CIRCUMFERENCE INSPECTIONS:** the owner or operator of a floating roof tank of 20,000 gallons (75,700 l) or more storing gasoline shall make the primary seal envelope available for inspection by the Control Officer for its full length every five years. However, if prior thereto 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 working days prior to removal of the secondary seal. The owner or operator shall perform a complete inspection of the primary seal and floating roof, including measurement of gap area and maximum gap, whenever the tank is emptied for non-operational reasons or at least every five years, whichever is more frequent.

403 **OTHER AGENCIES' REQUIREMENTS:** Compliance with this rule does not relieve or otherwise affect a person'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 Weights and Measures, local fire department codes, and local zoning ordinances.

SECTION 500 - MONITORING AND RECORDS: In addition to any federal testing, monitoring and recording requirements, an owner or operator of a ~~gasoline~~ bulk gasoline plant or ~~gasoline~~ bulk gasoline terminal shall comply with the following:

501 **PROVIDING AND MAINTAINING MONITORING DEVICES:** An owner or operator who is required to use an approved emission control system to control particulate emissions shall

501.1 Provide an approved emission control system;

501.2 Properly install the system;

501.3 Properly operate the system;

501.4 Maintain the system in calibration and in good working order.

501.5 Install devices for indicating temperatures, pressures, loading rates, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained.

~~501~~ **502** **LEAK DETECTION - TEST PROCEDURE:** During loading into or unloading out of delivery vessels, the peripheries of all potential sources of leakage at the loading facility are checked with a combustible gas detector or organic vapor analyzer (OVA) as follows:

~~501.1~~ **502.1** **Pressure:** A pressure tap shall be placed in the loading facility's vapor control system, as close as possible to the ~~delivery vessel's~~ gasline cargo tank. The pressure shall be recorded periodically during testing, at least once every minute. Instantaneous maximum pressure shall be recorded either automatically or by visual observation. A pressure measurement device capable of measuring 20 inches (50.8 cm) of water pressure with a precision of 0.1 (2.5 mm) inch of water shall be calibrated. This device shall fit the tap and shall either be permanently installed or shall be kept available at all times at the facility.

~~501.2~~ **502.2** **Calibration:** Within 4 hours prior to monitoring the combustible gas detector or OVA shall be calibrated with 10,600 ppm propane by volume in air for a 50 percent lower explosive limit (LEL) response.

~~501.3~~ **502.3** **Probe Distance:** The probe inlet shall be one inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be one 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 inch (2.5 cm) of an actual or potential leak source, the closest practicable probe distance shall be used.

~~501.4~~ **502.4** **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 a potential or actual leak source, the probe shall be positioned to locate the point of highest meter response.

~~501.5~~ **502.5** **Probe Position:** The probe inlet shall be positioned in the path of the vapor flow from a leak such that the central axis of the probe-tube inlet shall be positioned coaxial with the path of the most concentrated vapors.

~~501.6~~ **502.6** **Wind:** Wind shall be blocked as much as possible from the space being monitored. The annual leak detection test required by Section 401 shall be valid only when wind speed in the space being monitored is 5 mph or less.

~~501.7~~ **502.7** **Data Recording:** The highest detector reading and location for each incidence of leakage shall be recorded along with the date and time.

~~503~~ **503** **RECORDS RETENTION:** Records and information required by this rule shall be retained for at least ~~three~~five years.

503.1 **VAPOR PRESSURE RECORDS:**

a. **Bulk Gasoline Plant:** An owner or operator of a storage tank located at a bulk gasoline plant that is subject to the provisions of this rule shall keep accurate records of the following:

i. The amount of gasoline stored in such tanks.

ii. The Reid vapor pressure ranges of each such liquid.

iii. These records shall be kept a minimum of five years.

b. **Bulk Gasoline Terminal:** An owner or operator of a storage tank located at a bulk gasoline terminal shall keep accurate records of the following:

i. The temperature of the contents of each affected tank located at bulk gasoline terminals shall be recorded at least weekly.

ii. The Reid vapor pressure of each shall be recorded at least once each month.

iii. These records shall be kept a minimum of five years.

503.2 **LEAK INSPECTION RECORDS:** The owner or operator of a bulk gasoline plant or bulk gasoline terminal shall keep a log documenting each leak inspection. The log shall include, but is not limited to the items listed in Sections 502.1, 502.2, 503.3, 502.5 and 502.5 of this rule.

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

b. Each monthly inspection shall include shall contain a list, summary description or diagram(s) showing the location of all equipment at the bulk gasoline plant or bulk gasoline terminal.

c. Each monthly inspection shall include any maintenance that occurred.

d. Each annual inspection shall include any maintenance that occurred.

e. These records shall be kept a minimum of five years.

f. 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.

~~502~~ **504** **COMPLIANCE INSPECTIONS:** The Control Officer, at any time, may monitor a ~~delivery vessel~~ gasoline cargo tank vapor collection system, a loading rack's vapor loss control devices, a loading facility or a vapor

collection/processing system for vapor leaks by the methods described in ~~Section 501~~ Section 502 of this rule or by applicable EPA Reference Methods specified in ~~Section 504~~ Section 505 of this rule.

~~504~~ **505** **COMPLIANCE DETERMINATION - TEST METHODS:** When more than one test method is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule. Copies of the code of federal regulations are available electronically at: http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR; at the Maricopa County Air Quality Department, 1001 N. Central Ave., Suite 125, Phoenix, AZ, 85004; or by calling (602) 506-6010 for information. ASTM standards are available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428, or from its website at www.astm.org.

505.1 EPA Test Methods:

a. EPA Method 2A - Direct Measurement of Gas Volume Through Pipes and Small Ducts.

b. EPA Method 2B—Determination of Exhaust Gas Volume Flow Rate From Gasoline Vapor Incinerators.

c. EPA Method 18 - Measurement of Gaseous Organic Compound Emissions by Gas Chromatography.

d. EPA Method 21 - Determination of Volatile Organic Compound Leaks.

e. EPA Method 25A - Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer.

e. EPA Method 25A - Determination of Total Gaseous Organic Concentration Using a Nondispersive Infrared Analyzer.

f. EPA Method 27 - Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure Vacuum Test.

g. Optical Gas Imaging: An owner or operator can choose to comply with the alternative work practice requirements in 40 CFR 40.18(i) instead of using the 40 CFR 60, Appendix A-7, Method 21 monitor to identify leaking equipment.

505.2 California Air Resources Board (CARB) TEST PROCEDURES:

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

506.3 ASTM

a. ASTM D323-15a "Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).

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

c. ASTM D4953-15 "Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method).

d. ASTM D5191-15 "Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method)."

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

~~504.1 Vapor Collection/Processing System: Control efficiency of a vapor collection/processing system shall be determined according to EPA Reference Method 25A or Method 25B subsequent to the Control Officer's approval of the test protocol. Leak tests to verify a gas-tight state of the equipment associated with the vapor collection/processing device, including the piping outside of the loading area, shall be conducted according to EPA Reference Method 21. Gas volume flow rates shall be determined by Method 2B for a thermal oxidizer; otherwise, by Method 2A.~~

~~504.2 Vapor Balance And Loading Systems: Vapor tightness shall be determined using the method described in Section 501 of this rule.~~

~~504.3 True Vapor Pressure shall be determined by ASTM Method 2879-83 and by temperature measurement under actual conditions using an instrument accurate to within ±1 degree Fahrenheit or ±0.5 degree Celsius. For purposes of recording and reporting, the Reid vapor pressure and the foregoing temperature determination may be used in conjunction with the method of American Petroleum Institute Bulletin 2517, February, 1980, to determine true vapor pressure, unless the Control Officer specifies ASTM Method 2879-83.~~

~~504.4 Reid Vapor Pressure shall be determined by ASTM Method D 323-82 or by ASTM Method D 5191~~