

*This brochure is effective
October 13, 2018.*

PIPING RELEASE DETECTION

MANAGING YOUR UNDERGROUND STORAGE TANK



Owners and operators of regulated underground storage tanks (USTs) on tribal lands must comply with the federal UST regulation.

This compliance assistance brochure highlights tips to help you manage your piping release detection.

Note: This document is a resource to promote compliance and does not replace the federal UST regulation.

This brochure is one in a series of EPA compliance assistance brochures designed to help owners and operators in Indian country comply with the federal UST regulation.

Other brochures focus on implementation, compatibility, spill buckets, overfill protection, recordkeeping and notification, financial responsibility, insurance, and tank release detection.

<https://www.epa.gov/ust/best-management-practices-usts-indian-country>



Office of Underground Storage Tanks
www.epa.gov/ust
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Compliance Assistance In
Indian Country

RELEASE DETECTION

Piping [release detection](#) is a method or combination of methods designed to help quickly detect releases from underground piping.

What type of release detection must you use?

A line leak detector must be installed on your pressurized piping and must be tested **annually**.

Also, if your pressurized piping was installed or replaced on or before April 11, 2016, you must use any of the following release detection methods:

- ☞ annual tightness test
- ☞ monthly monitoring using either
 - *interstitial monitoring (for double-walled piping)
 - *continuous in-tank leak detection
 - *vapor monitoring
 - *groundwater monitoring
 - *statistical inventory reconciliation
- ☞ other methods approved by the implementing agency

If you use vapor monitoring or groundwater monitoring, you must keep records of a site assessment showing that the monitoring system is set up properly.

If your pressurized piping was installed or replaced after April 11, 2016, you must use secondary containment with interstitial monitoring.

What type of release detection can you use for suction piping?

Release detection is **not** required if the [suction piping](#):

- ☞ operates at below atmospheric pressure
- ☞ is sloped so its contents drain back into the tank, and
- ☞ there is only one check valve directly below the dispenser pump



If your suction piping does not exactly match the characteristics above, you must use one of the monthly methods used for pressurized piping, or conduct a [tightness test at least every 3 years](#).

What should you do to ensure your release detection device is working properly? If you use:

Control panel

- ☞ Check your printout
 - * What does the printout show? Is the system working properly or are there problems that need to be addressed?

MM DD, YYYY HH:MM XM PRESSURE LINE LEAK TEST RESULTS Q 1: UNLEADED REG LINE 3.0 GAL/HR RESULTS: LAST TEST: MM DD, YYYY HH:MM XM PASS NUMBER OF TESTS PASSED PREV 24 HOURS : 12 SINCE MIDNIGHT : 81 0.20 GAL/HR RESULTS: MM DD, YYYY HH:MM XM PASS MM DD, YYYY HH:MM XM PASS 0.10 GAL/HR RESULTS: MM DD, YYYY HH:MM XM PASS MM DD, YYYY HH:MM XM PASS

Piping leak test results

ALARM HISTORY REPORT ----- SENSOR ALARM ----- LI-DISP 12 DISP SUMP FUEL ALARM JUL 22, 2006 10:12 PM FUEL ALARM SEP 20, 2005 8:27 PM FUEL ALARM FEB 27, 2005 5:03 PM
--

Sump sensor alarm history

LIQUID STATUS MM DD, YYYY HH:MM XM L 1 : UNLEADED ANNULAR SENSOR NORMAL L 2 : SUPER ANNULAR SENSOR NORMAL
--

Sump sensor status report

- ☞ Immediately respond to and investigate any control panel alarms or flashing lights.

Make sure alarms function properly. Releases may go undetected if you ignore or disable the alarms.

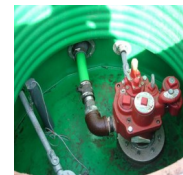
Containment sump

- ☞ Check your sump
 - * Is a sensor present?
 - * Is the sensor positioned correctly?
 - * Is there any liquid or product present?
 - * Does the lid have a tight seal and is it securely fastened?
 - * Is the sump damaged?
A damaged sump would no longer hold product if a release occurs.

Containment sumps that are part of the piping interstitial monitoring system must be tested at least once every three years for liquid tightness.



Control panel indicator lights



Tank top sump with double-walled piping and liquid sensor

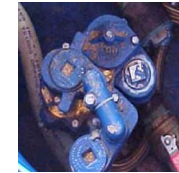


Tank top sump full of liquid

How do you avoid common piping release detection problems?

Line leak detectors (LLD)

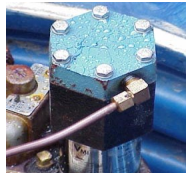
- ☞ Make sure the LLD is installed or functions correctly
- ☞ Test annually or in accordance with manufacturer's requirements
- ☞ Make sure the LLD is programmed or properly connected



Submersible turbine pump without a LLD installed



Electronic LLD



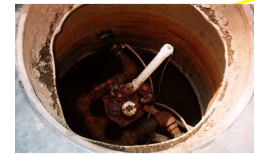
Mechanical LLD

Sensors

- ☞ Make sure sensors are present and functioning
- ☞ Make sure sensors are properly installed



Tank top sump sensor installed too high



Moved sensor cannot detect liquid

Tightness Testing

- ☞ Test every three years (*suction systems that do not meet the exemption requirements*)
- ☞ Conduct an annual line test for pressurized piping

Recordkeeping

- ☞ Keep records of annual tightness tests
- ☞ Keep records of annual release detection equipment tests
- ☞ Keep release detection performance claims or repair and maintenance records
- ☞ Keep records of the 30 day visual equipment inspection, or annual walkthrough inspection
- ☞ Keep site assessment records (for vapor and groundwater monitoring)

For more information on piping release detection, see EPA's [Release Detection For Underground Storage Tanks and Piping: Straight Talk on Tanks](#) or order free copies by calling (800) 490-9198.