

## A Lesson in Tank Tightness Testing for Underground Storage Tank (UST) Systems

### WHAT IS IT?

- ▶ A tank tightness test identifies breaches in a tank that may result in leaks.
- ▶ Tank tightness testing can be used in combination with monthly inventory control as a method of release detection.
- ▶ Tightness testing is also required to validate repairs to UST systems.

### THINGS TO CONSIDER

- ▶ Tank tightness tests must be performed by an ADEQ-certified service provider. Procedure and personnel, not equipment, are usually the most important factors in a successful tightness testing.
- ▶ Tank tightness testing is used primarily on tanks of 15,000 gallons capacity or less containing gasoline or diesel. If you are considering using tightness testing for larger tanks or other products, discuss the method's applicability with an ADEQ-certified tightness test service provider.

### WHAT ARE THE REGULATORY REQUIREMENTS?

- ▶ A "tightness test" must evaluate any portion of the tank that routinely contains liquid and be able to detect a leak as small as 0.1 gallon per hour (gph) with a probability of detection of at least 95% and a probability of false alarm of no more than 5%.

### WHEN IS IT REQUIRED?

- A.** As a method of release Detection (in conjunction with monthly inventory control or weekly manual tank gauging):
1. New UST systems installed after December 1988 - must have tank tightness tests performed every five years for up to ten years following installation.

2. Existing UST systems, installed before December 1988 and upgraded for spill, overfill, and corrosion protection, must have tank tightness tests performed every five years for up to 10 years following the date of upgrade or installation, whichever date is later.
3. After a repair of the UST system (unless the repaired tank is internally inspected or is monitored monthly).
4. After the time periods stated above, you must have an alternative release detection monitoring method that can be performed at least once per month, including vapor monitoring, interstitial monitoring, ATGS, etc.

**B.** If there is a suspected release:

1. Report it immediately to the UST call line at 1-800-234-5677, extension 771-4303, or (602) 771-4303.
2. UST owners and operators must investigate and confirm all suspected releases.
3. A tightness test may be conducted where there are no signs of environmental contamination.
4. Submit the results of the tank tightness testing along with a 14-day Report to the UST Program.

### HOW DOES TANK TIGHTNESS TESTING WORK?

There are two categories of precision tank tightness tests: A) Volumetric, and B) Non-volumetric.

**A.** Volumetric

- ▶ A volumetric tank tightness test measures the change in the volume of fluid in the tank and attributes this change to a leak.

- ▶ A leak is defined in terms of flow rate in gph and can be positive or negative; that is, product can flow out of the tank or water can flow into the tank.
- ▶ The determination as to whether the tank is leaking or non-leaking is usually made by comparing the flow rate to a predetermined value called the threshold. If the flow rate exceeds the threshold, a leak is declared.
- ▶ Adequate waiting periods must be observed after any change in product level, whether such a change represents the initial product delivery or a subsequent adjustment (topping off the tank) prior to starting the test.

## B. Non-Volumetric

- ▶ Non-volumetric methods typically use acoustics or chemical tracers to determine the presence of a breach in the tank.

## REQUIRED DOCUMENTATION

- ▶ Show that an ADEQ-certified tank tester performed the tank tightness test.
- ▶ Save the test results until after the next test.
- ▶ Need a list of the certified service providers? Call 1(800) 234-5677, Ext: 771-4316, or (602) 771-4316.

## CHECKLIST

### SPILL PREVENTION DEVICE

- Is the tank service provider certified by ADEQ?
- Is the test method third party certified for the size of tank and type of product?
- What is the phase-out date for using tank tightness testing and inventory control as a method of release detection?

### FOR MORE INFORMATION CONTACT:

Arizona Department of Environmental Quality  
 UST & Division Support Section  
 1110 West Washington Street  
 Phoenix, Arizona 85007

(602) 771-4303

toll free number: (800) 234-5677 Ext:771-4303

Website: [www.azdeq.gov](http://www.azdeq.gov)

In the event of any discrepancy between this information and the Arizona Revised Statutes or Arizona Administrative Code, the statutes or rules shall take precedence.