RELEASE DETECTION FOR PETROLEUM PIPING SYSTEMS

Studies have concluded that the operational piping components of underground storage tank systems (USTs) are twice as likely to cause a release as the tank component. Since piping failures are primarily caused by poor workmanship and corrosion, the problem of leak detection must be addressed. Due to their shallow burial depths, piping systems are susceptible to damage because of heavy traffic loads. Due to their high volume capabilities, piping systems can cause high volumes of contamination in a short period of time.

Piping that does not normally contain product, such as vent and vapor recovery lines, are not required to have leak detection.

RELEASE DETECTION REQUIREMENTS FOR PRESSURIZED PIPING SYSTEMS

All pressurized piping systems must have leak detection.

Each pressurized piping run must have one leak detection method from each set below:

Automatic line leak detector:

Automatic flow restrictor or
Automatic flow shutoff or
Continuous alarm system

And one other method:

Monthly groundwater monitoring or
Monthly vapor monitoring or
Monthly interstitial monitoring or
Annual line tightness test, or
Statistical Inventory Reconciliation

An automatic line leak detector must be able to detect a leak of as little as 3 gallons per hour when operated at 10 psi for one hour. Automatic line leak detectors must be tested annually by the manufacturer's instructions to ensure that they are functioning properly. (See 280.44 (a) in UST regulations.)

An annual line tightness test must be capable of detecting a leak of 0.1 gallon per hour at 1 1/2 **2** times the normal operating pressure.

The Department of Environmental Quality recommends one groundwater or vapor well for every 50 feet of transfer line.

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P. O. Box 2261, Jackson, MS 39225-2261 \ (601) 961-5171\fax (601) 961-5093 **4/ 08**

RELEASE DETECTION REQUIREMENTS FOR SUCTION PIPING SYSTEMS

There are two types of suction piping systems and leak detection is required on one type and not on the other. The two types are as follows:

Type 1 Suction Piping System:

On a **Type 1 Suction Piping System** the check valve is located at or inside the tank where it cannot be visually checked and product remains in the lines when suction is released.

One of the following forms of leak detection is required on all **Type 1 Suction Piping Systems**:

Line tightness testing every three years or
Statistical Inventory Reconciliation or
Monthly Vapor Monitoring or
Monthly Groundwater Monitoring or
Interstitial Monitoring

Type 2 Suction Piping System:

On a **Type 2 Suction Piping System** only one check valve is included in each suction line and that check valve is located directly below and as close as possible to the suction pump for accessible inspection. The below-grade piping is sloped so that the contents of the pipe will drain back into the tank if suction is released.

Line leak detection is not required on a **Type 2 Suction Piping System.** Tank leak detection is still required on this UST system.

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