



Underground Storage Tank Operational Compliance Field Guide

Created April 2012, Reaffirmed April 2015

Bureau of Underground Storage Tank Regulations

<http://www.com.state.oh.us/fire/default.aspx>



**Department
of Commerce**

Division of State Fire Marshal

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READ THIS FIRST

Federal law requires the Division of State Fire Marshal, Bureau of Underground Storage Tank Regulations (BUSTR) to inspect your underground storage tank (UST) systems every three years. When BUSTR visits your site, we will ask you to provide records demonstrating that you are in compliance with the following requirements:

- (A) USTs, piping, and containments are installed and operating correctly;
- (B) Corrosion protection equipment is installed and operating correctly;
- (C) Spill prevention equipment is installed and operating correctly;
- (D) Overfill prevention equipment is installed and operating correctly;
- (E) Release detection equipment is installed and operating correctly;
- (F) Hazardous substance and sensitive area UST systems are installed and operating correctly;
- (G) Administrative documents relating to registration, assurance, permits, and operator training are in proper order;
- (H) Compliance Inspection;
- (I) Performing work on UST Systems; and
- (J) Delivery Prohibition.

HOW TO STAY IN COMPLIANCE

This guidance is divided into sections that correspond to the requirements described above. BUSTR recommends that you review the guidance and make one of the following decisions:

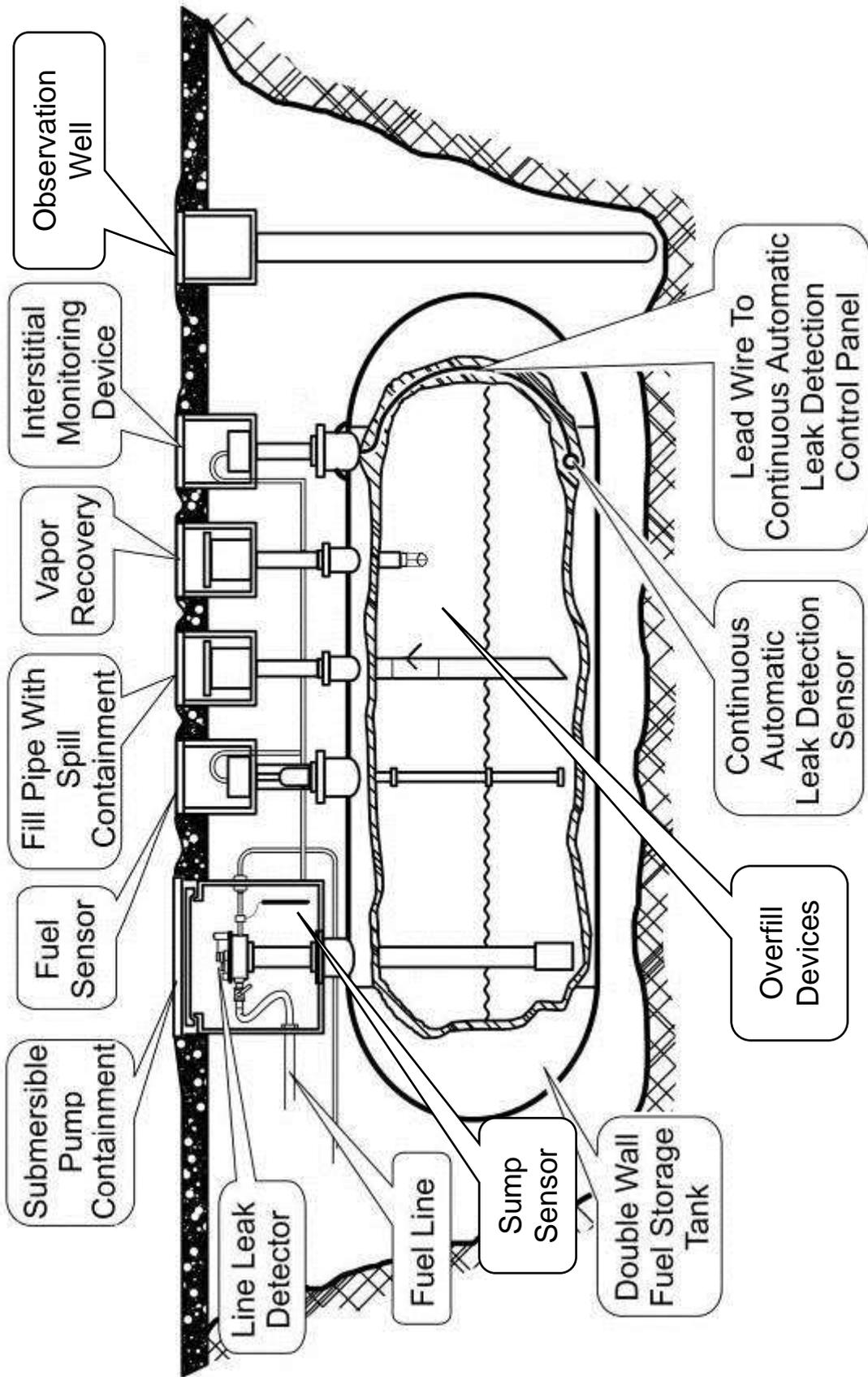
Option 1: Comply with the requirements yourself by reviewing this guidance in detail several times and setting up a schedule to make sure that you comply with each of the requirements mentioned above; or

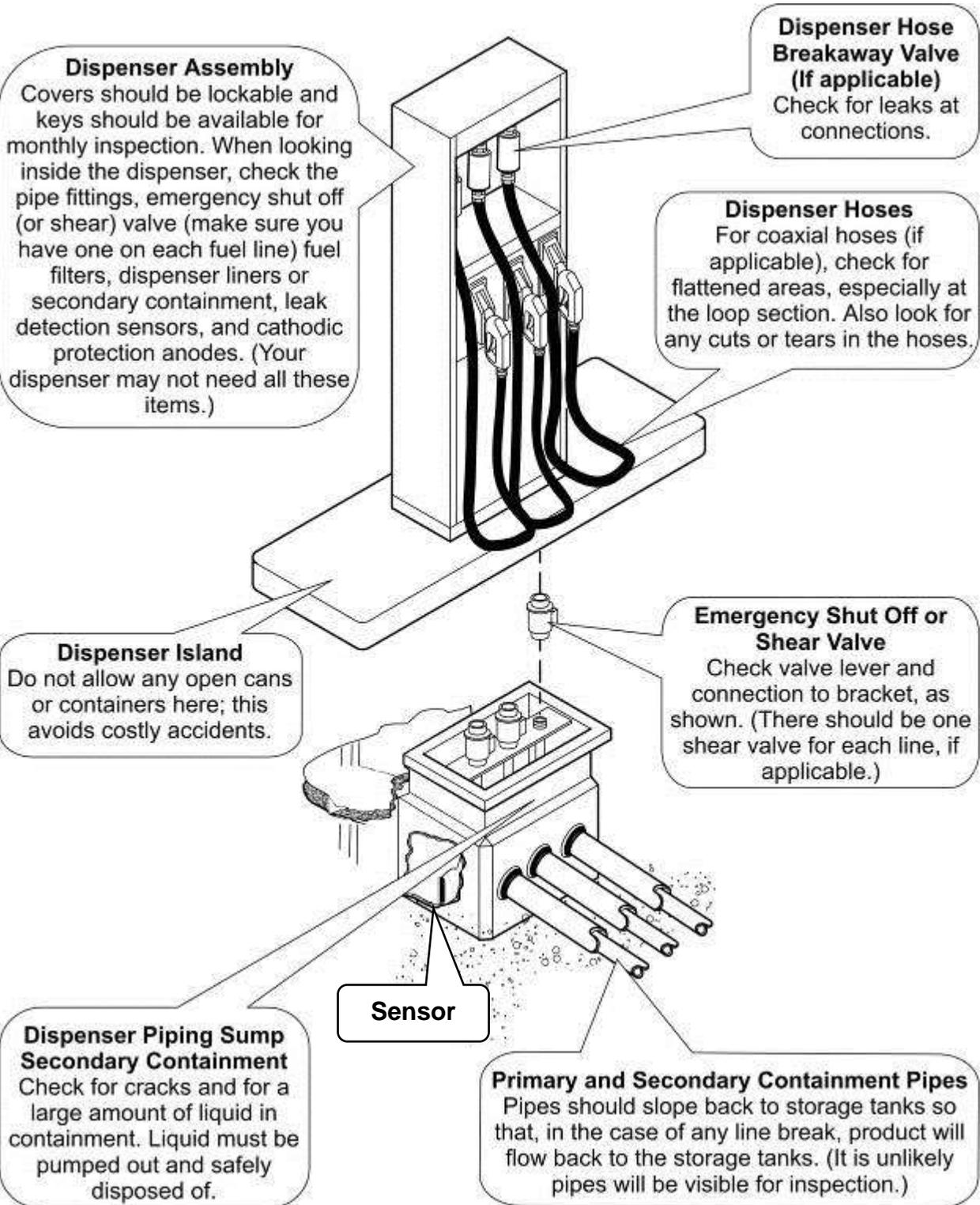
Option 2: Contact a Certified UST Installer or your service contractor and enter into an agreement with them to monitor your UST system to ensure that you comply with each of the requirements mentioned above.

It is important to make this decision as soon as possible. Do not procrastinate! Make the decision and take the basic steps to stay in compliance by starting a schedule or by calling a contractor.

This guidance is for informational use only and is not intended to supersede or replace any requirements listed in the BUSTR rules.

IF YOUR UST SYSTEM IS NOT EQUIPPED AND OPERATED IN COMPLIANCE WITH FEDERAL AND STATE REGULATIONS, THE FIRE MARSHAL HAS THE AUTHORITY TO FINE YOU UP TO \$10,000 FOR EVERY DAY YOU REMAIN IN VIOLATION. IN ADDITION, THE FIRE MARSHAL HAS THE AUTHORITY TO PLACE A RED TAG ON YOUR UST AND PROHIBIT DELIVERY OF FUEL TO YOUR UST.

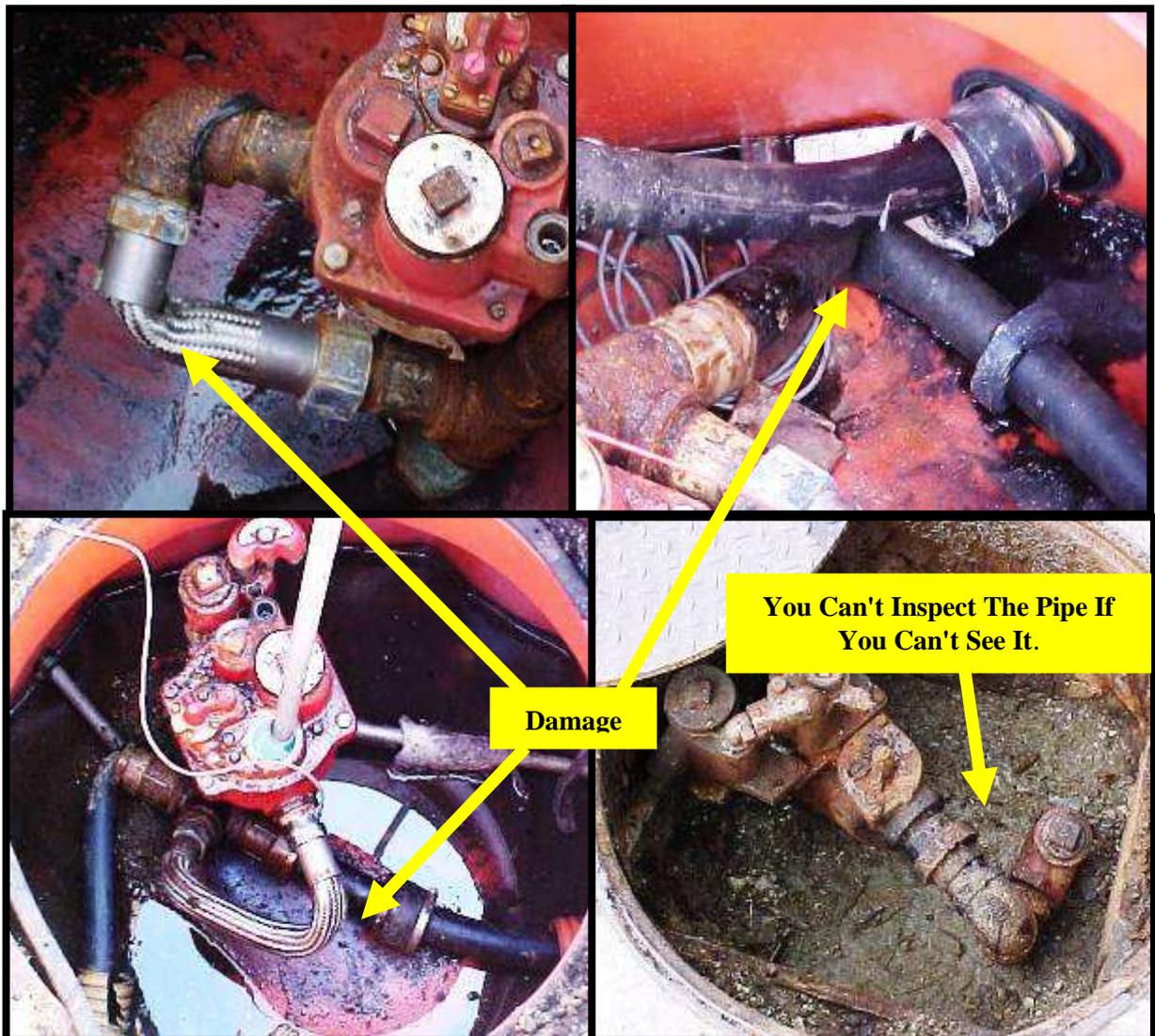


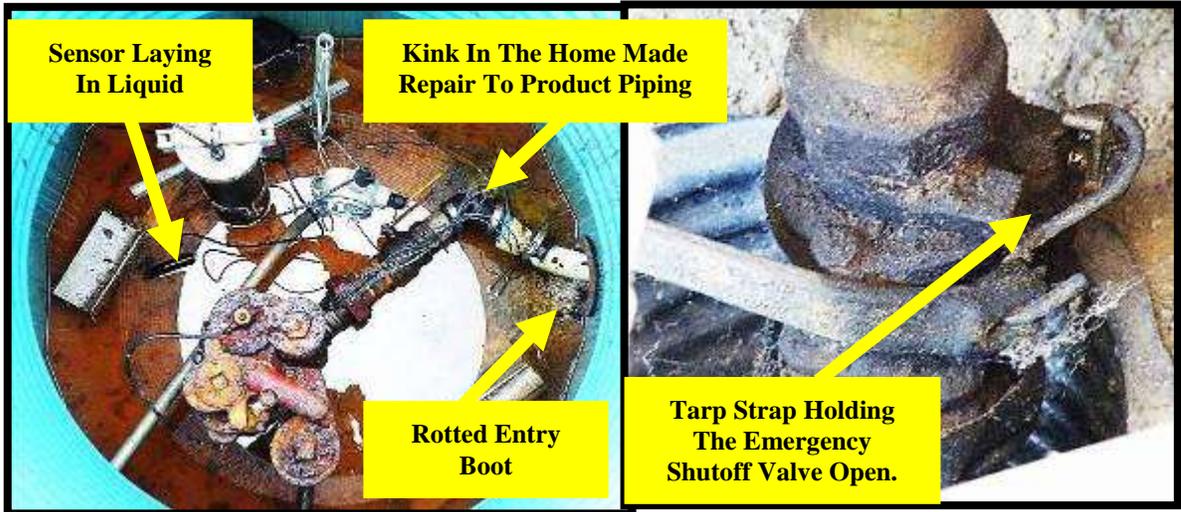


(A) USTs, PIPING, AND CONTAINMENTS

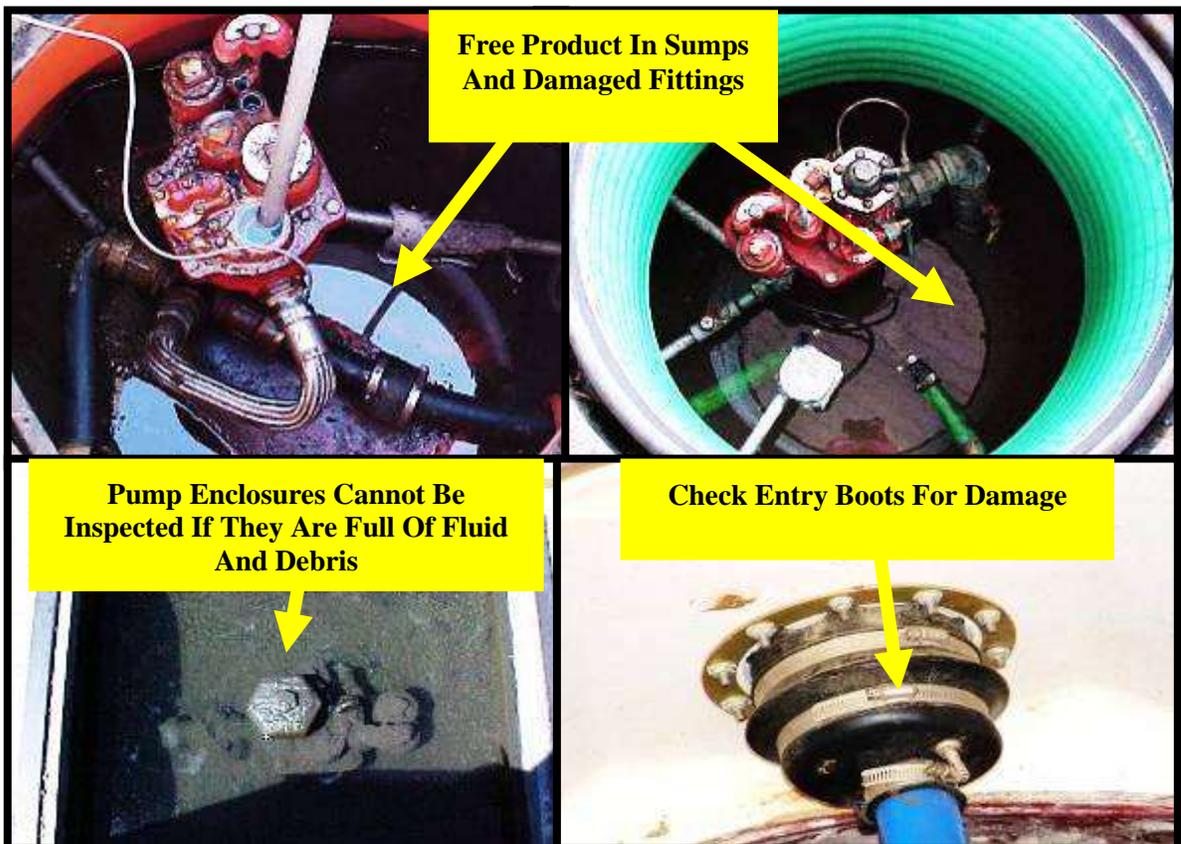
Most UST systems are comprised of three underground structural components: the underground storage tank (UST), the underground piping, and the containments. These components can break down due to physical and chemical wear as well as from environmental conditions such as winter cold and summer heat. A visual check should be performed once a year to look for signs of damage with these components.

1. The owner/operator or their authorized representative shall perform an a periodic visual inspection of all UST and piping components that are accessible:
 - a. UST and piping components shall be inspected at least once a year for signs of corrosion, peeling, cracking or excessive distortion; and
 - b. UST and piping components shall be inspected at least once a year for signs of degradation, including but not limited to, clogged filters or sludge buildup.





2. The owner/operator or their authorized representative shall perform a periodic visual inspection of all containments, including tank top containments, dispenser containments and intermediate sumps:
 - a. Containments shall be inspected at least once a year for proper operation and for the presence of water, regulated substances and debris;
 - b. Containments shall be inspected for evidence of excessive distortion, cracking or gross failure of the containments and any penetration fittings;
 - c. All water and debris shall be removed and properly disposed; and
 - d. All regulated substances shall be properly removed and disposed.



3. The owner/operator or their authorized representative shall perform tightness testing of containments every three years for the following:
 - a. All containments installed on new UST systems after March 1, 2005;
 - b. As of December 31, 2005, all containments associated with UST systems containing hazardous substances; and
 - c. As of December 31, 2005, all containments associated with UST systems that were installed in areas designated as sensitive areas (usually after September 1, 1992).

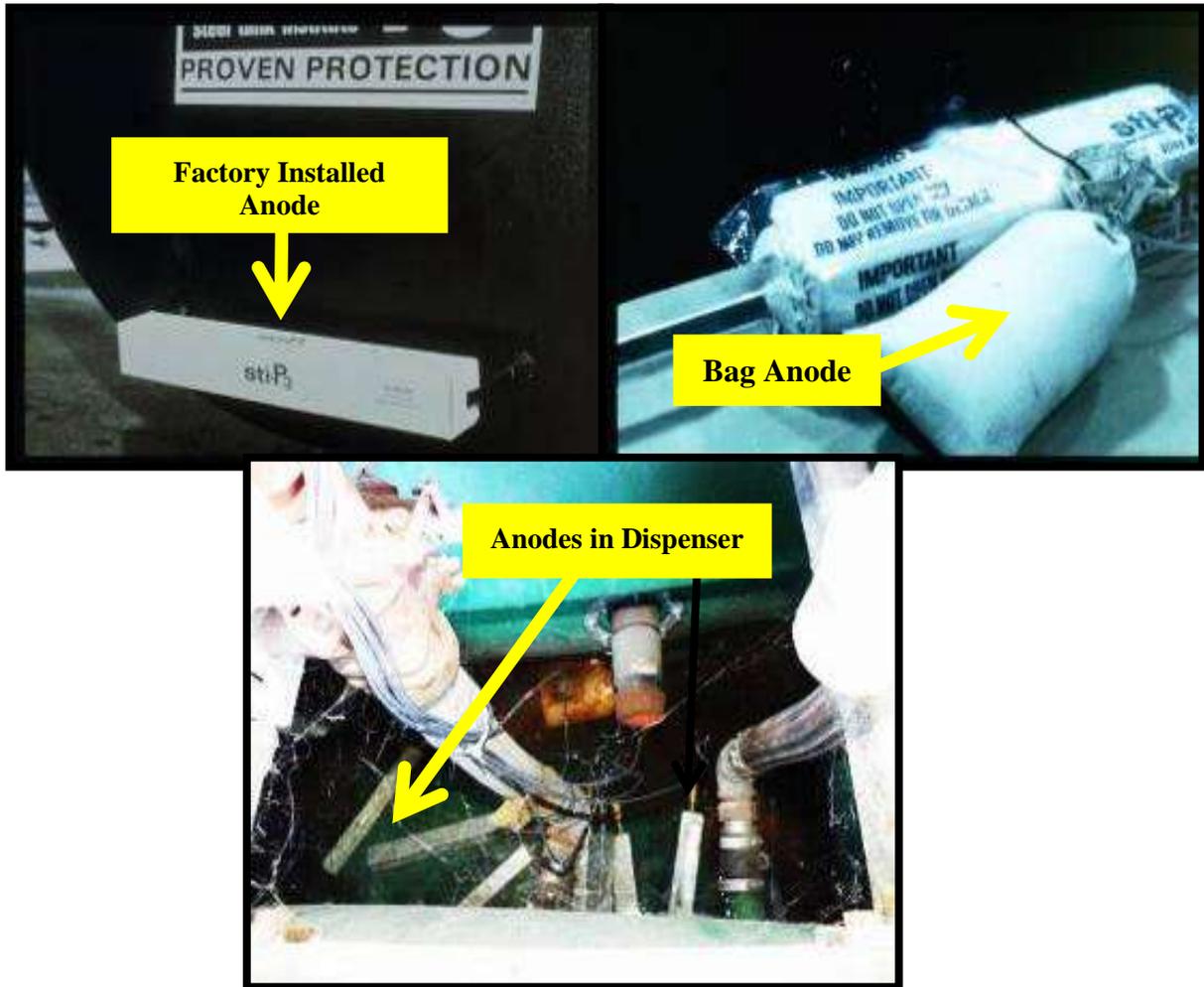


4. Additional information relating to UST's, piping and containments:
 - a. USTs installed prior to May 16, 2011, and piping associated with USTs installed prior to March 1, 2005, may be single wall (except USTs containing hazardous substances and USTs installed in sensitive areas).
 - b. UST systems installed prior to March 1, 2005, are not required to have tank top containments and dispenser containments (except USTs containing hazardous substances and USTs installed in sensitive areas).

(B) CORROSION PROTECTION AND COMPATIBILITY

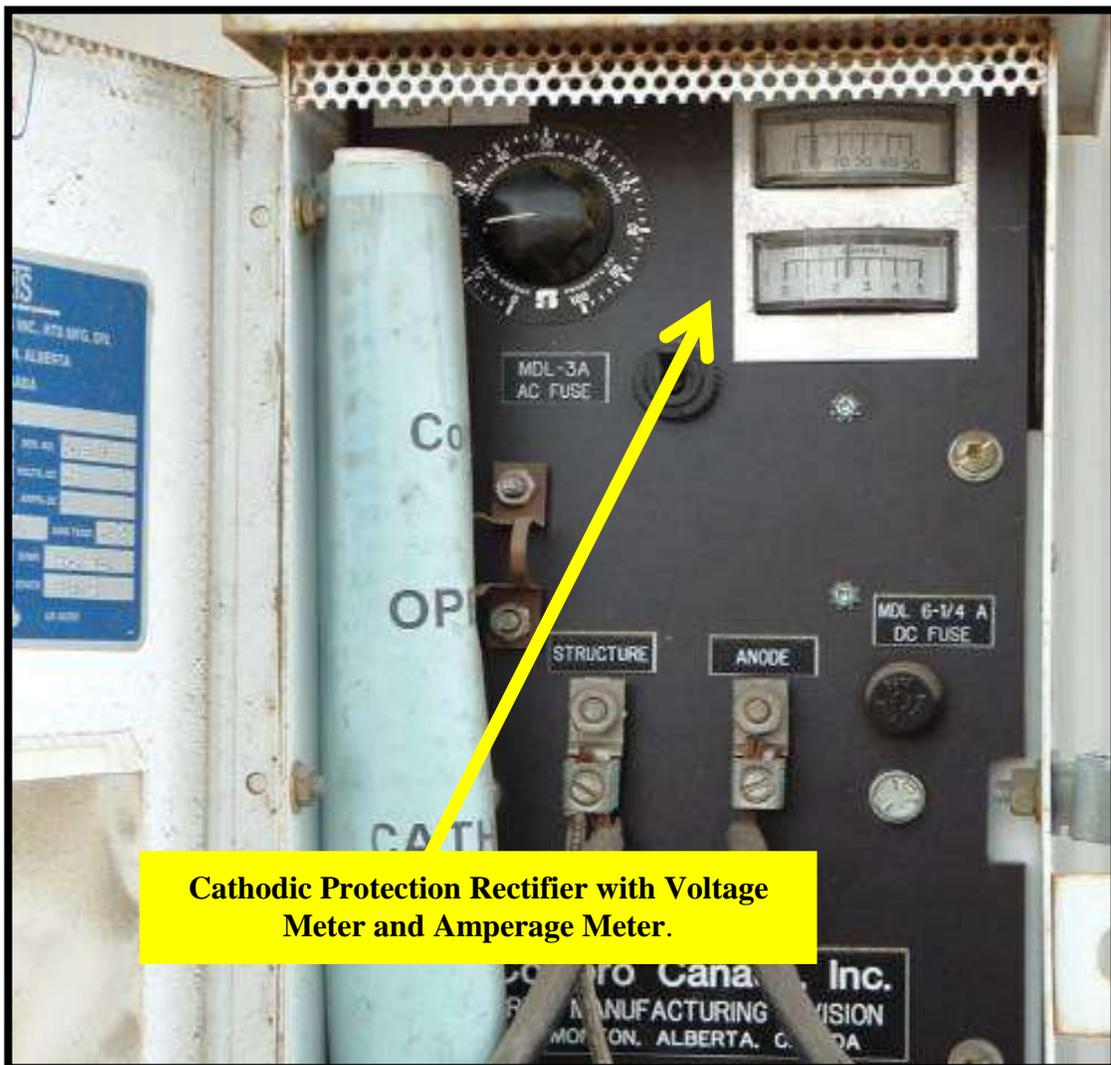
Metal UST systems must have cathodic protection to keep the systems from rusting. Fiberglass and plastic UST systems must be monitored to ensure that they do not degrade and break down when exposed to fuel and hazardous substances. UST systems need to undergo periodic checks to ensure that corrosion and compatibility problems are fixed in a timely manner.

1. The owner/operator or their authorized representative shall perform periodic checks of corrosion protection systems:
 - a. Option #1: Factory or field installed sacrificial anodes (galvanic cathodic protection):
 - i. Have been properly tested by a qualified corrosion protection tester in accordance with the required 3 year testing schedule; and
 - ii. All records of test and repairs shall be properly maintained.



- b. Option #2: Impressed current systems:
 - i. Rectifiers always need to be on to protect the UST and piping from corrosion;
 - ii. Impressed current systems must be inspected every 60 days (two months) by the owner/operator to ensure that the equipment is operating properly and the bimonthly form is properly completed and maintained;
 - iii. Impressed current systems shall be properly tested by a qualified corrosion protection tester in accordance with the required 3 year testing schedule; and
 - iv. All records of test and repairs shall be properly maintained.

Sample Impressed Current 60 Day Inspection Form				
Facility Name: _____				
Amperage Range Recommended: _____				
Voltage Range Recommended: _____				
Date	Your Name	Voltage Reading	Amperage Reading	Is Your System Running Properly? (Yes/No)
<ul style="list-style-type: none">◆ If the rectifier voltage and/or amperage output(s) are outside the recommended operating levels, contact a corrosion expert to address the problem.◆ Never turn off your rectifier.◆ Keep This Record For At Least Six Months After The Date Of The Last Reading				



Cathodic Protection Rectifier with Voltage Meter and Amperage Meter.

- c. Option #3: Internally lined UST's:
 - i. Internally lined UST's shall have an internal inspection 10 years after the initial lining and every 5 years thereafter; and
 - ii. If the internally lined UST has traditional corrosion protection (e.g., galvanic or impressed current) that has been properly maintained, then the periodic internal inspection is not required.



- 2. The owner/operator or their authorized representative shall perform periodic checks to inspect for compatibility problems:
 - a. Piping and Containments checked for abnormal appearance or operation such as:
 - i. Discoloration, delamination, swelling and disintegration.
 - ii. Clogged filters indicating fiberglass tank lining may be compromised.



3. Additional information relating to corrosion protection and compatibility:

- a. After May 16, 2012, the state fire marshal shall no longer grant approval for internal lining of USTs for corrosion protection purposes;
- b. Internally lined UST's located in sensitive areas shall be taken out of service by May 16, 2014, unless traditional corrosion protection (e.g., galvanic or impressed current) is installed; and
- c. Piping covered by earthen material shall be protected from corrosion. This requirement does not apply to piping immersed in water.

(C) SPILL PREVENTION

When regulated substances are transferred from a tanker truck to an UST, some spillage may occur at the point where the delivery hose connects to the UST. Regulations require the UST to have a spill prevention device (i.e., spill bucket or spill containment manhole) at the fill pipe to catch any spillage that may happen. The spill prevention device is subject to traffic and extreme weather conditions and needs to be checked regularly to ensure that it is in working order.

1. The owner/operator or their authorized representative shall perform periodic visual inspections of spill prevention devices:
 - a. New spill prevention devices shall have a capacity of at least 5 gallons;
 - b. The cover of the spill prevention device is in good condition and is not broken;
 - c. The spill prevention device has been visually inspected after each delivery and all water, regulated substances and/or debris are promptly removed;
 - d. The spill prevention device has been checked annually for proper operation and evidence of deterioration such as cracking, holes and other damage that could lead to a release of product; and
 - e. The drain mechanism on the spill prevention device is functioning properly.



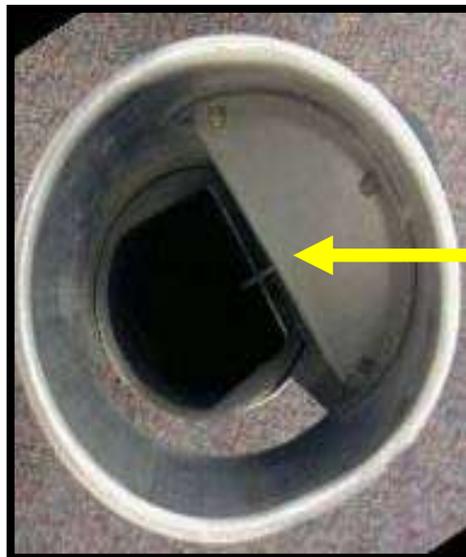
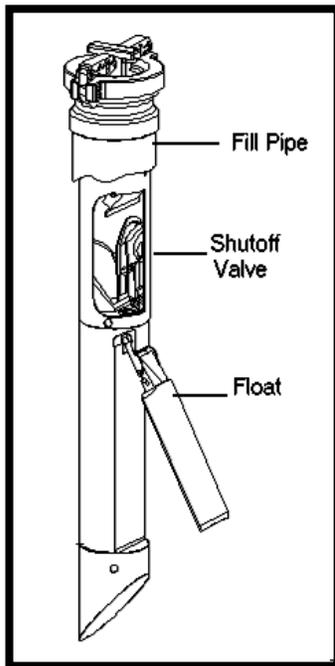
2. Additional information relating to spill prevention:

- a. Existing UST systems installed prior to March 1, 2005, that were filled with transfers of no more than twenty-five gallons at one time are not required to be equipped with spill prevention equipment.

(D) OVERFILL PREVENTION

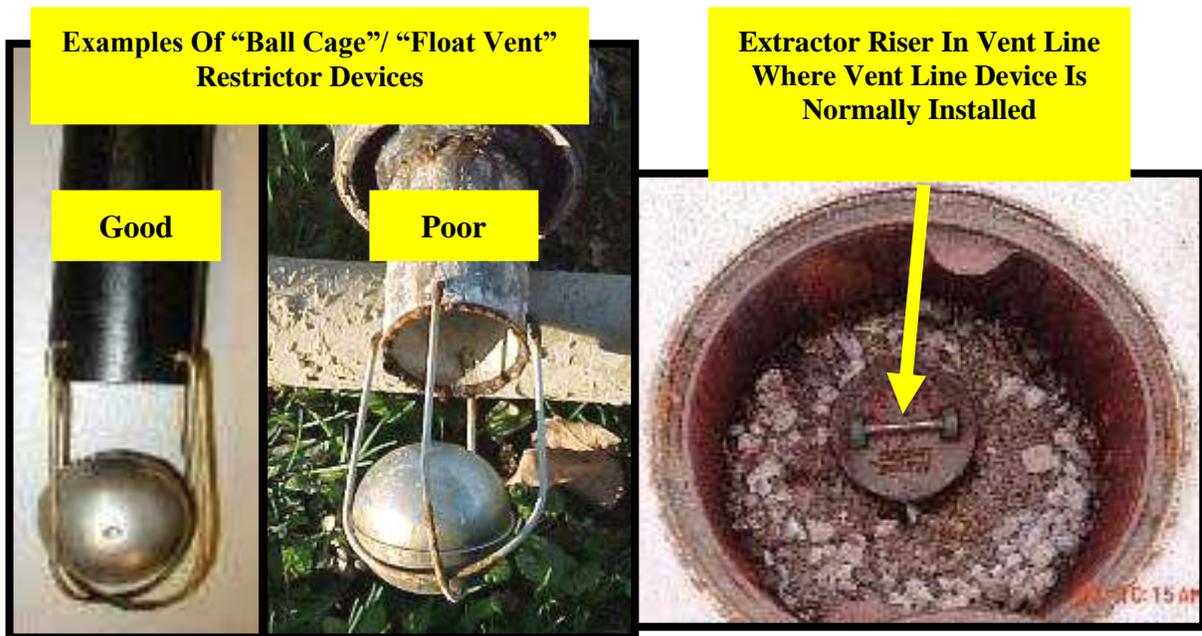
When regulated substances are transferred from a tanker truck to an UST, it is possible for the UST to be overfilled. The regulations require the UST to have an overfill prevention device in the UST to shut off or restrict the flow of regulated substances into the UST or sound an alarm when the UST is full. The overfill prevention device is subject to physical and chemical wear and needs to be checked annually to ensure that it is in working order.

- 1. The owner/operator or their authorized representative shall perform periodic visual inspections of overfill prevention devices:
 - a. Option #1: Flow shut-off devices (such as flapper valves in fill tubes)
 - i. Shut-off devices are in place and are not damaged, bent or out of alignment;
 - ii. Shut-off devices are not blocked or obstructed in the open position; and
 - iii. Shut-off devices are removed from the fill riser on an annual basis and inspected to confirm that the device is functional.



**Overhead View
looking down
into Fill Pipe
with an Overfill
Shut-off Device**

- b. Option #2: Vent restriction devices (such as ball cage / ball float valves / float vent valves)
 - i. Vent restriction devices shall not be allowed for on any type of suction systems or any other system where the device can be defeated; and
 - ii. Vent restriction devices shall be removed from the UST on an annual basis and inspected to confirm the device is functional.

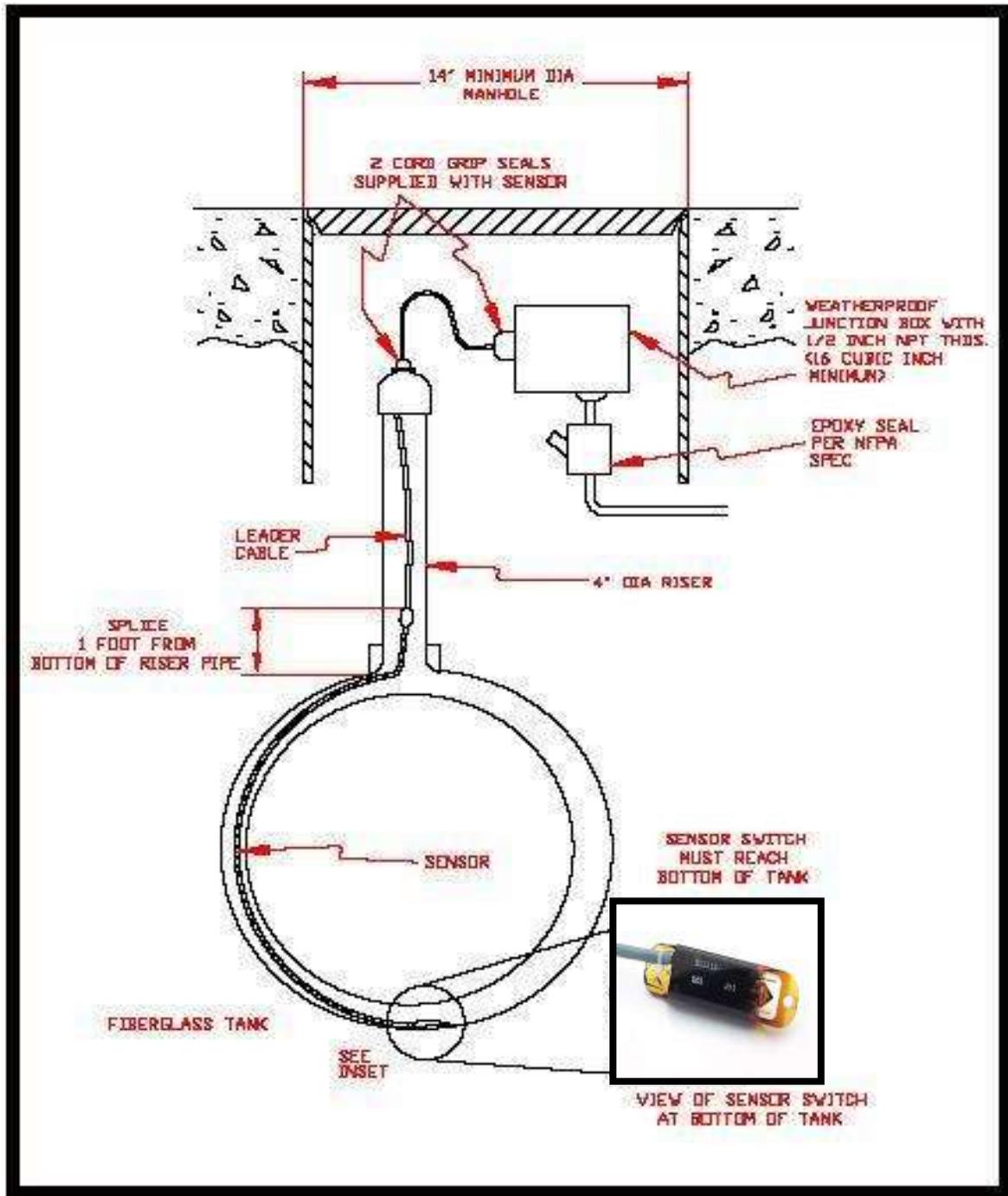


- c. Option #3: Overfill alarms
 - i. Overfill alarms shall be located in close proximity to where the delivery person stands during the delivery and be clearly labeled; and
 - ii. Overfill alarms shall be inspected and tested in-situ on an annual basis to confirm the device is functional.

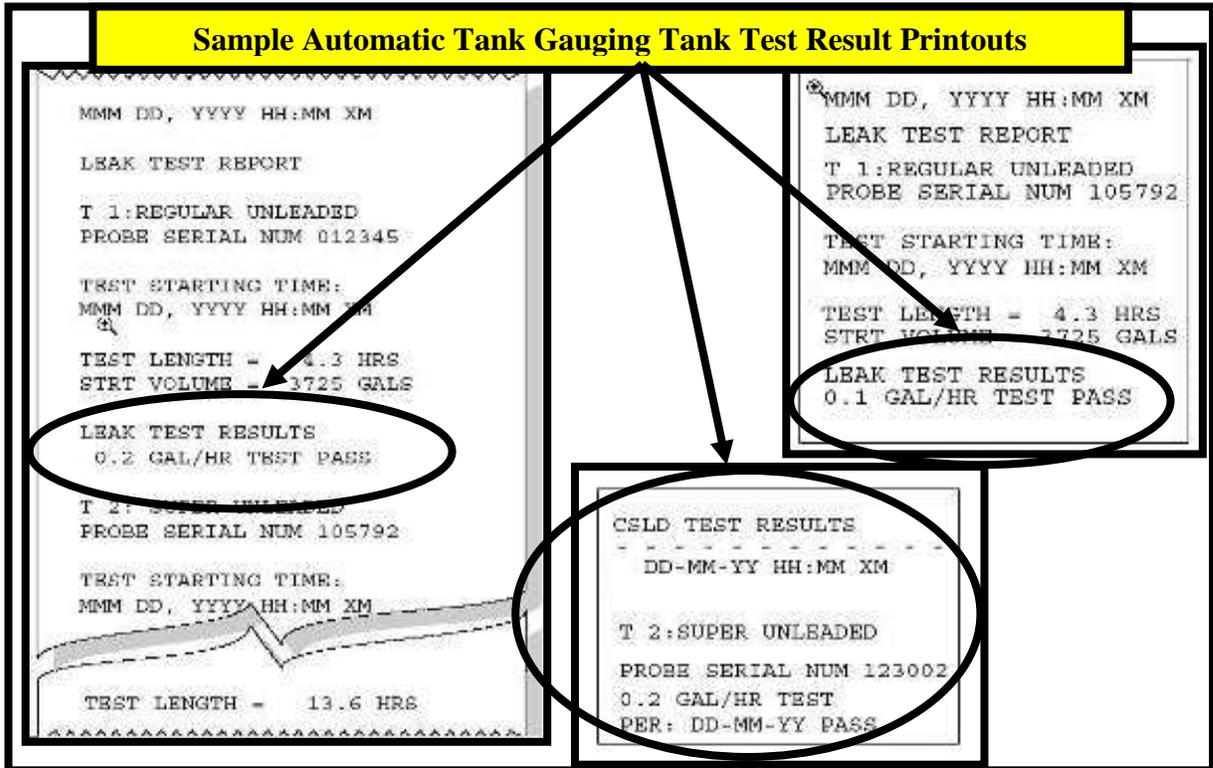


2. Additional information relating to overfill prevention:

- a. Existing UST systems installed prior to March 1, 2005, that were filled with transfers of no more than twenty-five gallons at one time are not required to be equipped with overfill prevention equipment.

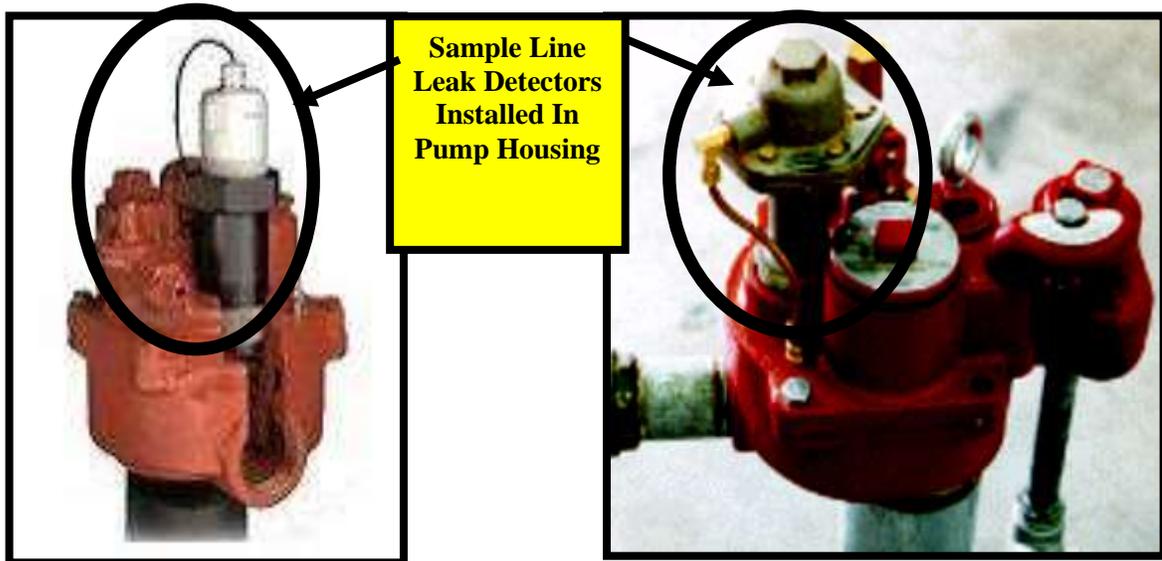


- b. Option #2: Automatic Tank Gauging (ATG): Owners/Operators shall ensure that the ATG equipment performs one of the following:
- i. An in-tank leak test capable of detecting a two tenth (.2) of a gallon per hour leak rate from any portion of the tank at least once every thirty days; or
 - ii. Continuous statistical leak detection capable of detecting a two tenth (.2) of a gallon per hour leak rate from any portion of the tank once every thirty days.



- c. Option #3: Alternative methods such as SIR can be used if approved in writing by the state fire marshal.

2. The owner/operator or their authorized representative shall equip and monitor release detection devices associated with piping and shall perform periodic checks of each device:
 - a. Underground product piping that is part of a new UST system installed after March 1, 2005 shall be equipped with secondary containment with interstitial monitoring using one of the following release detection methods:
 - i. A sampling or testing method that can detect a two-tenth (.2) of a gallon per hour leak rate from any portion of the inner or outer wall of the piping; or
 - ii. The piping terminates or transitions in containments and the sampling or testing method can detect a release from any portion of the inner wall of the piping.
 - b. Pressure piping shall be equipped with an Automatic Line Leak Detector (ALLD) that shall be tested annually to confirm proper calibration and operation.



- c. Pressure piping shall be tested periodically in the following manner:
 - i. Have an annual tightness test of the primary piping;
 - ii. Have a monthly 0.2 gallon per hour tightness test performed by the on-site electronic line testing unit at the facility; or
 - iii. Be a part of a secondarily contained piping system whereby the interstice of the piping is continuously monitored.
 - d. Suction piping shall be regularly monitored for loss of vacuum and shall meet one of the following:
 - i. Suction piping shall have a tightness test conducted every thirty-six (36) month period; or
 - ii. Suction piping shall demonstrate compliance with safe suction requirements.
3. The owner/operator or their authorized representative shall equip and monitor release detection devices associated with containments and shall perform periodic checks of each device:
 - a. Containments that are a part of new UST systems installed after March 1, 2005, shall be installed with sump sensors that are capable of detecting a release before the release reaches the lowest penetration in the containment.

4. Release detection shall be evaluated annually by a qualified person to confirm proper calibration and operation in accordance with the manufacturer's requirements. In most cases, this means that the qualified person needs to visit the site at least once a year and directly examine all probes and sensors.
5. A release is suspected and subject to reporting to BUSTR if any release detection device monitoring any UST, piping or containment goes into alarm. Owners and operators shall investigate alarms pursuant to rule 1301:7-9-13 of the Ohio Administrative Code "Petroleum UST Corrective Action."
6. Additional information relating to release detection:
 - a. USTs installed prior to May 16, 2011, with a capacity of 550 gallons or less may use manual tank gauging as the sole method of release detection;
 - b. New or used oil USTs installed prior to May 16, 2011, with a capacity from 551 to 2000 gallons may use manual tank gauging as a method of leak detection provided that a tank tightness test is performed every five years;
 - c. New and existing UST systems containing motor or aviation petroleum fuels are no longer required to be monitored using daily product inventory;
 - d. Daily product inventory control may be used for short periods of time while an UST system is undergoing repair or in special low fuel level situations;
 - e. Current regulations do not require new or existing suction piping or suction manifolds to be double wall (except suction piping containing hazardous substances); and
 - f. UST systems installed prior to May 16, 2011, that store fuel for use by emergency power generators are not required to have release detection (including dual-use systems containing diesel fuel used for both emergency power and heating).

(F) HAZARDOUS SUBSTANCE AND SENSITIVE AREA UST SYSTEMS

UST systems containing hazardous substances and UST systems located in sensitive areas must have full secondary containment that includes double wall USTs, double wall piping and containments in critical locations. These UST systems must use interstitial monitoring as their method of release detection.

1. A list of hazardous substances may be found in rule 1301:7-9-03 of the Ohio Administrative Code.
2. A list of sensitive areas may be found in rule 1301:7-9-09 of the Ohio Administrative Code.
3. If an UST system was installed in an area prior to that area becoming sensitive (usually before September 1, 1992), then the UST system does not have to be secondarily contained.

(G) ADMINISTRATIVE DOCUMENTS

1. Registration. Before June 30th of each year, owners and operators shall submit an annual registration to BUSTR. Non-government UST owners and operators shall submit an annual fee of \$50 per UST.

2. Assurance. Before June 30th of each year, owners and operators shall submit an annual registration to the Petroleum Underground Storage Tank Release Compensation Board (PUSTRCB).
 - a. Non-federal government UST owners and operators shall submit an annual fee for each regulated UST.
 - b. In addition to demonstrating coverage with PUSTRCB, owners and operators shall maintain proof of coverage of a deductible mechanism associated with the PUSTRCB coverage.
3. Installation, Modification and Major Repair Records. Owners and operators shall maintain records demonstrating that their UST systems are properly equipped and operated. Records shall be maintained pursuant to the following schedule:
 - a. All records shall be maintained for the operating life of the UST System and for two years after the closure of the UST System.
4. Release Detection Calibration and Release Detection Records. Owners and operators shall maintain records demonstrating that their UST systems are properly equipped and operated. Records shall be maintained pursuant to the following schedule:
 - a. All written performance claims pertaining to any release detection system used shall be maintained for the life of the UST system and for two years after the closure of the UST system.
 - b. The results of any sampling, testing, or monitoring shall be maintained for two years.
 - c. Written documentation of all calibration, maintenance, and repair of release detection equipment shall be retained for the life of the equipment and for two years thereafter.
 - d. Owner and operators shall provide the state fire marshal access to all records within twenty four hours of a request.
 - e. Within thirty days of the transfer of ownership of an UST system, the transferor shall provide the new owner with all records or equivalent copies identified in this section of the field guide.
5. Permits. Before performing work on an UST system or taking an UST system out-of-service, be sure to check to see if a permit is required. In most cases, a Certified UST Installer and a Certified UST Inspector is also required if you are performing UST work.
6. Operator training. Owners and operators are required to identify three classes of operators at their site and have these operators trained by August 8, 2012.
 - a. Operator Classes
 - i. Class A operators are traditionally the UST owner.
 - ii. Class B operators are traditionally the store manager or maintenance person.
 - iii. Class C operators are traditionally the store clerk.
 - b. Class A and B training is available through private trainers. A list of trainers may be found at <http://www.com.state.oh.us/fire/default.aspx>.

- c. Class C operators may be trained by qualified owners and operators.
- d. Certificates are issued upon completion of training, and it is the responsibility of owners and operators to maintain certificates and make them available upon request of BUSTR.

(H) COMPLIANCE INSPECTION.

Federal law requires BUSTR to inspect your UST system at least every three years. BUSTR recommends that you have the following information readily available in order that you may prepare for a compliance inspection:

1. BUSTR Registration
 - a. A current copy of the BUSTR registration certificate
2. PUSTRCB Certificate
 - a. A current copy of the PUSTRCB certificate of fund coverage
3. Financial Responsibility (Deductible Coverage)
 - a. A current copy of the \$11,000 or \$55,000 deductible mechanism proving that coverage is in place.
4. Permit Related Documents
 - a. Copies of Permits and Inspection Reports for any past and/or ongoing work being performed to the UST system components.
5. Out-of-Service Documents
 - a. Permits, Inspection Reports, Extension Approvals and other Documentation demonstrating that any out-of service UST system is being properly maintained.
6. Spill and Overfill Operation
 - a. Ensure that Spill Buckets are clean and free of debris.
 - b. Document that Overfill Devices have been checked annually for proper operation.
7. UST/Piping/Containment Release Detection Operation
 - a. Document that the UST Tank Top, all visible Piping have been inspected annually.
 - b. Document that Containment Release Detection, if appropriate, has been checked by a qualified person for proper operation.
8. UST/Piping Corrosion Protection Operation
 - a. Document that Factory, Field Installed and Impressed Current Cathodic protection has been tested within the last 3 years.
 - b. Document on a form that the Impressed Current System has been checked every sixty days and that the power is on and it is operating.
9. Containment Operation
 - a. Document that the Containment has been inspected annually for deterioration, cracking, deformation, compromised entry boots and other signs of failure.

10. Ancillary Equipment Operation

- a. Document that piping fittings, flanges, valves and pumps used to distribute regulated substance have been checked annually to ensure that they are operating properly and have not failed and are not showing signs of impending failure.

(I) PERFORMING WORK ON UST SYSTEMS

For the most part, the BUSTR regulations concerning construction and operation are organized in two parts. New UST systems (installed on or after May 16, 2011) shall meet the more stringent requirements for full secondary containment. Existing UST systems (installed prior to May 16, 2011) are normally required to comply with the rules in effect at the time of installation. However, there are a number of exceptions that apply to existing UST systems:

1. As of December 22, 1998, almost all UST systems were required to be upgraded to meet requirements for spill and overfill prevention as well as for cathodic protection and release detection; and
2. As of May 16, 2011, existing single wall UST systems that undergo extensive replacement or modification work are required to meet secondary containment requirements.

(J) Delivery Prohibition.

It is unlawful for any person to deliver, deposit, or accept a regulated substance into a UST that has a red tag attached to the fill pipe of the UST that the state fire marshal has classified as ineligible.

1. The state fire marshal will classify a UST ineligible if any of the following conditions exist:
 - a. Required spill prevention equipment is not installed.
 - b. Required overfill equipment is not installed.
 - c. Required corrosion protection equipment is not installed, or
 - d. Required release detection equipment is not installed.
2. The state fire marshal may also classify a UST ineligible if an owner or operator fails to correct a violation within sixty (60) days of the issuance of the Notice of UST Violation for the following:
 - a. Failure to properly operate or maintain spill prevention equipment.
 - b. Failure to properly operate or maintain overfill prevention equipment.
 - c. Failure to properly operate or maintain corrosion protection equipment.
 - d. Failure to properly operate or maintain release detection equipment, or
 - e. Failure to obtain a valid certificate of coverage from the Petroleum Underground Storage Tank Release Compensation Board.

Sample Red Tag

<p>WARNING: DO NOT FILL</p> <p>Delivery Prohibited. Delivering petroleum or other regulated substance to this underground storage tank, or removing, defacing, altering, or otherwise tampering with this tag may result in civil penalties of up to \$10,000 per day. For information, call the Bureau of Underground Storage Tank Regulations (BUSTR) at (614) 752-7938.</p> <p>Facility Number: _____</p> <p>Date: _____ Tag Number: 0001</p>	<p>Delivery Prohibited</p> <p>_____</p> <p>Facility Number</p> <p>_____</p> <p>Date</p> <p>_____</p> <p>0001</p> <p>Tag Number</p>
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Want to Help Improve This Field Guide?

Help us continually improve this Manual! Send us your feedback. Let us know if you find any errors. Tell us about anything that needs to be added or deleted and give us your suggestions on format or checklist changes.

Visit our web page at <http://www.com.state.oh.us/fire/default.aspx>

Send feedback by regular mail to:
Division of State Fire Marshal
Bureau of Underground Storage Tank Regulations
Release Prevention Section
8895 East Main Street
Reynoldsburg, OH 43068-9009

Phone in your feedback to the Release Prevention Supervisor at (614) 752-7938.

Ohio Department of Commerce
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