Maryland Underground Storage Tank Operator Class A & B Training Course

Presented By: Keystone Petroleum Equipment, Ltd. Doug Kassay Module 1 Operator Requirements and Responsibilities

Operator Training Requirements

- Code of Maryland Regulations (COMAR) 26.10.16.05 became effective April 19th, 2010
- Requires all facilities with regulated UST systems to have at least one designated Class A, B, and C operators by August 8, 2012
- Requires new or replacement Class A or B operators are trained and certified within 30 days after assuming the duties of the A or B operator
- Not required for UST system that only stores heating oil for direct consumptive use

Operator Training Sanctions

What can happen if you don't have trained operators?

- MDE may seek penalties
- Red Tag facility that does not have certified operators What can happen if you get certified but fail at maintaining compliance with COMAR?
- Facilities not in compliance will require retraining
- MDE may seek penalties
- MDE may suspend or revoke your certificate, which could lead to Red Tagging if you were the only one certified



The A, B, C's of a large company



The A, B, C's of a small company



Station Owner Class A & B (and sometimes C)



Class C

The A, B, C's of a your company



How you assign your A, B and C operators will be based on:

- Company size
- Corporate structure
- Number of facilities with regulated tanks
- Type of operation
 - Attended self-serve
 - Unattended self-serve
 - Fleet fueling
 - Generator tank

Class A Operator

Primary responsibility for operating and maintaining (to COMAR) one or more UST systems at a regulated substance storage facility. These responsibilities include:

- Successfully complete a MDE approved Class A training class
- Routine management of resources and personnel, which may include establishing work assignments
- System repairs, upgrades, new or replacement UST system(s) are by a qualified person (MDE certified tank technician must be used)



Class A Operator

- A qualified person is implementing the operation, maintenance, testing, and record-keeping requirements for an UST system that shall include:
 - Spill and overfill prevention
 - Release detection, reporting, and emergency response
 - Corrosion protection
 - Product and equipment compatibility
 - Financial responsibility
 - UST notification and registration
 - UST temporary and permanent closure
 - Operator training and certification

The above listed records must be maintained, show compliance, and be available upon request by the MDE and its certified inspectors

Understanding of the skills and training requirements of the Class B and C operator



Class B Operator

Primary responsibility for implementation of COMAR 26.10.02 - .11 through the daily operation, maintenance, testing, and record keeping of an UST

- UST release detection methods and release prevention equipment are operational and testing is performed
- Release detection reporting requirements are met
- Spill prevention, overfill prevention, and corrosion protection equipment are inspected for proper operation
- UST system equipment tests are performed
- UST equipment manufacturer and third-party performance standards, manuals, and instructions are available and followed
- Records required to demonstrate compliance are maintained and made available upon request by the Department or its certified inspectors
- A Class C operator is trained to respond properly to a suspected or confirmed release, unusual operating conditions, emergencies, and equipment failures
- Maintain knowledge of the skills and training requirements of the Class C operator



Class C Operators

Class C operators are trained by the Class A or Class B operators and shall be trained prior to taking on these responsibilities:

- Controlling and monitoring the dispensing or sale of a regulated substance
- Immediately responding to alarms, equipment failures, or other indications of emergencies caused by a release or spill from an UST system
- Notifying a Class A or a Class B operator, appropriate emergency response personnel, and the Department in accordance with the written instructions provided by the owner
- Being available to respond to a suspected or confirmed release, unusual operating conditions, emergencies, and equipment failures at a regulated substance storage facility



Operator Response Requirements



Class A or B operator must be available for immediate phone consultation during operating hours

Class A or B operator must be able to be at the site within 24 hours

Class C operator should always be at the site during operating hours

What About Unmanned Facilities?

- Class A and B response times are the same
- A Class C operator must be available immediately for phone consultation and be able to be onsite within 2 hours of being contacted
- Emergency contacts and procedures must be prominently displayed for all users of the site



Unattended Emergency Contact



8" x 10" sign with 1" lettering

- Name & contact number to reach a Class A, B and/or C operator
- Monthly inspections & maintain records of these inspections

One sign is required, two are recommended: One at the dispensing equipment and one at the emergency stop

Record Keeping Requirements Company Level

Copies of operator training certificates

- A list of certified Class A, B, and C operators currently employed by the owner which includes
 - The operator's name, mailing address, and emergency contact number
 - The name of each facility to which the operator is assigned
 - The names and dates of certification program completed:
 - Certificate from MDE approved operator class for the A and/or B operator(s)
 - Maryland Class C UST Operator Facility Checklist (completed by the A and/or B)

Records to be maintained for 5 years at a location designated by the owner

Each site must have a written set of emergency procedures

- We will go into greater detail about this in the next two modules

Record Keeping Requirements Company Level (Emergency Procedures)

- Each site shall have a set of written instructions that describe how to:
 - Respond to operational or equipment alarms, warnings, or alert mechanisms
 - Implement the emergency shutoff process
 - Respond to a suspected or confirmed release, unusual operating conditions, emergencies, and equipment failures
 - Notify the Department of a release in accordance with COMAR 26.10.01.03 & 26.10.08.01 - .04 (more details on this in module 2)

Module 2 Financial Responsibility & MDE Paperwork

Pollution Liability Insurance Requirements per COMAR 26.10.11.01B(3)

The owner of the regulated UST system must demonstrate financial responsibility

- Pollution Insurance: \$1,000,000.00*
- Annual Aggregate
 100 or less tanks: \$1,000,000.00
 101 or more tanks: \$2,000,000.00

Deductible will be set based on your policy with your insurance carrier

* - If throughput is < 10,000 gal/mo and facility is not engaged in petroleum sales, insurance level can be \$500,000.00

Pollution Liability Insurance Options

- Private insurance
- Surety bond
- Letter of credit
- Trust fund
- Obtain a guarantee (provider must pass 1 of 2 financial tests)
 Self insured (you must pass 1 of 2 financial tests)

Test 1

- Your firm must have a tangible net worth of at least \$10 million; and
- Your firm must have a tangible net worth of a least 10 times the amount of aggregate coverage that you are required to demonstrate plus any other liability coverage for which your firm is using the test to demonstrate financial responsibility to EPA; and
- Your firm must file the firm's annual financial statements with the Securities and Exchange Commission (SEC), or annually report the firm's tangible net worth to Dun and Bradstreet and receive a rating of 4A or 5A. Utilities may file financial statements with the Energy Information Administration, or the Rural Electrification Administration instead of the SEC; and
- Your firm must have audited financial statements that do not include an adverse auditor's opinion or disclaimer of opinion.

Test 2

- Your firm must have a tangible net worth of at least \$10 million; and
- Your firm must have a tangible net worth of at least 6 times the amount of aggregate coverage that you are required to demonstrate; and
- Have U.S. assets that are at least 90 percent of total assets or at least 6 times the required aggregate amount; and
- Have net working capital at least 6 times the required aggregate amount, or a bond rating AAA, AA, A, or BBB from Standard and Poor's, or Aaa, Aa, A, or Baa from Moody's; and
- Your firm must have audited financial statements that do not include an adverse auditor's opinion or disclaimer of opinion.

Whatever method you use, the named insured party is the entity as registered with MDE, ie... the owner, site, company, etc...

MDE Forms Tank Removal/Abandonment 30 Day

- Tank Removal/Abandonment 30 Day Written Notification
 - Used to notify MDE of your intent to permanently close registered tanks from a facility, submit at least 30 days prior to the closure
- Requires owner signature and will list the contractor and name of MDE certified individual performing work
- Notification For Underground Storage Tanks
 - Proof of financial responsibility
 - Add and/or remove tanks from an existing facility
 - Amend information about an existing facility (Insurance, Contact Info, Etc...)

Tank Removal/Abandonment 30 Day

MARYLAND DEPARTMENT OF THE ENVIRONMENT

| Land and Materials Administration • Oil Control Program |
|--|
| 1800 Washington Boulevard • Suite 620 • Baltimore Maryland 21230-1719 |
| 410-537-3442 • 800-633-6101 x3442 • 410-537-3092 (fax) • <u>www.mde.maryland.gov</u> |

Underground Storage System Removal/Abandonment

30-Day Written Notification

Case No:

Facility No:

(check box if facility was not previously registered) This form shall be used to notify the Department at least 30 days before beginning underground storage tank removal and/or abandonment-in-place. When fully completed, this form may be accepted as an amendment to the Notification for Underground Storage Tanks currently on file with the Department, for the removals and/or abandonments listed. New tank installations must be reported on the five-page notification (Form Number MDE/WAS/PER.012). The Department reserves the right to require Form Number MDE/WAS.PER.012, if determined necessary to properly update Department records.

| (1) | Check one) | Government | Commercia | alFarm/Nursery | Residential (non-rental) | Other (plea | ase specify) |
|-----|----------------------|----------------|------------|---------------------|--------------------------|--------------|---------------------------------|
| (2) | Type of work being p | a ufa uma a di | Domoural A | handanment in Diasa | Tomporany Closure | Installation | Ungrade of Evisting Teal/Dining |

(2) Type of work being performed: ____Removal ____Abandonment in Place _____Temporary Closure ____Installation ____Upgrade of Existing Tank/Piping (check all that apply)

(3) Date work is to be performed: _____ (4) Estimated time that work will be ready for inspection: _____

| (5) | Insurance Information: | Self Insurance | Insurance Pool | Risk Retention Group | Guarantee | Letter of Credit | Surety Bond |
|-----|------------------------|-------------------|------------------|----------------------|-----------|------------------|-------------|
| | (check one) | Commercial Insura | nce: Policy No.: | Insurer: | Agent/E | Broker: | _Phone: |

Other Method allowed: (specify)

| (6) Contractor Information: | (7) Facility Information: | (8) Owner Information: |
|-------------------------------------|---------------------------------|--|
| | | |
| Company Name | Facility Name | Owner Name |
| Mailing Address | Street Address | Mailing Address |
| City/State/Zip | City/State/Zip | City/State/Zip |
| Name of Contact Person | Nearest Cross Street | Contact Person at owner location (not contractor) |
| Telephone No. Fax No. | Name of Contact Person at Site | Telephone No. Fax No. |
| Name of Person certified to do work | Telephone No. of Contact Person | Name/Title of person authorized to represent owner |
| MDICexp. date// | | |

Tank Removal/Abandonment 30 Day

30-DAY WRITTEN NOTIFICATION

MDE Oil Control Program

(9) Underground Storage Tank Information:

Facility No.:

| Tank | Tank | Type of | Material of Construction | Material of Construction | Date Tank | Date Tank | Pass or | Type of |
|--------|----------|---------|-----------------------------|--------------------------|-----------|-------------|---------|---------|
| Number | Capacity | Product | Tank | Piping | Last Used | Last Tested | Failed? | Test |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

(11) Certification:

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this and all attached documents. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information submitted is true, accurate and complete. I understand this form may not be accepted by the Oil Control Program if the information is incomplete. (Complete items 1 through 11)

| Signature of UST Owner/ Authorized Owner Representative: | Title: | Date: |
|--|--------|-------|
| (as listed in section 8 of this form) | | |

Notice: Collection of Personal Records - State Government Article § 10-624

This Notice is provided pursuant to § 10-624 of the State Government Article of the Maryland Code. The personal information requested on this form is intended to be used in processing your application. Failure to provide the information requested may result in your application not being processed. You have the right to inspect, amend, or correct this form. The Maryland Department of the Environment ("MDE") is a public agency and subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE's website and is subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not protected by federal or State law.

⁽¹⁰⁾ Are there additional underground storage tanks at this facility not listed above? ____Yes ____No

MDE Forms

Notification for Underground Storage Tanks

Can be used for multiple purposes

- Change ownership
- Change of facility information
- Change of product in tanks
- Change in financial responsibility
- Installing a brand new facility
- Adding and/or removing tanks from an existing facility

Requires owner signature and signature of MDE certified individual if certified work was done

ie.. If change of ownership or information, then no certified individual was involved

MARYLAND DEPARTMENT OF THE ENVIRONMENT

Land and Materials Administration • Oil Control Program 1800 Washington Boulevard • Suite 620 • Baltimore Maryland 21230-1719 410-537-3442 • 800-633-6101 x3442 • 410-537-3092 (fax) • www.mde.maryland.gov

NOTIFICATION FOR UNDERGROUND STORAGE TANKS

| I. OWNERSHIP INFORMATION: Is this an Owner Name Change?yesno Owner ID: Type of Owner: (mark one) Owner Name: | Return completed form to: State Use Only Maryland Department of the Environment Oli Control Program 1800 Washington Boulevard, Suite 620 Battimore MD 21230-1719 Facility ID Number: Facility ID Number: | | | | | |
|---|---|--|--|--|--|--|
| Is this an Owner Name Change?yesno Type of Owner: (mark one) Owner Name: | I. OWNERSHIP INFORMATION: | Owner ID: | | | | |
| Street Address: | Is this an Owner Name Change?yes no | Type of Owner: (mark one) | | | | |
| Street Address: | | Government Commercial | | | | |
| City State Zip Code | | Federal Corporation | | | | |
| County: | City State Zip Code | StateCompany | | | | |
| Mailing Address (if different from above): | County: | LocalPartnership | | | | |
| Non-Commercial Telephone Number: | Mailing Address (if different from above): | Individual | | | | |
| Telephone Number: | | Non-Commercial | | | | |
| Contact Person: Agricultural Fax: Non-Profit Agency II. LOCATION OF TANKS: Is this a Facility Name Change? yes no Facility Name or Company Site Identifier: | Telephone Number: | Residential | | | | |
| Fax: | Contact Person: | Agricultural | | | | |
| II. LOCATION OF TANKS: Is this a Facility Name Change?yesno Facility Name or Company Site Identifier: Street Address: Street Address: City State Zip Code County Facility Water Supply (<i>mark one</i>):Potable WellPublic Water System Mailing Address (if different from above):Primary Phone Number:Primary Phone Number: | Fax:Email: | Non-Profit Agency | | | | |
| City State Zip Code County Facility Water Supply (mark one): Public Water System Mailing Address (if different from above): | II. LOCATION OF TANKS: Facility Name or Company Site Identifier: | Is this a Facility Name Change? yes no | | | | |
| Facility Water Supply (mark one): Public Water System Mailing Address (if different from above): | City State Zip Code | County | | | | |
| Mailing Address (if different from above):Primary Phone Number: | Facility Water Supply (mark one):Potable WellPublic Water System | n | | | | |
| Facility Operator:Primary Phone Number: | Mailing Address (if different from above): | | | | | |
| | Facility Operator:Primary Ph | one Number: | | | | |
| | | | | | | |

Page 1 of 7

From the Instructions:

When to Notify: (1) Immediately register all USTs that are in use or that have been taken out-of-service, but are remaining in the ground; (2) Prior to placing in service, register all new USTs; (3) Within 30 days after any change that affects either the facility or UST information on a previously filed notification, submit an amended notification form (e.g. ownership, substance, tank status, financial responsibility changes).

Who Must Notify? Maryland law requires that owners, operators, or the person in charge of USTs that store regulated substances must notify the State of the existence of their tanks unless those tanks are excluded.

Excluded Tanks are: (1) single family residence and farm tanks of 1,100 gallons or less capacity used for storing regulated substances for non-commercial or personal use; (2) septic tanks; (3) storm water or waste water collection system; (4) flow-through process tanks; or (5) storage tanks in an underground area (such as a basement or vault) if the storage tank is located above the surface of the floor.

What Substances are Covered? The notification requirements apply to USTs that store regulated substances. This includes any substance defined as oil or hazardous. "Oil" is defined in Maryland Law (Environment Article §4-401(h) and includes: petroleum; petroleum by-products, including used/waste oil; crude oils; aviation fuel; gasoline; kerosene; light and heavy fuel oils; diesel motor fuel, including biodiesel fuel, regardless of whether the fuel is petroleum based; ethanol that is intended to be used as a motor fuel or fuel source; and regardless of specific gravity, every other non-edible, non-substituted liquid petroleum fraction. "Oil" does not include liquefied propane. liquefied natural gas, or any edible oils.

"Regulated Substance" is defined in the Code of Federal Regulations (40CFR 280.12) as any substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (but not including any substance regulated as a hazardous waste under subtitle C).

| Facility ID Num | ber: |
|---|--|
| III. TYPE OF FACILITY: (check one) | |
| Aircraft Owner Federal Military Petroleum Distription Airtine Federal Mon-Military Railroad Apartment/Condo Fire/Rescue/Ambulance Residential Auto Dealership Gas Station State Government Commercial Industrial Store Contractor Local Government Trucking/Transp Educational Marina Utilities Office Not Listed | butor nt wort |
| IV. CONTACT PERSON IN CHARGE OF TANKS: Name: Job Title: | |
| | |
| Employer: | |
| Employer: | |
| Employer: Mailing Address:City State | Zip |
| Employer: Mailing Address:City State Phone Number:Fax Number: | Zip |
| Employer: Mailing Address: City State Phone Number: Fax Number: Email Address: | Zip |
| Employer: City State Mailing Address: Fax Number: Email Address: Email Address: Fax Number: Email Address: V. FINANCIAL RESPONSIBILITY: (if applicable – see instructions) Not Required For This Facility - heating oil for direct consumptive use only | Zip |
| Employer: City State Mailing Address: Fax Number: Email Address: Email Address: Email Address: Email Address: V. FINANCIAL RESPONSIBILITY: (if applicable – see instructions) Not Required For This Facility - heating oil for direct consumptive use onl Policy #: Period of Coverage: | Zip |
| Employer: City State Mailing Address: City State Phone Number: Fax Number: Email Address: Email Address: Email Address: Email Address: V. FINANCIAL RESPONSIBILITY: (if applicable – see instructions) Not Required For This Facility - heating oil for direct consumptive use onl Policy #: Insurer: | Zip |
| Employer: City State Mailing Address: City State Phone Number: Fax Number: Email Address: Email Address: Fax Number: Email Address: V. FINANCIAL RESPONSIBILITY: (if applicable – see instructions) Not Required For This Facility - heating oil for direct consumptive use onl Policy #: Insurer: Agent/Broker: | Zip |
| Employer: City Mailing Address: City State Phone Number: Fax Number: Fax Number: Email Address: Fax Number: Email Address: Fax Number: V. FINANCIAL RESPONSIBILITY: (if applicable – see instructions) Not Required For This Facility - heating oil for direct consumptive use onl Policy #: Period of Coverage: Insurer: Agent/Broker: Agent/Broker: Phone No.: Type of Financial Responsibility Used: | Zip |
| Employer: City State Mailing Address: | ZIp y. |
| Employer: City State Mailing Address: City State Phone Number: Fax Number: Email Address: Email Address: Fax Number: Email Address: Email Address: Fax Number: Email Address: Email Address: Particle Procession Fax Number: Email Address: Period of Coverage: Insurer: Insurer: Period of Coverage: Insurer: Agent/Broker: Phone No.: Phone No.: Type of Financial Responsibility Used: Guarantee* Locc | ZIp y. I Govt. Insurance Pool I Govt. Insurance Test I Govt. Financial Test |
| Employer: City State Mailing Address: City State Phone Number: Fax Number: Email Address: Email Address: Period of Coverage: Insurer: Insurer: Period of Coverage: Insurer: Agent/Broker: Phone No: Type of Financial Responsibility Used: Type of Financial Responsibility Used: | ZIp y. I Govt. Insurance Pool I Govt. Bond Rating Test I Govt. Financial Test I Govt. Guarantee |
| Employer: City State Mailing Address: City State Phone Number: Fax Number: Email Address: Email Address: Pax Number: Email Address: Email Address: Policy #: Period of Coverage: Insurer: Period of Coverage: Insurer: Agent/Broker: Phone No.: Type of Financial Responsibility Used: | ZIp y. |

From the Instructions:

V. FINANCIAL RESPONSIBILITY (FR) (page 2)

This section is to be completed by the owner(s) of any UST system that stores motor fuels, lube oils, and bulk heating oil, including emergency generators. Pursuant to federal law (40CFR 280 Subpart H) and Maryland statutes and regulations (§4-409(b) of the Environment Article and COMAR 26.10.11), UST owners shall meet specific financial responsibility (FR) requirements that demonstrate the owner's insurance provisions for taking corrective action and for compensating third parties for injuries and damages that may ensue from UST releases. A general liability policy <u>does not</u> meet this requirement. Heating oil used for direct consumption is exempt from this requirement and "Not Required" should be marked. However, if a heating oil UST is serving a dual purpose as an emergency generator, it must meet the FR requirements. See page one of these instructions for further information on applicable statutes and regulations to ensure that your FR coverage is adequate and your certification is accurate.

Facility ID Number:

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS: (complete for each tank at this facility)

| | _ | | - | | | | - | | | |
|--|----------|-----|----------|----|----------|-----|----------|----|----------|----|
| Tank Identification Number | Tank No. | | Tank No. | | Tank No. | | Tank No. | | Tank No. | |
| Alternate Tank ID Number | Tank No. | | Tank No. | | Tank No. | | Tank No. | | Tank No. | |
| 1. Status of Tank (mark only one) | | | | | | | | | | |
| - Currently in Use | | | | | | | | | | |
| - Temporarily Out of Use | | | | | | | | | | |
| - Permanently Out of Use (Complete Item 8) | | | | | | | | | | |
| 2. Date of Installation (month/year) | | | | | | | | | | |
| 3. Total Capacity (gallons) | | | | | | | | | | |
| 3A. Compartmentalized? | | YES | NO | | | YES | NO | | | |
| Enter Compartment Gallons: | Tank "A" | | Tank "B" | | Tank "A" | | Tank "B" | | | |
| 3B. Manifolded? | YES | NO | YES | NO | YES | NO | YES | NO | YES | NO |
| 4. Tank Construction (mark all that apply) | | | _ | - | | | - | | - | |
| - Asphalt Coated or Bare Steel | | | | | | | | | | |
| - Cathodically Protected Steel (Coating w/CP – Galvanic) | | | | | | | | | | |
| - Cathodically Protected Steel (CP Steel – Impressed Current) | | | | | | | | | | |
| - Composite Clad Steel (Steel w/FRP) | | | | | | | | | | |
| - Fiberglass Reinforced Plastic (FRP) | | | | | | | | | | |
| - Polyethylene Tank Jacket | | | | | | | | | | |
| - Other (must describe) | | | | | | | | | | |
| - Double-walled | | | | | | | | | | |
| - Excavation Liner | | | | | | | | | | |
| - Lined Interior | | | | | | | | | | |
| - Lined Interior with Impressed Current | | | | | | | | 1 | | |
| - Has tank been repaired? | YES | NO | YES | NO | YES | NO | YES | NO | YES | NO |

Facility ID Number:

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS: (complete for each tank at this facility)

| | | | | | | | | | | , |
|--|----------|----|----------|----|----------|----|----------|----|----------|----|
| Tank Identification Number | Tank No. | |
| Alternate Tank ID Number | Tank No. | |
| 5. Piping Construction (mark all that apply) | | | | | | | | | | |
| - Aboveground Piping | | | | | | | | | | |
| - Bare or Galvanized Steel | | | | | | | | | | |
| - Bare or Galvaized Steel - sleeved in PVC, FRP, or Plastic | | | | | | | | | | |
| - Copper | | | | | | | | | | |
| - Copper (CP Protected) | | | | | | | | | | |
| Copper-sleeved in PVC, FRP, or Plastic | | | | | | | | | | |
| - CP Steel (Galvanic) | | | | | | | | | | |
| - CP Steel (Impressed Current) | | | | | | | | | | |
| - Fiberglass Reinforced Plastic (FRP) | | | | | | | | | | |
| - Flexible Plastic | | | | | | | | | | |
| - Other (must describe) | | | | | | | | | | |
| - No Piping | | | | | | | | | | |
| - Double-walled | | | | | | | | | | |
| - Double-walled with Containment Sumps | | | | | | | | | | |
| - Secondary Containment (specify) | | | | | | | | | | |
| 6. Type of Piping (mark all that apply) | | | | | | | | | | |
| Pressurized? (if yes, select type of Automatic Line Leak Detector (ALLD) | | | | | | | | | | |
| Electronic ALLD | | | | | | | | | | |
| Mechanical ALLD | | | | | | | | | | |
| - Gravity Feed | | | | | | | | | | |
| - Suction, no valve at tank (Safe Suction) | | | _ | | _ | | | | | |
| - Suction, valve at tank (U.S. Suction) | | | | | | | | | | |
| - Has piping been repaired? | YES | NO |

Facility ID Number:

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS: (complete for each tank at this facility)

| Tank Identification Number | Tank No. | |
|---|----------|----|----------|----|----------|----|----------|----|----------|----|
| Alternate Tank ID Number | Tank No. | |
| 7. Substance Currently | | | | | | | | | | |
| or Last Stored | | | | | 1 | | | | | |
| - Aviation Fuel | | | | | | | | | | |
| - Bio-Diesel | | | | | | | | | | |
| - Car Wash-Oil/Water Separator UST | | | | | | | | | | |
| - Diesel | | | | | | | | | | |
| - Ethanol (E-85) | | | | | | | | | | |
| - Gasohol (E-10) | | | | | | | | | | |
| - Gasoline | | | | | | | | | | |
| - Hazardous Substance | | | | | | | | | | |
| (specify): | | | | | | | | | | |
| - Heading Oil #2 | | | | | | | | | | |
| - neaung Oil #4 | | | | | | | | | | |
| - Heating Oil #5 | | | | | | | | | | |
| - Heating Oil #6 | | | | | | | | | | |
| - Kerosene | | | | | | | | | | |
| - Lube Oil | | | | | | | | | | |
| - Methanol | | | | | | | | | | |
| - Mixture (specify): | | | | | | | | | | |
| - Used Oil | | | | | | | | | | |
| - Other (must describe) | | | | | | | | | | |
| - Other (must describe) | | | | | | | | | | |
| 7A. On-site consumptive use? | YES | NO |
| 7B. Emergency Generator? | YES | NO |
| 8. Closing of Tank | | | - | - | - | - | - | - | - | - |
| - Estimated date last used (month/day/year) | | | | | | | | | | |
| - Date Tank Closed (month/day/year) | | | | | | | | | | |
| - Tank Removed From Ground? | YES | NO |
| - Tank Filled with Inert Material? | YES | NO |
| - If yes, inert material used. | | | | | | | | | | |
| - Change in service to non- regulated substance? | YES | NO |
| 8A. Site Assessment Completed? | YES | NO |
| 8B. Assessment Report | YES | NO |

Facility ID Number: _____

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS: (complete for each tank at this facility)

| Tank Identification Number | Tank No. | Tank No. | | Tank No. Tank M | | Tank No. Tank N | | Tank No. | | Tank No. | |
|---|----------|----------|----------|-----------------|------|-----------------|------|----------|------|----------|--|
| Alternate Tank ID Number | Tank No. | | Tank No. | Tank No. | | Tank No. | | Tank No. | | Tank No. | |
| 9. Release Detection (see instructions) | TANK | PIPING | TANK | PIPING | TANK | PIPING | TANK | PIPING | TANK | PIPING | |
| 9A. Tank – Mark One Primany (P) and All | | | | | | | | | | | |
| Secondary (S) Methods | | | | | | | | | | | |
| - Manual Tank Gauging | | | | | | | | | | | |
| - Tank Tightness Testing (See Instructions) | | | | | | | | | | | |
| - ATG 0.2 gph Test | | | | | | | | | | | |
| - Inventory/Statistical Inventory Reconciliation (SIR) | | | | | | | | | | | |
| - Groundwater Monitoring | | | | | | | | | | | |
| - Interstitial Monitoring | | | | | | | | | | | |
| - Other Method Approved | | | | | | | | | | | |
| by MDE (must specify) | | | | | | | | | | | |
| 9B. Piping – Mark One | | | | | | | | | | | |
| Secondary (P) and All Secondary (S) Methods | | | | | | | | | | | |
| - Interstitial Monitoring | | | | | | | | | | | |
| Double-Walled Piping | | | | | | | | | | | |
| - Electronic ALLD Testing | | | | | | | | | | | |
| - Annual Line Tightness | | | | | | | | | | | |
| Testing (Pressurized) | | | | | | | | | | | |
| - 2-year Line Tightness | | | | | | | | | | | |
| - Inventory/Statistical | | | | | | | | | | | |
| Inventory Reconciliation (SIR) | | | | | | | | | | | |
| - Groundwater Monitoring | | | | | | | | | | | |
| Other Method Approved by MDE (must specify) | | | | | | | | | | | |
| 10. Spill and Overfill Protection | | _ | _ | | | _ | _ | | _ | _ | |
| 10A. Overfill Device | | | | | | | | | | | |
| Installed? | YES | NO | YES | NO | YES | NO | YES | NO | YES | NO | |
| (if yes, select one below) | | | | | | | | | | | |
| > Flapper Valve (FV) | | | | | | | | | | | |
| > High Level Alarm (HLA) | | | | | | | | | | | |
| > Other (must describe) | | | | | | | | | | | |
| - other (must describe) | | | | | | | | | | | |
| 10B. Spill Catch Basin | YES | NO | YES | NO | YES | NO | YES | NO | YES | NO | |
| (5 gallon minimum) | | | | | | | | | | | |
| 11. Stage I | YES | NO | YES | NO | YES | NO | YES | NO | YES | NO | |
| vapor Recovery? | | | | _ | | | - | _ | | _ | |
| Vapor Recovery? | YES | NO | YES | NO | YES | NO | YES | NO | YES | NO | |

Facility ID Number:

VII. UNDERGROUND STORAGE TANK (UST) TECHNICIAN CERTIFICATION OF COMPLIANCE:

(Complete for all new installed, replaced, and upgraded underground storage systems at this location)

I certify, under penalty of law, that I am certified by the State of Maryland as an UST Technician, that I am in good standing as a certified Technician with the State, and that I am familiar with the UST regulatory requirements in COMAR 26.10.02—26.10.11. I further certify, under penalty of law that, based upon my personal inspection and/or work upon the UST system(s) at the Facility identified on this Notification Form, the UST system(s) is/are in compliance with the requirements of COMAR 26.10.02—26.10.11.

| Installer: Print Name | Signature | Date |
|-----------------------------------|-----------------|---------|
| MDIC: State Identification Number | Expiration Date | Company |
| | | |

Penalties for False Statements: Any person who makes any false statement, representation, or certification herein is subject to criminal penalties of a fine and imprisonment and to civil monetary penalties, pursuant to §4-417 of the Environment Article of the Annotated Code of Maryland.

VIII. OWNER CERTIFICATION: (to be completed by owner or owner's representative)

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Notification Form and all attached documents, and that the information provided is true, accurate, and complete. I further certify, under penalty of law, that I have met the financial responsibility (FR) requirements in accordance with applicable federal and State laws (40CFR Part 280 Subpart H; §4-409(b) of the Environment Article; and COMAR 26.10.11) and that I can provide documentation thereof to MDE upon its request, or that I am not required to meet the FR requirements because the UST system stores heating oil for direct consumptive use only.

| Name (print / type): | Title: | _ |
|----------------------|--------|---|
| | | |
| Signature: | Date: | |

Penalties for False Statements: Any person who makes any false statement, representation, or certification herein is subject to criminal penalties of a fine and imprisonment and to civil monetary penalties, pursuant to §4-417 of the Environment Article of the Annotated Code of Maryland.

Notice: Collection of Personal Records - State Government Article § 10-624

This Notice is provided pursuant to § 10-624 of the State Government Article of the Maryland Code. The personal information requested on this form is intended to be used in processing your application. Failure to provide the information requested may result in your application not being processed. You have the right to inspect, amend, or correct this form. The Maryland Department of the Environment ("MDE") is a public agency and subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE's website and is subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not protected by federal or State law.

Note:

If you do a change of owner name or a change of ownership, submittal of this form will trigger a new inspection cycle and the new owner will receive a Notice to Inspect from MDE.

MDE Forms

UST System Compliance Inspection Report

Must be done by a MDE certified 3rd party inspector
 Signed by the owner and inspector



Maryland Department of the Environment Oil Control Program, Suite 620, 1800 Washington Blvd., Baltimore MD21230-1719 410-537-3442 410-537-3092 (fax) 1-800-633-6101 x3442 http://www.mde.maryland.gov



Underground Storage Tank System Compliance Inspection Report

We will be going into detail of this form in workgroup #2 so no slides in this module

Spill Notification

- Verbal notification of a spill must be made no later than 2 hours to 866-633-4686
- The individual making the notification must remain on site and/or available until clearance to leave is granted by MDE

Information required:

- Time of discharge
- Location of discharge
- Mode of transportation or type of facility involved
- Type and quantity of oil spilled
- Assistance required
- Name, address, and telephone number of the person making the report
- Any other pertinent information requested by the Administration

What is a reportable event?

- If a storage system fails a tightness test (line and/or tank) or otherwise is determined to be leaking
- 2 consecutive inconclusive leak tests (release detection records)
- Evidence of a discharge
- Failed spill bucket/sump testing
- The discovery of released regulated substances at or around the UST site
- Unusual operating conditions of storage tank system equipment*
- Monitoring results from release detection equipment*

* - If equipment is found to be defective and immediately repaired, then notification is not required

In some of these listed examples it is clear that the notification will need to be made in the 2 hour limit, like if you see gas or diesel streaming down your parking lot.

Some of the other examples, such as the last two, a release may not be immediately evident. In those cases you are afforded 48 hours to investigate a suspected release. Your 2 hour timer would start as soon as the investigation concludes as a release, but no later than 48 hours. If the investigation is inconclusive after the 48 hours then you would need to make the notification within the 2 hour time limit. If the investigations concludes that there was no release, then no notification required.

MDE Forms

All forms, instructions and regulations can be found at:

https://mde.maryland.gov Keyword: Storage Tanks

Recordkeeping Requirements

- All records relative to MDE regulations must be available for reasonable inspection
- Tank level to be gauged in writing prior to each fill, this record shall be maintained for 30 days
- Notification Form keep the last one
- Record retention: 5 years, first year at the facility then at a location designated by the owner. Includes:
 - Testing records
 - Release detection records
 - Facility inspections
 - Inventory records, including 30 day reconciliation
 - Tank installation/removal
 - Operator Training (A, B & C)
- Record retention: Permanent (or operating life):
 - Site Corrosion Survey
 - Tightness tests
 - System Repairs/Upgrades
 - As Built of Fueling System (installed after 1/1/2006)
 - Maintenance



Module 1 & 2 Review

- How many of each operator class must each company have? One. A company is required to have at least one Class A, B & C operator
- Who can train a companies Class C operator(s)? The class A and B operators
- What is the primary focus of the class C operators training? Emergency procedures
- At a manned facility when should a class C operator be onsite?
 - **During operating hours**
- How many hours until a class A or B operator must be onsite after an emergency? Within 24 Hours

Module 1 & 2 Review

- For sites with greater than 10,000 gallon per month throughput, what is per occurrence insurance minimum?
 \$1 Million
 - Annual Aggregates 100 or less tanks: \$1,000,000.00 101 or more tanks: \$2,000,000.00
- How much is the USTIF deductible per tank, per occurrence?
 Will be determined by your policy
- Records have tiered retention times, what are they?
 Five years total. First year onsite, remaining time can be offsite
- Within how many hours until you must verbally notify MDE about a spill?
 - 2 hours

Module 3 Site Safety & Emergency Procedures
Class C training components

Hazards

- Safety Equipment
- Safety Training
- Emergency Procedures/Contacts
- Site Specifics
- Safety Inspections and Checklists

These items fall into two separate plans for each site...

Proactive

Site Safety Plan Policies & procedures to reduce and/or limit accidents

Reactive

Emergency Procedures Policies & procedures for when the @*\$# hits the fan





Highly flammable

Hazards

Traffic Fire Explosion Chemical Exposure Weather Asphyxiation Other people





The Fire Triangle

<u>3 Components:</u>

- 1. Fuel Source
- 2. Oxygen
- 3. Ignition Source

A fire can <u>not</u> occur unless all three are present. Which one is most under control of the C operator?





Personal Safety Equipment Proper footwear

- Safety vest for doing work in the parking lot and/or fueling area
- Safety cones
- All relevant safety contact information should be readily available









Site Safety Equipment

- Bollards & island forms Protection of the dispensers
- Swivels Protects the hose from twisting and kinking
- Break-aways and shear valves Help to prevent spills/fire when a dispenser is hit or when a customer drives off with the nozzle still in his tank
- Nozzles Help prevent spills
- E-stop Kills power to the fueling area to help prevent fires
- Intercom Used to communicate with the customer
- Snuffer and fire extinguishers Used to fight fires
- Communications device (cell phone/landline)

Safety Training and Documentation

All employees who work at a facility utilizing a UST system should receive training on the hazards that they will encounter, prevention measures, and emergency procedures Training should cover necessary safety equipment and proper use of that equipment Emergency procedures and contacts Are weekly and daily safety checks being performed? Documented?

Emergency Procedures & Contacts

- Emergency Procedures must be posted at every regulated UST facility and shall cover:
 - How to respond to operational/equipment alarms
 - Location and operation of the emergency stop
 - How to respond to suspected/confirmed releases, unusual operating conditions, emergencies, and equipment failures
 - Contact numbers; 911, responsible party for the owner and/or Class A/B operator and MDE spill number for release notification (866.633.4686)

| OF HE . | |
|--------------------------|-------------------------|
| EMERGENCY | |
| | RESPONSIBLE PERSON |
| General Responsibilities | Staff Responsibilities |
| Bomb Threats | Weapons |
| Tornado/Water Spout | Earthquake |
| Hazardous Materials | Fire |
| Suicide/Attempt | Serious Injury/Death |
| Assaults/Fights | Campus Disturbance/Riot |
| Intruder/Hostage | |
| Crisis Team Members | |
| Warning and Notification | |
| Lock-Down Procedures | |
| Shelter-In-Place | |
| Evacuation | |
| Media Procedures | |
| Emergency Phone Numbers | |

Emergency Procedures Examples

Event: Drive-off with no apparent damage to the dispenser.

Possible Procedure: Visually inspect under dispenser for leaks. If no leaks, bag off fueling point, call A/B operator. If leak, engage E-stop, call 911, call A/B operator, call MDE.

Event: Drive-off with apparent damage to the dispenser. (tilted, partially off island)

Possible Procedure: Engage E-stop, call 911, call A/B operator.

Event: Spill by delivery driver, product not contained by spill bucket.

Possible Procedure: Engage E-stop, call 911, use spill kit, put boom around storm sewer inlet by the tank pad, call A/B operator, call MDE.

Event: Spill by delivery driver, product contained by spill bucket.

Possible Procedure: Call A/B operator

Event: Dispenser hit by car with fire

Possible Procedure: Engage E-stop, call 911, evacuate store to the rear, use fire extinguisher if safe, call A/B operator, call MDE.

Event: Tank monitor in alarm for X (sudden release/sensor alarm/failed release detection test)

Possible Procedure: Visual check of X, call A/B operator, call petroleum service contractor

Event: Gas dispensers not dispensing or tank monitor not powered on

Possible Procedure: Check if E-stop was triggered, check all sumps for fuel, call A/B operator, call petroleum service contractor

These are suggestions only. It is up to you as the A/B operator to develop emergency procedures based on each site and the equipment at that site.

Safety Inspections & Checklists



What site specific items are checked weekly and/or daily at your facility?

What is required by regulations and what is a good idea for general safety?

Who is performing the inspection?

How are they being documented and how is this documentation being stored?

Workgroup #1

The type of facility you operate dictates who will be your 'C' operator. In this workgroup we will:

- 1. Identify the 'C' operator
- 2. Discuss training strategies
- 3. Discuss record keeping for the Class 'C' training
- Group #1 Attended sites (C-store, repair garage with fuel sales)
- Group #2 Unattended sites (Trucking Company, Contractor, Fleet Fueling)

Group 1 is on a 10 min. break when instructor is working with Group 2 and vice versa

Module 4 Fuel System Components (A Fueling System Primer) &

Special Cases

(Garages, Service Stations, Marinas High Risk Groundwater Use Areas)

Components of a Fuel System

- A. Flow Channels
- B. Tank Bottom Deflector Plates
- C. Primary Tank Fittings
- D. Monitoring Fitting
- 1. Turbine Enclosure
- 2. Fitting Kits for Turbine Enclosure
- 3. Secondary Containment Collar
- 4. Reservoir Sensor
- 5. Fiberglass Reservoir (replaces monitoring fitting)
- 6. Containment Collar Sensor
- 7. Monitoring Fluid with Color Tracer
- 8. Electronic Inventory Gauge
- 9. Electronic Control Panel
- 10. Split-Strap Anchor System
- 11. Deadman Anchor
- 12. Dispenser
- 13. Dispenser Sump
- 14. Double-Wall Pipe
- 15. Submersible Pump
- 16. Fill Tube with Overfill Shut-Off
- 17. Ball Float Valve
- 18. Overfill Spill Container
- 19. Primary Tank Vent



Tank Equipment Categories Secondary Containment

Equipment used to contain releases from double wall components such as tanks and lines. Depending on when your system was put in, it may not have any secondary containment equipment

Venting & Vapor Recovery

All tanks must be vented. The vent riser should be made of steel and extend: 3' above grade for combustible liquids & 12' above grade for flammable liquids

- Stage I VR Required on all gas tanks over 2,000 gallons this is the process of the recovery of vapors from the tank back to the delivery truck
 - Two point connection
 - Coaxial connection

Stage II VR – This is the process of the recovery of vapors from the customers vehicles back to the underground tank. Only required in high risk groundwater use area.

Spill & Overfill Protection

Equipment for the purpose of eliminating or controlling a release during a tank fill

Release Detection

Equipment for the purpose of detecting a release from the tank and/or product lines

Secondary Containment Sumps

- Used to contain releases from double-wall piping and isolate piping components. Installed on tanks, under dispensers, and piping transitions.
- Regulations require containment sumps to be tested upon installation or modification (includes piping replacement & sump repair), then every 5 years.
- Testing is commonly performed by flooding the containment area with water and monitoring the level for at least one hour. (called hydrostatic testing)
- Water Level should be at least 4" above highest sump penetration

Sump Testing









Co-axial Stage I Vapor Recovery







Tank Types Post-2009 Installed Tanks

- Double Wall Steel
- Double Wall Fiberglass
- Clad Double Wall Steel (Cladding is non-conductive and protects the tank from corrosion; Fiberglass or Polyethylene cladding)

Pre-2009 Installed Tanks

Same as above but also could include

- (Pre-2009) Single Wall Steel
- (Pre-2009) Single Wall Steel with non-conductive cladding
- (Pre-2009) Single Wall Fiberglass
- (Pre-2009) Single Wall Steel with internal lining

Coated Steel Tanks

Commonly referred to as an ACT-100 tank regardless of the cladding material
Structural integrity of steel and the corrosion resistance of fiberglass
Does not require cathodic protection testing



Steel Tanks (STI-P3)

- Conforms to UL 58
- Cathodically protected tank
- Factory installed anodes
- Warranty is usually less then fiberglass
- Requires continual CP testing



Fiberglass Tanks

Conforms to UL 1316

- Corrosion resistant
- Warranties of 30 years is not uncommon
 Slightly more buoyant then steel tanks



Tank Interstitial Space

- Only applicable to double wall tanks
- Interstitial means the space between the inner (primary) wall and outer (secondary) wall of the tank
- Can be either wet or dry
- Steel tanks interstitial space is usually accessible via a straight tube and can be monitored manually
- Fiberglass tanks interstitial space is usually accessible via a tank top opening with no direct access to the bottom
- Wet interstitial spaces are only an option for fiberglass tanks
- The wet interstitial space in a fiberglass tank can be affected by fluctuating ground water levels or other external forces

Types of Petroleum Piping

Single wall (Pre-2005)Double wall

Flexible

- Polyethylene (UPP)
- Nylon 12 (FFS)

Rigid – Fiberglass

– Steel



PetroTechnik UPP pipe



FFS – XP pipe



AO Smith – Red Thread II Fiberglass pipe

Tank Components & Product Compatibility

- Product compatibility is critical when dealing with modern fuels, e.g., ethanol & bio-diesel blends.
- Compatibility with equipment and water must be considered.
- Ethanol is much more corrosive to softer metals (equipment), is susceptible to phase separation (water), and bio-diesel is more susceptible to fungal and bacterial growth.
- Every component in a UST system must be UL listed for the product that is being stored & dispensed in that system.

Garages, Service Stations, Marinas & High Risk Groundwater Use Area

- Existing COMAR regulation still apply to these sites, but they have additional requirements
- Conformance with COMAR is required based on the installation date of the system & location of the facility:
 - Garages, Service Stations & Marinas
 - High Risk Groundwater Use Area (HRGUA)
 - Well Head Protection Area

Garages, Service Stations & Marinas

- Oil distribution company must maintain inventory control when the facility operates under the meter marketing plan
- All sewers and drains receiving oil-bearing wastes or waste water must have adequate and properly maintained oil separating systems
- Used oil disposal including recycling shall be done in a manner that prevents water pollution
- Fuel delivery nozzles shall have a self-closing valve when the hand is removed from the nozzle (Marinas only)
- Piping to the wharf, pier or dock must have a readily accessible block valve located on shore near the approach to the wharf, pier or dock and outside any diked area. Valves shall be grouped at one location.
- Used oil must be labeled properly and WO tanks >1,000 gallons must have an Oil Operations Permit. (See COMAR 26.10.01.08)

High Risk Groundwater Use Area

Defined as: All areas served by individual water supply systems or in 'well head protection areas' in the Counties of:

- Baltimore, Carroll, Cecil, Frederick & Harford

Requires annual testing of all site supply & monitoring wells

- Monitoring well samples are tested per EPA Method 8260
- Supply well samples are tested per EPA Method 524.2
- Special notifications of GW contamination in:
 - Anne Arundel, Baltimore, Carroll, Cecil, Frederick & Harford
- MDE regulations differ based on year installed
 - Old 1/26/2005 and prior
 - New After 1/26/2005

Further clarification of these areas can be found in COMAR 26.04.01 (covers quality of drinking water in Maryland)

High Risk Groundwater Use Area Requirements (New Sites)

- Prior to construction, submit for MDE approval, plans and specifications for the proposed system (see 26.10.02.03-1 for submittal details)
- Be installed with Stage II vapor recovery
- Install and use an approved interstitial monitoring system on the lines
- For tanks >2,000 gal., or for multiple tanks in same excavation
 - Install 4 tank field monitoring pipes (1 in each corner)
 - Install piping between the monitoring pipes around the tank field to allow for active ventilation of the tank excavation area
- Test the entire system for leaks using a helium test (or other test approved by MDE)
- Install one of the following:
 - Min. of 3 groundwater monitoring wells
 - Pressure control system that actively monitors tank pressure and maintains a negative tank pressure that does not allow vapors to escape
 - Install a soil vapor extraction system and connect to the piping around the tank field
 - Any other alternative method approved by MDE
- Sample all site supply & monitoring wells within 30 days of installation, and then annually.
- Obtain Department approval for an alternative method that will prevent and detect the release of gasoline liquid and vapors from the UST system

High Risk Groundwater Use Area & Well Head Protection Area Requirements (Old Sites)

- Install a minimum of 3 properly placed groundwater monitoring wells
- Sample all site supply & monitoring wells annually
- Test the system piping every 2 years using a helium pressure test or other MDE approved test method

The important distinction for old sites is that these specific regulations also apply to Well Head Protection Areas. These areas are defined in COMAR as:

- Baltimore, Carroll, Cecil, Frederick, and Harford counties identified and regulated by a local government
- Surrounding one or more wells serving a community or public water system as defined by COMAR 26.04.01.01B(5) & .01B(34)

Module 3 & 4 Review

What must be posted at each facility with a regulated UST?

Emergency procedures

The fire triangle is composed of what 3 elements?
Fuel, oxygen and ignition source

What device helps prevent spills/fires if a dispenser is hit? Shear valve

What are the three main items that need to be on your emergency procedures?
Location and operation of the emergency stop

A list of emergency contacts

Notifications that need to be made

Module 3 & 4 Review

- What is the name of the component that contains releases from the double wall product lines? Sumps; tank, dispenser & transition.
- What are the four regulatory categories of tank equipment?
 Secondary Containment
 Venting & Vapor Recovery
 Spill & Overfill Prevention
 Release Detection
- MDE regulations require sump testing at what frequency? Upon installation, repair or replacement, line replacement. Then tested every 5 years

All equipment in a UST system must be compatible and listed for the product being stored and dispensed.

Module 5

Secondary Containment Spill Prevention Overfill Prevention
Secondary Containment

- Required on all UST systems installed, upgraded or replaced after (lines – 1/26/2005 & tanks - 1/12/2009) Includes:
 - Tanks
 - Lines
 - Line transitions (ie.. Where the line connects to something like at the submersible pump or at the dispenser or when connecting different types of product lines. The sump itself does not have to be double wall*, the sump is the secondary at the line transitions.)

Secondary Testing Requirements

Line Secondary – Every 5 years

Sumps – Every 5 years

* - If you do have a double wall sump, then it must be tested per manufacturer specifications or PEI RP 1200

Spill Containment

- Spill containment devices are often referred to as spill buckets or catchment basins
- Required on all tanks that receive deliveries of more than 25 gallons with 2 exceptions:
 - Heating oil tanks for onsite use installed prior to 11/4/96
 - New, replacement, or upgraded UST systems which receive used oil shall be equipped with a spill bucket
- Required on all UST systems to prevent release when the transfer hose is detached, this includes stage II vapor recover ports*
- They must have a capacity of at least 5 gallons and be placed around ports where product is transferred into the UST system (fill and vapor recovery ports)
- Newly installed or modified spill buckets must be tested (typically a hydrostatic test) to show they are liquid tight and then are tested annually. If spill bucket is double wall it still must be tested; to either manufacturer specifications or PEI RP 1200

* - MDE will accept an alternate to a spill bucket at the vapor recovery port if the owner or operator can demonstrate its effectiveness to their satisfaction

Spill Containment







Spill Bucket Hyrdo Test Form



Maryland Catchment Basin and Containment Sump Test Report

| Maryland |
|-----------------|
| Department of |
| the Environment |

| MDE Facility I.D. #: | | | | | | | |
|-------------------------------|------------------|-------|-------------|--------|-----|------|--|
| Facility Name: | | UST | Owner: | | | | |
| Facility Address: | | Owne | r Address: | | | | |
| City: Chevy Chase State: MD | Zip: 20815 | City: | | State: | PA | Zip: | |
| | | Owne | r Telephone | Numbe | er: | | |
| Testing Company: Keystone Pet | roleum Equipment | | | | | | |
| Company Telephone Number: | (717) 697-1651 | | | | | | |

Weather Condition: Sunny

| Test Date: | 07/09/18 |
|------------|----------|
|------------|----------|

Temperature: 87

| Product: | Regular | Super | Diesel |
|---------------|---|---|---|
| Construction: | Keguda V Check One Ø Spill Bucket Dispenser Sump Trank Top Sump Transition Sump Vent Riser Sump Other (Describe): Single-walled Ø Double-walled (vacuum test method must be performed in accordance with manufacturer or PEI/ RP1200) | Super V Check One Ø Spill Bucket Dispenser Sump Trank Top Sump Transition Sump Vent Riser Sump Other (Describe): Single-walled Ø Double-walled (vacuum test method must be performed in accordance with manufacturer or PEI/ RP1200) | VCheck One VCheck One Stage I Bucket Dispenser Sump Trank Top Sump Transition Sump Vent Riser Sump Other (Describe): Single-walled Double-walled (vacuum test method must be performed in accordance with manufacturer or PEI/ RP1200) |
| Start Level: | 11 7/8 | 10 1/2 | 11 1/8 |
| Start Time: | 11:50 am | 11:50 am | 11:50 am |
| End Level: | 11 7/8 | 10 1/5 | 11 1/8 |
| End Time: | 12:50 am | 12:50 am | 12:50 am |
| Level Change: | 00 | 00 | 00 |
| Test Results: | 🛛 Pass 🔲 Fail | 🛛 Pass 📘 Fail | 🛛 Pass 📃 Fail |
| Test Failure: | Reported to MDE Dat | e: Time: | |

- Hydrostatic and vacuum test failures must be reported to MDE immediately and within 2 hours of the test.

- A liquid level drop of 1/8 inch or greater in 1 hour is considered a test failure.

| Product: | Vapor | Vapor Manifold Sump | Vent Trans Sump |
|---------------------------|---|--|--|
| Testing: Construction: | Check One Spill Bucket Stage I Bucket Dispenser Sump Trank Top Sump Transition Sump Vent Riser Sump Other (Describe): Single-walled Double-walled (vacuum | V Check One Spill Bucket Stage I Bucket Dispenser Sump Tank Top Sump Transition Sump Other (Describe): Single-walled Double-walled (vacuum | Check One Spill Bucket Stage I Bucket Dispenser Sump Tank Top Sump Transition Sump Vent Riser Sump Other (Describe): Single-walled Double-walled (vacuum |
| | performed in accordance with manufacturer or PEI/ RP1200) | performed in accordance with manufacturer or PEI/ RP1200) | performed in accordance with manufacturer or PEI/ RP1200) |
| Start Level: | 12 3/8 | 15 5/8 | 12 1/2 |
| Start Time: | 11:50 am | 11:15 am | 12:00 am |
| End Level: | 12 3/8 | 1 5/8 | 12 1/2 |
| End Time: | 12:50 am | 12:15 am | 1:00 pm |
| Level Change: | 0 | 0 | 0 |
| Test Result: | 🛛 Pass 🔲 Fail | 🛛 Pass 🔲 Fail | 🖌 Pass 📃 Fail |
| Test Failure | Reported to MDE Date | e: Time: | |

- Hydrostatic and vacuum test failures must be reported to MDE immediately and within 2 hours of the test.

- A liquid level drop of 1/8 inch or greater in 1 hour is considered a test failure.

Tester Certification (check one):

| MDE Technician | MDIC- | - | - T |
|----------------------|------------|---|-----|
| MDE Inspector | MDIC- | - | - I |
| Precision Tester: Te | est Method | | |

Tester's Name (print) : Philip Alexander

Certification Expiration Tester's Signature:

Comments:

Copy of the test report must be maintained by the owner/operator for a period of 5 years and made available to the Department upon request and during UST inspections.

Overfill Prevention

- Required on all tanks that receive deliveries of more than 25 gallons with the exception of:
 - Heating oil tanks for onsite use installed prior to 11/4/96

They Must:

Automatically shut off flow into the tank when the tank is no more than 95% full.

<u>Or:</u>

- Alert the transfer operator when the tank is no more than 90% full by restricting the flow into the tank or triggering a high-level alarm.
- Three main types: overfill drop tube, ball float and overfill alarm.
- There are two types of deliveries that UST systems receive.
 - 1. Pressurized
 - 2. Gravity
- THE OVERFILL PREVENTION DEVICE / METHOD MUST BE COMPATIBLE WITH THE DELIVERY METHOD!!!!

Overfill Prevention-Drop tube shutoff devices

- These are commonly referred to as "flappers" or "overfill valves"
- Activation point can be set at a maximum of 95% of the tanks capacity
- These devices are rated for either pressure or gravities fills
- Must be tested at installation and repair or replacement



Pressure Rated



Gravity Rated



Gravity Rated – Valve Operation

Overfill Prevention Drop-Tube Shutoff Devices

<u>Advantages</u>

Easily verified

Disadvantages

Easily bypassed by delivery driver

Hopefully an easy install/replace (no power tools needed)

Must be changed if the customer switches delivery methods

Ball Float Valves

- Works on the theory that if air can't exit the tank, fuel can't go in
- Action point must be set at 90% or less of the tank's capacity since it only restricts flow and doesn't completely stop flow
- Must be tested at install, replacement or repair





Ball Float Valves

Advantages Low cost

Disadvantages

- Not easily verified
- No one knows if/when it breaks
- Can't be used with pressurized deliveries
- Can be very difficult to remove
- Can't be installed on new systems, can't be replaced on old systems

Cannot not be used on systems with remote fills, coaxial vapor recovery, and suction systems with an air eliminator

External Overfill Alarms

Audible and/or visual alarm that notifies the driver when the tank is 90% full

It must be audible and/or visible to the driver while he or she is making the delivery



External Overfill Alarms

<u>Advantages</u>
 Can be used in all applications

Easily tested

Disadvantages

- Expensive
 - The annunciator is an add on to the ATG
 - Additional wiring/building penetration

Does not physically restrict the delivery

Module 6 Release Detection

Release detection means the ability to detect a release from tanks and/or product lines. Referred to as:

- RD (Release Detection)

Release Detection DUMMES DUMMES

A Reference for the Rest of Us!

- LRD (Line Release Detection)
- TRD (Tank Release Detection)

If you can remember three numbers you will understand 95% of release detection requirements

Small Number: - .1 - Annual .2 - Monthly

Large Number: 3.0 - Continuous

Tank Release Detection Regulation Requirements

Precision testing is required on all tanks & lines:

- At installation, replacement, upgrade, or repair
- Non metered tanks such as heating oil for on site use and emergency generators must be tested at installation, 15 years and every 5 years thereafter
- At the request of MDE if the owner/operator fails to perform inventory control
- At the request of MDE if they suspect a release from the system
- If a tank that does not contain a flammable substance and is 1,000 gallons or less can use hydrostatic testing to satisfy the precision test requirement
- Monthly tank release detection method (Examples of the methods to follow)
 - Required on all tanks except generator tanks prior to 3/1/2008 & heating oil tanks for onsite consumption
 - Interstitial monitoring is required on all USTs installed after January 1, 2009
- Must maintain inventory reconciliation

Tank Release Detection Initial Precision Test Example

| Tankn | ology | Va Tank Ti | ghtness Test | | | page 1 o |
|--------------------------------|---------------------------------|----------------------------------|--------------------------------|---|-----|----------|
| Vork Order: | | | Date: 7/31/2013 | | | |
| Site Name/ID: | | | | | | |
| Address: | | | ~ | | | |
| | | | | 2 | Jp: | |
| | | | | | 1 | |
| Tank Information | 1 REGULAR | 2 SUPER | 3 Diesel | | | |
| Customer Tank ID | 1 | 2 | 3 | | | |
| Regulatory Tank ID | | | | | | |
| Product Category | Gasoline - Regular | Gasoline - Premium | Diesel | | | |
| Product Name | REGULAR | SUPER | Diesel | | | |
| Gallons Capacity | 20000 | 10000 | 10000 | | | |
| Tank Type | Fiberglass | Fiberglass | Fiberglass | | | |
| Tank Walls | Doublewall (field retrofit) | Doublewall (field retrofit) | Doublewall (field retrofit) | | | |
| Compartmentalized | No | Yes | Yes | | | |
| Siphon Tank | No | No | No | | | |
| Vents included with test | not tested | not tested | with this tank | | | |
| Test Start Time | 14:08:00 | 11:10:00 | 11:10:00 | | | |
| Test End Time | 15:18:00 | 13:30:00 | 13:30:00 | | | |
| Water ingress (Y/N) | No | No | No | | | |
| Bubble ingress (Y/N) | No | No | No | | | |
| Ullage ingress (Y/N) | No | No | No | | | |
| Test Result (P/F/I) | Pass | Pass | Pass | | | |
| Yes 🔲 No diagnostic only - T | est was performed per 3rd parts | v certifications as specified in | 40 CFR parts 280 and 281. | | | |
| Technician Comments : All Tank | s pass. | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| dress: | | | | | | |
|---|----------------------|----------------------|----------------------|------------------|------------------|------------------|
| ty: | | | State: | MD | Zip: 20815 | |
| ank Information | Tank # 1 Line # 1 | Tank # 2 Line # 1 | Tank # 3 Line # 1 | Tank # Line # | Tank # Line # | Tank # Line # |
| est Method | TLD-1 | TLD-1 | TLD-1 | | | |
| Customer Tank ID | 1 | 2 | 3 | | | |
| Product Name | REGULAR | SUPER | Diesel | | | |
| elivery Type | Pressure | Pressure | Pressure | | | |
| est Pressure | 60 | 60 | 60 | | | |
| est Start Time | 13:15 | 13:15 | 13:15 | | | |
| est End Time | 14:15 | 14:15 | 14:15 | | | |
| inal Leak Rate | -0.01 | -0.01 | -0.01 | | | |
| est Result(P/F/I) | Pass | Pass | Pass | | | |
| est was performed per rd party certifications as pecified in 40 CFR parts 80 and 281 | Yes | Yes | Yes | | | |
| echnician Comments: All | Lines pass. | | | | | |
| | | | | | | |

Environmental Compliance for Petroleum Systems @2013 Tanknology Inc., Austin, TX. All rights reserved. tanknology.com

44048

Certification #

Tony Parks

Toytak

Technician Name

Technician Signature

Environmental Compliance for Petroleum Systems @2013 Tanknology Inc., Austin, TX. All rights reserved. tanknology.com

Technician Signature:

Inventory Control Regulation Requirements

- Inventory control is not a substitute for a tank release detection method, it is a supplement and it is required for metered tanks
 - Non-metered tanks, such as heating oil tanks or generator tanks do not have to do inventory control
- Must be performed daily
- Reconciles stick readings against gallons pumped & gallons delivered
- EPA has published a document that explains the process in detail: 510-B-93-004 Doing Inventory Right
- Document is on the thumb drive and can be found at EPA's website

Note: the EPA document says to keep the records for 1 year, however; that is superseded by MDE's requirement to keep the document for 5 years.

Release Detection Regulation Requirements

If inventory reconciliation shows:

7 consecutive days of shortage of 80 gallons or more OR Variation exceeding 1 percent plus 130 gallons of the metered quantity

then the owner must be notified and an investigation must be performed immediately to identify the cause

If the investigation reveals a release then follow MDE notification procedures

If no release is determined, annotate the cause on the daily inventory record sheet

Inventory Control Example from the EPA form

| TPLE | | D | AILY INVE | NTORY WORKSHEET | S | MPL |
|---|-----------|-------------|-----------|-----------------------|------|---|
| SAMPL | | FACIL YC | | UAN DOE 122/93 | DATE | START STICK INVENTORY (GALLONS) DELIVERED |
| TANK IDENTIFICATION | 1 | 2 | 2 | 4 | 1 | 4047 (+) - (-) 3690 (+) - (-) |
| | 056 /11/1 | PPEN | 2/FCC/ | AAID IIAU | 3 | 3658 (+) - (-) |
| Type of Fuel | KER UNL | (ADD | LOSEL | 10.000 | 6 | 3275(+) - (-) |
| Tank Size in Gallons | 6000 | 6000 | 6000 | 10,000 | 6 | 3117 (+) - (-) |
| END STICK INCHES | 414 | 517 | 69 | 86 2 | 7 | 2790 (+) 6134 (-) |
| AMOUNT PUMPED | | 1 | 1.000 | 法规订论器 建塑料的生产 | 9 | 8732 (+) - (-) |
| Totalizer Reading | 14202 | 20798 | 97 485 | 44012 | 10 | 8591 (+) - (-) |
| Totalizer Reading | 55138 | 1/012 | 70128 | 20974 | 11 | 8379 (+) - (-) |
| Totalizer Reading | 95120 | 11017 | 70170 | 30 / / 1 | 12 | 8173(+) - (-) |
| Totalizer Heading | | | | | 13 | 1771 (+) - (-) |
| Totalizer Reading | | | | | 15 | 7402 (+) - (-) |
| Totalizer Reading | | | | · . | 16 | 7342 (+) (-) |
| Totalizer Reading | | | | | 17 | 7050 (+) - (-) |
| Totalizer Reading | · · · · · | | | · | . 18 | 6657(+) (-) |
| Totalizer Reading | | | | | 19 | 6354 (+) (-) |
| TODAY'S SUM OF TOTALIZERS | 79 521 | 41815 | 162663 | 82.487 | 21 | 5869 (+) - (-) |
| Previous Day's Sum of Totalizers | 78271 | 40260 | 16(663 | 82584 | 22 | 5639 (+) 4177 (-) |
| AMOUNT PUMPED TODAY | 1250 | 1555 | 1000 | 403 | 23 | 9423 (+) (-) |
| | | | | and the second second | 24 | 9343 (+) - (-) |
| DELIVERY RECORD | * | | | | 25 | 9036 (+) - (-) |
| Inches of Fuel Before Delivery | 13 7/8 | | | 497/8 | 20 | 8757 (+) (-) |
| Gallons of Fuel Before Delivery | E 27 | | | 5246 | 28 | 8270 (+) (-) |
| (from tank chart) | 777 | | | 3-10 | 29 | 7991 (+) - (-) |
| Inches of Fuel After Delivery | 4/14 | | | 86/2 | 30 | 78(1 (+) - (-) |
| Gallons of Fuel After Delivery | 2672 | | | 9423 | 31 | (+) (-) |
| GALLONS DELIVERED (STICK) [Gallons "After" - Gallons "Before"] | 2135 | | | 4177 | | ROP THE LAST 2 DIGITS from the |
| GROSS GALLONS DELIVERED (RECEIPT) | 2100 | | | 4200 | PL | MPED number and enter on the LEAK CHECK: |

| 5 | | | DAT | TE OF WATER | (AST C) CHECK: | L LEVEL | | " |
|----------|---------------------------------------|-----------------|---------------------|--------------------------------|-------------------|-----------|--|---------|
| $ \leq $ | | 0 | 0_ | C | | 3 | | -0 |
| ATE | START STICK INVENTORY (GALLONS) | GALLONS | GALLONS PUMPED | BOOK INVENTORY (GALLONS) | (INCHES) | (GALLONS) | DAILY OVER (+) OR SHORT (-) ("End" - "Book") | INITIAL |
| 1 | 4047 (+ | | -)333 (| =) 3714 | 38 1/4 | 3690 | - 24 | 71 |
| 2 | 3690 11 | 1 | -) 441 | =) 3646 | 38 | 3658 | +12 | ZD |
| Э | 3658 14 | +) (| -) 329 (| -1 3329 | 35 3/8 | 3323 | -6 | 70 |
| 4 | 33231 | +) (| -) 60 (| =) 3263 | 35 | 3275 | + 12 | 20 |
| 6 | 3275 14 | +) (| -) 145 (| -) 3130 | 33 3/4 | 3117 | - 13 | 20 |
| 6 | 3117 (4 | +1 - 1 | -) 238 (| -) 2879 | 31 V8 | 2790 | -89 | 30 |
| 7 | 2790 14 | +) 6134 1 | -) [17 (| -) 8807 | 80 | 8844 | +37 | 20 |
| B | 8844 14 | 1) - 1 | -) (27 (| =) 8717 | 78 7/8 | 8732 | +15 | ZD |
| 9 | 8732 14 | +) - (| -) 182 (| -) 8550 | 77 1/2 | 8591 | -+ 41 | 21 |
| 10 | 8591 (+ | +) <u> </u> | -) 205 (| -18386 | 75 1/2 | 8379 | -7 | 20 |
| 11 | 8379 (+ | +) - (| -) 204 (| -) 8175 | 73 % | 8173 | -2 | ZD |
| 12 | 8173 14 | 1 ~ 1 | -) (66 (| -) 8007 | 72 | 7991 | -16 | ZD |
| 13 | 7991 4 | 1) - (| -) 320 (| -) 769/ | 693/4 | 7730 | 159 | zD |
| 14 | 77304 | +) (| -) 307 (| -) 7423 | 67 | 7402 | -21 | ID |
| 15 | 7402 (+ | +) (| -) 76 (| -) 7326 | 66 Yz | 7342 | +16 | 20 |
| 16 | 7342 (+ | +) (| -) 224 (| =) 7118 | 6448 | 7050 | - 68 | 5D |
| 17 | 7050 (+ | 1 - 1 | -) 390 (| -) 6660 | 61 | 6657 | -3 | "LD |
| 18 | 6657 (+ | +) (| -1 296 1 | -) 6361 | 58 5/8 | 6354 | -7 | SP |
| 19 | 6354 (+ | +) - (| -) 781 | =) 6276 | 581/8 | 6290 | + 14 | 2P |
| 20 | 6290 14 | +1 (| -1 424 1 | =) 5866 | 54 \$/8 | 5869 | +3 | ZD |
| 21 | 5869 14 | 1 ~ (| -) 205 (| -) 5664 | 5318 | 5639 | -25 | ZD |
| 22 | 5639 (+ | +) 4177 (| -) 403 (| -) 94(3 | 861/2 | 1423 | + 10 | ZD |
| 23 | 9423 (+ | +) (| -) 87 (| =) 9336 | 851/2 | 9343 | +7 | ZD |
| 24 | 9343 (+ | +) (| -) 311 (| -) 9032 | 82 | 9036 | +4 | 20 |
| 25 | 9036 (+ | +) (| -) 239 (| -) 8797 | 79 1/2 | \$757 | -40 | 20 |
| 26 | 8757 14 | +) - (| -1 256 1 | -) 8501 | 767/8 | 8526 | +25 | ZD |
| 27 | 8526 14 | +) (| -1 2.64 1 | -) \$262 | 74 1/2 | 8270 | +8 | 32 |
| 28 | 8270 (+ | +1 (| -1 2.63 (| =) 8007 | 72 | 7991 | -16 | 2P |
| 29 | 7991 (+ | +) - (| -) 185 (| -) 7806 | 69 | 7811 | 5 | ZP |
| 30 | 7811 14 | +) (| -) 116 (| -) 7695 | 68 | 7690 | - 5 | J₽ |
| 31 | (+ | +) (| -) (| -) | | | | |
| | TAL GALLONS | DIGITS from the | 6594 the TOTAL G | TOTAL GAL | LONS OVER O | Compare | these numbers | 8 |

KEEP THIS PIECE OF PAPER ON FILE FOR AT LEAST 1 YEAR

Automatic Tank Gauging TRD Method

- The ATG must be calibrated annually (Also called; ATG Annual Test, ATG Functionality Test, ATG Manufacturer Recommended Testing)
- Automatic tank gauging uses the probe in the tank to perform a 0.2gal/hr test
- This can be done in two ways:
 - Static testing: When the fuel is monitored for one period of time over a 2-5 hour period. The tank must not be in operation during this time and this method can not be used on manifolded systems.
 - Continuous monitoring: When the probe tests for smaller amounts of time, while the system is not operating. It compiles the data over time and gives test results. This is a software upgrade for most ATGs (SCALD- Incon; CSLD-Veeder Root). The upgrade makes the ATG able to test manifolded systems. It performs better for sites that operate 24 hours a day and sites that frequently have low volumes in their tanks.

ATG - Annual TRD Records Example

This annual test typically requires that the tester holds a valid certification from the ATG manufacturer to ensure that the test is done to manufacturer specifications. All devices connected to the ATG are checked such as:

- Sensors
- ELLD's
- Probes
- Alarm lights/buzzers
- Overfill alarm & ack. switch

| KEYST | 981 Trindle Ro Mechanicsburg 717 607 1651 | 2 PA 17055 | | | | | e mop | | | | |
|--|---|--|--|--|-------------|----------------------------------|----------------|---|---|---|----------------|
| PETHOLEOM EQUI | Fire 717.697.1651 | o ot www.koolid | com | | Are passin | tank release | detection reco | rds available? | | Yes | |
| ΔΤ | S Inspection a | e al www.kpelld. nd Cortifica | tion Form | | Are the lea | tests valid w | ith the produc | t level, capacity, th | roughput and numb | er of tanks? | Yes |
| | o mopection a | Testalaine | | 1 | Did the hig | product alar | m pass a func | tionality test? | Yes | | |
| y Name: ity Contact: Ross Infeli | 1 | Signature: | nt CK | lexander | | | | | | | |
| e Number: | | Date: 7-9-18 | ¥* 0 | | is the high | broduct alarm | set to approx | mately 90% of the | tanks capacity? | | Yes |
| ess: | | Reviewed by: | | | Did the hig | water alarm | pass a functio | nality test? | Yes | | |
| | | _ | | | Is the high | vater alarm s | et at 2"? | Yes | | | |
| Facility ID: | | _ | | | Additional | Nahaa/Cammu | | | | | |
| Manufacturer: II | NCON | ATG Model: | TS 550 | | Additional | Notes/Comm | ints: | | | | |
| Software Revision: | 1.8.11.7804 | ATG Serial Number: | 19132808 | | | | | | | | |
| | | | | | | | | | | | |
| the facility have the i | nstruction manual onsite? | Yes | | | | | | Tankind | | | |
| ATG 3rd party certific | ed? Yes | | | | | | | Tank Int | ormation | | Product within |
| he date and Time Corr | ect? Yes | | | | | Active | Capacity | Deadwet Oland | (inches) | Water Level | of manual |
| | | | | | Tank # | Vor | (galions) | Regular | 59 07/59 5 | (Inches) ATG/Stick | Yer. |
| he lights, sounds, keys | and printer appear to be wo | rking properly? | Yes | | 2 | Yes | 10.000 | Super | 40.28/40" | .11/0 | Yes |
| here active alarms pre | sent? No | | | | 3 | Yes | 10,000 | Diesel | 54.41/54 1/8 | .03/0 | Yes |
| | | | | | | | | | | | |
| , explain. | | | | | | 1 | | | | | |
| s, explain. | | | | | | - | | | | | |
| s, explain. the situation fixed dur | ing the inspection? | | | | | | | | | - | |
| s, explain. the situation fixed dur | ing the inspection? | | | | | | | | | | |
| , explain. the situation fixed dur | ing the inspection? | nd Certifica | tion Form | | | | Ginsp | ection an | ² | ation Form | |
| s, explain. the situation fixed dur | ing the inspection? | nd Certifica | tion Form | | | AT | G Insp | ection an | ² d Certifica formation | ation Form | |
| s, explain. the situation fixed dur | ing the inspection? | nd Certifica | tion Form | | | A | G Insp | ection an Probe In | ² d Certifica formation | ation Form | |
| a, explain. the situation fixed dur | ing the Inspection? G Inspection a Liquid Sen | nd Certifica | tion Form | | Probe M | A] | G Insp | ection an Probe In | 2 d Certifica formation | ation Form | Notes |
| r, explain. the situation fixed dur A T (| ing the inspection? GInspection a Liquid Sen | 1 nd Certifica sor Informatio | tion Form | | Probe M | A 7 | G Insp | ection an Probe In be Model | 2 d Certifica formation Probe Location Und (1) | Floats Present Y/N Yes | Notes |
| the situation fixed dur | ing the inspection? G Inspection a Liquid Sen | 1 nd Certifica sor Informatic | tion Form | Did sensor pass | Probe M | A) anufacturer con | | ection an Probe In be Model SP-LL2 SP-LL2 | 2 d Certifica formation Probe Location Unit (1) Supor | Tion Form | Notes |
| , explain. the situation fixed dur A T (ensor status reports usor Manufacturer | ing the inspection? G Inspection a Liquid Sen or logs available? YES Sensor Model | 1 nd Certifica sor Informatic For the last 12 mo Sensor Location | tion Form | Did sensor pass functionality test? | Probe M | A 7 anufacturer con con | | ection an Probe In SP-112 SP-112 SP-112 | 2 d Certifica formation Probe Location Und (1) Supor Diesel #1 | Floats Present Y/N Yes Yes | Notes |
| a, explain. the situation fixed dur A T (ensor status reports <u>sor Manufacturer</u> <u>BNCON</u> | ing the inspection? G Inspection a Liquid Sen pr logs available? YES Sensor Model TSP ULS | 1 nd Certifica sor Informatic For the last 12 mo Sensor Location Unit (1) STP | tion Form | Did sensor pass functionality test? Yes | Probe M | A 7 anufacturer con con | | ection an Probe In Se Model SP-112 SP-112 | 2 d Certifica formation Probe Location Units (1) State Dissel #1 | Floats Present Y/N Yes Yes | Notes |
| ensor status reports nsor Manufacturer INCON INCON | ing the inspection? G Inspection a Liquid Sen priogs available? YES Sensor Model TSP-ULS TSP-14 S TSP-14 S | 1 and Certifica sor Informatic For the last 12 mo Sensor Location Und (1) STP Super STP Deced #1 STP | tion Form | Did sensor pass functionality test? Yes Yes | Probe M | A 1 anufacturer con con | FG Insp | ection an Probe In Se Model SP-112 SP-112 | 2 d Certifica formation Probe Location Utils (1) Storer Direct #1 | Floats Present Y/N Yes Yes | Notes |
| ensor status reports ensor status reports ensor status reports ensor status reports ensor Manufacturer encon enco | ing the inspection? G Inspection a Liquid Sen prioga available? YES Sensor Modal TSP-ULS TSP-ULS | 1 and Certifica sor Informatic For the last 12 mo Sensor Location Und (1) STP Stupe STP Dessel 81 STP Diese 181 STP Diese 191 STP | tion Form on whthe? YES Within 17 sump or interstice bottom Yes Yes Yes | Did sensor pass functionality test? Yes Yes Yes | Probe M | A 7 anufacturer con con | | ection an Probe In Se Model SP-112 SP-112 | 2 d Certifica formation Probe Location Utild (1) Storer Direct #1 | Floats Present Y/N Yes Yes | Notes |
| ensor status reports INCON INCON INCON INCON | ing the inspection? G Inspection a Liquid Sen prioga available? YES Sensor Model TSP-ULS TSP-ULS TSP-ULS | 1 and Certifica sor Informatic For the last 12 mo Sensor Location Unid (1) STP Stupe STP Disos # 11 STP | tion Form on whthe? YES Within 17 sump or interstice bottom Yes Yes Yes Yes | Did sensor pass functionality test? Yes Yes Yes | | A 7 anufacturer con con | | ection an Probe In 54 Model SPI12 SPI12 SPI12 | 2 d Certifica formation Probe Location Utild (1) Storer Dised #1 | Floats Present Y/N Yes Yes | Notes |
| ensor status reports ensor Manufacturer INCON IN | ing the inspection? G Inspection a Liquid Sen br loga available? YES Sensor Model TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS | 1 and Certifica sor Informatic For the last 12 mo Sensor Location Unid (1) STP Super STP Discel #1 STP Discel #1 STP Discel #1 STP Discel #1 STP Discel #1 STP Discel #1 STP | tion Form on whthe? YES Within 17 sump or interstate bottom Yes Yes Yes Yes Yes | Did sensor pass functionality test? Yes Yes Yes Yes Yes | | A 7 anufacturer con con | | ection an Probe In be Model SP-112 SP-112 SP-112 | 2 d Certifica formation Probe Location Utild (1) Storer Dissel #1 | Floats Present V/N Yes Yes | Notes |
| ensor status reports ensor status reports INCON | ing the inspection? G Inspection a Liquid Sen brioga available? YES Sensor Modal TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS | 1 Ind Certifica Sor Informatic For the last 12 mo Sensor Location Und (1) STP Super STP Diso Pan 12 Disp. Pan 12 Disp. Pan 34 Disp. Pan 36 Disp. Pan 36 | tion Form on http:/YES vointerstee bottom Yes Yes Yes Yes Yes Yes | Did sensor pass functionality test? Yes Yes Yes Yes Yes Yes | Probe M | A 7 anufacturer con con | | ection an Probe In Prote In SP112 SP112 SP112 | 2 d Certifica formation Probe Location Utild (1) Storer Desot #1 | Floats Present Y/N Yes Yes | Notes |
| A septian. the situation fixed during the situation fixed during the situation fixed during the situation fixed during the situation of the s | ing the inspection? G Inspection a Liquid Sen or logs available? YES Sensor Modal TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS | 1 Ind Certifica Sor Informatic For the last 12 mo Sensor Location Und (1) STP Disp. Pan 12 Disp. Pan 12 Disp. Pan 14 Disp. Pan 36 Disp. Pan 78 Und (1) Inr. | tion Form | Did sensor pass functionality test? Yos Yos Yes Yes Yes Yes Yes | Probe M | All | | ection an Probe In Probe In SP112 SP112 SP112 | 2 d Certifica formation Probe Location Unit (1) Storer Direct #1 | Floats Present V/N Vos Vos Yes | Notes |
| ensor status reports ensor status reports INCON INCON INCON INCON INCON INCON INCON INCON INCON INCON INCON | ing the inspection? G Inspection a Liquid Sen or logs available? YES Sensor Model TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS | 1 Ind Certifical Sor Informatic For the last 12 mo Sensor Location Unid (1) STP Super STP Disp. Pan 12 Disp. Pan 32 Disp. Pan 326 Disp. Pan 326 D | tion Form on where YES were interestice interestice interestice yes Yes Yes Yes Yes Yes Yes Yes Y | Did sensor pass functionality test? Yes Yes Yes Yes Yes Yes Yes Yes Yes | Probe M | A7 | | ection an Probe In Prote In SP112 SP112 SP112 | 2 d Certifica formation Probe Location Unit (1) Super Dised #1 | Floats Present V/N Yes Yes Yes | Notes |
| A septian. A status fixed during the situation fixed during the situation fixed during the situation fixed during the situation of the situat | ing the inspection? G Inspection a Liquid Sen or logs available? YES Sensor Modal TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS | 1 Ind Certifica Sor Informatic For the test 12 mo Sensor Location Und (1) STP Super STP Desp Pan 12 Desp Pan 34 Desp Pan 34 Desp Pan 36 Disp Pan 78 Und (1) Infr. Super Infr. | tion Form https YES whith YES whith I'' of sump interaction Yes Yes Yes Yes Yes Yes Yes Yes | Did sensor pass functionality test? Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes | | An | | ection an Probe In SPI12 SPI12 SPI12 | 2 d Certifica formation Probe Location Usid (1) Store Dissel #1 | Floats Present V/N Yes Yes Yes | Notes |
| explain. the situation fixed dur ATC ensor status reports of sor Manufacturer INCON | ing the Inspection? G Inspection a Liquid Sen or logs available? YES Sensor Model TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS | 1 Total Certifical Sor Informatic Porthe last 12 mg Bensor Location Und (1) STP Super STP Diso Pon 12 Disp. Pan 34 Disp. Pan 34 Disp. Pan 38 Disp. Pan 58 Disp. Pan 58 Disp | tion Form nths? YES Within 1° of sum yes Ven Yes Yes Yes Yes Yes Yes Yes Yes | Did sensor pass functionality test? Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes | | An | | ection an Probe In SP112 SP112 SP112 | 2 d Certifica formation Probe Location Undf (1) Stope Densel #1 | Floats Present V/N Yes Yes | Notes |
| A septials. the situation fixed dur A T of aensor status reports of nsor Manufacturer INCON INCON INCON INCON INCON INCON INCON INCON INCON INCON INCON INCON INCON INCON INCON INCON INCON INCON | ing the inspection? G Inspection a Liquid Sen or logs available? YES Sensor Model TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS | 1 Total Certifica Sor Informatic For the last 12 mo Bensor Location Und (11) STP Super STP Dessel #1 STP Disp Pan 3/4 Disp | tion Form nths7YES Within 17 of sump or initarticle bottom Yes Yes Yes Yes Yes Yes Yes Yes | Did sensor pass functionality teet? Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes | | All | | ection an Probe In SP112 SP112 SP112 | 2 d Certifica formation Probe Location Units (1) Store Densel #1 | Floats Present Y/N Yos Yes | Notes |
| s, explain. the situation fixed dur ATC sensor status reports mor Manufacturer INCON | ing the inspection? G Inspection a Liquid Sen br logs available? YES Sensor Model TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS TSP-ULS | 1 Total Certifica Sor Informatio For the last 12 mo Sensor Location Und (11) STP Super STP Diso Pan 1/2 Diso | tion Form ntha? YES Within 1° of sump or interstice bottom Yes Yes | Did sensor pass functionality test? Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes | Probe N | A 7 | | ection an Probe In SPIL2 SPIL2 SPIL2 | 2 d Certifica formation Probe Location Utild (1) Super Dissed #1 | Floats Present Y/N Yes Yes | Notes |

ATG - Monthly TRD Records Example

- One pass per month per tank
- Depending on the make/model of your ATG it may not be able to be programmed to automatically print out this report
- Know how to be able to manually run the report from your ATG
- Things to look for:



| GRUSS 9833.1 GAL NEI 8979.1 GAL PRUD LEUEL 53.484 IN ULLABE 18945.8 GAL IEMPERATURE 13128 F WATEK LEUEL 8.025 IN WATEK UDL 8.1 GAL PARMERS PRIDE INC. (PU BUX.39 (PARMERS PRIDE INC. (PARMERS PRIDE INC. (PU BUX.39 (PARMERS PRIDE INC. (PARMERS PRIDE INC. (PU BUX.39 (PARMERS PRIDE INC. (PARMERS PRIDE INC. (PARMERS PRIDE INC. (PARMERS PRIDE INC. (PARMERS PRIDE MAC. (| I RNK NU. 1 ZAAAA RU TIAAFULAKA KEAAKI TIA RASHAA RU TIA RASHAA TIA RASHAA TIA RASHA TIAN TIANK NO' I SAAAA TIANA RELA TIANA RU TIANA RU T | PRIDE INC. J BUX.39 ,EDRICKSBURG. PA. 17026 0000 SITE # 00001 JAI1/2018 05:00 AM INVENTURY REPORT INVENTURY REPORT |
|--|---|---|
| FARMERS PRIDE INC. E PU BUX.39 FREDRICKSBURG. E PA. 1/026 0000 SITE # 00001 MARMENS PRIDE INC. PA. 1/026 0000 SITE # 00001 MARMENS PRIDE INC. PU BUX.39 FREDRICKSBURG. PA. 1/026 0000 SUALD REPURI MARMENS PRIDE INC. PU BUX.39 FREDRICKSBURG. PA. 1/026 0000 SUALD REPURI MARMENS PRIDE INC. PU BUX.39 FREDRICKSBURG. PA. 1/026 0000 SUALD REPURI MARMENS PRIDE INC. PU BUX.39 FREDRICKSBURG. PA. 1/026 0000 SUALD REPURI MARMENS PRIDE INC. PU BUX.39 FREDRICKSBURG. PA. 1/026 0000 SUALD REPURI MARMENS PRIDE INC. PU BUX.39 FREDRICKSBURG. PA. 1/026 0000 SUALD REPURI MARMENS PRIDE INC. PU BUX.39 FREDRICKSBURG. PA. 1/026 0000 SUALD REPURI MARMENS PRIDE INC. PU BUX.39 FREDRICKSBURG. PU BUX.30 FREDRICKSBURG.30 FREDRICKSBURG.30 FREDRICKSBURG.30 FREDRI | GRUSS 9033.1 GAL NEI 8979.1 GAL PRUD LEVEL 55.484 IN ULLAGE 10945.8 GAL TEMPERATURE 73.128 F WATER LEVEL 0.026 IN WATER VUL 0.1 GAL | UTESEL GRUSS 15424.5 GAL NET 15320.5 GAL PRUD LEVEL 86.531 IN ULLAGE 4554.4 GAL TEMPERATURE 74.813 F WATER LEVEL 0.030 IN WATER VUL 0.1 GAL |
| l est | HARMERS PRIDE INC.HEPU BUX.39PREDRILCKSBURG.PARMERS PRIDE BUBULSILE # UUUULMILE # UUULMILE # UUUL | FARMERS PRIDE 1NC. PU BUX.39 PREDRICKSBURG. PALIZZE USUBSUBLE # 00001SUIL # 00000. GAL DIESELLEAK IESILEAK IESIUL WALIFYLEAK IARESHOLD 0.100 GAH DUL WALIFYLEAK IARESHOLD 0.100 GAH ESI STARTEDLEAK IARESHOLD 0.100 GAH ESI STARTEDLUSILUSIUDIY FACTORUDIY FACTORUDIALEDUDIALEDUDIALEDUNALEDSUPESLOPE ENDALS CALCULATED LEAK KATE |

Tank Interstitial Monitoring TRD Method

- The device used for interstitial monitoring must be calibrated annually (this device is typically an ATG, but there are stand alone devices that only perform interstitial monitoring)
- Interstitial monitoring is the act of checking the space between the two walls of double wall tank for signs of a release (*presence of liquid or change in liquid level*)
- Must be performed at least once a month
- This can be done by manually sticking the interstice and logging the results or...
- With a sensor between the two walls where a status report is printed or the alarm status is manually logged
- Interstitial monitoring has two main benefits:
 - It is not affected by manifolded systems
 - It is not affected by inventory levels

Tank Interstitial Monitoring Records Example

- One pass per month per tank
- Depending on the make/model of your ATG it may not be able to be programmed to automatically print out this report
- Know how to be able to manually run the report from your ATG
 - Incon Sensor Status Report
 - Veeder Root Liquid Status Report
- Things to look for:



L 5:DSL DISPENSER PAN SENSOR NORMAL

L 6:UNL DISPENSER PAN . SENSOR NORMAL

* * * * * END * * * * *

Statistical Inventory Reconciliation (SIR) TRD Method

- This must be done through an approved third party vendor
- Daily stick readings, sales volumes, and delivery receipts must be very well kept and submitted to the vendor every month
- They compile the data and send a test result
- In addition to providing a monthly 0.2gal/hr tank test, SIR also provides a monthly 0.2gal/hr piping test
- The tanks must be stuck every day!

Statistical Inventory Reconciliation (SIR) Records Example

SIR Vendor will provide a means for you to submit your daily dataData provided must be accurate

| TotalSIR DATA COLLECTION FORM | | | | | | | | | | | |
|----------------------------------|--------------------------------|---|-----------------------------------|------------------------------|-------------------|--------------------------|-------------------------------------|--|---------------------------|----------|--|
| Cus | tomer #: | Customer Name: | | | | | | | | | |
| | Site #: | Site N | Name: | | | Telephone: | | | | | |
| Site | Address: | | | | | | | | | | |
| | Product: | | | Та | nk #: | Tank Size: | | | | | |
| Мо | nth/Year: | | Date of | f Water C | heck | Level of Water (Inches): | | | | | |
| DATE | ENDING TOTALIZER READING | START STICK INVENTORY (+) (Gallons) | GROSS Gallons (-) Dellvered | Gallons Pumped (Sales) | Book Inventory | End Stick (Inches) | End Stick Inventory (Gallons) | Over/Short (End Stick- Book Inventory) | CUMUL.ATIVE Over/Short | Initials | |
| 1 | | (+) | (-) | | | | | | | | |
| 2 | | (+) | (-) | | | | | | | | |
| 3 | | (+) | (-) | | | | | | | | |
| 4 | | (+) | (-) | | | | | | | | |
| 6 | | (+) | (-) | | | | | | | | |
| 6 | | (+) | (-) | | | | | | | | |
| 7 | | (+) | (-) | | | | | | | | |
| 8 | | (+) | (-) | | | | | | | | |
| | | (1) | 0 | | | | | | | | |

SIR Vendor will provide a monthly reportThings to look for:

MONTHLY STATIST CAL INVENTORY RECONCILIATION (SIR) REPORT Richardso тχ (800)84 Date of SIR Report: 10/06/ SIR 5.7 - Version 5.7.L.M What is the required number of usable inventory days per tank? Cust Site ID Phone: PHOENIX State: AZ Zip: 85021 Fax: Phone: PHOENIX State: AZ Zip: 85021 Fax: This Month Last Two Month Months Ago Test Result: Pass, Fa (Jul 11) **Product Name:** m indicates Manifolded tan G indicates Gaining trend

SIR Version

Test Date:

Manual Tank Gauging TRD Method

- Can only be used on tanks up to 2,000 gallons
- For tanks 550 gallons or less it can be the sole TRD method
- For tanks between 551 to 2,000 gallons a precision or hydrostatic test must also be performed every 5 years
- Works by measuring the level of the tank to the nearest 1/8" and comparing that level a minimum of 36 hours later
- Detailed instructions can be found by searching:
 US EPA Manual Tank Gauging Procedures

Manual Tank Gauging Records Example

One passing result per tank per monthSee the EPA booklet for detailed instructions



EPA's guidance says 1 year, but MDE requires 5 years

| Circle your tank si | TANK ze, test du | GAU | IGING | y/monthly | Standards in the t | able b | Ta P elow: I | ank Ident erson Co Facility N | ification mpleting lamel | USED Form 7 | 0/L NCE # 2 | Doe |
|---|--------------------------------------|---------------------------------------|--------------------------------|---|--|------------------------|--|---|----------------------------------|---|---|--|
| Tank | Size |) | Minimum Duration Of Test | Weekly Standard (1 test) | Monthly Standard (4-test average) | Con | npare your v lings with th | veekly readin e standards | gs and the mo shown in the | onthly average table on the le | of the 4 week ft. | ιlγ |
| up to 550 |) gallons | : | 36 hours | 10 gallons | 5 gallons | 5 gallons If the Also, | | If the calculated change exceeds the weekly standard, the UST may be leaking. Also, the monthly average of the 4 weekly test results must be compared to | | | | |
| 551-1,000 (when tank dia | 0 gallons meter is 64' | ., 4 | 44 hours | 9 gallons | 4 gallons | the If e | the monthly standard in the same way. If either the weekly or monthly standards have been exceeded, the UST may be leaking. As soon as possible, call your implementing agency to report the suspected leak and get further instructions. | | | | | |
| 551-1,000 (when tank dia | 0 gallons meter is 48' | ") | 58 hours | 12 gallons | 6 gallons | leak sus | | | | | | |
| 551-1,000 gallor | ns (also requi | ires : | 36 hours | 13 gallons | 7 gallons | | | SA | MD | I.R | | |
| 1,001-2,000 gallo periodic tank tig | ons (also req htness testin | uires 3 ng) | 36 hours | 26 gallons | 13 gallons | D | | NJ1 | | | | |
| Start Test (month, day, and time) | First Initial Stick Reading | Second Initial Stick Reading | Avera Initia Readi | ge Init al Galla (com inche galla | ial End Ter ons (month, day vert time) ons) | st y, and | First End Stick Reading | Second End Stick Reading | Average End Reading | End Gallons (convert inches to gallons) | Change In Tank Volume In Gallons + or (-) | Tank Passe Test (circle YES (NO) |
| Date: 9/4 | 447 | 45 1/2 | 6 45 | - 110 | D/ Date: 9, Time: 6 | 16 AMAPM | 453% | 45 1/2 | 45 /2 | 1119 | +18 | Ò |
| Date: 9/11 | 7% | 7 | 74 | 5 89 | 7 Date: 9/ Time: 6 | 13 AMPM | 61/4 | 61/4 | 64 | 75 | -14 | Ø |
| Date: 9/18 Time: 6 AM | 10 | 10 | 10 | 15 | 0 Date: 9/ | 20 AMAM | 9% | 101/8 | 10 | 150 | 0 | Ø |
| Date: 9/25 Time: 6 AMPND | 24 34 | 25% | 25 | , 90 | 06 Date: 9/ Time: 6 | 27 () | 25% | 25/4 | 254 | 915 | <i>49</i> | Ø |
| | | | | | | | (| To se monthly | e how close y standard, divid | ou are to the le the sum of | 13/4 | Ø |

Vapor Monitoring TRD Method

Not allowed on systems installed after April 1, 2009
 Monitors the area around the tanks for vapors
 Must be approved on a site by site basis by MDE
 Very uncommon

Ground water Monitoring TRD Method

- Monitors the ground water around the tanks for sign of a release
- Very restrictive in terms of conditions that must be met to use this method
- Very uncommon

Line Release Detection Regulation Requirements – All Lines

- Any piping that routinely contains product must be monitored for releases
- If you have double wall piping the secondary (outer wall) must be precision tested:
 - At installation, upgrade or replacement of the piping
 - Then every 5 years
- The line release regulations that apply to line release detection are then determined by the type of piping system, there are two different types
 - Pressurized Most common at gas stations, typically one tank multiple dispensers. Pump is in the tank and product is 'pushed' to the dispenser.
 - Suction Most common at small fleet systems, typically one tank, one dispenser.
 Pump is at the dispenser and pulls (sucks) product from tank.

Piping Release Detection Regulation Requirements (Suction)

<u>American Suction Style Piping</u> (check valve at both ends or just at the tank end)

Tightness test every two years (precision test)

or

Other method of .2 GPH line release detection allowed by COMAR 36.10.05.02D(3)

 Based on the options allowed by COMAR, the one used is usually interstitial monitoring

European or Safe Suction Style Piping

(check valve at dispenser end only)

- None currently required for systems installed prior to 1/12/2009
- For systems installed after 1/12/2009 they must do interstitial monitoring.

Piping Release Detection Regulation Requirements (Pressurized)

UST systems utilizing pressurized piping are required to have two forms of piping release detection

- The first is a continuous 3.0gal/hr form. A 3.0gal/hr leak would need to be picked up within one hour

 This must be an Automatic Line Leak Detector (ALLD)

 The second is a monthly 0.2gal/hr form. A 0.2gal/hr
 - leak must be picked up within a month

OR

A 0.1gal/hr annual test can be substituted for 0.2gal/hr monthly testing.

Continuous 3.0gal/hr Piping Release Detection Required LRD Method – Leak Detectors

- Leak Detectors: Automatic Line Leak Detectors (ALLD) are installed in the submersible pump and monitor pressure inside the line to check for leaks. In the event a leak is detected, they must be able to restrict or shut off the flow of product
- There are two different types of leak detectors:
 - Mechanical (MLLD), these can only restrict flow of product
 - Electronic (ELLD, PLLD), these are capable of completely stopping the flow of product (also known as positive shutoff)
- Leak Detectors must be tested annually



Leak Detector Large LRD 3.0 Records Example

One annual precision test per year

There is no requirement to keep records of the passing 3.0 gph test results, but know where to find the report in the ATG, things to look for on the report:

| 🗲 Tan | knol | ogy | LDT 5000 Field Line Leak D | | Page 1 of 1 | | | |
|---|---|-----------------------------------|-------------------------------|--|-------------|-------------------|-----|--|
| Nork Order: Site Name / ID: Address: City: | 8551092 PMG #86 219 LON MANCHE | 97 / 8697 DONDERRY TPK STER | E NHDES 200005 | Date: 3/10 048 Fac ID 01 State: NH | Zip: | Zip: <u>03104</u> | | |
| Tank ID | | 1 | 3 | | I | 1 | 1 1 | |
| Product | | REGULAR | SUPER | | | | | |
| Product Line | | 1 | 1 | | | | | |
| Tested From | | 5 | 5 | | | | | |
| Existing/New | | Existing | Existing | | | | | |
| Mechanical/Electronic | | Electronic | Electronic | | | | | |
| Manufacturer/Model | | Veeder Root PLLD | Veeder Root PLLD | | | | | |
| Serial No. | | 416716 | 416465 | | | | | |
| Pump Operating Pr | essure (psi) | 31.00 | 31.00 | | | | | |
| Calibrated Leak (ml | /min) | 189.0 | 189.0 | | | | | |
| Calibrated Leak (gp | h) | 3.00 | 3.00 | | | | | |
| Holding PSI 'N/A for Electronic LD's | | | | | | | | |
| Resiliency (ml) 'N/A for Electronic Ll | D's | | | | | | | |
| Metering PSI "N/A for Electronic LI | D's | | | | | | | |
| Opening Time (sec) N/A for Electronic L | D's | | | | | | | |
| Test Results | | Pass | Pass | | | | | |



ATG PLLD Test Report

MMM DD, YYYY HH:MM XM

Annual PLLD Precision Test Report

Monthly .2gal/hr Piping Release Detection Small LRD Method

- Choice of your small LRD method is heavily influenced by the method of your large LRD
- Common methods:
- Electronic leak detectors Uses the ATG to print out monthly .2 GPH tests
- Interstitial monitoring Uses sump sensors hooked up to the ATG to print out sensor/liquid status reports
- SIR If you are using SIR for TRD (and depending on the SIR vendor) then you will also get LRD results at .2 GPH monthly also

Leak Detector

Small .2 LRD records Example

- One passing result per tank per month
- On the report, look for:

Report Name:

Test Date:

.2 GPH Test Result:

| MMM DD, YYYY HH:MM XM |
|--|
| PRESSURE LINE LEAK TEST RESULTS |
| Q 1:UNLEADED REG LINE 3.0 GAL/HR RESULTS: |
| LAST TEST: MMM DD,YYYY HH:MM XM PASS |
| NUMBER OF TESTS PASSED PREV 24 HOURS : 123 SINCE MIDNIGHT : 81 |
| 0.20 GAL/HR RESULTS: |
| MMM DD,YYYY HH:MM XM PASS MMM DD,YYYY HH:MM XM PASS |
| 0.10 GAL/HR RESULTS: |
| MMM DD,YYYY HH:MM XM PASS MMM DD,YYYY HH:MM XM PASS |

This is the same report we saw for tank interstitial monitoring. Some ATG's can't be programmed to automatically print this. Know your ATG!!!



* - Some ELLD/PLLD's have the ability to test at the annual .1 GPH rate. If yours can do this, then you only need one passing test for the year for each line.

| 4 | Franklin Fueling Systems | | | | | | | | | | | |
|---|--|----------------------|----------------------|-------------------------|-----------|-----------|----------------------|--|--|--|--|--|
| | GL | retail | | Line Test Detail Report | | | | | | | | |
| 1 | ast Av | ailable Records | | | | | | | | | | |
| | 0327-Chevy Chase, MD - DIESEL (FFS TS-5/550/5000/608 & Colibri) | | | | | | | | | | | |
| | Line | Started | Ended | Result | Leak Rate | Test Type | Last Updated | | | | | |
| | 3 | 1/17/2019 5:54:20 PM | 1/17/2019 5:54:20 PM | Passed | 0.00 GPH | 0.20 GPH | 1/17/2019 6:21:21 PM | | | | | |
| | 3 | 1/17/2019 4:56:06 PM | 1/17/2019 4:56:06 PM | Passed | 0.00 GPH | 0.20 GPH | 1/17/2019 6:21:21 PM | | | | | |
| | 3 | 1/17/2019 3:57:54 PM | 1/17/2019 3:57:54 PM | Passed | 0.00 GPH | 0.20 GPH | 1/17/2019 6:21:21 PM | | | | | |
| | 3 | 1/17/2019 2:09:50 PM | 1/17/2019 2:09:50 PM | Passed | 0.00 GPH | 0.20 GPH | 1/17/2019 6:21:21 PM | | | | | |
| | 3 | 1/17/2019 7:35:56 AM | 1/17/2019 7:35:56 AM | Passed | 0.00 GPH | 0.20 GPH | 1/17/2019 6:21:21 PM | | | | | |
| | 3 | 1/17/2019 6:37:46 AM | 1/17/2019 6:37:46 AM | Passed | 0.00 GPH | 0.20 GPH | 1/17/2019 6:21:21 PM | | | | | |
| | 3 | 1/17/2019 5:39:34 AM | 1/17/2019 5:39:34 AM | Passed | 0.00 GPH | 0.20 GPH | 1/17/2019 6:21:21 PM | | | | | |
| | 3 | 1/17/2019 4:41:22 AM | 1/17/2019 4:41:22 AM | Passed | 0.00 GPH | 0.20 GPH | 1/17/2019 6:21:21 PM | | | | | |
| | 3 | 1/17/2019 3:43:12 AM | 1/17/2019 3:43:12 AM | Passed | 0.00 GPH | 0.20 GPH | 1/17/2019 6:21:21 PM | | | | | |
| | 3 | 1/17/2019 2:45:00 AM | 1/17/2019 2:45:00 AM | Passed | 0.00 GPH | 0.20 GPH | 1/17/2019 6:21:21 PM | | | | | |

Monthly Int. Sensor Report

Monthly LLD Test Reports

Annual .1gal/hr Piping Release Detection Small LRD Method

- 0.1gal/hr annual test can be substituted for monthly 0.2 gal/hr testing. There are two ways of achieving this.
- If a MLLD is being used as the 3.0 GPH method of LRD, when the MLLD is tested annually the line will be tested at .1 GPH. This precision testing must be performed by an individual holding current certification from the manufacturer of the test method.
- Some electronic line leak detectors can perform a .1 test. A passing test print out must be retained, and only one is needed for the year
Line Testing Small .1 LRD records Example

| idress: | | | State | MD | Zip: 20815 | |
|---|------------------|----------------------|----------------------|------------------|------------------|------------------|
| | | | | | | |
| Fank Information | Tank#1 Line#1 | Tank # 2 Line # 1 | Tank # 3 Line # 1 | Tank # Line # | Tank # Line # | Tank # Line # |
| fest Method | TLD-1 | TLD-1 | TLD-1 | | | |
| Customer Tank ID | 1 | 2 | 3 | | | |
| Product Name | REGULAR | SUPER | Diesel | | | |
| Delivery Type | Pressure | Pressure | Pressure | | | |
| Fest Pressure | 60 | 60 | 60 | | | |
| Fest Start Time | 13:15 | 13:15 | 13:15 | | | |
| Test End Time | 14:15 | 14:15 | 14:15 | | | |
| Final Leak Rate | -0.01 | -0.01 | -0.01 | | | |
| Test Result(P/F/I) | Pass | Pass | Pass | | | |
| Fest was performed per 3rd party certifications as specified in 40 CFR parts 280 and 281 | Yes | Yes | Yes | | | |
| Technician Comments: All | Lines pass. | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

RESULTS 1:UNLEADED REG LINE Q. .0 GAL/HR RESULTS: LAST TEST: Report Name: MMM DD, YYYY HH:MM XM FASS NUMBER OF TESTS PASSED Line Name: PREV 24 HOURS : 123 SINCE MIDNIGHT : 81 0.20 GAL/HR RESULTS: **Test Date:** MMM DD, YYYY HH:MM XM PASS MMM DD, YYYY HH:MM XM PASS .1 GPH Test Result: .10 GAL/HR RESULTS:

MMM DD. YYYY

PRESSURE LINE LEAK TEST

MMM DD, YYYY HH:MM XM PASS MMM DD, YYYY HH:MM XM PASS

HH:MM XM

Note all ELLD/PLLD's have the ability to test at the annual .1 GPH rate. If yours can do this, then you only need one passing test for the year for each line.

ELLD .1 GPH Test Reports

Annual Precision Line Test Report

Interstitial Monitoring Small LRD Method

- Interstitial monitoring of lines is the act of monitoring the space between the primary and secondary walls of the product piping
- Since the space between the walls of the piping is so small, the most common way* to perform interstitial monitoring is in the containment sumps in the run of product line
- This can only be done if your product line system is completely secondarily contained (just like tanks, if you don't have a double wall tank you can do tank interstitial monitoring)
- For this to function properly, the line secondary must be open so that it can drain into the sumps
- The sensors in the sumps are used to detect a line release
- For all lines installed after 1/12/2009, you must use interstitial monitoring as either your primary or secondary form of line release detection

* - There are some piping systems that do contain sensors in the interstitial space, these are not common and typically seen in industrial applications.

Line Interstitial Monitoring Records Example

- One pass per month per line (this will consist of all sump sensors for that line)
- Line interstitial must be opened to drain into a sump so that the sensor can detect the liquid
- Depending on the make/model of your ATG it may not be able to be programmed to automatically print out this report
- Know how to be able to manually run the report from your ATG
 Report Nom
 - Incon Sensor Status Report
 - Veeder Root Liquid Status Report
- Things to look for:

Report Name: Test Date: Sensor Name: Test Result: AUG 6, 2007 9:20 AM

AUG 6, 2007 9:20 AM

LIQUID STATUS

L 1:GAS STP SUMP SENSOR NORMAL

1. 2:DSL STP SUMP FUEL ALARM

SENSOR NORMAL

SENSOR NORMAL

SENSOR NORMAL

FUEL ALARM

L 3: UNLEADED ANNULAR

L 4:DIESEL ANNULAR

L 5:DSL DISPENSER PAN

L 6:UNL DISPENSER PAN .

* * * * * END * * * * *

Note: In this example each line consists of 2 sumps; the STP & Dispenser. Both have to pass.

High Risk Ground Water Only (in addition to previously discussed RD methods)

- For new stations, within 30 days of installation take water samples of site supply well and all monitoring wells
- Annual water sampling of all site supply & all monitoring wells
- Test the UST system after any repairs

Release Detection Record Keeping

- Release detection records must be maintained for 5 years (1 year onsite)
- The most recent twelve months of records should be readily available for inspection
- Equipment and/or methods must have the third party certification: ie... SIR, ATG, MIId's and EIId's www.NWGLDE.org



3rd Party Certification Examples

All the capabilities & limitations of the equipment or test method will be listed on the 3rd party certification

| Issue Date: November Revision Date: Decemb | 22, 1995 er 20, 2013 | Issue Date: March 31, 2015 Revision Date: June 29, 2017 | | | | |
|---|--|--|--|--|--|--|
| | Franklin Fueling Systems | | Veeder-Root | | | |
| INCON T1 Series TS-750, TS-1000, TS-1001, TS-2000, TS-2001, INCON T5 Series, TS-5, TS-608, TS-550, TS-550 evo, TS-5000, TS-5000 evo, | | | Series 8590 DPLLD with 8600 Series System (Veeder-Root TLS-450) for Rigid, Semi-Rigid and/or Flexible Pipelines | | | |
| | Franklin Colibri CL6 & TS-CL6 Series (INCON Magnetostrictive Probe) | | AUTOMATIC ELECTRONIC LINE LEAK DETECTOR | | | |
| | AUTOMATIC TANK GAUGING METHOD | Certification | Leak rate of 3.0 gph at 10 psi* with PD = 100% and PFA = 0%. | | | |
| Certification | Leak rate of 0.2 gph with PD = 95.7% and PFA = 4.3%. Leak rate of 0.1 gph with PD = 99.9% and PFA = 0.1%. | | Leak rate of 0.1 gph at 1.5 times operating pressure* with PD = 100% and PFA = 0%. *Since leak rate varies as a function of pressure, this leak rate and pressure were certified using an equivalent leak rate and pressure, in accordance with an acceptable protocol. | | | |
| Leak Threshold | 0.1 gph for leak rate of 0.2 gph. 0.05 gph for leak rate of 0.1 gph. A tank system should not be declared tight if the test result indicates a loss or gain that equals or exceeds this threshold. | Leak Threshold | 1.5 gph for leak rate of 3.0 gph. 0.1 gph for leak rate of 0.2 gph. 0.05 gph for leak rate of 0.1 gph. | | | |
| Applicability | Gasoline, diesel, aviation fuel, fuel oil #4, biodiesel blends B6-B20 meeting ASTM D7467, biodiesel B100 meeting ASTM D6751. | Applicability | A pipeline system should not be declared ugin in the test result indicates a loss that equals or exceeds this threshold. Gasoline, diesel, aviation fuel, ethanol blends up through E100, biodiesel blends B6-B20 meeting ASTM D7467, biodiesel B100 meeting ASTM | | | |
| Tank Capacity | Maximum of 30,000 gallons for leak rate of 0.2 gph. | | D6751. | | | |
| | Maximum of 15,000 gallons for leak rate of 0.1 gph. Tanks less than 95% full may be tested. Minimum product level required based on tank diameter is as follows: | Specification | System tests pressurized rigid, flexible, and combinations of rigid and flexible pipelines. Tests are conducted at operating pressure. System will not function with a mechanical line leak detector installed in the pipeline. | | | |
| | 48° dia/min 12°; 64° dia/min 14°; | Pipeline | For 3.0 gph (hourly) leak rate test and 0.2 gph (monthly): | | | |
| | /2 dia/min 15 ; 96" dia/min 17.5"; 1.52" dia/min 25 E | cupacity | Maximum of 109.84 gallons for flexible pipelines. Maximum of 643 gallons for semi-ridid pipelines. | | | |
| | For other tank diameters, see evaluation report. | | Maximum of 1178.68 gallons for combination piping systems. | | | |
| Waiting Time | Minimum of 4 hours 9 minutes between delivery and testing for leak rate of 0.2 gph. Minimum of 5 hours 18 minutes between delivery and testing for leak rate of 0.1 gph. | | For 0.1 gph (annual) leak rate test: Maximum of 165.08 gallons for rigid pipelines. | | | |
| | None between dispensing and testing. There must be no delivery during waiting time. | | Maximum of 109.84 gallons for flexible pipelines. Maximum of 267.84 gallons for combination piping systems. | | | |
| Test Period | Length of the test is determined automatically based on quality of test data. | Waiting Time | None between delivery and testing. Minimum between dispensing and testing. | | | |
| | Average data collection time during evaluation was 6 hours, 51 minutes for leak rate of 0.2 gph. Average data collection time during evaluation was 5 hours 44 minutes for leak rate of 0.1 gph. | Test Period | Response time is 1 to 5 minutes for leak rate of 3.0 gph. | | | |
| | Test data is acquired and recorded by system's computer. Leak rate is calculated from data determined to be valid by statistical analysis. | | Response time is 48 minutes to 270 minutes for leak rate of 0.2 gph. Response time is 48 minutes to 489 minutes for leak rate of 0.1 gph. | | | |
| Tomperature | There must be no dispensing or delivery during the test. Probe contains 5 thermistors to monitor product temperature | | lest data are acquired and recorded by a microprocessor. Calculations are automatically performed by the microprocessor. | | | |
| remperature | At least one thermistor must be submerged in product during testing. | System Features | 8600 Series console used in this evaluation with Series 8590 DPLLD. Permanent installation on pipeline. | | | |
| Water Sensor | Must be used to detect water ingress. Minimum detectable water level in the tank is 0.208 inch (0.44 inch using model TSP-IGF4P). Minimum detectable water level change is 0.011 inch (0.013 inch using model TSP-IGF4P). | | Automatic testing of pipeline. Preset threshold. Pump shutdown (optional), message display and alarm activation if leak is declared. | | | |
| Calibration | Thermistors and probe must be checked and, if necessary, calibrated in accordance with manufacturer's instructions. | Calibration | System must be checked annually and, if necessary, calibrated in accordance with manufacturer's instructions. | | | |
| Comments | Not evaluated using manifolded tank systems. Therefore, this certification is only applicable when there is a probe used in each tank and the siphon is broken during testing. Tests only portion of tank containing product. | Comments | System was evaluated on a pipeline consisting of rigid and flexible piping, and the resulting combined bulk modulus was determined by physical measurement at evaluator's facility. The bulk modulus of the piping system in which the device is installed can be calculated so that the software can be programmed to monitor various configurations of rigid/flexible combination piping systems at the facility. | | | |

Module 5 & 6 Review

UST's filled in increments of _____ gallons or less are exempt from _____ & ____?

25 gallons are exempt from spill and overfill prevention

- Why should the line secondary be left open in a sump if you are doing line interstitial monitoring?
 So if a release occurs it will drain into the sump allowing it to be detected by the sensor
- How can a delivery driver bypass an overfill drop tube?

By breaking off the tank stick in order to block the flapper valve from closing

- What can't an overfill alarm do? Physically restrict the delivery
- What are the three types of overfill prevention equipment? Drop tube shut off devices
 - **Ball floats**
 - **Overfill alarms**

Module 5 & 6 Review

Release detection records must be maintained for how long?

5 years total; 12 months onsite – usually one pass per tank/line per month for the last 12 months

For your small line release detection your monthly leak test should be at a leak rate of _____ gallons per hour ?

0.2 gph (or one annual test at .1gph)

Your continuous method of line release detection must be able to detect a leak rate of _____ gallons per hour?

3 gph

For lines, owners of sites installed after 1/12/09 must perform what monthly?

Interstitial monitoring (visual sump inspections or sump sensors)

- After 7 consecutive days of inventory control showing a shortage of 80 gallons or more an owner must: Immediately investigate
- In addition to maintain TRD, owners must also do monthly: Inventory control

Module 7 Cathodic Protection Systems

Cathodic Protection – What is Required?

MDE requires that any component of a UST system that is in contact with soil/back fill/groundwater that routinely contains product must be protected from corrosion

So what is corrosion?

- Corrosion results from an electric current which is caused by contact between metal surfaces, water, and the chemicals present in soils and water
- Cathodic protection is one of several methods for protecting underground tanks and pipelines from corrosion
- Other common names: CP, corrosion protection, STIP-3 or STIP-3 Testing

Possible Petroleum Equipment Requiring Cathodic Protection

Tanks
Lines
Flex hoses
Tank top fittings

Cathodic Protection – How it Works

| Two types of cathodic protection systems | | | | | |
|--|--|--|--|--|--|
| Galvanic (Sacrificial) | Impressed Current (ICCP) | | | | |
| Uses the difference in energy | Uses an outside power source | | | | |
| (hard metal) and zinc or | current flow. These systems | | | | |
| magnesium anodes (soft metal) | are designed by a corrosion | | | | |
| causes corrosion to occur on | typically used to protect large | | | | |
| the softer metal. This is | quantities of metal or added to | | | | |
| option. | tanks/lines that were not factory protected with galvanic. | | | | |

Regardless of the type of CP system you have, it works by managing the flow and direction of the current which controls corrosion.

Galvanic Protection Sacrificial System

- A sacrificial anode protects steel by managing the flow of electrical currents from the equipment
- The sacrificial anode(s) are attached to the component that is to be protected
- The anodes are a softer metal than what is being protected, typically they are made of zinc or magnesium
- Electrons exit the system through the anode
- The anode corrodes instead of the tank

Galvanic System



Impressed Current System

- This type of system uses anodes attached to a rectifier to introduce a negative DC current to the soils around the objects to be protected. It is through the current introduction that corrosive forces are transferred to the anode.
- ICCP systems typically protect large steel structures or are used at facilities that did not come with factory installed galvanic CP systems.
- These systems are designed by a corrosion expert, typically someone holding NACE certification, and require a site survey be completed prior to installation.

Schematic & Components of an ICCP System





Anodes



Rectifier

Alternative to CP systems

In addition to the two types of CP systems used to prevent corrosion there is another way to meet the requirement for corrosion protection and that is:

 Isolating the component from the soil and/or back fill.

Cathodic Protection Upgrades/Repairs

- Anodes can be added to equipment if needed, but:
- An approved method must be followed when adding supplemental cathodic protection to an UST or any other metallic component associated with the system
- This will involve a NACE certified corrosion expert to size the anode properly by performing a corrosion survey
- The physical attachment of a new or replacement anode does not require a NACE certified individual but does require an MDE certified technician to do the work







CP Testing and Record Keeping Requirements Galvanic Systems

Galvanic Systems:

- Individual must be properly trained (NACE or STIP3 certification)
- Must be tested within 6 months of installation/repair
- Must be tested every 1 year if field installed
- Must be tested every 3 years if factory installed (tanks only)

Records:

- Must keep last the last two sets of CP test results
- Must keep the last CP survey (only applicable when anodes are added to an existing system)

CP Testing and Record Keeping Requirements Impressed Current Systems

Impressed Current Systems:

- Inspect unit every 60 days (record volt & amp meter readings as proof, see last 5 assessment for allowable range)
- Annual inspection/testing by qualified personnel (NACE or STIP3 certification)
- Completed CP system assessment every 5 years by a corrosion expert

Records:

- Maintain the last three 60 day inspections (1/2 year worth of records)
- Maintain the last two annual inspection records
- Maintain the last 5 year system assessment

Workgroup #2 Underground Storage Tank System Compliance Inspection Report

Inspection Requirements

- Must be completed by an MDE certified 3rd party inspector
- Initial inspection within 6 months of installation
- Cyclical inspections every 3 years
- At MDE discretion
- Within 3 months of a change of ownership
- Deficiencies must be corrected within 60 days unless alternate schedule is approved by MDE
- Past 5 years of inspections must be retained, last inspection report must be kept onsite

Workgroup #2 **Application of Course Material to Your Site** Operator training requires that you understand all of the MDE requirements for all regulations for UST systems This workgroup looks at how the regulations apply to your site(s) You should have with you a copy of your last facility inspection A facility inspection form will have all the details about the hardware at your site and the corresponding methods of compliance

Maryland Department of the Environment Oil Control Program, Suite 620, 1800 Washington Blvd., Baltimore MD21230-1719

Page 1 of 25

Underground Storage Tank System Compliance Inspection Report

Instructions: Only a person currently certified by the Maryland Department of the Environment in UST Inspection shall complete this report. Detailed instructions on how to complete this form are provided in MDE's "UST Operations Inspector Reference Handbook," which is available at:

410-537-3442 410-537-3092 (fax) 1-800-633-6101 x3442 http://www.mde.maryland.gov

http://mde.maryland.gov/programs/Land/OilControl/UndergroundStorageTanks/Documents/www.mde.state.md.us/assets/document/OilControl/USTInspector_Reference_Handbook.pdf. Use a second form for facilities with more than 5 tanks. Type or Print all information with blue or black ink.

| | | | | - | | | | | | | |
|--------------|-------------------|--------------------|----------|-------------|----------------|----------|---------|-----------|------------|-----------------|--------------------|
| | | | | | | | | | | | |
| | | | | _ | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| MDE | Date of | Current UST | | All | Site loc | ated in | Site o | r | Ow | ner/Operator | has provided |
| Facility | Inspection: | Registration | ap | plicable | High | Risk | neigh | bor | app | proved docume | entation to |
| Number | mm/dd/yyyy | Certificate on | | tanks | Groun | dwater | suppl | led by a | der | nonstrate Fina | ncial |
| rumber. | | onsite? | Je le | gister eu . | UseA | Ica. | Well | ÷ | Ite | sponstonity. | |
| | 05/02/2016 | [X] Yes | IX | Yes | [X] Yes | 5 | []Y | s | IXI | Yes []No | |
| | 03/02/2010 | []No | 11 | No | []No | | [X] N | 0 | If y | es, attach FR p | roof to this form. |
| Inspection | Summary | | | | | | | | | | |
| Tank Syst | em ID Number | as listed on | Sectio | n Tan | k#1 | Tank | # 2 | Tank # | | Tank # | Tank # |
| MDE UST | Registration F | orm | No | | | | | | _ | | |
| Owner Ta | nk ID # (if diffe | erent) | | Tank | 2 Super | Tank 1 | 1 Reg | | | | |
| Fill out the | following using | g these codes: P=F | ass Insp | ection, P | C=Pass | w/correc | ctions, | F=Fail In | spect | tion, NA= No | t Applicable |
| Status: (T | emporarily Out | of Use) | (3.) | | NA | N/ | A | | | | |
| Containm | ent Sump Inspe | ection | (4a.) | | Ρ | P | | | | | |
| Dispenser | Inspection | | (4b.) | 1 | Ρ | P | | | | | |
| Tank Top | Inspection | | (5a.) | | P | Р | | | | | |
| Vent Pipe | Inspection | | (5b.) | | Ρ | P | | | | | |
| Spill Preve | ention | | (ба.) | | Ρ | Р | | | | | |
| Overfill Pr | revention | | (6b.) | | P | P | | | | | |
| Stage I Va | por Recovery | | (7a.) | | Ρ | P | | | | | |
| Stage II V | apor Recovery | | (7b.) | | P | Р | | | | | |
| Piping Co | nstruction and | Corrosion | (8.) | | P | P | | | | | |
| Protection | | | | | | | | | | | |
| Tank Con | struction and C | orrosion | (8.) | | P | P | | | | | |
| Protection | | | (2) | _ | | | | | | | |
| lightness | Testing | | (9.) | | P | P | | | | | |
| Facility H | ouse Keeping | | (10a. |) | Р | P | | | | | |
| Tank Field | 1 Monitoring P | ipes and Site | (10b. |) | Р | P | | | | | |
| wells | Cantural | | (11) | | 0 | | | | | | |
| Inventory | Control | | (11.) | | P | P | | | | | |
| Tank Rele | ase Detection | | (12.) | | P | P P | | | | | + |
| Piping Rel | ease Detection | | (12.) | | P | P | | | | | |
| Operator | raining | anatan has si | (14) | and is it | P lated a - | <u>Р</u> | | [V] V | Г 1 | Ne | 1 |
| inspector | and Owner/Op | erator has signed | i page 2 | and mit | tated pa | ge 24 | | [A] res | | | |
| Addendun | n rorm Used | | | | | | | Yes | | INO | |

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Section 1: General Comment

§ 4-417 Environment Article, Annotated Code of Maryland

(c) False statements in required documents; tampering with monitoring devices. Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this title, or by any permit, rule, regulation or order issued under this title, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this title, or by any permit, rule, regulation, ororder issued under this title, upon conviction, is subject to a fine not exceeding \$10,000, or by imprisonment not exceeding six months or both.

This Notice is provided pursuant to § 10-624 of the State Government Article of the Maryland Code. The personal information requested on this form is intended to be used in processing your inspection form. Failure to provide the information requested may result in your inspection form not being processed. You have the right to inspect, amend, or correct this form. The Maryland Department of the Environment ("MDE") is a public agency and subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE's website and is subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not protected by federal or State law.

| Certified Inspector: (print) Philip Alexander | |
|---|--|
| Company: Keystone Petroleum Equipment, Ltd. | |
| Certification No.: 2015-2241 | |
| Expiration. Date: June 1, 2017 | |
| Telephone No.: 717-697-1651 | |
| Facsimile No.: 717-697-8591 | |
| E-mail address: phil.alexander@kpeltd.com | |

**High Risk Groundwater Use Area* (HRGUA) means all areas served by individual wells. Existing UST systems installed prior to 1/26/05 in Balilmore, Carroll, Cecil, Frederick and Harford counties or New UST systems installed after 1/26/05 in Anne Arundel, Baltimore, Carroll, Cecil, Charles, Calvert, Frederick, Harford, Monrd, Mongomery, and Prince George's counties.

| The MDE UST database will be updated with information listed in this inspection report an | nd any amended facility |
|---|-------------------------|
| registration form unless additional forms are required by regulation. | |

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 2 of 25

Section 2: Tank System Information_

Fill out the tank number for each tank but only use the MDE Tank ID numbering system. Use (ψ) box if information is obtained from facility registration form.

| Tank and Piping (MDE ID#) | (1 | | Tank | Tank | Tank | Tank | Tank |
|--|--------|---------|-----------|-------------|------------|----------|------------|
| a | | Ŧ | 71 | # 4 | # | # | # |
| Owner Tank ID # (if different) | | Т | ank 2 Sup | Tank 1 Reg | | | |
| Status (I-m use or T-temp. out of use) | | | 1 | 1 | | | |
| Date of Installation (month/year) | | | 12/2012 | 12/2012 | | | |
| Capacity (gallons) | | | 10,000 | 30,000 | | | |
| Product (see Chart A below for code and list | | | 2 | 2 | | | |
| each compartment tank product separately) | | | | | | | |
| Tank Construction Material | | | 6 | 6 | | | |
| (see Chart B for code) | | | | | | | |
| Compartment Tank (Yes/No) | | | | | / | / | 1 |
| (If Yes, list capacity of each compartment | | | No | No | | | |
| separately) | | | | | | , | · · |
| Double-Wall Tank (Yes/No) | | | Yes | Yes | | | |
| Piping Type (SS) safe suction; (US) U.S. sucti | on | | Р | Р | | | |
| (G) gravity; (P) pressure | | | | | | | |
| Piping Construction Material (see Chart C fo | r | | 5 | 5 | | | |
| code) | | | | | | | |
| Double-Wall Piping (Yes/No) | | | Yes | Yes | | | |
| Outer Wall Pipe Construct. Material (see | | | 5 | 5 | | | |
| Chart C for code) | | | | | | | |
| Emergency Power Generator UST (Yes/No) | | | No | No | | | |
| Global Position Signal - Only one set of | | Control | Field #1 | Tanl | · Field #2 | Tank | Field #2 |
| coordinates is to be collected while standing | | анк | riela #1 | 1 411 | x Fleid #2 | тапк | rielu #5 |
| over the center of each tank field. | Latitu | de: | Longitude | : Latitude: | Longitude: | Latitude | Longitude: |
| | 39.379 | 9527 | -77.42254 | 0 | - | : | |
| List tank MDE ID # for each tank field | | | | | | | |
| according to MDE Registration Form. | | | | | | | |

Section 2: Tank System Information continued on Page 4

| | CHART A | | CHART B | | CHART C |
|------|----------------------------|------|-------------------------------------|------|-------------------------------------|
| CODE | PRODUCT DESCRIPTION | CODE | TANK MATERIAL DESCRIPTION | CODE | PIPING MATERIAL DESCRIPTION |
| 1 | Diesel | 1 | Asphalt Coated or Bare Steel | 1 | Bare Steel |
| 2 | Gasohol E-10 | 2 | Cathodically Protected Steel | 2 | Galvanized Steel |
| 2a | Ethanol E-85 | 3 | Composite (Steel w/FRP) | 3 | Fiberglass Reinforced Plastic (FRP) |
| 2b | Methanol | 4 | Concrete | 4 | Copper |
| 3 | Gasoline | 5 | Epoxy Coated Steel | 4a | Copper-slvd. in PVC, FRP or Plastic |
| 4 | Hazardous Substance | 6 | Fiberglass Reinforced Plastic (FRP) | 5 | Flexible Plastic |
| 5 | Heating Oil #2 | 7 | Polyethylene Tank Jacket | 6 | No Piping |
| 5a | Heating Oil #4 | 8 | Other (Must Describe) | 7 | Other (Must Describe) |
| 5b | Heating Oil #5 | | | | |
| 5c | Heating Oil #6 | | | | |
| 6 | Kerosene | | | | |
| 7 | Mixture | | | | |
| 8 | Used Oil | | | | |
| 9 | Car Wash O/W Separator UST | | | | |
| 10 | Other (Must Describe) | | | | |
| | | | | | |

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 3 of 25

Section 2: Tank System Information (cont'd.)

Diagram: Show layout of site and all UST systems.

| Fill out this section for any tank that is "temporarily closed" or "taken out of service" (empty, out of use). A complete inspection of these tanks is required. This section does not apply to a tank that is currently in use or | | | | | | | | |
|--|--|---|--|---|--|--|--|--|
| entry out of use. | | | | | | | | |
| Answer all (P)ass, (F)ail (PC), or (NA) for each Tank | Tank # | Tank #_ | Tank # | Tank # | Tank # | | | |
| Tank contains less than 1" of product. | | | | | | | | |
| Tank vented and fill pipe locked. | | | | | | | | |
| Date temp. closed or taken out of service (Month/Day/Year). | | | | | | | | |
| UST closed 3 months or more, drain and cap product lines and secure | | | | | | | | |
| other lines, pumps, and manways (vent line open and operating). | | | | | | | | |
| orarily Closed Tank(s) passes inspection. | | | | | | | | |
| ons 1,2 and 4 are (P) or (PC) | | | | | | | | |
| | his section for any tank that is "temporarily closed" or "taken out of se inspection of these tanks is required. This section does not apply to a alty out of use. Answer all (P)ass, (F)ail (PC), or (NA) for each Tank ank contains less than 1" of product. Tank vented and fill pipe locked. Date temp. closed or taken out of service (Month/Day/Year). JST closed 3 months or more, drain and cap product lines and secure ther lines, pumps, and manways (vent line open andoperating). rarity Closed Tank(s) passes inspection. ns 1,2 and 4 are (P) or (PC) | his section for any tank that is "temporarily closed" or "taken out of service" (emp inspection of these tanks is required. This section does not apply to a tank that is ally out of use. Tank and the section of the section of the section of these tanks is required. Tank and tank and the section of the | his section for any tank that is "temporarily closed" or "taken out of service" (empty, out of inspection of these tanks is required. This section does not apply to a tank that is currently thy out of sue. Answer all (P)ass, (F)ail (PC), or (NA) for each Tank Tank # Tank # Answer all (P)ass, (F)ail (PC), or (NA) for each Tank Tank # Tank # Contains less than 1" of product. Image: Contain the second of the s | his section for any tank that is "temporarily closed" or "taken out of service" (empty, out of use). A inspection of these tanks is required. This section does not apply to a tank that is currently in use or taly out of use. Answer all (P)ass, (F)ail (PC), or (NA) for each Tank Tank # Tank # Tank # Answer all (P)ass, (F)ail (PC), or (NA) for each Tank Tank # Tank # Tank # Contains less than 1" of product. Image: Contain less than 1" of product. Image: Contain less than 1" of product. Image: Contain less than 1" of product. State temp: closed or taken out of service(Month/Day/Year). Image: Contain and cap product lines and secure ther lines, pumps, and manways (vent line open and operating). Image: Contain less than less inspection. rank 1, 2 and 4 are (P) or (PC) Image: Contain less tank less inspection. Image: Contain less less inspection. | his section for any tank that is "temporarily closed" or "taken out of service" (empty, out of use). A inspection of these tanks is required. This section does not apply to a tank that is currently in use or a tank that is currently in the tank is currently in the tank that is currently in the tank is currently in the tank that the tank that is currently in the tank that the tank that is currently in the tank that the tank that tank that the tank the tank that the tank that the tank that the tank that the ta | | | |

| | | | | | [X] App [] Not A | licable Applicable |
|--------------|---|----------|----------|--------|---------------------|-----------------------|
| 4.a. | Containment Sump Inspection | | | | | |
| # | Complete 1 and 8. Answer (P)ass, (PC), | Tank # 1 | Tank # 2 | Tank # | Tank # | Tank # |
| | (F)ail or (NA) for 2 – 7 (each tank) | | | | | |
| 1 | (v)Equipped with containment sump dispense | er- √ | V | | | |
| | tank to | p- √ | V | | | |
| | vent rise | ar- √ | V | | | |
| | Stage two-condensate po | d - | | | | |
| | Other – Specify in commen | ts - | | | | |
| 2 | All containment sumps are clean and free of debris product, and water. | , Р | P | | | |
| 3 | All manway covers and containment sump lids are properly fitted and not in contact with cap, piping, pump. | or | P | | | |
| 4 | All containment sumps have no visible cracks, hole or openings. | es, P | P | | | |
| 5 | If sump equipped with liquid sensor the sensor is properly secured and within 1" of sump bottom or meets manufacturer's specifications. | Р | P | | | |
| 6 | If equipped with double-wall piping, test boot is open to allow product flow to sump. | P | P | | | |
| 7 | Containment sump has been tested within past 5 years with passing results. | Р | P | | | |
| 8 | Enter Date of last containment sump test. | 2-18-13 | 2-18-13 | | | |
| Cont Ques | ainment Sump passes inspection. stions 2 – 7 are (P) or (PC) | P | P | | | |

Note: If answer to any question is (F), explain below. List any problems noted during inspection. Note corrections.

Comments:

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 5 of 25

| Secti 4.b. | [X] Appl [] Not A | licable Applicable | | | | |
|---------------|--|-----------------------|-----------|-------------------|-------------------|--------------------|
| # | Answer (P)ass, (PC), (F)ail or (NA) for | Disp.# <u>1/2</u> | Disp.#3/4 | Disp.# <u>5/6</u> | Disp.# <u>7/8</u> | Disp.# <u>9/10</u> |
| | each dispenser | | | | | |
| 1 | Dispenser in good condition and properly secured to pump island. | Р | Р | Р | Р | Р |
| 2 | Shear valve (pressure system) properly secured and shear section within ½" of top of pump island or manufacturer specifications. | Ρ | Ρ | Ρ | Ρ | Ρ |

| | shear section within ½" of top of pump island or manufacturer specifications. | | | | | |
|-------------|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| 2a. | Fusible link or other thermally actuated device properly connected. | P | Р | Р | Р | Р |
| 2b. | Product pipe manifold installed above the shear valves. | Circle one) N |
| 3. | Shear valve (Stage II piping) properly secured and shear section within ½" of top of pump island by manufacturer specifications or with flex connector. | Р | Ρ | Ρ | Ρ | Р |
| 4 | Dispenser hose in good condition with no cuts, or holes and equipped with breakaway device. | P | Р | Р | Р | Р |
| 5 | Dispenser hose properly secured and not subject to damage from vehicle traffic (hose retractor). | P | Р | Р | Р | Р |
| 6 | Emergency shut-off present. | P | Р | Р | Р | Р |
| ба. | Emergency shut-off properly identified. | P | Р | Р | Р | Р |
| <u>6b</u> . | Emergency shut-off in correct location. | P | Р | Р | Р | Р |
| 7 | Dispenser is not leaking product. | P | Р | Р | Р | Р |
| 8 | Flex connector observed under dispenser. If in contact with soil, complete Section 8. | (Circle one) Y |
| 9 | Marina Hold open device has been removed from nozzle. | NA | NA | NA | NA | NA |
| Disp | enser passes inspection. | P | Р | Р | Р | Р |
| Oner | tions 1 - 7 and 9 are (P) or (PC) and 2h No | | | | | |

 Questions 1 – 7 and 9 are (P) or (PC) and 2b. No

 Note: If the answer to any question is (F), explain below. List any problems noted during inspection. Note corrections.

If more then 5 dispensers include additional copies of this page.

Comments:

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 6 of 25

Section 5: Tank Top Components and Vent Pipe Inspection_

5.a. Tank Top Inspection

| # | # Complete 1-3. Answer (P)ass, (PC), (F)ail | | Tank # 2 | Tank # | Tank # | Tank # |
|---------|---|--------------|--------------|---------------|--------------|--------------|
| | or (NA) for 1a, 1b, and 4 -7 for each tank | | | | | |
| 1 | Storage tank equipped with ATG? If Yes, complete | (Circle one) | (Circle one) | (Circle one) | (Circle one) | (Circle one) |
| | 1a., 1b. | Y | Y | Y/N | Y/N | Y/N |
| 1a. | ATG riser is capped and electrical connection secure | Р | P | | | |
| | with proper grommet. | | | | | |
| 1b | ATG manway lid properly fitted and not in contact | Р | P | | | |
| | with riser or electrical wires. | | | | | |
| 2 | Flex connector present on STP? If in contact with | (Circle one) | (Circle one) | (Circle one) | (Circle one) | (Circle one) |
| | soil complete Section 8. | N | N | Y/N | Y/N | Y / N |
| 3 | Interstice monitoring system (double wall tank) or | (Circle one) | (Circle one) | (Circle one) | (Circle one) | (Circle one) |
| | inspection station present? | Y | Y | Y/N | Y / N | Y / N |
| 4 | Ball Float riser and other riser pipes are fitted with | Р | P | | | |
| | proper caps; manway covers are not in contact with | | | | | |
| | cap or riser pipe. | | | | | |
| 5 | No petroleum vapors present during ATG, Ball | Р | P | | | |
| | Float, or Vent riser inspection, or STP without sump. | | | | | |
| 6 | Note all vapor field readings if taken for ATG, Ball | NA | NA | | | |
| | Float, or Vent riser, or STP without sump. | | | | | |
| 7 | Marina. Each pipeline has a readily accessible shut- | NA | NA | | | |
| | off valve grouped at one location on shore near | | | | | |
| | approach to pier or dock and marked "emergency | | | | | |
| | shut-off"? | | | | | |
| Tank | Top Components passes inspection. Questions 1a., | Р | P | | | |
| 1b.an | d 4 - 7are (P) or (PC) and 3 yes or component not | | | | | |
| requir | ed | | | | | |
| Mata: I | f the answer to any question is (F) compain helow. List any F | cohlame note | during inco. | otion Note co | reactions | |

Note: If the answer to any question is (F), explain below. List any problems noted during inspection. Note corrections. Comments:

5.b. Vent Pipe Inspection

| # | Answer (P)ass, (PC), (F)ail or (NA) for | Tank# <u>1</u> | Tank#2 | Tank # | Tank # | Tank # |
|------|---|----------------|--------|--------|--------|--------|
| | each vent | | | | | |
| 1 | Vent pipe riser is constructed of steel? | Р | Ρ | | | |
| 2 | Vent pipe is properly anchored and protected from vehicle traffic (bollards or secured to building)? | Р | Ρ | | | |
| 3 | Vent pipe is proper height (flammable liquids 12 feet above ground surface and 2 feet above any attached building). (Combustible liquids minimum 3 feet above ground surface)? | Ρ | Ρ | | | |
| 4 | Equipped with vent cap (flammable liquid with Stage I vapor recovery must have pressure vent cap)? | Р | Ρ | | | |
| Vent | passes inspection. Questions 1 – 4 are (P) or (PC) | Р | P | | | |

Note: If the answer to any questions is (F), explain below. List any problems noted during inspection. Note corrections. Comments:

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility ID. 20308

Page 7 of 25

Section 6: Spill and Overfill

6.a. Spill Device

| # | Answer (P)ass, (PC), (F)ail or (NA) | Tank # <u>1</u> | Tank # <u>2</u> | Tank # | Tank # | Tank # |
|---------------|--|-----------------|-----------------|--------|--------|--------|
| 1 | Equipped with minimum 5-gallon catch basin. (Note: Used oil and heating oil USTs installed, upgraded, or replaced after 11-4-96 require catch basin). | Ρ | Ρ | | | |
| 2 | Basin clean and free of debris and water. | Р | Р | | | |
| 3 | Basin has no cracks or holes observed. | P | Р | | | |
| 4 | No abnormalities observed in fill pipe. (No bent drop tubes, no cracks or holes observed in basin especially at connection to tank and spill device). | Ρ | Ρ | | | |
| 5 | Basin lid fits properly and not in contact with fill cap. | Р | Р | | | |
| 6 | Fill pipe marked to indicate size of tank/type of product stored or Lid contains API color symbol w/posted sign to indicate tank size and type of product within delivery driver view. | Ρ | Ρ | | | |
| 7 | Catch basin tested within past year with passing results in accordance with Maryland Containment System Testing Protocol. | Р | Ρ | | | |
| 7a. | Date of last test: | 2-2-16 | 2-2-16 | | | |
| 8 | Spill device not required: (Tank receives less than 25-gallons of petroleum per delivery or heating oil UST installed prior to 11.4-96 is not required to have a spill device). If not required indicate (P). | NA | NA | | | |
| Spill Ques | Spill device passes inspection. Questions 1 – 8 are (P) or (PC) | | Р | | | |

Note: If the answer to any question is (F), explain below. List any problems noted during inspection. Note corrections. Comments:

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 8 of 25

Section 6: Spill and Overfill (cont'd.)

6.b. Overfill Device

| # | Complete 2 – 4. Answer (P)ass, (PC), (F)ail or | Tank # 1 | Tank # 2 | Tank # | Tank # | Tank # |
|------|--|-------------------|-------------------|-----------------------|-----------------------|-----------------------|
| | (NA) for 1 and 5 – 9 | | | | | |
| 1 | Fill drop tube required and observed. | Р | Р | | | |
| 2 | Overfill device present (list all present): Flapper Valve (FV), Ball Float Valve (BFV), High Level Alarm (HLA), Other Describe. | FV | FV | | | |
| 3 | Indicate delivery method-gravity (G) or pump flow (PF). | G | G | | | |
| 4 | Owner/Operator ensures releases due to spilling or overfilling do not occur? For example, product is measured prior to each delivery to ensure enough roomin tank for product and all fuel deliveries aremonitored. | (Circle one) Y | (Circle one) Y | (Circle one) Y / N | (Circle one) Y / N | (Circle one) Y / N |
| 5 | Visually observed overfill device housing, documentation of installation provided, OR certification provided from a certified UST installer attesting to overfill device operability. | Р | Ρ | | | |
| 6 | Tank receives less than 25-gallons of petroleum per delivery or heating oil UST installed prior to 11-4-96 is not required to have an overfill device. | NA | NA | | | |
| 7 | Drop Tube Flapper Valve Visual observation indicated flapper valve is present, with no obstruction in the drop tube that would render the device ineffective. * | Р | Ρ | | | |
| 8 | Ball Float Valve / Vent Restrictor Compatible with UST system configuration, delivery, and use. ** | NA | NA | | | |
| 9 | <u>Audible External high level alarm only</u> Visual and audible alarm present to the driver at the point of transfer. | NA | NA | | | |
| Over | fill device passes inspection. Question 4 is yes and 1 and | P | Р | | | |

2→ 9 (as applicable) are (P) or (PC) Note: If the answer to any question is No (N) or (F), explain below. List any problems noted during inspection. Note corrections.

*A fill pipe that utilizes a flapper valve in the drop tube for overfill purposes and receives a pressure delivery product drop, shall have a specific flapper valve designed for that use.

shar have a specify hopper rare designed for manufact. ** If a UST system has one or more of the following, the owner or operator of the system shall not use a ball float valve on that system: (1) a tank that receives a pumped delivery; (2) suction piping with air eliminator; (3) remote fill pipes and gauge openings; (4) an emergency generator tank; (5) coaxial drop filladapter.

Comments:

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 9 of 25

Section 7: Stage I and II Inspection

Note: Stage I and II vapor recovery inspections also include completing and submitting Section 7c. forms to MDE's Air and Radiation Management Administration.

| 7.a. | Stage I Vapor Recovery | | | | [X] Applicable [] Not Applicat | ole |
|--------------|--|--------------------|--------------------|-----------|------------------------------------|-----------|
| # | Complete 1 & 2 Answer (P)ass, (PC), (F)ail or (NA) for 3 – 6a. for each tank | Tank # <u>1</u> | Tank # <u>2</u> | Tank # | Tank # | Tank # |
| 1 | Is tank equipped with vapor recovery? (Yes) / (No) or (N/A). (If Yes for any tank, complete 2 through 6a. and section 7c.). Stage I required Statewide | YES | YES | | | |
| 2 | Type of vapor recovery: A – Coaxial B – 2 point system | В | В | | | |
| 3 | Dry break vapor cap and gasket in good condition? | P | P | | | |
| 4 | Poppet valve in dry break moves easily and closes tight? | P | P | | | |
| 5 | Vapor recovery connection equipped with minimum 5-gallon catchment basin. (If installed after July 1, 1998). (If 5 is N/A complete 5a. & 5b.). | Р | P | | | |
| 5a. | There are no petroleum vapors or staining in soil or pea gravel around vapor recovery riser pipe. | NA | NA | | | |
| 5b. | Note all field readings if taken. | NA | NA | | | |
| 6 | Catchment basin tested within the past year with passing results. | Ρ | P | | | |
| ба. | Date of last test. | 2-2-16 | 2-2-16 | | | |
| Stag Ques | e I Passes Inspection. Question 1 is Y or NA and tions 3 – 6a. are (P) or Stage I not applicable or (PC) | Р | P | | | |

Comments:

| 7.b. | Stage II Vapor Recovery | | | | [X] Applicab [] Not Appli | le cable |
|-----------------|---|--------------------|--------------------|--------------|-------------------------------|--------------|
| # | Answer for each tank | Tank # <u>1</u> | Tank # <u>2</u> | Tank # | Tank # | Tank # |
| 1 | Does the storage system have Stage II? Yes or No. | (Circle one) | (Circle one) | (Circle one) | (Circle one) | (Circle one) |
| | (If Yes, complete 2 and 3 and Section 7c, If No and Stage II is decommissioned complete 4 - 4.b and 7c). | Y | Y | Y / N | Y / N | Y / N |
| 2 | Type of vapor recovery: Balance System -(BS) Vacuum Assist -(VA) | VA | VA | | | |
| 3 | UST system equipped with pressure control system and continuously monitors tank pressures. | N | N | Y/N | Y / N | Y / N |
| 4 | Stage II vapor recovery system decommissioned on all gasoline USTs? | N | Ν | Y / N | Y / N | Y / N |
| 4a. | MDE Notification of Intent to Decommission or Not Install Stage II System form is available? | Y / N | Y / N | Y / N | Y / N | Y / N |
| 4b. | Date of Stage II Decommission. (mm/dd/yy) | | | | | |
| Stage | II Passes Inspection. Question 1 is (Y) complete 2 | P | P | | | |
| or Qu II not | estion 1 is No and 4, 4a. and 4b. is complete or Stage applicable | | | | | |
| Com | nents: | | | | | |

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility ID. 20308

Page 10 of 25

Section 7: Stage I and II Inspection (cont'd.)

7.c. Air and Radiation Management Administration Inspection Report (Submit completed copy of pages 11 & 12 to Air and Radiation Management Administration)

> Maryland Department of the Environment Air and Radiation Management Administration Suite 715, 1800 Washington Boulevard Baltimore MD 21230 410-537-3231 STAGE I AND II VAPOR RECOVERY SYSTEMS INSPECTION REPORT

| Owner: Giant of Maryland LLC | Operator/Lessee: Giant of Landover MD #346 |
|-------------------------------|--|
| Address: 1149 Harrisburg Pike | Address: 5310 New Design Road |
| Carlisle, PA 17013 | Frederick, MD 21701 |
| Telephone: 717-240-7541 | Telephone: 301-644-0661 |

Stage I Vapor Recovery System

| Condition of Fill: Good | Tank Vent Condition: Location, height, protected |
|-------------------------|---|
| | from traffic and weather? Yes Δ |
| Witness Fuel Drop: No A | Fill and Vapor Swivel Adaptor Installed: $Y \Delta$ |
| Comments: | Comments: |
| | |
| | |

| Stage II Vapor Recovery System | Vapor Balance System / Vacuum Assist System (CircleOne) | | | | | | | |
|---------------------------------|---|--------------|--|--|--|--|--|--|
| EQUIPMENT (No. Present) | MANUFACTURER | MODEL NUMBER | | | | | | |
| Nozzles: 10 | HUSKY | V34 | | | | | | |
| Hoses: 10 | GOODYEAR | FUTURA | | | | | | |
| Dispensers: 5 | WAYNE | B12 | | | | | | |
| Date Stage II Installed: 2-2013 | | | | | | | | |

TEST REQUIREMENTS

Balance System Liquid Blockage: Pass A Fail A Date _____ Leak Test: Pass A Fail A Date _____ Dynamic Back Pressure: Pass A Fail A Date _____

Frequency Liquid Blockage: Every 5 years Dynamic Backpressure: Annually Leak Test: Annually Air to Liquid Ratio: Annually

Notify the MDE in writing within 5 days of ANY TEST FAILURE, including pre-tests.

Vacuum Assist System

Leak Test: Pass A Date 2-2-16

Liquid Blockage: Pass A Date 2-18-13

Air to Liquid Ratio: Pass & Date 2-2-16

Healy Vacuum Assist System: Model 400 - Nozzle Regulation Test: Pass & Fail & Date ______ Vapor Return Line Tightness Test: Pass & Fail & Date

Model 600 & 800 – Air to Liquid Ratio Test: Pass Δ Fail Δ Date

Vapor Return Line Vacuum Integrity Test: Pass \triangle Fail \triangle Date

| Equipment Inspection (include description, i.e. good, ok, cracked hose, etc.) | | | | | | | |
|---|-----------|--|--|--|--|--|--|
| MPD #1 GOOD | #5 GOOD | | | | | | |
| #2 GOOD | #6 GOOD | | | | | | |
| #3 GOOD | #7 GOOD | | | | | | |
| #4 GOOD | #8 GOOD | | | | | | |
| Comments: | Comments: | | | | | | |

* Operator must inspect equipment daily. Verify log is being kept.

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 11 of 25

Section 7.c.: Air and Radiation Management Administration Inspection Report RECORDKEEPING

Operator shall keep daily inspection logs, test reports, permits, violation notices, Department correspondence, training records, and other relevant information on-site (5-year retention). Complete Δ Incomplete Δ

Maintenance Records (2-year retention) Complete ▲

Comments

INSTRUCTIONAL SIGNS ("Do Not Top Off", "MDE Toll Free Number" 1-800-633-6101) Complete Δ

Comments

TRAINING CERTIFICATES

One employee must be trained at an approved training course. This employee may assist in the training of other employees. Include the name on the Stage II training certificate in the Comments section.

Complete **A**

Comments

P/V Vent Valve Test (mm/dd/yy):

Follow-up Required

Inspector

Date 5-1-16

Vapor Recovery Questions? Call MDE Air and Radiation Management Administration at 410-537-3231

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 12 of 25

Section 8: Corrosion Protection

A buried metal tank and piping (including fittings, flex-connectors, etc.) must be isolated from soil and cathodically protected. Commercial Heating Oil UST systems installed after March 15, 1985 require corrosion protection.

| | Non-Metal Construction Material | | | | | | | | | | |
|----|--|-------|------|------------|------------|------|------------|------|------------|------|------------|
| | Answer (P)ass, (PC), (F)ail or (NA) for | Tank | Pipe | Tank | Pipe | Tank | Pipe | Tank | Pipe | Tank | Pipe |
| | each tank and pipe | # | #1 | # <u>2</u> | # <u>2</u> | # | # | # | | # | |
| 1 | Tank: Outer wall made of non-metallic material | Р | N/A | Р | N/Δ | | N/Δ | | N/Δ | | N/Δ |
| | such as fiberglass or plastic jacket or coating. | | | | 1.0.11 | | | | 1011 | | 1.011 |
| 2 | Pipe: Outer wall made of non-metallic material | N/A | Ρ | N/A | Ρ | N/A | | N/A | | N/A | |
| | such as fiberglass or flexible plastic. | 11/14 | | 10/1 | | IVA | | 10.4 | | 10/A | |
| No | n-Metal Construction passes inspection. | Р | P | Р | P | | | | | | |
| Qu | estions 1 and 2 are (P) or (PC) Go to Section 9 | | | | | | | | | | |

| # | Check ($$) type of corrosion protection | Tank | Pipe | Tank | Pipe | Tank | Pipe | Tank | Pipe | Tank | Pipe |
|-----|---|---------|------|------|------|------|------|------|------|------|------|
| | for each tank and pipe, and answer | # | | # | — | # | — | # | — | # | — |
| | (P)ass, (PC), (F)ail or (NA) for each | | | | | | | | | | |
| | tank and pipe | | | | | | | | | | |
| | Salvanic Cathodic Protection (Tank and Cathodic Protection) | ıd Pipi | ng) | | | | | | | | |
| 3 | Tank: CP on (sti-P3®) tested within past 3 years | | | | | | | | | | |
| | and passed test in accordance with NACE Code | | N/A | | N/A | | N/A | | N/A | | N/A |
| | of Practice Standard. If supplemental anodes | | | | | | | | | | |
| | were installed or added, complete 3a. | | | | | | | | | | |
| 3a. | UST CP tested annually. | | N/A | | N/A | | N/A | | N/A | | N/A |
| 4 | Pipe: CP tested within past year and passed test | | | | | | | | | | |
| | in accordance with NACE Code of Practice | N/A | | N/A | | N/A | | N/A | | N/A | |
| | Standard. | | | | | | | | | | |
| 5 | Record of last two cathodic protection tests on | | | | - | | | | | | |
| | file with Owner or Operator. | | | | | | | | | | |
| 6 | Cathodic protection system failure was | | | | | | | _ | | | |
| | inspected/repaired within 60 days of test. | | | | | | | | | | |
| Gal | lvanic Cathodic Protection passes inspection. | | | | | | | | | | |
| Que | estions 3 – 6 are (P) or (PC) or 6 (NA) | | | | | | | | | | |

| | Impressed Current | nt Cath | odic I | Protect | ion (T | ank a | nd Pip | ing) | | | |
|------------------|--|----------------|-----------|-----------------------|--------|-----------------------|--------|-----------------------|-----|----------------|-----------|
| 7 | Date impressed current system installed. (M/Y). | | | | | | | | | | |
| 8 | Assessment performed at 5-year intervals. | | | | | | | | | | |
| 9 | System has power and is turned on. | | | | | | | | | | |
| 10 | Hour meter present? If (Y) complete 11. | (Circle Y / | one) N | (Circle one) Y / N | | (Circle one) Y / N | | (Circle one) Y / N | | (Circle Y / | one) N |
| 11 | Record hours: | | | | | | | | | | |
| 12 | 60-day inspection log is present and properly filled out. | | | | | | | | | | |
| 13 | <u>Tank</u> tested within past year and passed test in accordance with NACE Code of Practice Standard. | | N/A | | N/A | | N/A | | N/A | | N/A |
| 14 | <u>Pipe</u> tested within past year and passed test in accordance with NACE Code of Practice Standard. | N/A | | N/A | | N/A | | N/A | | N/A | |
| 15 | Records available for last two Impressed Current Cathodic Protection tests. | | | | | | | | | | |
| 16 | Cathodic protection system failure was inspected/repaired within 60-days of test. | | | | | | | | | | |
| Im ins (PC | pressed Current Cathodic Protection passes pection. Questions 8&9 and 12–16 are (P) or | | | | | | | | | | |

Form Number: MDE/WAS/COM.055

Date: October 10, 2014 TTY Users: 800-735-2258 Facility I.D. 20308

Page 13 of 25

[X] Applicable [] Not Applicable

Section 8: Corrosion Protection (cont'd.)

| | Internally Lined Tank | Tank # | Pipe | Tank # | Pipe | Tank # | Pipe | Tank # | Pipe | Tank # | Pipe |
|------|--|-----------|---------|-----------|--------|-----------|---------|-----------|----------|-----------|------|
| 17 | Documentation available and tank was less than | | | | | | | | | | |
| | 10 years old prior to installing liner. | | | | | | | | | | |
| 18 | Documentation available and internal inspection | | | | | | | | | | |
| | performed to determine tank is structurally | | | | | | | | | | |
| | sound and free of corrosion holes prior to | | N/A | | N/A | | N/A | | N/A | | N/A |
| | installing impressed current cathodic protection | | | | | | | | | | |
| | and liner. | | | | | | | | | | |
| 19 | Site assessment performed before installing liner. | | | | | | | | | | |
| 20 | Date liner installed (Month / Year). | | | | | | | | | | |
| 21 | Date of last internal inspection. (Month / Year). | | | | | | | | | | |
| 22 | Internal inspection performed within 10 years of | | | | | | | | | | |
| | installation and every 5 years thereafter. | | | | | | | | | | |
| Inte | rnal Liner passes inspection. Questions 17–19 | | | | | | | | | | |
| and | 22 are (P) or (PC) | | | | | | | | | | |
| Note | : If the answer to any question in section 8 is (F), e | xplain b | elow. I | list any | proble | ms note | d durin | g inspe | ction. N | lote | |
| com | prections. | | | | | | | | | | |

Comments:

IF A METALLIC TANK OR PIPE HAS NO CATHODIC PROTECTION NOTIFY MDE OIL CONTROL PROGRAM AT 410-537-3442.

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 14 of 25

9. Tightness Testing (Tanks and Piping)

Complete this section if tank and/or pipe used periodic tightness testing.

| # | Answer (P)ass, (PC), (F)ail or (NA) for | Tank | Pipe |
|--------------------------------------|---|------|------|------|------|------|------|------|------|------|------|
| | each tank and pipe | #1 | #1 | # | # | # | # | # | # | # | # |
| 1 | Test method on NWGLDE. | P | Р | Р | P | | | | | | |
| | Method Name: Vacutech | | | | | | | | | | |
| 2 | Last tightness test results available and passed | D | D | D | D | | | | | | |
| 2 | Last tightness test results available and passed. | P | Р | P | ٢ | | | | | | |
| 3 | Tightness testing conducted within specified time frames: at installation, at 15 years, and every 5 years thereafter for tanks NOT doing inventory control; annually for pressurized piping; every 2 years for non-exempt suction piping or be monitored monthly by approved leak detection method. | Ρ | Ρ | Ρ | Ρ | | | | | | |
| 4 | High Risk Groundwater Use Area** – Helium vapor test performed within past two years with passing results. | NA | NA | NA | NA | | | | | | |
| 4a. | Date of last test. | NA | NA | NA | NA | | | | | | |
| Tightness Testing passes inspection. | | Р | P | Р | P | | | | | | |

 Questions 1 - 4 are (P) or (PC)

 Note: If the answer to any question is (F), please explain below. List any problems noted during inspection. Note corrections.
 * www.nwglde.org (National Work Group on Leak Detection Evaluations)

**"High Risk Groundwater Use Area" (HRGUA) means all areas served by individual wells. Existing UST systems installed prior to 1/26/05 in Baltimore, Carroll, Cecil, Frederick and Harford counties or New UST systems installed after 1/26/05 in Anne Arundel, Baltimore, Carroll, Cecil, Charles, Calvert, Frederick, Harford, Howard, Montgomery, and Prince George's counties.

Comments:

Questions regarding Helium Testing, call MDE Oil Control Program at 410-537-3442

Section 10: House Keeping and Monitoring Pipe/Well Inspection

10.a. Facility House Keeping

| # | Answer (P)ass, (PC), (F)ail or (NA) | | | | | |
|------|--|----|--|--|--|--|
| 1 | Facility is clean with no sign of spillage or open containers of oil. | Р | | | | |
| 2 | ASTs (if present) are clean and properly maintained. | NA | | | | |
| 3 | Pump island area is clean with no indication of surface spillage. | Р | | | | |
| 4 | Garage area (if present) is maintained with no indication of surface spillage. | NA | | | | |
| Hous | House Keeping passes inspection. Questions 1 – 4 are (P) or (PC) or (NA) | | | | | |

Note: If the answer to any questions is (F), explain below. List any problems noted during inspection. Note corrections.

| 10.b | . Tank Field Monitoring Pipes | | | [| X] Applica] Not App | ble licable |
|------|--|--|------------|-----------|-------------------------|----------------|
| # | Answer (P)ass, (PC), (F)ail or (NA) | | MP-1 | MP-2 | MP-3 | MP-4 |
| 1 | Storage systems installed after March 15, 1985 have PVC mo installed on opposing corners of the tank field. | onitoring pipes | Р | Р | Р | P |
| 1a. | Gasoline storage systems installed after January 26, 2005+>2 or multiple tanks in a shared excavation used to fuel motor ve in HRGUA* have four monitoring pipes (each corner of the t | 2,000-gallons hicles located ank field). | P | Р | Р | P |
| 2 | Monitoring pipes are screened to within 2ft. of the surface an 2ft. being solid pipe and sealed to prevent entrance of surface | d the remaining runoff. | P | Р | Р | P |
| 3 | Monitoring pipe has liquid-tight cap, protected from traffic w cover and locked or bolted closed. | vithmanhole | Р | Р | Р | P |
| 4 | Monitoring pipe cover is clearly marked "monitoring well-do identified using API color code symbol. | not fill" or | Р | Р | Р | P |
| 5 | Monitoring pipes checked for the presence of petroleum cont if present complete 5a. | amination and | Р | Р | Р | P |
| 5a. | Record product thickness if taken. | | NA | NA | NA | NA |
| | Record field vapor reading if taken. | | NA | NA | NA | NA |
| Site | wells for Facilities located in HRGUA* | Answer (I | P)ass, (PC |), (F)ail | or (NA) | |
| 6 | Facility or immediate neighbor on either side supplied by potable well? | (Circle one) NO | | | | |
| 7 | Three or more groundwater monitoring wells installed outside of tank excavation area. | NA | | | | |
| 8 | Monitoring wells have liquid-tight cap, protected from traffic with manhole cover and locked or bolted closed. | NA | | | | |
| 9 | Groundwater has been sampled within past year and sample results available? | NA | | | | |
| 10 | Site potable well has been sampled within past year. | NA | | | | |

Monitoring Pipes and Site Wells Pass Inspection. Questions 1 - 5 and 7 - 10 are (P) or (PC) or (NA)

Note: If the answer to any question is (F), explain below. List any problems noted during inspection. Note corrections. *"High Risk Groundwaler Use Area" (HRGUA) means all areas served by individual wells. Existing UST systems installed prior to 1/26/05 in Baltimore, Carroll, Cecil, Frederick and Harford counties or New UST systems installed after 1/26/05 in Anne Arundel, Baltimore, Carroll, Cecil, Charles, Calvert, Frederick, Harford, Howard, Montgomery, and Prince George's counties.

Ρ

Ρ

Ρ

Ρ

Ρ

Comments:

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 15 of 25

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 16 of 25

[X] Applicable [] Not Applicable

Section 11: Inventory Control

| For For For | metered storage systems: complete items 1 – 10. non-metered storage systems: complete items 3 – tanks using Inventory Control combined with SIF | 6. C: also comp | lete Section 1 | 2d. | | |
|-------------------|--|--------------------|--------------------|-----------|-----------|-----------|
| # | Answer (P)ass, (PC), (F)ail or (NA) for each tank | Tank # <u>1</u> | Tank # <u>2</u> | Tank # | Tank # | Tank # |
| 1 | Readings recorded each day of operation. | P | Р | | | |
| 2 | Inventory records are reviewed daily and reconciled monthly. Note: Seven consecutive days of shortage totaling 80-gallons or more must be reported to owner and investigated. | Р | Ρ | | | |
| 3 | Appropriate calibration tank chart is used for calculating volume to nearest 1/8 inch. | P | Р | | | |
| 4 | Stick readings recorded before and after each delivery. | P | Ρ | | | |
| 5 | Gauge stick is marked so the owner is capable of determining product level to the nearest 1/8 inch and stick is in good condition and not worn. | Ρ | Р | | | |
| 6 | Stick capable of measuring full height of tank. | P | P | | | |
| 7 | Monthly water readings checked to the nearest 1/8 inch and used in calculating inventory balances. | Ρ | Р | | | |
| 8 | Prior 12 months of inventory data available. | P | Ρ | | | |
| 9 | Inventory variations do not exceed 1% + 130 gallons of the metered quantity (sales). | P | Р | | | |
| 10 | Existing inventory results show no evidence of a release, and no water intrusion. | P | Р | | | |
| Inv Qu | rentory Control Passes Inspection estions 1 – 10 are (P) or (PC) or not applicable | P | Ρ | | | |

If using Statistical Inventory Reconciliation (SIR), also complete Section 12.d.

Note: If answer to any question is (F), explain below. List any problems noted during inspection. Note corrections.

Comments:

This section indicates the method or methods of release detection present. Proceed to the section identified in the last column. Emergency power generator UST systems and heating oil (on-site consumptive use) UST systems are exempt from release detection.

| Tank Method: Complete for each | II | If using as primary | | | | |
|---|-----------------|------------------------|--------|--------|--------|-----------------------------------|
| tank | Tank # <u>1</u> | Tank # 2 | Tank # | Tank # | Tank # | method, proceed to section: |
| Automatic Tank | S | S | | | | 12.a. |
| Gauging | | | | | | |
| Vapor Monitoring | | | | | | 12.b. |
| Interstitial Monitoring | PR | PR | | | | 12.c. |
| Statistical Inventory Reconciliation | | | | | | 12.d. |
| Groundwater Monitoring | | | | | | 12.e. |
| Manual Tank Gauging | | | | | | 12.f. |
| None needed (Explain) | | | | | | Skip section 12 |

| Pipe Method: Complete for each | Indicate seco | primary (P ondary (S) n | plicable, run | If using as primary method, | | |
|---|------------------|----------------------------|------------------|--------------------------------|--------|------------------------|
| pipe i un | Pipe # 1 | Pipe # 2 | Pipe # | Pipe # | Pipe # | proceed to section: |
| Pressurized piping only | | | | | | |
| Automatic line leak detector (ALLD) will | S | S | | | | 12.c. and 12.h. |
| detect 3-gph release, double-wall pipe with | | | | | | |
| containment sump and liquid sump sensor. | | | | | | |
| ALLD will detect 3-gph release, double- | | | | | | 12.c. and 12.h. |
| wall pipe with containment sump and | | | | | | |
| manual interstitial monitoring. | | | | | | |
| Electronic ALLD will perform 3-gph | PR | PR | | | | 12.h. |
| continuous test plus 0.2-gph monthly test. | | | | | | |
| Mechanical ALLD will detect 3-gph release | | | | | | 9 and 12.h. |
| in conjunction with annual line tightness | | | | | | |
| test. | | | | | | |
| Other combination: (Explain in comments) | | | | | | |
| Suction piping only | | | | | | |
| Line tightness test every 2 years. | | | | | | 9 |
| Double wall piping with containment sumps | | | | | | 12.c. |
| utilizing electronic or manual interstitial | | | | | | |
| monitoring. | | | | | | |
| Safe Suction. | | | | | | 12.g. |
| None needed (Explain) | | | | | | Skip Section 12 |

Comments:

Page 17 of 25

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 18 of 25

Section 12: Release Detection (cont'd.)

[] Applicable [X] Not Applicable

Section 12.a. Automatic Tank Gauging (Tank Only)

| # | Complete 1 and 4. Answer (P)ass, (PC), or (F)ail for 2,3,5 – 10. | Tank # |
|-----|---|--------|--------|--------|--------|--------|
| 1 | Console Make and Model Make: | | | | | |
| | Model: | | | | | |
| 2 | Monitoring console is working. | | | | | |
| 3 | Owner's manual for console and probes is available at site. | | | | | |
| 4 | Frequency ATG performs test (D) daily, (W) weekly, or (M) monthly. | | | | | |
| 5 | Device is calibrated, operated, and maintained per manufacturer's instructions in addition to limitations listed on evaluation summary NWGLDE* list. | | | | | |
| 6 | System setup reviewed and system capable of verifying probe(s) are functioning and documenting results. | | | | | |
| ба. | Attach copy of print out for the last monthly ATG tank leak test to this page. | | | | | |
| 7 | Tank is filled to proper capacity and test run for proper duration of time for last 2 months per NWGLDE* list. | | | | | |
| 8 | Verification that console and probe are third party approved and on the NWGLDE* list. | | | | | |
| 9 | Monthly release detection records are available and reviewed for past 12 months. | | | | | |
| 10 | Existing release detection results reviewed shows no failure. | | | | | |
| AT | passes inspection. | | | | | |
| Que | stions 2, 3 and 5 - 10 are (P) or (PC) | | | | | |

Note: If the answer to any question is (F), explain below. List any problems noted during inspection. Note corrections. *www.uwglde.org (National Work Group on Leak Detection Evaluations).

Comments:

Section 12: Release Detection (cont'd.)

| Sec | tion 12.b. Vapor Monitoring (T | anks and/ | or Piping) | | [] Applica [X] Not Ap | ble plicable |
|-----|---|-----------|------------|--------|---------------------------|-----------------|
| # | Complete 1. Answer (P)ass, (PC), (F)ail or (NA) for 2 – 11. | Tank # | Tank # | Tank # | Tank # | Tank # |
| 1 | Console Make and Model Make: Model: | | | | | |
| 2 | Monitoring panel and/or control box is working. | | | | | |
| 3 | Verification that the Vapor Monitoring device is third-party approved and on the NWGLDE* list. | | | | | |
| 4 | Owner's manual for the Vapor Monitoring device is available at the site. | | | | | |
| 5 | The material used as backfill is sufficiently porous, such as pea gravel or sand, to readily allow diffusion of vapors from releases into the excavation zone. | | | | | |
| 6 | Vapor Monitors are designed, calibrated, and operated to detect an increase in concentration of the regulated substance, a component of the regulated substance, or a tracer compound placed in the tank system and maintained per manufacturer's instructions in addition to limitations listed on evaluation summary NWGLDE* list. | | | | | |
| 7 | Site evaluation report is on site and verifies the above information and that background contamination will not interfere with vapor monitoring. Attach evaluation cover page. | | | | | |
| 8 | System setup reviewed and proper settings confirmed correct. Verification all probes functioning. | | | | | |
| 9 | Vapor Monitors are checking portion of tank and piping that routinely contain product. | | | | | |
| 10 | Monthly release detection records are available for last 12 months. | | | | | |
| 11 | Existing release detection results show no evidence of a release. | | | | | |
| Vap | or Monitoring passes inspection. | | | | | |
| Que | stions 2 – 11 are (P) or (PC) | | | | | |

Note: If the answer to any question is (F), please explain below. List any problems noted during inspection. Note corrections. * www.nwglde.org (National Work Group on Leak DetectionEvaluations).

Comments:

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D. 20308

Page 19 of 25

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D.20308

Page 20 of 25

Section 12: Release Detection (cont'd.)

| | | | | | | | | i i | Not Ap | plicable | |
|------------------|--|--------|---------|----------|---------|----------|---------|----------|--------|----------|------|
| Se | ction 12.c. Interstitial Monitoring (| Tank | and | Pipir | ig) | | | | | | |
| # | Complete 1 and 3 for Electronic and | Tank | Pipe | Tank | Pipe | Tank | Pipe | Tank | Pipe | Tank | Pipe |
| | Answer (P)ass, (PC), (F)ail or (NA) | # 1 | # | # 2 | # | # | # | # | # | # | # |
| | 2&4–10 for each Tank and Pipe | | | | | | | | | | |
| 1 | Type of interstitial monitoring: i.e. Liquid (L), Air Space (AS), or Pressure/vacuum (PV). List each if different. | L | | L | | | | | | | |
| М | anual /Visual Inspection Only | | | | | | | | | | |
| 2 | Interstitial space is monitored and a written log is maintained monthly. | | | | | | | | | | |
| El | ectronic System Only | | | | | | | | | | |
| 3 | Console make/model Make: | INCON | | INCON | | | | | | | |
| | Model: | T\$550 | | T\$550 | | | | | | | |
| 4 | Console and sensor on NWGLDE* list | P | | Р | | | | | | | |
| 5 | Monitoring console is operational. | Ρ | | Р | | | | | | | |
| 6 | Interstitial space monitored monthly. ** | P | | Р | | | | | | | |
| 7 | Device is calibrated, operated, and maintained per manufacturer's instructions in addition to limitations listed on evaluation summary NWGLDE*list. | Ρ | | Ρ | | | | | | | |
| Su | mmary | | | | | | | | | | |
| 8 | Monthly release detection records are available for prior 12 months with passing results. | Ρ | | Ρ | | | | | | | |
| 9 | No evidence of liquid in sump or interstitial space of air filled system. No evidence of loss or gain of brine in brine filled system. Operation of partial vacuum or over pressure system is within manufacturer's design specifications. | Ρ | | Ρ | | | | | | | |
| 10 | No visible leaks or holes in secondary containment. | Ρ | | Ρ | | | | | | | |
| In 2 a (P) | terstitial Monitoring passes inspection. Questions nd 8 – 10 are (P) for Manual Questions 4 – 10 are or (PC) for Electronic | Ρ | | Ρ | | | | | | | |
| Int | e: If the answer to any question is (F) please evolain below | Liston | v probl | emr note | d durin | rincoact | ion Not | e correc | tions | | |

**Monitor interstitial space at lowest point of secondary containment for air filled or at highest point of secondary containment for brine filled and is positioned so that other equipment will not interfere with its proper operation. See manufacture specifications and NWGLDE listing limitations for continual partial vacuum or overpressure interstitial monitoring. *www.nwglde.org (National Work Group on Leak Detection Evaluations).

Comments:

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D.20308

Page 21 of 25

[X] Applicable

Section 12: Release Detection (cont'd.)

[] Applicable [X] Not Applicable

Section 12.d. Statistical Inventory Reconciliation

| Cor | Complete this section and Section 11 (Inventory Control) if you use Statistical Inventory Reconciliation (SIR). | | | | | | | | | | |
|-----------------|---|------|------|------|------|------|------|------|------|------|------|
| A | nswer (P)ass, (PC), (F)ail for each | Tank | Pipe |
| tank system. | | # | # | # | # | # | # | # | # | # | # |
| 1 | SIR method on NWGLDE* list. Method Name: | | NA |
| 2 | Inventory records are submitted to the SIR vendor within 5 days of the 30 day monitoring period. | | NA |
| 2a | SIR results are received by owner from vendor within 15 days of submittal of data. | | NA |
| 3 | SIR results indicate sufficient amount of data was used to perform leak check. | | NA |
| 4 | Existing release detection results show no evidence of a failure for the previous 12 months. | | NA |
| Sta Pa or | atistical Inventory Reconciliation (SIR) sses Inspection. Questions 1 – 4 are all (P) (PC). | | NA |

Note: If the answer to any question is (F), explain below. List any problems noted during inspection. Note corrections. *www.nwglde.org (National Work Group on Leak Detection Evaluations) Comments:

[] Applicable [X] Not Applicable

Section 12.e. Groundwater Monitoring

| Answer (P)ass, (PC), (F)ail for each | Tank | Pipe | Tank | Pipe | Tank | Pipe | Tank | Pipe | Tank | Pipe |
|--|--|---|---|---|---|---|--|--|--|---|
| tank system | # | # | # | # | # | # | # | # | # | # |
| Groundwater at site is not more than 15 feet | | | | | | | | | | |
| from ground surface during inspection. | | | | | | | | | | |
| Slotted casing is properly screened across the | | | | | | | | | | |
| water table to allow entry of product. | | | | | | | | | | |
| Monitoring wells intercept the UST excavation | | | | | | | | | | |
| zone or positioned as close as technically | | | | | | | | | | i i |
| feasible. | | | | | | | | | | |
| Regulated substance is immiscible in water and | | | | | | | | | | |
| has a specific gravity of less than one. | | | | | | | | | | i i |
| Site evaluation report on site and verifies | | | | | - | | | | | |
| above information and background | | | | | | | | | | i i |
| contamination will not interfere with | | | | | | | | | | i i |
| groundwater monitoring. Attach evaluation | | | | | | | | | | i i |
| cover page. | | | | | | | | | | |
| Monitoring device is capable of detecting 1/8 | | | | | | | | | | |
| inch of free product and wells are monitored | | | | | | | | | | i i |
| monthly with results recorded. | | | | | | | | | | |
| undwater Monitoring passes inspection. | | | | | | | | | | |
| stions 1 – 6 are all (P) or (PC) | | | | | | | | | | |
| If the answer to any question is (F), please explain bel | ow. List | any prob | lems not | ted durin | g inspect | tion. Not | e correcti | ons. | | |
| | Answer (P)ass, (PC), (F)ail for each tank system Groundwater at site is not more than 15 feet from ground surface during inspection. Slotted casing is properly screened across the water table to allow entry of product. Monitoring wells intercept the UST excavation zone or positioned as close as technically feasible. Regulated substance is immiscible in water and has a specific gravity of less than one. Site evaluation report on site and verifies above information and background contamination will not interfere with groundwater monitoring. Attach evaluation cover page. Monitoring device is capable of detecting 1/8 inch of free product and wells are monitored monthly with results recorded. undwater Monitoring passes inspection. stions 1 – 6 are all (P) or (PC) | Answer (P)ass, (PC), (F)ail for each Tank tank system Tank Groundwater at site is not more than 15 feet from ground surface during inspection. Slotted casing is properly screened across the water table to allow entry of product. Monitoring wells intercept the UST excavation zone or positioned as close as technically feasible. Regulated substance is immiscible in water and has a specific gravity of less than one. Site evaluation report on site and verifies above information and background contamination will not interfere with groundwater monitoring. Attach evaluation cover page. Monitoring device is capable of detecting 1/8 inch of free product and wells are monitored monthly with results recorded. undwater Monitoring passee inspection. stions 1 - 6 are all (P) or (PC) If the answer to any question is (F), please explain below. List | Answer (P)ass, (PC), (F)ail for each tank system Tank # Pipe # Groundwater at site is not more than 15 feet from ground surface during inspection. Slotted casing is properly screened across the water table to allow entry of product. Image: Comparison of the second mathematical strength of the second screen of the second comparison of the second screen of the second screen of the second mathematical substance is immiscible in water and has a specific gravity of less than one. Image: Comparison of the second screen of the screen of the second screen of the screen of the second screen of the screen of the second screen of the sec | Answer (P)ass, (PC), (F)ail for each tank system Tank # | Answer (P)ass, (PC), (F)ail for each tank system Tank # Pipe # Tank # Pipe # Croundwater at site is not more than 15 feet from ground surface during inspection. Image: Comparison of the system Image: | Answer (P)ass, (PC), (F)ail for each tank system Tank # | Answer (P)ass, (PC), (F)ail for each tank system Tank pipe t | Answer (P)ass, (PC), (F)ail for each tank system Tank tank system Pipe tank tank tank tank tank tank tank tank | Answer (P)ass, (PC), (F)ail for each tank system Tank # # # Pipe # # Tank # Pipe # Tank # # <td>Answer (P)ass, (PC), (F)ail for each tank system Tank # Pipe # Tank # #</td> | Answer (P)ass, (PC), (F)ail for each tank system Tank # Pipe # Tank # # |

Comments:

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility I.D.20308

Page 22 of 25

Section 12: Release Detection (cont'd.)

Section 12.f. Manual Tank Gauging (Tank Only)

| # | Answer 1–5 (P)ass, (PC), (F)ail or (NA) for each Tank | Tank # |
|------------|--|--------|--------|--------|--------|--------|
| 1 | Tank is 550-gallons or less. | | | | | |
| 2 | Tank is 551 to 2,000-gallons. Note: Must be combined with tightness testing. | | | | | |
| 3 | Gauging stick is capable of measuring the full height of the tank to the nearest 1/8" in conjunction with the appropriate tank calibration chart on site. | | | | | |
| 4 | Monthly log is maintained. * | | | | | |
| 5 | Last 12 months of records show no failure. | | | | | |
| Mar Que | ual Tank Gauging passes inspection. stions 1 or 2 and 3–5 are (P) or (PC) | | | | | |

Note: If the answer to any question is (F), explain below. List any problems noted during inspection. Note corrections. * See Inspector guidance book or COMAR 26.10.05.04C. for weekly and monthly variation standard. Comments:

| Section | n 12.g. Safe Suction (Suction Pipi | ng Only) | | [] [X] | Applicable Not Applicabl | e |
|---------|--|-----------|-----------|------------|-----------------------------|----------|
| # | Answer (P)ass, (F)ail, or (PC) for each pipe | Pipe # | Pipe # | Pipe # | Pipe # | Pip # |
| 1 | The piping slope is back to the tank and operates under atmospheric pressure or less. | | | | | |
| 2 | Confirm a single check valve is located directly under the dispensing pump. | | | | | |
| Safe Su | ction passes inspection. | | | | | |

Questions 1 and 2 are (P) or (PC) Note: If the answer for 1 or 2 is (F), another type of release detection must be used and inspected. Fill out the applicable section on piping release detection. List any problems noted during inspection. Note corrections. Comments:

> [X] Applicable [] Not Applicable

[] Applicable [X] Not Applicable

Section 12.h. Automatic Line Leak Detectors (Pressurized Piping Only)

| # | Complete 1 Answer questions 2 – 7 (P)ass, (F)ail or (PC) | Pipe # # <u>1</u> | Pipe # # <u>2</u> | Pipe # | Pipe # | Pipe # |
|---|--|----------------------|----------------------|-----------|-----------|-----------|
| 1 | Mechanical or Electronic (M - Mechanical or E - Electronic) | E | E | | | |
| 2 | Is the equipment on the NWGLDE* list. | Р | Р | | | |

Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTY Users: 800-735-2258

Facility LD.20308

Page 23 of 25

Section 12: Release Detection (cont'd.)

| 3 | All ALLDs pass an annual field operability test for detection of a 3.0-gph leak. | Р | Р | | |
|------------|---|---|---|--|--|
| 4 | Device is calibrated, operated, and maintained per manufacturer's instructions in addition to limitations listed on evaluation summary NWGLDE* list. | Ρ | P | | |
| 5 | Line Leak Detector shows no evidence of a visual release. | Р | Р | | |
| 6 | Is the entire piping system covered by the ALLD (including satellite pipe if present)? | Ρ | Р | | |
| 7 | For an electronic ALLD, last record of passing 3.0-gph test result for each pipe is within the previous 72 hours. | Р | Р | | |
| 8 | Does the STP shut off when the dispensers are not pumping? | Р | Р | | |
| ALI Que | LD Passes Inspection. stions 2 – 8 are (P) or (PC) | Р | Р | | |
| | | | | | |

Note: If the answer to any question is (F), please explain below. List any problems noted during inspection. Note corrections *www.nwglde.org (National Work Group on Leak DetectionEvaluations) COMMENTS:

Section 13 Suspected Release Answer (Y)es or (N)o for 1 and if yes answer 2

| 1 | Do you suspect or have you detected a release during this inspection? | [] Yes [X] No | | |
|---|--|----------------|-------|-------|
| 2 | Did you report this suspected or detected release to the Department? | [] Yes [] No | DATE: | TIME: |

Report all known or suspected spills or leaks Call Maryland Department of the Environment 410-537-3442

Or call: 1-866-633-4686 after business hours

GENERAL COMMENTS:

| Inspector's Initials: PRA | Owner/Operator's Initials: | Jun |
|---|----------------------------|--------|
| Date: 5-2-16 | Date: 5-2-16 | |
| Form Number: MDE/WAS/COM.055 Date: October 10, 2014 TTV Users: 800-735-2258 | Facility LD <u>20208</u> | Page 1 |

Page 24 of 25

STOP
Worksheet Completion

Break into company groups

- Apply knowledge to complete worksheet section on fuel components
- Refer to your last facility inspection to understand your components

Distill the information on your facility inspection into a 'cheat sheet' of your sites compliance equipment & methods

| System Info: | Tank 001 | Tank 002 | Tank 003 |
|--|---|---|--|
| Product: | Gas | Diesel | Diesel |
| Capacity: | 10,000 | 10,000 | 1,000 |
| Year Installed: | 5/1/2010 | 6/1/2001 | 6/1/2001 |
| Tank Release Detection: | Interstitial Monitoring/12 months of sensor status reports | ATG/12 months of passing . 2 gph tank tests | ATG/12 months of passing . 2 gph tank tests |
| Line Release Detection (Continuous): | ELLD/12 months of passing 3.0 tests & annual functionality test | MLLD/annual line & LLD testing | N/A - Safe suction |
| Line Release Detection (Monthly/Yearly): | Interstitial Monitoring/12 months of sensor status reports | Annual line & LLD testing | N/A - Safe suction |
| Spill Prevention: | Annual hydrostatic testing of spill buckets | Annual hydrostatic testing of spill buckets | Annual hydrostatic testing of spill buckets |
| Overfill Prevention: | Overfill Droptube/5 year testing | Overfill Droptube/5 year testing | Overfill Droptube/5 year testing |
| CP - Tank: | N/A - Double wall fiberglass | Every 3 years - single wall steel | Every 3 years - single wall steel |
| CP – Line End at Dispensers: | N/A - Inside Sump | N/A - Inside Sump | N/A - Inside Sump |
| CP – Line End at Dispensers: | N/A - Inside Sump | N/A - Inside Sump | Every 1 year - spike anode added to flex hose |
| High Risk Ground Water Area: | N/A | N/A | N/A |
| Post 2005 Systems – Tank Interstitial Monitoring: | Yes - same as TRD | N/A | N/A |
| Pre 2005 Systems – Line Interstitial Monitoring for pressurized: | Yes - same as LRD small | Monthly visual inpsection/manual log file | N/A |

Module 8 Temporary and Permanent Closure of Regulated UST systems

Temporarily Out of Service T.O.S.

- Makes facilities that are not being used safer for the environment
- Useful for facilities awaiting sale or saving for permanent closure





Requirements for Temporary Closure – Short Term (< 3 Months)

- Must maintain cathodic protection (if applicable)
- If tank is not emptied, must continue release detection
- If tank is emptied (< 1" of product) then exempt from release detection</p>
- Vent line open and functioning
- Facility inspection are required while in TOS, if tank has <1" then only certain sections of the inspection need completed. If >1" then full inspection is required.



Requirements for Temporary Closure – Long Term (> 3 months)

- Tanks must be emptied (less than 1" of substance)
- Cap and secure all lines, pumps, manways, ancillary equipment (this includes the fill)
- Vent line open and functioning
- Exempt from release detection
- Must maintain cathodic protection (if applicable)
- Facility inspection are required while in TOS, if tank has <1" then only certain sections of the inspection need completed. If >1" then full inspection is required.



Temporary Closure Time Limits

If the tank system <u>does not meet</u> COMAR requirements (except for spill & overfill equipment) then it can be in temporarily closed for 6 months

If the tank system <u>does meet</u> COMAR requirements then it can be in temporarily closed for 1 year

An extension of the time period can be applied for if a site assessment is made in accordance with COMAR

Permanent UST Closure Two Different Types Closure by Removal Closure by Close-in-Place (must have MDE) approval) No matter which one you choose: A MDE Certified individual holding Technician or Remover must be used to permanently close a UST system and a 30 day notification form must be submitted (form was covered in module 2)

Closure in Place

Removal is always preferred though circumstances can sometimes make removal impossible

Sampling is still required

Must receive prior approval from MDE

Always more expensive



Closure In Place

All product must be removed and the tank must be thoroughly cleaned before a solid, inert material can be added to fill the tank as much as possible





Closure In Place Disadvantages

More Expensive More Time Difficult to Sample Must follow the same requirements as closure by removal The tank(s) may cause issues with the property in the future



Tank Removal



Closure by Removal

The tank is removed from the ground and dismantled safely

Samples can easily be taken from under the tank



Change in Service

Changing the product stored in the tank from a regulated substance to a non-regulated substance, e.g., gasoline to heating oil used on site.

- Tank must be emptied and cleaned
- Site assessment (and activities report) must occur

If contamination is suspected or confirmed, then corrective action per COMAR 26.10.09 must occur

Site Assessment (closure report)

- Must be completed prior to completion of a tank closure or change-in-service to determine evidence of a release
- The end result of the site assessment/closure is a written report that includes: site information, tank information, sampling maps, sample results, closure methods, the name of the certified individual/company performing the closure, and all waste manifests (tanks, piping, product, etc.)
- If contamination is suspected or confirmed, then corrective action per COMAR 26.10.09 must occur
- Record keeping 5 years: (must be 1 or more of the following)
 - By the owner of the site that closed the UST system
 - By the current owner of the site
 - By submitting the documentation to MDE

Module 7 & 8 Review

- A rectifier must have its readings logged every how many days?
 60 days
- Cathodic protection must be tested within _____ months of installation/repair and every _____ years after?

6 months & 1 or 3 years (1 year for field installed and 3 for factory)

- Any component of a UST system that comes in contact with soil/back fill/ground water must be protected from what? Corrosion
- What are the two different types of cathodic protection systems?

Galvanic & Impressed Current

In addition to CP systems, what is another method of protecting metallic components from corrosion? Physically isolate the component from soil and/or backfill

Module 7, 8 & 9 Review

A tank is considered empty if it has ______
Less then 1" of product

 A UST that is empty & in temporary closure is exempt from what? And not exempt from what?
 Tank and line release detection
 Cathodic protection testing

How long can a tank system that meets COMAR requirements remain in TC? How long for one that doesn't meet COMAR?

1 year

6 months

How long must tank closure/change in service records be keep?

5 years

Questions Before the Test

