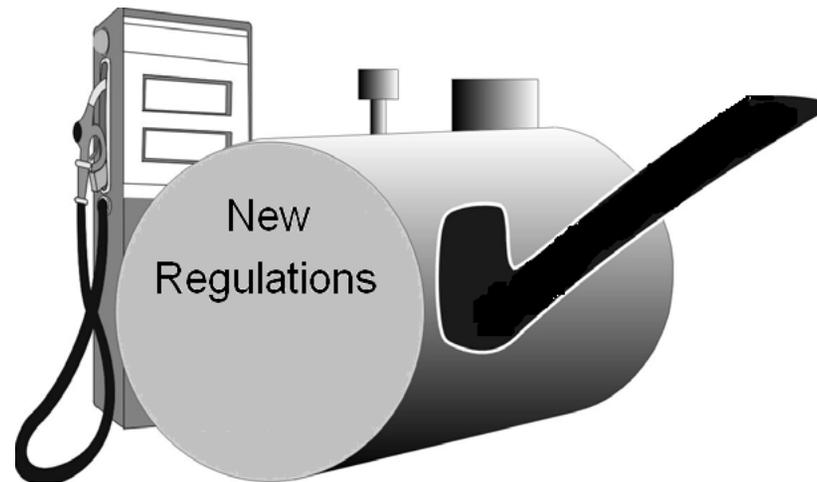


Underground Storage Tanks

How will the new regulations affect me?



Heather Peters
October 17, 2011

Regulatory History

- 1985- EPA created the Office of Underground Storage Tanks to develop and implement a regulatory program for UST systems.
- 1989- Missouri enacted statutes for the UST program.

Since 1990, the regulations have not been substantially changed or updated to reflect the many changes and improvements to underground storage tanks, piping, release detection methods and other equipment.

Why?

- The department opened the UST regulations to:
 - Clarify existing regulations that may be unclear or confusing.
 - Include equipment and options that were not available in 1989.
 - Ensure older tank systems remain safe to use.
 - Prevent tanks that are not being used from becoming “abandoned.”
 - Ensure proper installation of tanks, piping and equipment.

Hazardous Waste Management Commission

These changes will move the Tanks
Regulations:

- From Division 20 of the Code of State Regulations under the Clean Water Commission:
 - To Division 26 under the Hazardous Waste Management Commission
- Was: 10 CSR 20-10.040
- Now: 10 CSR 26-2.040

Definitions

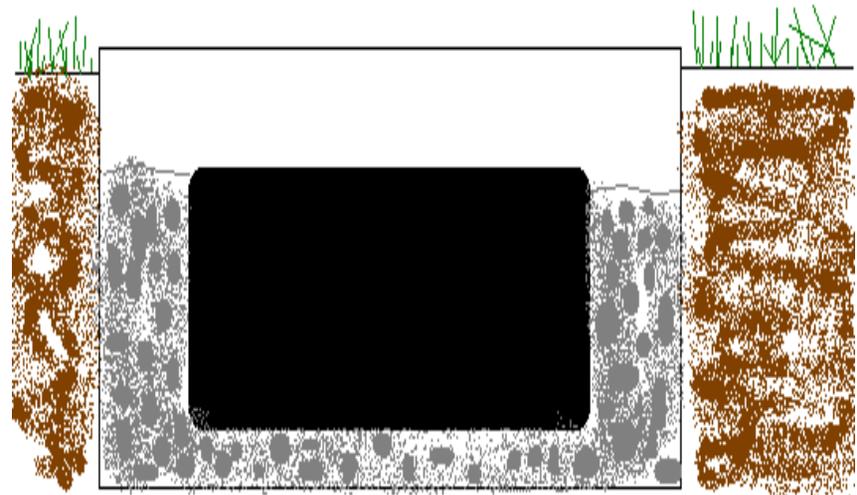
- In use contains product
- Out of use is empty
- Routinely contains product- regularly, *not always*, has product in it
- Monthly, Annual, Triennial defined
- Tank in a vault- UST or AST?

Tank in a Vault

AST



UST



New Installations- New Requirements

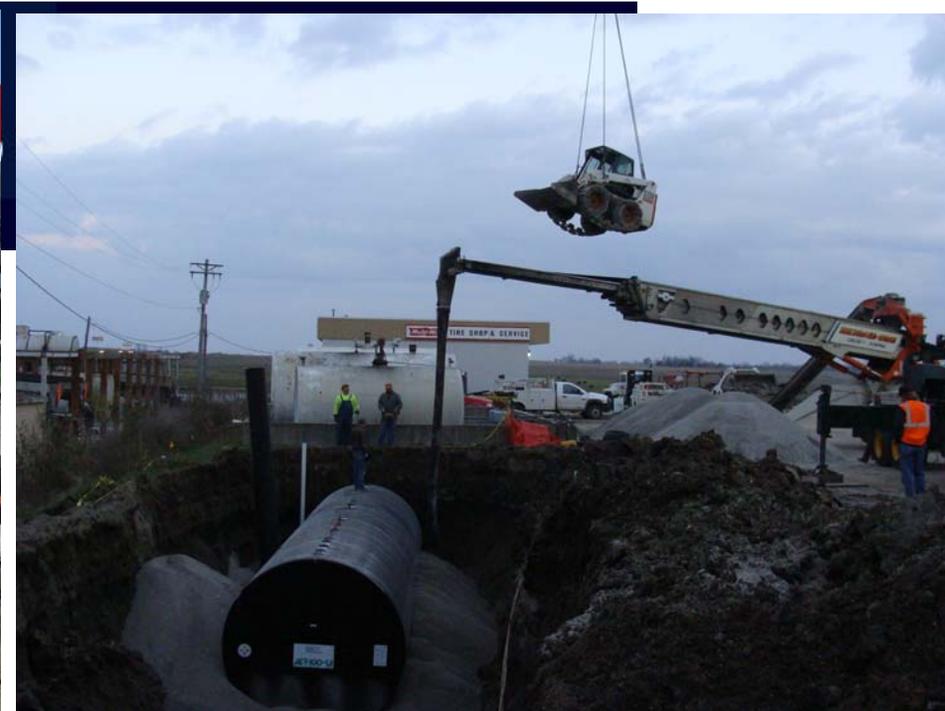
- Transfer responsibility to the installers.
- Authority to shutdown or hold:
 - Until manufacturer approves configuration.
 - Until owner is contacted.
 - Until the Department approves installation.
 - Until issue is resolved.
- Must have containment sumps.

Containment Sumps



Installations- What is the standard?

- American Petroleum Institute (API) 1615
and/or
 - Petroleum Equipment Institute (PEI) 100
- AND
- Manufacturer installation guidance
 - Trained/certified as required by the manufacturer



New Installation- Testing

- If the tank contains product, release detection is required of the installer
- Pre-installation testing required in accordance with manufacturer requirements or API/PEI (soap or approved interstitial vacuum)
- Must conduct 0.1 g/h tank and line tightness test prior to release to owner

New Installations- Other issues

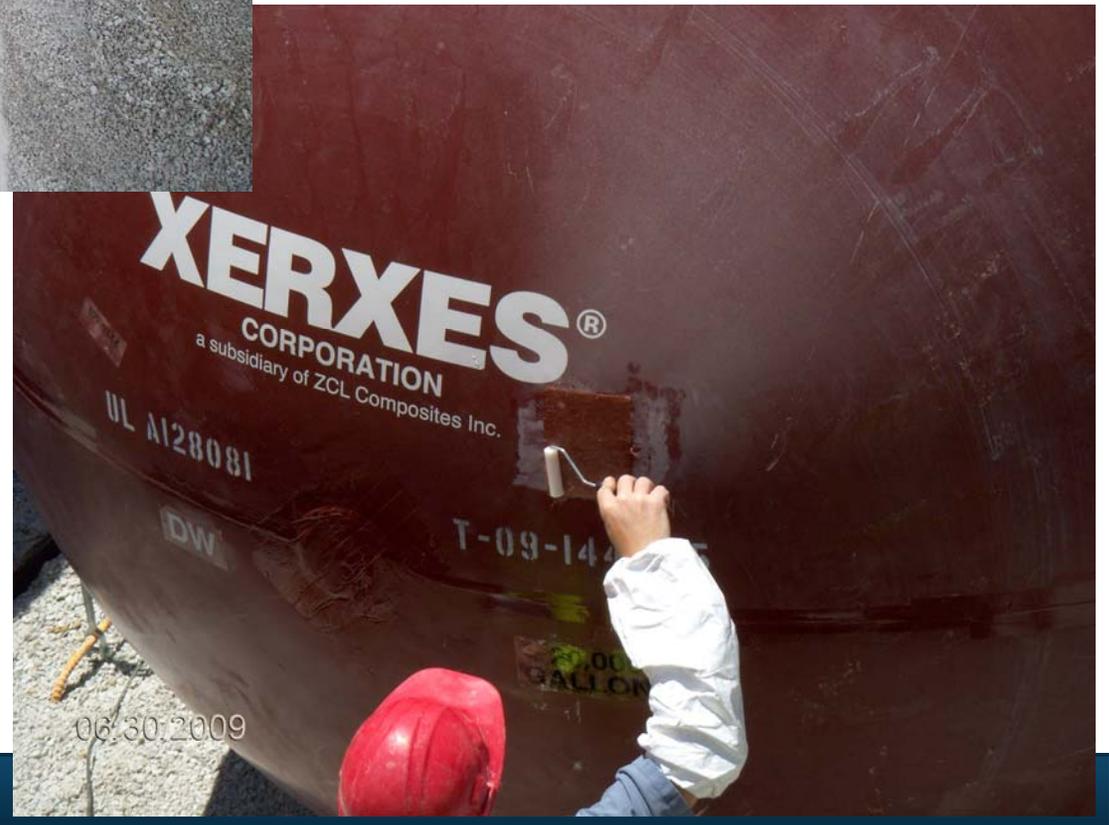
- Repairs must be documented and manufacturer certified/approved
- Ensure backfill meets the tank/piping specifications
- Must have FR on file with the Missouri Department of Agriculture
- No ball float valves for overflow prevention
- Owners/operators cannot bring a tank in use that is not in compliance with these requirements





10.06.2009

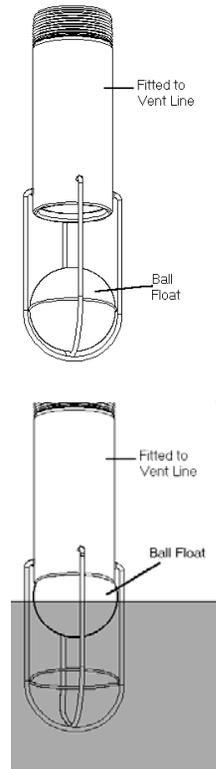
Tank Repairs



06.30.2009

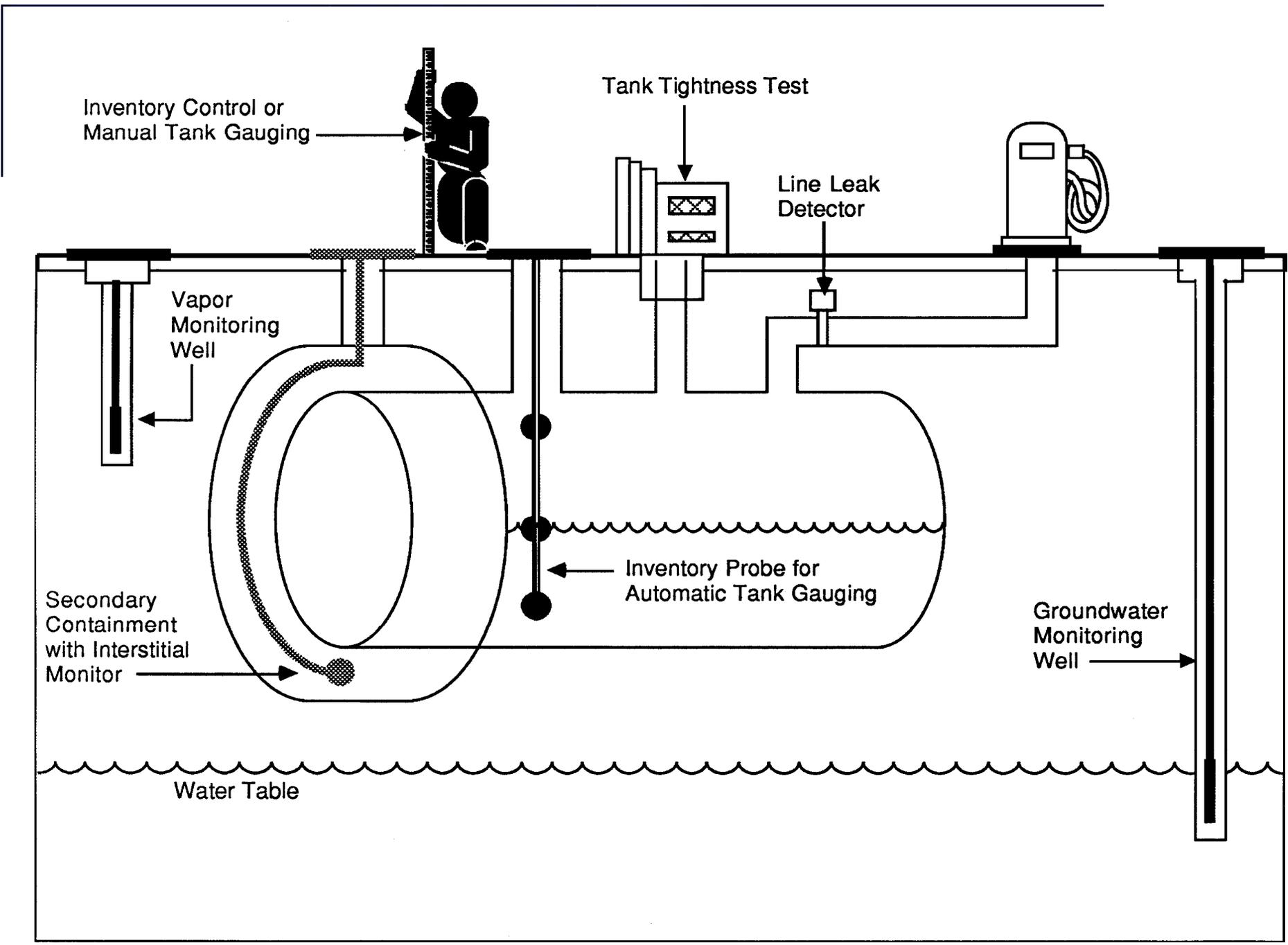
Spill and Overfill Prevention

- Ball float valves are not compatible with safe suction systems, single point vapor recovery systems (co-axial drop tubes), or pressurized deliveries
- Ball float valves will not be permitted for overfill prevention on new systems
- All deliveries must be lock-on, tight connections
- May submit written request for alternative



Release Detection

- Emergency Generator fuel storage tanks will be subject to requirements.
 - PSTIF requires these tanks conduct release detection.
- High through-put facilities.
 - Some current methods are not adequate.
- Statistical Inventory Reconciliation



National Work Group on Leak Detection Evaluations

The screenshot shows a Microsoft Internet Explorer browser window displaying the website http://www.nwglde.org/method_index.html. The page title is "Method Index - Microsoft Internet Explorer provided by Missouri DNR". The browser's address bar shows the URL. The website content includes a navigation menu on the left with items like Home, Group Members, Team Members, Vendors: A - F, Vendors: G - M, Vendors: N - S, Vendors: T - Z, Testing Methods, Downloads, Links, Library, Disclaimer, and News & Events. The main content area features a "Revision Date: September 29, 2010" and a "TEST METHOD INDEX" section. Below this, there is a instruction: "Click on a specific Test Method to go to that page for individual Vendor Listings." followed by a list of test methods, each preceded by a diamond icon and underlined text:

- [ABOVEGROUND STORAGE TANK LEAK DETECTION METHOD](#)
- [AUTOMATIC ELECTRONIC LINE LEAK DETECTOR](#)
- [AUTOMATIC MECHANICAL LINE LEAK DETECTOR](#)
- [AUTOMATIC TANK GAUGING METHOD](#)
- [BULK UNDERGROUND STORAGE TANK LEAK DETECTION METHOD \(50,000 Gallons or Greater\)](#)
- [CONTINUOUS IN-TANK LEAK DETECTION METHOD \(Continuous Automatic Tank Gauging\)](#)
- [CONTINUOUS IN-TANK LEAK DETECTION METHOD \(Continual Reconciliation\)](#)
- [CONTINUOUS INTERSTITIAL MONITORING METHOD \(LIQUID FILLED\)](#)
- [CONTINUOUS INTERSTITIAL LINE MONITORING METHOD \(PRESSURE/VACUUM\)](#)
- [CONTINUOUS INTERSTITIAL TANK SYSTEM MONITORING METHOD \(PRESSURE/VACUUM\)](#)
- [CONTINUOUS PRESSURIZED PIPING LEAK DETECTION METHOD \(CONTINUOUS ELECTRONIC LINE LEAK DETECTION\)](#)
- [INTERSTITIAL DETECTOR \(LIQUID-PHASE\)](#)

The browser's taskbar at the bottom shows the Windows Start button, several open applications, and the system tray with the time 12:53 PM.

www.nwglde.org

Emergency Generators

- Must comply with Tank Release Detection
 - Automatic Tank Gauge (ATG)
 - Interstitial monitoring
 - Chemical marker monitoring (not vapor)
- Special piping provisions
 - Safe suction/ unsafe suction
 - Pressurized piping
 - Monthly monitoring
 - LLD exclusion: sump sensors/ELLD with alarm only

High-throughput facilities

- Over 800,000 gallons per system per month
 - System is an independent tank OR a system of manifolded tanks
 - 1 month in- 12 months out
-
- CITLDS (Continuous in tank leak detection system)
 - Interstitial monitoring- electronic/continuous
 - Chemical/Vapor monitoring every 15 days

Statistical Inventory Reconciliation (SIR)

- Must be conducted on each independent tank system separately
- Must be submitted, reported and reviewed by the 15th of the following month
- Must maintain supporting data (readings)
- Read daily to the nearest 1/8th inch
- Use a drop tube, ATG or permanent gauge
- Follow vendor requirements

Interior Linings

- Tanks (not linings) have one ten year inspection, every five years thereafter
- Must re-assess the steel shell before repair or re-lining
- Integrity assessments must include **ACTUAL** steel shell thickness readings
- Linings for compatibility or repair must meet same requirements



Interior Linings



Cathodic Protection Testing

- Tester must be certified by:
 - NACE International
 - Steel Tank Institute
 - International Code Council (ICC)
- Integrity test must confirm structural integrity (actual steel shell thickness readings) AND no holes or voids

CP Test Checklist- ALL SYSTEMS

- ✓ Test Date
- ✓ Test Method
- ✓ Tester Name
- ✓ Tester Certification
- ✓ Tank system data
- ✓ Map of test locations, include ref. cell site
- ✓ Site conditions
- ✓ System on readings
- ✓ IR drop
- ✓ Testing equipment is adequate and in good repair

CP Test Checklist- Impressed current

- ✓ “On” readings
- ✓ Instant off readings
- ✓ -100mV polarization or “decay” readings, if applicable
- ✓ Continuity readings include test points on sketch
- ✓ Rectifier settings and allowable range
- ✓ Rectifier output onboard gauges and or readings with meter (include shunt values)

CP system check- rectifier log sheet

- ✓ Staff initials or name
- ✓ Date of system check
- ✓ Functional or not



- IF the rectifier has the following, log:
- ✓ Green or Red light
 - ✓ Amp meter reading
 - ✓ Voltage meter reading
 - ✓ Hour meter reading-
be sure to read and
include correct units

Metal in contact with an electrolyte



Piping Sump Contains Liquid/Debris - Liquid in Diesel and Premium piping sumps.



Repairs



- Cannot repair steel piping
- Must replace entire, electrically continuous, cathodically protected metal piping
- Must have proof of FR on file with Dept of Ag

Out of use tanks

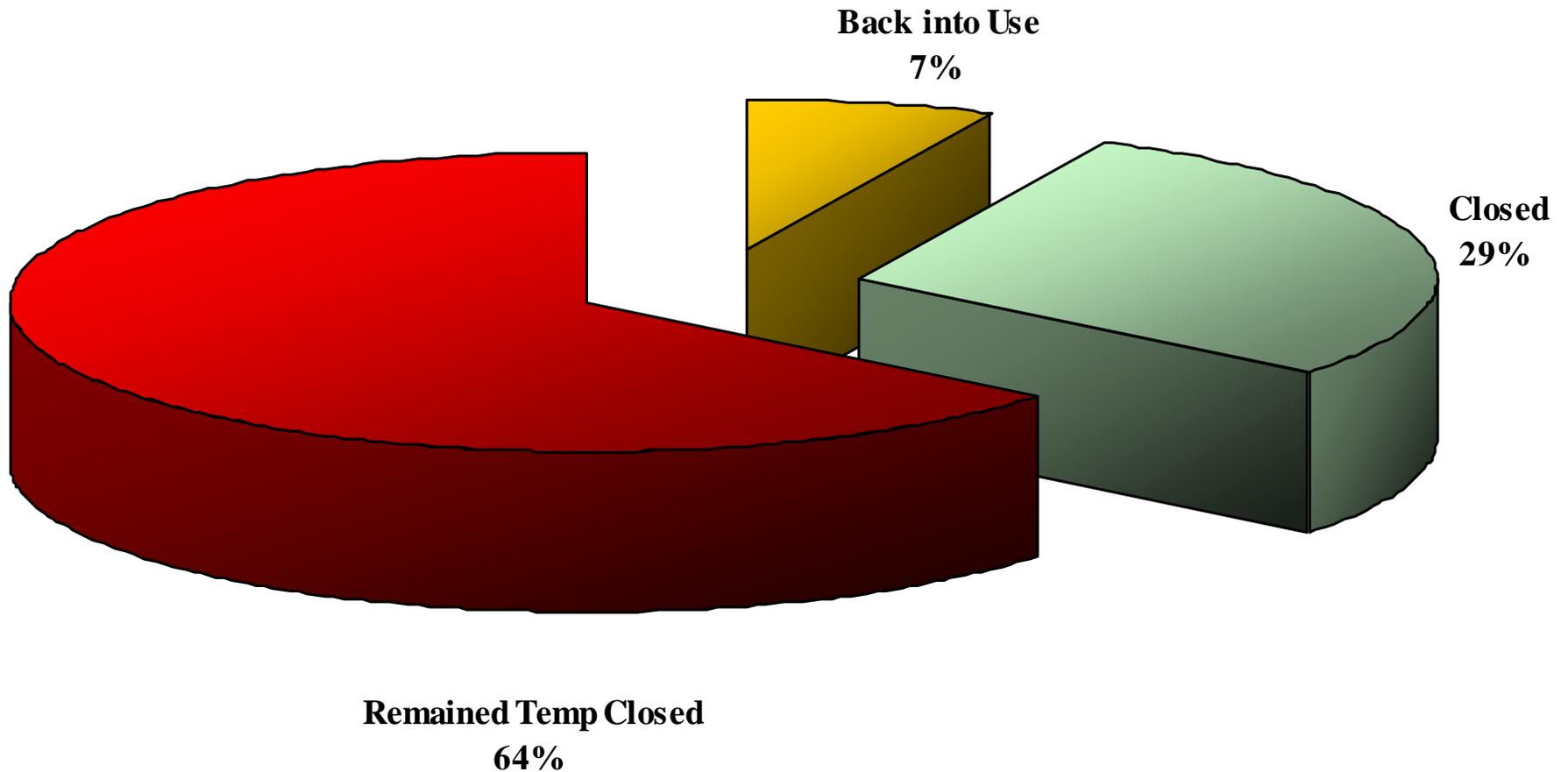
- Do not need to maintain lining or CP

BUT if you do not, you will need to re-assess the tank AND confirm lining and/or CP functional prior to re-opening the tank

- To re-open, you will also need:
 - Tightness testing
 - Electronic equipment evaluations
 - Deflection readings (fiberglass tanks)

Closed tanks- Is it temporary?

Tanks Temporarily Closed for More Than 1 year



Older and out of use tanks

- 1988 - New regulations created “abandoned” tanks.
- 2010 - tanks in service should not be ending up as “abandoned” tanks.

Out of use, “abandoned” tank sites are:

- Hard to sell.
- Hard to address contamination.



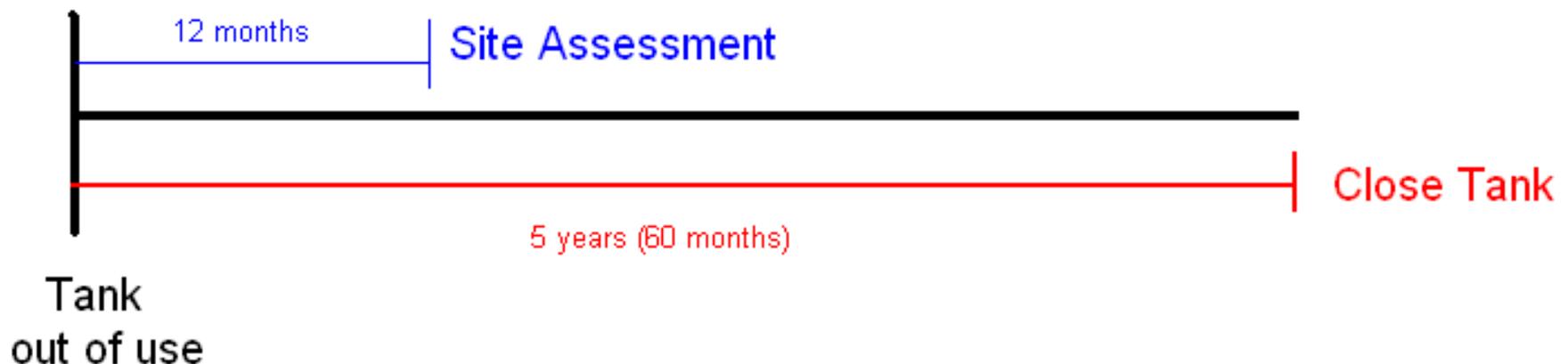
11/16/2009

Do I have to close my old tank?

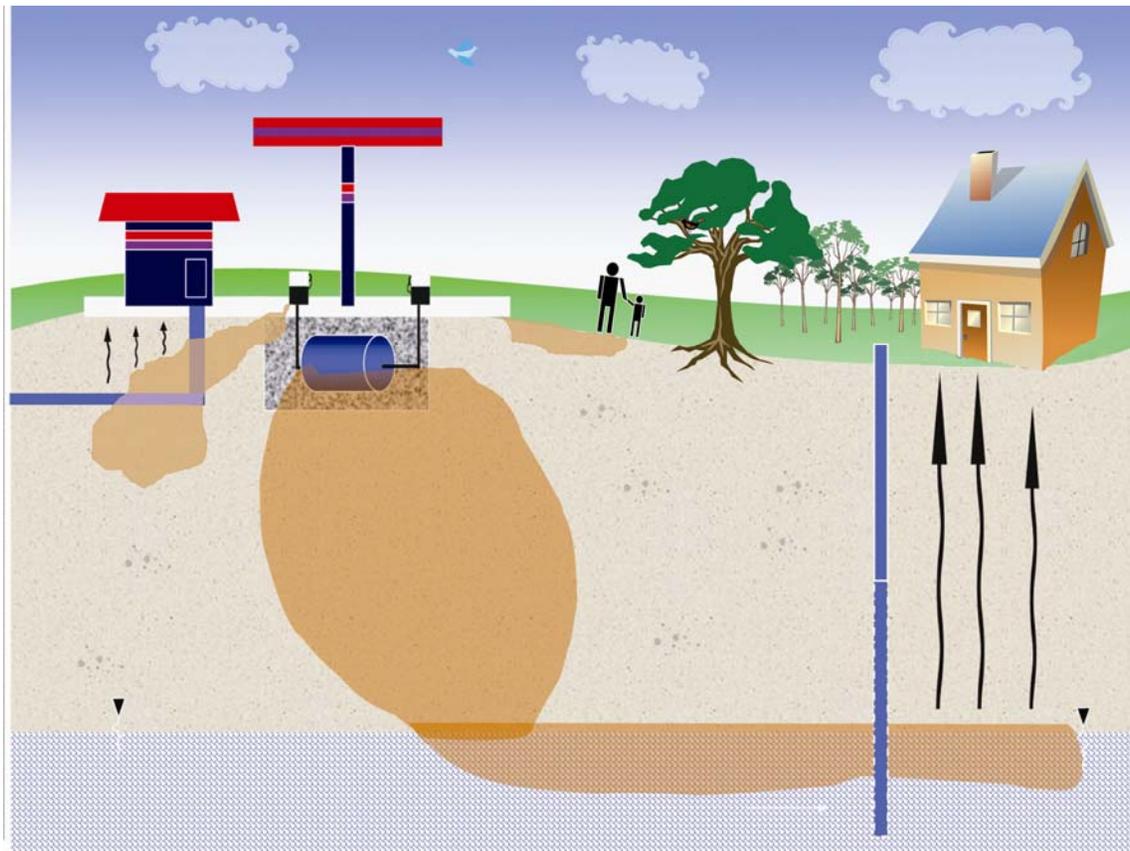
Yes, but responsible party is the last owner when the tank was in use for tanks out of operation by August 28, 1989 under Tank law

Out of use tanks

- Either they are in use (contain product) or are out of use (empty)
- Within 12 months of being taken out of use, a site assessment must be conducted
- Within 5 years of being taken out of use, the tank must be permanently closed



Why the site assessment?



So we know if it leaked!

For more information

- Will be published in Missouri Register 11/1/2011
- Will be published in Code of State Regulations (CSR) on 11/30/2011
- <http://www.dnr.mo.gov/env/hwp/ustchanges.htm>
- Heather.Peters@dnr.mo.gov
- (573) 751-7877