

# TANKS: DOUBLE-WALLED with CONTINUOUS ELECTRONIC MONITORING

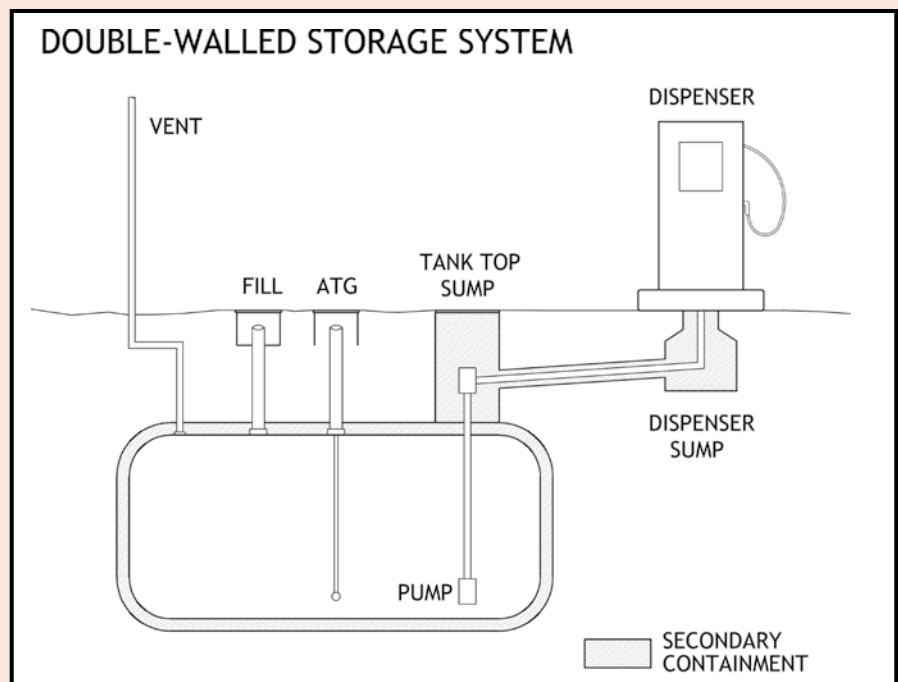
**A**s of September 16, 1991, all underground storage tanks installed in Maine must be double-walled. Double-walled tanks are, in essence, a tank within a tank and designed to prevent releases into the environment by containing fuel leaking out from the inner tank in the “interstitial space” between the two walls of the tank. When the interstitial space is monitored continuously and alarms are addressed as they occur, fuel can be prevented from reaching the environment.

Double-walled tanks can be fashioned with both walls made of either steel or fiberglass or with an inner steel tank and an outer containment vessel constructed of fiberglass or polyethylene plastic, generally known as “jacketed” tanks.

Double-walled tank technology is generally considered to be the most secure form of fuel storage, but a double-walled tank is only as good as how well you know your leak-monitoring system, what it tells you, and how to respond.

Leak detection for double-walled tanks is known as interstitial monitoring. Since September 16, 1991, sensors must be used to continuously monitor for leaks in interstitial spaces. Periodic visual inspection of tank interstitial spaces is not allowed for tanks installed after September 16, 1991.

**When the interstitial space is monitored continuously and alarms are addressed as they occur, fuel can be prevented from reaching the environment.**



**Double-walled tanks are the most secure form of fuel storage, but they are only as effective as the people who operate them.**

**NOTE:** In some double-walled tanks (e.g., STI P3), both walls are made of steel (subject to corrosion). If you have such tanks, they will have cathodic protection to prevent corrosion. (See the *TankSmart* Cathodic Protection for Tanks & Piping module.)

## HOW DOES INTERSTITIAL MONITORING DETECT LEAKS IN TANKS?

Interstitial monitoring is a leak detection method that is used with double-walled tanks and piping.

Interstitial monitoring is a leak detection method that is used with double-walled tanks and piping. It is the only method of leak detection that can actually PREVENT a release to the environment, because the alarm should sound when the product is still contained within the outer wall of the tank or pipe. A sensor is placed in the interstitial space and then connected to a console that continuously monitors for leaks and triggers an alarm if a problem is detected. Many consoles are combined with an automatic tank gauge (ATG). In either case, sensors will trigger an alarm at the console whenever the sensor detects liquid.

There are two types of sensors: discriminating and non-discriminating. A discriminating sensor can tell the difference between fuel and water and provides a different alarm for each type of liquid. A non-discriminating sensor, by far the most commonly used, only tells you that a liquid is present. With non-discriminating sensors, you have to visually investigate to determine whether fuel or water has triggered the alarm.

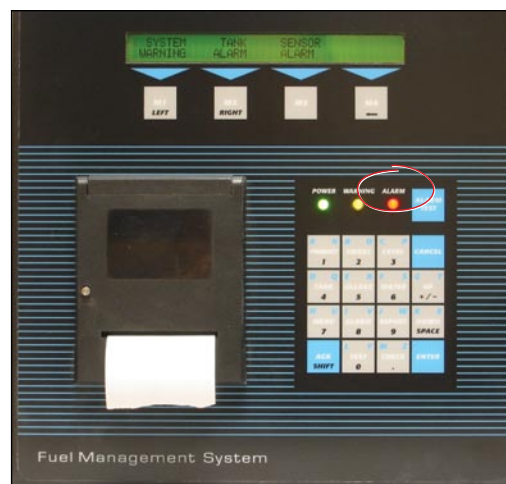
You should keep a list of all the sensor locations with the sensor identification number or label posted close to the alarm console so you (and the service technician) can quickly tell which tank is causing the alarm.

The biggest issue with interstitial monitoring is:

### OPERATORS NOT PAYING ATTENTION TO ALARMS!

Not all alarms are due to leaks, but ignoring any alarm defeats the purpose of having a leak-monitoring system. Large leaks have gone undetected when operators ignored an alarm. Most consoles indicate alarms with audible beeping or a horn and an illuminated red light. Systems with digital displays also describe the alarm (e.g., “L1: Fuel Alarm” indicates liquid is present at the location where sensor L1 is installed). Respond immediately to any audible alarm or blinking red or yellow lights!

If you do not know what to do, call your service technician or the DEP (207-287-2651).



An ATG tank monitor in alarm.



*A tank interstitial leak sensor in alarm.*



*Do not cover up or ignore alarms. In this photo, a piece of paper was taped over the alarm lights so they could not be seen. This is NOT the proper response to an alarm!*

## WHAT SHOULD YOU DO IF YOUR ELECTRONIC MONITOR ALARMS?

Check your monitoring system EVERY DAY for alarms, which are evidence of a possible leak. If your console is in alarm, take the following steps:

- Report evidence of a possible leak to the DEP within 24 hours. Call 207-287-2651 (workdays 8AM – 5 PM), or 1-800-482-0777 anytime.
- Contact your tank installer or inspector immediately to determine the cause of the alarm.

**To ensure your sensors are working properly, they must be inspected as part of your annual inspection by a Maine-certified tank installer or inspector.**