

## **Line Leak Detection and Stand Alone Sump Sensors**

**Background:** According to 40 CFR 280.41(b)(1), pressurized underground piping must be monitored by the combination of a line leak detector and an annual line tightness test, or, monitored by a line leak detector and have monthly monitoring. These requirements are intended to assure that large leaks are detected within one hour and that slower, small leaks are detected within one month. Stand-alone sump sensors may only be used for piping leak detection if the owner/operator can demonstrate that the sensor meets both the large leak detection and small, slow leak detection requirements. In our experience, few owner/operators can make this difficult demonstration.

**EPA Region 10 Policy:** Therefore, EPA Region 10 does not recommend use of stand-alone sump sensors. Further, EPA Region 10 inspectors will be directed to take enforcement actions when they encounter stand alone sump sensors which are used to comply with all line leak detection requirements, unless the owner/operator immediately provides all necessary technical documentation that the sump sensor will meet those requirements.

### **Line Leak Detection Requirements:**

- Hourly/Annual - 3 gallons per hour (gph) at 10 pounds per square inch line pressure within 1 hour and annual function test; **and** one of these three requirements:
- 0.2 gallons per hour; or,
- 150 gallons within a month; or,
- other methods approved by the implementing agency.

**Note:** All of the above methods must meet the EPA standard of the probability of detection of 0.95 and a probability of false alarm of 0.05.

**Technical Documentation:** It should be noted that while third party evaluations may indicate that a device is capable of detection of a liquid within a specified time period, they make no statement or guarantee that the device will respond in this manner as uniquely installed in any particular facility. **Site-specific documentation that includes calculations and as-builts in an engineering review must accompany stand alone sump sensors to achieve compliance.**

**Reliable Leak Detection Configurations:** In our experience, the following examples are among the more reliable ways to meet line leak detection requirements.

1. Electronic line leak detectors (programmed to conduct the 3gph hourly test and also a 0.2gph monthly and/or a 0.1 gallon per hour annual test of the lines).
2. Mechanical line leak detectors combined with performance of annual line tightness tests.
3. Mechanical line leak detectors and a form of monthly monitoring (e.g. Sump sensors in each sump).

### ***Reminder:***

- *All automatic line leak detection devices must be tested on an annual basis.*
- *Remember to maintain monthly records of release detection monitoring of all tanks and lines.*
- *Ensure integrity of the sump (consult American Petroleum Institutes (API) recommended practice 1615 (Fifth Ed., March 1996).*

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