

# Material Storage, Usage, and Public Reporting

Material storage and usage are regulated to protect rivers and streams, public health, and emergency responders from hazards associated with spills or other accidental releases of hazardous materials. Each of these reporting regulations are dependent upon certain kinds of “threshold” values such as volumes or weights of hazardous materials stored, processed, used, or released at/from a facility. Although most small print shops may not be affected by these rules, large printing operations may find that one or more of these apply to their facilities. The following regulations apply to material storage and usage:

## ***Spill Prevention Control and Countermeasure (SPCC)***

On average, the U.S. uses over 250 billion gallons of oil and petroleum products each year and imports an average of 114 billion gallons of crude oil and other petroleum products. Given the billions of gallons of oil being transported and stored in tanks throughout the country, the potential for an oil spill is significant.

Any oil spill can pose a serious threat to human health and the environment, requires remediation that extends beyond your facility's boundary, and results in substantial cleanup costs. Even a small spill can have a serious impact. A single *pint* of oil released into the water can cover **one acre** of water surface area and can seriously damage an aquatic habitat. It may take years for an ecosystem to recover from the damage caused by an oil spill. You may have to pay for cleanup operations that extend beyond your facility's boundary to affected offsite areas. EPA may levy heavy fines and penalties, especially if you were negligent

The U.S. Environmental Protection Agency (EPA) developed the Federal Oil Pollution

Prevention regulation to reduce environmental damage from oil spills. This regulation has two sets of requirements—the Spill Prevention Control and Countermeasure (SPCC) plan rule (an oil spill *prevention* program), and the Facility Response Plan (FRP) rule (an oil spill *response* program). You must comply with these requirements if you meet the applicability provisions set out in each rule.

EPA issued the Federal Oil Pollution Prevention regulation to prevent oil spills from reaching the navigable waters of the U.S. or adjoining shorelines and to prepare facility personnel in responding to oil spills. You may be subject to this regulation, if your facility drills for, produces, gathers, stores, processes, refines, transfers, distributes, or consumes oil. Under the SPCC rule, EPA requires you to implement measures that will *prevent and control* oil spills due to human operational error or equipment failure.

Under the FRP (facility response plan) rule, if an oil spill from your facility could cause “substantial harm” to the environment, you must *prepare and implement* an FRP that includes an assessment of response resources; a training log; a description of drills and exercises that allow for an expeditious response to an oil spill; and other elements that will reduce a spill's impact and severity.

You *must* comply with EPA's SPCC requirements (40 CFR 112.1 through 112.7) if both of the following conditions describe your facility operations. The first is that you own or operate a non-transportation-related fixed facility that could reasonably be expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines. The second is that your facility has:

- an aboveground oil storage capacity of more than **660** gallons in a single container; or

- a total aboveground oil storage capacity of more than **1,320** gallons; or
- a total underground buried storage capacity of more than **42,000** gallons

Note that if a tank has the requisite capacity, it doesn't matter whether the tank is filled to that capacity. The SPCC rule applies regardless of the tank's contents.

If your facility meets the SPCC criteria, you must prepare an SPCC plan and follow the other provisions of the SPCC rule. Plan to address three areas:

- operating procedures to prevent an oil spill
- control measures to prevent a spill from entering navigable waters
- countermeasures to contain, clean up, and mitigate the effects of any oil spill that affects navigable waters.

You *must* develop your plan within six months of the date you begin operations, and fully implement it within one year of starting operations. A registered Professional Engineer (PE) *must* certify the Plan. The PE's certification, however, does not relieve you of the ultimate responsibility for the plan. The cornerstone of the SPCC rule is the technical requirement to install structures and equipment designed to prevent the release of oil and its spread to surface waters. If installing these structures and equipment is impractical for reasons other than cost, you must develop an oil spill contingency plan and commit resources to control discharges.

**Note:** *When considering whether a spill from your facility can reach navigable waters of the U.S. keep in mind that the U.S. EPA considers almost all facilities to be in areas that can impact navigable waters. Facilities should also be aware that you should assess this impact regardless of any man-made devices such as dikes, walls or other secondary containment structures. For example, if used oil is stored inside a building, with adequate secondary containment to hold the entire contents of the tank, it is still subject to the SPCC requirement if its volume is greater than 660 gallons or totals more than 1320 gallons.*

The following Web sites are excellent resources for more information on the Federal Oil Pollution Prevention regulation and requirements:

<http://www.epa.gov/oilspill/spcc/index.htm>  
(compliance assistance guides)

<http://www.epa.gov/oilspill/spcc/sampln.pdf>  
(sample SPCC plan)

(see the fact sheet "Plan Now to Contain Your Oil Spills" provided in the appendix following this section)

**Note:** *Printers that generate used oil from their printing presses should limit the amount accumulated on site below the thresholds which would require SPCC reporting.*

## ***Superfund Amendments and Reauthorization Act (SARA)***

SARA created a program with two goals:

- to facilitate and promote planning for chemical emergencies at the state and local levels; and
- to provide information to the public about chemicals used, stored, or released to the environment in their communities.

**Community Emergency Response and Right to Know Act (CERCLA)** regulates the storage of materials above certain threshold levels and requires reporting to several agencies to facilitate emergency responses and also requires reporting on materials released in the environment or otherwise leaving a facility. CERCLA provides authority for the EPA to respond to a release or threat of a release of any pollutant or contaminant which may pose a potential threat to human health and/or the environment. One provision within the CERCLA regulations requires generators or facility owners to notify the National Response Center (NRC) when certain quantities of "hazardous substances" are released into the environment.

**Emergency planning and community right-to-know act (EPCRA)** is Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986. This legislation is sometimes referred to as SARA Title III, but more commonly as EPCRA. EPCRA has several levels of reporting:

- Emergency planning and reporting of accidental releases of chemical pollutants
  - Section 302-304 reporting
- Reporting of hazardous chemical inventories and toxic releases
  - Section 311 and 312 reporting
  - Section 313 reporting

*Note: EPA has prepared a consolidated list of chemicals, (each referenced by name and CAS number) for CERCLA and EPCRA reporting and the threshold planning quantities (TPQs) for each chemical that require reporting under each section requirement listed above. This list can be found at the following website:  
<http://www.epa.gov/ceppo/pubs/title3.pdf>*

The list does not include all chemicals subject to the reporting requirements in EPCRA sections 311 and 312 because of the sheer numbers of chemicals (any material with an MSDS.) Material safety data sheets (MSDS) must be developed under the OSHA Hazard Communication Standard (29 CFR 1910.1200) for any chemical that creates a physical or health hazard. There are over 500,000 products that satisfy this criteria.

### *Section 302 Extremely Hazardous Substances (EHSs)*

EPCRA section 302 requires the owner or operator of a facility that has any extremely hazardous substances (EHSs) present in amounts that exceed the chemical-specific threshold planning quantity (TPQ) to notify the State Emergency Response Commission (SERC) with jurisdiction for your facility. If your facility acquires a new EHS in excess of the TPQ, or if there is a revision to the list of EHSs and the facility has present a substance on the revised list in excess of the TPQ, the owner or operator of the facility is required to notify the SERC and the Local Emergency Planning Committee (LEPC) within 60 days after such acquisition or revision.

Additionally, if the TPQ is met, facilities with a listed EHS are subject to the requirements of EPCRA section 311 and 312 of Kansas Tier II reporting.

**Note:** The consolidated list presents the TPQ (in pounds) for section 302 EHSs (extremely hazardous substances, in the column following the CAS number.) For chemicals that are solids, there may be two TPQs given (e.g., 500/10,000). In these cases, the lower quantity applies for solids in powder form with particle size less than 100 microns, or if the substance is in solution or in molten form. Otherwise, the 10,000 pound TPQ applies.

The Kansas regulation and requirements for Tier II reporting can be found at: [www.kdhe.state.ks.us/pdf/regs/28-65.pdf](http://www.kdhe.state.ks.us/pdf/regs/28-65.pdf)  
Kansas businesses must use the Kansas Tier II reporting forms for Section 302 reporting. These forms and instructions are included in the appendix following this section and can be found at KDHE's Web site: [www.kdhe.state.ks.us/radiation/index.html#asbestos](http://www.kdhe.state.ks.us/radiation/index.html#asbestos)

*Section 303* requires owners or operators subject to section 302 to provide their LEPC with the name of a person who will act as the facility emergency coordinator. Additionally, 303 requires the owner or operator to promptly supply information to the LEPC upon request. The scope of the information request encompasses anything necessary for developing and implementing the emergency plan.

#### *Section 304 Accidental releases of chemical pollutants*

Releases and spills of reportable quantities (RQ) of CERCLA hazardous chemical and EHSs requires the owner or operator to immediately notify the appropriate governmental entities. The notification must be given to the SERCs for all states likely to be affected by the release and to the community emergency coordinators for the LEPCs for all areas likely to be

affected by the release. If the release occurs during transportation, the notice requirement shall be satisfied by dialing 911 or, in the absence of a 911 emergency telephone number, calling the operator and supplying the appropriate information. (See the KDHE official spill notification list in the appendix of this section.)

**Note:** Spills of hazardous substances must be reported to the appropriate authority if "reportable quantities" are spilled. These quantities range from 1 to 5,000 pounds of substances spilled within a 24-hour period. Reportable quantities are often found on the MSDS provided with the material. In many cases, local authorities require facilities to report smaller spills. The number for the U.S. EPA National Response Center is 800-424-8802. The 24-hour spill response number for the Kansas Department of Health and Environment (KDHE) is 785-296-0614.

#### *Section 311 Hazardous chemical inventory notification*

Section 311 inventory reporting requires the owner or operator of a facility using hazardous materials required to have an Material Safety Data Sheet (MSDS), to submit to the SERC, LEPC, and the local fire department, the MSDS(s) for each such chemical present in quantities equal to or greater than 10,000 pounds or the chemical-specific minimum threshold level.

The submission(s) must be made within three (3) months after the chemical has been brought on site. If the hazardous chemical is a listed EHS under section 302, the threshold for reporting is 500 pounds or the chemical-specific threshold planning quantity, whichever is lower. A revised MSDS shall be provided within 3 months following discovery by an owner or

operator of significant new information concerning an aspect of a hazardous chemical for which a MSDS was previously submitted. In addition, if a facility changes its inventory and a chemical becomes subject to these reporting requirements, the facility must provide the MSDS to the SERC, LEPC, and fire department within 3 months.

Section 311 reporting is also done on the Kansas Tier II form:

[www.kdhe.state.ks.us/radiation/index.html#asbestos](http://www.kdhe.state.ks.us/radiation/index.html#asbestos)

### *Section 312 Annual inventory reporting*

EPCRA requires facilities to submit an annual inventory of the hazardous chemicals stored on site, if threshold quantities are met. Facilities required to submit MSDSs under Section 311 are required to comply with this section for the chemicals they report under 311. The inventory form must be submitted on Tier II reporting forms. The form can be found on the Kansas Department of Health and Environment (KDHE) Web site at [www.kdhe.state.ks.us/radiation/index.html#asbestos](http://www.kdhe.state.ks.us/radiation/index.html#asbestos).

**Note:** *Section 312 Tier II reporting is to be submitted to KDHE, your local emergency response committee, and your local fire department. These forms contain more detailed information on the chemicals stored onsite and the locations of those chemicals at the facility. The Tier II form is an annual form due March 1.*

You must file a Kansas Tier II form if:

- you have at your facility more than 10,000 lbs of any chemical OSHA requires you to have a MSDS for; or
- you have either 500 lbs or the threshold quantity, whichever is smaller, of an extremely hazardous substance (EHS). Some common EHS include nitric acid, sulfuric acid, and ammonia.

Fees are assessed on facilities subject to 312 reporting. The facility fee calculation worksheet and instructions are included in the appendix of this section. The LEPC contacts and their addresses can be found at [www.ink.org/public/kdem/LEPC.htm](http://www.ink.org/public/kdem/LEPC.htm) And the addresses of local fire departments can be obtained by calling the State Fire Marshall's Office at 785-296-3401.

### *Section 313 Toxic release inventory reporting*

Begun in 1988, the Toxics Release Inventory (TRI) contains information on releases of nearly 650 chemicals and chemical categories from industries including manufacturing, metal and coal mining, electric utilities, and commercial hazardous waste treatment, among others. Under Section 313, facilities are required to report releases and other waste management methods/destinations of specifically listed chemicals such as transfers of toxic chemicals for waste management to off-site locations.

Facilities that meet *all three* of the following criteria are subject to EPCRA Section 313 (TRI) reporting:

- The facility is included in Standard Industrial Classification (SIC) Codes 10 (except 1011, 1081, and 1094), 12 (except 1241), 20–39, and 7389 (limited to facilities primarily engaged in solvents recovery services on a contract or fee basis); and other select industries.
- The facility employs 10 or more full-time employees or full-time employee equivalents (i.e., a total of 20,000 hours or greater; see 40 CFR 372.3).
- The facility *manufactures* (defined to include importing), *processes*, or *otherwise uses* any EPCRA section 313 chemical in quantities greater than the established threshold in the course of a calendar year. Executive Order 13148 extends TRI reporting requirements to federal facilities, regardless of their SIC code.

On October 29, 1999 EPA published a final rule under section 313 of EPCRA, which lowers TRI reporting thresholds for persistent bioaccumulative toxic (PBT) chemicals and adds certain other PBT chemicals to the TRI list. The current EPCRA section 313 reporting thresholds are 25,000 pounds for the manufacture or processing of a chemical and 10,000 pounds for otherwise used of the chemical. Believing these thresholds inadequate to protect public health by providing important information about the quantities of PBT chemicals which enter their communities from local industrial facilities, EPA lowered the existing thresholds to 10 and 100 pounds for toxic PBTs.

***Note:** The reporting threshold for lead was lowered to 100 pounds under the new PBT rule, for lead manufactured, processed, or otherwise used which may affect some linotype printing operations. For more information on PBT TRI reporting:  
[www.epa.gov/tri/lawsandregs/pbt/pbtrule.htm](http://www.epa.gov/tri/lawsandregs/pbt/pbtrule.htm)*

Some of the data that must be reported include the following:

- how much of each chemical was released and to what environmental media
- how much was disposed of, treated, recycled, or used for energy recovery
- what pollution prevention and chemical recycling activities were performed at each facility.

*Threshold guidelines:*

You must submit a report for any EPCRA section 313 chemical, which is not listed as a PBT chemical, which is *manufactured or processed* at your facility in excess of the following threshold:

25,000 pounds per EPCRA section 313 chemical or category over the calendar year.

You must submit a report for any EPCRA section 313 chemical, which is not listed as a PBT chemical that is *otherwise used* at your facility in excess of 10,000 pounds per EPCRA section 313 chemical or category over the calendar year.

***Note:** Threshold determinations for EPCRA section 313 chemicals that are reused at the facility are based only on the amount of the EPCRA section 313 chemical that is **added** during the year, not the total volume in the system.*

You must submit a report for any EPCRA section 313 PBT materials manufactured, processed, or otherwise used above the reporting thresholds. There are 16 PBT chemicals and 4 PBT chemical compound categories which are subject to reporting under the EPCRA section 313. The tables below list the name, identification number and reporting threshold for each.

## **Chemical Categories**

<b>Category Name</b>	<b>TRI Cat. #</b>	<b>Reporting Threshold (in pounds unless noted otherwise)</b>
Dioxin and dioxin-like compounds (manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical)	N150	0.1 grams
Lead and lead compounds have special reporting thresholds.	N420	100
Mercury compounds	N458	10
Polycyclic aromatic compounds (PACs)	N590	100

Lead and lead compounds have special reporting requirements.  
Refer to [www.epa.gov/tri/lawsandregs/tri\\_pb\\_rule.htm](http://www.epa.gov/tri/lawsandregs/tri_pb_rule.htm)

## **Chemical**

<b>Chemical Name</b>	<b>CAS #</b>	<b>Reporting Threshold (in pounds)</b>
Aldrin	309-00-2	100
Benzo(g,h,i)perylene	191-24-2	10
Chlordane	57-74-9	10
Heptachlor	76-44-8	10
Hexachlorobenzene	118-74-1	10
Isodrin	465-73-6	10
Lead	7439-92-1	100
Mercury	7439-97-6	10
Methoxychlor	72-43-5	100
Octachlorostyrene	29082-74-4	10
Pendimethalin	40487-42-1	100
Pentachlorobenzene	608-93-5	10
Polychlorinated biphenyl (PCBs)	1336-36-3	10
Tetrabromobisphenol A	79-94-7	100
Toxaphene	8001-35-2	10
Trifluralin	1582-09-8	100

TRI reporting forms, Q & A, general and specific guidance documents for industry or chemical specific reporting please visit the following Web sites:

[www.epa.gov/tri/report/index.htm#forms](http://www.epa.gov/tri/report/index.htm#forms)  
[www.epa.gov/tri/guide\\_docs/index.htm#trial\\_cat](http://www.epa.gov/tri/guide_docs/index.htm#trial_cat)

and for PBT information:

[www.epa.gov/tri/lawsandregs/pbt/pbtrule.htm](http://www.epa.gov/tri/lawsandregs/pbt/pbtrule.htm)  
(See TRI Reporting form in the appendix of this section.)

TRI submissions must be sent to both EPA and the State (or the designated official of an Indian tribe) by **July 1 of each year**. Send reports to EPA by regular mail to:

EPCRA Reporting Center  
P.O. Box 3348  
Merrifield, VA 22116-3348  
Attn: Toxic Chemical Release Inventory

Certified mail, overnight mail, and hand-delivered submissions only should be addressed to:

EPCRA Reporting Center, c/o Titan Systems Corp.  
4600 North Fairfax Drive, Suite 300  
Arlington, VA 22203  
703-816-4445

In Kansas, each owner or operator of a facility required to file the toxic chemical release form under section 313 of the federal act and K.A.R. 28-65-3 shall pay an annual report fee based upon the total quantity of chemicals released as reported on the federal form R. The fee schedule and KDHE regulatory references are found at the following website:

[www.kdhe.state.ks.us/pdf/regs/28-65.pdf](http://www.kdhe.state.ks.us/pdf/regs/28-65.pdf)

Send your state copy of the TRI report to:

KDHE, Dept. of Air and Radiation  
Scott Bangert  
1000 SW Jackson, Suite 430  
Topeka, KS 66612

## ***Clean Air Act Amendments (CAAA)***

The CAAA also regulates highly hazardous materials stored or used above threshold quantities through the Risk Management Plan (RMP). The RMP program is a formal effort to anticipate chemical accidents, evaluate their risks, and develop preventive measures to protect the public health.

Very few printers will be subject to the RMP requirements. However, printers needing information on this rule should visit:

[www.epa.gov/swercepp/acc-pre.html](http://www.epa.gov/swercepp/acc-pre.html) or read the RMP fact sheets in the appendix following this section:

*"Preventing Accidental Releases under the Clean Air Act"* and *"Here's what you need to know about RMP Submit"* or call the SBEAP for individual assistance at 800-578-8898.

## ***Underground and aboveground storage tanks (USTs and ASTs)***

### **USTs**

Until the mid-1980s, most USTs were made of bare steel, which is likely to corrode over time and allow UST contents to leak into the environment. Faulty installation or inadequate operating and maintenance procedures also can cause USTs to release their contents into the environment.

The greatest potential hazard from a leaking UST is that the petroleum or other hazardous substance can seep into the soil and contaminate groundwater, the source of drinking water for nearly half of all Americans. A leaking UST can present other health and environmental risks, including the potential for fire and explosion.

An underground storage tank or underground storage tank system, means one or a combination of stationary devices, including under-

ground pipes connected to the devices, that is designed to contain an accumulation of petroleum or other hazardous material, the volume of which, including the volume of underground pipes, is 10% or more beneath the surface of the ground.

In 1984, Congress responded to the increasing threat to groundwater posed by leaking USTs by adding Subtitle I to the Resource Conservation and Recovery Act (RCRA). Subtitle I required EPA to develop a comprehensive regulatory program for USTs storing petroleum or certain hazardous substances. Congress directed EPA to publish regulations that would require owners and operators of new tanks and tanks already in the ground to *prevent, detect, and clean up releases*. At the same time, Congress banned the installation of unprotected steel tanks and piping beginning in 1985.

In 1986, Congress amended Subtitle I of RCRA and created the Leaking Underground Storage Tank Trust Fund, which is to be used for two purposes:

- To oversee cleanups by responsible parties.
- To pay for cleanups at sites where the owner or operator is unknown, unwilling, or unable to respond, or which require emergency action.

The 1986 amendments also established financial responsibility requirements. Congress directed EPA to publish regulations that would require UST owners and operators to demonstrate they are financially capable of cleaning up releases and compensating third parties for resulting damages.

Before an existing underground storage tank permit can be obtained or renewed, the owner shall comply with the following requirements:

- 1) the underground storage tanks shall be registered with KDHE (for a copy of the Kansas Storage Tank Act go to: [www.kdhe.state.ks.us/tanks/download/KSA\\_65-34.pdf](http://www.kdhe.state.ks.us/tanks/download/KSA_65-34.pdf))

- 2) an annual registration fee of \$10.00 per tank shall be paid to the department by each owner or operator of an underground storage tank prior to April 30 of each year
- 3) a late notice fee of \$10.00 shall be charged for each facility which fails to submit the required fees prior to April 30 of each year.

#### *UST Exemptions*

The following USTs do not need to meet federal requirements for USTs:

- Farm and residential tanks of 1,100 gallons or less capacity holding motor fuel used for noncommercial purposes
- Tanks storing heating oil used on the premises where it is stored
- Tanks on or above the floor of underground areas, such as basements or tunnels
- Septic tanks and systems for collecting storm water and wastewater
- Flow-through process tanks
- Tanks of 110 gallons or less capacity; and
- Emergency spill and overfill tanks

#### *UST Requirements*

The new UST regulations requires all regulated tanks and piping to have release detection so that leaks are discovered quickly before contamination spreads from the UST site. You must provide your UST system with release detection (often also called "leak" detection) that allows you to meet three basic requirements:

- you can detect a leak from any portion of the tank or its piping that routinely contains petroleum;
- your leak detection is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions; and
- your leak detection meets the performance requirements described in the federal regulations.

The leak detection requirements are summarized in the table below:

### ***Leak Detection Requirements***

UST System Component	Leak Detection Method			
Tanks <i>2 Choices</i>	Monthly monitoring; or monthly inventory control and tank tightness testing every 5 years. <i>This option can be used only for 10 years after installing a new UST or upgrading an UST with corrosion protection. After this 10-year period, monthly monitoring is required.</i>			
Pressurized Piping <i>Choice of one from each set A &amp; set B:</i>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Set A Automatic shutoff device -or- flow restrictor -or- continuous alarm system</td> <td style="width: 10%; text-align: center; border: none;"><b>-AND-</b></td> <td style="width: 40%; border: none;">Set B Annual line testing -or- monthly monitoring (<i>except automatic tank gauging</i>)</td> </tr> </table>	Set A Automatic shutoff device -or- flow restrictor -or- continuous alarm system	<b>-AND-</b>	Set B Annual line testing -or- monthly monitoring ( <i>except automatic tank gauging</i> )
Set A Automatic shutoff device -or- flow restrictor -or- continuous alarm system	<b>-AND-</b>	Set B Annual line testing -or- monthly monitoring ( <i>except automatic tank gauging</i> )		
Suction Piping <i>3 Choices</i>	Monthly monitoring ( <i>except automatic tank gauging</i> ); or line testing every 3 years; or No Requirements <b>IF</b> the following characteristics are readily determinable: <ul style="list-style-type: none"> <li>■ Below-grade piping is sloped so that its contents will drain back into the storage tank if the suction is released.</li> <li>■ Each suction line has only one check valve which is located directly below the suction pump.</li> <li>■ System must operate at less than atmospheric pressure.</li> </ul>			

Monthly Monitoring Choices in the table above include:

- secondary containment with interstitial monitoring
- automatic tank gauging
- monitoring for vapors in the soil
- monitoring for liquids on the groundwater
- statistical inventory reconciliation (SIR)
- other methods approved by the implementing agency

**Note:** Tanks 2,000 gallons and smaller may be able to use manual tank gauging to meet leak detection requirements (be sure you read the link carefully to make sure you meet all the requirements of this method).

What leak detection methods can you use to detect leaks from tanks? Owners and operators of petroleum USTs must use at least one of the leak detection methods below, or other methods approved by their state agency.

- *Secondary containment and interstitial monitoring.* This involves placing a barrier

between the UST and the environment. The barrier provides "secondary" containment and can be a vault, liner, or the outer wall of a double-walled structure. Interstitial monitoring methods range from a simple dip stick to automated vapor or liquid sensors permanently installed in the system. All USTs holding hazardous substances that were installed after December 22, 1988 must use this method.

- *Automatic tank gauging (ATG) systems.* ATGs use monitors permanently installed in the tank. These monitors are linked electronically to a nearby control device to provide information on product level and temperature. The gauging system can automatically calculate the changes in product volume that can indicate a leaking tank. This method does not work on piping.
- *Vapor monitoring.* Vapor monitors sense and measure product vapor in the soil around the tank and piping to determine the presence of a leak. This method requires installation of carefully placed monitoring wells. Vapor monitoring can be performed periodically using manual devices or continuously using permanently installed equipment.
- *Groundwater monitoring.* Groundwater monitoring devices sense the presence of liquid product floating on the groundwater. This method requires installation of monitoring wells at strategic locations in the ground near the tank and along the piping runs. To discover if leaked product has reached groundwater, these wells can be checked periodically by hand or continuously with permanently installed equipment. This method is effective only at sites where groundwater is within 20 feet of the surface.
- *Statistical inventory reconciliation (SIR).* SIR uses sophisticated computer software to determine whether a tank system is

leaking. The computer conducts a statistical analysis of inventory, delivery, and dispensing data collected over a period of time and provided by the operator to a vendor.

- *Manual tank gauging.* Manual tank gauging can be used only on tanks 2,000 gallons or smaller. This method does NOT work on tanks larger than 2,000 gallons or on piping. This method requires taking the tank out of service for at least 36 hours each week to take measurements of the tank's contents. Tanks 1,000 gallons or less can use this method alone. Tanks from 1,001 to 2,000 gallons can use this method only when it is combined with periodic tank tightness testing and only for 10 years after installing a new UST or upgrading an UST with corrosion protection. After 10 years, these USTs must use one of the leak detection methods listed above.

The additional method below can be used **temporarily** at petroleum UST sites:

- *Tank tightness testing and inventory control.* This is a combination of two methods. Tank tightness testing requires periodic tests conducted by vendors who temporarily install special equipment that tests the soundness of the tank. Tank tightness testing must be used in combination with inventory control. Inventory control is an ongoing accounting system, like a checkbook, kept by the UST owner or operator to detect leaks. Inventory control requires taking daily accurate measurements of the tank's contents and performing monthly calculations to prove that the system is not leaking. Tank tightness testing and inventory control can be used only for 10 years after installing a new UST or upgrading an UST with corrosion protection. After 10 years, these USTs must use one of the leak detection methods listed above.

What leak detection methods can you use to detect leaks from piping? Pressurized piping must meet the following requirements:

- The piping must have devices that automatically shut off or restrict flow or have an alarm that indicates a leak.
- You must either conduct an annual tightness test of the piping or use one of the following monthly methods:
  - interstitial monitoring,
  - vapor monitoring,
  - groundwater monitoring,
  - statistical inventory reconciliation,
  - or other methods approved by the Implementing Agency.

If your UST has **suction piping**, your leak detection requirements will depend on which type of suction piping you have.

One type of suction piping does not require leak detection if it has the following characteristics which must be readily determinable:

- Below-grade piping operating at less than atmospheric pressure is sloped so that the piping's contents will drain back into the storage tank if the suction is released.
- Only one check valve is included in each suction line and is located directly below the suction pump.
- Suction piping that does not exactly match the characteristics noted above must have leak detection, either monthly monitoring (using one of the monthly methods noted above for use on pressurized piping) or tightness testing of the piping every 3 years.

Why might you fail to be in compliance even if you have the required leak detection equipment or method? It takes more than equipment to be in compliance and to have a safe facility. You must operate and maintain this equipment properly over time or you will not benefit from having the equipment or using an approved leak detection method. Most impor-

tantly, you must be sure you successfully use the method *at least once a month* to determine if the UST system has released any of its contents.

Failure to operate and maintain equipment and methods can lead to new releases. For example, a poorly functioning ATG system will provide inaccurate data that will be useless in detecting leaks. A manual vapor or groundwater monitoring device that doesn't work properly means you have no reliable leak detection system. Inaccurate data from poorly operated and maintained measuring devices can make SIR methods unable to usefully detect leaks in a timely manner. If your leak detection fails, you can find yourself facing potential fines or penalties for noncompliance, as well as the worst-case scenario in which you face an expensive cleanup at your UST site.

Are reporting and recordkeeping necessary?

If operation of the leak detection method indicates a possible leak, UST owners and operators need to report the potential release to the regulatory authority. UST owners and operators must keep records on leak detection performance and upkeep. These include the previous year's monitoring results, the most recent tightness test results, performance claims by the leak detection device's manufacturer, and records of recent maintenance and repair.

**Note:** For more information on USTs visit the following Web sites:

[www.kdhe.state.ks.us/tanks/index.html](http://www.kdhe.state.ks.us/tanks/index.html)

[www.epa.gov/swerust1/overview.htm](http://www.epa.gov/swerust1/overview.htm)

## ASTs

Unlike USTs, ASTs are not regulated under any comprehensive federal program. However, a number of separate federal and state laws do provide some regulatory coverage for ASTs. The federal Oil Pollution Prevention Act and the Clean Water Act, and the RCRA hazardous waste regulations each contain provisions for used oil, oils and fuels, and other hazardous materials stored in above ground storage tanks.

In the state of Kansas the Bureau of Environmental Remediation (BER) is responsible for regulating releases from aboveground storage tanks (ASTs) and registering ASTs. (A sample registration form is included in the appendix of this section.) The Kansas State Fire Marshal's office regulates the ASTs for safety requirements of the state fire codes and to meet the environmental protection goals of KDHE.

ASTs are those in which more than 90% of the tank volume, including piping, is located aboveground or above the floor of an underground area such as a basement.

Certain types of tanks are exempt from the requirements:

- Tanks containing petroleum products which are not liquid at standard temperature and pressure. This exemption excludes propane, natural gas, and similar products from regulation by KDHE under the Kansas Storage Tank Act. It also excludes most asphaltic materials which are solids at ambient temperatures.
- Tanks located at crude oil production, transport, and refining facilities
- Tanks associated with electrical equipment (transformers)
- Tanks containing agricultural materials regulated by the state board of agriculture (liquid fertilizers and pesticides)

- Small tanks, having less than 660 gallons capacity
- Tanks less than 1100 gallons capacity used for farm and/or residential fuel supplies
- Single family residence heating oil storage tanks
- Flow through process tanks

## Requirements for new tank construction

Many ASTs fall under the requirement of both the Kansas Storage Tank Act and of state and local fire codes. KDHE and the Kansas State Fire Marshal's office work closely together to permit and register new tanks so that they will comply with both the safety requirements of the fire code and environmental protection.

New tank construction must meet the AST requirements provided in the "Summary of aboveground storage tank requirements and regulations for flammable/combustible liquids". The AST must also be approved in advance by the State Fire Marshal's (SFM) office, on forms they provide. For a copy of the regulations, requirements, forms, and the inspection checklist for ASTs contact:

Kansas State Fire Marshal's Office  
700 SW Jackson Suite 600  
Topeka, Kansas 66603-3714  
Phone: (785) 296-3401 Fax: (785) 296-0151  
Business Hours are Monday–Friday  
8:00 a.m. to 4:30 p.m.

The purpose is to provide the SFM with information which allows the agency personnel to verify that the new tank meets the applicable fire codes. The review/approval process generally takes between two and three weeks.

In addition to the SFM's requirements for ASTs, the U.S. EPA requires secondary containment for ASTs under the oil pollution prevention SPCC regulations.

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***US Department of Transportation  
(DOT) Hazardous Materials  
Registration***

The U.S. DOT requires all shippers, generators and transporters of hazardous materials, including hazardous waste, which *requires hazardous materials placarding*, to file a registration statement and pay a fee.

The registration scheme is divided into a two-tiered fee schedule: those registrants meeting the definition of a “small business” will pay a \$300 annual fee; all others will pay a \$2000 fee annually. Shipments of hazardous wastes may fall under this regulation *if* they require placarding. For more information on this regulation please see the fact sheet “New USDOT regulations changes affect more companies, cost more” provided in the appendix of this section.

To determine what materials and what quantities of those materials require placarding for transportation, please see the code of federal regulations (CFR) Title 49 CFR part 172.500 and Title 49 CFR part 172.504. You may access these regulations by going to the following website and inserting the reference numbers given:

[www.gpo.gov/nara/cfr/cfr-retrieve.html#page1](http://www.gpo.gov/nara/cfr/cfr-retrieve.html#page1)