TCEQ REGULATORY GUIDANCE Small Business and Environmental Assistance Division RG-475e • Revised April 2011

Petroleum Storage Tank Spill and Overfill Prevention

A guide for owners and operators of underground storage tanks (USTs)

Introduction

This is a general guide to laws and regulations about underground storage tanks and an aid in minimizing potential risks; it does not replace those laws and regulations, which take precedence over any information contained herein. If your tank system is located in Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, or Williamson County, additional requirements related to the protection of the Edwards or the Trinity Aquifer may apply (Title 30, Texas Administrative Code [30 TAC], Chapters 213 and 214). In addition to the laws and TCEQ rules, local governments and other state and federal agencies may have rules that apply. The owner and operator are responsible ensuring compliance with all applicable laws and regulations.

How can releases from USTs be prevented?

The TCEQ has adopted technical regulations requiring owners and operators of UST systems to prevent spills and other releases, overfills, and corrosion. Spills and overfills result mainly from bad filling practices. In addition, unprotected steel tanks and piping can corrode and release product through holes caused by corrosion of the metal tank or piping. See module RG-475f, *Protecting Petroleum Storage Tanks against Corrosion*, for additional information. Regulations pertaining to spill and overfill prevention located in 30 TAC 334.51 list the equipment required as well as defining proper fill procedures, maintenance, and record keeping.

What is spill and overfill prevention? What is its purpose?

Spill and overfill prevention relies on equipment designed to prevent releases to the environment during filling of a UST. The purpose of spill and overfill prevention is to prevent cleanup of contamination that may occur when the UST is filled. Overfills and repetitive spills can result in significant cleanup costs.

What are my options?

Three pieces of equipment are required to meet spill and overfill prevention requirements: a tight-fill fitting, a spill container, and an overfill device.

- **Tight-fill fitting:** The fill pipe of the tank must be equipped with a tight-fill fitting, adapter, or similar device to ensure a liquid-tight seal during the transfer of product into the tank. Such a fitting between the delivery hose and the UST's fill port reduces the likelihood of a leak.
- **Spill-container equipment:** The fill tube must either be fitted with a spill bucket or enclosed in a liquid-tight manway, riser, or sump. The spill bucket must be designed to minimize entry of surface water, groundwater, or any other substance. Facilities with vapor-recovery equipment may have a vapor-tight drain valve. Spill-containing equipment catches any product from the delivery hose and is located at ground level, surrounding the tight-fill fitting. Spill buckets should be kept clear of debris and water at all times.
- **Overfill-prevention device:** Each tank is required to have a valve or other device that will prevent overfilling of the tank. There are three basic options:
 - 1. automatic shutoff
 - 2. automatic flow restrictor
 - 3. audible alarm with flow restrictor or automatic shutoff

What are spill buckets?

A spill bucket, also known as a *spill-containment manhole* or a *catchment basin*, is a bucket sealed around the fill pipe (see Figure 1). Try to keep water out of spill buckets—some can collect enough water and sediment, along with spilled product, to make draining this mixture into the tank unwise. If that happens, pump out the spill bucket and dispose of the liquid properly. If the liquid contains fuel or chemicals, it could be considered a hazardous waste.



Figure 1. Spill bucket.

Manufacturers equip spill buckets with either pumps or drains to remove liquid. See Figure 2.



Figure 2. Spill bucket with a drain valve.

What is an automatic shutoff?

An **automatic shutoff** stops flow of product into the tank at a preset level (never more than 95 percent of the tank volume). The most common shutoff devices have a flapper or float (Figure 3) which rises as the tank is filled. Then, when the liquid reaches the preset level, the flapper or float shuts off the flow (Figure 4). The shutoff is most commonly installed in the drop tube.





Figure 3. Automatic shutoff device with the float down and the fill valve open.

Figure 4. Automatic shutoff device with the float up and the fill valve closed.

What is an automatic flow restrictor?

An **automatic flow restrictor** must restrict flow to the tank above a preset level which never exceeds 90 percent of the volume of the tank. A ball-float valve (Figures 5, 6), the most common flow restrictor, is usually installed in the vent line or in a separate, dedicated portal.



Figure 5. Ball-float valve with the ball at the bottom of the cage and the vent line open. The product is below the cage.

Figure 6. The **ball-float valve** rises as the product rises. The ball eventually seats in the vent line and restricts vapor flowing out of the vent before the tank is full.

Can I use an audible alarm as an overfill device?

An **audible alarm** that is emitted when the level reaches 90 percent of the tank's volume may be used as an overfill device if used in conjunction with either a flow restrictor or shutoff set at 98 percent of the tank volume.



Figure 7. Overfill alarm.

How often do I need to inspect spill containers?

Effective October 30, 2008, all spill containers, regardless of their date of installation, need to be inspected to ensure they are liquid tight at least once every 60 days. The owner or operator should make sure that the spill container's sides and bottoms and any penetration points are liquid tight. Remove and properly dispose of any liquids or debris found during the inspection within 96 hours of discovery. To document compliance with this requirement, keep a logbook with the date of inspection, the result, and name of the person performing the inspection. A sample inspection form is included with this document.

What records do I need to keep?

Generally you need to keep records to document you're operating your UST system in compliance with applicable rules, including 60-day inspection records. Installation records documenting the installation should be kept as long as the equipment is in use.

Where do I find more information?

The complete requirements for spill and overfill prevention may be found at 30 TAC 334.51.

See the EPA publication *UST Systems: Inspecting and Maintaining Sumps and Spill Buckets,* EPA 510-R-05-001

Search for TCEQ publications online at <www.tceq.texas.gov/publications>.

For confidential environmental compliance assistance for small businesses and local governments, contact Small Business and Local Government Assistance via the hotline at 800-447-2827 or online at <www.TexasEnviroHelp.org>.



60-Day Spill-Container Inspection

If you have questions on how to complete this form or about the Petroleum Storage Tank (PST) program, please contact Small Business and Local Government Assistance at its hotline, 800-447-2827 or online at <www.TexasEnviroHelp.org>.

Facility Information

Facility Name:	Facility ID No.:
Street Address:	City, State, Zip:

Instructions

- This form may be used to document compliance with the 60-day inspection requirement for spill containers.
- Inspect all spill containers to ensure that their sides, bottoms, and any penetration points are liquid tight.
- Remove and properly dispose of any liquids or debris found during the inspection within 96 hours of discovery.
- Keep this form on file for at least 5 years

Inspection Log for Spill Container

Date Inspected	Result	Inspector Initials	Comments, including date emptied

Date Inspected	Result	Inspector Initials	Comments, including date emptied