



Department of
**Environment &
Conservation**

**TN Division of Air Pollution Control
Permit-by-Rule Compliance Manual
For Gasoline Dispensing Facilities**

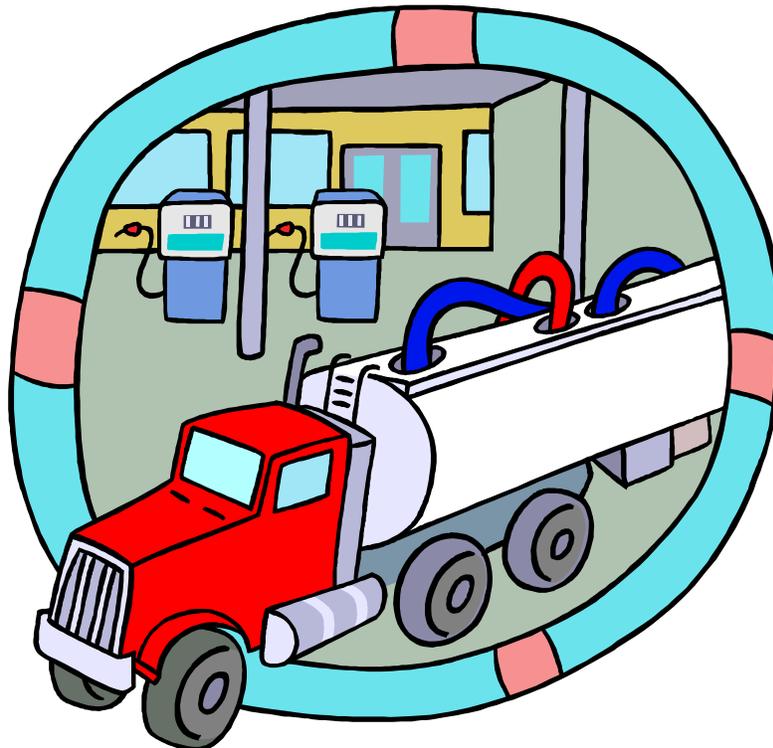


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Introduction

The TN Division of Air Pollution Control (DAPC) has implemented Permit-by-Rule for Gasoline Dispensing Facilities (GDF) in order to make it easier, faster, and more cost effective for both the GDF and DAPC. What this means is no written permit will be issued to sources covered under a Permit-by-Rule. Instead, a Notification of Intent would be submitted and a Notification of Authorization is received. See the Permit-by-Rule section on page 16 for more details. This manual is a tool to help GDF understand how to comply with the rule by providing details as to what a GDF needs to do to be in compliance. It does not cover Underground Storage Tank rules or any other rules from other regulatory agencies that may affect a GDF.

For the UST Operator's Manual, forms, and other guidance on complying with UST rules, please visit these websites:

<http://www.tn.gov/environment/article/ust-educational-tools>

<http://www.tn.gov/environment/article/ust-forms-and-guidance>

Tennessee Small Business Environmental Assistance Program

The 1990 Clean Air Act Amendments established the framework for new regulatory permitting, operating, and control requirements that affected many small businesses. To help small businesses understand these new regulations, the federal legislation required each state to establish an assistance program. Tennessee's Small Business Environmental Assistance Program (SBEAP) was established in 1993 to assist small businesses.

To effectively meet the compliance assistance needs of small businesses, the SBEAP addresses all environmental media (air, land, and water). The program provides free, confidential, technical assistance on questions regarding regulations, compliance, and other environmental concerns.

The SBEAP serves as a liaison between the regulatory agency and the small business. The SBEAP does **not** have regulatory enforcement authority. Confidentiality is maintained when representing the interest of a small business. The types of assistance provided through the SBEAP include:

- Informing businesses of regulatory requirements that apply to them and the dates those requirements apply
- Working with small businesses to understand the regulations affecting them and assist them with achieving compliance
- Develop materials such as this manual and present workshops on environmental regulations and how to comply with those regulations.

How to contact us

You can contact the SBEAP by mail, email, or through our toll free hotline:

Mail: Tennessee Department of Environment and Conservation
Small Business Environmental Assistance Program
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Ave., 2nd Floor
Nashville, TN 37243

Email: BGSBEAP@tn.gov

Hotline: 1-800-734-3619

The SBEAP website at <http://www.tn.gov/environment/section/sbeap-small-business-environmental-assistance> contains specific information about several industry sectors and provides a resource for small businesses looking for assistance.

Definitions and Explanations of Abbreviations

Average Monthly Throughput (AMT): The total volume of **gasoline** that is loaded into, or dispensed from, all gasoline storage tanks at each **GDF** during a month. Monthly throughput is calculated by summing the volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the current day, plus the total volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the previous 364 days, and then dividing that sum by 12.

Listed Counties: Anderson, Blount, Carter, Cheatham, Davidson, Dickson, Fayette, Hamilton, Hawkins, Haywood, Jefferson, Knox, Loudon, Marion, Meigs, Montgomery, Putnam, Robertson, Rutherford, Sevier, Shelby, Sullivan, Sumner, Tipton, Unicoi, Union, Washington, Williamson, and Wilson Counties.

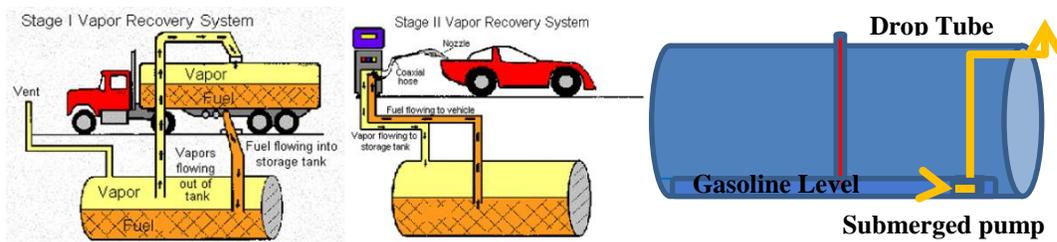
Gasoline: Any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals (4.003 psi) or greater, which is used as a fuel for internal combustion engines. This includes fuels such as E-85 but excludes diesel.

Gasoline Dispensing Facility (GDF): Any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, non-road vehicle, or non-road engine, including a non-road vehicle or non-road 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 vehicle, lawn equipment, boats, test engines, landscaping equipment, generators, pumps, and other gasoline-fueled engines and equipment.

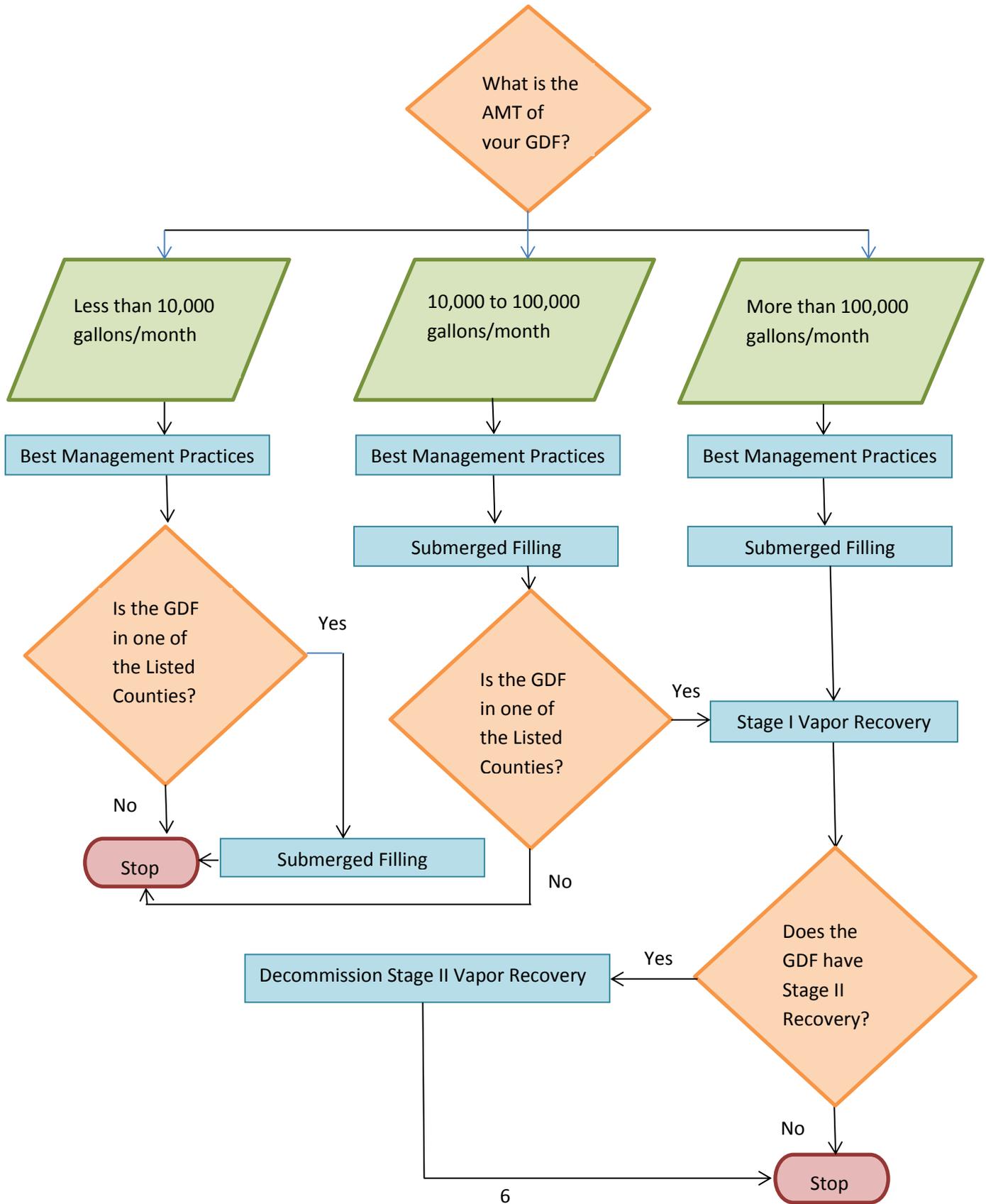
Stage I Vapor Recovery System: means a combination of pipes and hoses that create a closed system between the vapor spaces of an unloading gasoline cargo tank and a receiving storage tank such that vapors displaced from the storage tank are transferred to the gasoline cargo tank being unloaded. (see first picture below)

Stage II Vapor Recovery System: means a combination of pipes and hoses that capture displaced vapors from the vehicle being fueled at the dispenser. (see second picture below)

Submerged Filling: The filling of a gasoline storage tank through a fill pipe equipped with a drop tube whose discharge is below the gasoline level in the tank and is no more than the applicable distance specified from the bottom of the tank. Bottom filling of gasoline storage tanks is included in this definition. The applicable distance may be different based on where in the state the tank is located (see third picture below)



How to determine what general Air Pollution rules affect my GDF



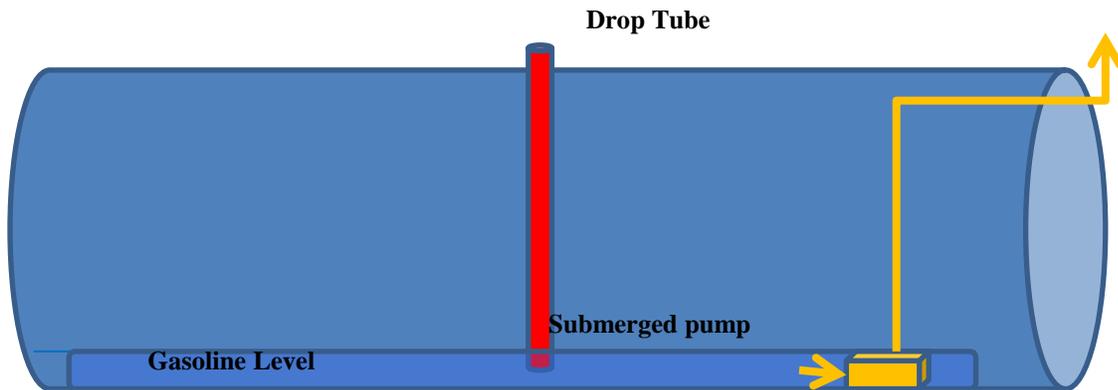
Best Management Practices

Regardless of the AMT for your GDF, you will need to use Best Management Practices. These practices are basic steps that should be common to all GDFs. They are:

1. Must operate and maintain your GDF, including associated pollution control and monitoring equipment, in a manner consistent with safety and good pollution control practices for minimizing emissions.
2. Maintain records of average monthly throughput. These records must be available within 24 hours of a request. These records should show what the AMT is and the threshold level of the GDF (less than 10,000 or 10,000 to 100,000). Monthly throughput records should be kept **at least five years**. Those over 100,000 gallons/month would not need to keep records of AMT for this rule as they are already operating under the highest level of requirements.
3. Maintain good housekeeping practices. These practices are to limit vapor releases and include, but are not limited to, the following:
 - a. Minimize gasoline spills
 - b. Clean up spills as soon as practicable
 - c. Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use.
 - d. Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

Submerged Filling

Submerged filling is where the fill or drop tube that the cargo truck delivers the gasoline into the storage tank through extends far enough down into the tank so that its bottom opening is under the level of gasoline already inside the tank.



In the above illustration, the red tube is a drop tube inside the fill pipe where the cargo truck connects in order to deliver gasoline to the storage tank. The tube extends far enough down that the bottom opening is under the existing level of gasoline. Submerged filling prevents splashing which creates a larger amount of gasoline vapors which would in turn increase emissions. The more emissions that are created, the more gasoline is lost in the form of vapors. Submerged filling applies to both USTs and ASTs, unless they have a capacity of less than 250 gallons.

Submerged filling is required if either of the following applies:

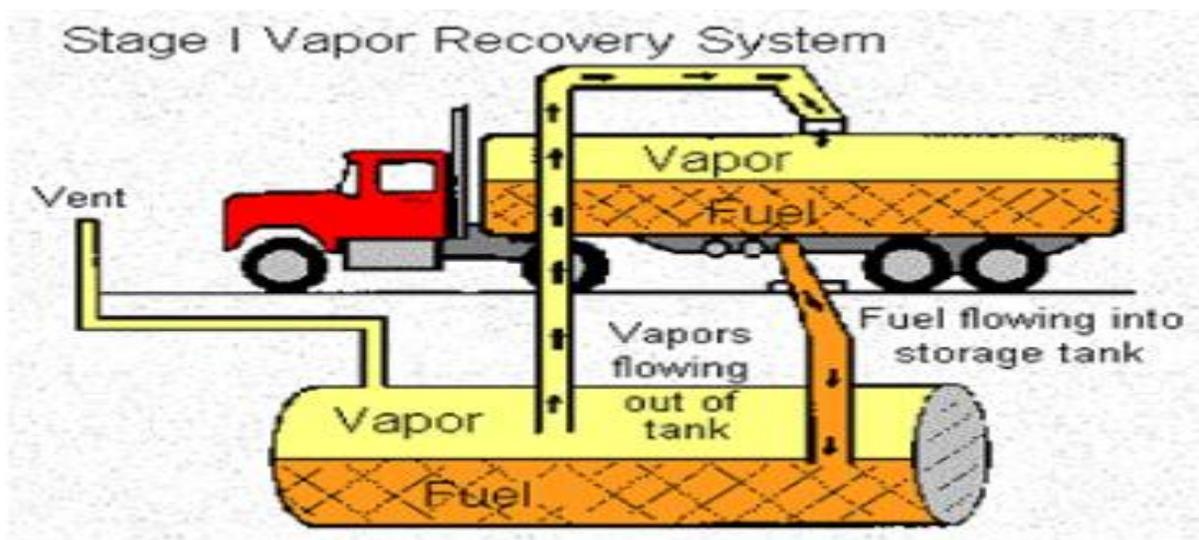
1. If the AMT for the GDF is 10,000 gallons/month or more.
2. If the GDF is located within one of the Listed Counties. All AMT thresholds in the Listed Counties must use submerged fill.

There are required distances that submerged filling should meet. The distance is measured from the bottom opening of the fill pipe or drop tube to the bottom of the storage tank. If you do not know the distance, the contractor that installed your tanks may be able to help. When putting in new tanks, it would be a good idea to get this information from the contractor for your records. The three distances for submerged filling are:

1. If the fill pipe was installed on or before November 9, 2006, it should be no more than 12 inches from the bottom of the tank.
2. If the fill pipe was installed after November 9, 2006, it should be no more than 6 inches from the bottom of the tank.
3. You can demonstrate that the liquid level in the tank is always above the entire opening of the fill tube. Documentation showing this must be made available for inspections.

Stage I Vapor Recovery System

Stage I Vapor Recovery means a combination of pipes and hoses that create a closed system between the vapor spaces of an unloading gasoline cargo tank and a receiving storage tank such that vapors displaced from the storage tank are transferred to the gasoline cargo tank being unloaded.



Stage I Vapor Recovery Systems are designed to capture the vapors that pushed out of the tank when the cargo truck is filling the storage tank. These vapors are pulled into the cargo truck where they can later be condensed back into liquid fuel. The Stage I Vapor Recovery System in this way helps lessen the release of gasoline vapors and enables the recovery of gasoline that has become a vapor. The illustration above shows the basic operation of a dual-point Vapor Recovery system.

Stage I Vapor Recovery Systems are required if either of the following applies to your GDF:

1. If the AMT for the GDF is 100,000 gallons/month or more.
2. If the GDF is located within one of the Listed Counties and the AMT for the GDF is 10,000 gallons/month or more.

There are some exceptions. Certain gasoline storage tanks are not required to have Stage I Vapor Recovery Systems, even if they are present at a GDF where the AMT would otherwise require Stage I Vapor Recovery Systems. These are gasoline storage tanks that:

1. Have a capacity of less than 250 gallons and were constructed after January 10, 2008.
2. Have a capacity of less than 2000 gallons and were constructed before January 10, 2008.
3. Are equipped with a floating roof or the equivalent.

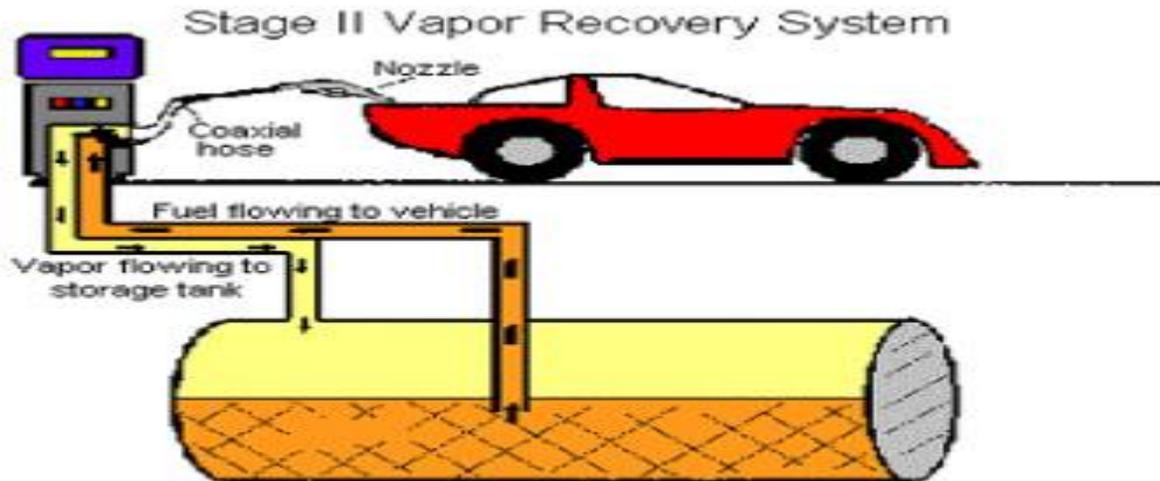
Stage I Vapor Recovery Systems should meet certain design criteria:

1. All vapor connections and lines must be equipped with closures that seal on disconnect.
2. The vapor line from the storage tank to the cargo tank shall be vapor tight.

3. The system will be designed so that the pressure in the cargo truck does not exceed 18 inches of water pressure or 5.9 inches of water vacuum during gasoline transfers.
4. The vapor recovery and product adaptors, and the method of connection to the delivery elbow, shall be designed to prevent the over-tightening or loosening of fittings during normal delivery operations.
5. If a gauge well separate from the fill tube is used, it must extend to the same distance as with submerged filling.
6. Liquid fill connections for all systems must be equipped with vapor tight caps.
7. Pressure/vacuum vent valves must be installed on the storage tank vent pipes. The vent valve must meet certain pressure specifications. Installer or tester should be familiar with these specifications.
8. The system must meet certain static pressure performance requirements. The installer or tester should be familiar with these specifications.
9. **New or reconstructed GDFs or storage tank constructed after November 9, 2006**, must use a dual-point Vapor Recovery system as opposed to a single point system. Some older GDFs and tanks may still use a coaxial or swivel connection, but if the storage tank is replaced, a dual-point system will need to be used.

Stage II Vapor Recovery Systems

Stage II Vapor Recovery System means a combination of pipes and hoses that capture displaced vapors from the vehicle being fueled at the dispenser.



Starting July 14, 2016, Stage II Vapor Recovery Systems will be able to be decommissioned and removed. They will not be a required emission control for new or reconstructed GDFs. The previous requirement for Stage II Vapor Recovery Systems only applied to the five county area of Davidson, Rutherford, Sumner, Williamson, and Wilson Counties. Davidson County has a local program, so GDFs in Davidson County should contact the Davidson County Air Pollution Division for information.

GDFs that have a Stage II Vapor Recovery System will have until July 14, 2019, to decommission and remove the Stage II System. The decommissioning will need to follow the Petroleum Equipment Institute (PEI) guidance, "[Recommended Practices for Installation and Testing of Vapor Recovery Systems at Vehicle Fueling Sites, PEI/RP300-09](#)". Whoever does the decommissioning should be familiar with the process outlined in the guidance.

Until such time that a GDF with a Stage II Vapor Recovery System decommissions the system, they will need to continue to operate it according to the rules that required the system.

For decommissioning notification, we will be applying Operational Flexibility as a standard method for GDFs to notify APC. There is not a standard form for this, but some basic information is required, similar to a Performance Test. The information required is as follows:

- Location information of the facility
- Contact information of the responsible official or technical contact
- Change proposed (in this case, decommissioning of Stage II)
- Date when decommissioning will occur
- Pollutants emitted that are affected by the change (in this case, VOCs from gasoline vapor)
- Application requirements (in this case, State of TN rules 1200-03-18-.24(2)(b-d))

- And the statement that the change would not result in emissions exceeding the emissions allowable under their existing operating permit.

This notification would be required 7 days prior to the decommissioning as per Operational Flexibility found in 1200-03-02-.01(1)(aa)4 of the TN APC rules. Calculations of the emission change should not be required due to a previous determination and calculations developed by APC over the development of the rule change. This information can be supplied via email or direct mail to APC. The email address is Air.Pollution.Control@tn.gov. APC's mailing address is:

State of Tennessee
Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243

Increasing Average Monthly Throughput to a new Threshold

The previous sections have dealt with the requirements for a particular threshold. When permitted, your GDF will be within a specific threshold category. However, an increase in the AMT may place your GDF into a new category and you may have new requirements to meet. If this occurs, the GDF will have three years to meet the new requirements, including installing any necessary equipment. However, the reverse is not true. If you start in a higher threshold category such as 100,000 gallons/month, the GDF must continue to operate by those requirements even if the AMT falls below 100,000 gallons/month.

Testing and Monitoring

Testing and monitoring of Stage I Vapor Recovery Systems are required in order to show that they continue to meet the standards. Testing is required at the time of installation and every three years afterwards. Test results should be kept for a period of five years.

When planning a test (also known as a performance test), notify DAPC 60 days prior to the test. A simple letter or email indicating the facility location, the date, and the test plan will suffice.

All test results must be reported to DAPC within 180 days of the test.

The tests required for Stage I Vapor Recovery Systems are:

1. Leak rate and cracking pressure tests:
 - a. California Air Resources Board Vapor Recovery Test Procedure TP-201.1E – Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves.
 - b. Or an alternative test method that has been approved by meeting specific alternative test method requirements.
2. Static pressure performance tests:
 - a. 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.
 - b. Or using Bay Area Air Quality Management District Source Test Procedure ST-30 – Static Pressure Integrity Test – Underground Storage Tanks
 - c. Or an alternative test method that has been approved by meeting specific alternative test method requirements.

If you use a Stage I system not described as in the rule (summarized in section **Stage I Vapor Recovery Systems** on page 10), you must show that it is equivalent by conducting additional tests. Namely:

1. Demonstrate that the Vapor Recovery system achieves 95% reduction using California Air Resources Board Vapor Recovery Test Procedure TP-201.1 – Volumetric Efficiency for Phase I Vapor Recovery Systems
2. Document the test to determine alternative acceptable values for the leak rate, cracking pressure, and the static pressure performance requirements.
3. This is in addition to the above listed tests.

Recordkeeping and Reporting

There are several records that a GDF must maintain and potentially report to DAPC.

The records to be kept are:

1. Records of gasoline throughput in order to determine AMT.
 - a. These records can either record daily amounts of gasoline sold or received. It is recommended that once a method is chosen, do not switch to the other method. This allows for a consistent manner in which the records are kept.
 - b. Calculate AMT by summing the volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the current day, plus the total volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the previous 364 days, and then dividing that sum by 12.
2. Records of all performance tests conducted.
3. Records of the occurrence and duration of each malfunction of operation (i.e. process equipment such as the pumps) or the air pollution control and monitoring equipment (such as the Stage I Vapor Recovery System).
 - a. If there is a malfunction, record the actions taken to minimize emissions and what was done to fix the malfunction.

All records should be kept for five years.

Reports to be sent to DAPC are:

1. The results of any performance tests within 180 days of the test.
2. By March 15 of each year, the number, duration, and description of each malfunction that occurred in the previous year. Include a description of what was done to fix the malfunction. If there were no malfunctions, a report is not necessary.

The AMT record can become confusing if simple records are not kept. Some recommendations on how to keep this record are to use a spreadsheet program such as Excel or a physical calendar. The required calculation should have a running total of gasoline dispensed or received over a year's time. Then when the same date comes back around on the calendar, subtract the previous year's amount (for the same date) and then add the current day's amount. Finally, divide the new total by 12 to arrive at the Average Monthly Throughput. For example, on June 1st of 2015, 1340 gallons of gasoline were dispensed.

Between June 1, 2015 and May 31, 2016 180,000 gallons of gasoline were dispensed. On June 1, 2016, 1500 gallons of gasoline were dispensed. To show how the calculation goes, the steps are:

1. $180,000 \text{ gallons} - 1340 \text{ gallons} = 178,660 \text{ gallons}$
2. $178,660 \text{ gallons} + 1500 \text{ gallons} = 180,160 \text{ gallons}$
3. $180,160 \text{ gallons} / 12 = 15,013 \text{ gallons/month}$

In the example, the AMT for this GDF on June 1, 2016, would be 15,013 gallons/month. This record and calculation will need to be determined on a daily basis. An advantage to this method is it will provide a more even AMT and smooth out any spikes that may push a GDF into a new AMT threshold.

Gasoline Delivery Cargo Trucks

Gasoline delivery cargo trucks also have requirements under this rule. The cargo truck unloading at a GDF must comply with the following:

1. All hoses in the Vapor Recovery system are properly connected.
2. The adapters or couplers that attach to the vapor line on the storage tank have closures that seal upon disconnect.
3. All vapor return hoses, couplers, and adapters used in the gasoline delivery are vapor-tight.
4. All tank truck vapor return equipment is compatible in size and forms a vapor-tight connection with the Vapor Recovery equipment on the GDF storage tank.
5. All hatches on the tank truck are closed and securely fastened.
6. The filling of storage tanks at a GDF shall be limited to unloading from vapor-tight gasoline cargo tanks. Documentation that the cargo tank meets the requirements shall be carried with the cargo tank.

Cargo tanks (i.e. cargo tankers) must conduct annual certification testing. The results of these tests must be kept with the tank. If preferred, only the most recent test has to be kept with the tank, but the other 4 years of tests should be kept at a central office for easy access in the event of a request by an inspector.

Notifications

There are three notifications that are required at various times. These notifications are:

1. An Initial Notification, required when the GDF becomes subject to submerged filling or Stage I Vapor Recovery system requirements.
2. A Notification of Compliance Status, required within 60 days of being in compliance with the requirements.
3. A Notification of Performance Test, submitted 60 days prior to conducting the test.

The Initial Notification and Notification of Compliance Status should be submitted to both EPA Region IV and TN DAPC. There is no official form for these notifications, but an example form can be found on the SBEAP website (<http://www.tn.gov/environment/topic/sbeap-gasoline-dispensing-facilities>). You do not have to use the examples, but they show what information is necessary to be submitted.

In most cases, as a GDF must be in compliance with the requirements upon startup of a new or reconstructed facility, the Notification of Compliance Status may be the only required notification. If an existing GDF increases their threshold to a new category, the GDF should submit an Initial Notification when the threshold is crossed. Then within 60 days of meeting the new requirements, the Notification of Compliance Status should be submitted.

The Performance Test Notification was discussed in the section on **Testing and Monitoring**.

Permit-by-Rule

GDFs are able to utilize Permit-by-Rule. What this means is that they have the option to submit a Notice of Intent, which is essentially replacing the current permit application process for sources that are able to use Permit-by-Rule. DAPC will then issue a Notice of Authorization in place of a written permit. This Notice of Authorization will act as both a construction and an operating permit.

As there will be no written permit issued, this manual was developed as a tool to help GDFs know what they should do to be in compliance with the air rules that affect their facilities. The Permit-by-Rule is planned to be easier, faster, and more cost effective for all parties. It may also reduce violations as a large number of violations are related to facilities not applying for a permit, especially an operating permit following completion of construction. Go to the following website for more on Permit-by-Rule: www.tn.gov/environment/article/sbeap-permit-by-rule

Notifications, reports, and Notice of Intent that are to be sent to the DAPC can be sent by mail or email using these addresses:

Mail: Tennessee Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Ave., 15th Floor
Nashville, TN 37243

Email: Air.Pollution.Control@tn.gov