



# Environmental Update #7

Published by the Hazardous Substance Research Centers/South & Southwest Outreach Program

February 2002

## Understanding EPA's Underground Storage Tank Regulations

### What is an underground storage tank?

The U.S. Environmental Protection Agency (EPA) defines an underground storage tank (UST) as: “any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground.” An “UST system” is comprised of both the tank and the piping.

### What is *not* an underground storage tank?

EPA regulations specifically state that the following are not considered USTs:

- farm and residential tanks of 1,100 gallons or less capacity used for noncommercial motor fuel storage;
- heating oil tanks as long as they are used to heat the premises only;
- septic tanks;
- pipeline facility (including gathering lines);
- surface impoundment, pit, pond, or lagoon;
- stormwater or wastewater collection system;
- flow-through process tank;
- liquid trap or associated gathering lines directly related to oil or gas production or gathering operations; and
- a storage tank situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

State, territory, county or local requirements may apply to the above types of tanks.

### How many USTs are there nationwide?

According to the EPA, there are about 900,000 active federally regulated USTs buried at over 300,000 sites nationwide. Nearly all of these USTs contain petroleum. More than half of the USTs are at sites operated by marketers who sell petroleum to the public, such as gas stations and convenience stores. Less than half of the USTs are at sites operated by nonmarketers such as federal, state, and local governments, schools, motor pools, and fleet service operators.

### What is the problem with USTs?

UST systems can cause environmental, safety, health and financial problems. Leaking USTs (LUSTs) can contaminate groundwater, surface water, surface soils and subsurface soils. Over 370,000 confirmed releases have been reported with about half affecting groundwater quality. Fumes from leaks can cause explosions or fires, and exposure to contaminated media can result in health concerns. Any investigation or clean-up of contaminants causes financial strain on responsible parties. Average cleanup costs from LUST sites are approximately \$125,000. Groundwater cleanup at some sites can easily exceed \$1 million.

## **What has the EPA done to reduce the environmental problems associated with UST systems?**

UST regulations were published in 1988 and are coded in 40 Code of Federal Regulations Parts 280 and 281 (accessible online at [http://www.access.gpo.gov/nara/cfr/cfrhtml\\_00/Title\\_40/40cfr280\\_00.html](http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr280_00.html)). The EPA's UST program has the following goals:

- prevent leaks and spills;
- find leaks and spills;
- clean them up;
- make sure owners can pay; and
- build state programs.

## **What UST systems do federal regulations cover?**

The Federal UST regulations apply only to USTs storing petroleum or containing hazardous substances identified as such by the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) except for those listed as hazardous wastes. The following are considered exclusions from 40 CFR Part 280 and as such are not regulated under the federal regulations:

- a UST system holding hazardous waste (regulated under Subtitle C of the Solid Waste Disposal Act);
- any wastewater treatment tank system that is part of a wastewater treatment facility governed under Section 402 or 307(b) of the Clean Water Act;
- equipment or machinery containing regulated substances for operational purposes (e.g., hydraulic lift tanks and electrical equipment tanks);
- UST system with a capacity less than 110 gallons;
- UST system containing a *de minimis* concentration of regulated substances; and
- emergency spill or overflow containment UST system that is expeditiously emptied after use.

## **What technical guidance for UST systems does the federal regulation include?**

The regulations summarized below are in accordance with federal UST regulations (40 CFR Part 280). Some states have been given authority by the EPA to manage their UST programs. Visit <http://www.epa.gov/swrust1/states/statcon1.htm> to find links to state or territory regulatory agencies. In addition to the federal regulations, other requirements may be imposed by states, territories, counties, and for localities.

In accordance with federal regulations, all UST systems must have release detection, spill and overfill prevention, and corrosion protection.

### ***Release Detection***

40 CFR Part 280 Subpart D requires owners and/or operators (O/O) to have release detection for tanks and piping. "Existing" UST systems (those installed on or before December 22, 1988), were required to implement a release detection method by December 22, 1993. "New" UST Systems (those installed after December 22, 1988) were required to implement a release detection method upon installation.

### ***Tank Release Detection***

There are two categories of tank release detection: inventory control and monthly monitoring. Inventory control must be used in conjunction with tightness testing. This method can be used for ten years after a tank has been installed or upgraded with corrosion protection, whichever is later. Inventory readings must be collected daily and reconciled monthly. A tightness test must be performed every five years after the tank has been upgraded or installed with corrosion protection. After the ten-year period, the O/O must change to a monthly monitoring method to comply with the tank release detection requirements.

Using a monthly monitoring method to meet the tank release detection requirements includes checking the tank for leaks at least once a month using one or a combination of the following methods:

- manual tank gauging;
- vapor monitoring;
- groundwater monitoring;
- automatic tank gauging;
- interstitial monitoring; and
- another approved method (including statistical inventory reconciliation [SIR]).

Each monthly monitoring method has specific requirements and/or limitations that must be considered when determining if a UST system is in compliance. Please note that manual tank gauging can be used as the sole method of leak detection for the life of the tank if it has a capacity of 550 gallons or less. Manual tank gauging can also be used if the tank's tightness is tested for 10 years after the tank is upgraded or corrosion protection is applied to tanks with a capacity of 2,000 gallons or less.

### ***Piping Release Detection***

The type of release detection required for piping depends on the type of piping system:

- suction piping that has only one check valve directly under the pump (also called "European") does not require *any* release detection;
- suction piping with a valve at the tank (also called "American") requires the use of either a monthly monitoring method (same methods as for tanks) or a tightness test every three years;
- pressurized piping requires an annual tightness test or a monthly monitoring method and the use of an automatic line leak detector (ALLD); and
- double-walled piping that is continuously monitored with a sensor and alarm does not require the use of an ALLD.

### ***Spill and Overfill Prevention***

"Existing" and "new" UST systems must have been upgraded to include spill and overfill prevention by December 22, 1998. Spill prevention, required if transferring more than 25 gallons at one time, must prevent the release of product when the transfer hose is detached. Typically a catchment basin is installed surrounding the fill pipe of the tank.

There are three methods for meeting the overfill prevention requirements:

- Equipment will automatically shut off flow into tank at 95 percent full;
- An alarm will alert the supplier when the tank is at 90 percent full; and
- The supplier will be alerted by creation of enough back pressure to restrict product flow into the tank.

Typically, a ball float valve, flapper valve, or an audio/visual alarm is added to meet the overfill prevention requirements.

### ***Corrosion Protection***

Corrosion protection must have been added to an "existing" UST system (any UST System installed prior to December 22, 1988) by December 22, 1998, by using one of the following methods:

- Internally coating a tank with a corrosion resistant substance (the coating must be inspected internally 10 years from installation and every five years thereafter), or
- Installing an impressed current system on the bare steel tank and piping.

Any UST system installed after December 22, 1988 ("new" UST system) must be a cathodically protected steel tank or composed of a non-corrodible material, such as fiberglass reinforced plastic.

### **What do I do if my tanks do not meet the upgrade requirements?**

By now, all UST systems must have release detection (1993), spill and overfill prevention (1998), and corrosion protection (1998). If an UST system does not meet the upgrade requirements, it should be closed immediately. If the UST system has been upgraded but is empty, the corrosion protection must be maintained. If the UST system has been upgraded and contains product, release detection requirements must be continuously met.

### **What is required if it is discovered an UST system is leaking?**

The O/O should report a suspected release to the regulatory authority within 24 hours. Typically, a tightness test and/or site check is conducted to confirm or resolve a suspected release. If the suspected release is confirmed, the O/O should report the confirmed release within 24 hours.

### **What is required to close an UST system?**

The O/O should notify the regulatory agency 30 days before they permanently close the UST system. Most states have requirements for submission of paperwork prior to closing an UST system, as well as for closure reporting after the system has been closed. The UST should be closed by following standard safety practices. If a product release is discovered during removal activities, the O/O must report it to the regulatory agency within 24 hours.

To obtain additional information about closing an UST system, contact the governing regulatory agency. In addition, the American Petroleum Institute (API) Bulletin RP 1604, "1987 Removal and Disposal of Used Underground Petroleum Storage Tanks, Recommended Practice 2nd Edition" may be helpful. This publication is available from:

American Petroleum Institute  
Publications and Distribution Section  
220 L Street, NW  
Washington, DC 20005  
202/682-8375

### **What should companies do to ensure that they are in compliance with federal UST regulations?**

Get "A Basic Checklist for USTs" published by the EPA Office of Underground Storage Tanks (OUST). OUST has a "Compliance Assistance" section on its web site that can be accessed at <http://www.epa.gov/swerust1/cmplastc/cap.htm>. In addition, states, territories, counties, and localities may have additional compliance assistance programs. It should be noted that states and EPA are committed to an enforcement strategy that will identify noncompliant USTs and issue penalties that can exceed \$11,000 a day.

### **Where can I go to find additional information?**

The Office of Underground Storage Tanks maintains a web site at <http://www.epa.gov/oust/>. This site can connect you to a variety of UST-related resources. You can also use a free EPA Hotline at 800-424-9346 to speak directly with people who can provide free compliance assistance materials and answer questions. In addition, state regulatory agencies are a great source of additional information.