pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

TIGHTNESS TEST FOR UNDERGROUND PIPING SYSTEMS

Requirements for existing piping:

Federal and state regulations require that underground piping that routinely contains regulated substances must be monitored for releases. Part of this monitoring may require a line tightness test. If line tightness testing is used as a method of release detection, it must be performed in accordance with the regulations by a Pennsylvania Department of Environmental Protection (DEP) Certified Underground Storage Tank System Tightness Tester (UTT). See Fact Sheet 1507, titled "How to Detect Releases in Underground Piping Systems," for more information on release detection schedules and methods and options for underground piping.

When the piping to be tested is installed and operational, a test, as specified in 25 Pa. Code, §§ 245.445(2) and 245.31(b), must be conducted. Regulations require that a line test be conducted at a positive pressure 1.5 times the system's operating pressure, and the test must be able to detect a 0.1-gallon-per-hour leak rate. Vacuum tests do not satisfy regulatory requirements for pressurized or suction piping systems.

Newly installed piping:

According to the American Petroleum Institute Recommended Practice 1615, a tightness test for new piping is an air pressure test of underground product piping and associated valves and fittings that is conducted before the product is introduced and the piping is covered with backfill. These tests are an integral part of the installation process and are conducted as follows:

1. The piping to be tested is isolated and pressurized with compressed air to 150 percent of the maximum system operating pressure (or a minimum of 50 pounds per square inch gauge (psig)) for a minimum of 30 minutes;
2. All valves, fittings, and surfaces are coated with a soap solution and inspected for bubbles; and
3. Leaks, as indicated by bubbles, are repaired and the piping is retested as necessary.

The Petroleum Equipment Institute Recommended Practice 100 recommends that immediately before the underground product piping is placed into service, the piping should be tested hydrostatically at 150 percent of the operating pressure, but not less than 50 psig.

QUESTIONS RELATING TO PIPE TIGHTNESS TESTING:

Q. What are some of the recognized line tests, and how can the owner determine if the line test done on the piping is valid?

A. When it is necessary to test the piping for release detection compliance, the following methods have been evaluated to date and have been found through certification or third-party evaluation (U.S. Environmental Protection Agency (EPA) line test protocol) to meet state and federal requirements when properly performed:

AcuRite - Training and Services Corp.
EZY-Chek Manual Line Test - Estabrook EZY CHEK Systems
EZY-Chek II Automatic Line Test - Estabrook EZY CHEK Systems
HCNA Pipeline Leak Detection System, Version 2.1 – Hansa Consult of North America, LLC.
LTH - 5000 Line Tester - ProTank, Inc.
LTP - 5000 Line Tester - ProTank, Inc.
MDleak Enhanced Leak Detection and Leak Location Method – Leak Detection Technologies
ML3P Line Leak Detection System - MassTech International, Ltd.
Model PLT-100R - Western Environmental Resources
Petro Tite Line Tester - Purpora Engineering, LLC.
Proline Test Series III, Version 1.0 - Tanknology
PTK-88 – Tanknology
Qualitative Dry Line Test PM2 – Leighton O'Brien Technologies, Ltd.
Quantitative Wet Line Test PM2 – Leighton O'Brien Technologies, Ltd.
TEI Model LT 3, Version 1.0 - Triangle Environmental, Inc.
TLD-1 - Tanknology
Tracer Tight - Praxair Services, Inc.
U.T.S. 6000 Line Tester – United Testing Systems

Q. Can anyone test the product lines or must they be tested by a DEP-certified UTT?

A. A DEP-certified UTT must perform the product line testing. See Fact Sheet 1647, titled "Understanding the Certification Categories," for more information on the certification categories.

Q. Should the owner request and keep a copy of the line test protocol, industry standard, or manufacturer's instructions used on underground product piping?

A. The tank owner/operator should request, receive, and retain the results of the manufacturer's certification and the EPA Standard Evaluations Form, which establishes that the method used during the tightness test meets performance requirements. DEP-certified inspectors review this documentation and line tightness testing results during facility operations inspections.

Q. Can a UTT-certified individual test the piping when that individual tests the tank?

A. Yes, as long as the UTT-certified individual follows industry codes and the appropriate tank/line testing protocols. Please keep in mind that nearly all tank tightness test methods are inadequate for testing lines that are required to be tested under federal and state rules.

Q. If the owner uses a monthly monitoring method for piping release detection, such as vapor monitoring, groundwater monitoring, interstitial monitoring, statistical inventory reconciliation, or another acceptable procedure, does the owner still have to have the piping tightness tested?

A. No, line tightness testing is not required if another acceptable form of monthly piping release detection, such as those mentioned above, is used. The alternative method must be capable of detecting a 0.2-gallon-per-hour leak rate.

Q. If line tightness testing is used as the method of release detection for piping, what leak rate requirements must be met?

A. Technical requirements specify that a periodic test of piping may be conducted only if it can detect a 0.1-gallon-per-hour leak rate at 1.5 times the system operating pressure or equivalent.

For additional information on Pennsylvania's Storage Tank Program or to obtain forms, contact:	
Southeast Region 2 East Main St. Norristown, PA 19401-4915 484-250-5900	**Northeast Region** 2 Public Square Wilkes-Barre, PA 18701-1915 570-826-2511
Southcentral Region 909 Elmerton Ave. Harrisburg, PA 17110-8200 717-705-4705	**Northcentral Region** 208 W. Third St., Suite 101 Williamsport, PA 17701-6448 570-327-3636
Southwest Region 400 Waterfront Drive Pittsburgh, PA 15222-4745 412-442-4000	**Northwest Region** 230 Chestnut St. Meadville, PA 16335-3481 814-332-6648
Central Office **Bureau of Environmental Cleanup and Brownfields** **Division of Storage Tanks** P.O. Box 8762 Harrisburg, PA 17105-8762 Local and Out of State 717-772-5599 800-42-TANKS (in PA only)	
For additional information on DEP regional offices, or to determine which regional office is responsible for the county in which a facility is located, please visit www.dep.pa.gov and search "Regional Resources."	

For more information, visit www.dep.pa.gov, Businesses > Land > Storage Tanks.