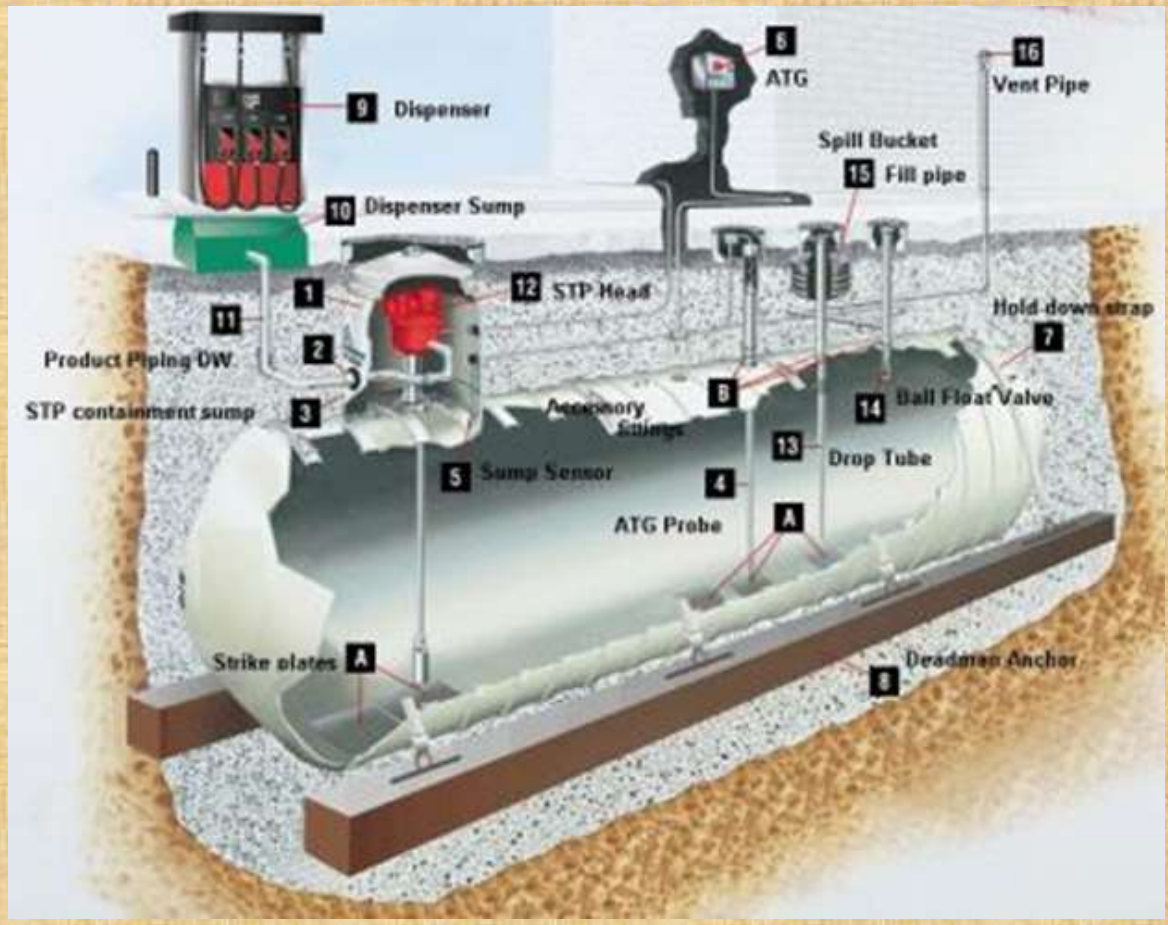
UST Compliance Manager Training

Mississippi Department of Environmental Quality

www.mdeq.ms.gov

Underground Storage Tank (UST) System



Why are we here?

In 2005 when EPA established the Energy Act which required such things as

Secondary Containment and Delivery Prohibition

It also required Operator Training

In 2018 MDEQ adopted new regulations required by the EPA.

This course is designed to bring you the most up to date information.

Topics

- Who is responsible?
- Timeline for repairs
- Financial Responsibility
- Notification Requirements
- Release Reporting
- What to do after release reported.
- Record Keeping
- Types of USTs:
  - Permanent Closure Requirements
  - Temporary Closure Requirements
  - Currently In Use (active) Requirements
    - Spill Buckets
    - Overfill Devices
    - Monthly Walk-through inspections
- Release (Leak) Detection
  - Types & typical reports
- Recap of testing required by leak detection method
- Recap of monthly reports required by leak detection method
- Types of Piping
- Requirements for Pressurized pipes
  - Line Leak Detectors
  - Shear Valves
- Release Prevention
  - Cathodic Protection
  - Product Compatibility
- UST Emergency Response
- UST Operations Clerk Training

What is Operator Training?

It is a program designed to ensure there are knowledgeable people working at each UST facility that understand operating and maintaining UST systems

Different Levels of Operator Training

- Compliance Manager – a person having daily on-site responsibility for the operation and maintenance of UST systems.
  - Usually manages paperwork.
  - Trains store clerks.
  - Notifies the tank owner of issues.

- UST Operations Clerk – a person on-duty at a service station that has the primary responsibility for operating the dispensers
  - Responds to emergencies.
  - Monitoring system for alarms
  - Minor cleanup

- You can be both the Compliance Manager & Operations Clerk at your store.

How do you get trained?

Compliance Manager

- MDEQ Class with examination
- Third Party Course

Operations Clerk

- Trained by the Compliance Manager
- On-line training courses

Why is it important?

Petroleum products and gas are dangerous!

And your customers can be even more dangerous

Need to know what to do & how to respond.

- What else is there?
- MDEQ requirements for Compliance.
- If you're NOT compliant MDEQ can:
  - Can issue penalties of up to $25,000 per day.
  - Can place your tanks on delivery prohibition (no fuel deliveries)
  - May not reimburse you with Trust Fund monies for cleanup of leaks.

Who is responsible for the tanks?

The Tank Owner

The Tank Owner

The Tank Owner

This includes all aspects of:

- Notification to MDEQ
- Leak Detection
- Making sure required testing is done.
- Making sure repairs are made in a timely manner.
- Paying tank fees.

Can it not be the tank owner responsible?

NO

- For MDEQ, the tank owner is Ultimately responsible to ensure that leasee or compliance manager or operator of facilities maintain compliance.

- If you do lease stores, require documents from leasee to be submitted monthly to you to ensure requirements are met.

Could other parties be liable? (property owner, store clerk, fuel suppliers)

Yes

A few tips for compliance….

- Check your mail and email.
- Update mailing address if needed.
- Stay In contact with us.
- Each letter has a contact name or email.
- Call and email the person on letter.
- Follow instructions on letters.
- Keep good records…
  - Get them from your contractor quickly
  - Keep copies in a safe place

- Pay attention in this class. You need to know what to do.

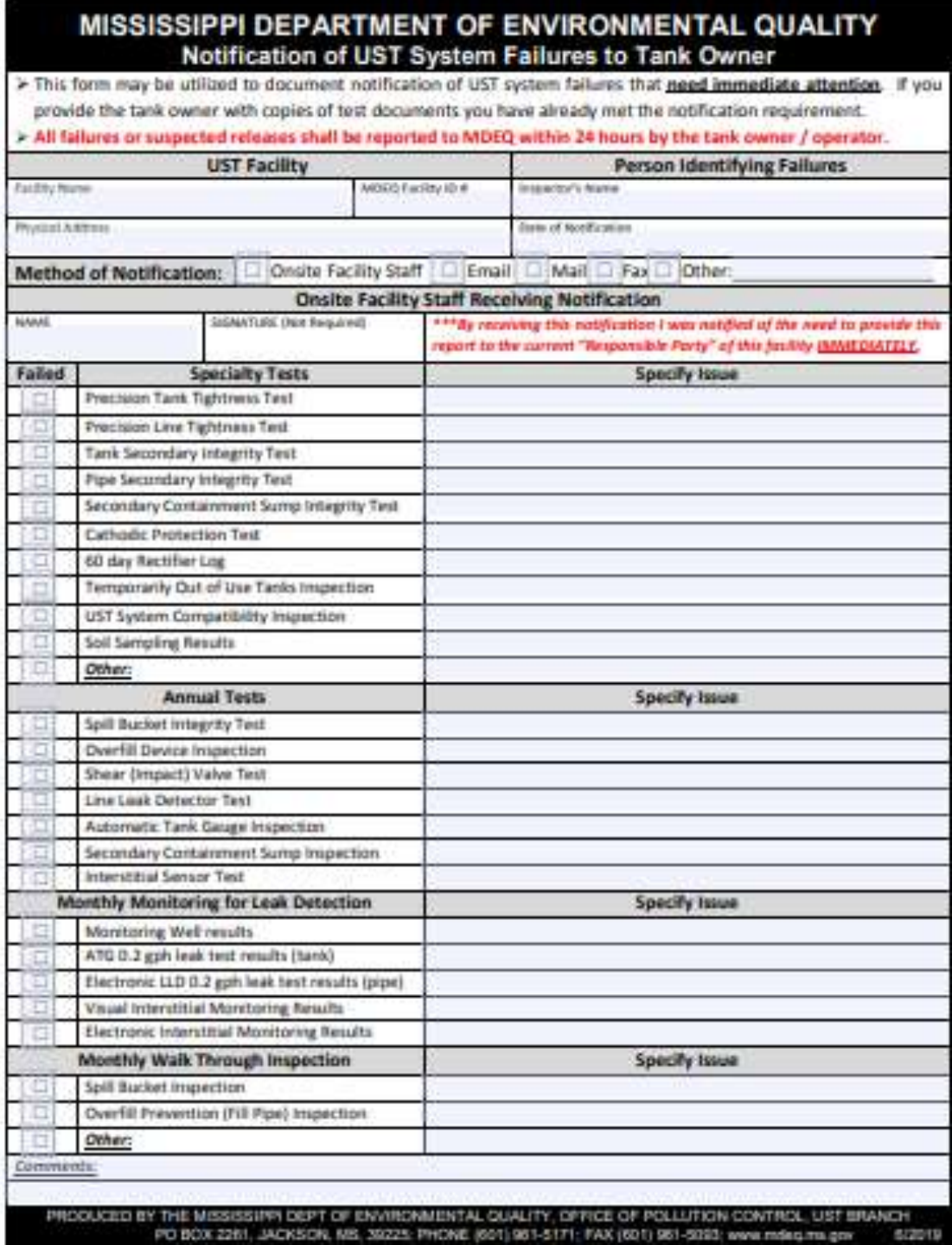
What is your UST contractor responsible for?

- Licensure
- Install & test per manufacturer requirements
- Notification to tank owner

Required to notify the tank owner when failures occur in writing. Maybe..

- on Invoice
- actual test results
- just a piece of paper.
- this form

- **From there it is TANK OWNERS responsibility to report to MDEQ and address failures.**



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Notification of UST System Failures to Tank Owner

- This form may be utilized to document notification of UST system failures that need immediate attention. If you provide the tank owner with copies of test documents you have already met the notification requirement.
- All failures or suspected releases shall be reported to MDEQ within 24 hours by the tank owner / operator.

UST Facility		Person Identifying Failures
Facility Name	MDEQ Facility ID #	Inspector's Name
Physical Address		Date of Notification

Method of Notification: ☐ Onsite Facility Staff ☐ Email ☐ Mail ☐ Fax ☐ Other: _____

Onsite Facility Staff Receiving Notification

NAME	SIGNATURE (Not Required)	***By receiving this notification I was notified of the need to provide this report to the current "Responsible Party" of this facility IMMEDIATELY.

Failed	Specialty Tests	Specify Issue
☐	Precision Tank Tightness Test	
☐	Precision Line Tightness Test	
☐	Tank Secondary Integrity Test	
☐	Pipe Secondary Integrity Test	
☐	Secondary Containment Sump Integrity Test	
☐	Cathodic Protection Test	
☐	60 day Rectifier Log	
☐	Temporarily Out of Use Tanks Inspection	
☐	UST System Compatibility Inspection	
☐	Soil Sampling Results	
☐	Other:	
	Annual Tests	**Specify Issue**
☐	Spill Bucket Integrity Test	
☐	Overfill Device Inspection	
☐	Shear (Impact) Valve Test	
☐	Line Leak Detector Test	
☐	Automatic Tank Gauge Inspection	
☐	Secondary Containment Sump Inspection	
☐	Interstitial Sensor Test	
	Monthly Monitoring for Leak Detection	**Specify Issue**
☐	Monitoring Well results	
☐	ATG 0.2 gph leak test results (tank)	
☐	Electronic LLD 0.2 gph leak test results (pipe)	
☐	Visual Interstitial Monitoring Results	
☐	Electronic Interstitial Monitoring Results	
	Monthly Walk Through Inspection	**Specify Issue**
☐	Spill Bucket Inspection	
☐	Overfill Prevention (Fill Pipe) Inspection	
☐	Other:	

Comments:

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PO BOX 2261, JACKSON, MS 39225; PHONE (601) 961-5171; FAX (601) 961-5093; www.mdeq.ms.gov 6/2019

What is timeframe for repairs?

- 90 days for failed annual tests.
- 90 days for failed cathodic protection or sump integrity tests

**No need to report these to MDEQ if they can be repaired & retested in 90 days.

If you see, you'll exceed 90 days please email wmccain@mdeq.ms.gov to report.

Should you exceed this timeframe without reporting you can expect a penalty.

Immediate action is needed for:

- Leaks (Suspected or Confirmed)
- Failed or Inconclusive Tank or Line Tightness tests

**Need to report to MDEQ within 24 hours of discovery.

When your contractor does work at your facility you need to ensure payment , get paperwork, report and begin repairs as needed.

Why is compliance important to you?

The main reason is:

Financial Responsibility

Required for all tank owners by federal regulation for the operation of petroleum Underground Storage Tanks.

- Each Facility must have insurance for:
  - $1,500,000 for cleanup activities
  - $1,000,000 for third party damages

Ways to meet financial responsibility

- Pollution Insurance
- Self Insurance ($10 million company)
- Guarantee
- Surety Bond
- Irrevocable Letter of Credit
- Trust Fund

The Mississippi Groundwater Protection (Trust Fund)

Is the most common resource used for financial responsibility.

- no deductible for the tank owner
- no premiums to be paid by the tank owner
- requires substantial compliance with all UST regulations

Eligibility for the Trust Fund

UST owners that have made a good faith effort to comply with the UST regulations are eligible for the Trust Fund

- Proper registration of USTs
- Pay tank fees
- Maintain compliance with regulations

This is why you want to be in compliance with UST regulations.

It is free insurance for cleanup of leaks as long as you try to do the right thing.

MDEQ can deny you access to use the fund.

You may be liable for millions in cleanup costs should a leak occur.

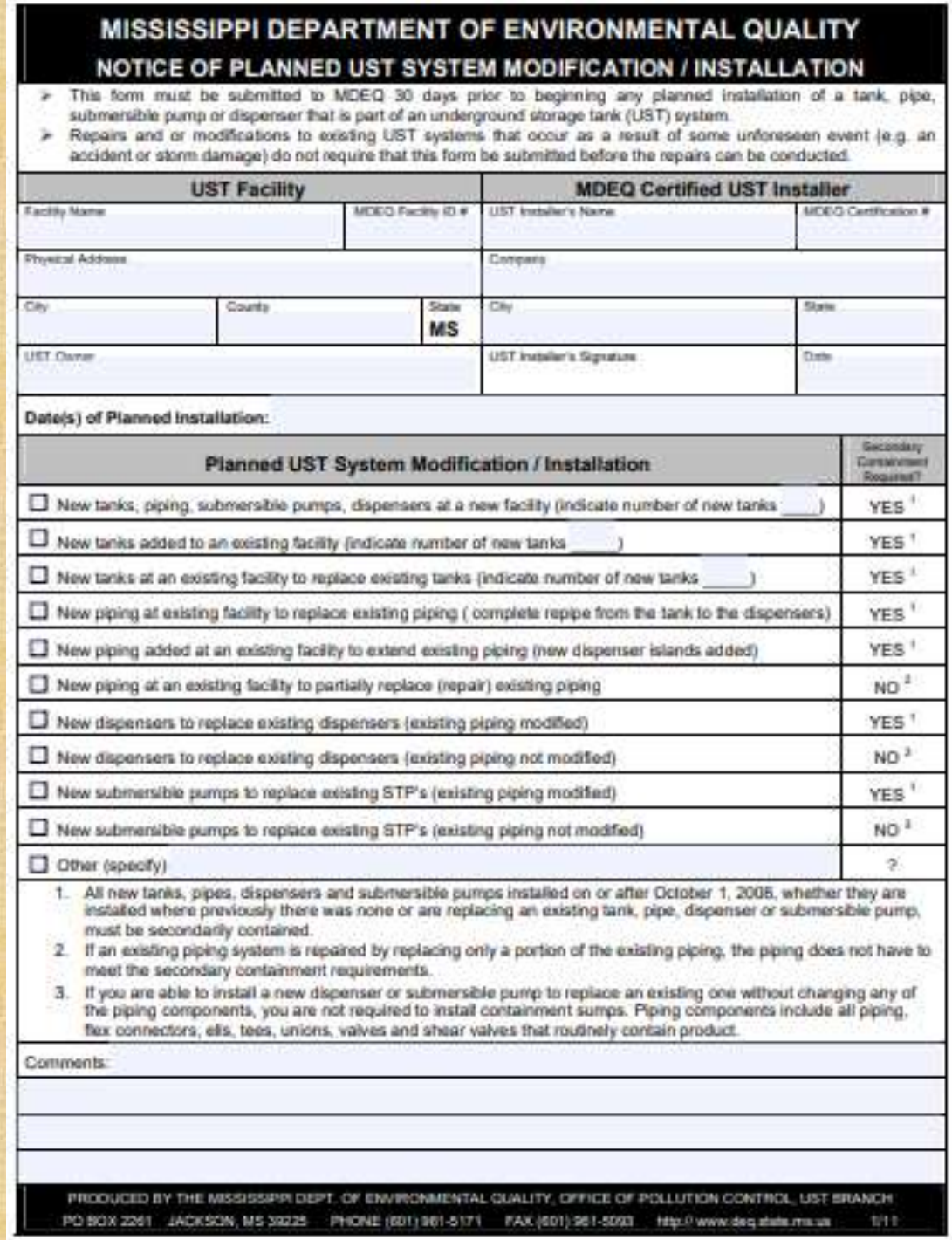
Notification Requirements

- Installation of New UST Equipment
- Change of Equipment
  - Temporary Closure
  - Type of product stored
- Change of Ownership
- Repair or Replacement of Equipment
- Permanent Closure of USTs
- Suspected or Confirmed Releases

Initial Notification: Installation of New Equipment

- Must notify at least 30 days prior to installing any new
  - Tank
  - Pipe
  - Dispenser
  - Submersible Pump

- "Notice of planned UST system modification / installation" form.



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

NOTICE OF PLANNED UST SYSTEM MODIFICATION / INSTALLATION

- This form must be submitted to MDEQ 30 days prior to beginning any planned installation of a tank, pipe, submersible pump or dispenser that is part of an underground storage tank (UST) system.
- Repairs and or modifications to existing UST systems that occur as a result of some unforeseen event (e.g. an accident or storm damage) do not require that this form be submitted before the repairs can be conducted.

UST Facility			MDEQ Certified UST Installer	
Facility Name	MDEQ Facility ID #		UST Installer's Name	MDEQ Certification #
Physical Address			Company	
City	County	State: MS	City	State
UST Owner			UST Installer's Signature	Date

Date(s) of Planned Installation:

Planned UST System Modification / Installation	Secondary Containment Required?
☐ New tanks, piping, submersible pumps, dispensers at a new facility (indicate number of new tanks ____)	YES [1]
☐ New tanks added to an existing facility (indicate number of new tanks ____)	YES [1]
☐ New tanks at an existing facility to replace existing tanks (indicate number of new tanks ____)	YES [1]
☐ New piping at existing facility to replace existing piping (complete repipe from the tank to the dispensers)	YES [1]
☐ New piping added at an existing facility to extend existing piping (new dispenser islands added)	YES [1]
☐ New piping at an existing facility to partially replace (repair) existing piping	NO [2]
☐ New dispensers to replace existing dispensers (existing piping modified)	YES [1]
☐ New dispensers to replace existing dispensers (existing piping not modified)	NO [3]
☐ New submersible pumps to replace existing STP's (existing piping modified)	YES [1]
☐ New submersible pumps to replace existing STP's (existing piping not modified)	NO [3]
☐ Other (specify)	?

1. All new tanks, pipes, dispensers and submersible pumps installed on or after October 1, 2008, whether they are installed where previously there was none or are replacing an existing tank, pipe, dispenser or submersible pump, must be secondarily contained.
2. If an existing piping system is repaired by replacing only a portion of the existing piping, the piping does not have to meet the secondary containment requirements.
3. If you are able to install a new dispenser or submersible pump to replace an existing one without changing any of the piping components, you are not required to install containment sumps. Piping components include all piping, flex connectors, ells, tees, unions, valves and shear valves that routinely contain product.

Comments:

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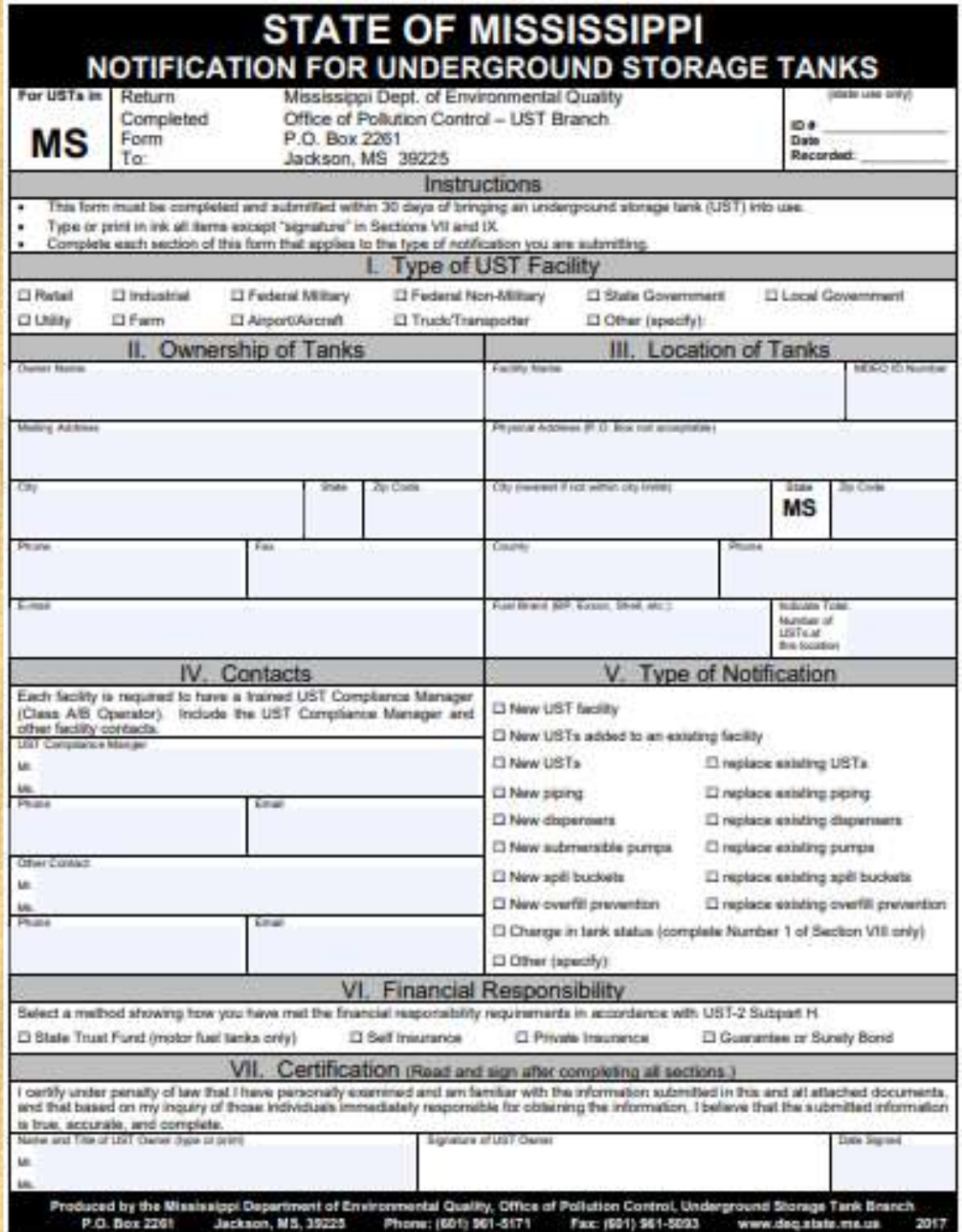
PO BOX 2261 JACKSON, MS 39225 PHONE (601) 961-5171 FAX (601) 961-5093 http:// www.deq.state.ms.us 1/11

After Install: Installation of New Equipment

- New equipment must be registered with MDEQ within 30 days of bringing the UST system into use

- "Notification of Underground Storage Tanks" Form



STATE OF MISSISSIPPI
NOTIFICATION FOR UNDERGROUND STORAGE TANKS

For USTs in: MS

Return Completed Form To: Mississippi Dept. of Environmental Quality, Office of Pollution Control – UST Branch, P.O. Box 2261, Jackson, MS 39225

(state use only) ID # Date Recorded:

Instructions

- This form must be completed and submitted within 30 days of bringing an underground storage tank (UST) into use.
- Type or print in ink all items except "signature" in Sections VII and IX.
- Complete each section of this form that applies to the type of notification you are submitting.

I. Type of UST Facility

☐ Retail ☐ Industrial ☐ Federal Military ☐ Federal Non-Military ☐ State Government ☐ Local Government
☐ Utility ☐ Farm ☐ Airport/Aircraft ☐ Truck/Transporter ☐ Other (specify):

II. Ownership of Tanks

Owner Name | Mailing Address | City | State | Zip Code | Phone | Fax | E-mail

III. Location of Tanks

Facility Name | MDEQ ID Number | Physical Address (P.O. Box not acceptable) | City (nearest if not within city limits) | State: MS | Zip Code | County | Phone | Fuel Brand (BP, Exxon, Shell, etc.) | Indicate Total Number of USTs at this location

IV. Contacts

Each facility is required to have a trained UST Compliance Manager (Class A/B Operator). Include the UST Compliance Manager and other facility contacts.

UST Compliance Manager: Mr. Ms. | Phone | Email
Other Contact: Mr. Ms. | Phone | Email

V. Type of Notification

☐ New UST facility
☐ New USTs added to an existing facility
☐ New USTs ☐ replace existing USTs
☐ New piping ☐ replace existing piping
☐ New dispensers ☐ replace existing dispensers
☐ New submersible pumps ☐ replace existing pumps
☐ New spill buckets ☐ replace existing spill buckets
☐ New overfill prevention ☐ replace existing overfill prevention
☐ Change in tank status (complete Number 1 of Section VIII only)
☐ Other (specify)

VI. Financial Responsibility

Select a method showing how you have met the financial responsibility requirements in accordance with UST-2 Subpart H.

☐ State Trust Fund (motor fuel tanks only) ☐ Self Insurance ☐ Private Insurance ☐ Guarantee or Surety Bond

VII. Certification (Read and sign after completing all sections.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and Title of UST Owner (type or print): Mr. Ms. | Signature of UST Owner | Date Signed

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P.O. Box 2261 Jackson, MS, 39225 Phone: (601) 961-5171 Fax: (601) 961-5093 www.deq.state.ms.us 2017

Change in Equipment

Must be reported to the MDEQ within 30 days of the change of UST equipment

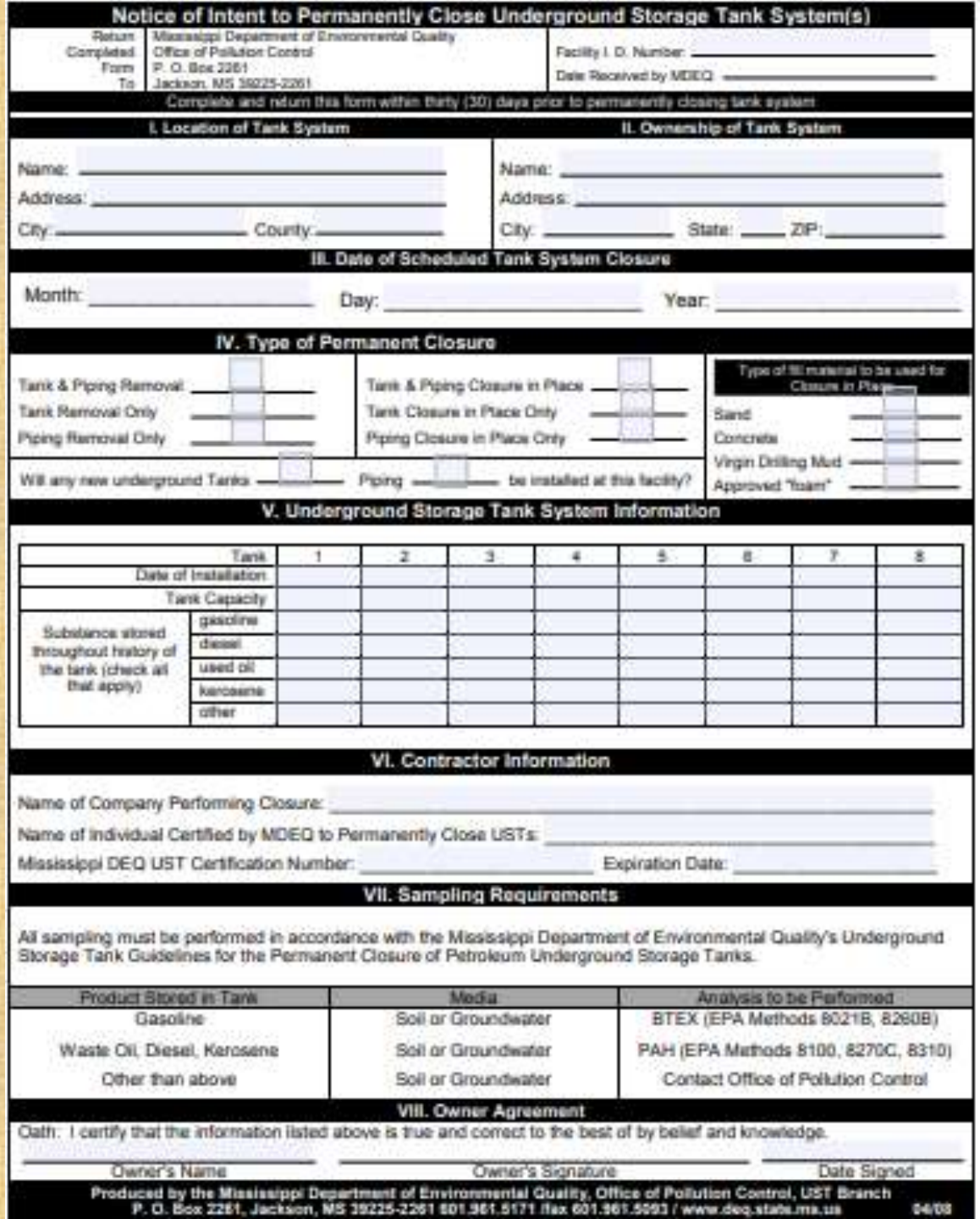
Use “Notification of Underground Storage Tanks” Form

What is a change in equipment?

- When you start or stop using a tank it should be registered as either:
  - Temporarily out of use
  - Currently in use
- Change of product or grade of fuel stored
  - greater than 20% biodiesel
  - greater than 10% ethanol
- Repairs or replacements that occur due to an emergency situation

Initial Notification: Permanent Closure

The tank owner must submit "Notice of Intent to Permanently Close" Form at least 30 days prior to the scheduled tank closure



Notice of Intent to Permanently Close Underground Storage Tank System(s)

Return Completed Form To: Mississippi Department of Environmental Quality, Office of Pollution Control, P. O. Box 2261, Jackson, MS 39225-2261

Facility I. D. Number: _____

Date Received by MDEQ: _____

Complete and return this form within thirty (30) days prior to permanently closing tank system

I. Location of Tank System

Name: _____

Address: _____

City: _____ County: _____

II. Ownership of Tank System

Name: _____

Address: _____

City: _____ State: ____ ZIP: _____

III. Date of Scheduled Tank System Closure

Month: _____ Day: _____ Year: _____

IV. Type of Permanent Closure

Tank & Piping Removal: ____

Tank Removal Only: ____

Piping Removal Only: ____

Tank & Piping Closure in Place: ____

Tank Closure in Place Only: ____

Piping Closure in Place Only: ____

Type of fill material to be used for Closure in Place:

Sand: ____

Concrete: ____

Virgin Drilling Mud: ____

Approved "foam": ____

Will any new underground Tanks ____ Piping ____ be installed at this facility?

V. Underground Storage Tank System Information

Tank		1	2	3	4	5	6	7	8
Date of Installation									
Tank Capacity									
Substance stored throughout history of the tank (check all that apply)	gasoline								
	diesel								
	used oil								
	kerosene								
	other								

VI. Contractor Information

Name of Company Performing Closure: _____

Name of Individual Certified by MDEQ to Permanently Close USTs: _____

Mississippi DEQ UST Certification Number: _____ Expiration Date: _____

VII. Sampling Requirements

All sampling must be performed in accordance with the Mississippi Department of Environmental Quality's Underground Storage Tank Guidelines for the Permanent Closure of Petroleum Underground Storage Tanks.

Product Stored in Tank	Media	Analysis to be Performed
Gasoline	Soil or Groundwater	BTEX (EPA Methods 8021B, 8260B)
Waste Oil, Diesel, Kerosene	Soil or Groundwater	PAH (EPA Methods 8100, 8270C, 8310)
Other than above	Soil or Groundwater	Contact Office of Pollution Control

VIII. Owner Agreement

Oath: I certify that the information listed above is true and correct to the best of by belief and knowledge.

Owner's Name _____ Owner's Signature _____ Date Signed _____

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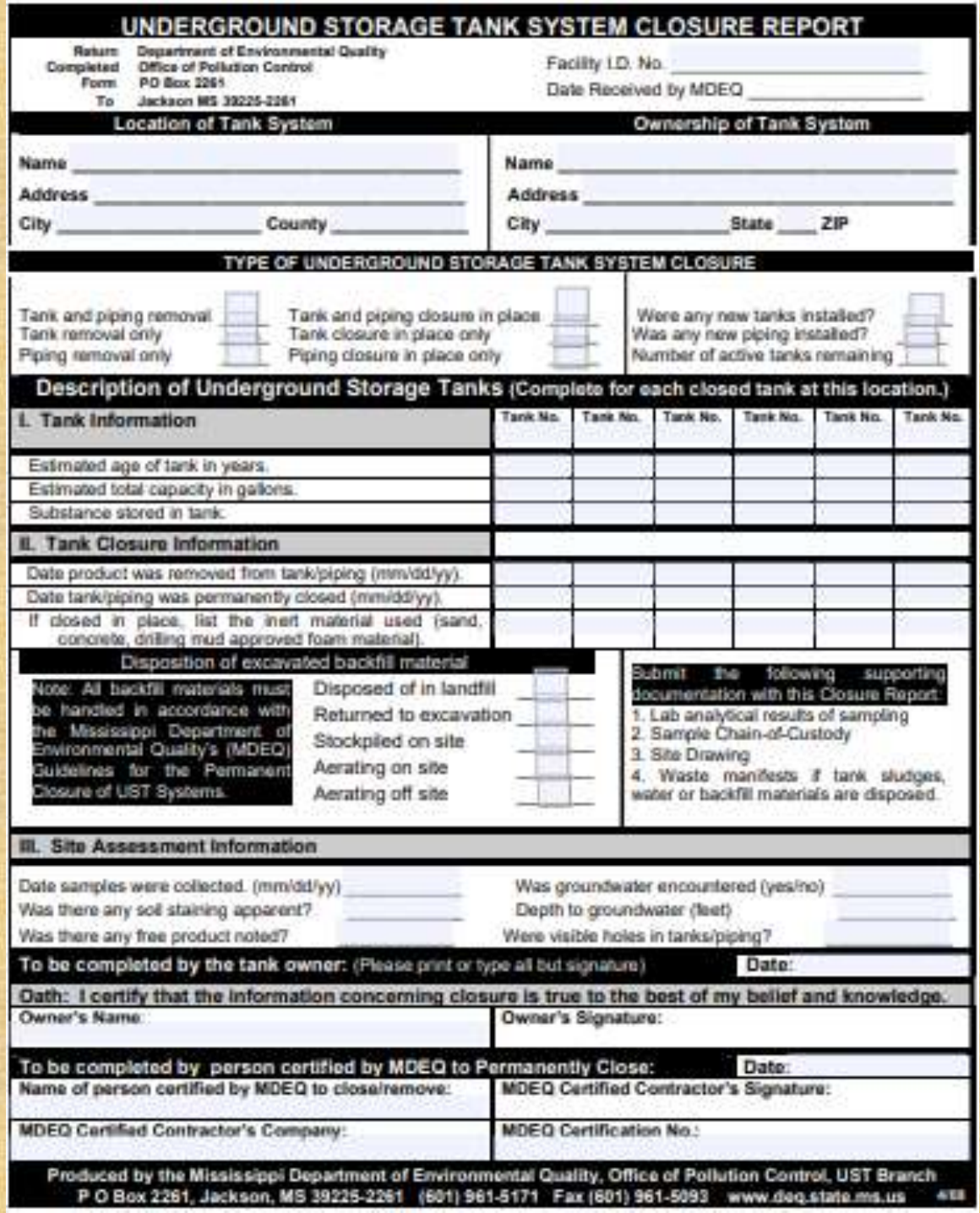
P. O. Box 2261, Jackson, MS 39225-2261 601.961.5171 /fax 601.961.5093 / www.deq.state.ms.us 04/08

Final Notification: Permanent Closure

- **The tank owner** must submit:
  - Closure Report
  - sample results

within 60 days of completing the UST Closure

- If all appears well, MDEQ will issue a final "no further action" needed letter.



UNDERGROUND STORAGE TANK SYSTEM CLOSURE REPORT

Return Completed Form To: Department of Environmental Quality, Office of Pollution Control, PO Box 2261, Jackson MS 39225-2261

Facility I.D. No. _____

Date Received by MDEQ _____

Location of Tank System

Name _____

Address _____

City _____ County _____

Ownership of Tank System

Name _____

Address _____

City _____ State ____ ZIP

TYPE OF UNDERGROUND STORAGE TANK SYSTEM CLOSURE

Tank and piping removal
Tank removal only
Piping removal only

Tank and piping closure in place
Tank closure in place only
Piping closure in place only

Were any new tanks installed?
Was any new piping installed?
Number of active tanks remaining

Description of Underground Storage Tanks (Complete for each closed tank at this location.)

I. Tank Information	Tank No.	Tank No.	Tank No.	Tank No.	Tank No.	Tank No.
Estimated age of tank in years.						
Estimated total capacity in gallons.						
Substance stored in tank.						
II. Tank Closure Information						
Date product was removed from tank/piping (mm/dd/yy).						
Date tank/piping was permanently closed (mm/dd/yy).						
If closed in place, list the inert material used (sand, concrete, drilling mud approved foam material).						

Disposition of excavated backfill material

Note: All backfill materials must be handled in accordance with the Mississippi Department of Environmental Quality's (MDEQ) Guidelines for the Permanent Closure of UST Systems.

Disposed of in landfill
Returned to excavation
Stockpiled on site
Aerating on site
Aerating off site

Submit the following supporting documentation with this Closure Report:
1. Lab analytical results of sampling
2. Sample Chain-of-Custody
3. Site Drawing
4. Waste manifests if tank sludges, water or backfill materials are disposed.

III. Site Assessment Information

Date samples were collected. (mm/dd/yy) _____
Was there any soil staining apparent? _____
Was there any free product noted? _____
Was groundwater encountered (yes/no) _____
Depth to groundwater (feet) _____
Were visible holes in tanks/piping? _____

To be completed by the tank owner: (Please print or type all but signature) Date:

Oath: I certify that the information concerning closure is true to the best of my belief and knowledge.

Owner's Name: Owner's Signature:

To be completed by person certified by MDEQ to Permanently Close: Date:

Name of person certified by MDEQ to close/remove: MDEQ Certified Contractor's Signature:

MDEQ Certified Contractor's Company: MDEQ Certification No.:

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P O Box 2261, Jackson, MS 39225-2261 (601) 961-5171 Fax (601) 961-5093 www.deq.state.ms.us

Certificate of Operation

Must be posted in the store.

Should:

- Be used by Delivery Drivers.
- Indicate correct tank size.
- Indicate correct fuel stored.
- Indicate correct tank status:
  - Currently In Use (stores fuel)
  - Temporarily out of Use (No Fuel Stored)

CERTIFICATE OF OPERATION

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
UNDERGROUND STORAGE TANKS

MDEQ UST FACILITY ID NUMBER: ####

This certifies that the referenced facility is registered and has paid all annual tank regulatory fees.
No certification of substantial compliance is indicated.

REGISTERED UST OWNER

John Doe (Example)

FACILITY NAME & ADDRESS

Registered Name of Facility
Registered Physical Address of Facility

Tank Number	Compartment Number	Tank Status	Capacity (Gallons)	Substance Stored	Fuel Type
3	1	Currently In Use	15000	Gasoline	Regular E10
4	1	Currently In Use	8000	Gasoline	Regular
5	1	Currently In Use	8000	Diesel	Off-Road (Exempt)
6	1	Currently In Use	15000	Diesel	Highway (Taxed)

CERTIFICATE EXPIRES: JUNE 30, 2022

DATE CERTIFICATE ISSUED:
1/26/2022

Lynn Chambers

LYNN CHAMBERS, UST BRANCH CHIEF

This certificate automatically renews upon payment of annual tank regulatory fees.

THIS CERTIFICATE MUST BE POSTED AT THE FACILITY

Change in Ownership

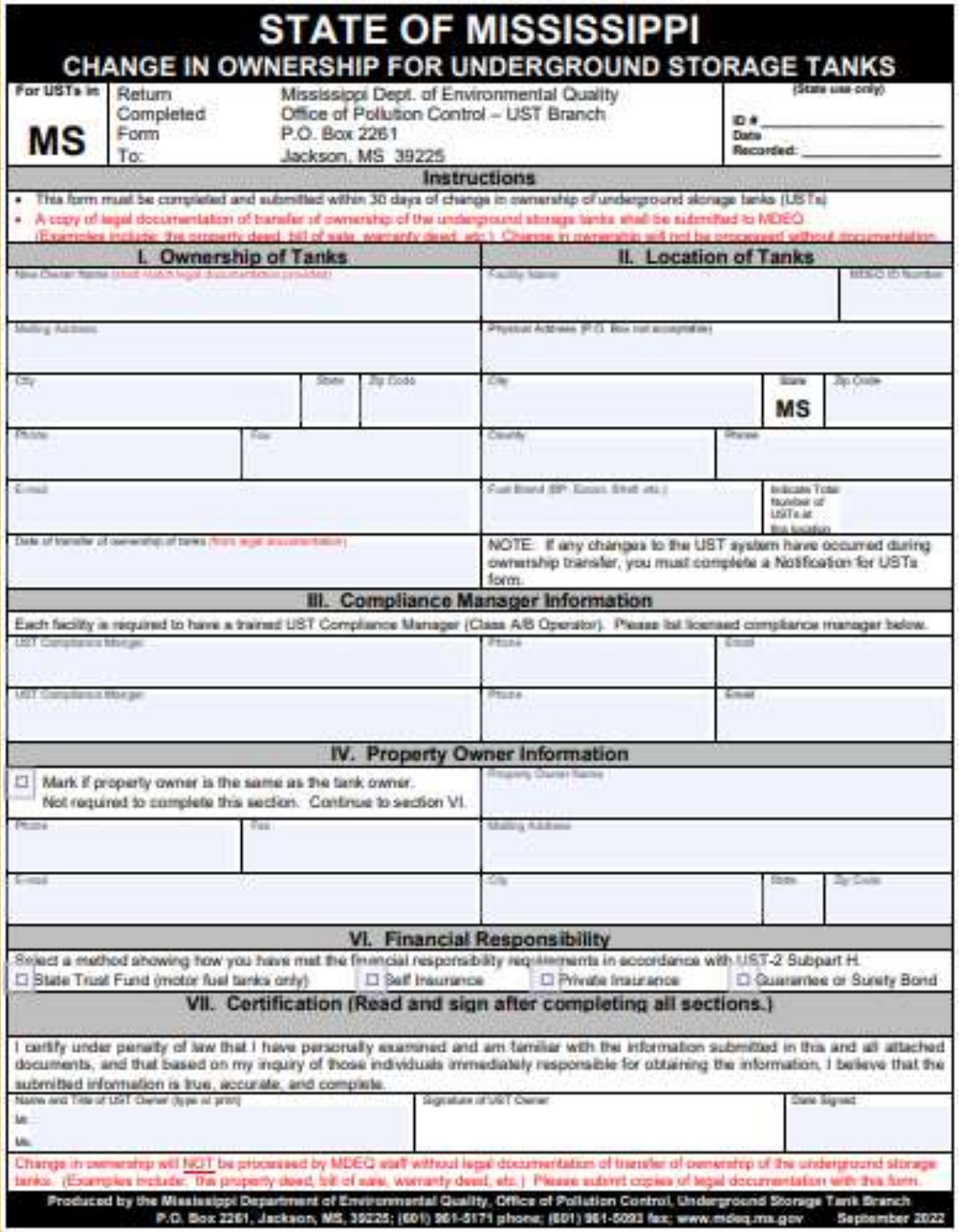
The EXISTING registered tank owner (i.e. old tank owner) is responsible for notifying the new owner of the requirement to notify MDEQ of the Change in Ownership within **30 days**.

We encourage completion of a Change of Ownership Form during the purchasing process

As the current owner, you can notify MDEQ directly by sending copy of the legal doc to krobinson@mdeq.ms.gov

Change in Ownership

- Form **should** be signed by the new tank owner
- Required to provide copy of legal document to MDEQ that indicates transfer of ownership occurred.



STATE OF MISSISSIPPI

CHANGE IN OWNERSHIP FOR UNDERGROUND STORAGE TANKS

For USTs in **MS**

Return Completed Form To:

Mississippi Dept. of Environmental Quality
Office of Pollution Control – UST Branch
P.O. Box 2261
Jackson, MS 39225

(State use only)
ID #
Date Recorded:

Instructions

- This form must be completed and submitted within 30 days of change in ownership of underground storage tanks (USTs).
- A copy of legal documentation of transfer of ownership of the underground storage tanks shall be submitted to MDEQ. (Examples include: the property deed, bill of sale, warranty deed, etc.) Change in ownership will not be processed without documentation.

I. Ownership of Tanks

New Owner Name (must match legal documentation provided)
Mailing Address
City | State | Zip Code
Phone | Fax
E-mail

II. Location of Tanks

Facility Name | MDEQ ID Number
Physical Address (P.O. Box not acceptable)
City | State: MS | Zip Code
County | Phone
Fuel Brand (BP, Exxon, Shell, etc.) | Indicate Total Number of USTs at this location
Date of transfer of ownership of tanks (from legal documentation)

NOTE: If any changes to the UST system have occurred during ownership transfer, you must complete a Notification for USTs form.

III. Compliance Manager Information

Each facility is required to have a trained UST Compliance Manager (Class A/B Operator). Please list licensed compliance manager below.

UST Compliance Manager | Phone | Email
UST Compliance Manager | Phone | Email

IV. Property Owner Information

☐ Mark if property owner is the same as the tank owner.
Not required to complete this section. Continue to section VI.

Property Owner Name
Phone | Fax
Mailing Address
E-mail | City | State | Zip Code

VI. Financial Responsibility

Select a method showing how you have met the financial responsibility requirements in accordance with UST-2 Subpart H.

☐ State Trust Fund (motor fuel tanks only) ☐ Self Insurance ☐ Private Insurance ☐ Guarantee or Surety Bond

VII. Certification (Read and sign after completing all sections.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and Title of UST Owner (type or print)
Mr.
Ms.
Signature of UST Owner | Date Signed

Change in ownership will NOT be processed by MDEQ staff without legal documentation of transfer of ownership of the underground storage tanks. (Examples include: the property deed, bill of sale, warranty deed, etc.) Please submit copies of legal documentation with this form.

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P.O. Box 2261, Jackson, MS, 39225; (601) 961-5171 phone; (601) 961-5093 fax; www.mdeq.ms.gov September 2022

What legal documentation?

- Bill of sale
- Warranty deed
- Property deed

You should have “tanks” specifically referenced in whatever document you use to clearly show that transfer of ownership occurred.

MDEQ will not process “change of ownership” without a copy of the legal document.

What is NOT accepted:

- Lease agreement does NOT count.

Notification of Suspected or Confirmed Releases

All confirmed or suspected releases must be reported to MDEQ within 24 hours of discovery

(Tank Owner Responsibility)

Release Reporting

Two types:

- Suspected Releases
- Confirmed Releases

Suspected Releases

- Leak Detection Failures
- Unusual Operating Conditions
- Some Testing Failures
- Environmental Conditions

Anything that makes you “suspect” a release into the ground.

Examples of Suspected Releases:

- Leak detection failures:
  - ATG in alarm showing failed periodic leak test and no passing test within previous 30 days.
  - SIR records indicating a failed test or two consecutive inconclusive results.
  - Water in the interstice of a Double Walled tank.
  - High vapors recorded in monitoring wells.
  - Fuel observed in containment sump.
- Failed tests:
  - line tightness test or tank tightness test.
- Line leak detectors in slow flow OR frequent slow flow…
- Water in your tank…….

More Examples:

- Electronic sump sensor alarms that cannot be checked for fuel or water within 24 hours of discovery.
- Unusual operating conditions:
  - Customer complaints about pumps pumping slower than normal.
  - Unexplainable presence or sudden appearance of water in the tank.
- Environmental Conditions
  - Strong lingering smell of gas in the building

NOT a suspected release

- A wetted connection under dispenser– NOT dripping into soil or collecting in a sump.
- Customer complaint of "bad" gas
- An old oil stain on the concrete
- A small customer overfill (Under 25 gallons)

Confirmed Releases

- Product observed in monitoring wells.
- Surface spills (greater than 25 gallons)
- Fuel dripping from UST component directly into the soil.
- Discovery of product or vapors in utility lines, sewers, or soil.

Release Reporting – to who at MDEQ?

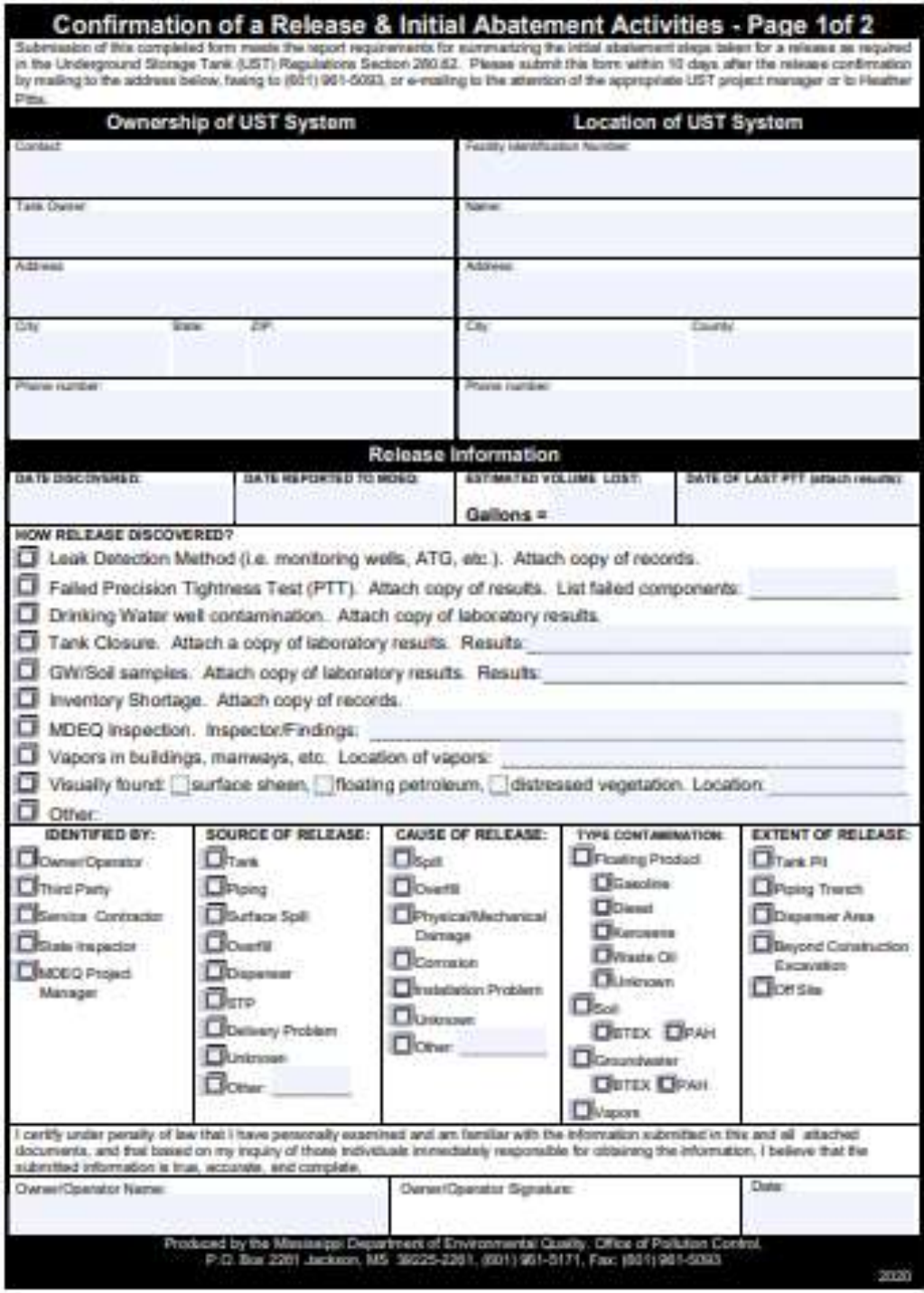
- Report to MDEQ within 24 hours
  - Recommend email to:
    - Brittany Jamison (bjamison@mdeq.ms.gov)
- Take the immediate and appropriate action to prevent further release
- Identify and stop any fire, explosion or vapor hazards

We will cover what to do in more detail in the clerk training session.

- Submit a written report to MDEQ in 10 days

What happens after a release is reported?

- Tank owner to submit “confirmation of release & initial abatement activities” form.
- Basically, telling us what you saw and what you did about it.
- Submit records requested by MDEQ clean up division.
- MDEQ will proceed with cleanup, monitor records for a period of time, and may require additional testing to be done.



Confirmation of a Release & Initial Abatement Activities - Page 1of 2

Submission of this completed form meets the report requirements for summarizing the initial abatement steps taken for a release as required in the Underground Storage Tank (UST) Regulations Section 260.62. Please submit this form within 10 days after the release confirmation by mailing to the address below, faxing to (601) 961-5093, or e-mailing to the attention of the appropriate UST project manager or to Heather Pitts.

Ownership of UST System

Contact:
Tank Owner:
Address:
City: State: ZIP:
Phone number:

Location of UST System

Facility Identification Number:
Name:
Address:
City: County:
Phone number:

Release Information

DATE DISCOVERED: | DATE REPORTED TO MDEQ: | ESTIMATED VOLUME LOST: Gallons = | DATE OF LAST PTT (attach results):

HOW RELEASE DISCOVERED?

- ☐ Leak Detection Method (i.e. monitoring wells, ATG, etc.). Attach copy of records.
- ☐ Failed Precision Tightness Test (PTT). Attach copy of results. List failed components:
- ☐ Drinking Water well contamination. Attach copy of laboratory results.
- ☐ Tank Closure. Attach a copy of laboratory results. Results:
- ☐ GW/Soil samples. Attach copy of laboratory results. Results:
- ☐ Inventory Shortage. Attach copy of records.
- ☐ MDEQ Inspection. Inspector/Findings:
- ☐ Vapors in buildings, manways, etc. Location of vapors:
- ☐ Visually found: ☐ surface sheen, ☐ floating petroleum, ☐ distressed vegetation. Location:
- ☐ Other:

IDENTIFIED BY:	SOURCE OF RELEASE:	CAUSE OF RELEASE:	TYPE CONTAMINATION:	EXTENT OF RELEASE:
☐ Owner/Operator	☐ Tank	☐ Spill	☐ Floating Product	☐ Tank Pit
☐ Third Party	☐ Piping	☐ Overfill	☐ Gasoline	☐ Piping Trench
☐ Service Contractor	☐ Surface Spill	☐ Physical/Mechanical Damage	☐ Diesel	☐ Dispenser Area
☐ State Inspector	☐ Overfill	☐ Corrosion	☐ Kerosene	☐ Beyond Construction Excavation
☐ MDEQ Project Manager	☐ Dispenser	☐ Installation Problem	☐ Waste Oil	☐ Off Site
	☐ STP	☐ Unknown	☐ Unknown	
	☐ Delivery Problem	☐ Other:	☐ Soil ☐ BTEX ☐ PAH	
	☐ Unknown		☐ Groundwater ☐ BTEX ☐ PAH	
	☐ Other:		☐ Vapors	

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Owner/Operator Name: | Owner/Operator Signature: | Date:

Produced by the Mississippi Department of Environmental Quality, Office of Pollution Control
P.O. Box 2261 Jackson, MS 39225-2261, (601) 961-5171, Fax: (601) 961-5093

2020

Record Keeping

Who is responsible?

The Tank Owner

Not MDEQ
Not the store clerk
Not the Certified Contractor

Tip: (For annual or 3 year testing records)

MDEQ recommends participation in the UST Compliance Assistance Program

MDEQ Compliance Assistance Program (CAP)

- Participation is voluntary
- MDEQ acts as a third party
- MDEQ tells you what and when to test
- You will receive
  - A summary sheet of all tests required and when they are due.
    60-90 days before due date
- In order to participate you have to:
  - Send the yellow sheet back to MDEQ with the new test dates (date tests were done on).
  - That way MDEQ can remind you the next year.

Please note: CAP program currently does not account for new 2018 regulations. This does not mean you don't have to do them.

What Records must be kept?

- Tank Installation Equipment Records
- Equipment Upgrade Records
- UST Repair Records
- Permanent Closure Reports
- Monthly Leak Detection Records
- Monthly Walk-Through Records
- Annual Testing Records
  - Spill bucket
  - Overfill prevention
  - Automatic Line Leak Detector
  - Shear Valves
  - Equipment inspection
  - Automatic Tank Gauge inspection
  - Sensor test
  - Sump inspection
- 3 year tests
  - Cathodic Protection
  - Sump integrity

Keep copies of the last 2 annual tests

- Spill bucket tests
- Overfill device inspections
- Line Leak Detector tests
- Secondary containment Sump Inspections
- Inspection of Temporarily out of Use tanks
- Shear valve Tests
- Electronic Sensor Tests
- Automatic Tank Gauge Inspections
- Precision tightness tests
- Annual Inspection of handheld leak detection equipment.

Keep copies of leak detection records for a minimum of 2 years

Examples Include:

- Monthly Monitoring well records
- Monthly Interstitial monitoring records that may include:
  - visual inspections
  - sensor status reports & alarm history reports
  - reconciliation of all sensor alarms.
  - Water disposal or pump out records
- Monthly ATG reports for 0.2 for tanks.
- Monthly ATG reports for 0.2 leak tests for pipes.
- Statistical Inventory Reconciliation reports

Keep copies of monthly walk-through inspection reports for a minimum of 2 years

- New: Monthly Walk-Through inspections

  Monthly walk-through inspection form will require review of monthly leak detection records.

  The monthly walk-through inspection form should aid you in meeting the 24 hour reporting requirement.

What about three-year tests?

Cathodic Protection

- For impressed current systems,
  - the last 2 years of *60 day rectifier logs*
  - the last 2 *impressed current cathodic protection evaluations*
- For galvanic systems,
  - the last 2 *galvanic cathodic protection evaluations*

Secondary Containment Sump Integrity tests (Interstitial Monitoring)

- the last 2 “routine” secondary containment sump Integrity tests.
- all sump tests performed due to:
  - A release investigation.
  - A sump repair / replacement

Permanent Closure Reports

- Maintain Permanent Closure Reports for 3 years after USTs are closed
- Keep:
  - site investigations
  - sampling results conducted at closure
  - Copy of No further action letter

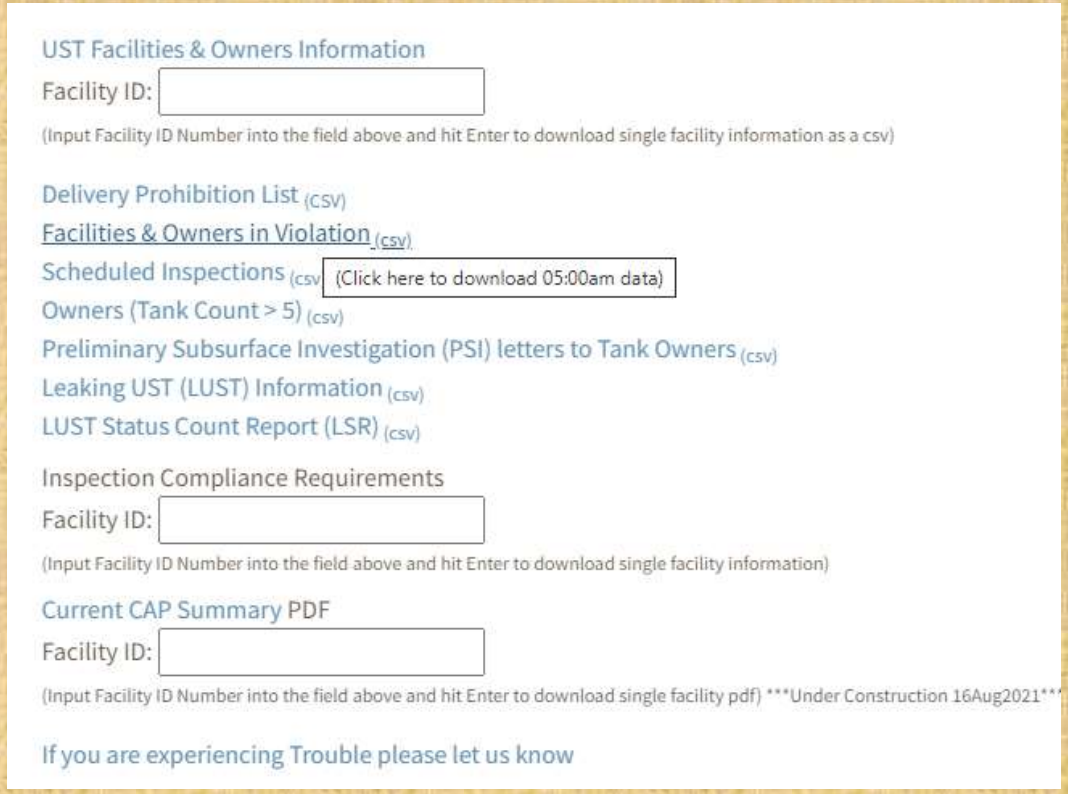
until the property is sold

How do you know what records your supposed to have?

- Use MDEQs online database.

https://www.mdeq.ms.gov/water/groundwater-assessment-and-remediation/underground-storage-tanks/musterweb/

- Inspection Compliance Requirements
- Type in ID number and hit enter
- Should pop up file showing records needed.



You can also check “registration” under UST facilities & owner Information.

Types of USTs

- Currently in use:
  - ✓ The tank is active and actively storing fuel greater than 1 inch.
  - ✓ UST Owner is still responsible for UST
- Temporarily Out of Use Indefinitely (TOSI):
  - ✓Tank remains in the ground
  - ✓The tank and piping can be brought back into use
  - ✓UST Owner is still responsible for UST
- Permanently Out of Use:
  - ✓Tank is removed from the ground, or
  - ✓the tank and piping are closed where they can never be brought back into use
  - ✓UST Owner is no longer responsible for the physical UST

Requirements for each varies. Let's discuss them one by one.

What is permanent closure?

Permanent closure for a UST system is the permanent elimination from service of a UST system by:

- Removal from ground
- Closure in place by filling with an inert solid material (approval for this type closure must be granted from MDEQ)

Permanent Closure Procedure

- Requires Mississippi UST Certified Closure Contractor
- Follow the “Guidelines for the Permanent Closure of Petroleum UST System”
- Conduct soil and groundwater sampling as required.
- Contractor should give you:
  - copy of Closure Report
  - Sample Results
  - Chain of Custody form
  - Other documents

that should be sent to MDEQ within 60 days.

After the Permanent Closure

Keep copy of your

"No Further Action"

letter from MDEQ.

Tank Fees NO LONGER billed annually

Keep copies of closure records until the property is sold

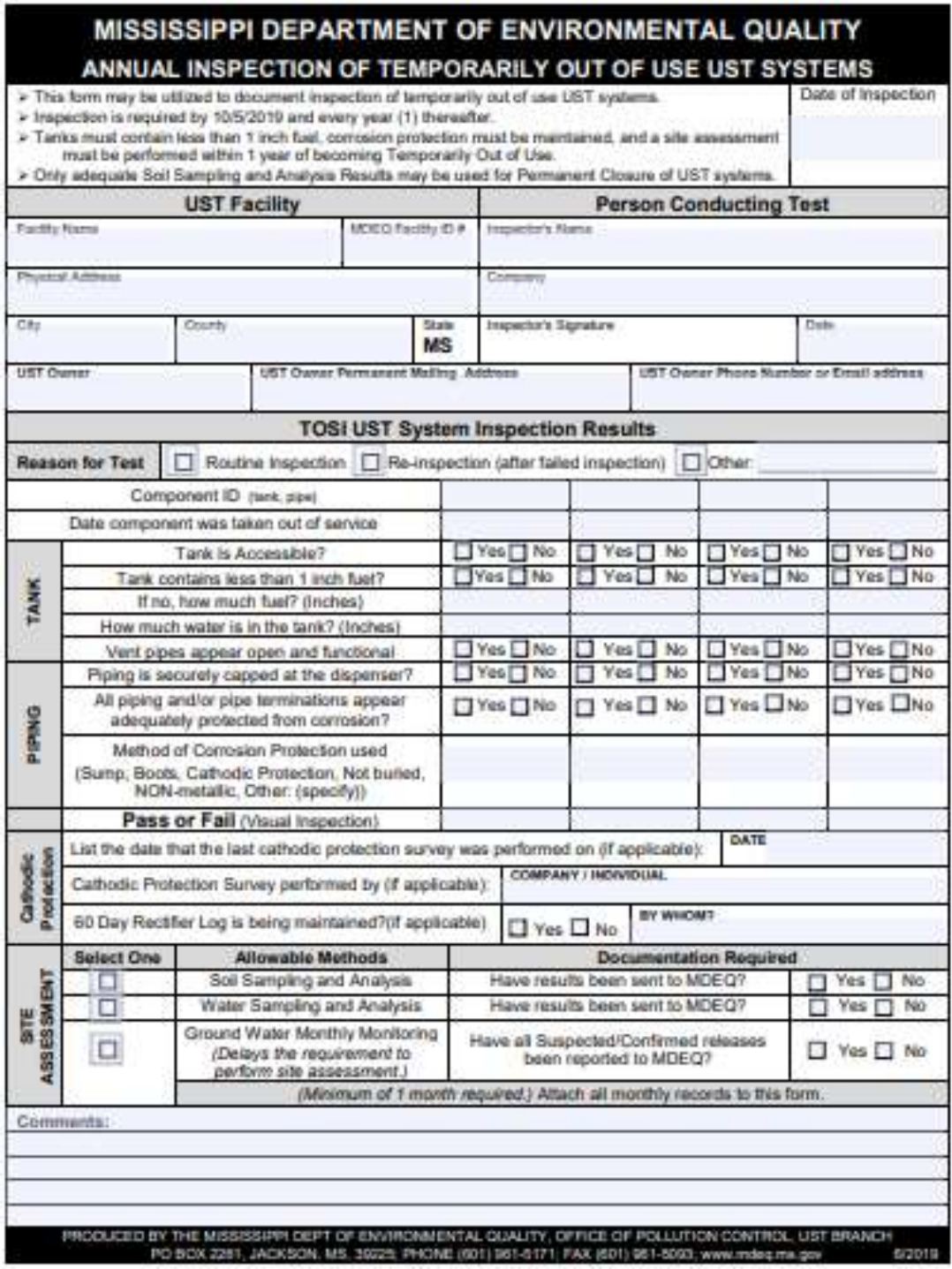
All is done.

Temporary Closure Requirements

Tank fees still billed annually.

Annual Inspection to verify:

- Fuel removed to Less than 1 inch.
- Vent lines open
- Piping secure & capped. (Dispenser still in place)
- Maintain corrosion protection
- Site assessment.



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

ANNUAL INSPECTION OF TEMPORARILY OUT OF USE UST SYSTEMS

- This form may be utilized to document inspection of temporarily out of use UST systems.
- Inspection is required by 10/5/2019 and every year (1) thereafter.
- Tanks must contain less than 1 inch fuel, corrosion protection must be maintained, and a site assessment must be performed within 1 year of becoming Temporarily Out of Use.
- Only adequate Soil Sampling and Analysis Results may be used for Permanent Closure of UST systems.

Date of Inspection

UST Facility		Person Conducting Test	
Facility Name	MDEQ Facility ID #	Inspector's Name	
Physical Address		Company	
City / County / State MS		Inspector's Signature	Date
UST Owner	UST Owner Permanent Mailing Address	UST Owner Phone Number or Email address	

TOSI UST System Inspection Results

Reason for Test ☐ Routine Inspection ☐ Re-inspection (after failed inspection) ☐ Other:

	Component ID (tank, pipe)				
	Date component was taken out of service				
TANK	Tank is Accessible?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
TANK	Tank contains less than 1 inch fuel?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
TANK	If no, how much fuel? (Inches)				
TANK	How much water is in the tank? (Inches)				
TANK	Vent pipes appear open and functional	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
PIPING	Piping is securely capped at the dispenser?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
PIPING	All piping and/or pipe terminations appear adequately protected from corrosion?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
PIPING	Method of Corrosion Protection used (Sump, Boots, Cathodic Protection, Not buried, NON-metallic, Other: (specify))				
	Pass or Fail (Visual Inspection)				

Cathodic Protection	List the date that the last cathodic protection survey was performed on (if applicable):	DATE
Cathodic Protection	Cathodic Protection Survey performed by (if applicable):	COMPANY / INDIVIDUAL
Cathodic Protection	60 Day Rectifier Log is being maintained?(if applicable) ☐ Yes ☐ No	BY WHOM?

SITE ASSESSMENT	Select One	Allowable Methods	Documentation Required	
SITE ASSESSMENT	☐	Soil Sampling and Analysis	Have results been sent to MDEQ?	☐ Yes ☐ No
SITE ASSESSMENT	☐	Water Sampling and Analysis	Have results been sent to MDEQ?	☐ Yes ☐ No
SITE ASSESSMENT	☐	Ground Water Monthly Monitoring *(Delays the requirement to perform site assessment.)*	Have all Suspected/Confirmed releases been reported to MDEQ?	☐ Yes ☐ No
		(Minimum of 1 month required.) Attach all monthly records to this form.		

Comments:

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PO BOX 2261, JACKSON, MS 39225; PHONE (601) 961-5171; FAX (601) 961-5093; www.mdeq.ms.gov 6/2019

Temporary Closure Site Assessments

- Within 12 months (of registering as Temporarily out of Use) the facility must have a site assessment done for contamination or begin the permanent closure process.

What are allowable site assessments?

- Soil sampling and analysis.
- Ground Water sampling and analysis.
- Minimum of 1 month Groundwater or vapor monitoring during annual inspection of TOSI tank / pipe.
- Other MDEQ approved methods

Importance of Proper Temporary Closure

"According to eyewitness reports, the cover suffered a direct hit from lightning and destroyed two fuel tanks that were underground… things went everywhere."

Lighting Strike Causes Tanks to Explode

Lighting Strike Causes Tanks to Explode

According to the local news….
"It could have been a lot worse than it was."

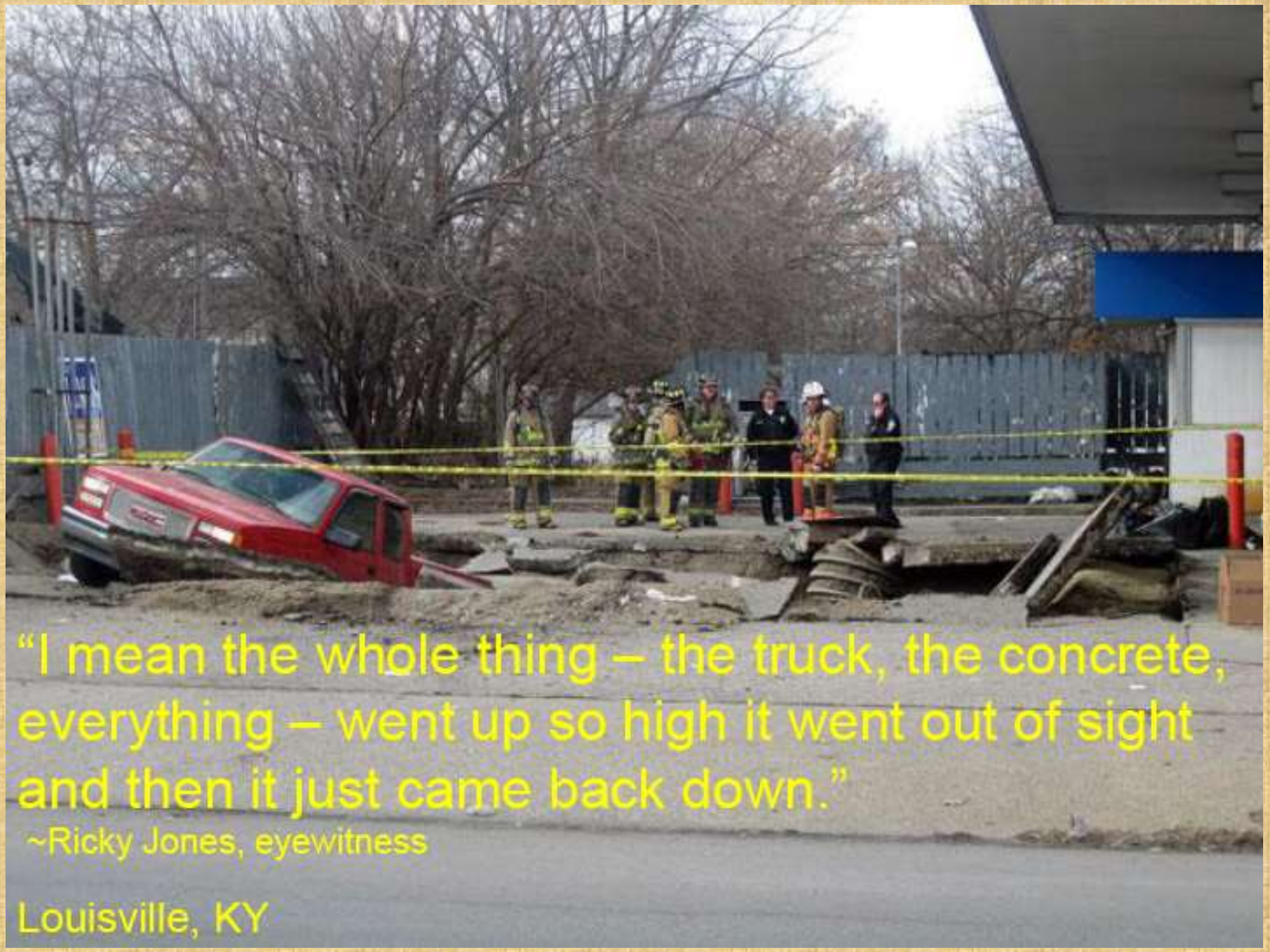
Big bang, big hole

"The cover went high into the air and came through the building"

Proper Temporary Closure is **Important**

Hurricane Katrina

Theft or Vandalism


"I mean the whole thing – the truck, the concrete, everything – went up so high it went out of sight and then it just came back down."
~Ricky Jones, eyewitness
Louisville, KY

Flooding & Changes in ground

What else can happen?..
MS recently had an STP manway explode

This was once a sump.
Fire melted it all.
Explosion from inside of sump.

What happened?

MS Manway explosion….

Explosion was largely contributed to:

- Exposed electrical
- Improper electrical
- Fuel & fuel vapors in the sump

For TOSI tanks or pipes it is recommended to shut off power to the STP and dispensers to reduce risk.

It is a lot more common than you think. What about “Currently In Use Systems”?

What should you do? Ask contractors to look at your site.

Try to determine risk & need for repair.

Repair as needed…. Don’t put it off.

Currently In Use Tanks

Tank Fees Billed Annually

Annual Tests Required for all:

- Spill Bucket Integrity test
- Overfill Prevention Inspection

Monthly Inspections Required:

- Monthly Walk-Through Inspections
- Monthly leak detection

Other tests required depends on:

- Construction material of tank
  (Cathodic protection)
- Type of tank leak detection used

Spill Buckets

- **Must be:**
  - Installed on all tanks.
  - Tested annually for integrity.
  - Inspected during monthly walk- through inspection.

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
ANNUAL SPILL BUCKET INTEGRITY TESTING

- This form may be utilized to document integrity testing of spill containment buckets.
- Testing of all spill buckets is required at installation and at least once every 12 months thereafter.
- In the absence of an approved 3rd party test procedure or manufacturer's recommended practice, the test method outlined below in the "MDEQ Hydrostatic Test Procedure" section may be utilized.

Date of Test

UST Facility			Person Conducting Test	
Facility Name	MDEQ Facility ID #		Tester's Name	
Physical Address			Company	
City	County	State: MS	MDEQ Certification #	Expiration Date
UST Owner			Tester's Signature	Date

Spill Bucket Testing

Reason for Test	☐ New Installation ☐ Existing Installation (annual test) ☐ Release Investigation
Construction	☐ Single-Walled ☐ Double-Walled ☐ Spill Bucket Liner ☐ Unknown
Type of Test	☐ Hydrostatic (Complete "Test Data" table below)
	☐ Vacuum (Attach test equipment manufacturer's data sheet/test protocol to this form)
	☐ Other (Specify)

MDEQ Hydrostatic Test Procedure

1. Clean out and properly dispose of all debris, soil and/or fluids from the spill bucket.
2. Visually examine to ensure there are no cracks, holes, or broken seals and the fill cap seals properly.
   Note: If the fill cap does not seal – Remove adapter and drop tube and seal tank fill riser with a plumbers plug.
3. Fill with water to within 1 ½ inches of top and let stand 5 minutes to allow water to reach ambient temperature.
4. After 5 minutes has elapsed, document the initial water level measurement as measured from the bottom of the spill bucket to the nearest 1/16th inch.
5. Leave the spill bucket undisturbed for at least one hour then compare the starting fluid level to the ending level.
   Note: For accuracy, the location where both the initial and final fluid levels are measured should be the same.
6. If the fluid level is the same or it has changed by 1/8th inch or less the spill bucket passes the test.
7. If the fluid level is different by more than 1/8th inch, the spill bucket fails the test.
   Note: A leak less than 1/8th of an inch is still critical if the tank is using vapor monitoring as their method of leak detection For tests performed as part of a release investigation, fluid level readings should be taken very carefully.
8. Properly dispose of all test fluids at the conclusion of testing.

Note: MDEQ certification as a UST installer is required to install spill containment devices.

Test Data for the Year

Tank ID (product stored)					
Area of Spill Bucket Tested	☐ Single-Walled ☐ Double-Walled	☐ Single-Walled ☐ Double-Walled	☐ Single-Walled ☐ Double-Walled	☐ Single-Walled ☐ Double-Walled	☐ Single-Walled ☐ Double-Walled
Test Start Time					
Test End Time					
Test Beginning Level					
Test Ending Level					
Test Result (Pass/Fail)					

Vacuum Test – Gauge Range | **Gauge Units** ☐ in WC ☐ Other: _____

Comments:

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Spill Buckets

- Catches fuel spilled during delivery.
- NOT made to routinely hold product.

TIP: Fuel NOT removed can damage your spill bucket.

Must be checked before and immediately after each delivery

Overfill Prevention Devices

RESTRICT

At 90%

ALARM

At 90%

SHUT OFF

At 95%

Overfill Prevention Devices

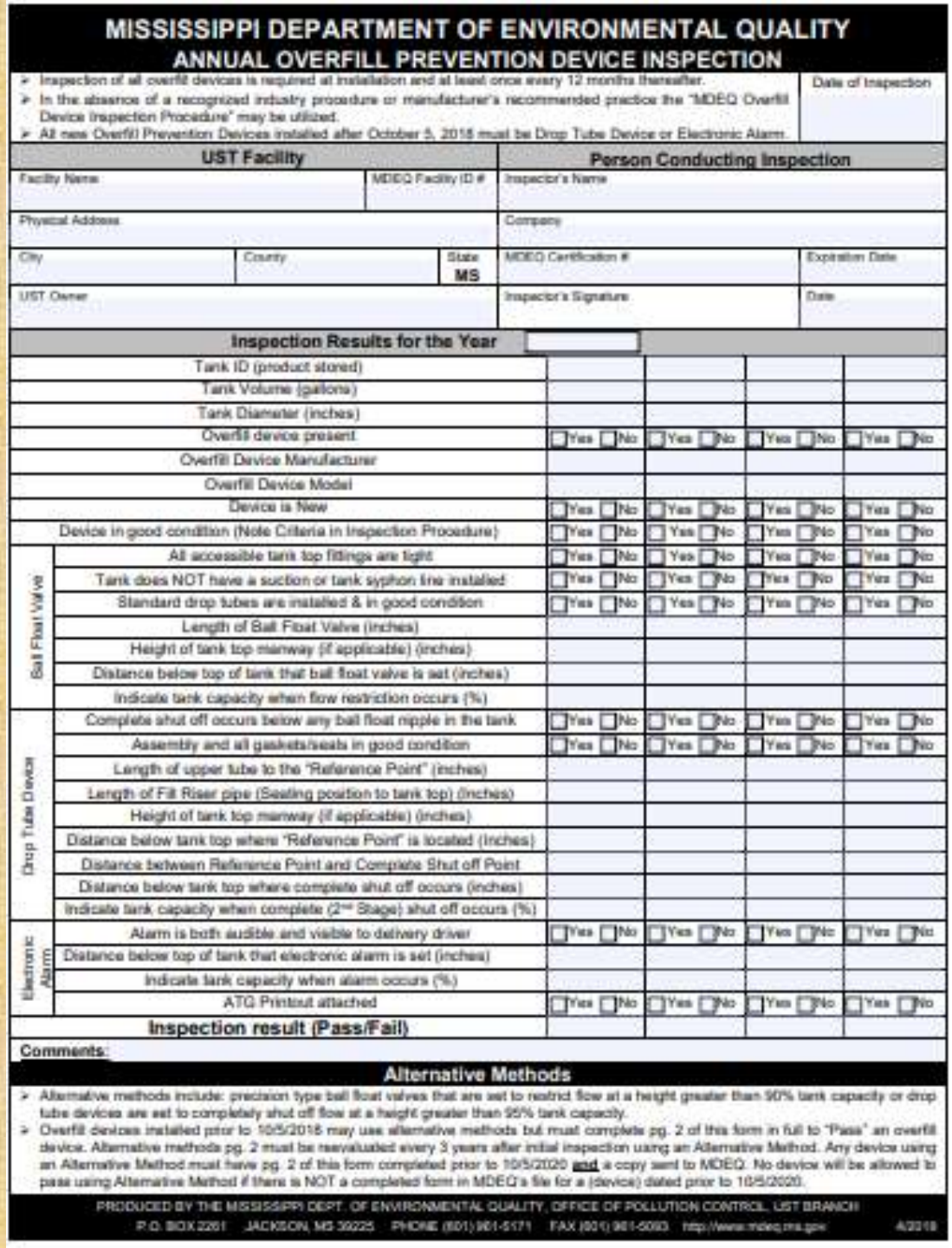
Must be:

- Installed properly.
- Inspected annually.

- Ball Float cannot be installed, repaired or modified.
- Some components must be inspected during monthly walk-through inspections.

Why are they important?

Prevent Overfills



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

ANNUAL OVERFILL PREVENTION DEVICE INSPECTION

- Inspection of all overfill devices is required at installation and at least once every 12 months thereafter.
- In the absence of a recognized industry procedure or manufacturer's recommended practice the "MDEQ Overfill Device Inspection Procedure" may be utilized.
- All new Overfill Prevention Devices installed after October 5, 2018 must be Drop Tube Device or Electronic Alarm.

Date of Inspection

UST Facility			Person Conducting Inspection	
Facility Name	MDEQ Facility ID #		Inspector's Name	
Physical Address			Company	
City	County	State MS	MDEQ Certification #	Expiration Date
UST Owner			Inspector's Signature	Date

Inspection Results for the Year					
Tank ID (product stored)					
Tank Volume (gallons)					
Tank Diameter (inches)					
Overfill device present	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	
Overfill Device Manufacturer					
Overfill Device Model					
Device is New	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	
Device in good condition (Note Criteria in Inspection Procedure)	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	
Ball Float Valve: All accessible tank top fittings are tight	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	
Ball Float Valve: Tank does NOT have a suction or tank syphon line installed	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	
Ball Float Valve: Standard drop tubes are installed & in good condition	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	
Ball Float Valve: Length of Ball Float Valve (inches)					
Ball Float Valve: Height of tank top manway (if applicable) (inches)					
Ball Float Valve: Distance below top of tank that ball float valve is set (inches)					
Ball Float Valve: Indicate tank capacity when flow restriction occurs (%)					
Drop Tube Device: Complete shut off occurs below any ball float nipple in the tank	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	
Drop Tube Device: Assembly and all gaskets/seals in good condition	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	
Drop Tube Device: Length of upper tube to the "Reference Point" (inches)					
Drop Tube Device: Length of Fill Riser pipe (Seating position to tank top) (inches)					
Drop Tube Device: Height of tank top manway (if applicable) (inches)					
Drop Tube Device: Distance below tank top where "Reference Point" is located (inches)					
Drop Tube Device: Distance between Reference Point and Complete Shut off Point					
Drop Tube Device: Distance below tank top where complete shut off occurs (inches)					
Drop Tube Device: Indicate tank capacity when complete (2nd Stage) shut off occurs (%)					
Electronic Alarm: Alarm is both audible and visible to delivery driver	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	
Electronic Alarm: Distance below top of tank that electronic alarm is set (inches)					
Electronic Alarm: Indicate tank capacity when alarm occurs (%)					
Electronic Alarm: ATG Printout attached	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	
Inspection result (Pass/Fail)					

Comments:

Alternative Methods

- Alternative methods include: precision type ball float valves that are set to restrict flow at a height greater than 90% tank capacity or drop tube devices are set to completely shut off flow at a height greater than 95% tank capacity.
- Overfill devices installed prior to 10/5/2018 may use alternative methods but must complete pg. 2 of this form in full to "Pass" an overfill device. Alternative methods pg. 2 must be reevaluated every 3 years after initial inspection using an Alternative Method. Any device using an Alternative Method must have pg. 2 of this form completed prior to 10/5/2020 **and** a copy sent to MDEQ. No device will be allowed to pass using Alternative Method if there is NOT a completed form in MDEQ's file for a (device) dated prior to 10/5/2020.

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Two Kinds of Overfills

- **1. "VISIBLE"**
  - Above ground release.
  - Vent pipes or other riser pipes
- **2. "HIDDEN"**
  - Occur underground.
  - Go unnoticed.
  - Not seen by most leak detection methods.
  - More common.

Visible overfills are particularly dangerous.

Biloxi, MS 1998

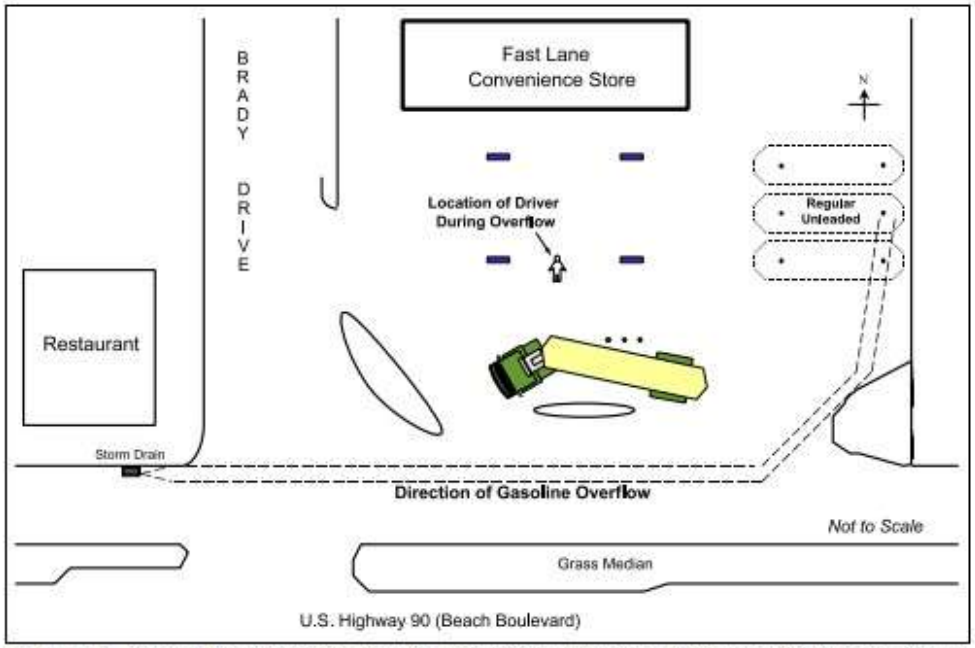


Figure 2. Dotted lines from the regular unleaded underground storage tank to the storm drain represent the flow of the gasoline overfill.

- Visible overfill was NOT noticed.
- Most over fills occur because of human error & not because of equipment failure.
- In the case of Biloxi both occurred.

What should your delivery driver do?

- **Verify tank capacity before drop.**
- **Always watch fuel drop**

(Not be in the store or inside truck)

They should be beside the hose or very close by.

- **Use proper adapters**
- **Clean up their mess / spilled in spill bucket**

Delivery Drivers should NEVER..

- Disable Overfill drop tubes.

BUT THEY DO!!!

- They will use gauge stick to measure fuel levels both before and after.
- They should NOT leave the stick in there when they drop fuel and pull it out after they are done.
- MANY know this trick.

IF you see it call their boss and report them.

Delivery Drivers should NEVER..

- Have the vapor recover cap open during drop
- If they have that 2nd (ORANGE) manway open during delivery they better have 2nd hose hooked up to it.
- MANY will never use the 2nd hose. Just stick something in it.
- Vapors VENT AT GROUND LEVEL.

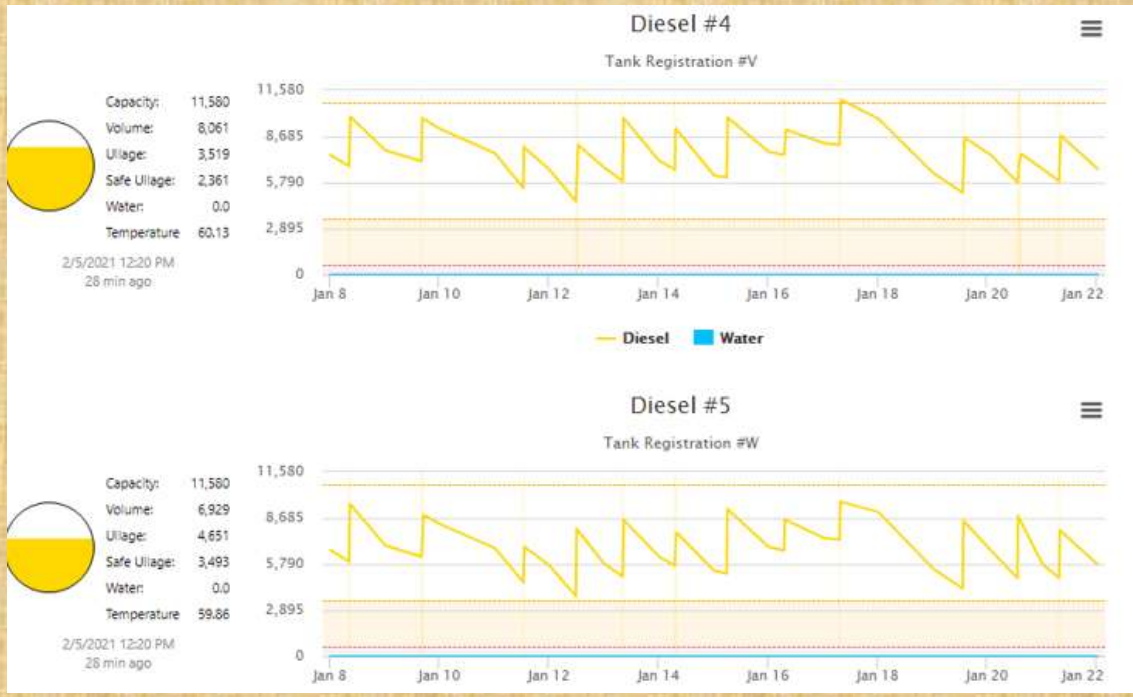
VERY VERY DANGEROUS.

- Call the FIRE MARSHALL
- Call their boss.

Don’t try to pack the tank.

- Know how much room you have till 90 or 95%.
- Don’t over order.

- Increases risk of:
  - drivers packing the tank.
  - Overfills
  - Damage occurring to overfill devices
  - Fuel in spill buckets.



Deliveries is the most dangerous time at a gas station

- Gas vapors
- Customer interaction

- Lack of training
- Lack of care
- Limited oversight and enforecement

- Protect yourself and your customers

Report them!!

Monthly Walk-through Inspections Pg. 1

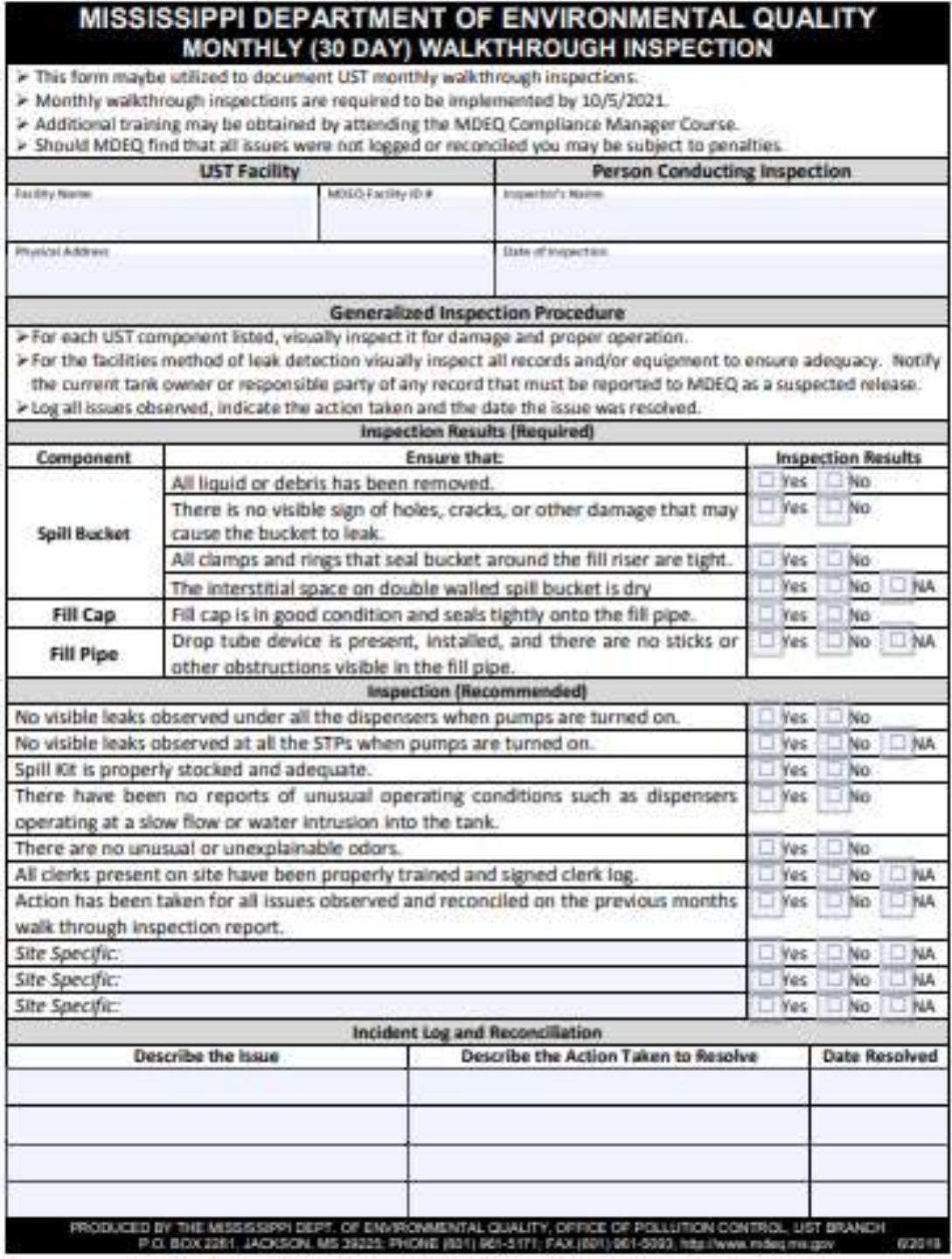
Required to:

- Inspect Spill buckets
- Fill Caps
- Drop tube Overfill Devices

Recommended section is advised but not required.

There is an annual version of this form you can use to reduce paperwork.

Walk-throughs can be done by tank owner or 3rd party



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
MONTHLY (30 DAY) WALKTHROUGH INSPECTION

- This form maybe utilized to document UST monthly walkthrough inspections.
- Monthly walkthrough inspections are required to be implemented by 10/5/2021.
- Additional training may be obtained by attending the MDEQ Compliance Manager Course.
- Should MDEQ find that all issues were not logged or reconciled you may be subject to penalties.

UST Facility		Person Conducting Inspection
Facility Name	MDEQ Facility ID #	Inspector's Name
Physical Address		Date of Inspection

Generalized Inspection Procedure

- For each UST component listed, visually inspect it for damage and proper operation.
- For the facilities method of leak detection visually inspect all records and/or equipment to ensure adequacy. Notify the current tank owner or responsible party of any record that must be reported to MDEQ as a suspected release.
- Log all issues observed, indicate the action taken and the date the issue was resolved.

Inspection Results (Required)

Component	Ensure that:	Inspection Results
Spill Bucket	All liquid or debris has been removed.	☐ Yes ☐ No
	There is no visible sign of holes, cracks, or other damage that may cause the bucket to leak.	☐ Yes ☐ No
	All clamps and rings that seal bucket around the fill riser are tight.	☐ Yes ☐ No
	The interstitial space on double walled spill bucket is dry	☐ Yes ☐ No ☐ NA
Fill Cap	Fill cap is in good condition and seals tightly onto the fill pipe.	☐ Yes ☐ No
Fill Pipe	Drop tube device is present, installed, and there are no sticks or other obstructions visible in the fill pipe.	☐ Yes ☐ No ☐ NA

Inspection (Recommended)

No visible leaks observed under all the dispensers when pumps are turned on.	☐ Yes ☐ No
No visible leaks observed at all the STPs when pumps are turned on.	☐ Yes ☐ No ☐ NA
Spill Kit is properly stocked and adequate.	☐ Yes ☐ No
There have been no reports of unusual operating conditions such as dispensers operating at a slow flow or water intrusion into the tank.	☐ Yes ☐ No
There are no unusual or unexplainable odors.	☐ Yes ☐ No
All clerks present on site have been properly trained and signed clerk log.	☐ Yes ☐ No ☐ NA
Action has been taken for all issues observed and reconciled on the previous months walk through inspection report.	☐ Yes ☐ No ☐ NA
Site Specific:	☐ Yes ☐ No ☐ NA
Site Specific:	☐ Yes ☐ No ☐ NA
Site Specific:	☐ Yes ☐ No ☐ NA

Incident Log and Reconciliation

Describe the Issue	Describe the Action Taken to Resolve	Date Resolved

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Why the recommendation DEQ?

Inspection (Recommended)	
No visible leaks observed under all the dispensers when pumps are turned on.	☐ Yes ☐ No
No visible leaks observed at all the STPs when pumps are turned on.	☐ Yes ☐ No ☐ NA
Spill Kit is properly stocked and adequate.	☐ Yes ☐ No
There have been no reports of unusual operating conditions such as dispensers operating at a slow flow or water intrusion into the tank.	☐ Yes ☐ No
There are no unusual or unexplainable odors.	☐ Yes ☐ No
All clerks present on site have been properly trained and signed clerk log.	☐ Yes ☐ No ☐ NA
Action has been taken for all issues observed and reconciled on the previous months walk through inspection report.	☐ Yes ☐ No ☐ NA
Site Specific:	☐ Yes ☐ No ☐ NA
Site Specific:	☐ Yes ☐ No ☐ NA
Site Specific:	☐ Yes ☐ No ☐ NA

MOST leaks found by MDEQ inspectors is done simply by opening stuff up to look.

Even if you don't do this monthly. It is good practice to do it as much as you are able to. Anything is better than nothing.

You WILL be surprised to see what you find & catch early on.

Monthly Walk-Through Inspection (Spill Buckets)

- You must document at least one visual inspection of the spill bucket monthly.
- What do you inspect for?
  - Water – must be removed / disposed of.
  - Fuel – must be removed / disposed of.
  - Integrity – must inspect bucket for holes, cracks, other indicators that bucket is not tight

Note: If integrity is questionable, contact your contractor to conduct integrity test.

Majority of all releases come from spill buckets.

Spill Bucket Integrity
(Signs of issues & Tips for inspection)

Fuel or Water Present

- Look for residual fuel ring.

(The larger the ring the faster the leak)

- Inspect for hole around the water and fuel line.

Spill Bucket Integrity
(Signs of issues & Tips for inspection)

No Fuel or Water Present

- Inspect gasket or seal in bottom of bucket.
- Inspect connection points where bucket is attached to the riser pipe.

More Tips

- Look at all abnormalities.
- Crack may be very small.
- Slow leaks can be detrimental to wells using monthly vapor monitoring for release detection.
- Remove product immediately when found in spill buckets.

Spill Bucket Integrity
(Double Walled Spill Buckets)

- Double walled spill buckets may be equipped with:
  - Gauge
  - Liquid indicator float
  - Electronic Sensors

Fill Caps

Verify that the cap is:

- In good condition.
- Seals tightly onto the tight fill adapter.
- That all seals or gaskets are present.

Tips:

If you can spin the cap it probably isn't liquid tight.

If you can spin the tight fill or if it's bent or crimped, that may be why fuel is routinely spilled in the bucket.

Monthly Walk-Through Inspections
(Overfill Prevention Devices)

- Must inspect for sticks or other obstructions in the fill pipe.
- Primarily applies to drop tube shut off devices.
- May be difficult to see
- You should not take a delivery until the stick is removed.
- Contractor should:
  - Remove stick
  - Remove overfill drop tube
  - Inspect for damage to drop tube.

Monthly Walk-through Inspections Pg. 2

Required to:

- Review of Leak Detection Records
- Log all issues and what was done to resolve them.

Seems dumb to have to ask…. But who really looks at these?

- Tank owner should be…..

Inspection of Leak Detection Equipment and Documents (Required)	Facility ID#:	
All Methods		**Inspection Results**
I reviewed all applicable reports, tests, or equipment related to leak detection at this facility.		☐ Yes ☐ No
I notified the current Tank Owner or Responsible Party in writing of any leak detection record that must be reported to MDEQ as a suspected release.		☐ Yes ☐ No ☐ NA
Method Used	**Ensure that:**	
Monitoring Wells	All necessary monitoring wells were checked and observations properly recorded.	☐ Yes ☐ No ☐ NA
Automatic Tank Gauging	The ATG is operating with no alarms or unusual operating conditions related to leak detection.	☐ Yes ☐ No ☐ NA
	0.2 gph leak tests indicate passing results.	☐ Yes ☐ No ☐ NA
	A passing 0.2 gph leak test was obtained (within 24 hrs) of all failing or inconclusive 0.2 gph leak tests.	☐ Yes ☐ No ☐ NA
Electronic Line Leak Detectors	The ATG is operating with no alarms or unusual operating conditions related to pipe leak detection	☐ Yes ☐ No ☐ NA
	All 0.2 gph pipe leak tests show passing results.	☐ Yes ☐ No ☐ NA
	A passing 0.2 gph leak test was obtained (within 24 hrs) of all failing/inconclusive 0.2 gph leak tests.	☐ Yes ☐ No ☐ NA
Visual Interstitial Monitoring	Report indicates that there is no liquid observed.	☐ Yes ☐ No ☐ NA
	All water observed has been removed.	☐ Yes ☐ No ☐ NA
	All fuel observed has been removed (Need to Report to MDEQ)	☐ Yes ☐ No ☐ NA
Electronic Interstitial Monitoring	Monthly sensor status report indicates all sensors are not in alarm and functioning properly.	☐ Yes ☐ No ☐ NA
	All alarms for the month have been reconciled and logged on the monthly Electronic Interstitial monitoring form.	☐ Yes ☐ No ☐ NA
	All water observed has been removed.	☐ Yes ☐ No ☐ NA
	All fuel observed has been removed (Need to Report to MDEQ)	☐ Yes ☐ No ☐ NA
Statistical Inventory Reconciliation	Tank checked for water, no water is present, and fuel levels are being properly recorded.	☐ Yes ☐ No ☐ NA
	Fuel levels were submitted to a 3rd party vendor for analysis.	☐ Yes ☐ No ☐ NA
	The previous month's record indicates passing results.	☐ Yes ☐ No ☐ NA
Other:		☐ Yes ☐ No ☐ NA

Additional Incident Log and Reconciliation

Describe the Issue	Describe the Action Taken to Resolve	Date Resolved

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What is Release Detection?

Release Detection (leak detection) includes the activities and equipment used to detect a leak from UST Systems.

- Tank owner will have at least 1 monthly leak detection record to keep…
- This section also goes over the annual tests required for the method and the monthly reports required.
- A UST system maybe capable of using multiple types of release detection.
- It is still important for you to know all that your system can do. Why?

Why do you need to know what your UST system can do?

- If the leak detection method that you are using malfunctions and you can't fix it in 30 days… (Ex: Lightening hits your ATG)
- What do you do?
  - Need alternative method if you have one.
  - If you don’t have anything you can use report to MDEQ.

- It can also help you rule out some suspected releases.

(Ex. ATG fails periodic test but the other type of leak detection indicates everything is good)

You are still responsible for reporting a suspected release, but it can give you some assurance that no release occurred.

- Consult with your certified UST contractor and / or MDEQ.

What can you use?

- If your tank or piping was installed after 10/1/08 then:
  - You can only switch from electronic interstitial monitoring to visual interstitial monitoring.
- If your tank or piping was installed prior to 10/1/08 then you may use any form (if applicable to your site).

Remember: These are only temporary fixes.

It allows you to do some form of leak detection versus having none.

Some methods may require additional equipment inspection if you continue to use the method for a prolonged period of time.

What other reasons would you be required to change leak detection methods?

These are MDEQ required changes:

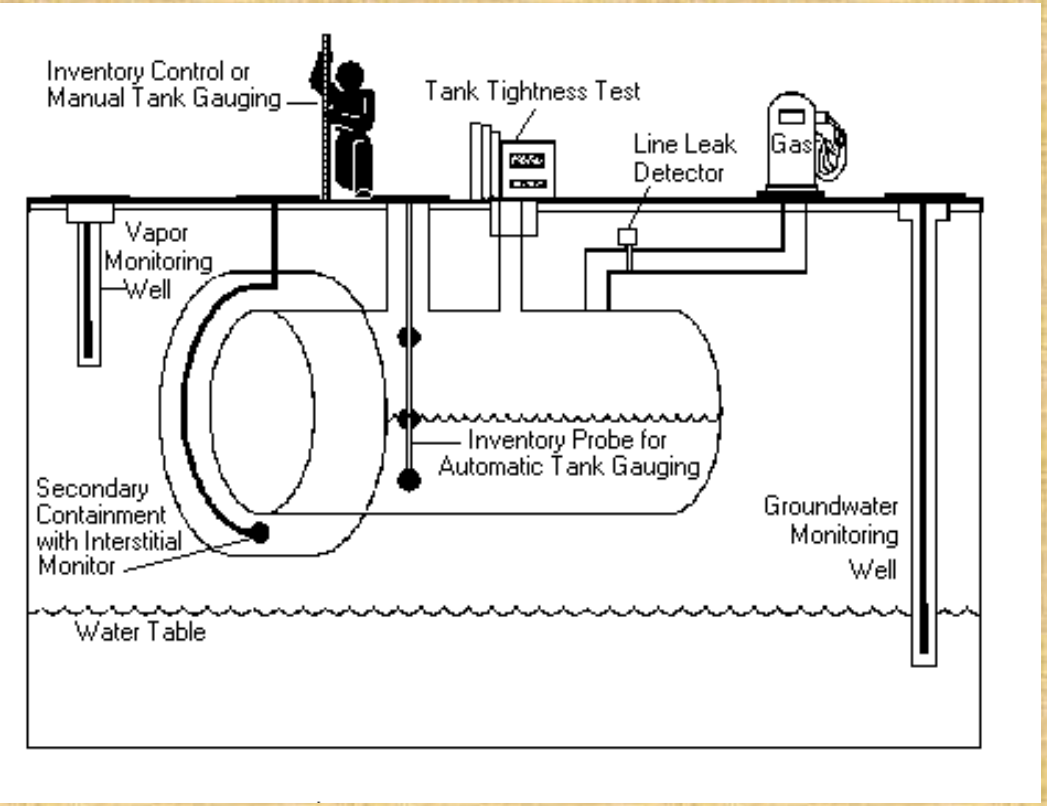
- Consistently high vapor readings in Monitoring wells.

  (Ex. Leak from spill bucket, dispenser, or STP)

- If the method of leak detection that you normally use doesn't work or isn't adequate.

Types of Release Detection

- Monitoring Wells
- Statistical Inventory Reconciliation
- Precision Tightness Testing (Piping)
- Automatic Tank Gauging
- Interstitial Monitoring
- Manual Tank Gauging



Which type can I use?

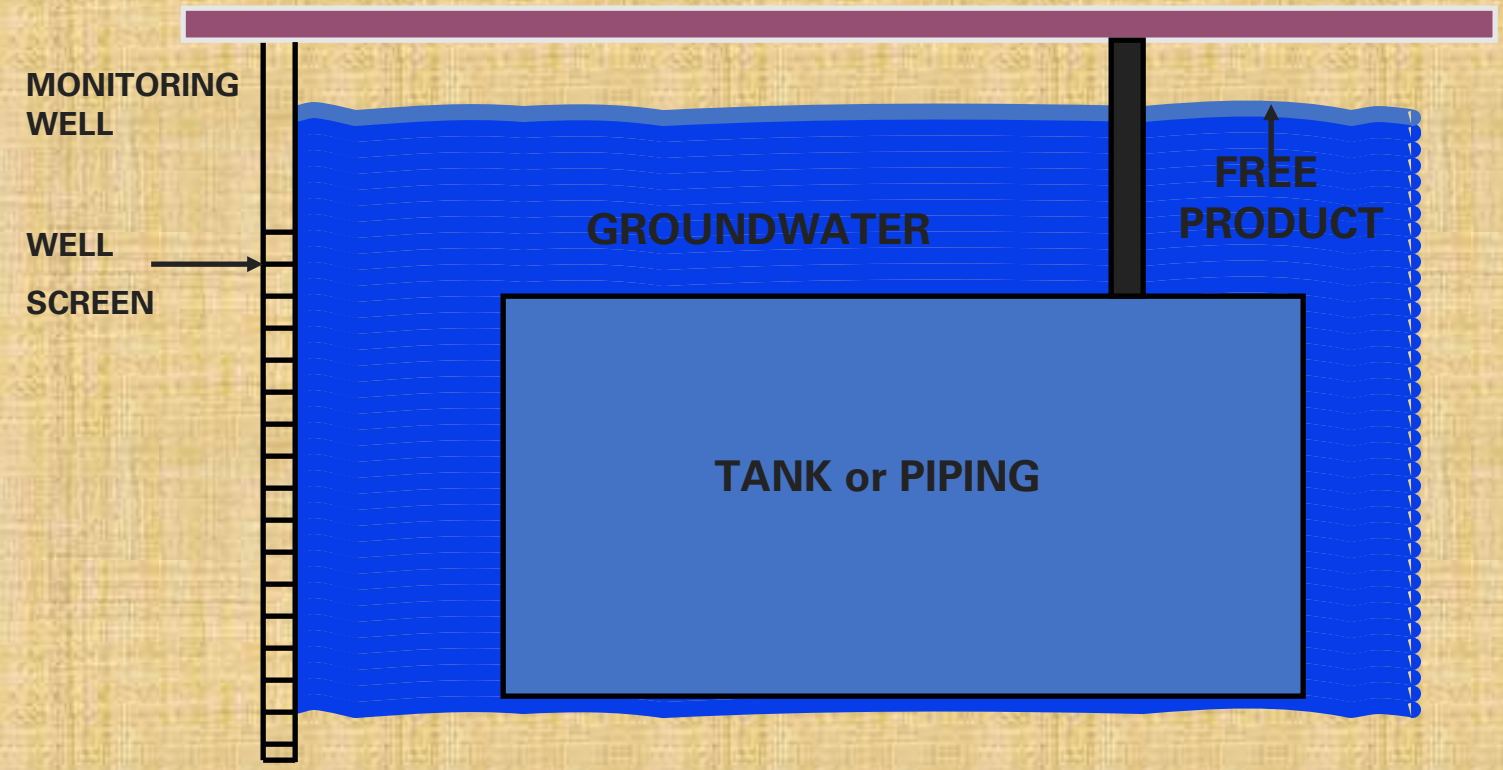
UST systems installed after October 1, 2008, must use **Interstitial Monitoring**.

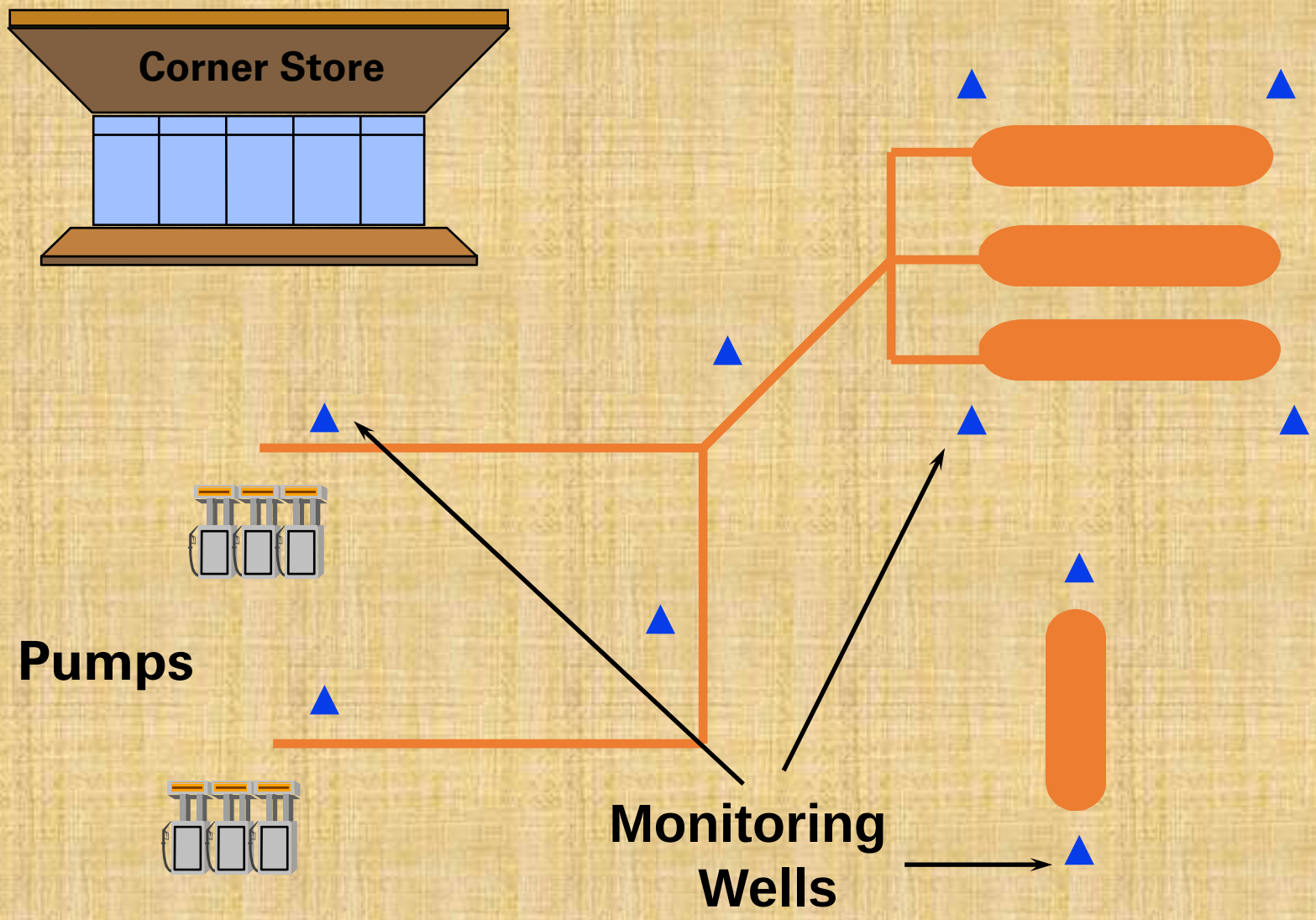
UST systems installed prior to October 1, 2008, may use any of the methods if it is capable of doing it.

Monitoring Wells

- Use for tanks or pipe leak detection.
- Are shallow wells around tanks or along piping.
- Must be monitored properly using bailer or vapor meter
- They require proper location and construction.
  - One foot below deepest tank or pipe
  - Spaced no more than 50 feet apart.
  - Have factory slotted casing.

MONITORING WELLS




Corner Store
Pumps
Monitoring
Wells

Monitoring Well Sampling

Groundwater
(6 inches or more water in the well)

Monitoring Well

Vapor Meter
(Less than 6 inches water in well)

TIP: Know the total depth of your well and compare that to the ground water level recorded on the form. 6 inches is the cutoff point between methods. That will let you know if the well was monitored properly.

What needs to be reported to MDEQ?

(Note: These are also stated on the monthly form)

- Groundwater Wells
  - If 1/8 inch of product or more is observed.
- Vapor Wells
  - Reportable amount depends on the type of product your trying to detect:
    - For Diesel or waste oil: 100 ppm vapors.
    - For Gasoline: 5,000 ppm vapors.
    - if vapor readings jump substantially from the previous month.

Ex: If Diesel tank is in the same tank bed as the gas tanks, then your reportable amount is 100 ppm for all wells in that tank bed.

Monthly Groundwater / Vapor Monitoring Form

- Reportable amounts are shown in Red on the form.
- You should NOT see the # of wells checked from month to month vary.

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
MONTHLY GROUNDWATER / VAPOR MONITORING

- This form may be utilized to document monthly monitoring of groundwater/vapor monitoring wells.
- Whenever the monitoring wells contain 6 inches or more of water, visually examine the water and record your observations under the "Groundwater" section at the bottom of this form.
- If the monitoring wells are dry or contain less than 6 inches of water, the wells must be checked with an instrument capable of detecting the product stored in the tanks and you must record your observations under the "Vapor" section of this form.

UST Facility			Person Conducting Monitoring	
Facility Name	MDEQ Facility ID #		Person's Name	
Physical Address			Company	
City	County	State: MS	City	State
UST Owner			Person's Signature	Date

Procedure for Checking Monitoring Wells

Groundwater Monitoring (Wells Contain > 6" Water)

1. Record in inches the approximate depth to the top of the water as measured from the top of the well casing.
2. Lower the bailer in the well until it is halfway submerged.
3. Raise the bailer and visually observe the water.
4. Note if there is any sheen of the stored product stored in the tank observed on top of the water in the bailer.
5. Note if there is a layer of the stored product observed on top of the water (measure and record the thickness of the product layer to the nearest 1/8 inch).
6. Report to MDEQ immediately (within 24 hours) anytime you observe a layer of stored product 1/8 inch or more on the water.

Vapor Monitoring (Wells Are Dry < 6" water)

1. Ensure the vapor monitoring instrument is calibrated in accordance with manufacturer's recommendations.
2. Obtain readings from lowest possible portion of the well.
3. Record the vapors in parts per million (ppm) hexane.
4. Record the vapor meter manufacturer, model number, and the date the vapor meter was last calibrated.
5. Record any conversion factor used to convert readings to ppm hexane (applies to PID meters only).
6. Report to MDEQ immediately (within 24 hours) anytime the vapor readings reach 100 ppm for diesel or 5,000 ppm for gasoline or increase substantially from the previous month. For tank pits or piping trenches containing both gas and diesel tanks or pipes the reportable amount is 100 ppm.

Monitoring Results for the Month of _____ **Year** _____

	Monitoring Well Number	1	2	3	4	5	6	7	8
GROUNDWATER	Measured depth to top of the water in the well (inches)								
	Is there any sheen of the stored product on the water?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
	Is there any layer of the stored product on the water?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
	If there is a layer of the stored product, how thick is it? (inches)								
VAPOR	Vapor reading (record in parts per million hexane)								
	Have the vapor readings substantially increased from the previous month?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
	Vapor Meter manufacturer and model number								
	Date Vapor Meter was last calibrated				Conversion factor (if used) to calculate ppm hexane				

Ground water / Vapor monitoring
(Annual Equipment Inspection)

New: All bailers and / or vapor meters used to monitor your site must be inspected annually.

Who does this?

- You - if you check your own wells.
- Contractor – if contractor checks your wells.
- For vapor meters a 3rd party vendor.

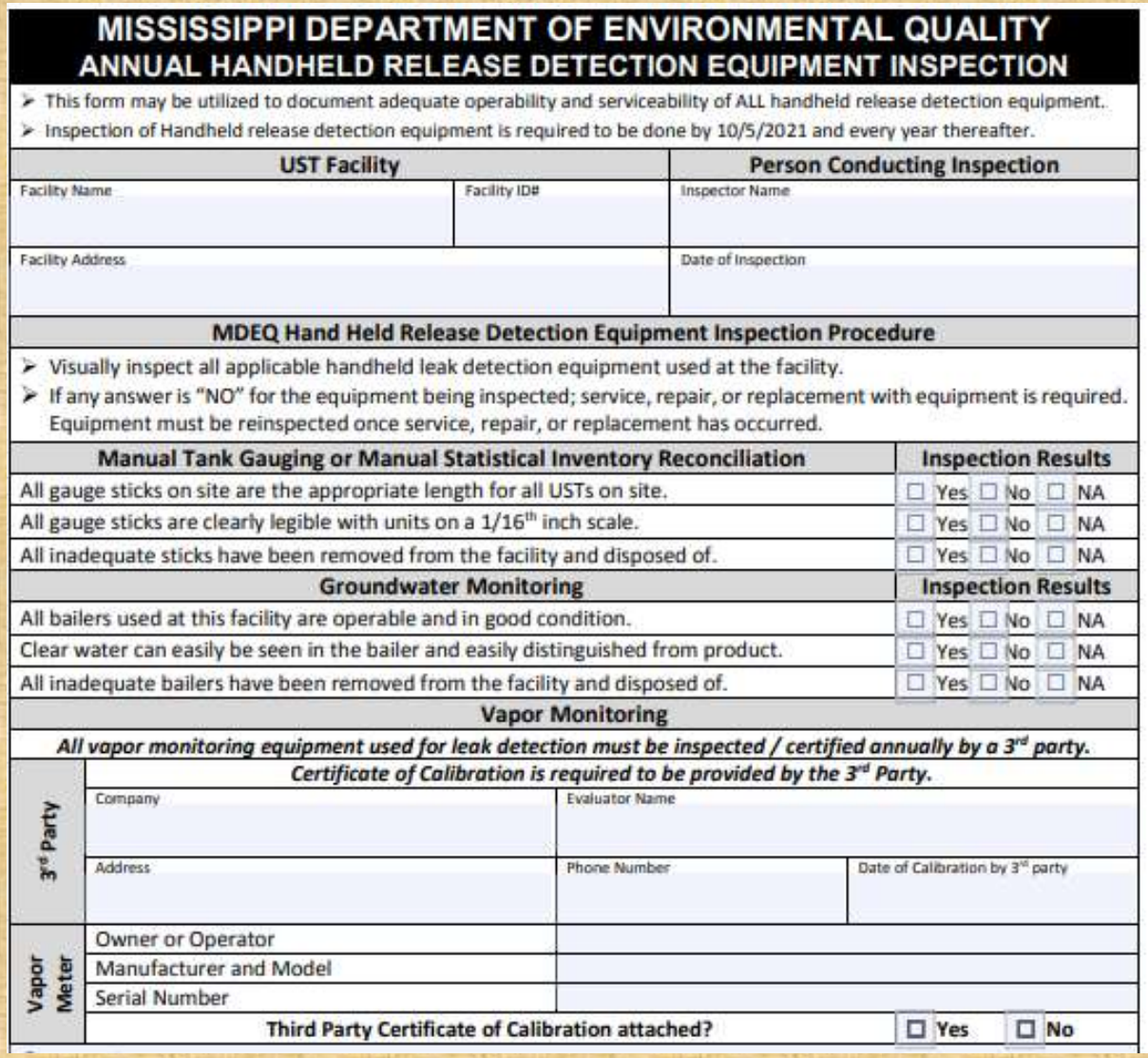
Seems unnecessary… but is it?

- Fresh fuel is very clear…. Can you see it?
- Gauge sticks wear…. Can you read it accurately?
- Vapor meters – frequently do not get calibrated properly..

Annual Handheld Leak Detection Equipment Inspection Form

Annual test for:

- Monitoring wells
- SIR – if gauge stick used
- Manual Tank gauging



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
ANNUAL HANDHELD RELEASE DETECTION EQUIPMENT INSPECTION

- This form may be utilized to document adequate operability and serviceability of ALL handheld release detection equipment.
- Inspection of Handheld release detection equipment is required to be done by 10/5/2021 and every year thereafter.

UST Facility		Person Conducting Inspection
Facility Name	Facility ID#	Inspector Name
Facility Address		Date of Inspection

MDEQ Hand Held Release Detection Equipment Inspection Procedure

- Visually inspect all applicable handheld leak detection equipment used at the facility.
- If any answer is "NO" for the equipment being inspected; service, repair, or replacement with equipment is required. Equipment must be reinspected once service, repair, or replacement has occurred.

Manual Tank Gauging or Manual Statistical Inventory Reconciliation	Inspection Results
All gauge sticks on site are the appropriate length for all USTs on site.	☐ Yes ☐ No ☐ NA
All gauge sticks are clearly legible with units on a 1/16th inch scale.	☐ Yes ☐ No ☐ NA
All inadequate sticks have been removed from the facility and disposed of.	☐ Yes ☐ No ☐ NA
Groundwater Monitoring	**Inspection Results**
All bailers used at this facility are operable and in good condition.	☐ Yes ☐ No ☐ NA
Clear water can easily be seen in the bailer and easily distinguished from product.	☐ Yes ☐ No ☐ NA
All inadequate bailers have been removed from the facility and disposed of.	☐ Yes ☐ No ☐ NA

Vapor Monitoring

All vapor monitoring equipment used for leak detection must be inspected / certified annually by a 3rd party.

3rd Party	***Certificate of Calibration is required to be provided by the 3rd Party.***		
	Company	Evaluator Name	
	Address	Phone Number	Date of Calibration by 3rd party
Vapor Meter	Owner or Operator		
	Manufacturer and Model		
	Serial Number		
	Third Party Certificate of Calibration attached?	☐ Yes	☐ No

Statistical Inventory Reconciliation

- Used for both tank and pipe leak detection.
- You must contract with an approved 3rd party SIR Vendor
- Inventory Records are:
  - Collected manually by you and sent to vendor
  - Or vendor can access your ATG and POS system to gather inventory information.
- The SIR Vendor analyzes your records and sends you a report each month
- The report will tell you the results are Pass, Fail, or Inconclusive

SIR Requirements

- Leak threshold of 0.1 gph
- Typically, 21 – 30 days readings.
- Accurate gauge stick readings.
- In some cases, equipment to be installed.
- Accurate tank size information.
- Accurate meters readings at the dispenser.
- Vendor's form must be in an MDEQ approved format.


STICKING

Annual tests needed:

- ATG inspection if used to collect data for vendor.
- Handheld leak detection equipment inspection if gauge stick used to collect data for vendor.

What needs to be reported to MDEQ?

- Must report any time you have a “fail” or two consecutive “inconclusive” results.
- Precision tank and line testing required when you get a “fail” or two consecutive “inconclusive” monthly tests.
- Keep monthly reports and annual summary of leak detection reports provided by SIR Vendor.

Precision Line Tightness Testing

- Annual Test.
- Only allowed to meet pipe leak detection requirement.

Must be:

- Done by a Certified Contractor
- Capable of detecting a 0.1 gph leak rate at 1 ½ times operating pressure

- Reporting Requirements:
  - A Failed Line Tightness Test must be reported to MDEQ within 24 hours.

Manual Tank Gauging

Allowed for tank leak detection only.

Tank must be:

- 2000 gallons or less
- Must be left out of use for up to 36 hours for testing
- Test performed weekly
- Averaged monthly
- Requires accurate gauge stick readings
- May require periodic tank tightness testing.

Annual tests needed:

- Handheld leak detection equipment inspection of gauge stick

MDEQ Manual Tank Gauge form

Mississippi Department of Environmental Quality
MANUAL TANK GAUGING RECORD

- This form maybe utilized to document manual tank gauging leak detection results.
- Test procedure maybe found under EPA publication 510-B-93-005.
- MDEQ modified weekly / monthly standards below for Pass / Fail criteria.

Facility Information			Test Information	
Facility ID #:	Facility Name:		Month	Year
Tank Identification	Tank Capacity	Tank Diameter	Person Completing Form	

Select tank size, test duration, and weekly / monthly standard in table below:

	Tank Size	Minimum Test Time	Weekly Standard (1 Test)	Monthly Standard (4 – Test Average)
☐	Up to 550 gallons	36 hours	10 gallons	5 gallons
☐	551 – 1,000 gallons *(when tank diameter is 64")*	44 hours	9 gallons	4 gallons
☐	551 – 1,000 gallons *(when tank diameter is 48")*	58 hours	12 gallons	6 gallons
☐	551 – 1,000 gallons *(requires periodic tank tightness testing)*	36 hours	10 gallons	5 gallons
☐	1,000 – 2,000 gallons *(requires periodic tank tightness testing)*	36 hours	13 gallons	7 gallons

General Instructions

- Gauge water and fuel levels to the nearest 1/8 inch.
- Utilize water finding paste to determine water level.
- Should water be present either before or after the test, documentation of water level is required. Water is subject to the same weekly / monthly standards shown in the table.
- For both fuel and water levels, compare your weekly readings and the monthly average of the 4 weekly readings with the standards shown in the table.
- If either the weekly or monthly standards have been exceeded for either fuel or water, the UST may be leaking and should be reported to MDEQ within 24 hours as a suspected release.
- Tank Tightness testing every 5 years as indicated.

Start Test	First Initial Stick Reading (inches)	Second Initial Stick Reading (inches)	Average Initial Reading (inches)	Initial Gallons (convert inches to gallons) [a]	End Test	First End Stick Reading (inches)	Second End Stick Reading (inches)	Average End Reading (inches)	End Gallons (convert inches to gallons) [b]	Change in Tank Volume In Gallons (+ / -) [a – b]	Tank Passes Test Mark One
Date:	Fuel	Fuel	Fuel	Fuel	Date:	Fuel	Fuel	Fuel	Fuel	Fuel	☐ Pass
Time: AM / PM	Water	Water	Water	Water	Time: AM / PM	Water	Water	Water	Water	Water	☐ Fail
Date:	Fuel	Fuel	Fuel	Fuel	Date:	Fuel	Fuel	Fuel	Fuel	Fuel	☐ Pass
Time: AM / PM	Water	Water	Water	Water	Time: AM / PM	Water	Water	Water	Water	Water	☐ Fail
Date:	Fuel	Fuel	Fuel	Fuel	Date:	Fuel	Fuel	Fuel	Fuel	Fuel	☐ Pass
Time: AM / PM	Water	Water	Water	Water	Time: AM / PM	Water	Water	Water	Water	Water	☐ Fail
Date:	Fuel	Fuel	Fuel	Fuel	Date:	Fuel	Fuel	Fuel	Fuel	Fuel	☐ Pass
Time: AM / PM	Water	Water	Water	Water	Time: AM / PM	Water	Water	Water	Water	Water	☐ Fail

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To see how close you are to the monthly standard, divide the sum of the 4 weekly readings by 4 and enter result here. Perform the calculation for both fuel and water.

Fuel		☐ Pass
Water		☐ Fail

Automatic Tank Gauging

ATG can:

- Tell you fuel levels
- Let you know when you need a delivery
- Perform leak tests if its programmed properly.

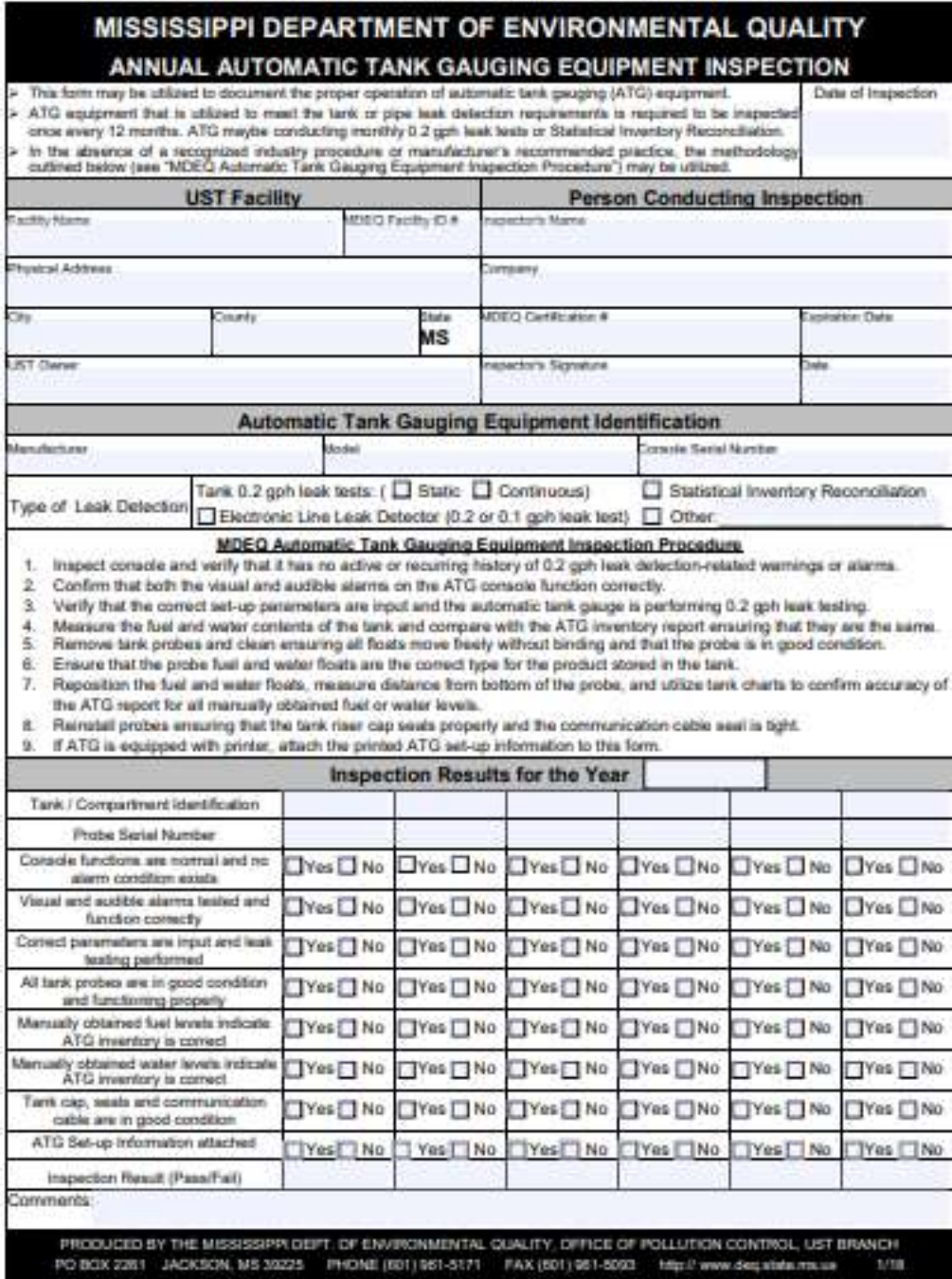
ATG for Leak Detection (Tanks)

- Performs 0.2 gph leak test at least every 30 days
- Must be programmed correctly
- ATG is inspected annually

ATG Annual Inspection form

Contractor should:

- Verify ATG programing.
- Remove the probe from the tank.
- Reconnect the probe.
- Move fuel & water floats on the probe to simulate alarms.
- Verify alarms sound at correct level.
- Should make audible and visual alarm on ATG. If it doesn't your contractor should fail it.



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

ANNUAL AUTOMATIC TANK GAUGING EQUIPMENT INSPECTION

- This form may be utilized to document the proper operation of automatic tank gauging (ATG) equipment.
- ATG equipment that is utilized to meet the tank or pipe leak detection requirements is required to be inspected once every 12 months. ATG maybe conducting monthly 0.2 gph leak tests or Statistical Inventory Reconciliation.
- In the absence of a recognized industry procedure or manufacturer's recommended practice, the methodology outlined below (see "MDEQ Automatic Tank Gauging Equipment Inspection Procedure") may be utilized.

Date of Inspection

UST Facility			Person Conducting Inspection	
Facility Name	MDEQ Facility ID #		Inspector's Name	
Physical Address			Company	
City	County	State: MS	MDEQ Certification #	Expiration Date
UST Owner			Inspector's Signature	Date

Automatic Tank Gauging Equipment Identification

Manufacturer	Model	Console Serial Number

Type of Leak Detection: Tank 0.2 gph leak tests: (☐ Static ☐ Continuous) ☐ Statistical Inventory Reconciliation ☐ Electronic Line Leak Detector (0.2 or 0.1 gph leak test) ☐ Other:

MDEQ Automatic Tank Gauging Equipment Inspection Procedure

1. Inspect console and verify that it has no active or recurring history of 0.2 gph leak detection-related warnings or alarms.
2. Confirm that both the visual and audible alarms on the ATG console function correctly.
3. Verify that the correct set-up parameters are input and the automatic tank gauge is performing 0.2 gph leak testing.
4. Measure the fuel and water contents of the tank and compare with the ATG inventory report ensuring that they are the same.
5. Remove tank probes and clean ensuring all floats move freely without binding and that the probe is in good condition.
6. Ensure that the probe fuel and water floats are the correct type for the product stored in the tank.
7. Reposition the fuel and water floats, measure distance from bottom of the probe, and utilize tank charts to confirm accuracy of the ATG report for all manually obtained fuel or water levels.
8. Reinstall probes ensuring that the tank riser cap seals properly and the communication cable seal is tight.
9. If ATG is equipped with printer, attach the printed ATG set-up information to this form.

Inspection Results for the Year ____

Tank / Compartment Identification						
Probe Serial Number						
Console functions are normal and no alarm condition exists	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No
Visual and audible alarms tested and function correctly	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No
Correct parameters are input and leak testing performed	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No
All tank probes are in good condition and functioning properly	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No
Manually obtained fuel levels indicate ATG inventory is correct	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No
Manually obtained water levels indicate ATG inventory is correct	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No
Tank cap, seals and communication cable are in good condition	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No
ATG Set-up Information attached	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No	☐Yes ☐ No
Inspection Result (Pass/Fail)						

Comments:

PRODUCED BY THE MISSISSIPPI DEPT. OF ENVIRONMENTAL QUALITY, OFFICE OF POLLUTION CONTROL, UST BRANCH
PO BOX 2261 JACKSON, MS 39225 PHONE (601) 961-5171 FAX (601) 961-5093 http:// www.deq.state.ms.us 1/18

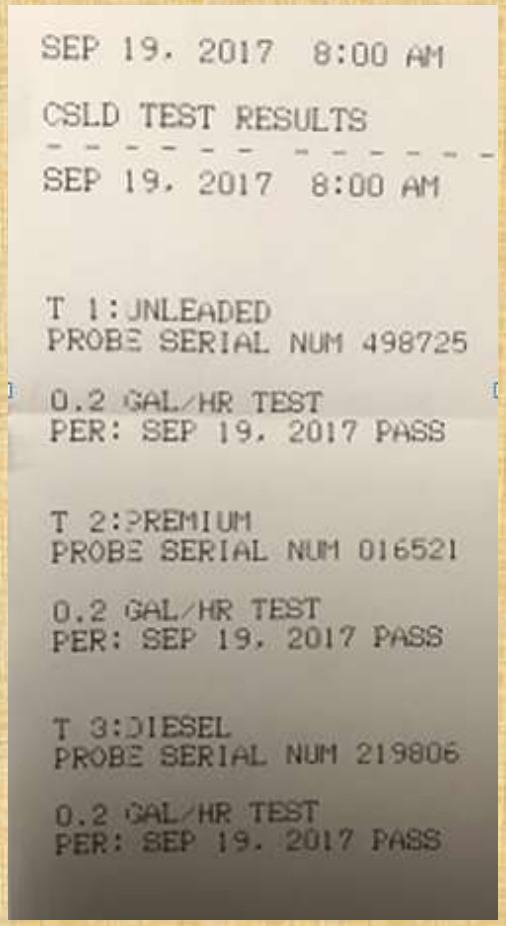
Automatic Tank Gauging

- Two ways to perform tank leak detection
  - Static leak test (2-6 hours)
    - Typically done at night time.
    - No dispensing or delivery during test.
    - More cut and dry pass or fail.
  - Continuous leak detection (20 + hours)
    - ATG collects data throughout the day.
    - Similar to static but at varying fuel levels.
    - Typically for facilities open 24 hours.
    - Many factors affect pass or fail.

Example of ATG report (Tanks)

- You must maintain record of at least 1 passing 0.2 gph test for each month.
- Required to have 1 passing test every 30 days.
- So if you exceed 30 days with no pass then it is reportable as suspected release.

- No form to document this test.
- Keep copies of the ATG tickets.


SEP 19. 2017 8:00 AM

CSLD TEST RESULTS

SEP 19. 2017 8:00 AM

T 1:UNLEADED
PROBE SERIAL NUM 498725

0.2 GAL/HR TEST
PER: SEP 19. 2017 PASS

T 2:PREMIUM
PROBE SERIAL NUM 016521

0.2 GAL/HR TEST
PER: SEP 19. 2017 PASS

T 3:DIESEL
PROBE SERIAL NUM 219806

0.2 GAL/HR TEST
PER: SEP 19. 2017 PASS

What should you do if it fails?

- You should monitor the results of every test that the ATG completes.
- Routine / frequent failures is a….. Sign
- Maybe programming. Maybe leak.

- It's entirely possible to have 28 failures a month and 1 passing result.
- Is that okay? Not at all.

- ATG should have very limited number of "false alarms".

- Call your contractor.
- Report unusual monthly ATG results or trends to MDEQ immediately.

Contractor should:

If you see a fail. Try to determine why.

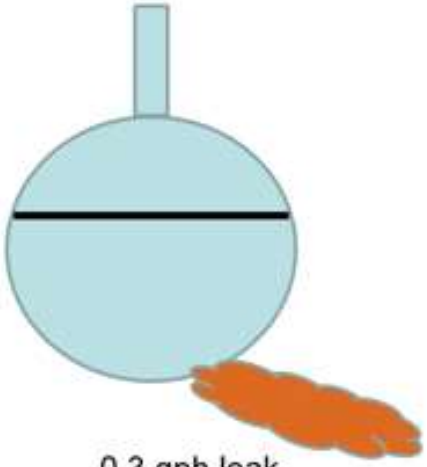
- Look at ATG inspection and see if “static test” or “continuous test”.
- You as an owner need to know this….
- Why does that matter?

- If your running Continuous Tests (20+ hours) It maybe necessary to shut down the tank and run a Static test (2-4 hours) to get a pass.

- A failure on static test should be reported immediately if a passing test cannot be achieved within 24 hours.

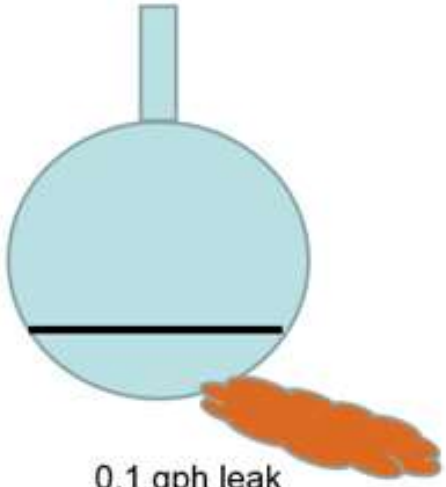
Why did you get a pass?

Higher Fuel Level – Faster Leak Rate



0.3 gph leak

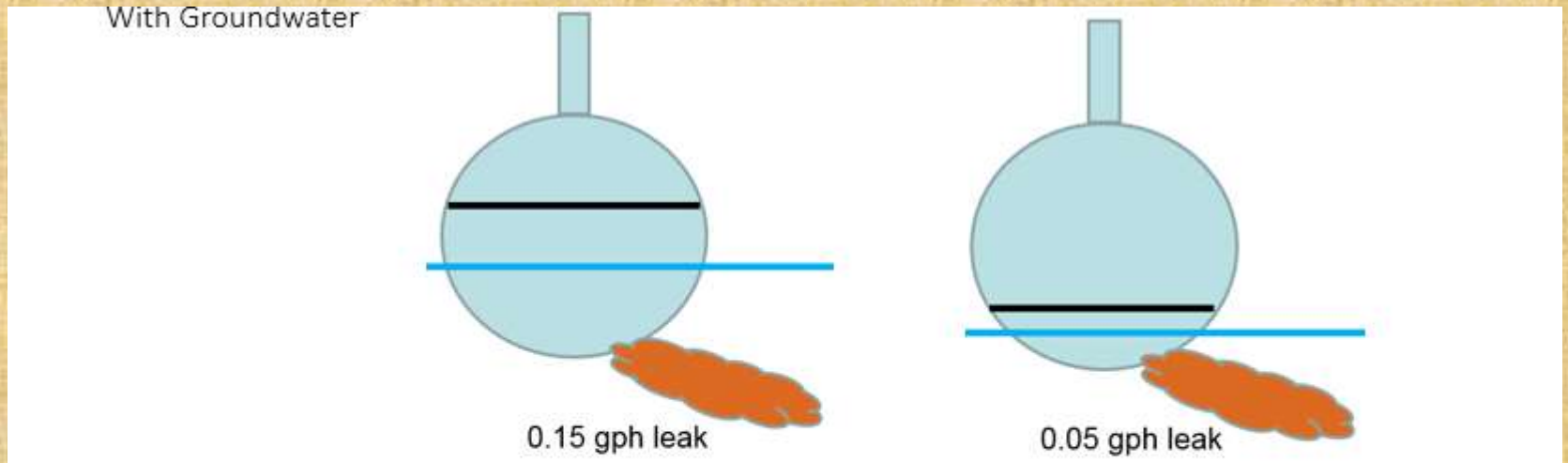
Lower Fuel Level – Slower Leak Rate



0.1 gph leak

- Same Size Hole. Different head pressures from fuel. Fuel levels fluctuate.
- That is why:
  - The Trends Matter
  - Where the fluid levels are when it fails matters.

How does groundwater contribute?



- With groundwater now you have pressure pushing back on the leak. Even slower leak rates.
- Fuel levels will fluctuate. Groundwater may or may not.
- That is why:
  - Trends matter. If you routinely have water show up at low fuel levels, you likely have an issue.
  - Routinely checking for water or phase separation matters.

The unaccounted-for factor……

- Entrained water.
- Gasoline can hold water without a change in volume.

- Meaning:

  Your tank can leak and the water it takes in off sets the leak.

Any sign of water in your tank is concerning.

- Phase Separation
- Traditional water in tank bottoms

Water observed may come and go with deliveries.

It is still a sign… you have a suspected leak.

Typical reasons an ATG may fail a 0.2 gph leak test?

- Not enough fuel in the tank.
- Temperature of fuel.
- Recent deliveries.
- Someone dispensed fuel when ATG was trying to run the test.
- High through-put fuel sales.
- Tank Manifold lines.
- A leak.
- Pressure decay vent caps not functioning properly.

ATG for Leak Detection (Piping)

- Must have Electronic Line Leak Detector Installed.
- ATG must be programed correctly.
- ATG uses electronic line leak detector to monitor pressure in the pipe.
- Can perform 0.2 gph or 0.1 gph leak tests.

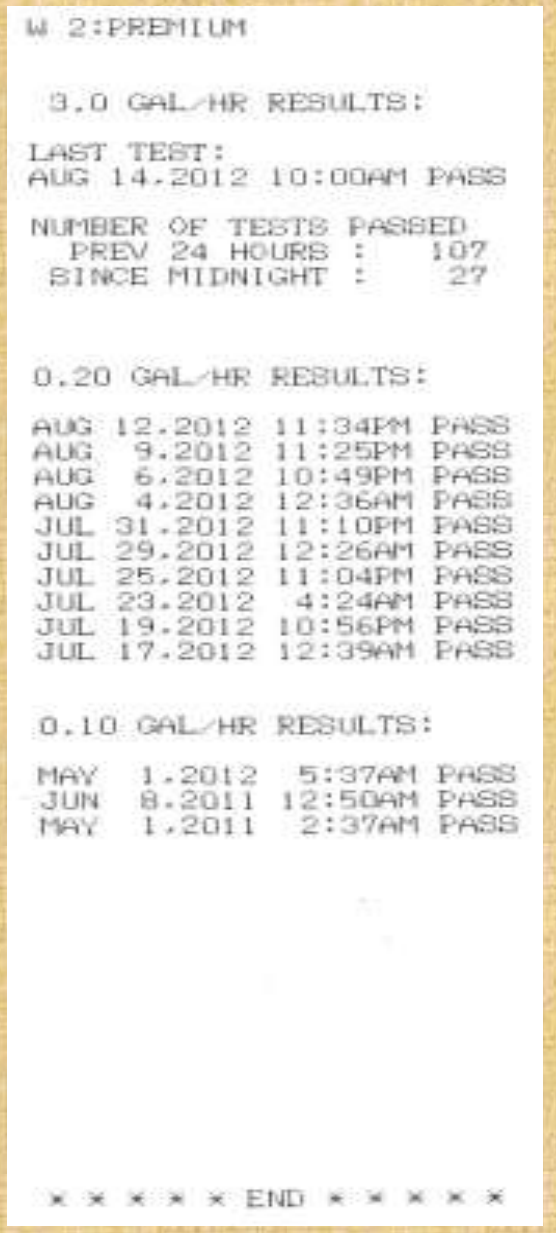
Annual tests needed:

- ATG inspection.
- Line leak detector test

Example of ATG report (Piping)

- You must maintain record of at least 1 passing 0.2 gph test for each month.
- For any test that fails or is inconclusive, the next test must be done within 24 hours with passing results.
- If passing results cannot be achieved in 24 hours it must be reported to MDEQ as a suspected release.

- Trouble shooting here would include opening all dispenser and manways to look for fuel leak.



```
W 2:PREMIUM

 3.0 GAL/HR RESULTS:

LAST TEST:
AUG 14,2012 10:00AM PASS

NUMBER OF TESTS PASSED
  PREV 24 HOURS :   107
 SINCE MIDNIGHT :    27


0.20 GAL/HR RESULTS:

AUG 12,2012 11:34PM PASS
AUG  9,2012 11:25PM PASS
AUG  6,2012 10:49PM PASS
AUG  4,2012 12:36AM PASS
JUL 31,2012 11:10PM PASS
JUL 29,2012 12:26AM PASS
JUL 25,2012 11:04PM PASS
JUL 23,2012  4:24AM PASS
JUL 19,2012 10:56PM PASS
JUL 17,2012 12:39AM PASS

0.10 GAL/HR RESULTS:

MAY  1,2012  5:37AM PASS
JUN  8,2011 12:50AM PASS
MAY  1,2011  2:37AM PASS

* * * * * END * * * * *
```

Interstitial Monitoring

Interstitial Monitoring must be used for:

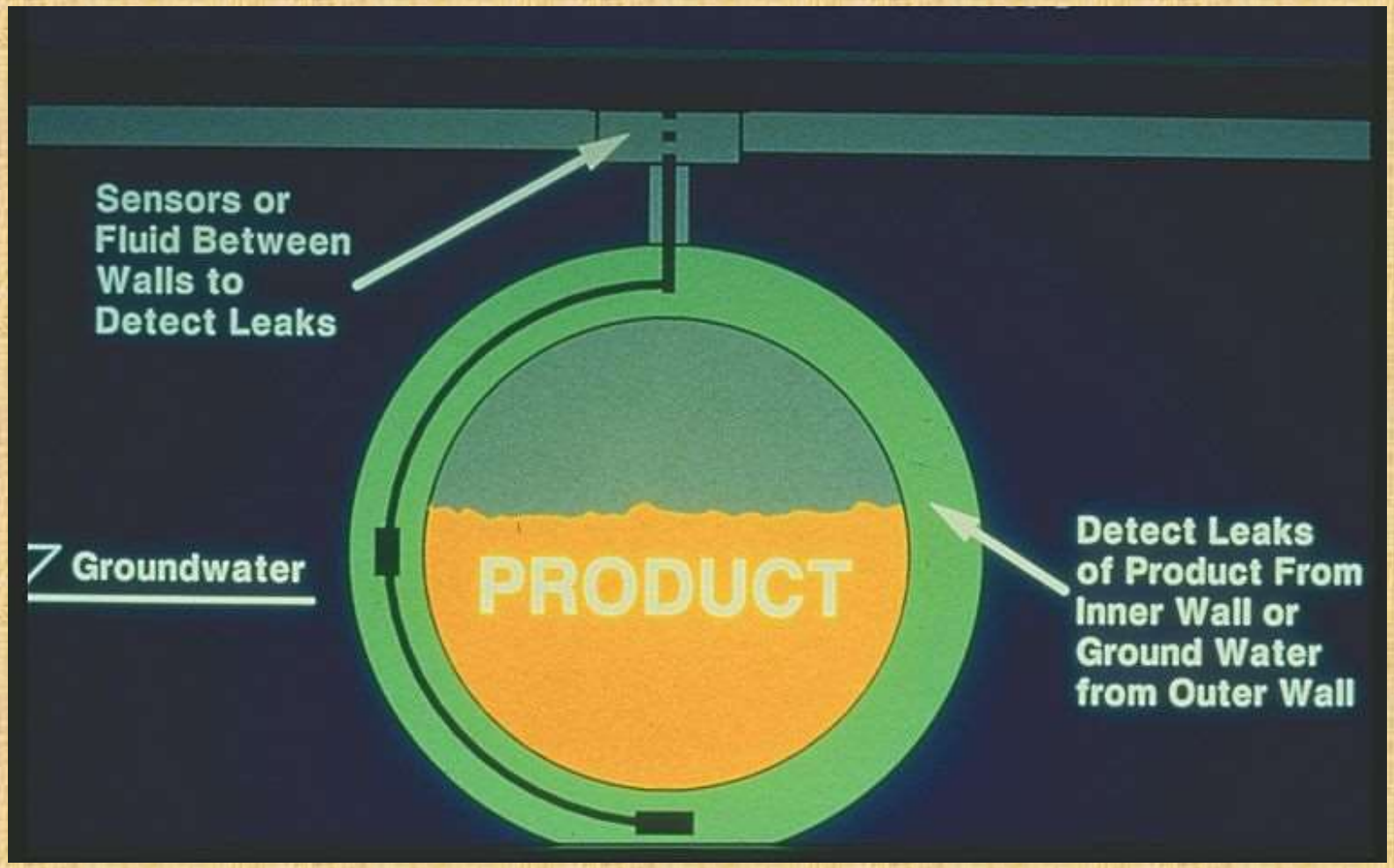
- All tanks or piping installed after 10/1/2008.
- All sumps installed after 10/1/08 when piping terminations are modified.

  (Commonly required when new STPs or Dispensers are installed.)

It can be also be used for leak detection for double walled tanks or piping installed before October 1, 2008

Interstitial Monitoring

Refers to monitoring of the space between two walls. Also known as the “Interstice” or “Interstitial Space”



Interstitial Monitoring

Two common types:

- Electronic sensors
  - Sensors installed in Interstitial space.
- Manual - visual inspection
  - Visual inspection of tank and / or piping interstitial space.

Electronic Sensors

Sensors must be installed properly.

- 1 inch from bottom of piping secondary containment sump.
- At the bottom of the tank interstice

Monthly reports:

- Print off Sensor Status
- Print off Alarm history
- Reconcile all alarms

Annual Tests required:

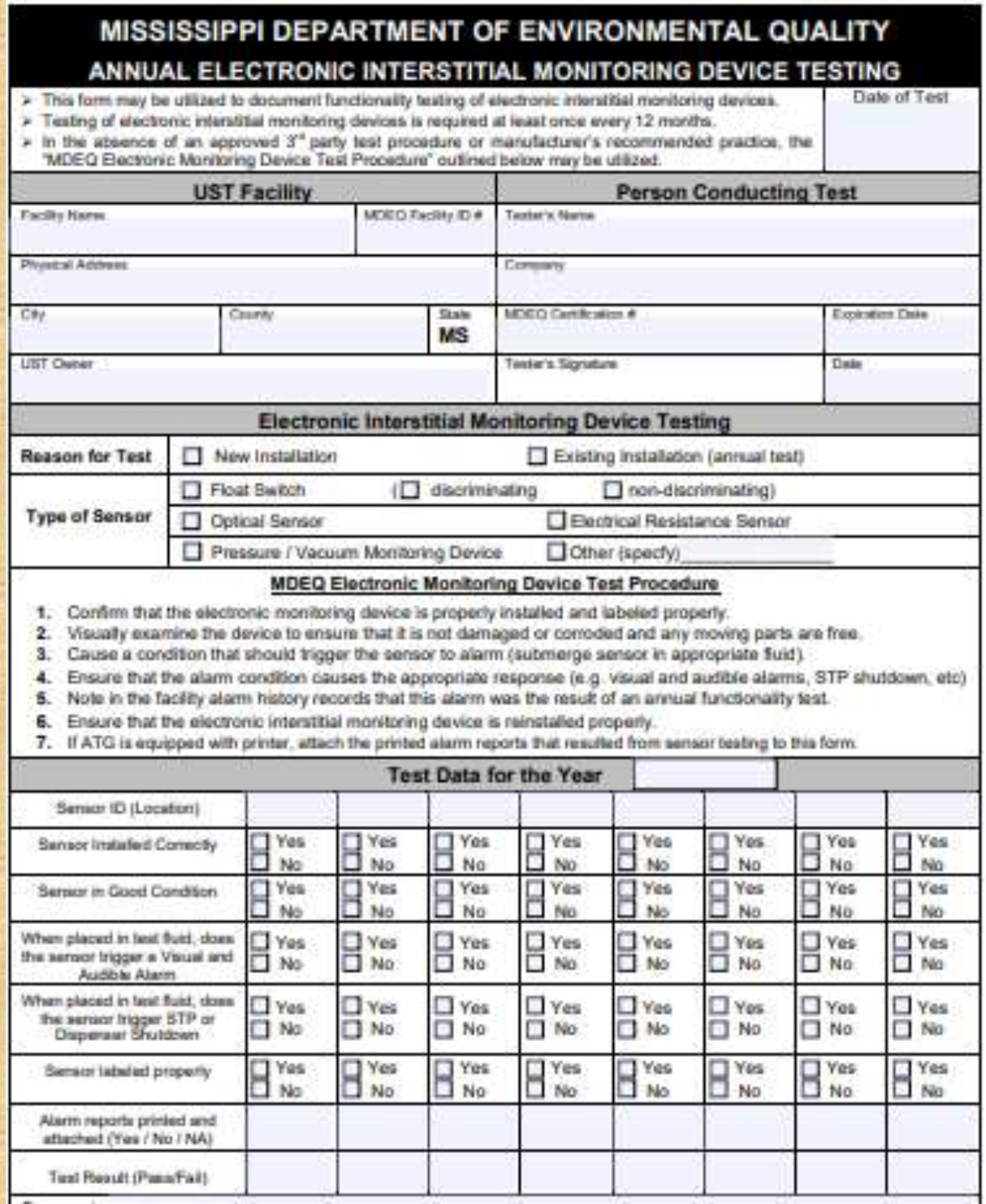
- Electronic IM Device testing

Annual Electronic Interstitial Device Test Form

- Contractor should trigger alarms on all sensors.
- You should see this on monthly alarm history printout.

If you do not, sensor either:

- Was not tested.
- Failed but not reported correctly.



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

ANNUAL ELECTRONIC INTERSTITIAL MONITORING DEVICE TESTING

- This form may be utilized to document functionality testing of electronic interstitial monitoring devices.
- Testing of electronic interstitial monitoring devices is required at least once every 12 months.
- In the absence of an approved 3rd party test procedure or manufacturer's recommended practice, the "MDEQ Electronic Monitoring Device Test Procedure" outlined below may be utilized.

Date of Test

UST Facility			Person Conducting Test	
Facility Name	MDEQ Facility ID #		Tester's Name	
Physical Address			Company	
City / County / State (MS)			MDEQ Certification #	Expiration Date
UST Owner			Tester's Signature	Date

Electronic Interstitial Monitoring Device Testing

Reason for Test	☐ New Installation	☐ Existing Installation (annual test)
Type of Sensor	☐ Float Switch	(☐ discriminating ☐ non-discriminating)
	☐ Optical Sensor	☐ Electrical Resistance Sensor
	☐ Pressure / Vacuum Monitoring Device	☐ Other (specify)_____

MDEQ Electronic Monitoring Device Test Procedure

1. Confirm that the electronic monitoring device is properly installed and labeled properly.
2. Visually examine the device to ensure that it is not damaged or corroded and any moving parts are free.
3. Cause a condition that should trigger the sensor to alarm (submerge sensor in appropriate fluid).
4. Ensure that the alarm condition causes the appropriate response (e.g. visual and audible alarms, STP shutdown, etc)
5. Note in the facility alarm history records that this alarm was the result of an annual functionality test.
6. Ensure that the electronic interstitial monitoring device is reinstalled properly.
7. If ATG is equipped with printer, attach the printed alarm reports that resulted from sensor testing to this form.

Test Data for the Year _____

Sensor ID (Location)								
Sensor Installed Correctly	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sensor in Good Condition	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
When placed in test fluid, does the sensor trigger a Visual and Audible Alarm	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
When placed in test fluid, does the sensor trigger STP or Dispenser Shutdown	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sensor labeled properly	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Alarm reports printed and attached (Yes / No / NA)								
Test Result (Pass/Fail)								

Electronic Interstitial Monthly Reports
Sensor Status Report

Print and keep 1 copy per month.

Only tells you if sensors are hooked up and what condition they are in.

Should have the same # of sensors monthly showing on report.

The labeling of sensors is checked during annual testing. If you notice it is not labeled right call your contractor.

If it's in alarm, go reconcile it.


AUG 31, 2017 1:37 PM

LIQUID STATUS

AUG 31, 2017 1:37 PM

L 1:DISP 1 2
SENSOR NORMAL

L 2:DISP 3 4
SENSOR NORMAL

L 3:DISP 5 6
SENSOR NORMAL

L 4:DISP 7 8
SENSOR NORMAL

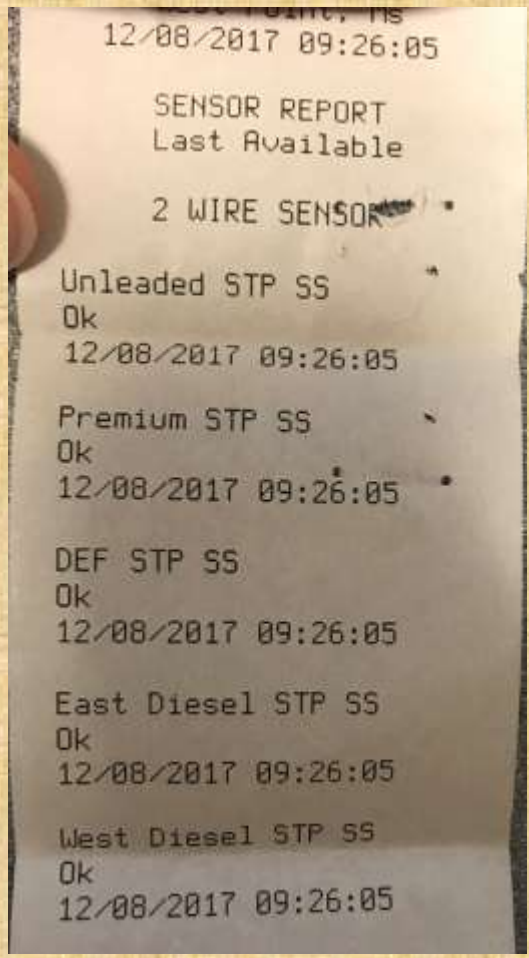
L 5:REG STP
SENSOR NORMAL

L 6:REG INTERRTITUAL
SENSOR NORMAL

L 7:PRE STP
SENSOR NORMAL

L 8:PRE INTERSTHTUAL
SENSOR NORMAL

* * * * * END * * * * *


12/08/2017 09:26:05

SENSOR REPORT
Last Available

2 WIRE SENSOR

Unleaded STP SS
Ok
12/08/2017 09:26:05

Premium STP SS
Ok
12/08/2017 09:26:05

DEF STP SS
Ok
12/08/2017 09:26:05

East Diesel STP SS
Ok
12/08/2017 09:26:05

West Diesel STP SS
Ok
12/08/2017 09:26:05

Electronic Interstitial Monthly Reports
Sensor Alarm History Report

Print and keep 1 copy per month for each sensor shown on status report.

- Alarms can come and go.
- Sensor status report won't catch everything.
- Should you see an alarm you still need to reconcile it.

- Should help you be sure you didn't miss an alarm.

- Helpful to verify contractor tested sensors.

What is meant by reconciliation?

- If your sensor goes into alarm you must:
  - Visually inspect the area where that sensor is located to see what triggered the alarm.
  - Do you see fuel or water?
    - Water – must be removed and disposed of properly.
    - Fuel – must be removed & reported to MDEQ as a suspected release.
    - Once removed, reinstall sensor properly, reset sensor.
- You must document what you saw and what you did to resolve it.
- If no one can physically check the sensor location in 24 hours it MUST be reported to MDEQ.

Sensor Monthly monitoring form

- Use form to document alarms. Keep copies of work orders or pump out activities.
- You still have to keep ATG print outs.
- Train your store clerks to watch for these alarms on ATG.
- Sensor must be installed at bottom.

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
MONTHLY ELECTRONIC INTERSTITIAL MONITORING

- This form may be utilized to document electronic interstitial monitoring of secondarily contained UST systems.
- Interstitial monitoring is required on all secondarily contained UST systems installed after October 1, 2008.
- You must maintain a monthly written record that electronic interstitial monitoring has been accomplished.

UST Facility			Person Conducting Monitoring	
Facility Name	MDEQ Facility ID #		Person's Name	
Physical Address			Company	
City	County	State MS	City	State
UST Owner			Person's Signature	Date

Electronic Interstitial Monitoring

UST System Components Electronically Monitored (check all that apply)
☐ Double-walled Tank ☐ Double-walled Pipe ☐ STP Sump ☐ Dispenser Sump ☐ Transition Sump

Interstitial Space (check all that apply)
☐ Atmospheric (dry) ☐ Hydrostatically Monitored (Brine Filled) ☐ Vacuum Monitored ☐ Pressure Monitored

Type of Electronic Device (check all that apply)
☐ Float Switch ☐ Optical ☐ Electrical Resistivity ☐ Other (specify)

MDEQ Electronic Interstitial Monitoring Procedure

1. Document that all sensors are connected to console and apparently functional in the appropriate space below. If your system is capable of producing a "sensor status" report you must attach a copy of the report or it's equivalent to this form.
2. Document all alarms that may have occurred during the month by completion of this form. If your system is capable of producing an "alarm history" report you must attach a copy of the report or it's equivalent to this form for the month.
3. Investigate and document the cause of the alarm including a measurement of the amount of water and/or fuel observed in inches if applicable. Take the appropriate action to resolve the alarm. Consult with your certified contractor if necessary. Attach a copy of all appropriate documentation to this report to show adequate reconciliation of all alarms for the month.

Any unusual operating conditions or suspected releases discovered must be reported to MDEQ within 24 hours of discovery.

Monitoring Results for the Month of				Year						
Electronic Sensor ID (Location)										
Component Monitored: Tank / Pipe / Sump										
Sensors are connected to control panel and working?	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
Have there been any alarms for this month? If yes, complete alarm log.	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N

ALARM LOG	Sensor ID	Date of Alarm	Cause of Alarm	Date Resolved	Describe action taken to resolve

Sensor Placement

If you check your own sensor alarms remember:

<u>Sensor should be:</u>

- Straight up and down.
- No more than 1 inch from bottom of sump

Picture is an example of how it should NOT be.

Visual Interstitial Monitoring

Tanks

- Manually stick the access port of a steel tank using a gauge stick.
- For fiberglass tanks an MDEQ approved procedure must be used.

Piping

- Visually inspect ALL containment sumps

What are you looking for?

- Water
  - Must measure and document the amount.
  - Must remove and properly dispose of water.
  - Keep good records of water removal / disposal.
- Fuel
  - Must measure and document the amount.
  - Visually inspect for a leak or source of the fuel.
  - Must be reported to MDEQ as a suspected release.

Example of Water Versus Product

Water

When in doubt use water finding paste, absorbent pads, or other method to determine if it's fuel or water or both.

Fuel

Call your contractor to assist. Removal of fuel is extremely dangerous without the proper equipment.

Visual Monthly Monitoring Form

- Document what you see here.
- You should see the same # of columns filled out monthly.
- Water must be removed.
- Question on form asks if water was removed.

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
MONTHLY VISUAL INTERSTITIAL MONITORING

- This form may be utilized to document visual interstitial monitoring of secondarily contained UST systems.
- Interstitial monitoring is required on all secondarily contained UST systems installed after October 1, 2008.
- You must maintain a written record that monthly interstitial monitoring has been accomplished.
- If the interstice is monitored electronically, complete the form for "Electronic Interstitial Monitoring."

UST Facility			Person Conducting Monitoring	
Facility Name	MDEQ Facility ID #		Person's Name	
Physical Address			Company	
City	County	State MS	City	State
UST Owner			Person's Signature	Date

Visual Interstitial Monitoring

UST System Components Visually Monitored (check all that apply)

☐ Double-walled Tank ☐ Double-walled Pipe ☐ STP Sump ☐ Dispenser Sump ☐ Transition Sump

Interstitial Space:

☐ Atmospheric ☐ Hydrostatically Monitored (Brine Filled) ☐ Vacuum Monitored ☐ Pressure Monitored

MDEQ Visual Interstitial Monitoring Procedure

Atmospheric *(Dry Interstice)*	Hydrostatic *(Brine Filled)*	Vacuum / Pressure
1. Record whether interstice is dry or wet. 2. If wet, note whether fluid is water or fuel or both. 3. Note amount of water / fuel in inches. 4. Remove all fluids from interstice.	1. Record fluid level in inches. 2. Note whether or not present fluid level is within acceptable range. 3. Specify acceptable brine range.	1. Record vacuum / pressure gauge reading. 2. Note whether or not present gauge reading is within acceptable range. 3. Specify acceptable range.

Monitoring Results for the Month of _____ **Year** _____

Interstitial Space ID (product stored or dispenser number)								
Component Monitored: Tank / Sump								
Atmospheric: Condition of interstice (Dry / Wet)	D / W	D / W	D / W	D / W	D / W	D / W	D / W	D / W
Atmospheric: If wet – Is fluid Water, Fuel or Both?	W / F	W / F	W / F	W / F	W / F	W / F	W / F	W / F
Atmospheric: If wet - Amount of fluid in inches								
Atmospheric: All fluids Removed during inspection?	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
Atmospheric: Active Fuel Leaks Observed?	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
Hydro: Fluid level in inches								
Hydro: Is fluid level within allowed range?	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
Hydro: Specify Brine Range:								
Vacuum: Gauge reading								
Vacuum: Is gauge reading within allowed range?	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
Vacuum: Specify Range:								

What other testing is required for interstitial monitoring?
Piping Containment Sumps

New double-walled piping requires a containment sump at each end. These sumps are usually

- At the submerged pump
- At the dispenser island
- Where pipe transitions from old to new.

Any sump installed after 10/1/2008 *(even if pipe is single walled)* must use interstitial monitoring for leak detection and falls in this category

- New dispensers added with piping modified.
- Replacement of flex connectors or shear valves
- Replacement of existing sumps
- Replacement of STPs.

Containment Sumps

- Are not made to routinely hold product.
- Product / vapors can damage the sumps integrity.
- All product should be removed when found.

Annual Containment Sump Inspections

- All containment sumps used for interstitial monitoring must be inspected annually.
- Inspected for:
  - Cracks, holes, or other defects in:
    - The sump.
    - The pipe sump penetration fittings.
    - The conduit sump penetration fittings.
  - Consistent water intrusion issues.

Sump Integrity Issues

Consistent water intrusion is a sign of an issue.

Annual Sump inspection Form

A failure on this form triggers need for:

- Repair
- Sump Integrity test
- Perhaps Both

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

ANNUAL CONTAINMENT SUMP INSPECTION

- This form may be utilized to document the inspection of containment sumps.
- Inspection of containment sumps is required once every 12 months.
- In the absence of a recognized industry procedure or manufacturer's recommended practice, the inspection methodology outlined below (see "MDEQ Containment Sump Inspection Procedure") may be utilized.

Date of Inspection:

UST Facility			Person Conducting Inspection	
Facility Name	MDEQ Facility ID #		Inspector's Name	
Physical Address			Company	
City	County	State: MS	MDEQ Certification #	Expiration Date
UST Owner			Inspector's Signature	

Containment Sump Inspection

Sump Material of Construction: ☐ Fiberglass Reinforced Plastic ☐ Thermoplastic ☐ Steel ☐ Other: _____

MDEQ Containment Sump Inspection Procedure

1. Clean-out and properly dispose of all debris, soil and/or fluids from the containment sump.
2. Visually examine the containment sump to ensure there are no cracks, holes, deteriorated seals, deformation or other indications that the sump is not liquid tight.
3. If the sump appears to be liquid tight and no water was in the sump, the inspection result is **"PASS"**.
4. If the sump appears to be liquid tight but water was present within the sump, the inspection result is **"FAIL"** and integrity testing is required in accordance with MDEQ requirements.
5. If there is visual evidence that the sump is not liquid tight, then repair or replacement (see note below) of the sump is required and integrity testing must be conducted afterward in accordance with MDEQ requirements.

Note: MDEQ certification as a UST installer is required to repair or install containment sumps

Inspection Results for the Year _____

Sump ID (product stored for STP or dispenser number)								
Sump lid/gasket in good condition (yes/no)	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
Sump is dry (yes/no)	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
If NO, how much water is present (inches)								
All penetration fittings in good condition (yes/no)	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
Sump walls/bottom in good condition (yes/no)	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
Are there any leaks from pipe components (yes/no)	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
Inspection Result (Pass/Fail)	P / F	P / F	P / F	P / F	P / F	P / F	P / F	P / F

Containment Sump Integrity Testing

- All secondary containment sumps used for Interstitial monitoring must be Integrity tested by October 5, 2021 and every 3 years thereafter.

- Also required when:
  - Sump fails annual inspection.
  - After any repair is made to the sump.
  - If a release of fuel is suspected from the sump
    - If you see fuel in the sump from monthly monitoring activities.

Containment Sump Integrity Test Form

- Contractor isolates sump from pipe interstice.
- Fills sumps with water.
- Watches for loss.

- **For cases where it is a leak investigation:**

NO repair or modifications should be made prior to testing.

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

CONTAINMENT SUMP INTEGRITY TESTING

- This form may be utilized to document integrity testing of containment sumps.
- Testing of all containment sumps is required at installation, at least once every 3 years thereafter and after any annual inspection fails or any repair or modification is made that may affect the sumps integrity.
- In the absence of an approved 3rd party test procedure or manufacturer's recommended practice, the test method outlined below in the "MDEQ Hydrostatic Test Procedure" section may be utilized.

Date of Test

UST Facility			Person Conducting Test	
Facility Name	MDEQ Facility ID #		Tester's Name	
Physical Address			Company	
City	County	State: MS	MDEQ Certification #	Expiration Date
UST Owner			Tester's Signature	Date

Containment Sump Testing

Reason for Test	☐ New Installation ☐ Routine 3 yr Test ☐ Repair / modification ☐ Release Investigation
Type of Test	☐ Hydrostatic (Complete "Test Data" table below)
	☐ Vacuum (Attach test equipment manufacturer's data sheet/test protocol to this form)
	☐ Other (Specify)

MDEQ Hydrostatic Test Procedure

1. Remove and properly dispose of any liquid or debris (leaves, sediment, filters, trash) in the containment sump.
2. Examine all penetration fittings, conduits, junction boxes, caps or risers, and sump seams for defects, damage or water intrusion. If possible, these issues should be repaired or replaced before continuing the test.
3. Secondary piping test boots or fittings should be temporarily sealed to test the sump integrity. Remove sump sensors.
4. Document the height of the highest sump penetration fitting or sump seam as measured from the bottom of the sump.
5. Fill sump with water to a level at least four inches above the highest penetration fitting or seam (e.g. two piece sumps). Verify that the water level appears to be four inches higher or lower than the groundwater level. Let water settle for at least 15 minutes to allow water to reach ambient temperature.
6. Document the initial water level measurement as measured from the bottom of the sump to the nearest 1/16th inch.
7. Leave the sump undisturbed for at least one hour then compare the starting fluid level to the ending fluid level.
8. If the water level is the same or it has changed by 1/8th inch or less the sump passes the test.
   Note: A leak less than 1/8th of an inch is still critical for tests performed as part of a release investigation; fluid level readings should be taken very carefully.
9. Remove and properly dispose of all water at the conclusion of testing.
10. Unseal all secondary piping test boots or fittings. Reinstall and secure all electronic sump sensors.

Test Data

Sump ID (product stored for STP or dispenser number)								
Highest penetration fitting or sump seam (inches)								
Test Start Time								
Test End Time								
Initial Water Level (inches)								
Final Water Level (inches)								
Test Result (Pass/Fail)								

My sump passed… but I'm still getting water in monthly

- It is better to recognize this before install ever occurs and have installer modify plan.
- Haul in dirt.
  - Change grade of building.
  - Change grade of tank pad.
- Put more slope on the concrete.
- It's better to get it on the front end than deal with the headache later.

- If it is already installed, what do you do?

There are options…. Do they work?

- Tank Mats
- Replacement lids
- Retrofit lids

Talk to your contractor.

Remember… it won't be perfect.

If you never see water in your sumps, be thankful…

But if you do….

Do all that you can to control the amount of water you see monthly.

What else is there?

- **If your piping:**
  - Does not slope to a sump
  - Has known low spots typical with some piping cross overs.
- **3 year pipe secondary integrity test is required.**
- Consult with your certified contractor to determine if this test is needed or not.
- It is recommended that you avoid the above in initial construction projects.

Piping Secondary Integrity Test

- Contractor closes test boots or fittings on pipe interstice
- Applies air
- Watches for loss of pressure.
- Opens the test boots or fittings to original state.
  - Allowing for leak detection in sumps.

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Piping Secondary Containment Integrity Testing

- This form may be utilized to document integrity testing of Secondary Containment Piping.
- Testing of secondary containment pipes installed after 10/1/08 is required at installation, after any repair or modification to an existing secondary pipe (installed after 10/1/08) that may affect its integrity, and anytime a sump inspection indicates a suspected release such as water intrusion from the secondary pipe into the containment sump or when product is seen passing through the secondary containment piping.
- Testing procedure including test pressures should follow the pipe manufacturer's specifications or an approved 3rd party test procedure taking into account MDEQ requirements for testing listed under "MDEQ Pipe Secondary Containment Test Requirements" below.

UST Facility			Person Conducting Test	
Facility Name	MDEQ Facility ID #		Tester's Name	
Physical Address			Company	
City	County	State MS	MDEQ Certification #	Expiration Date
UST Owner			Tester's Signature	

Pipe Secondary Containment Testing			
Reason for Test	☐ New Installation ☐ Existing Installation ☐ Release Investigation		
Piping Construction	☐ Rigid ☐ Semi-Rigid ☐ Flexible ☐ Other: _____		
Pipe Manufacturer		**Pipe Model**	
Gauge Range		**Gauge Units**	☐ psig ☐ inHG ☐ Other: _____

MDEQ Pipe Secondary Containment Test Requirements

1. Test duration should be a minimum of 1 hour.
2. Gauge range should not exceed 2.5 times the test pressure and gauge readings should be in 0.5 increments.
3. Pressure should be applied at one end of the piping being tested. A secondary gauge maybe necessary to install at this end of the pipe run to prevent damage from over pressurizing the pipe secondary. If gauge is installed at this end of the pipe run, it should NOT be used to obtain the integrity test data below.
4. The gauge should be installed and monitored at the opposite end to obtain integrity test data below.
5. Piping should be restored to its normal operating condition. (Open to secondary containment sumps.)

Integrity Test Data						
Product Stored						
Pressure applied at:						
Pressure gauged at:						
Test Date (s)						
Begin Test Time						
End Test Time						
Initial Reading						
Final Reading						
Test Result (Pass / Fail)						

When should leak detection be monitored?

A minimum of every 30 days for:

Monitoring Wells

Automatic Tank Gauging

Interstitial Monitoring

Manual Tank Gauging

SIR

Note: The only exception is the annual line tightness test for piping.

Recap of Testing Required….
By leak detection method used

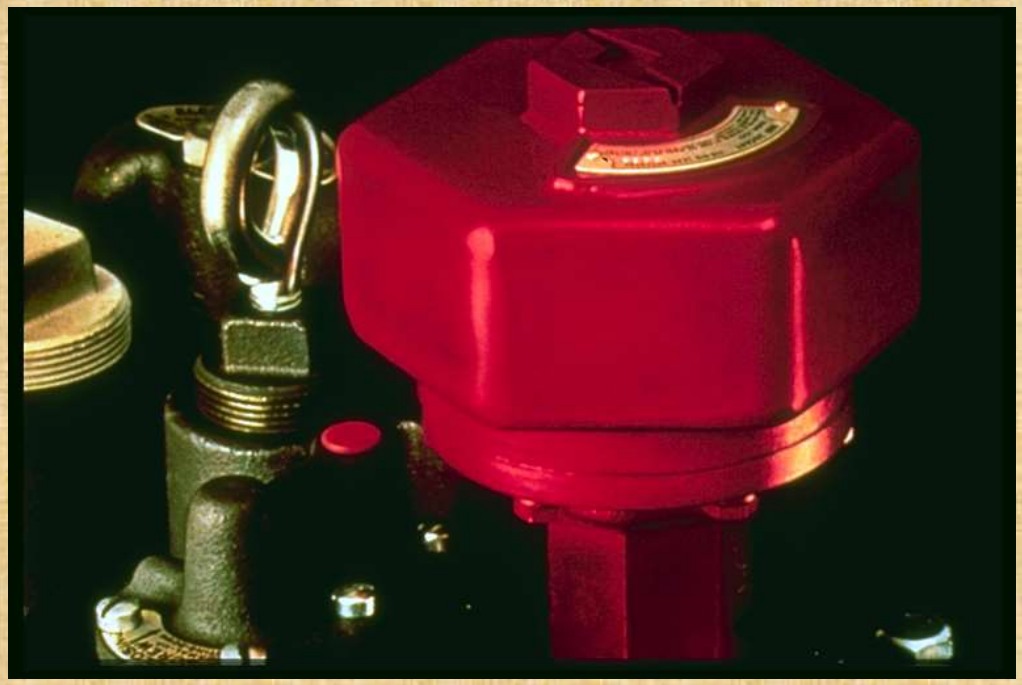
- Monitoring wells – Annual Handheld leak detection equipment inspection
- Automatic Tank Gauging (tanks) – ATG inspection
- Automatic Tank Gauging (piping electronic leak detectors) – ATG inspection
- Manual Tank Gauging - Annual Handheld leak detection equipment inspection
- Line Tightness test (piping only) – Manufacturer's form.
- Statistical Inventory Reconciliation (also applies to CITLDS)
  - ATG to collect data – ATG inspection
  - Gauge Stick to collect data - Annual Handheld leak detection equipment inspection
- Interstitial Monitoring
  - Annual Sump Inspection
  - 3 year containment sump integrity test
  - Annual Sensor Test

Recap of monthly records needed… by leak detection method.

- Monitoring Wells – MDEQ monthly monitoring well form
- Automatic Tank Gauging (tanks) – 1 passing 0.2 gph periodic test per month
- Automatic Tank Gauging (piping with electronic line leak detectors) – 1 passing 0.2 gph test per month OR 1 passing 0.1 gph leak test per year
- Manual Tank gauging – MDEQ manual tank gauging form.
- Statistical Inventory Reconciliation – 3rd party vendor report form
- Interstitial monitoring (Sensors)
  - Sensor Status report
  - Sensor Alarm History report
  - MDEQ Reconciliation form for all alarms
  - Document how you disposed of water…
- Interstitial monitoring (visual)
  - MDEQ Monthly visual interstitial monitoring form
  - Document how you disposed of water…

Let us Discuss Piping… it is special.

- Pressurized versus suction piping
- Automatic line leak detectors
- Shear Valves



2 types of Piping

Pressurized

- Uses a submersible pump at the tank
- Provides faster flow of product to dispenser
- Requires leak detection.

Suction

- Used at older service stations
- Requires a pump at the dispenser
- May require leak detection depending on how it’s configured.

Pressurized Piping Requires

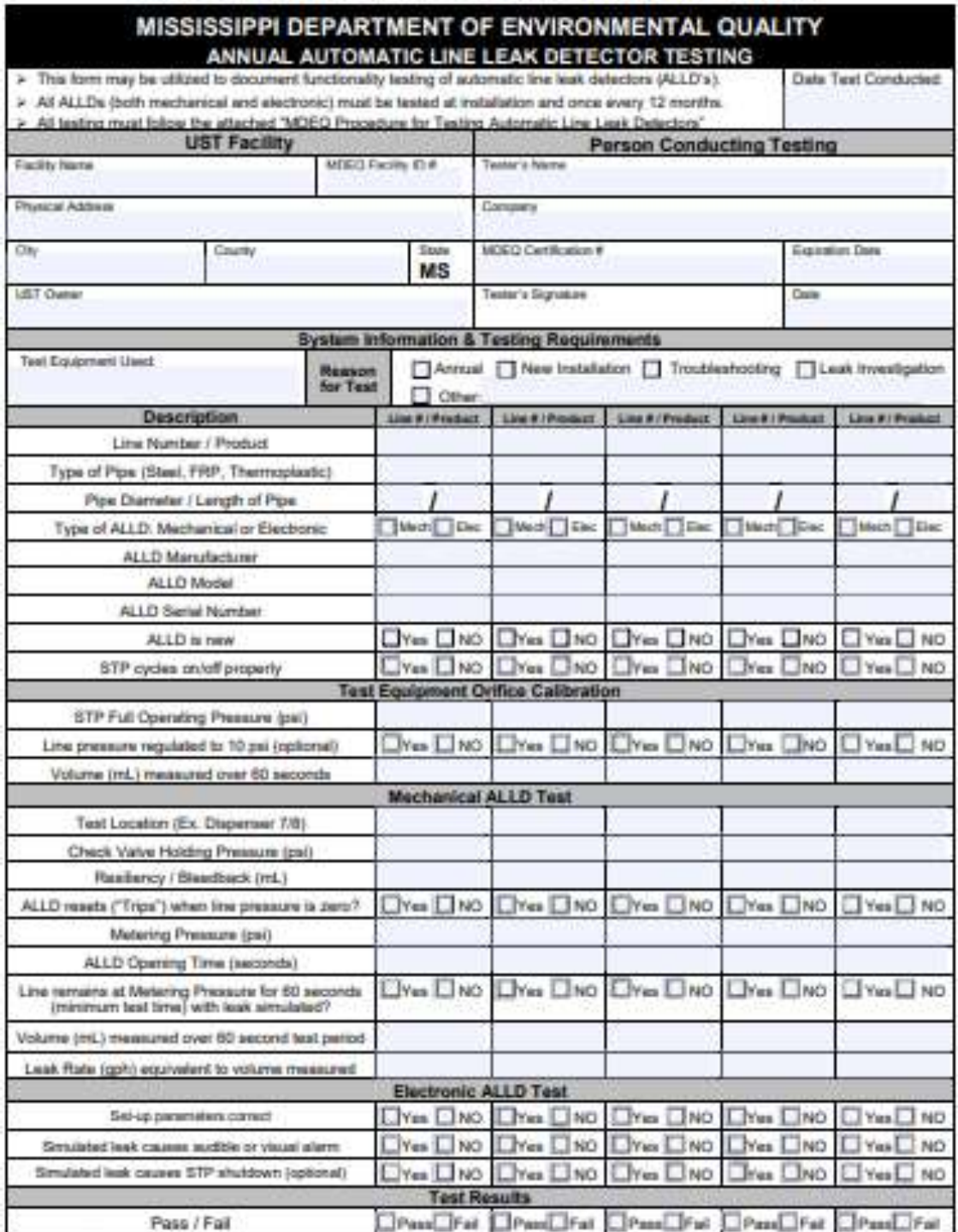
Two forms of release detection

1. Automatic Line Leak Detectors
   - Catastrophic leak detection (3 gph)
   - Installed on all pressurized piping
   - Must be tested once every 12 months
   - Can be Mechanical or Electronic

2. Another form of Release Detection
   - Standard forms of pipe leak detection.

Line Leak Detector Test form

- Contractor connects equipment to shear valve or pipe.
- Simulates leak.
- Cycles the STP ON / OFF.
- Determines if LLD catches leak or not.



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

ANNUAL AUTOMATIC LINE LEAK DETECTOR TESTING

- This form may be utilized to document functionality testing of automatic line leak detectors (ALLD's).
- All ALLDs (both mechanical and electronic) must be tested at installation and once every 12 months.
- All testing must follow the attached "MDEQ Procedure for Testing Automatic Line Leak Detectors"

Date Test Conducted:

UST Facility			Person Conducting Testing	
Facility Name	MDEQ Facility ID #		Tester's Name	
Physical Address			Company	
City	County	State: MS	MDEQ Certification #	Expiration Date
UST Owner			Tester's Signature	Date

System Information & Testing Requirements

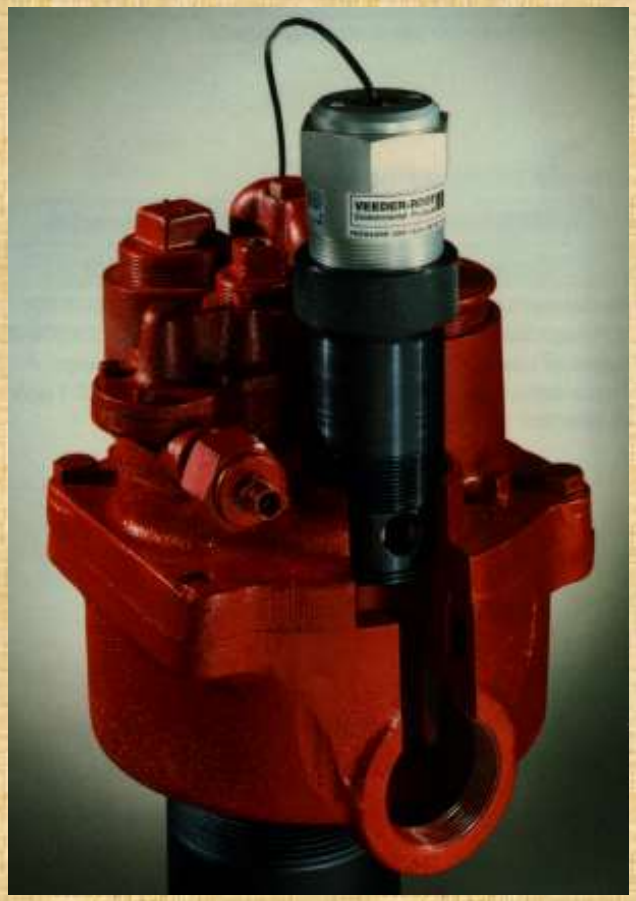
Test Equipment Used:

Reason for Test: ☐ Annual ☐ New Installation ☐ Troubleshooting ☐ Leak Investigation ☐ Other:

Description	Line # / Product	Line # / Product	Line # / Product	Line # / Product	Line # / Product
Line Number / Product					
Type of Pipe (Steel, FRP, Thermoplastic)					
Pipe Diameter / Length of Pipe	/	/	/	/	/
Type of ALLD: Mechanical or Electronic	☐ Mech ☐ Elec	☐ Mech ☐ Elec	☐ Mech ☐ Elec	☐ Mech ☐ Elec	☐ Mech ☐ Elec
ALLD Manufacturer					
ALLD Model					
ALLD Serial Number					
ALLD is new	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO
STP cycles on/off properly	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO
Test Equipment Orifice Calibration					
STP Full Operating Pressure (psi)					
Line pressure regulated to 10 psi (optional)	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO
Volume (mL) measured over 60 seconds					
Mechanical ALLD Test					
Test Location (Ex. Dispenser 7/8)					
Check Valve Holding Pressure (psi)					
Resiliency / Bleedback (mL)					
ALLD resets ("Trips") when line pressure is zero?	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO
Metering Pressure (psi)					
ALLD Opening Time (seconds)					
Line remains at Metering Pressure for 60 seconds (minimum test time) with leak simulated?	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO
Volume (mL) measured over 60 second test period					
Leak Rate (gph) equivalent to volume measured					
Electronic ALLD Test					
Set-up parameters correct	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO
Simulated leak causes audible or visual alarm	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO
Simulated leak causes STP shutdown (optional)	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO	☐ Yes ☐ NO
Test Results					
Pass / Fail	☐ Pass ☐ Fail	☐ Pass ☐ Fail	☐ Pass ☐ Fail	☐ Pass ☐ Fail	☐ Pass ☐ Fail

Automatic Line Leak Detectors

Mechanical



Electronic

What does an ALLD do?

- Mechanical
  - Significantly restricts the flow of product if it senses a 3 gph leak.
  - Pump will go into slow flow
  - Customers will complain pump keeps clicking off
- Electronic
  - Will cause an alarm on the ATG.
  - Will shut down the STP (if it is setup this way)
- Both:
  - Monitor the pressure in the piping.
  - Look for a 3 gph leak.

What is slow flow?

- Typically occurs in the mornings or after long periods of no dispensing of fuel.
- It is and will be becoming more common.
- If you have Slow Flow occurring often (Daily or weekly) it is a very good sign of a leak.
- Slow flow for facilities open 24 hours a day that sell a lot of fuel may not occur as often. If slow flow occurs it is cause for concern.

Is it slow flow?

- True slow flow – your STP will not override it. All dispensers will be slow. It is in slow flow with at least 3 gph leak rate present.

- Common slow flow – your typical morning slow flow. Few people try to pump fuel but it's slow. Then it opens up and becomes fast again. It is still slow flow with a leak rate less than 3 gph that is present.

- For both types, the pipe lost pressure & leak is suspected.

- What may not be slow flow? (contractor trouble shooting)
  - Weak STP motors. Your flow rates low and always is slow.
  - Clogged up filters. May be select dispensers or all of them.
  - Pressure decay caps on tank vent pipes. Cause Vacuum on tank. Results in slower pumping when demand is high (such as customers steadily fueling from all dispensers)
  - Temperature changes. (When temp overnight drops substantially) Should not be a frequent nightly issue.

What to do if your ALLD indicates a leak?

- Call your certified contractor to investigate.
- Report it to MDEQ as a suspected release within 24 hours.
- Contractor should:
  - Look for possible causes.
  - Repair or replace the component as necessary
  - Perform a Precision Line Tightness test to ensure that the pipe is not leaking.

Shear Valves

All pressurized piping must have shear or impact valves installed at the dispensing end of the piping.

What do shear valves do?

If dispenser is hit the shear valve poppet should:

- Close.
- Completely shut down the flow of product from the pipe.

Requirements for Shear Valves

Must be tested annually

To pass the valve must:

- Be anchored properly.
- Be installed properly.
- Close properly.
- Completely stop the flow of product when tripped.

Note: This is an example of what NOT to do. Valve is held open and may not close.

Annual Shear valve testing

- Contractor should:
  - Inspect Anchoring
  - Close the valve
  - Try to dispense fuel from each valve.
- Every valve at every dispenser should be tested.
- Contractor should ask your clerk to authorize fuel sales many times during testing.

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
ANNUAL SHEAR VALVE TESTING

- This form may be utilized to document testing of shear valves (a.k.a. impact, crash, safety or fire valves).
- Testing of all shear valves is required at least once every 12 months.
- In the absence of an approved 3rd party test procedure or manufacturer's recommended practice, the procedure outlined below in the "MDEQ Shear Valve Test Procedure" section may be utilized.

Date of Test

UST Facility			Person Conducting Test	
Facility Name	MDEQ Facility ID #		Tester's Name	
Physical Address			Company	
City	County	State: MS	MDEQ Certification #	Expiration Date
UST Owner			Tester's Signature	

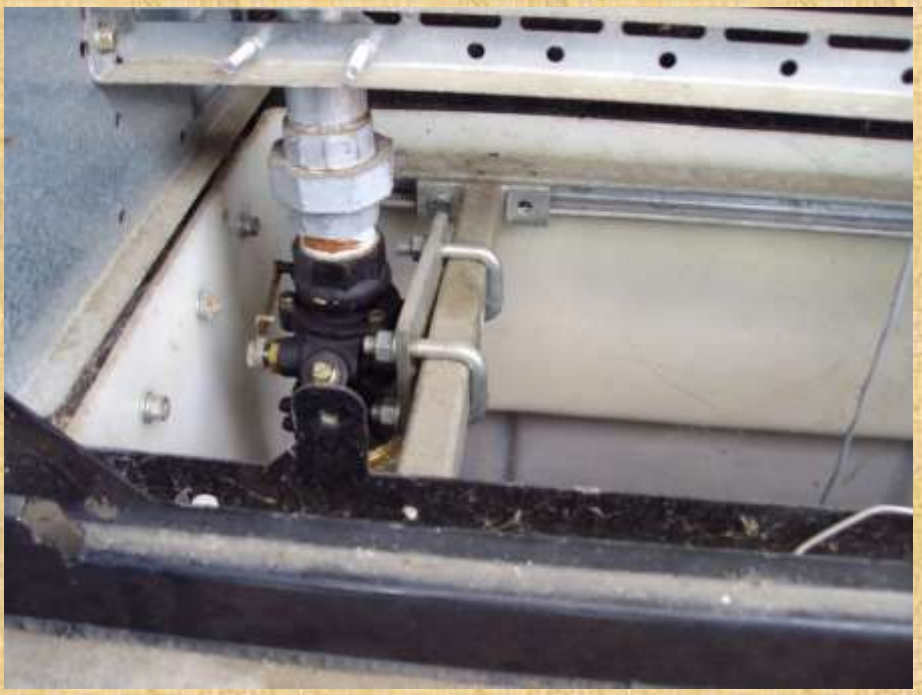
MDEQ Shear Valve Test Procedure

1. Visually inspect the shear valve for proper installation and anchoring. The portion of the shear valve located below the shear section must be rigidly anchored to the dispenser box frame or the concrete dispenser island.
2. Manually trip the shear valve lever arm. The lever arm must move freely into the tripped position without the use of force to do so. Lever arm must quickly snap shut the poppet valve.
3. Energize the pump and attempt to dispense fuel from the corresponding nozzle into a suitable container.
4. The shear valve must effectively interrupt the flow of fuel so that no fuel is dispensed from the nozzle.
5. Return the nozzle to the hanging position. Return the lever arm to its proper open position.

Test Data

Shear Valve ID											
	Dispenser #										
	Product										
Anchored Properly?		Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
Lever arm moves freely?		Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
Lever arm quickly snaps shut the poppet valve?		Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
Can product be dispensed when valve is closed?		Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
Pass or Fail		P/F	P/F	P/F	P/F	P/F	P/F	P/F	P/F	P/F	P/F

Are they anchored?



Should be checked by contractor annually.

Dispensers replaced recently?....

Very likely anchoring was loosened.

Importance of proper anchoring…

Shear Valves not anchored.
Cracked pipe below dispenser.

Shear Valves anchored.

Caused some rotation of the pipe but pipe not damaged.

If they are not anchored properly it can result in:

Release Prevention Topics to discuss

Corrosion Protection

Product compatibility

What is Corrosion?

Corrosion is defined as the degradation of a material or its properties due to a reaction with the environment.

How can we prevent corrosion?

Non-corrodible material

Cathodic Protection

What needs cathodic protection?

- Any metallic object that routinely contains product AND is in contact with the soil or water SHOULD be cathodically protected
- Includes:
  - Tanks
  - Piping
  - Metallic pipe terminations

Two Types of Cathodic Protection

- Galvanic
  - Uses anodes
- Impressed Current
  - Uses electricity

Both work the same way - just have a different energy source

How does Galvanic work?

Anodes are installed in the ground and wired directly to the tanks or piping

Anodes provide their own source of power

How does Impressed Current Work?

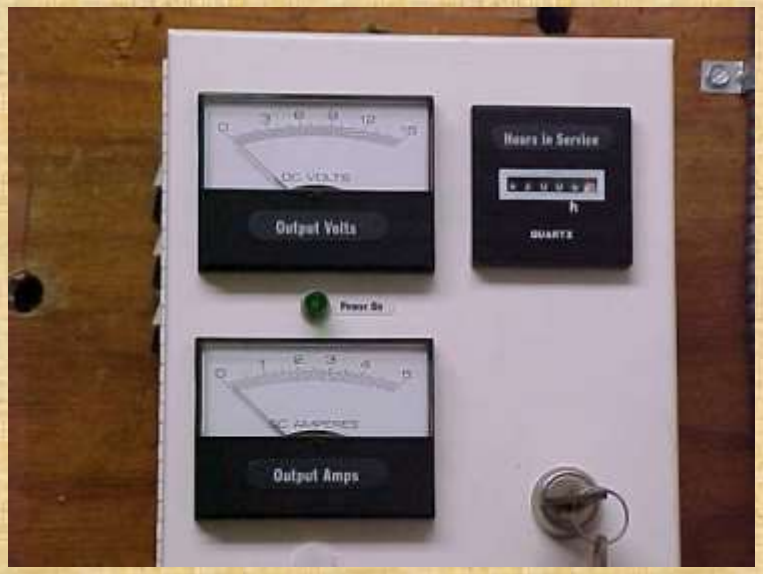
- Anodes installed in ground and wired to rectifier box.
- Tanks and piping also wired to rectifier box.
- Uses electricity.
- Is adjustable and should last longer than typical galvanic system.

Impressed Current Rectifiers

- Must be checked every 60 days for operation.
- Must maintain log of these inspections.

If Amps reading drops significantly something happened, call your contractor.

(Amp readings should BE consistent)



Tip: Check rectifier box during 30 day monthly monitoring helps to remember to check it.

Cathodic Protection Survey – 3 year test

Every three (3) years, cathodic protection systems must be tested.

This testing is still required if your tanks are temporarily out of service.

Remember, impressed current systems are also checked a minimum of every 60 days

Rectifier Log

Remember if Amps drops… call your contractor

STATE OF MISSISSIPPI
IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM
60-DAY RECORD OF RECTIFER OPERATION

- This form may be utilized to document that the cathodic protection system rectifier is checked for operation at least once every 60 days.
- Checked for operation is taken to mean that it was confirmed the rectifier was receiving power and is "turned-on".
- If your rectifier is so equipped, you should also record the output voltage, amperage and the number of hours indicated on the meter.
- The design corrosion engineer should specify the minimum amperage required to provide adequate cathodic protection.

UST OWNER		UST FACILITY	
NAME:		NAME:	ID #
ADDRESS:		ADDRESS:	
CITY:	STATE:	CITY:	COUNTY:

MINIMUM DESIGN AMPERAGE

The minimum amperage needed to provide adequate cathodic protection is: ____ amps

Contact a qualified person to investigate if the observed amperage falls below this value

Note: Relatively small variations in the rectifier amperage are normal. If there is no minimum amperage specified, contact a qualified person to investigate if the observed amperage varies by 20% or more from the last passing test amperage.

The last passing test was performed on: _____ with the system operating at _____ amps

IMPRESSED CURRENT RECTIFIER DATA

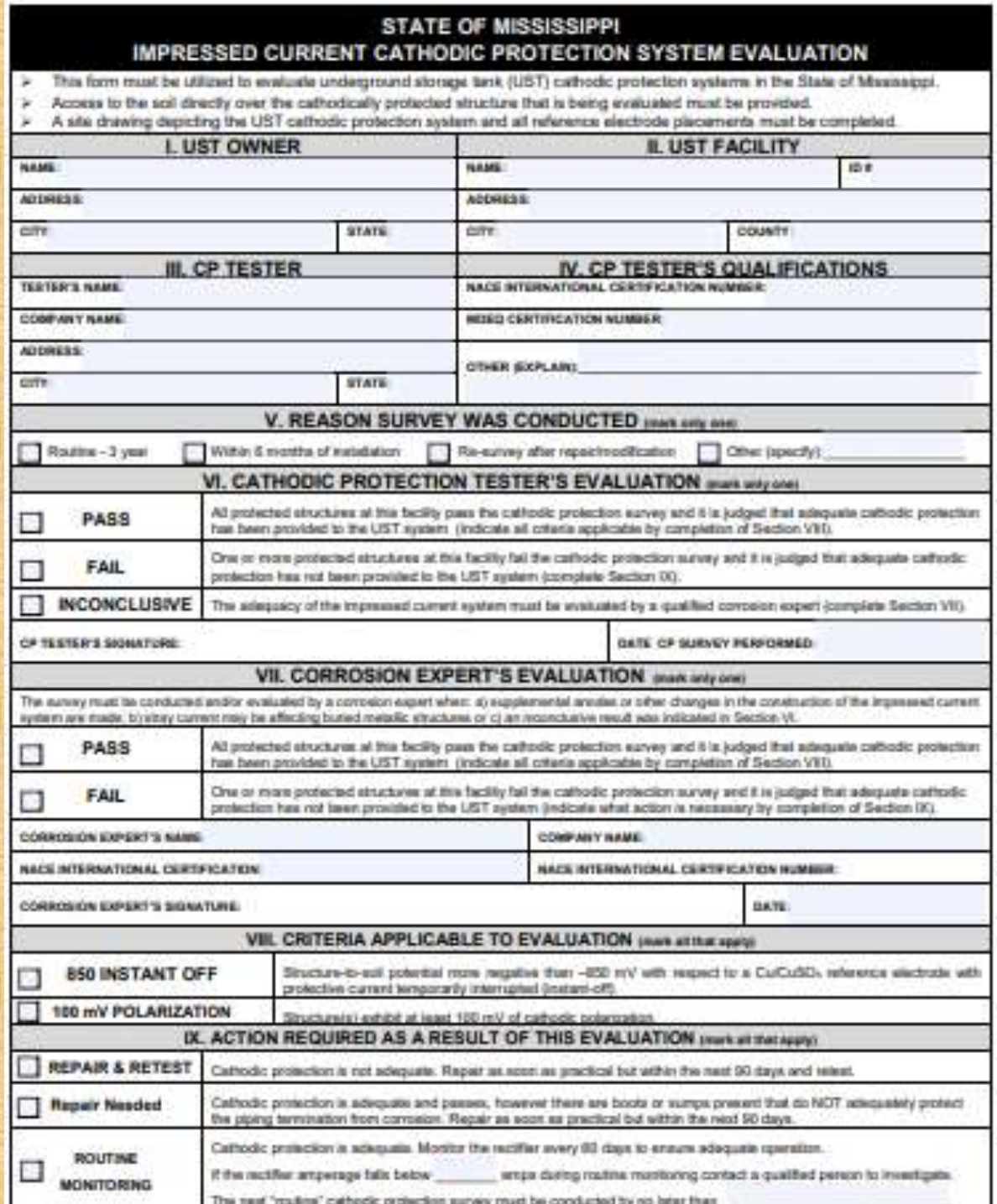
Rectifier Manufacturer:	Rated DC Output: _____ VOLTS _____ AMPS
Rectifier Model:	Rectifier Serial Number:

60-DAY LOG OF RECTIFIER OPERATION

DATE INSPECTED	RECTIFIER TURNED ON?	TAP SETTINGS		DC OUTPUT		HOUR METER	INSPECTOR INITIALS	COMMENTS
		COARSE	FINE	VOLTS	AMPS			

Impressed Current System Test form

- Notice bottom of page should have a warning.
- If amps drops to _____ call contractor.
- This is the # you should be watching during 60 day inspections.
- Also notice, it is possible for test to pass but you may have repair that is needed still.



STATE OF MISSISSIPPI
IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM EVALUATION

- This form must be utilized to evaluate underground storage tank (UST) cathodic protection systems in the State of Mississippi.
- Access to the soil directly over the cathodically protected structure that is being evaluated must be provided.
- A site drawing depicting the UST cathodic protection system and all reference electrode placements must be completed.

I. UST OWNER

NAME:
ADDRESS:
CITY: STATE:

II. UST FACILITY

NAME: ID #
ADDRESS:
CITY: COUNTY:

III. CP TESTER

TESTER'S NAME:
COMPANY NAME:
ADDRESS:
CITY: STATE:

IV. CP TESTER'S QUALIFICATIONS

NACE INTERNATIONAL CERTIFICATION NUMBER:
MSEQ CERTIFICATION NUMBER:
OTHER (EXPLAIN): _____

V. REASON SURVEY WAS CONDUCTED (mark only one)

☐ Routine – 3 year ☐ Within 6 months of installation ☐ Re-survey after repair/modification ☐ Other (specify): _____

VI. CATHODIC PROTECTION TESTER'S EVALUATION (mark only one)

☐ PASS	All protected structures at this facility pass the cathodic protection survey and it is judged that adequate cathodic protection has been provided to the UST system (indicate all criteria applicable by completion of Section VIII).
☐ FAIL	One or more protected structures at this facility fail the cathodic protection survey and it is judged that adequate cathodic protection has not been provided to the UST system (complete Section IX).
☐ INCONCLUSIVE	The adequacy of the impressed current system must be evaluated by a qualified corrosion expert (complete Section VII).

CP TESTER'S SIGNATURE: DATE CP SURVEY PERFORMED:

VII. CORROSION EXPERT'S EVALUATION (mark only one)

The survey must be conducted and/or evaluated by a corrosion expert when: a) supplemental anodes or other changes in the construction of the impressed current system are made, b) stray current may be affecting buried metallic structures or c) an inconclusive result was indicated in Section VI.

☐ PASS	All protected structures at this facility pass the cathodic protection survey and it is judged that adequate cathodic protection has been provided to the UST system (indicate all criteria applicable by completion of Section VIII).
☐ FAIL	One or more protected structures at this facility fail the cathodic protection survey and it is judged that adequate cathodic protection has not been provided to the UST system (indicate what action is necessary by completion of Section IX).

CORROSION EXPERT'S NAME: COMPANY NAME:
NACE INTERNATIONAL CERTIFICATION: NACE INTERNATIONAL CERTIFICATION NUMBER:
CORROSION EXPERT'S SIGNATURE: DATE:

VIII. CRITERIA APPLICABLE TO EVALUATION (mark all that apply)

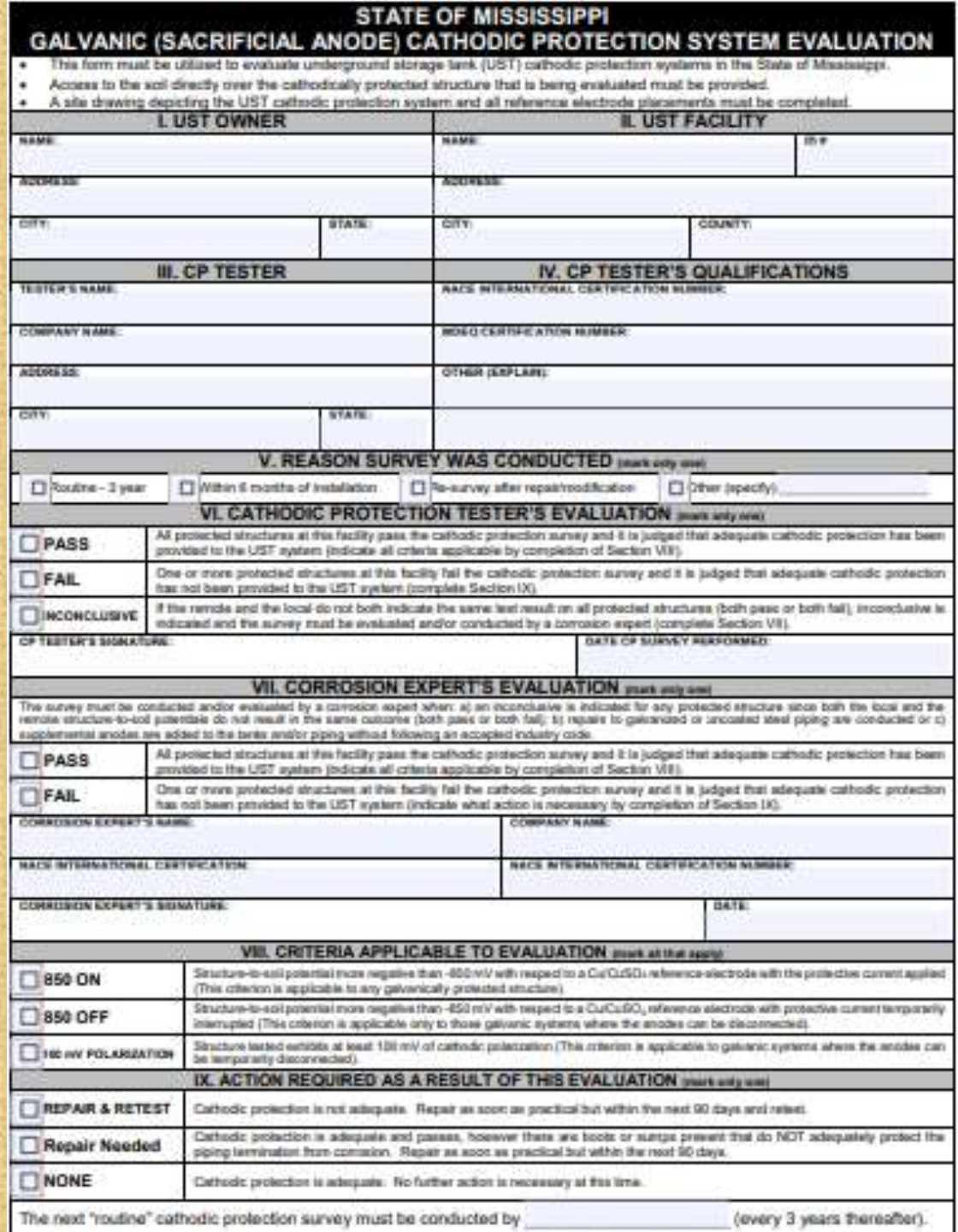
☐ 850 INSTANT OFF	Structure-to-soil potential more negative than –850 mV with respect to a Cu/CuSO4 reference electrode with protective current temporarily interrupted (instant-off).
☐ 100 mV POLARIZATION	Structure(s) exhibit at least 100 mV of cathodic polarization.

IX. ACTION REQUIRED AS A RESULT OF THIS EVALUATION (mark all that apply)

☐ REPAIR & RETEST	Cathodic protection is not adequate. Repair as soon as practical but within the next 90 days and retest.
☐ Repair Needed	Cathodic protection is adequate and passes, however there are boots or sumps present that do NOT adequately protect the piping termination from corrosion. Repair as soon as practical but within the next 90 days.
☐ ROUTINE MONITORING	Cathodic protection is adequate. Monitor the rectifier every 60 days to ensure adequate operation. If the rectifier amperage falls below _____ amps during routine monitoring contact a qualified person to investigate. The next "routine" cathodic protection survey must be conducted by no later than _____

Galvanic System Test form

- Pretty Straight forward.
- Also notice, it is possible for test to pass but you may have repair that is needed still.
- Read the reports.



STATE OF MISSISSIPPI
GALVANIC (SACRIFICIAL ANODE) CATHODIC PROTECTION SYSTEM EVALUATION

- This form must be utilized to evaluate underground storage tank (UST) cathodic protection systems in the State of Mississippi.
- Access to the soil directly over the cathodically protected structure that is being evaluated must be provided.
- A site drawing depicting the UST cathodic protection system and all reference electrode placements must be completed.

I. UST OWNER

NAME:
ADDRESS:
CITY: STATE:

II. UST FACILITY

NAME: ID #:
ADDRESS:
CITY: COUNTY:

III. CP TESTER

TESTER'S NAME:
COMPANY NAME:
ADDRESS:
CITY: STATE:

IV. CP TESTER'S QUALIFICATIONS

NACE INTERNATIONAL CERTIFICATION NUMBER:
ISNETG CERTIFICATION NUMBER:
OTHER (EXPLAIN):

V. REASON SURVEY WAS CONDUCTED (mark only one)

☐ Routine – 3 year ☐ Within 6 months of installation ☐ Re-survey after repair/modification ☐ Other (specify): _____

VI. CATHODIC PROTECTION TESTER'S EVALUATION (mark only one)

☐ PASS	All protected structures at this facility pass the cathodic protection survey and it is judged that adequate cathodic protection has been provided to the UST system (indicate all criteria applicable by completion of Section VIII).
☐ FAIL	One or more protected structures at this facility fail the cathodic protection survey and it is judged that adequate cathodic protection has not been provided to the UST system (complete Section IX).
☐ INCONCLUSIVE	If the remote and the local do not both indicate the same test result on all protected structures (both pass or both fail), inconclusive is indicated and the survey must be evaluated and/or conducted by a corrosion expert (complete Section VII).

CP TESTER'S SIGNATURE: DATE OF SURVEY PERFORMED:

VII. CORROSION EXPERT'S EVALUATION (mark only one)

The survey must be conducted and/or evaluated by a corrosion expert when: a) an inconclusive is indicated for any protected structure since both the local and the remote structure-to-soil potentials do not result in the same outcome (both pass or both fail); b) repairs to galvanized or uncoated steel piping are conducted or c) supplemental anodes are added to the tanks and/or piping without following an accepted industry code.

☐ PASS	All protected structures at this facility pass the cathodic protection survey and it is judged that adequate cathodic protection has been provided to the UST system (indicate all criteria applicable by completion of Section VIII).
☐ FAIL	One or more protected structures at this facility fail the cathodic protection survey and it is judged that adequate cathodic protection has not been provided to the UST system (indicate what action is necessary by completion of Section IX).

CORROSION EXPERT'S NAME: COMPANY NAME:
NACE INTERNATIONAL CERTIFICATION: NACE INTERNATIONAL CERTIFICATION NUMBER:
CORROSION EXPERT'S SIGNATURE: DATE:

VIII. CRITERIA APPLICABLE TO EVALUATION (mark all that apply)

☐ 850 ON	Structure-to-soil potential more negative than -850 mV with respect to a $Cu/CuSO_4$ reference electrode with the protective current applied (This criterion is applicable to any galvanically protected structure).
☐ 850 OFF	Structure-to-soil potential more negative than -850 mV with respect to a $Cu/CuSO_4$ reference electrode with protective current temporarily interrupted (This criterion is applicable only to those galvanic systems where the anodes can be disconnected).
☐ 100 mV POLARIZATION	Structure tested exhibits at least 100 mV of cathodic polarization (This criterion is applicable to galvanic systems where the anodes can be temporarily disconnected).

IX. ACTION REQUIRED AS A RESULT OF THIS EVALUATION (mark only one)

☐ REPAIR & RETEST	Cathodic protection is not adequate. Repair as soon as practical but within the next 90 days and retest.
☐ Repair Needed	Cathodic protection is adequate and passes, however there are boots or sumps present that do NOT adequately protect the piping termination from corrosion. Repair as soon as practical but within the next 90 days.
☐ NONE	Cathodic protection is adequate. No further action is necessary at this time.

The next "routine" cathodic protection survey must be conducted by _____ (every 3 years thereafter).

Product Compatibility

Compatibility basically means when two things are able to exist or occur together without problems.

In the UST world:

- UST equipment
- The product stored.

Product Compatibility

- Applies to UST systems storing:
  - Greater than 20% biodiesel
  - Greater than 10% ethanol.
- Must notify MDEQ at least 30 days prior to changing to one of these grades of fuel.
- Must provide documentation that the UST system components are compatible with the fuel stored.
- Contact MDEQ or your contractor for more details.

MDEQ Compatibility Form

- Only have to do this 1-time unless equipment is modified or installed.

1.) Petroleum Equipment Institute – UST Component Compatibility Library
https://www.pei.org/ust-component-compatibility-library

2.) Steel Tank Institute – Alternative Fuels Storage Information and Links
https://www.steeltank.com/FabricatedSteelProducts/ShopFabricatedTanks/SteelandAlternativeFuels/tabid/465/Default.aspx

3.) California State Water Resources Control Board – Affirmative Statement of Compatibility by Manufacturer
https://www.waterboards.ca.gov/ust/alt_comp_opt/soc.html

4.) National Ethanol Vehicle Coalition
https://www.steeltank.com/Portals/0/pubs/E85/E85_Equipment_and_manufacturers_edit.pdf

5.) National Biodiesel Board
http://biodiesel.org/docs/ffs-performace_usage/materials-compatibility.pdf?sfvrsn=4

6.) UL Certification Website – Search Directory
http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
Alternative Fuel / Hazardous Substances Compatibility Checklist

- This form may be utilized to document compatibility of UST system components. Certification must be done by a licensed MDEQ UST Installation contractor familiar with the model/brand and installation procedures for UST equipment to be certified.
- For existing facilities storing alternative fuels certification of UST components is required beginning October 5, 2018. For new facilities or facilities converting the product stored, certification should be done prior to bringing the UST system into use.
- Alternative fuels include fuels containing greater than 10% ethanol or greater than 20% biodiesel.
- Should any applicable component be found as not compatible then replacement of the component is required. Should any component be repaired or replaced after the initial certification of the system, then recertification is required.
- Use the checklist below to document each component. If using manufacturer approval letter for component, then a copy must be attached and clearly indicate that it was issued by the manufacturer with an affirmative statement of compatibility. If using Underwriters Laboratory (UL), the UL listing must specify compatibility with the alternative fuel to be stored.

UST Facility			Person Conducting Inspection	
Facility Name	MDEQ Facility ID #		Inspector's Name	
Physical Address			Company	
City	County	State: MS	MDEQ Certification #	Expiration Date
UST Owner			Inspector's Signature	Date of Inspection

UST System Information

Reason for Inspection	☐ New Installation ☐ Change of Product Stored ☐ Repair / modification ☐ Release Investigation				
Product Stored		**Tank 1:**	Date of Installation	Capacity	☐ Single Walled ☐ Double Walled
% Ethanol or % Biodiesel		**Pipe 1:**	Date of Installation	☐ Pressurized ☐ Suction	☐ Single Walled ☐ Double Walled

Compatibility Checklist

Component	Manufacturer	Model/Brand	UL Listed	UL Number	Manufacturer Approved
Tank 1			☐ Yes ☐ No		☐
Tank Lining			☐ Yes ☐ No		☐
Spill Bucket			☐ Yes ☐ No		☐
Overfill Device			☐ Yes ☐ No		☐
Submersible Pump, O-Rings, Gaskets			☐ Yes ☐ No		☐
			☐ Yes ☐ No		☐
			☐ Yes ☐ No		☐
			☐ Yes ☐ No		☐
ATG In-Tank Probe			☐ Yes ☐ No		☐
Tank Interstitial Sensor			☐ Yes ☐ No		☐
			☐ Yes ☐ No		☐
Tank Top Piping Sump			☐ Yes ☐ No		☐
			☐ Yes ☐ No		☐
Pipe 1			☐ Yes ☐ No		☐
Pipe dope / Sealant / adhesive			☐ Yes ☐ No		☐
			☐ Yes ☐ No		☐
			☐ Yes ☐ No		☐
Pipe fittings / gaskets / seals			☐ Yes ☐ No		☐
			☐ Yes ☐ No		☐
			☐ Yes ☐ No		☐
			☐ Yes ☐ No		☐

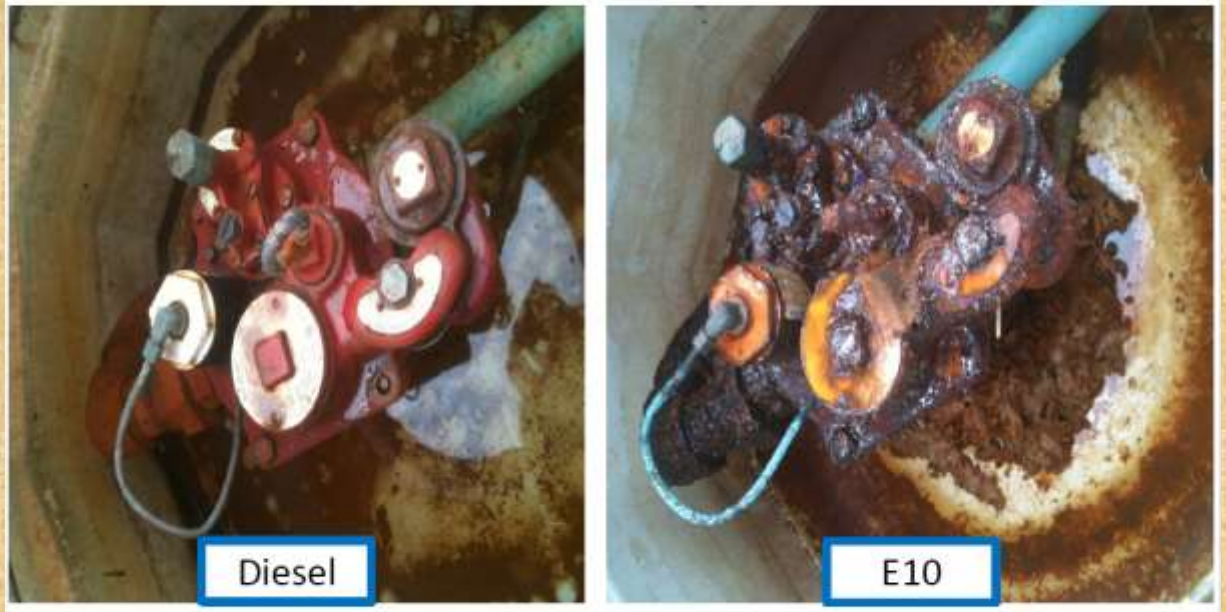
What's the big deal?

- Fuel and/or fuel vapors cause a type of chemical corrosion or degradation.
- Does it affect UST components storing less than 10% ethanol and 20% biodiesel?
  - Absolutely.
- It can and will cause equipment failure
- Proper maintenance is key to early detection and may aid in prevention.

Most commonly seen in sumps

Why Do Some Sumps Get It and Some Don't?

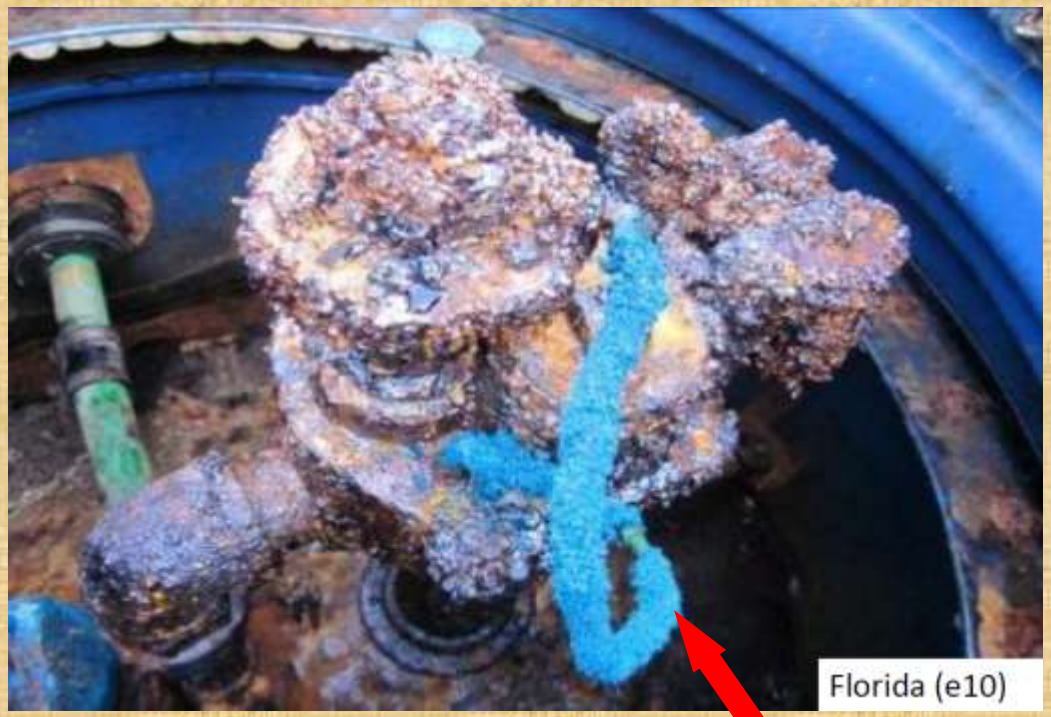
Mississippi



Installed 8-07 - Photos 3-12

Same Facility - Same Equipment – Same Day- Different Sumps

Over time will look like….



Copper drain lines will need to be replaced frequently.

Thermoplastic Piping

- Look for signs of pipe elongation or growth.
- Kinks in piping.
- Recommend visual inspections monthly for leaks.
- Remove all fuel from sumps quickly to limit exposure to piping.

What can you do?

- Keep all water / sludge removed from tanks.
- Annual inspections / maintenance helps free up and prevent a lot.
- Leak detection.
  - Consider doing both an
    - annual line tightness test for piping and
    - monthly form of leak detection.
  - Ensure whatever form you are using is functional.
- Expect some annual costs for repairs.
  - Copper Drain Lines
- Limit the impact.
  - Inspect all components monthly for leaks if you can.
  - Consider replacement with a material that is compatible.
    - Stainless Steel
  - Consult with your certified contractor.

Products Available

- There are multiple products / methods available to reduce these types of corrosion.
- Consult with your certified contractor.
- If no product is available or feasible, inspect the component frequently for leaks if you are able to.

MDEQ strongly recommends: Visual inspections of easily accessible UST components for leaks even if not done monthly. This is a very sound / effective way to perform preventative maintenance.

Remember…

All product observed in containment sumps must be:

- Removed and properly disposed of.
- Reported to MDEQ within 24 hours
  - This applies to all sumps & all components that you inspect monthly for leaks..

Emergencies Happen

You and your trained clerks need to know how to respond

Emergency Response – what do you do?

Take the immediate and appropriate action to prevent further release.

4 Steps for any UST Related Emergency

1. Press Emergency Stop or electrical breakers (cut power to dispensers AND submersible pumps)
   - Should stop fuel from flowing to the leak.
   - In the case of fire, should stop fuel from flowing to the fire.
2. Control & Secure the area
   - Keep people away from fuel or fire.
   - Keep fuel from running off site.
3. Call someone
   - Fire Department
   - Tank owner or manager
   - MEMA
   - MDEQ
4. Cleanup

First Emergency Action

- Step 1 for any EMERGENCY turn off power to the dispensers AND submersible pumps.
- How?
  - Press the Emergency Stop (e-stop) button.
  - Use breaker or fuse boxes.

If there is a fire, you have to stop fuel flow to the fire…… or the fire may not stop.

If it is leaking, you have to stop fuel flow….
Increased risk of fire & it will increase the cost of cleanup

Not ALL cleanups are covered under the Trust Fund.
Tank owner may be liable for cleanup costs & other damages.

Other Emergency Actions

The order of Steps 2 through 4 will change depending on the type of emergency

Fire

Large spill

Small spill

Control & Secure the Area

- Keep people away from fuel or fire.
- Keep fuel from running off site.

Examples include:

- Bag the dispenser
- Caution tape the fuel island
- Block access to surface spills
- Block sensitive receptors
- Get customers out of harms way
- In event of fire, block the driveway

With fuel leak…

1.) keep customers from running over fuel.

2.) try to keep fuel from running off property.

Examples of product off-site

Increased cost of cleanup.
Damage to neighboring property
Increased fire risk as it travels.

Need to call
Fire Department
Immediately

Call Someone

The Operations Clerk will need to notify:

- the Compliance Manager for all UST emergencies
- The local fire department
  - in the event of a fire
  - if product goes offsite
  - If it is a spill where you cannot keep customers away from it.

The tank owner or compliance manager will need to notify:

- MEMA for Emergencies
- MDEQ to report

When to call MEMA.

Emergencies Only

- 1-800-222-6362
- If there is a release or spill that may affect state waters, land, air, or public health, immediately call the Mississippi Emergency Management Agency (MEMA) at 1-800-222-MEMA(6362).

Examples include:

- Fuel in the creek or ditch beside the store.
- Discovery of fuel or vapors in utility lines, or sewers.
- Discovery of fuel or vapors on third party properties or other significant surface contamination in other areas at or around the UST facility.

Cleanup – with a fire

- With a fire, the petroleum cleanup should be handled by fire department

- Otherwise, know how to use a spill kit
  - Contain product
  - Use absorbents
  - Dispose of absorbents

Cleanup – small spills


SPILL RESPONSE KIT
INSTRUCTIONS
STOP
When a spill occurs
STOP spill at source
CONTAIN
Use booms to
CONTAIN the spill
ABSORB
Use Sukerup pads
to ABSORB the spill
DISPOSE
DISPOSE of used
absorbent in
waste bag
REPORT
REPORT the
incident
RESTOCK
RESTOCK the kit
after use

UST Operations Clerk Training

- At least 1 clerk should be trained on each shift.

Can be trained by:

- You the Compliance Manager
- Completing on-line course
- Approved In House Training

If you train them, just know:

- Each site is different.
- Requires different approaches in the case of an emergency
- Walk with your clerks and show them everything applicable to the site.

Show your clerks…

- All emergency shutoffs (e-stops) **and** Electrical Breakers
- Identify tank beds, dispensers, and product hoses
- Identify Sensitive Receptors (storm drains, ditches, etc)
- Tank monitor alarms and warnings
- Fire Extinguishers
- Spill Kits
- Emergency Contact List
- How to respond to an emergency

Emergency Shutoffs

- **Location of:**
  - All E – Stop buttons
  - All STP control boxes
  - All breakers to STPs

Show them. Don't just tell them.

- **Clerks need to know:**
  - How to shut off power to dispensers and STPs
  - When to shut them down.
    - Fire at dispenser
    - Fire in the parking lot
    - Fast leak at the dispenser

Identifying Components

Components installed on UST

- Clerks need to know:
  - What each component is.
  - It's location.
  - It's general purpose.
  - How it is supposed to be.
  - Any issues associated with it that need to be reported to you.

- If they don't know, how can they tell you what's going on?

Example of fuel coming out of tank manway

Identifying Components

Dispenser

- Clerks need to know:
  - What each component is.
  - It's location.
  - It's general purpose.
  - How it is supposed to be.
  - Any issues associated with it that need to be reported to you.

Examples include

What about underneath the dispenser?

- Do your clerks have keys?
- Do they know how to open and look for leak / fuel?

Show them. Don't just tell them.

- If not, do they know who to call?
  - UST certified contractor
  - You (Compliance Manager)

Identify Sensitive Receptors

- Clerks need to know:
  - Location of all storm drains.
  - Where the drains go
    (if known)
  - Location of ditches & creeks

- Do they know where to look?
- Do they know how to stop fuel from getting to these locations?

Show them. Don't just tell them.

- Do you have the equipment for them to use?

Tank Monitors and Alarms

- Clerks need to know:
  - Location of:
    - Automatic Tank Gauges
    - Overfill Alarms
  - It's general purpose.
  - How it is supposed to be.
  - How to print general reports.
  - Any issues associated with it that need to be reported to you.

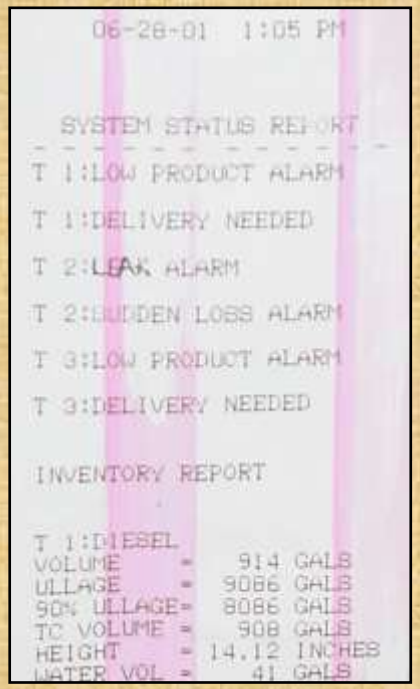
- Do they know to check it daily?

Show them how.

Tank Monitor Reports

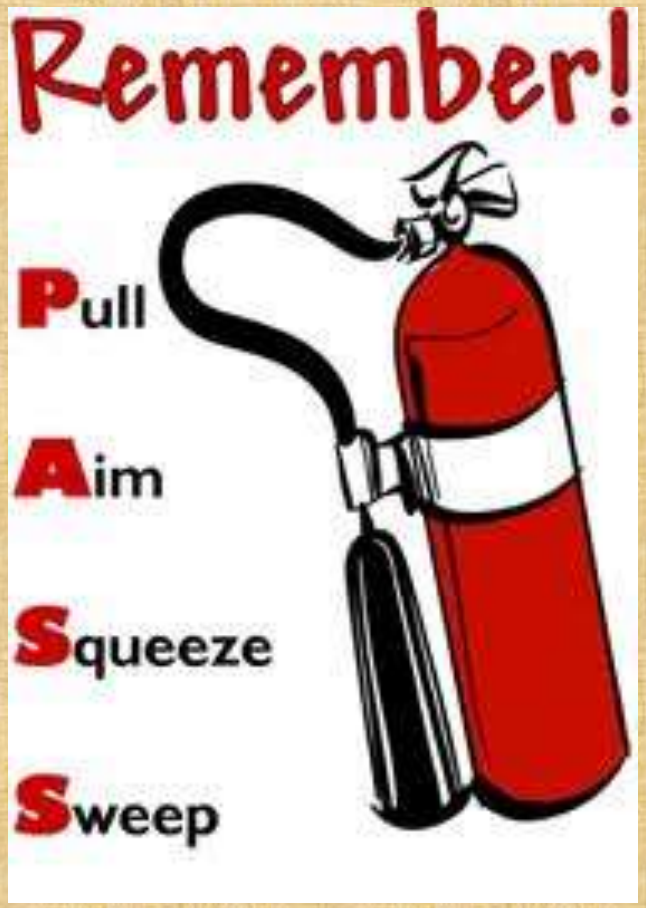
Clerks need to be able to:

- Identify when there is an alarm.
- Distinguish what the alarm / report means.
- Identify which alarms are a priority.
- Know how to respond.



Tip: Consult with your contractor or the ATG owners manual for a list of possible alarms and explanations.

Fire Extinguishers



Clerks need to know when and how to use. (small fires)

- Pull the pin
- Aim the nozzle
- Squeeze the trigger
- Sweep from side to side

Spill Kits

- Whether you have a small or large spill kit clerks need to know when and how to use it.
- Need to be able to notify you when spill kit needs to be restocked.
- What determines the size of the spill kit that you need?
  - Not defined by MDEQ UST Division currently.
  - Up to you to determine and keep stock of equipment.


Release as a result due to apparent Lightning Strike
Birmingham, AL

Small Spills

- Spill kits should be used to <u>cleanup</u> small spills.
- Spills less than 25 gallons do not need to be reported to MDEQ as long as they are <u>contained on site</u>.

Large Spills

- Spill kits should be used to control and secure the area of large spills.
- All spills greater than 25 gallons need to be reported to MDEQ.
- All spills that run offsite need to be reported to MDEQ.

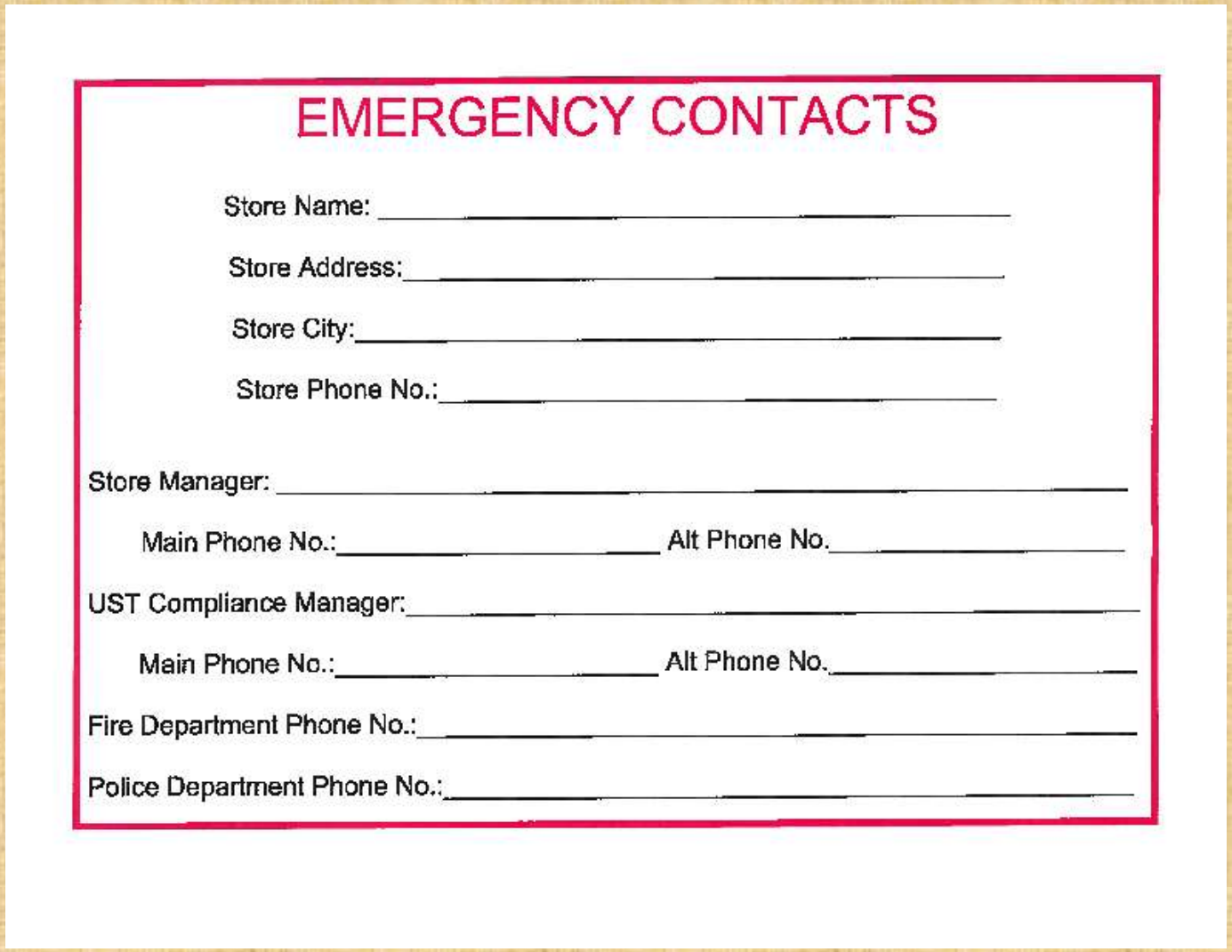
How do you tell if it exceeded 25 gallons?

Example:

- Car's pumping gas.
- Dispenser shows it dispensed 100 gallons.
- You know the car didn't hold over 25 gallons.

- At least 75 gallons overflowed.

Clerk needs access to:



EMERGENCY CONTACTS

Store Name: _____

Store Address: _____

Store City: _____

Store Phone No.: _____

Store Manager: _____

Main Phone No.: _____ Alt Phone No. _____

UST Compliance Manager: _____

Main Phone No.: _____ Alt Phone No. _____

Fire Department Phone No.: _____

Police Department Phone No.: _____

Clerk needs to know & be able to access Emergency Procedures

Remember each site is different. Modify as needed to fit your facility.

EMERGENCY PROCEDURES

In Case of Fire

1. Press Emergency Stop (e-stop)
2. Call 911
3. Control & Secure the area
4. Call Manager and UST Compliance Manager

In Case of Large Spill

(greater than 5 gallons)

1. Press Emergency Stop (e-stop)
2. Call Manager and UST Compliance Manager
   If product goes offsite, call 911
3. Control & Secure the area
4. Use spill kit to keep the product from spreading

In Case of Small Spill

(less than 5 gallons)

1. Press Emergency Stop (e-stop) if necessary
2. Control & Secure the area
3. Use the spill kit to clean up the product
4. Call Manager and UST Compliance Manager

How to respond to an Emergency

- Clerks need to know how to respond to common emergencies.
- Follow emergency procedures for your facility.

Common Emergencies

Small customer overfill.

- Contain spill and cleanup.
- Use spill kit.

Drive off.

- Bag off dispenser.
- Hang nozzle back up.
- Did it damage dispenser or cause leaks under it?
- Small spill? Use spill kit.

Less Common Emergencies

- This can happen at any time.
- If you've had it happen at your site you should expect it to happen again.
- Some dispensers are prone to be hit more often.

Safety – train your clerks

- It is dangerous out there.
- Please train clerks to use personnel protective equipment.
- Protect their selves from customers vehicles.
- Show anyone who may be on site inspecting components, cleaning spill buckets, etc.

What would make the example above safer?

- Use vehicle to block traffic.
- Have another clerk assist and watch traffic.

Try to expect the unexpected

- Customers will run over cones.
- They will run you over.

- Use vehicles to block you and equipment if it is open.
- Have another clerk assist and watch traffic.

Who else regulates UST systems?

Department of Agriculture

- How much you sell per gallon.
- What type of fuel
- Quality of fuel
- How you advertise grades of fuel
- Amount of water in the tank

Local Fire Marshall & Building Inspector

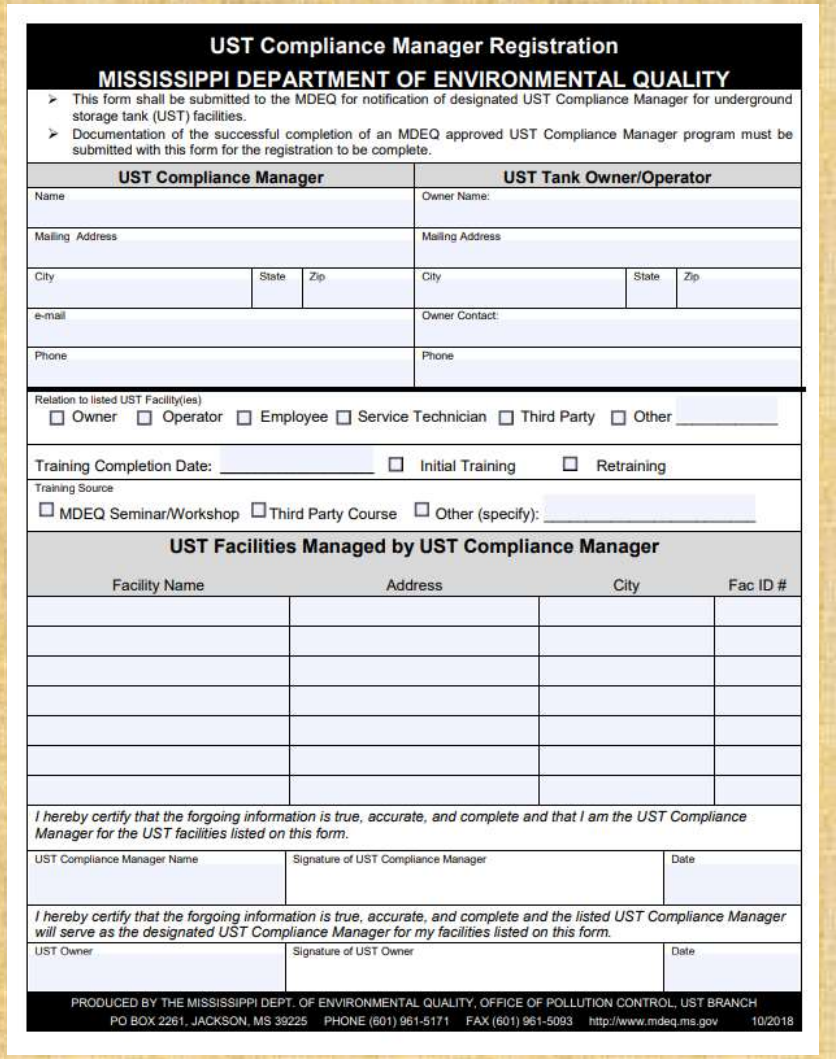
- Enforce Fire code
- Bollard height & depths
- Conduit used
- Wiring issues.
- Shear valve anchoring
- Shear valve testing

Both of the above & MDEQ can “shut down” facilities for compliance issues.
Be sure you're talking to the right agency on the letter / paperwork you receive.

Note: Other municipalities or agencies may regulate USTs, so this is not a complete list.

This completes Compliance Manager Training

- Fill out the UST Compliance Manager Registration Form
- Must be sent to MDEQ.
- If you pass the exam:
  - MDEQ will mail you a certificate.
  - Train your store clerks as needed



UST Compliance Manager Registration

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

- This form shall be submitted to the MDEQ for notification of designated UST Compliance Manager for underground storage tank (UST) facilities.
- Documentation of the successful completion of an MDEQ approved UST Compliance Manager program must be submitted with this form for the registration to be complete.

UST Compliance Manager			UST Tank Owner/Operator		
Name			Owner Name:		
Mailing Address			Mailing Address		
City	State	Zip	City	State	Zip
e-mail			Owner Contact:		
Phone			Phone		

Relation to listed UST Facility(ies)

☐ Owner ☐ Operator ☐ Employee ☐ Service Technician ☐ Third Party ☐ Other _____

Training Completion Date: _____ ☐ Initial Training ☐ Retraining

Training Source

☐ MDEQ Seminar/Workshop ☐ Third Party Course ☐ Other (specify): _____

UST Facilities Managed by UST Compliance Manager

Facility Name	Address	City	Fac ID #

I hereby certify that the forgoing information is true, accurate, and complete and that I am the UST Compliance Manager for the UST facilities listed on this form.

UST Compliance Manager Name	Signature of UST Compliance Manager	Date

I hereby certify that the forgoing information is true, accurate, and complete and the listed UST Compliance Manager will serve as the designated UST Compliance Manager for my facilities listed on this form.

UST Owner	Signature of UST Owner	Date

PRODUCED BY THE MISSISSIPPI DEPT. OF ENVIRONMENTAL QUALITY, OFFICE OF POLLUTION CONTROL, UST BRANCH

PO BOX 2261, JACKSON, MS 39225 PHONE (601) 961-5171 FAX (601) 961-5093 http://www.mdeq.ms.gov 10/2018

Clerk Training

Once complete

Fill out the UST Operation Clerk Log

UST Operation Clerks Log

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

- This form must be used to document that all UST Operations Clerks at this facility have been trained in accordance with the Mississippi Underground Storage Tank Regulations effective August 25, 2011
- UST Operation Clerks must be trained before assuming UST clerk responsibilities.
- This form must be kept at the facility and made available for review upon request.

UST Facility				UST Tank Owner/Operator			
Facility Name			Fac ID #	Owner Name:			Owner ID #
Street Address				Mailing Address			
City		State	Zip	City		State	Zip

Training Documentation

By signing this UST Operation Clerks Log, I (UST Operation Clerk) acknowledge that I have been trained by this facility's designated UST Compliance Manager (signed below) on the following information:

All emergency shutoffs (e-stops)	Fire Extinguishers
Tank beds, dispensers, and product hoses	Spill Kits
Sensitive Receptors (storm drains, ditches, etc)	Emergency Contact list
Tank monitor alarms and warnings (if applicable)	How to respond to an emergency

Date:	UST Operations Clerk:	Trained by UST Compliance Manager
	Printed Name:	Printed Name:
	Signature:	Signature:
	Printed Name:	Printed Name:
	Signature:	Signature:
	Printed Name:	Printed Name:
	Signature:	Signature:
	Printed Name:	Printed Name:
	Signature:	Signature:

PRODUCED BY THE MISSISSIPPI DEPT. OF ENVIRONMENTAL QUALITY, OFFICE OF POLLUTION CONTROL, UST BRANCH
PO BOX 2261 JACKSON, MS 39225 PHONE (601) 961-5171 FAX (601) 961-5093 http:// www.deq.state.ms.us 3/12

Keep copy of: Compliance Manager Certificate And Clerk Log at all of your stores

Certificate of Completion

This is to certify that

<NAME>

has successfully completed the course

UST Operator Training

on

<DATE>

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
Underground Storage Tank Branch

Lynn Chambers
Head of UST Compliance & Enforcement Section

UST Operation Clerks Log

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

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	Signature:	Signature:
	Printed Name:	Printed Name:
	Signature:	Signature:
	Printed Name:	Printed Name:
	Signature:	Signature:
	Printed Name:	Printed Name:
	Signature:	Signature:

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PO BOX 2261 JACKSON, MS 39225 PHONE (601) 961-5171 FAX (601) 961-5093 http:// www.deq.state.ms.us 3/12

What Else?

No further training is required UNLESS:

New UST Compliance Manager and/or Operations Clerks
Facility is found out of substantial compliance

Questions?

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