

# Overview of an Underground Storage Tank Inspection



# PURPOSE OF INSPECTION

- Protect drinking water, lakes, streams, etc.
- Education.
- Protect property value.

# TECHNICAL ASSISTANCE INSPECTIONS

- **Technical Assistance Inspection - requested by owner.**
- **No penalties, unless significant violation that threatens human health or environment.**



# COMPLIANCE INSPECTIONS

- **Ecology initiates Compliance Inspections - usually announced a week prior.**
- **Ecology issues on-site Notices of Non-Compliance (NONCs) or Field Tickets (\$) for violations.**

# RECORD KEEPING

The following records must be on-site:

- Facility Compliance Tag
- Master Business License.

The following records must be on-site or be immediately available:

- Proof of financial responsibility.
- Monitoring & testing results (ATG, corrosion protection, tank & piping release detection).
- 3rd-party certifications for release detection equipment (visit [www.nwglde.org](http://www.nwglde.org)).

# Facility Compliance Tag

- Ecology issues site a Facility Compliance Tag after new tank site installation. Existing sites had to prove they met the 1998 upgrade requirements.
- Both Distributors and Site Owners are subject to Penalties, if site receives fuel without a TAG.
- The tag must be visible to the fuel distributor.



# Master Business License (MBL)

- Each tank name must be listed as an endorsement on MBL.
- Annual renewal of MBL - submit tank fees and proof of financial responsibility.
- If MBL has expired or does not have each tank listed on it, call the Department of Licensing at **(360) 664-1414**.

**STATE OF WASHINGTON**

**MASTER LICENSE SERVICE**  
**REGISTRATIONS AND LICENSES**

UNIFIED BUSINESS ID #: 609 123 456  
BUSINESS ID #: 001  
LOCATION: 0001  
EXPIRES: 12-31-2003

ORGANIZATION TYPE  
DOMESTIC PROFIT CORPORATION

GRAB N BAG SUPERMARKETS, INC.  
MR. LUCKY'S GENERAL STORE  
12345 GEORGE WASHINGTON WAY SW  
TUMWATER WA 98502-1486

SCALE-SMALL (3)  
LP GAS METER-SMALL (1)  
INDUSTRIAL INSURANCE  
GROCERY STORE - BEER/WINE  
MINOR WORK PERMIT  
UNDERGROUND STORAGE TANKS (3):  
#3, #4, #5

LIQUID FUEL METER-LOW (6)  
UNEMPLOYMENT INSURANCE  
TAX REGISTRATION  
LOTTERY RETAILER  
CIGARETTE RETAILER  
SHOPKEEPER

CITY LICENSES/REGISTRATIONS:  
TUMWATER GENERAL BUSINESS

DUTIES OF MINORS:  
COLLECT CARTS, BAG GROCERIES, STOCK SHELVES, CLEANING

REGISTERED TRADE NAMES:  
MR. LUCKY'S GENERAL STORE  
LUCKY'S

The above entity has been issued the business registrations or licenses listed

13911 DEPARTMENT OF LICENSING, BUSINESS & PROFESSIONS DIVISION,  
P.O. BOX 9034 OLYMPIA, WA 98507-9034 (360) 664-1400

13911 Department of Licensing

**SAMPLE ONLY**

# Financial Responsibility

- Owners of operational regulated tanks must have **pollution liability insurance** or another method of financial responsibility (FR) described in WAC 173-360-400. This protects owners from clean-up costs if their system has a release.
- State and Federal tank owners do NOT need financial responsibility .
- Provide proof of tank insurance or financial responsibility to the Dept. of Licensing during annual renewal of MBL.
- Questions? Contact Pollution Liability Insurance Agency (PLIA) at **(360) 586-5997**.

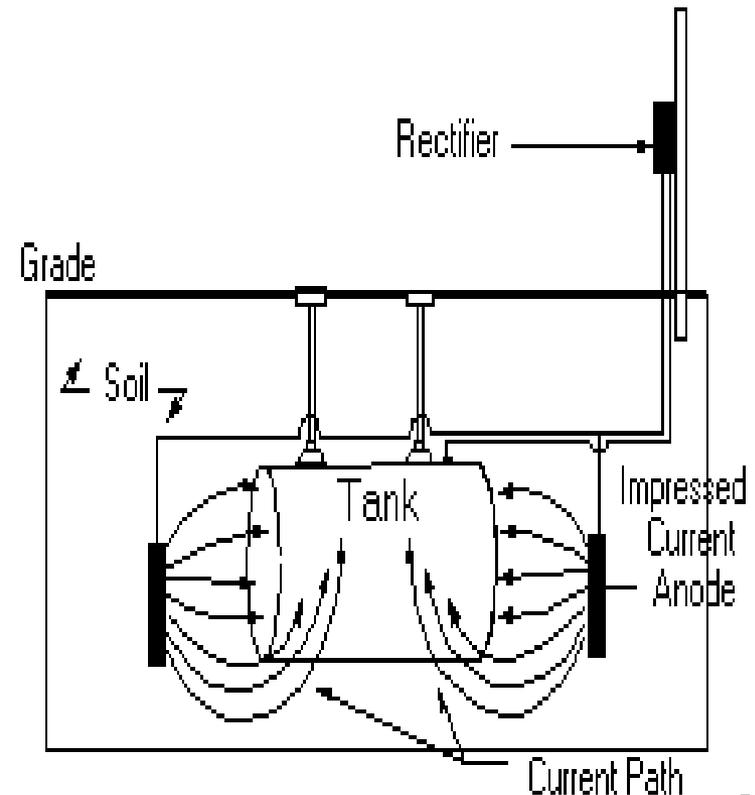
**Note: Most insurers require owners to be in compliance with UST regulations.**

# CORROSION PROTECTION FOR STEEL USTS

- **Impressed current system, OR**
- **Sacrificial anode (STIP-3 tank), OR**
- **Interior lining, OR**
- **Interior lining with cathodic protection.**

# Impressed Current (active)

- Tank operator must record rectifier readings (Volts, Amps) every 60 days (recommend **monthly**).
- **Compare** Amp and Volt readings with Hi Lo limits set by Cathodic Protection service provider.
- If readings are higher or lower than recommended range, call a corrosion expert.
- Cathodic protection tests must be conducted for tanks and piping within 6 months after install/repair, and **every 3 years** thereafter.



# Sacrificial Anodes (passive)

- STIP-3 tanks are manufactured with Sacrificial Anodes.
- Steel Flex Connectors on FRP pipe may have “spike” anodes added to protect steel.
- CP tests must be conducted within 6 months after install and **every 3 years** thereafter.
- If you do not pass a test, call a corrosion expert.



# Interior-Lined Tanks

- Interior Lined **without** cathodic protection must have an internal inspection of the lining within **10 years** from the lining installation and every **5 years** thereafter.
- Interior Lined **with** cathodic protection (impressed current) must have a CP test within 6 months of CP install/repair and every **3 years thereafter**. (Does NOT require internal inspection of lining.)
- If internal lining inspection does NOT pass, must follow codes and standards (API 1631, NLPA 631, etc.) to determine if a tank can be relined.

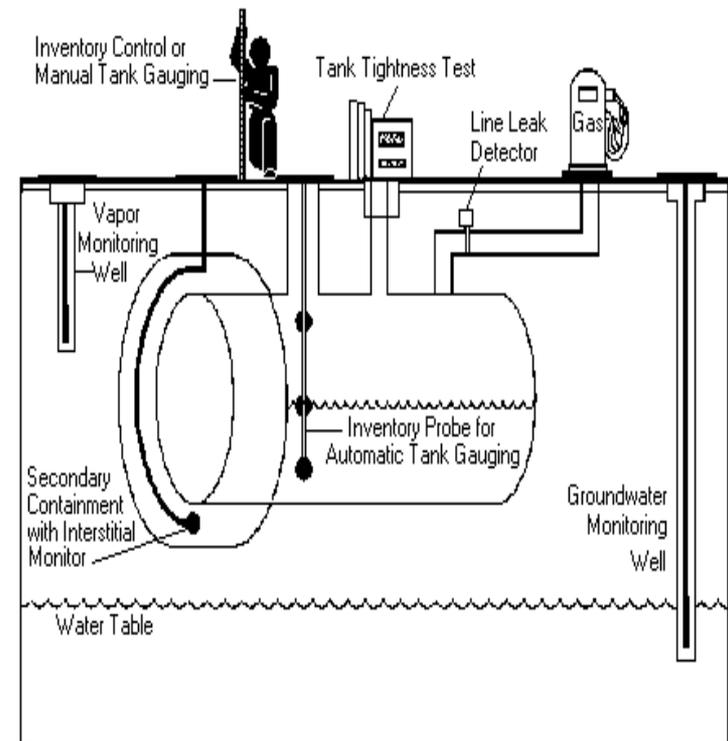
# Tank Release Detection Methods

➤ **Manual Inventory Control (10 Yrs.)**

**OR**

➤ **Monthly Monitoring Methods:**

- **Automatic tank gauge.**
- **Interstitial monitoring.**
- **Statistical Inventory Reconciliation.**
- **Vapor or Groundwater Monitoring (contact Ecology for guidance).**



## Manual Inventory Control (Stick Measurement)

### Daily sticking

- Tightness test every 5 yrs (10 yr limit).

### Weekly sticking

- Up to 1000 gal: no tightness test (life of tank).
- 1001-2000 gal: 5-yr tightness test (10-yr limit).
- > 2000 gal **only** emergency power generators: 5-yr tightness test (10-yr limit).

### Monthly sticking (**only** emergency power generators )

- Up to 1000 gal: no tightness test (life of tank).
- 1001-2000 gal: annual tightness test (life of tank).



Note: Operators must conduct **end-of-month calculations** for daily, weekly, or monthly sticking and maintain records onsite. Suspected releases must be investigated.

# Automatic Tank Gauge (ATG)

- **Daily** check ATG printout for pass results for each tank. (Some ATGs programmed weekly or monthly.)
- Every failed or non-passing test must be resolved ASAP to ensure no leaks.
- Every **month** keep at least one passing leak test (0.2 gph) per tank for record keeping (5 yrs in WA, 12 mos. for EPA).



**Note: Some 3rd-party certifications require annual checks of the ATG system.**

## Interstitial Monitoring for Double-Wall Tanks

- **Daily** check interstitial monitor to see all functions are normal and NO alarms. (If no daily staff, at least monthly check).
- Document **monthly** system check by printout of “sensors normal” or monthly log.
- Check, document, investigate, and correct all alarms.

**Note: Some 3<sup>rd</sup>-party certifications require annual checks of interstitial sensors.**

## Statistical Inventory Reconciliation (SIR)

- SIR method/vendor must be 3<sup>rd</sup>-party certified.
- Tank Operator mails “daily inventory control” records each month to SIR vendor.
- SIR vendor must mail pass/inconclusive/fail results to the tank operator **within 15 days**.
- If there are two consecutive non-passing results, a tank tightness test must be performed within 15 days.
- No leak is acceptable. If SIR vendor notifies owner of suspected release, must investigate immediately. The suspected release must be confirmed or denied within 7 days.

# PIPING RELEASE DETECTION



# Pressurized Piping Release Detection

Pressurized piping must use **two modes** of release detection.  
Choose one from each category:

1. Catastrophic leak detection (3 gph) – Automatic Line Leak Detector (ALLD):
  - **Annual** test of Mechanical ALLD (restricts flow), **or**
  - **Annual** test of Electronic ALLD (shuts off flow)

**AND**
2. Slow leak detection:
  - **Annual** line tightness test at 0.1 gph, **or**
  - **Monthly** Electronic ALLD test at 0.2 gph, **or**
  - **Monthly** Interstitial check (double wall lines with sump leak sensors), **or**
  - **Monthly** SIR (3<sup>rd</sup>-party certified for lines)

# Automatic Line Leak Detector



- Annual function test of ALLD by ICC Certified Service Provider.
- If ALLD goes into slow flow, may have leak, shut down turbine and call service provider ASAP.

# Electronic ALLD

- Electronic ALLDs can fulfill both leak detection and flow shut-off.
- **Monthly** printout of **each line** passing a 0.2gph test. Keep 5 yrs records in WA, 12 mos. EPA.
- **Annual** function test of the electronic ALLD by an ICC certified service provider.
- Electronic ALLDs shut the turbine off if detects a leak. Call your service provider to resolve.

# Interstitial Monitoring for Double-Wall Lines

- **Daily** check no alarms on interstitial panel. If no daily staff, at least monthly.
- **Monthly** printout each sensor is “normal.” If no printer use log book. Keep records for 5 yrs WA, 12 mos. EPA.
- Recommend **annual** test of sensors by service provider.
- Sensors must be placed **downhill**. If tanks are lower than dispensers, sensors are in turbine sump.
- Most chase pipe was not UL listed to contain petroleum, so is **not considered part of double wall pipe**. (Most chase pipe manufactured after 7/2007 is UL listed for petroleum).

*Note: To meet catastrophic requirements for pressurized piping, remember annual test of the ALLD.*

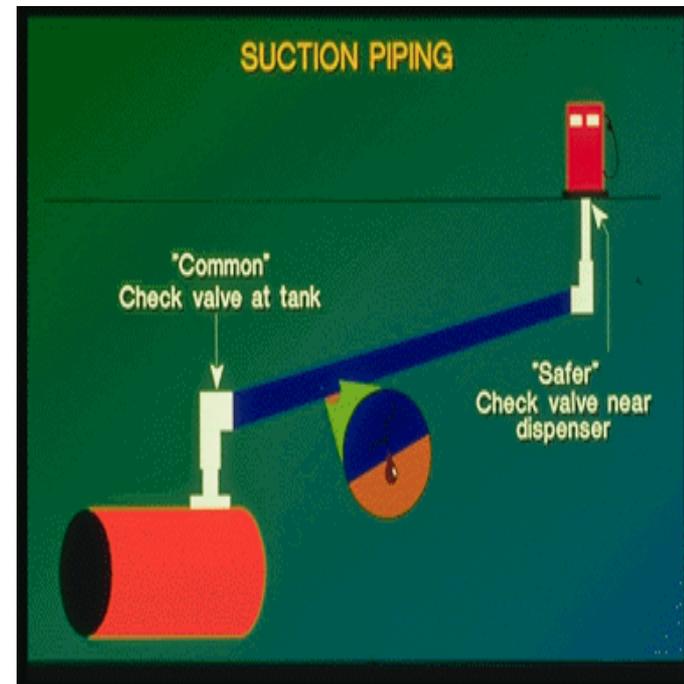
## SIR for Lines

- Check 3<sup>rd</sup>-party certification of SIR method to ensure it meets piping release detection requirements.
- If leak, shut down turbine, and call service provider to resolve.

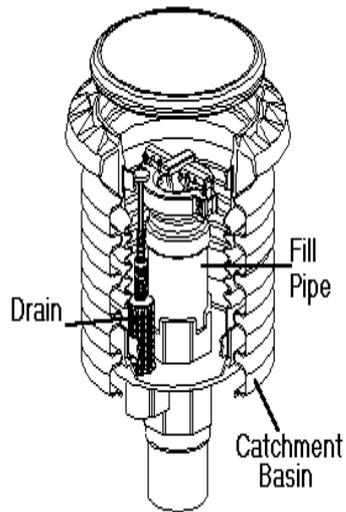
Note: *To meet catastrophic requirements for pressurized piping, remember annual test of the ALLD.*

# Suction Piping Release Detection

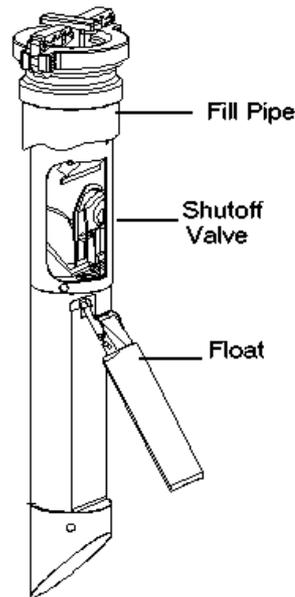
- Check valve only under dispenser – No release detection required.
- Check valve at tank: choose one
  - Every 3 yr. line tightness test,  
*or*
  - monthly monitoring method (interstitial or SIR line compliant)
- Maintain records 5 yrs in WA and 12 mos. for EPA.



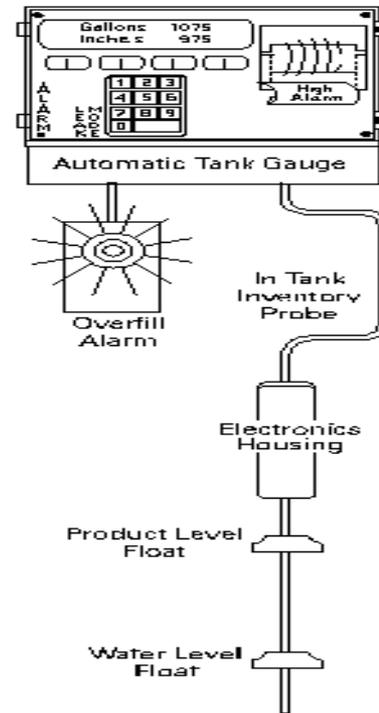
# SPILL & OVERFILL PROTECTION



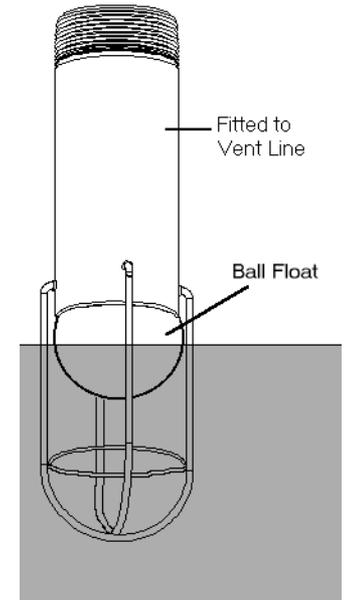
Spill Bucket



Automatic Shutoff



Overfill Alarm



Ball Float Valve

# Spill Buckets

- Spill buckets must contain spills when delivery hose and fill pipe uncouple.
- Periodically inspect buckets.
- Buckets must be clean (no liquid).
- Buckets must be leak-free (no holes or cracks).

# Overfill Protection Options

- Alarm system: must activate when tank is 90% full. Exterior Alarm must be audible to the delivery driver.
- Automatic shutoff device: must be set to shut off when tank is 95% full.
- Ball float valve: must be set at 90% level. Have documentation available showing ball float valve installation, or have service provider document ball float valve is present.

# Equipment Inspection

Some owners hire a service provider for the inspection to open the sumps. Inspectors will look at the following equipment.

- Impressed current rectifier (check log, AMP, volt readings)
- ATG (run alarm reports, leak test reports)
- Equipment in turbine area or sump (ALLD, pipe, sensors)
- Under dispensers (pipe protection, leaks)
- Spill and overflow equipment (spill buckets, automatic shutoff valves, and overflow alarms).

# POST-INSPECTION BRIEFING

- Discuss results and provide educational materials.
- If violations, issue a Notice of Non-Compliance (NONC) and/or a Field Ticket (\$). The NONC documents the violations found, actions necessary to correct them, and a time frame to complete the corrections.

# QUESTIONS?

Locate Your Regional Office (below)  
Call number listed and  
Ask for an UST Inspector

## Regional Offices:

<b>Northwest</b>	<b>425-649-7000</b>
<b>Southwest</b>	<b>360-407-6300</b>
<b>Central</b>	<b>509-575-2490</b>
<b>Eastern</b>	<b>509-329-3400</b>



The Regional Office phone numbers may be used for reporting a spill or release from an UST system.