Underground Storage Tank Containment Sump Testing

Overview

By January 1, 2021 and every three years thereafter, underground storage tank (UST) containment sumps used for interstitial monitoring must be tightness tested. This document provides tank owners, contractors and DEQ staff with a guide to assist in determining if UST piping containment sumps are required to be tested.

What is a containment sump?

A containment sump is a liquid-tight container that protects the environment by containing leaks and spills of regulated substances from piping, dispensers, pumps and related components in the containment area. Submersible turbine pump (STP) sumps, under-dispenser containment (UDC), intermediate, and transition sumps are all considered containment sumps and are included in the testing requirement.

When does a containment sump need to be tested?

Containment sumps must be tested if all the following conditions exist:

1) The piping is double-walled or secondarily contained,
2) The containment sump is associated with pressurized piping or US suction (unsafe) piping systems, and
3) The underground piping was installed or replaced on or after September 15, 2010, **or** the underground piping was installed or replaced prior to September 15, 2010 and interstitial monitoring is the only compliant method of release detection that is used to meet the piping release detection requirements.

Which containment sumps do not need to be tested?

- Containment sumps associated with single-walled piping.
- Containment sumps associated with safe suction piping.
- Containment sumps associated with underground piping that was installed or replaced prior to September 15, 2010, and the tank owner can demonstrate compliance with piping release detection requirements using any approved release detection method other than interstitial monitoring. The tank registration form must not identify interstitial monitoring as the method. If it does, the form will need to be amended.

Do the transition sumps need to be tested?

Transition sumps are containment sumps by definition; therefore, they need to be tested if the underground piping and sumps meet the above requirements for testing.

Do containment sumps need to be tested for suction piping systems?

Containment sumps associated with safe suction piping systems do not need to be tested. Containment sumps associated with US suction (un-safe suction) piping must be tested if they meet the above testing criteria.

Does the UDC need to be tested if it contains a sensor but the STP does not?

Sensor placement has no bearing on whether a containment sump needs to be tested. Containment sump testing depends on three factors:

1) Piping Type (pressurized vs. US suction)
2) Piping/UDC installation date
3) Release detection method

Please refer to the second and third questions above for additional information.

Does the UDC need to be tested if the piping was installed prior to September 15, 2010, but the UDC was installed on or after September 15, 2010?

No, the UDC does not need to be tested, unless interstitial monitoring is the only method of release detection for the piping contained in the UDC.

What are the testing requirements if the UDC is open to a piping chaseway?

If the UDC is required for interstitial monitoring or installed on or after September 15, 2010, then the tank owner has two compliance choices if the UDC is open to a piping chaseway:

1) The UDC, piping chaseway, and STP sump must be tested to ensure the entire interstitial monitoring system works as a whole. Chaseways are difficult to test and may not pass a tightness test; OR
2) A penetration boot may be installed in the UDC to isolate the UDC from the piping chaseway and allow the UDC to be tightness tested independently. The penetration boot must remain and may not be removed after testing.

Do containment sumps need to be tested if the tank owner is performing piping interstitial monitoring but is also able to demonstrate compliance using a different method of piping release detection?

Containment sump testing depends on three factors:

1) Piping Type – pressurized or US suction.
2) Piping / UDC installation date – Pressurized and US suction piping installed on or after September 15, 2010 must perform interstitial monitoring, therefore the associated containment sumps must be tested, and
3) Release detection method – For piping installed prior to September 15, 2010, if the release detection requirements can be met using a method other than interstitial monitoring and the alternative method is correctly identified on the UST Notification Form 7530, then the associated containment sumps are not required to be tested.

What test methods may be used to test containment sumps?

Containment sumps must be tested in accordance with the manufacturer's instructions, industry standard (PEI-RP1200), or a method approved by DEQ. DEQ, like the USEPA, has approved a Low Level Test method that may be used for routine testing if the following conditions are met: (1) the liquid sensor is mounted at the lowest point in the sump; (2) the sump sensor is tested and works correctly; (3) the pump automatically shuts off (positive shutdown) when the sensor is activated or the dispenser shuts off when the sensor is activated; and (4) the facility is always staffed when the pumps are operational. **The low level testing method may NOT be used for testing containment sumps at the time of installation but may be used thereafter.**

The low level testing requires that the containment sump is filled with water to at least 4 inches above the height required to activate the sensor. A measurement is taken after the water settles for 15 minutes and another measurement in an hour from the first measurement. If the difference of the two measurements is greater than 1/8 inch, the containment sump fails the test. Additional information regarding low level containment sump testing may be found in Appendix A of the Guidance Memo No. LPR-SRR-2020-01- New Underground Storage Tank (UST) Requirements Effective January 1, 2021 located here: https://townhall.virginia.gov/L/ViewGDoc.cfm?gdid=6856 .

For additional information:

- Contact the Office of Spill Response & Remediation at tank@deq.virginia.gov, or contact your regional DEQ Office: https://www.deq.virginia.gov/get-involved/about-us/contact-us.