

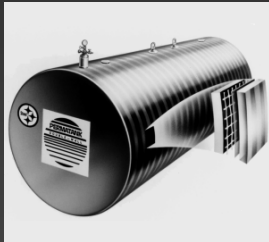
Hospital  
Compliance Seminar  
Managing  
Underground Storage Tanks

# 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



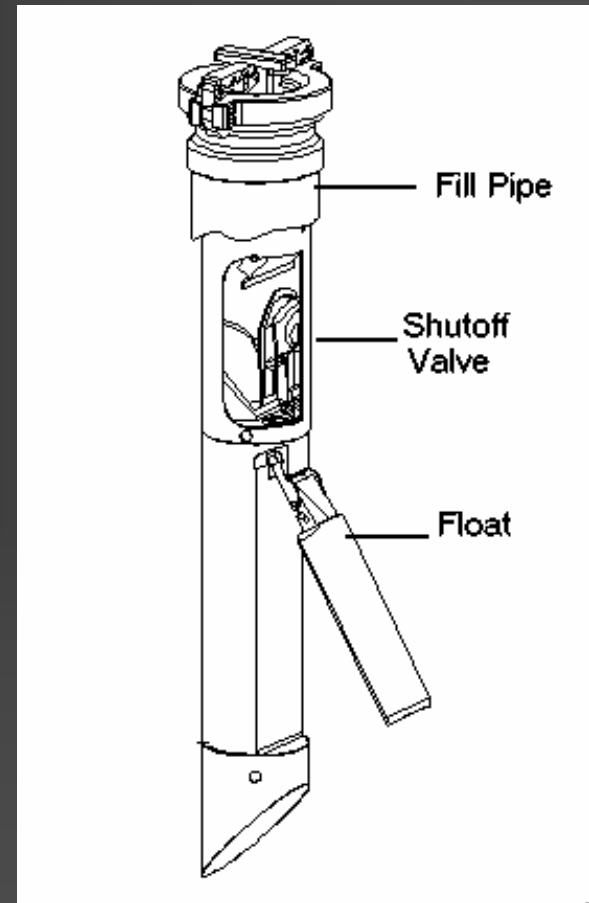
# Overfill Protection - Options

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



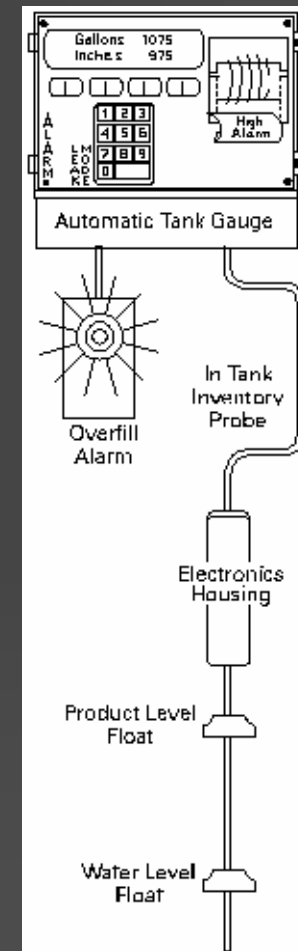
# Overfill Protection

Automatic  
overflow  
alarm

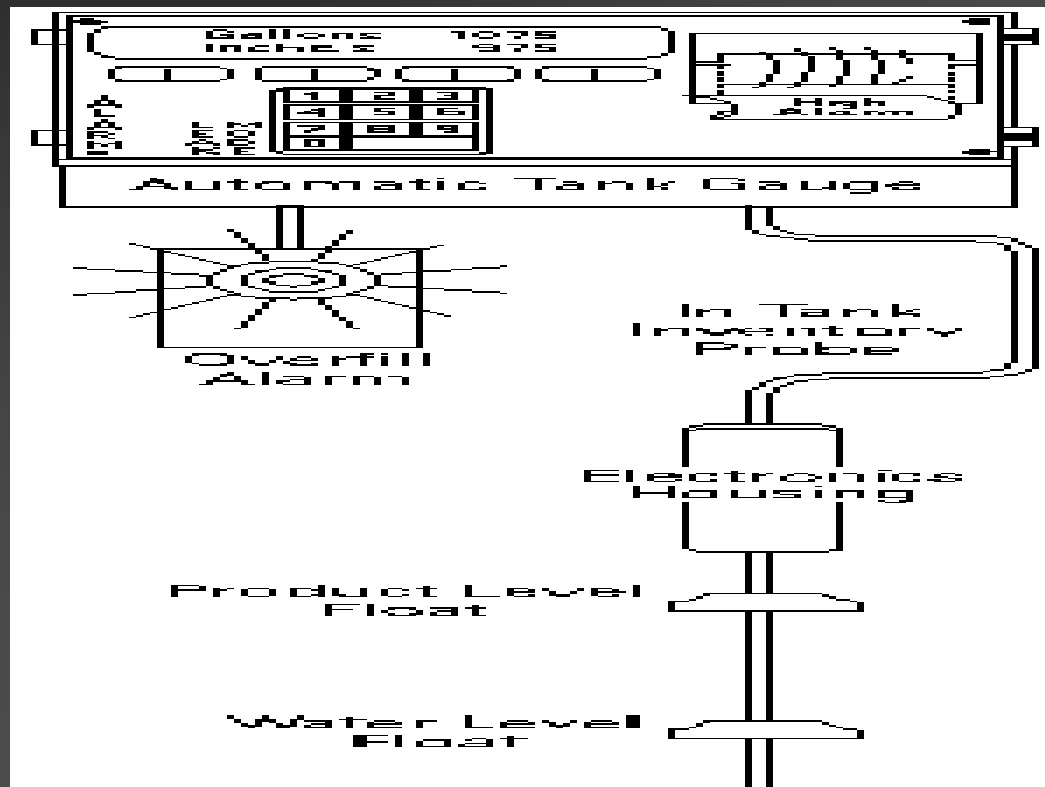


# Overfill Protection - Overfill Alarm

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

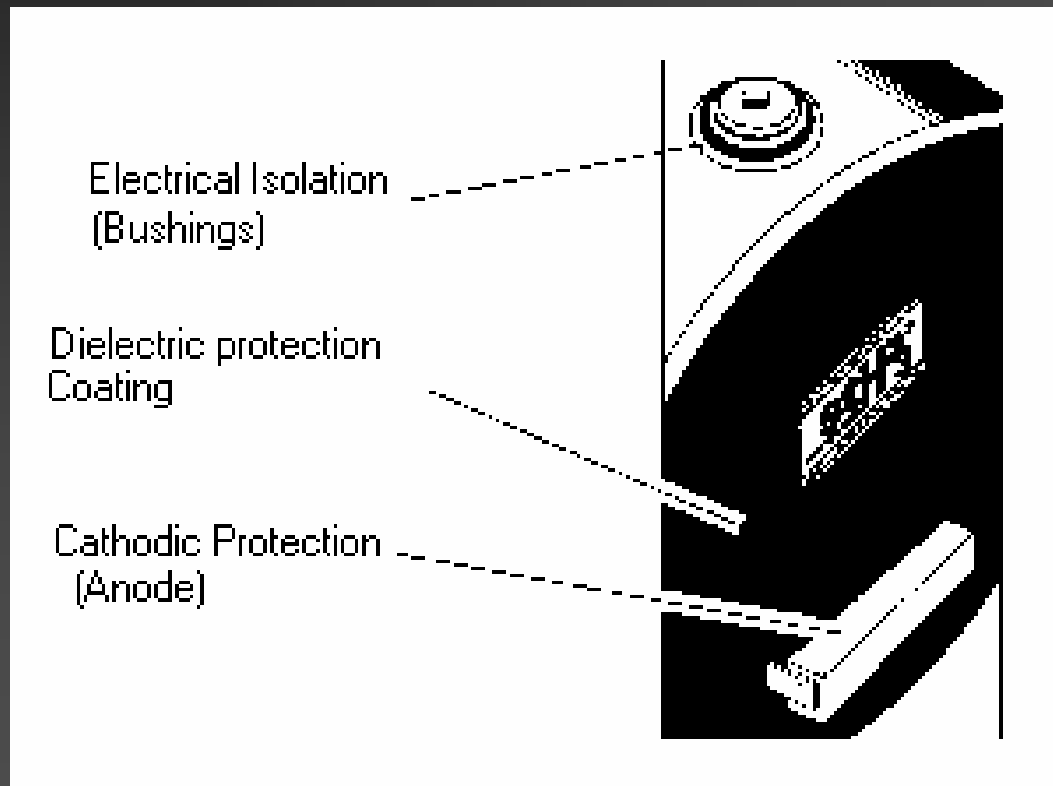
## UST Corrosion Protection



# 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"

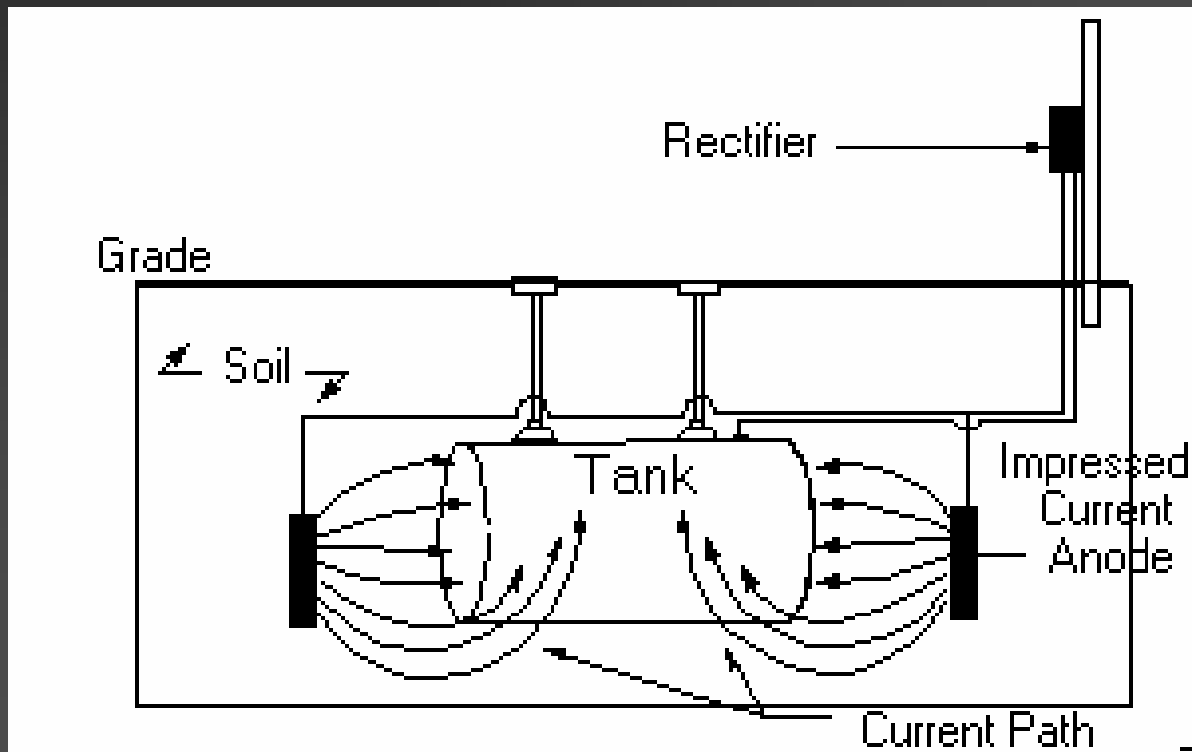
A corrosion expert is either:

- 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

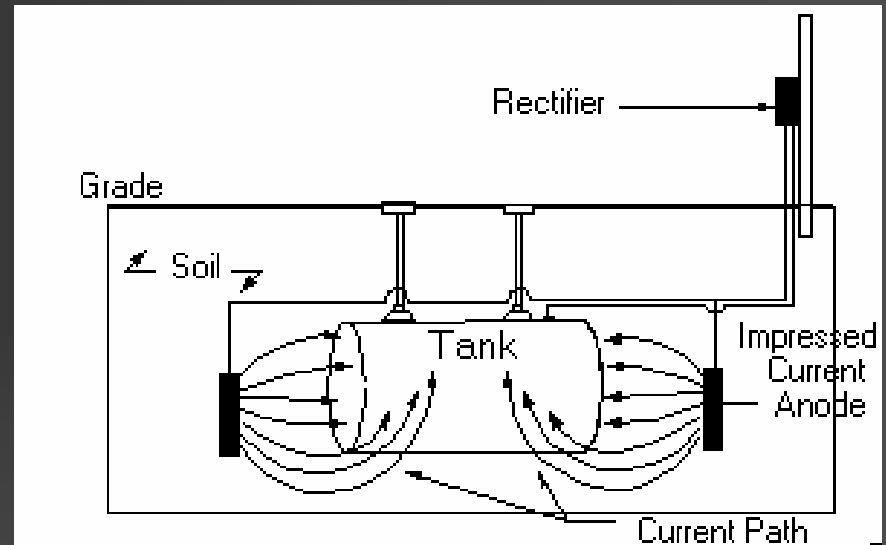
# Impressed Current



# 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

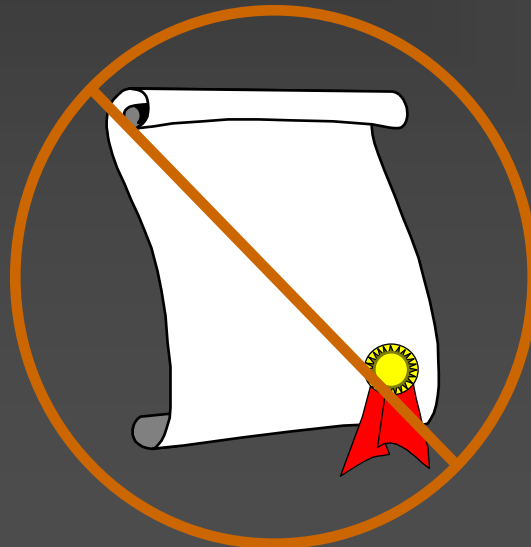
The tank must be tested within 6 months of the installation of the system and every 3 years thereafter.

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.





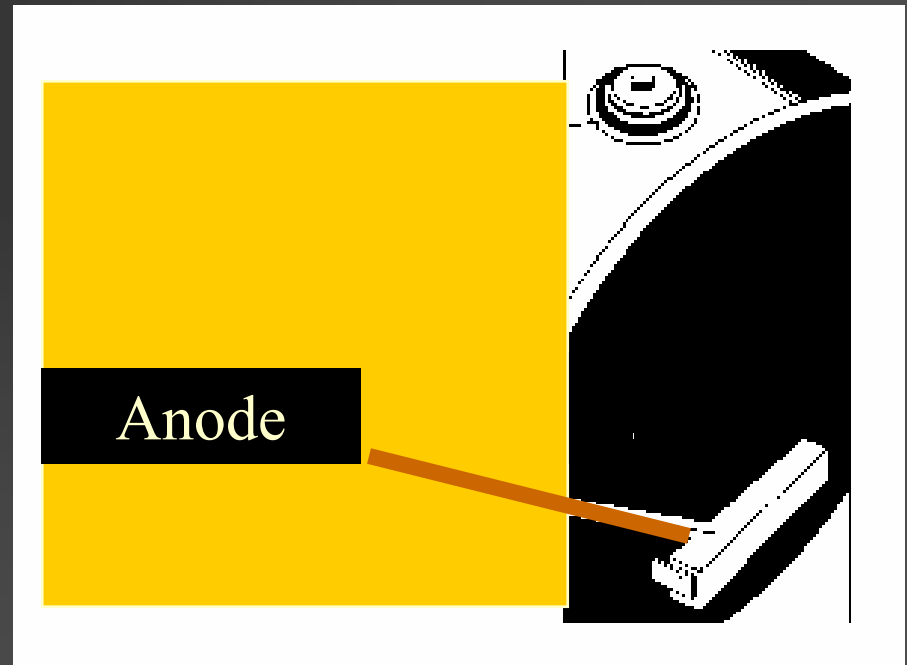
# Sacrificial Anode System



# Requirements

## Cathodic - Sacrificial Anode

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

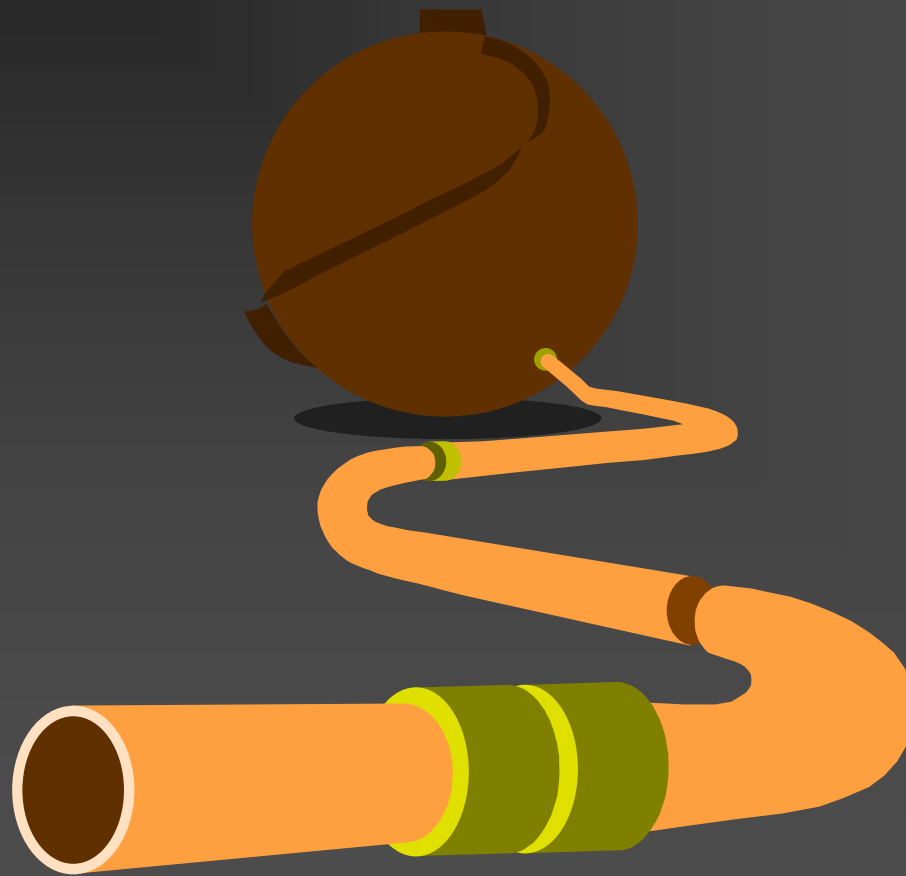


# Requirements

## 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

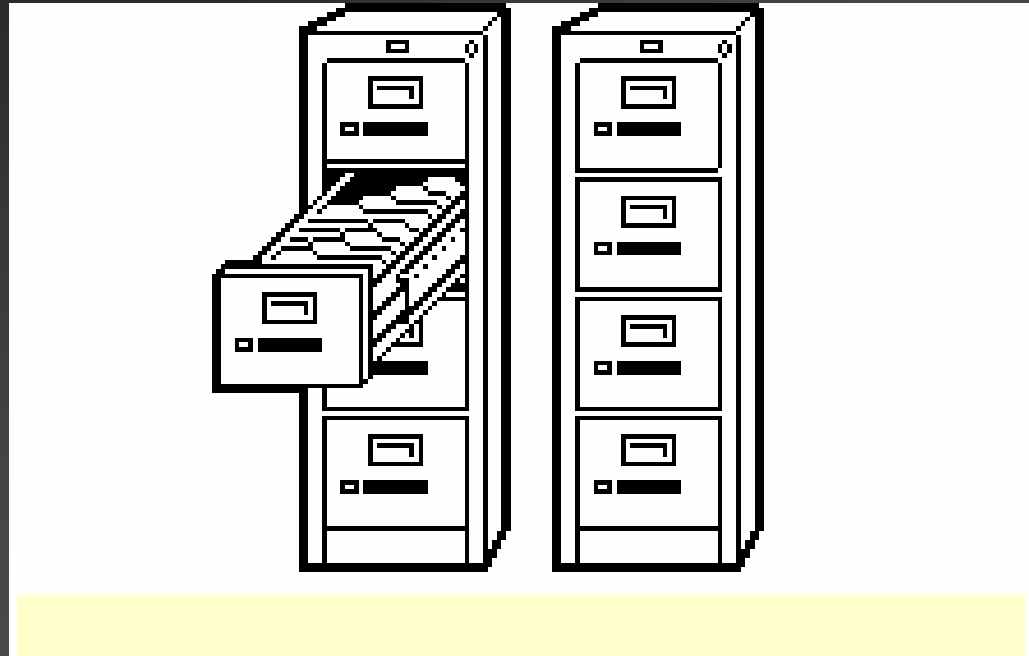
Otherwise, existing piping must be upgraded or replaced.



# 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



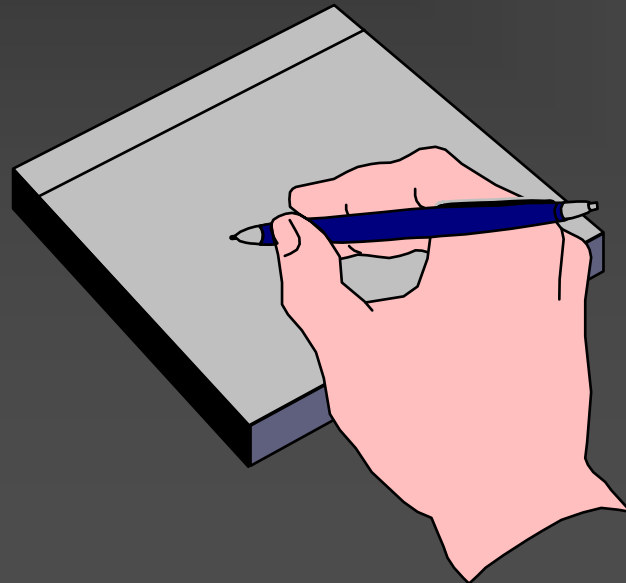


# Record keeping Requirements

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

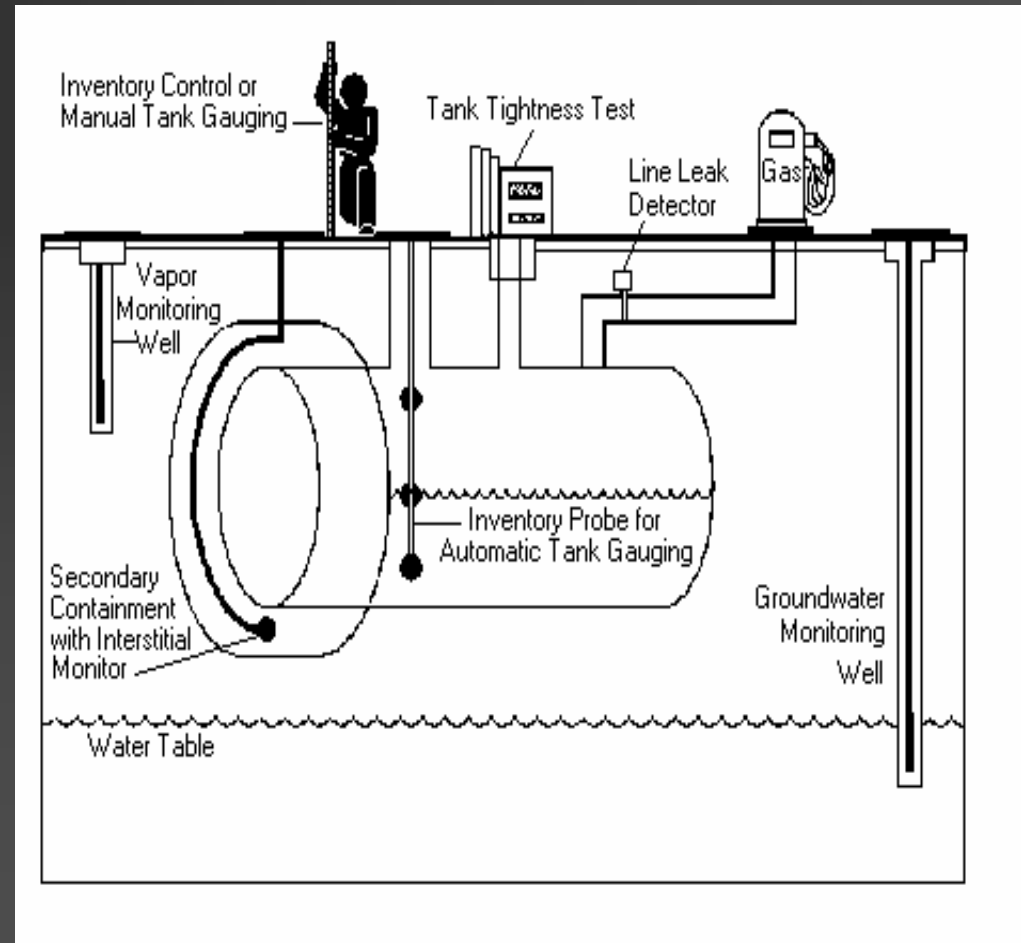
# Release Detection

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

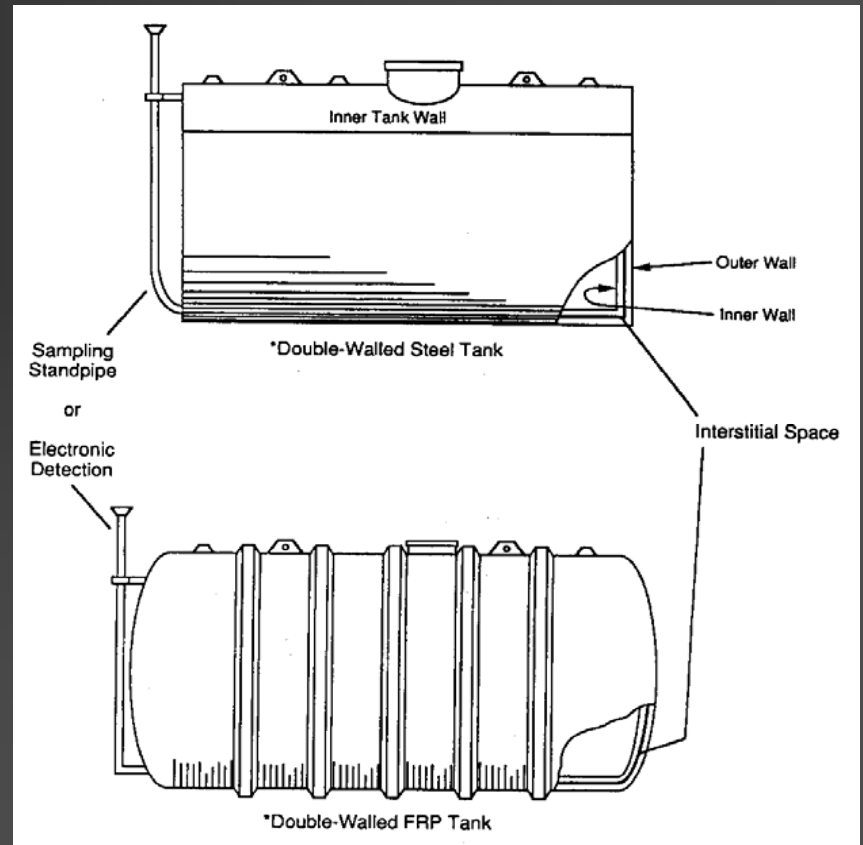
# Automatic Tank Gauge

- 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

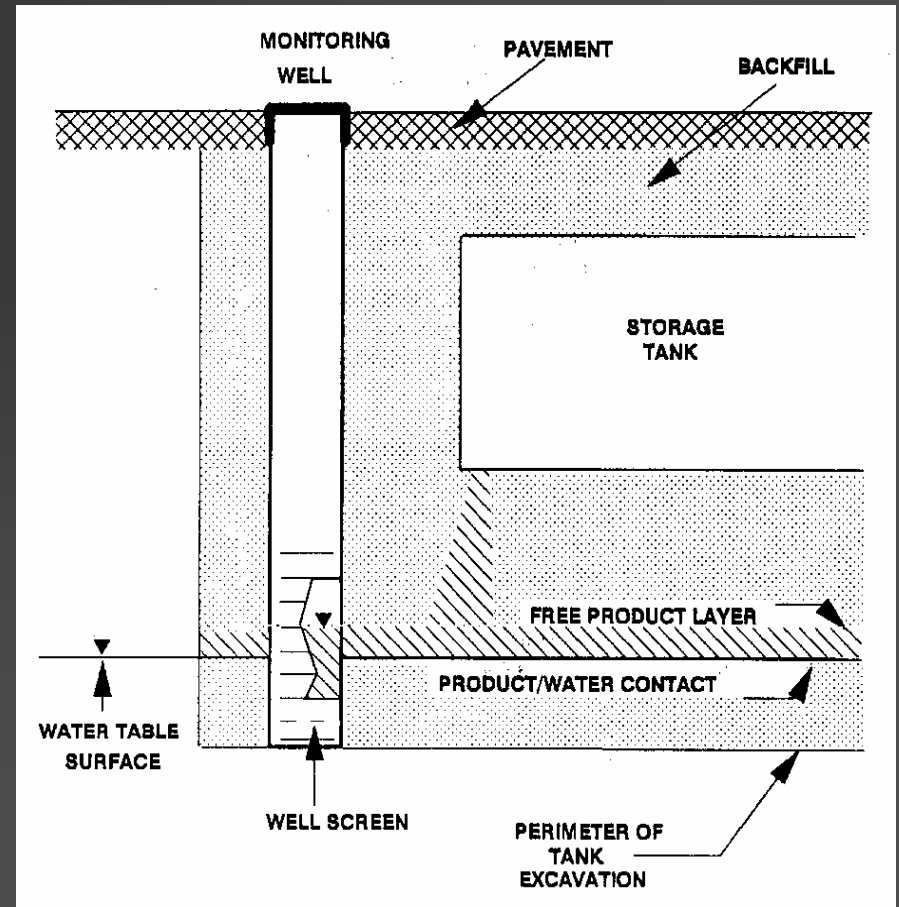


# External

- Ground Water
- Vapor

# Ground Water

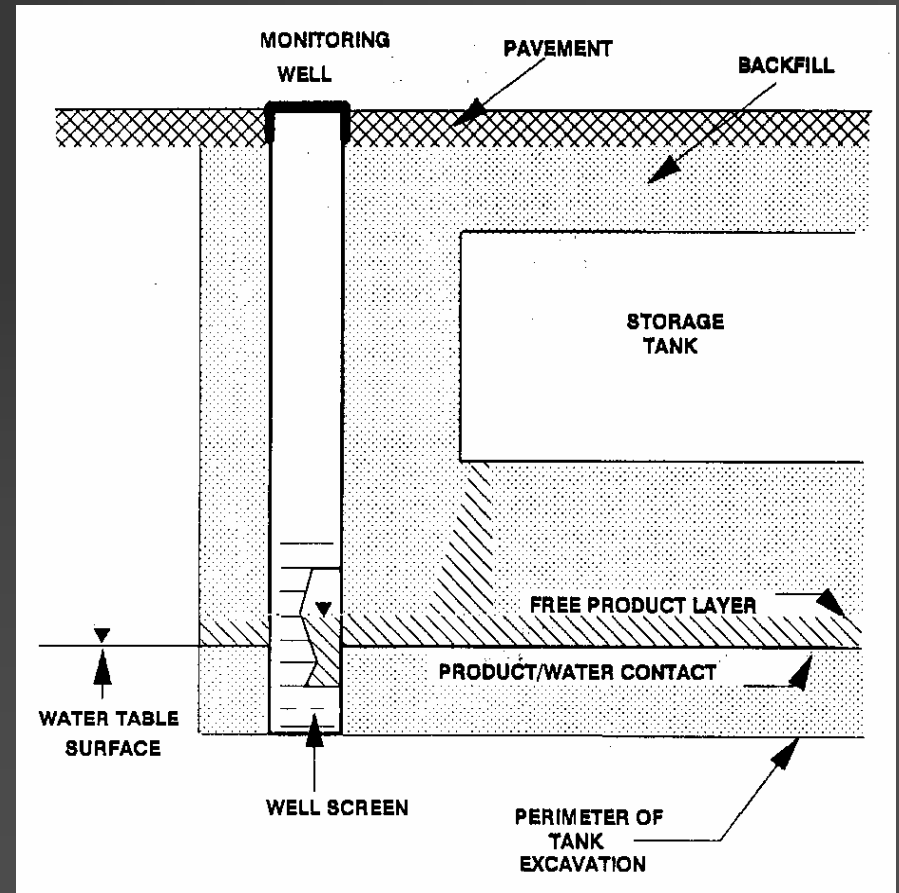
- Ground water must always be less than 20 feet from ground surface
- Soils between tank and well must have hydraulic conductivity of not less than 0.01 cm/sec (gravels, or other permeable materials)





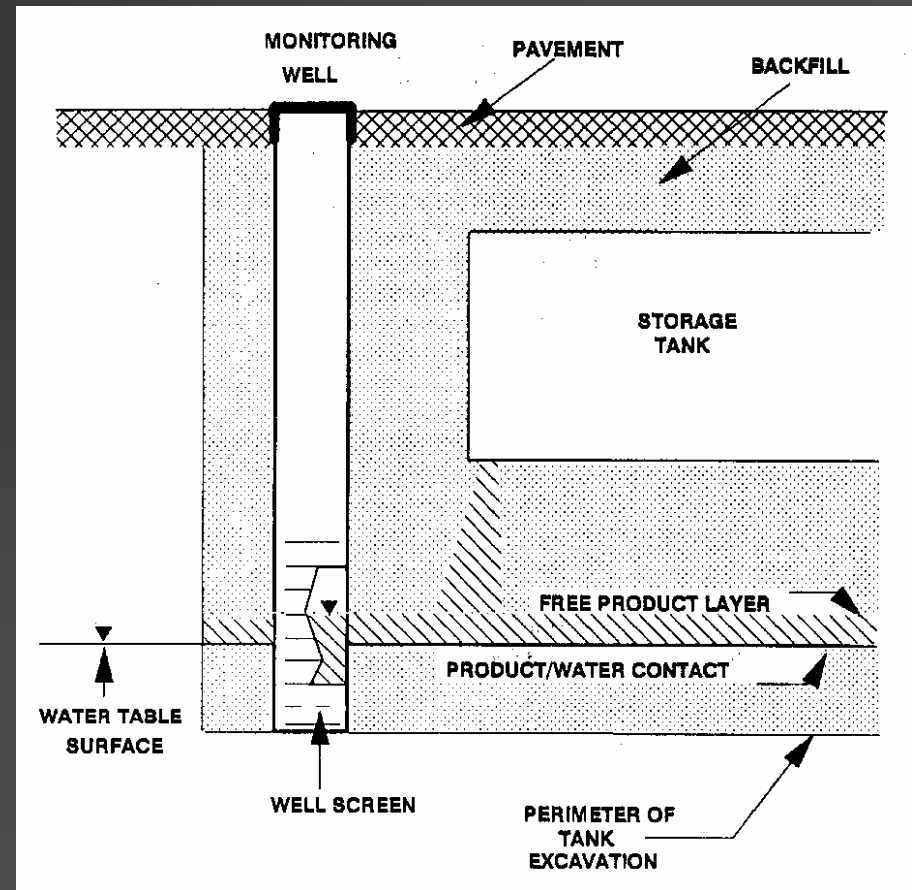
# Ground Water

- 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

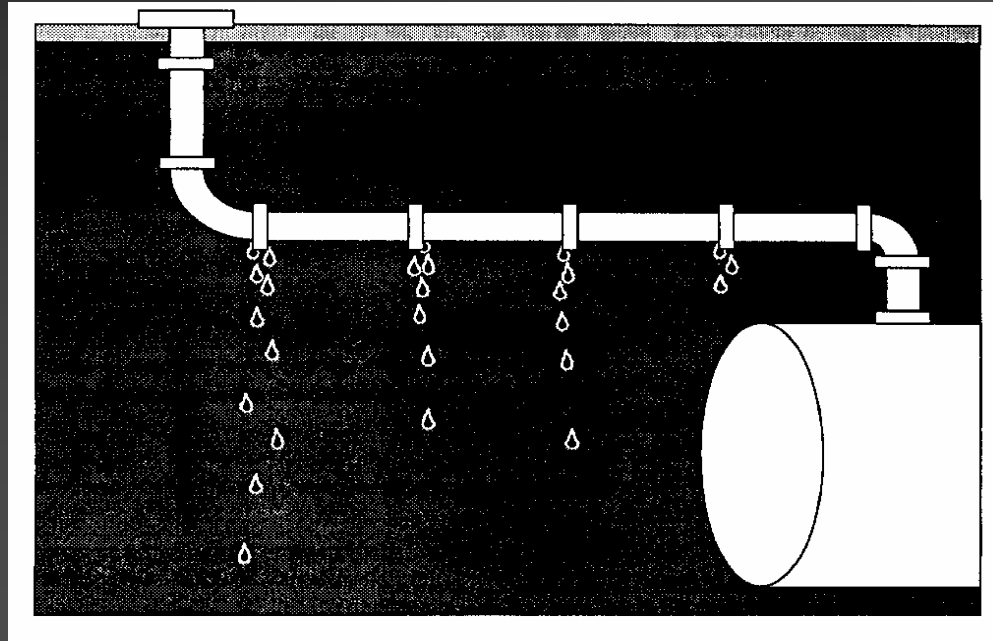
- Soils must allow for vapors to migrate
- Product must generate vapors or use tracer
- Background contamination must not interfere with detecting leaks

# 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

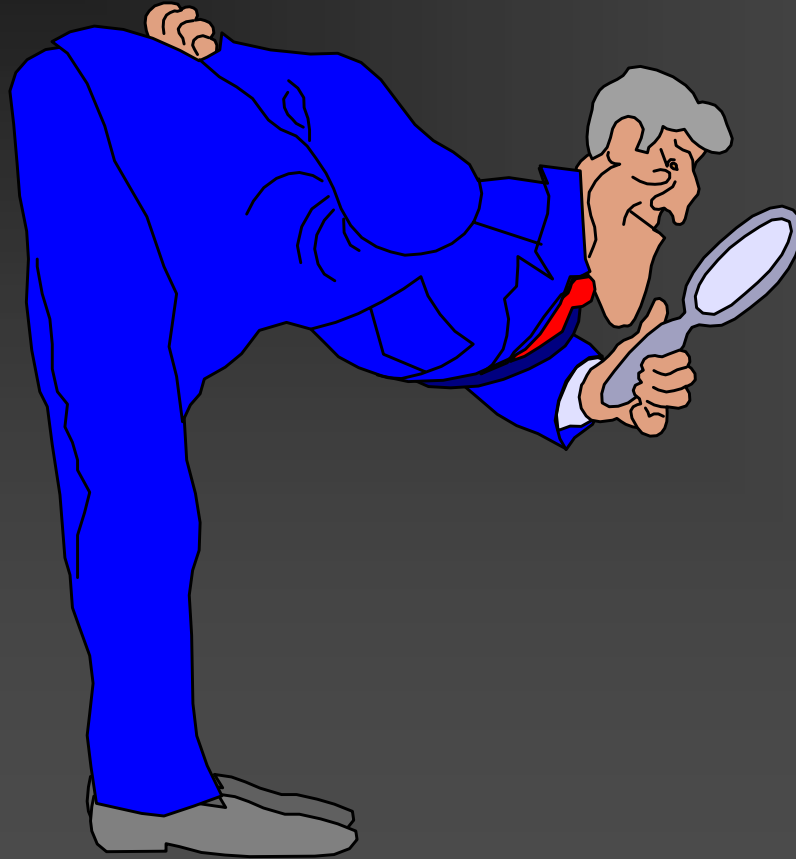
### Did the tank system leak?

- 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

- Claudia Gutierrez, (212) 637-4945 or via email at [gutierrez.claudia@epa.gov](mailto:gutierrez.claudia@epa.gov)
- [www.epa.gov/swerust1](http://www.epa.gov/swerust1)