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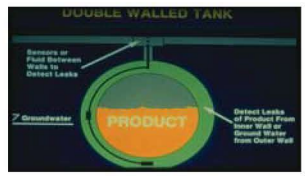
Secondary Containment with Interstitial Monitoring

(From the EPA Office of Underground Storage Tanks)

This method detects leaks in the space between the UST and a second barrier. The regulations describe general performance requirements for interstitial monitoring with double-walled USTs, USTs fitted with internal liners, and USTs using interception barriers.

Secondary Containment

- Secondary containment provides a barrier between the tank and the environment. The barrier holds the leak between the tank and the barrier so that the leak is detected. The barrier is shaped so that a leak will be directed towards the interstitial monitor.
- Barriers include:
    - Double-walled or "jacketed" tanks, in which an outer wall partially or completely surrounds the primary tank;



    - Leak proof excavation liners that partially or completely surround the tank.
    - Internally fitted liners ("bladders"); and
    - Clay and other earthen materials cannot be used as barriers.

Interstitial Monitors

- Monitors are used to check the area between the tank and the barrier for leaks and alert the operator if a leak is suspected.
- Some monitors indicate the physical presence of the leaked product, either liquid or gaseous. Other monitors check for a change in condition that indicates a hole in the tank, such as a loss of vacuum or a change in the level of a monitoring liquid between the walls of a double-walled tank.
- Monitors can be as simple as a dipstick used at the lowest point of the containment to see if liquid product has leaked and pooled there. Monitors can also be sophisticated automated systems that continuously check for leaks.

What are the regulatory requirements?

- The barrier must be immediately around or beneath the tank.
- The interstitial monitor must be checked at least once every 30 days.
- A double-walled system must be able to detect a release through the inner wall.
- An excavation liner must:
    - Direct a leak towards the monitor;
    - Not allow the specific product being stored to pass through it any faster than 0.000001 cm/sec;
    - Be compatible with the product stored in the tank;
    - Not interfere with the UST's cathodic protection;
    - Not be disabled by moisture;
    - Always be above the groundwater and the 25-year flood plain; and
    - Have clearly marked and secured monitoring wells, if they are used.