

US EPA ARCHIVE DOCUMENT

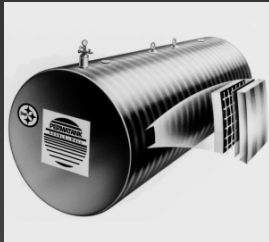
Hospital Compliance Seminar Managing Underground Storage Tanks

Requirements for Federally Regulated USTs

Requirements

Federal UST Definition

What is a Federally Regulated UST?



Federal UST Definition

An UST system is defined as:

- Containing petroleum or hazardous substances
- At least 10 percent underground (tank & piping)
- 110 gallons or larger

Federal UST Definition

Tanks not regulated by EPA:

- Farm/residential tanks 1,100 gallons or less containing motor fuels used for noncommercial purposes
- ***Tanks storing heating oil for on-site consumption (NYS DEC requirement)***
- Emergency spill and overfill tanks

General Requirements

- **Corrosion protection**
- **Spill protection**
- **Overfill protection**
- **Release Detection**

General Requirements

After 12/22/98 all federally regulated USTs are required to have either:

- Upgraded to protect from corrosion, spills and overfills or
- Replaced with new USTs that have corrosion, spill and overfill, protection or
- Closed properly

Spill Protection Requirements

Spill Protection



Requirements Spill Protection

All tanks must have an approved catchment basin, often called a "spill bucket," unless the tank receives product in quantities less than 25 gallons at a time.



Overfill Protection



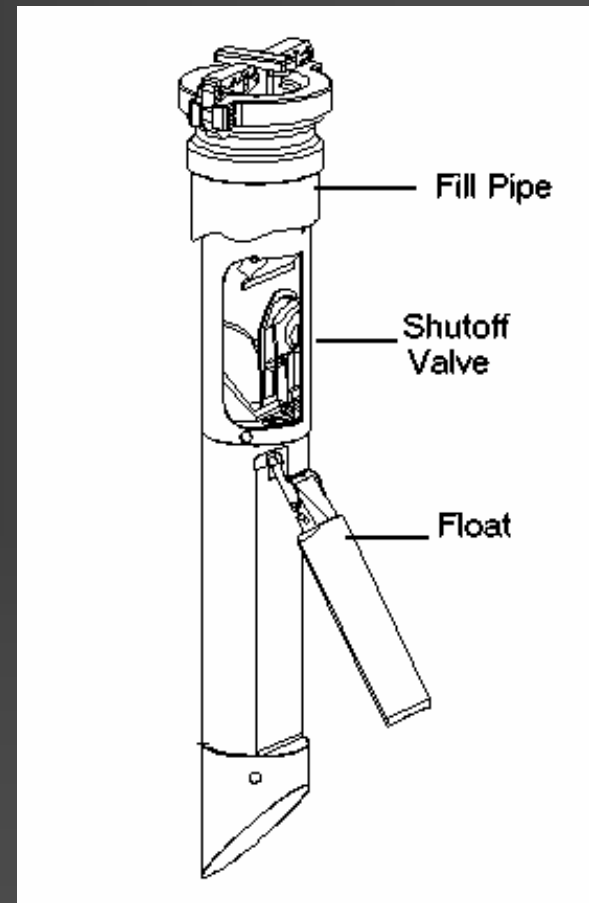
Overfill Protection - Options

Unless the tank receives 25 gallons at a time, all tanks must have an overfill device

Your options are:

- Automatic shutoff device
- Overfill alarm

Automatic shutoff device



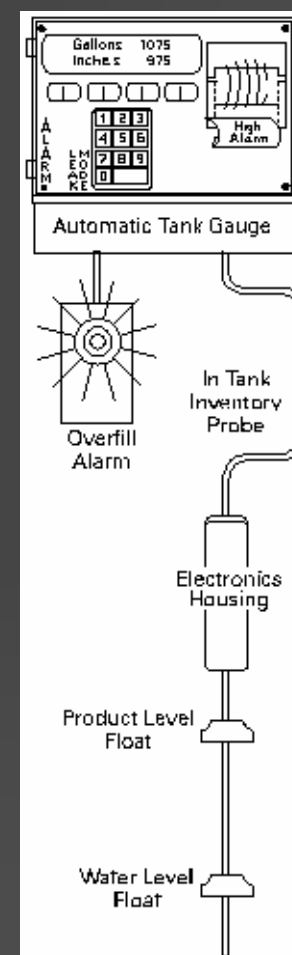
Overfill Protection

Automatic
overflow
alarm

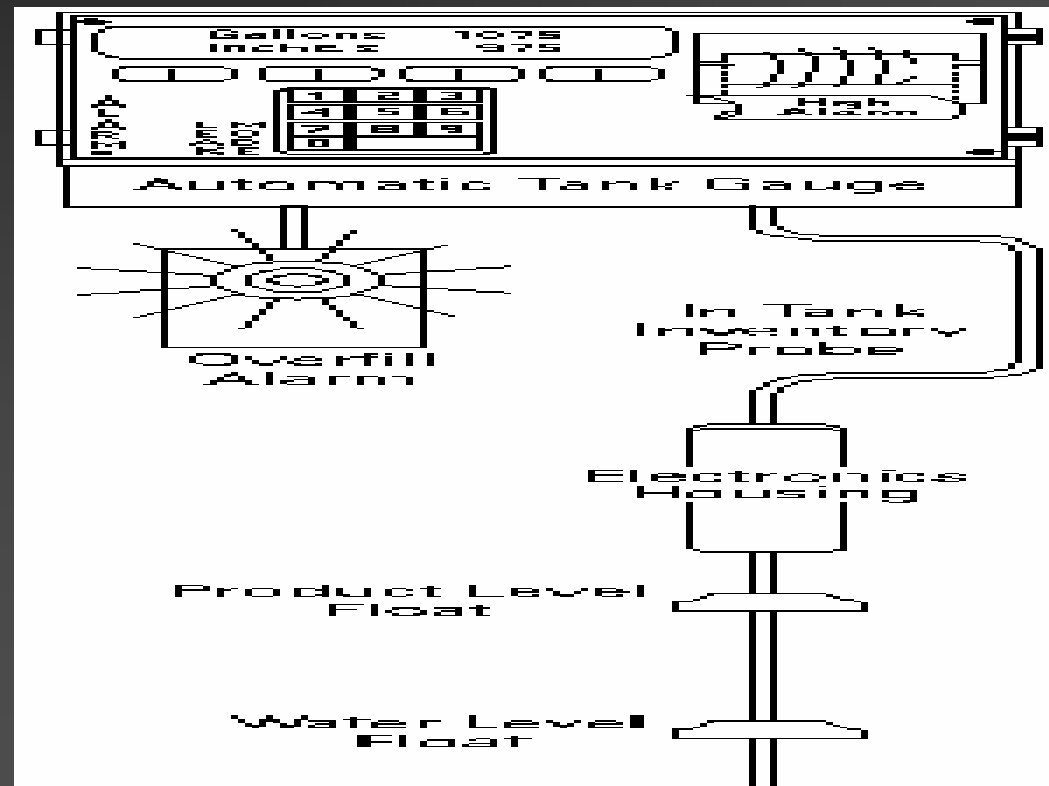


Overfill Protection - Overfill Alarm

Overfill alarms use probes to activate an alarm when the tank is either 90% full or within 1 minute of being overfilled.



Corrosion Protection



Requirements

Corrosion Protection

If your existing UST is one of these non-corrodible types, your tank meets the requirement for corrosion protection:

- Clad

- Jacketed

- Sti-P3

- Fiberglass

Requirements

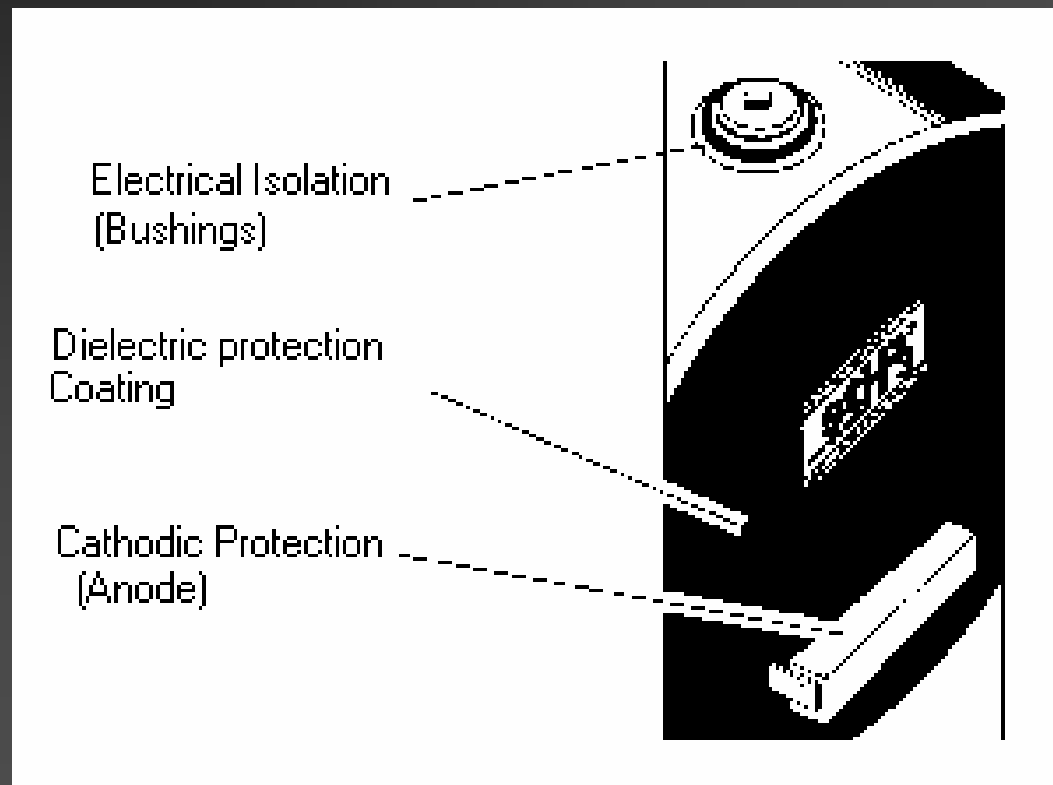
UST Corrosion Protection



Requirements

UST Corrosion Protection - Cathodic

Cathodic Protection



Requirements

Cathodic Protection - Types

Cathodic Protection Types:

(1) sacrificial anodes

(2) impressed current

Requirements

Cathodic Protection Expert

Both of the corrosion protection methods described in the following slides must be designed by a "corrosion expert"

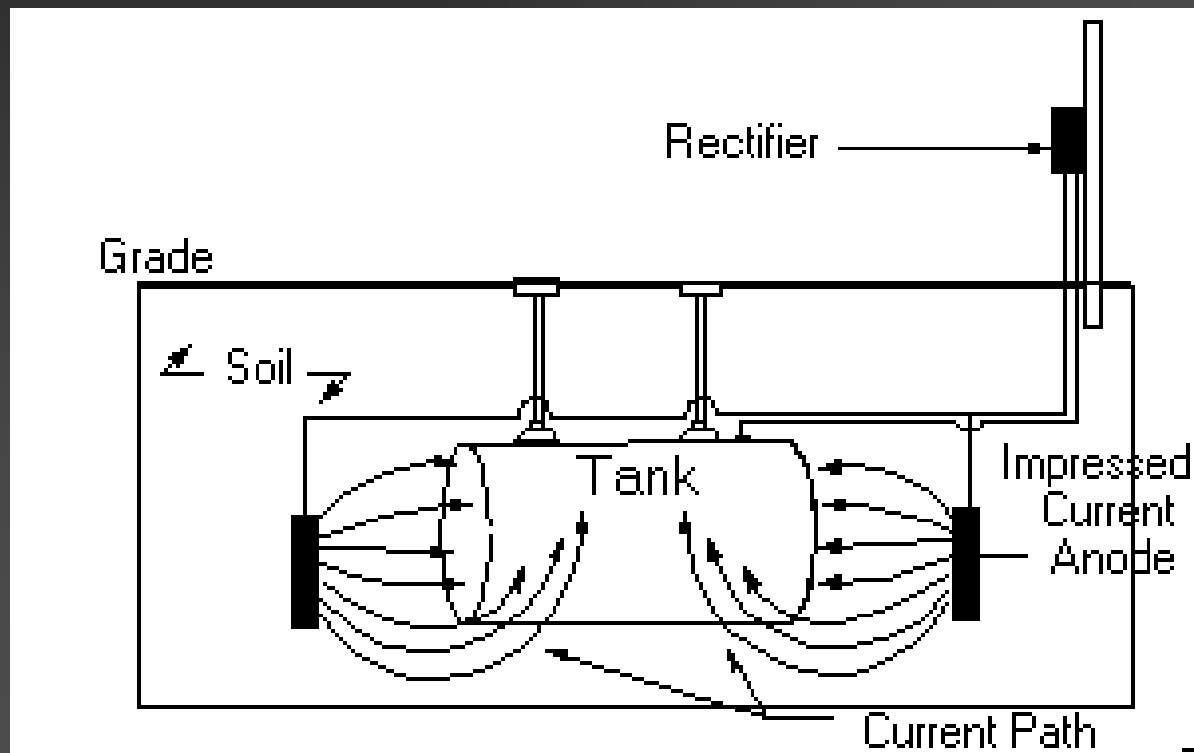
A corrosion expert is either:

- A NACE certified "corrosion specialist" or "cathodic protection specialist"
- A PE with certification or licensing in corrosion control of buried metal pipes and tanks

Requirements

Cathodic - Impressed Current

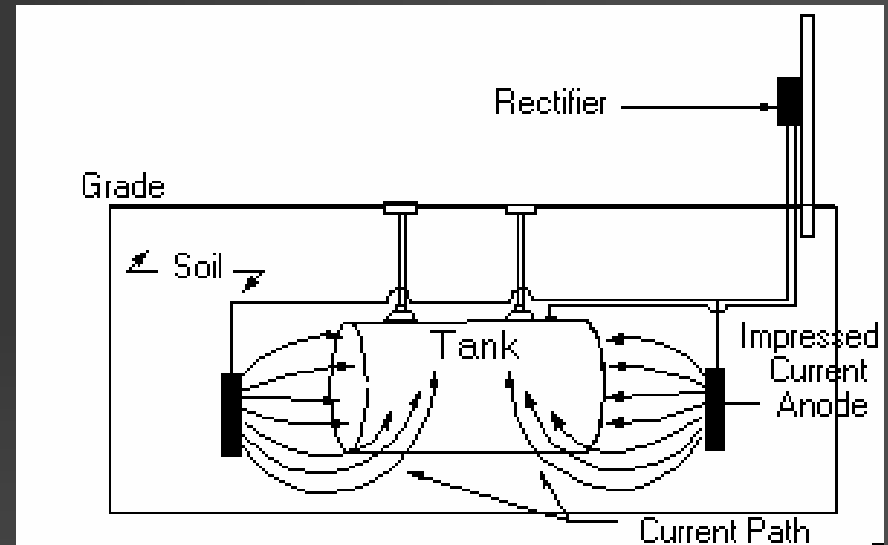
Impressed Current



Requirements

Cathodic - Impressed Current

An impressed current system uses a rectifier to convert alternating current to direct current.



The UST system is protected because the current going to the UST system overcomes the corrosion-causing current normally flowing away from it.

Requirements

Cathodic Protection - Testing

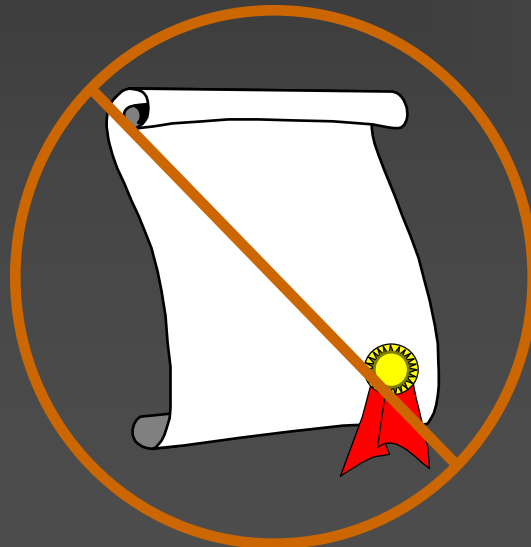
The tank must be tested
within 6 months of the
installation of the system
and every 3 years
thereafter.

Additionally: the impressed current system
must be checked every 60 days to make sure
it's operating.

Requirements

Cathodic Protection - Testing

A qualified tester does NOT have to be NACE certified but must demonstrate an understanding of principles and measurements of common types of UST tank and piping cathodic protection systems.



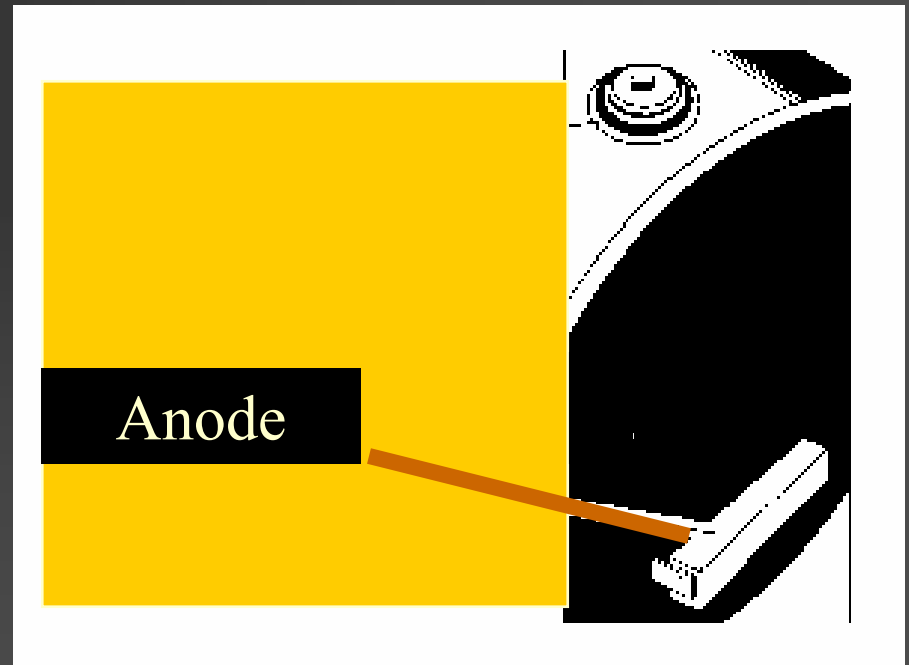
Sacrificial Anode System



Requirements

Cathodic - Sacrificial Anode

A sacrificial anode system uses retrofitted anodes to protect the tank from corrosion.

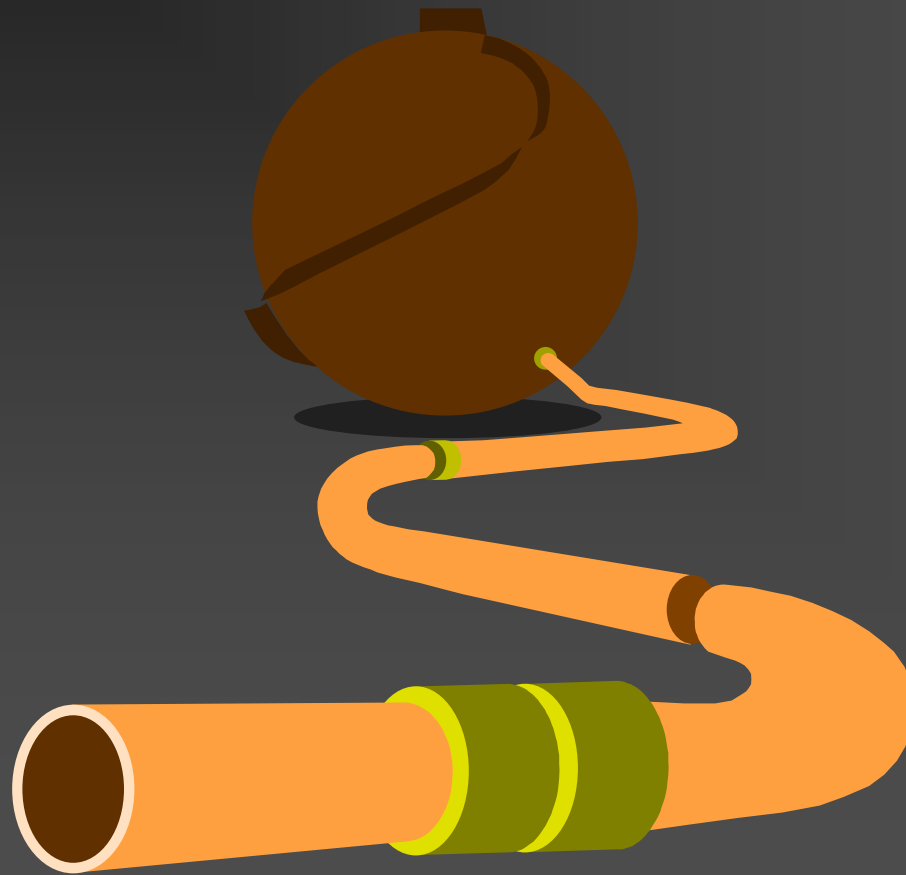


Requirements

Cathodic - Sacrificial Anode

The system must be tested within 6 months of installation and every 3 years thereafter

Piping corrosion protection



Requirements

Upgrade - Piping Options

Existing piping must be either

1. Made of, or enclosed in, a noncorrodible material such as fiberglass
2. If made of metal, it must have cathodic protection

Requirements

Upgrade - Piping Options

Otherwise, existing piping must be upgraded or replaced.



Requirements Inspection

After you have completed the a new installation or upgrade then must check with local and state authorities to meet the codes.

Record Keeping

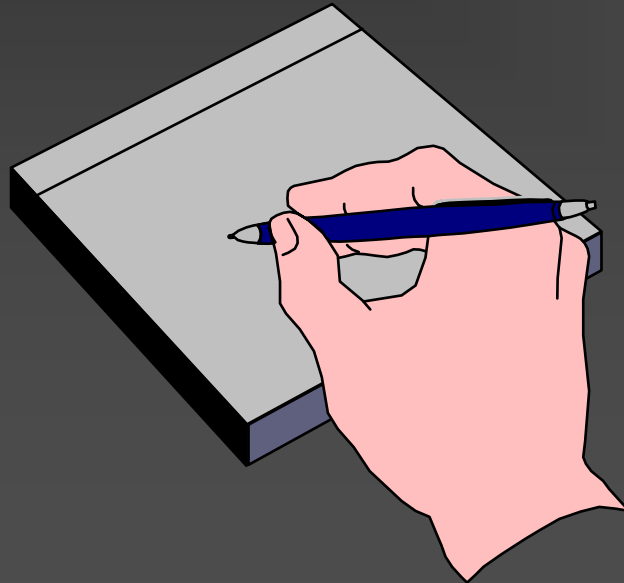


Record keeping Requirements

The law requires you to keep records of the activities that you conduct in the maintenance of your UST system.

Recordkeeping Requirements

You must keep records about any upgrading and repairing of your UST system over the life of the system



Requirements

Recordkeeping - Sacrificial Systems

For Sacrificial Anode Systems

Test the system within 6 months
of its installation and every 3
years thereafter

Keep results of the last 2
cathodic protection tests.

Requirements

Recordkeeping - Impressed Systems

For Impressed Current Systems

Inspect the system every 60 days to make sure the equipment is operating properly

Keep results of the last 3
equipment inspections

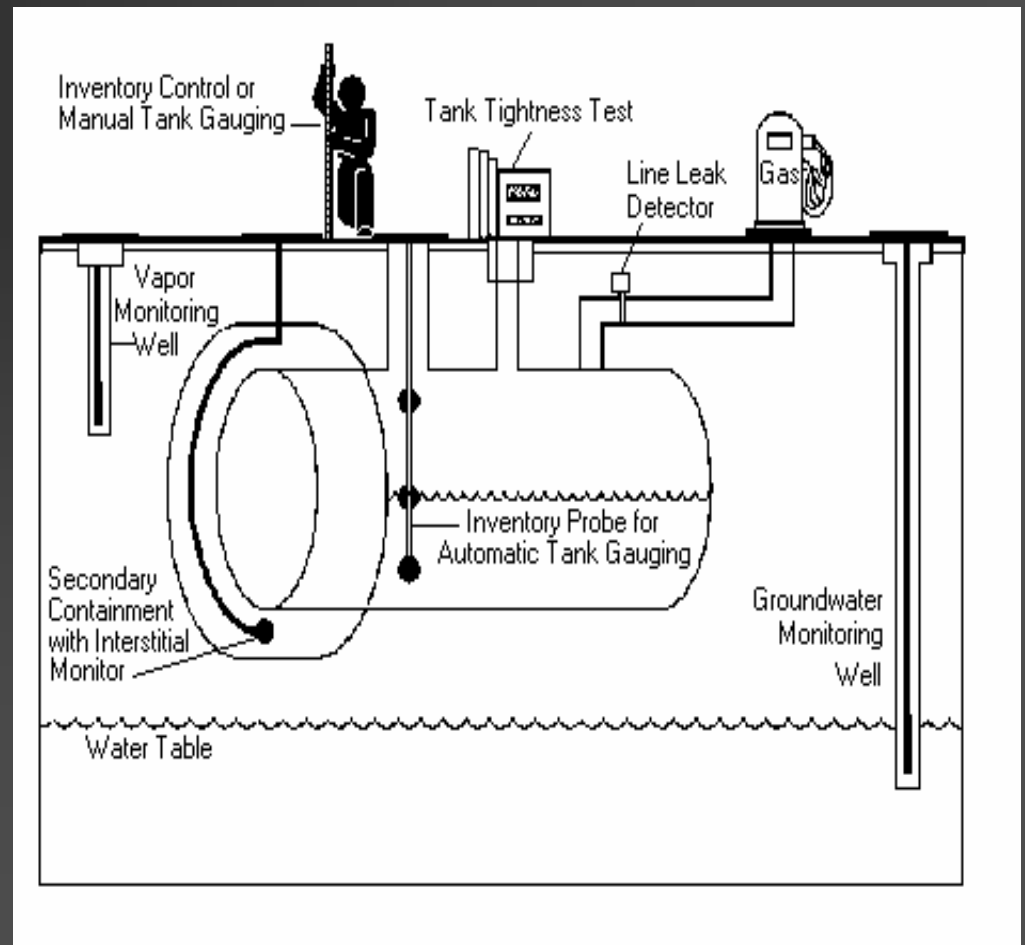
Release Detection

REQUIREMENTS

- Upgraded tanks and piping, you could use tightness testing every 5 years in conjunction with inventory monitoring.
- Or use another release detection method

Methods

- Internal
- Interstitial
- External
- Piping



Certification

- All methods are required to be certified
- Generally by a third party
- National listing is available

Internal

- Inventory Monitoring and TTT
- Statistical Inventory Reconciliation
- Automatic Tank Gauge

Inventory Monitoring

- Daily measurements of level, sales and deliveries
- Measure product level to closest 1/8"
- Calibrated meter (stick)
- Water bottom check (monthly)
- Reconcile records every 30 days



Statistical Inventory Reconciliation

- Third party provider
- Size and throughput limits
- Variable threshold
- Need quality data
- Monthly
- Very tank specific



Tank Tightness Testing

- Full system test
- Volumetric
- Non-Volumetric
 - Vacuum
 - Tracer

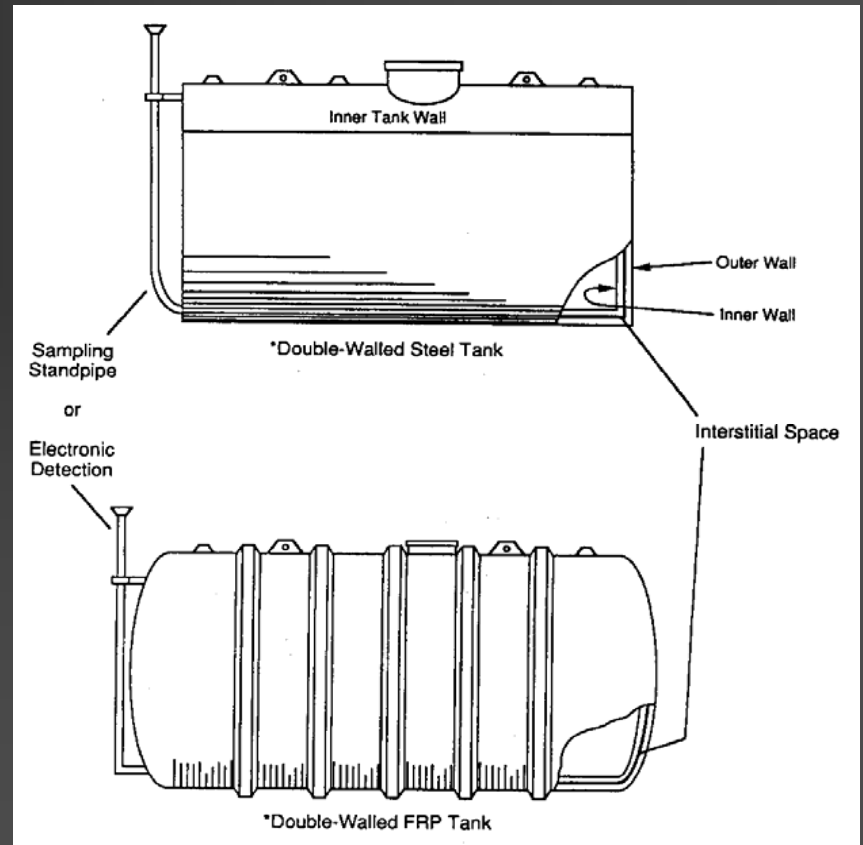
Automatic Tank Gauge

- Not a tightness test
- May not be useful on manifolded tanks
- Useful for inventory monitoring
- Run test weekly
- Out-of-service test vs continuous ATG



Interstitial

- Common with double wall tanks
- Monitor weekly
- Electronic versus manual

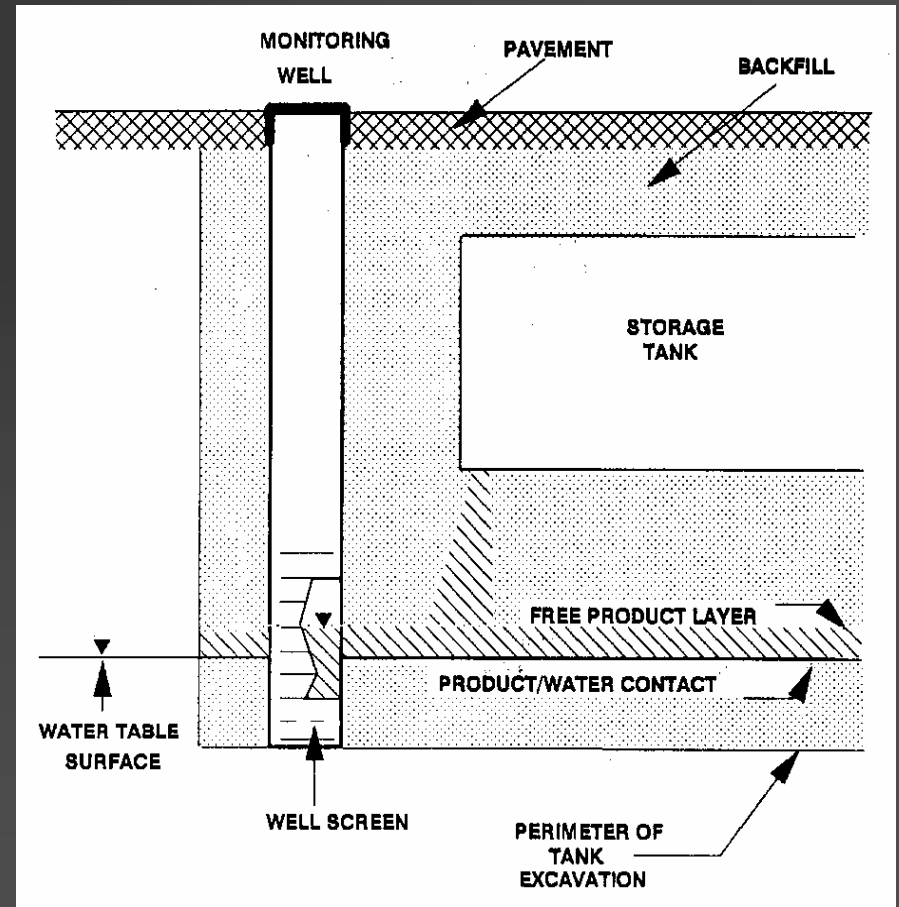


External

- Ground Water
- Vapor

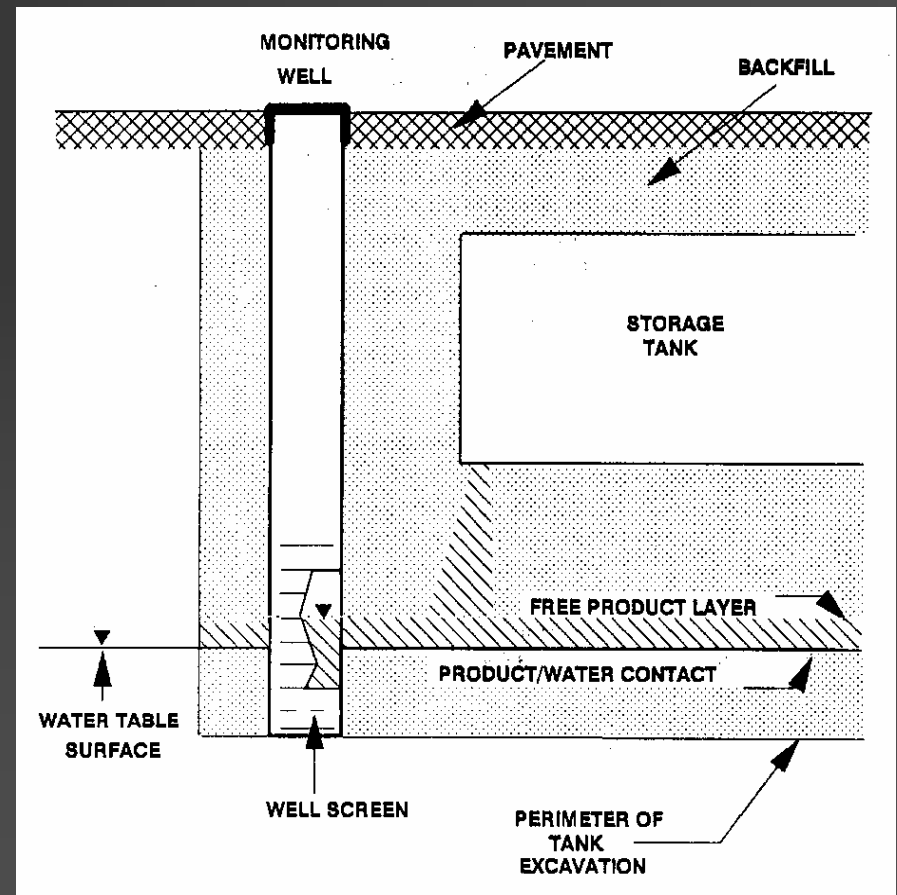
Ground Water

- Ground water must always be less than 20 feet from ground surface
- Soils between tank and well must have hydraulic conductivity of not less than 0.01 cm/sec (gravels, or other permeable materials)



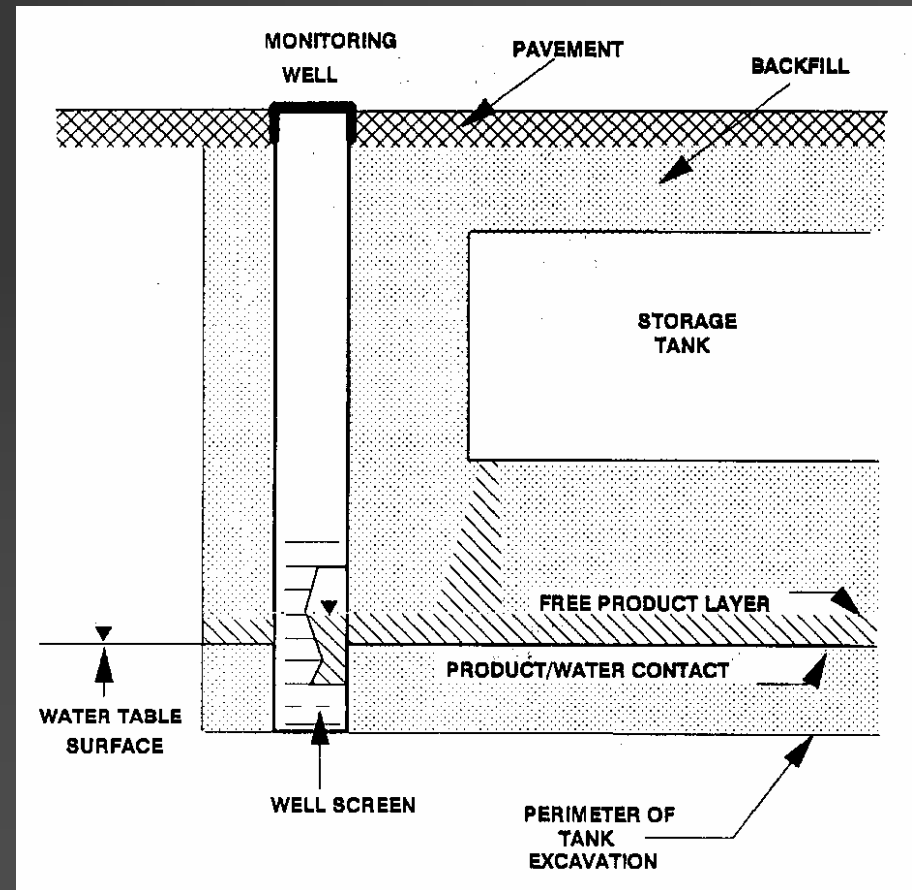
Ground Water

- The site must be assessed to determine correct number and position of wells
- Wells must be sealed from the surface
- Wells must be placed within excavation or as close as possible



Ground Water

- Wells clearly marked and secured
- Wells may be manually monitored weekly or electronically
- Need to detect 1/8" of free product



Vapor

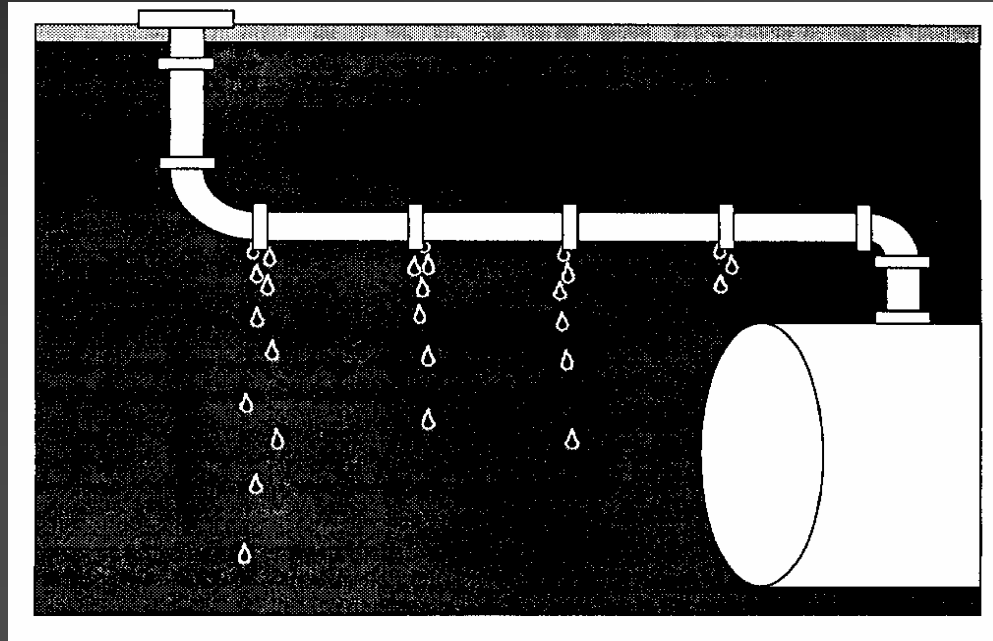
- Soils must allow for vapors to migrate
- Product must generate vapors or use tracer
- Background contamination must not interfere with detecting leaks

Vapor

- Site is assessed to determine number and position of wells
- Wells must be clearly marked and secured

Pipeline Leak Detection

- Pressurized
- Suction



Pressurized Piping

- Line Leak Detector
- Annual line test or wells, SIR, interstitial



Suction Piping

- Exempt if
 - Piping is sloped to the tank
 - Only one check valve and is located at the pump
- Otherwise test every three years or wells, SIR or interstitial

Closure and Site Assessment

Closure Requirements

Temporary Closure

Within 90 days...

- Empty UST
- Seal off fills
- Good for 1 year

Closure Requirements

Before permanent closure or a change-in-service is completed, owners and operators must:

“measure for the presence of a release

where contamination is most likely to be present at the UST site.”

Closure Requirements

Permanent Closure

- Clean and empty UST
- Remove UST or close in place
- Conduct site assessment

Closure Requirements

Site Assessment

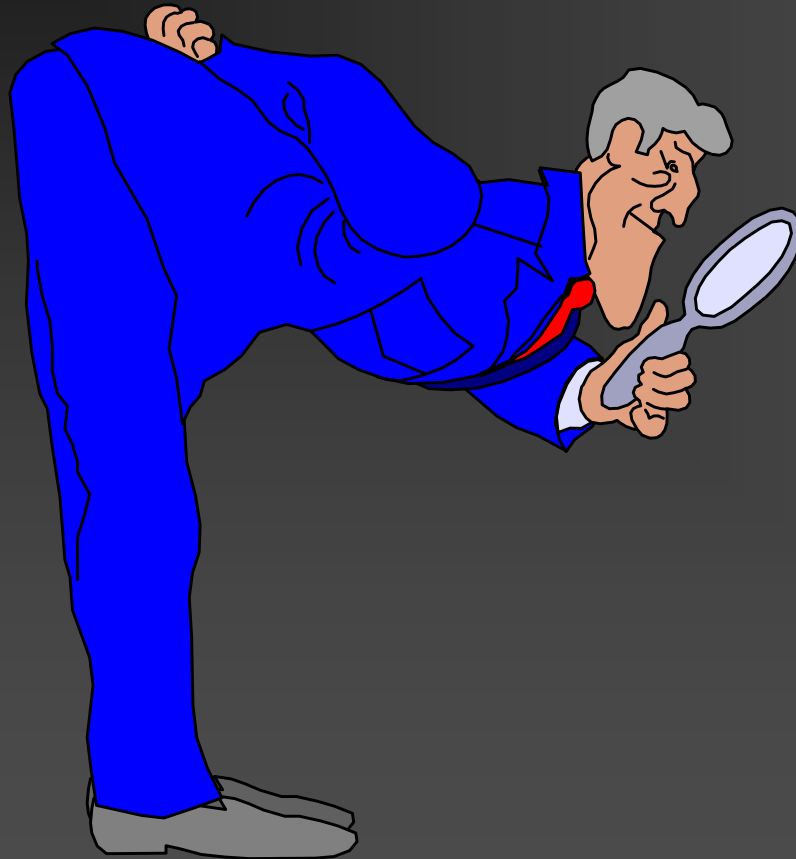
Did the tank system leak?

- State and/or delegated agency must be notified!!!
- Corrective action / Remediation Plan

Additional Requirements for USTs

- State's Regulation
- Fire Department's Regulation
- County's Regulation

Inspection Targets



Enforcement by EPA

- Can be a referral from local or state agency (database)
- Random inspections
- Sector or Media Initiative

Contacts for Further Questions

■ EPA

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