

UST/AST Inspection Findings

Presented by Brian Pottebaum

The logo for Risk Professionals, featuring the letters 'R&A' in a blue, serif font. The ampersand is stylized and integrated between the 'R' and 'A'. Below the letters is a thin blue horizontal line.

RISK PROFESSIONALS

R&A Inspections

UST Compliance Inspections

- ✓ MO DNR/PSTIF Contract with R&A
- ✓ Inspections conducted on a 3 cycle



R&A Inspections

1. Sites selected for inspection and provided to R&A.
2. Inspection Data imported into R&A database
3. Notification letters sent out to owners/operators (within 60 days)
4. Inspector is dispatched and UST site is inspected
5. Inspector provides inspection data, photographs, and report to office staff
6. Inspection data and photographs are reviewed
7. Inspection report is processed and mailed to site owner inspection
8. Inspection report/photos/documents provided to MO DNR and PSTIF based on specific timing criteria.



R&A Inspections

UST Inspection Documentation

- Cover Page
- Inspection Report
- Response Form (if items to correct)



R&A Inspections

UST – Cover Page

If you have any questions about the inspection or the information on the inspection report, please contact us at (315) 334-3310 or toll-free at (833) 838-8888. Thank you for your cooperation.

Sincerely,

Diana Wagner
Vice President, Inspection Services



September 20, 2018

[REDACTED]

Re: [REDACTED]

Dear Sir or Madam:

An inspection of your petroleum storage tank system at the above site was conducted on 9/19/2018. Your inspection report is enclosed.

Your inspection report identifies issues that are considered serious and require immediate attention. Please address these issues, and then complete the enclosed Inspection Response Form to document your actions. You must return this form within 15 days of the date on this letter.

Your inspection report identifies other issues. You have 60 days to address these issues; when you have done so, please return the enclosed Inspection Response Form to document that all issues have been corrected.

Your inspection report identifies items intended to assist you in properly operating and maintaining your tank system. These items are listed as "Recommendations."

Return your response form to:

Rounds & Associates
Attention: Missouri Inspection Program
2804 - 106th Street, PO Box 7624
Urbandale, IA 50323

A copy of the inspection report is being provided to the Petroleum Storage Tank Insurance Fund (PSTIF) and the Missouri Department of Natural Resources (MDNR). Failure to adequately respond may result in cancellation of your insurance coverage by the PSTIF and/or enforcement action by the MDNR.



R&A Inspections

UST – Inspection Report

Missouri UST Inspection Report

Facility Name		[REDACTED]		Served Inward		[REDACTED]	
Address		[REDACTED]		Address		[REDACTED]	
City, State, Zip		[REDACTED]		City, State, Zip		[REDACTED]	
Phone		[REDACTED]		Phone		[REDACTED]	
ST Number		[REDACTED]		Facility Hours		[REDACTED]	
Date		8/14/18		Facility Vols		[REDACTED]	
Inspector		Tyler McQuinn		Facility Atty		[REDACTED]	
Observer		[REDACTED]		[REDACTED]		[REDACTED]	

Tank #	Compartment #	Product	Capacity	Tank Material	Double Wall	Interior Lining	Corrosion Protection	Tank Leak Detection	Spill Equipment	Overfill Protection
4	1	Unleaded	12,000	Fiberglass	No	No	N/A	ATG	SW	Auto Shut-off
-	2	Premium Unl	8,000	Fiberglass	No	No	N/A	ATG	SW	Auto Shut-off
5	1	Diesel	8,000	Fiberglass	No	No	N/A	ATG	SW	None

Line #	Compartment #	Piping Material	Double Wall	Corrosion Protection	Delivery System	Line Leak Detection	Electronic or Mechanical LLD
4	1	Flex Pipe	No	N/A	Pressure	LFT	Electronic
-	2	Flex Pipe	No	N/A	Pressure	LFT	Electronic
5	1	Flex Pipe	No	N/A	Pressure	LFT	Electronic

Miscellaneous Inspection			Yes	No	N/A
LLD in normal state			X		
Overfill monitor in normal state				X	
Facility operational				X	
Electronic line leak display in normal state			X		

FFL/Spill Inspection			Yes	No	N/A
Spill basin clean/functional				X	
Overfill device present/functional				X	
Drop tubes present in applicable tanks			X		
Other tanks with fill pipe				X	

Tank Area Inspection			Yes	No	N/A
Contained piping intact			X		
Piping clamp clean/functional				X	
Flange sensor operable/functional				X	
Submersible pump installed/operating properly			X		
ELLD/MLLD installed/operating properly			X		
Corrosion intact at tank				X	
Piping supports functional at piping clamp			X		
Locks present at piping clamp				X	
Monitoring wells installed and secured			X		
Any tanks out of use				X	

Serious Issues Noted (These issues must be corrected within 15 days by completing the attached response form):

Overfill Prevention, Disabled/Damaged/Removed
Please PROVIDE DOCUMENTATION that overfill prevention on specified tank(s) is operating in accordance with 10 CSR 26-2.030 - No overfill prevention present on Diesel tank.

Other Issues Noted (These issues must be corrected within 60 days by completing the attached response form):

Spill Containment Insufficient
Remove and properly dispose of any liquid and debris in spill containment(s), and maintain in accordance with 10 CSR 26-2.030 - Liquid in Pans/Unleaded and Diesel spill basins.

Recommendation (No response or correction is required):
Piping Clamp Contains Liquid/Debris
We recommend that you remove and properly dispose of liquid and debris in piping secondary containment clamp(s) - Liquid in Unleaded and Diesel piping clamp.

Dispenser Clamp Contains Liquid/Debris
We recommend that you remove and properly dispose of liquid and debris in dispenser clamp(s) - Liquid in all dispenser clamp.



R&A Inspections

UST – Response Form

September 25, 2018

Missouri UST Inspection Response Form

Please complete this form and return with requested documentation (e.g. invoice, work order, contractor's statement, photos, etc.) within the required timeframes to:

TO: Rounds & Associates
2884 - 188th Street, PO Box 1628
Urbandale, IA 50322
Phone: (515) 334-3011
Toll Free: (855) 834-8686
Fax: (515) 334-3013
Email: ustinspection@roundsassociates.com

RE: [REDACTED]

SERIOUS ISSUES NOTED - Complete by Due Date Indicated

Due Date	Corrected By:	<input type="checkbox"/> Owner/Operator <input type="checkbox"/> Service Co. (Print Company)	Date Completed
10/10/2018	Overfill Prevention, Disabled/Removed - Please <u>PROVIDE DOCUMENTATION</u> that overfill prevention in specified tanks is operating in accordance with 10 CSR 262.030. - No overfill prevention present on Diesel tank.		

Owner/Operator Signature _____ Date _____

OTHER ISSUES NOTED - Complete by Due Date Indicated

Due Date	Corrected By:	<input type="checkbox"/> Owner/Operator <input type="checkbox"/> Service Co. (Print Company)	Date Completed
11/24/2018	Spill Containment Insufficient - Remove and properly dispose of any liquid and debris in spill containment(s), and maintain in accordance with 10 CSR 262.030. - Liquid in Pallets Unsecured and Debris spill boxes.		

Owner/Operator Signature _____ Date _____

RECOMMENDATIONS NOTED - No Due Date

Due Date	Corrected By:	<input type="checkbox"/> Owner/Operator <input type="checkbox"/> Service Co. (Print Company)	Date Completed
NONE	Piping Ramp Contain Liquid/Debris - We recommend that you remove and properly dispose of liquid and debris in piping secondary containment tanks. - Liquid in Unsecured and Debris piping swages.		
NONE	Dispenser Ramp Contain Liquid/Debris - We recommend that you remove and properly dispose of liquid and debris in dispenser tanks. - Liquid in all dispenser swages.		

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Serious Category

Other Category

Recommendation Category



R&A Inspections

UST – Response Form

- Due Date (Serious = 15 day/Other = 60 day)
 - Starts day report is finalized (printed)
- Owner/Operator MUST sign
- Provide documentation (if requested)

SERIOUS ISSUES NOTED - Complete by Due Date Indicated		
Due Date	Corrected <input type="checkbox"/> Owner/Operator By: <input type="checkbox"/> Service Co. (Print Company):	Date Completed
10/10/2018	Overfill Prevention, Disabled/Damaged/Removed - Please <u>PROVIDE DOCUMENTATION</u> that overfill prevention in specified tank(s) is operating in accordance with 10 CSR 26-2.030. - No overfill prevention present on Diesel tank.	
Owner/Operator Signature: _____		Date: _____

NOTE: After “Due Date” expires, responses tracked by DNR or PSTIF respectively.



R&A Inspections

UST – Response Form

- Documentation
 - Service Company Work Order
 - Service Company Invoice
 - Part Purchase Invoice
 - Other approved documentation

SERIOUS ISSUES NOTED - Complete by Due Date Indicated			
Due Date	Corrected By:	<input type="checkbox"/> Owner/Operator <input type="checkbox"/> Service Co. (Print Company)	Date Completed
10/10/2018	Overfill Prevention, Disabled/Damaged/Removed. Please <u>PROVIDE DOCUMENTATION</u> that overfill prevention in specified tank(s) is operating in accordance with 10 CSR 26.2.030. No overfill prevention present on Diesel tank.		

Owner/Operator Signature: _____ Date: _____



R&A Inspections

AST Compliance Inspections

- ✓ MO Weights & Measures/PSTIF contract
- ✓ Inspections conducted on a 3 cycle



R&A Inspection Findings

Progress on current inspection contract:

USTs

- 385 inspections completed as of 11/26/18
- 892 total 2018-2019 inspections

ASTs

- 192 inspections completed as of 11/26/18
- 539 total 2018-2019 inspections

NOTE: Just over 40% complete.



2017 R&A Inspection Findings

Previous Contract:

USTs

- 1422 inspections completed in 2017-2018

ASTs

- 341 inspections completed in 2017-2018



NOTE: Used this set of complete data for “Top Ten” Lists



THE

TOP
TEN

LIST

2017 UST “Top Ten” Issues

1. Spill Containment Insufficient
2. Piping Sump Contains Liquid/Debris
3. Dispenser Sump Contains Liquid/Debris
4. Secondary Containment, Inadequate (Dispenser)
5. Dispenser Filters
6. ATG in Alarm
7. (2-way tie)
 - Secondary Containment, Unable to Confirm Status (Piping Sump)
 - Spill Containment, Damaged or Missing
8. Secondary Containment, Inadequate (Piping Sump)
9. Metal in Contact with Soil/Liquid (at tank top/transition area)
10. Leak in Fuel System at Dispenser (no containment)



UST

1. Spill Containment Insufficient

- Approximately 19% of issues cited
- “Other” issue (60 Day)

10 CSR 26-2.030

- *PURPOSE: This rule is designed to prevent releases during routine filling of the underground storage tank with product.*
- Sumps (containments) must be maintained and kept free of debris, liquid and ice at all times.
- Regulated substances spilled into any spill catchment basin, turbine sump, transition/intermediate sump or under-dispenser containment shall be immediately removed.



Spill Containment Insufficient



UST

2. Piping Sump Contains Liquid/Debris

- Approximately 10% of issues cited
- “Recommendation” issue (No Due Date)
 - The owner installed secondary containment to prevent releases from impacting the environment. We advise them when the containment is impacted by liquid/debris as the containment are not designed for long term exposure to liquids/fuels. Liquid/Fuel can cause corrosion issues or affect components adversely if not removed in a timely manner.
 - In addition if liquid can get into the containments more than likely fuel can get out.



Piping Sump Contains Liquid/Debris



UST

3. Dispenser Sump Contains Liquid/Debris

- Approximately 7% of issues cited
- “Recommendation” issue (No Due Date)
 - The owner installed secondary containment to prevent releases from impacting the environment. We advise them when the containment is impacted by liquid/debris as the containment are not designed for long term exposure to liquids/fuels. Liquid/Fuel can cause corrosion issues or affect components adversely if not removed in a timely manner.
 - In addition if liquid can get into the containments more than likely fuel can get out.



Dispenser Sump Contains Liquid/Debris

Dry



Liquid



UST

4. Secondary Containment Inadequate (Dispenser)

- Damaged or Compromised
- Approximately 5% of issues cited
- “Recommendation” issue (No Due Date)

10 CSR 26-2.020(1)(E)

- Prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances.
- Not sealed tight, allowing liquid in/out of containment.
 - Product/conduit entry boots damaged
 - Clamps missing/loose
 - Cracks in containment housing



Secondary Containment Inadequate (Dispenser)



Secondary Containment Inadequate (Dispenser)



UST

5. Dispenser Filter (Maintenance)

- Approximately 4% of issues cited
- In service 2+ years
- Damaged / Rusted
- Incorrect application
- Incorrect disposal
- “Recommendation” issue (No Due Date)
 - Prevent filter failure or related dispensing issues.
 - Industry advises annual filter changes, or less on high volume.
 - Installed per manufacturer; NEVER with pipe wrench
 - Gasoline/Ethanol = 10 micron; Diesel/Bio Blends = 30 micron



Dispenser Filter Issues



UST

6. ATG in Alarm

- Approximately 3.9% of issues cited
- “Other” issue (60 Day)

10 CSR 26-2.043(1)(E)

- *PURPOSE: This rule contains the requirements that specific underground storage tank leak detection methods must meet.*
- ATG displaying alarm. Recommend contact service company to correct issue and verify system is operating according to manufacturing specifications. Also, the situation must be further investigated to ensure a petroleum release has not occurred.



ATG in Alarm



ATG in Alarm

OCT 20, 2013 2:25 PM

SYSTEM STATUS REPORT

T 1:PERIODIC TEST FAIL
T 2:PERIODIC TEST FAIL
L 2:FUEL ALARM

UST

7. (TIED) Secondary Containment, Unable to Confirm Status (Piping Sump)

- Approximately 3.5% of issues cited
- “Recommendation” issue (No Due Date)

- Unable to gain access to or inspect the specified sub/piping sump.
- Recommend address the specified issue(s) (e.g. liquid removal, access sump lid) and confirm the containment and it's components are installed and operating according to manufacturer's specifications.
- Document that items are corrected, i.e. Photograph or assessment



Secondary Containment, Unable to Confirm Status (Piping Sump)



Secondary Containment, Unable to Confirm Status (Piping Sump)



UST

7. (TIED) Spill Containment, Damaged or Missing

- Approximately 3.5% of issues cited
- “Serious” issue (15 Day)
- Documentation Required

10 CSR 26-2.030

- *PURPOSE: This rule is designed to prevent releases during routine filling of the underground storage tank with product.*
 - Punctures
 - Cracks/Splits
 - Separations
 - Corrosion



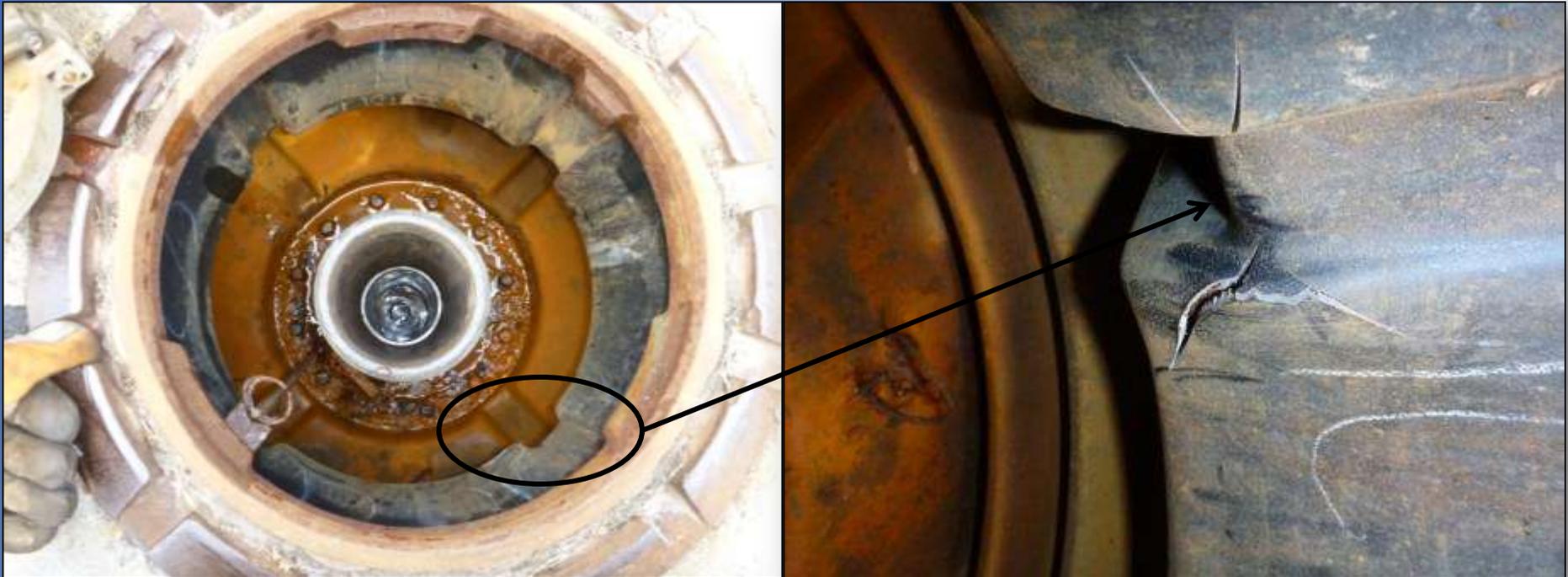
Spill Containment, Damaged or Missing

- Punctures



Spill Containment, Damaged or Missing

- Cracks/Splits



Spill Containment, Damaged or Missing

- Cracks/Splits



Spill Containment, Damaged or Missing

- Separation



Spill Containment, Damaged or Missing

- Corrosion



UST

8. Secondary Containment, Inadequate (Piping Sump)

- Damaged or Compromised.
- Approximately 3.4% of issues cited
- “Recommendation” issue (No Due Date)

10 CSR 26-2.020(1)(E)

- Prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances.
- Not sealed tight, allowing liquid in/out of containment.
 - Product/conduit entry boots damaged
 - Clamps missing/loose
 - Cracks in containment housing



Secondary Containment, Inadequate (Piping Sump)



Secondary Containment, Inadequate (Piping Sump)



UST

9. Metal in Contact with Soil/Liquid (at tank top/transition area)

- Approximately 3.4% of issues cited
- “Other” issue (60 Day)
- Documentation Required

10 CSR 26-2.031(1)(A)

- Submersible pumps (with metal pipe connections or components) above tanks in direct contact with soil/liquid must be isolated or cathodically protected.
 - Isolation boots/sleeves
 - Sacrificial Anode bags/spikes (magnesium/zinc)
 - Impressed



Metal in Contact with Soil/Liquid (at tank top/transition area)



Metal in Contact with Soil/Liquid (at tank top/transition area)



Metal in Contact with Soil/Liquid (at tank top/transition area)



Metal in Contact with Soil/Liquid (at tank top/transition area)



UST

10. Leak in Fuel System at Dispenser (no containment)

- Approximately 3.2% of issues cited
- “Serious” issue (15 Day)
- Documentation Required

10 CSR 26-2.030

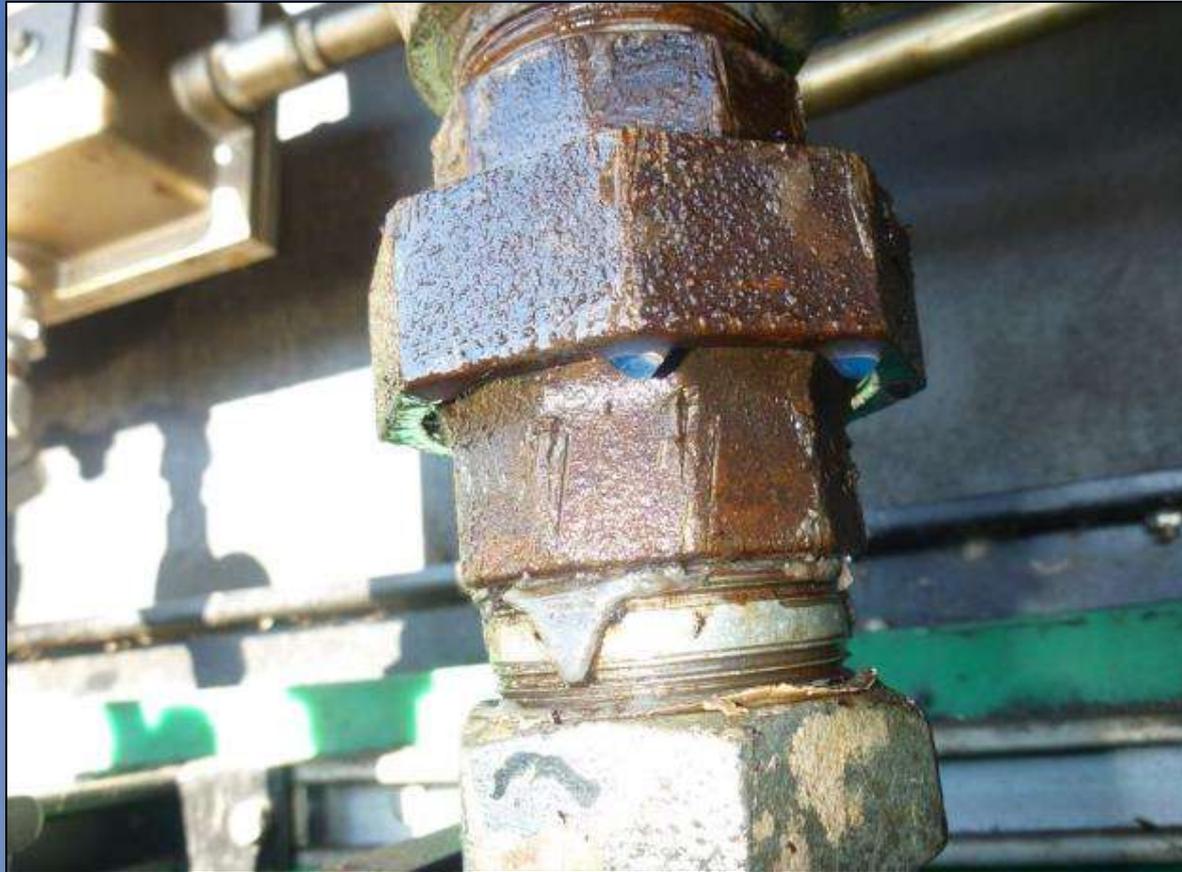
- Extensions will never be granted
- Contained leak is a “Other” issue (60 Day)
- Advise follow up check by owner after repair



Dispenser Without Containment



Leak in Fuel System at Dispenser



Size/Frequency of Leak	Gallons per...		
	Day	Month	Year
One Drop Per Second	1	33	410
Two Drops Per Second	2	67	821

R&A

Leak in Fuel System at Dispenser



Leak in Fuel System at Dispenser



UST Inspection Findings Summary

- Liquid/Debris –
 - Spill Containment Insufficient – 19%
 - Piping Sump Contains Liquid/Debris – 10%
 - Dispenser Sump Contains Liquid/Debris – 7.4%
 - Secondary Containment, Unable to Confirm Status (piping) – 3.5%
 - Metal in Contact with Soil/Liquid (tank top/transition) – 3.4%
- Compromised Containment –
 - Secondary Containment Inadequate (dispenser) – 5%
 - Spill Containment, Damaged or Missing – 3.5%
 - Secondary Containment, Inadequate (piping) – 3.4%
- Leak in Fuel System at Dispenser (no containment) – 3.2%
- ATG Alarm – 3.9%



2017 AST “Top Ten” Deficiencies

1. Metal in Contact with Soil/Backfill
2. Leak in Fuel System at Dispenser (no containment)
3. Tank Overfill Prevention
4. Spill Containment Insufficient
5. AST Containment, Open Drain Valve
6. Dispenser Sump Contains Liquid/Debris
7. Secondary Containment, Inadequate (Dispenser)
8. Leak in Fuel System at Tank (with containment)
9. Dispenser Hoses Deteriorating
10. Leak in Fuel System at Dispenser (with containment)



AST

1. Metal in Contact with Soil/Backfill

- Approximately 22% of issues cited
- “Recommendation” issue (No Due Date)

NFPA 30 (1996) 2-4.3 and

NFPA 30A (1996) 2-4.8

- Metal fuel piping or fittings is in direct contact with soil. Recommend isolating metal piping from soil or cathodically protecting (anode).



Metal in Contact with Soil/Backfill



Metal in Contact with Soil/Backfill



AST

2 . Leak in Fuel System at Dispenser (no containment)

- Approximately 12% of issues cited
- “Serious” issue (15 days)
- Documentation required

2 CSR 90-30.050(7)

- Leak/weep not occurring inside or over containment
- Provide documentation of repair to the leaking fuel system at the specified piping area or dispensing unit to document compliance.



Leak in Fuel System at Dispenser (no containment)



Leak in Fuel System at Dispenser (no containment)



Leak in Fuel System at Dispenser (no containment)



Leak in Fuel System at Dispenser (no containment)



AST

3 . Tank Overfill Prevention

- Approximately 11% of issues cited
- “Other” issue (60 days)

2 CSR 90-30.050(27) and
NFPA 30A (1996) 2-4.6.1

- Overfill device did not appear to meet requirements. Provide documentation that tank overfill prevention device is installed/adjusted to meet guidelines.



Tank Overfill Prevention



Tank Overfill Prevention



R&A

Tank Overfill Prevention



Tank Overfill Prevention



Tank Overfill Prevention



AST

4 . Spill Containment Insufficient

- Approximately 7% of issues cited
- “Recommendation” issue (No Due Date)

2 CSR 90-30.050(6)

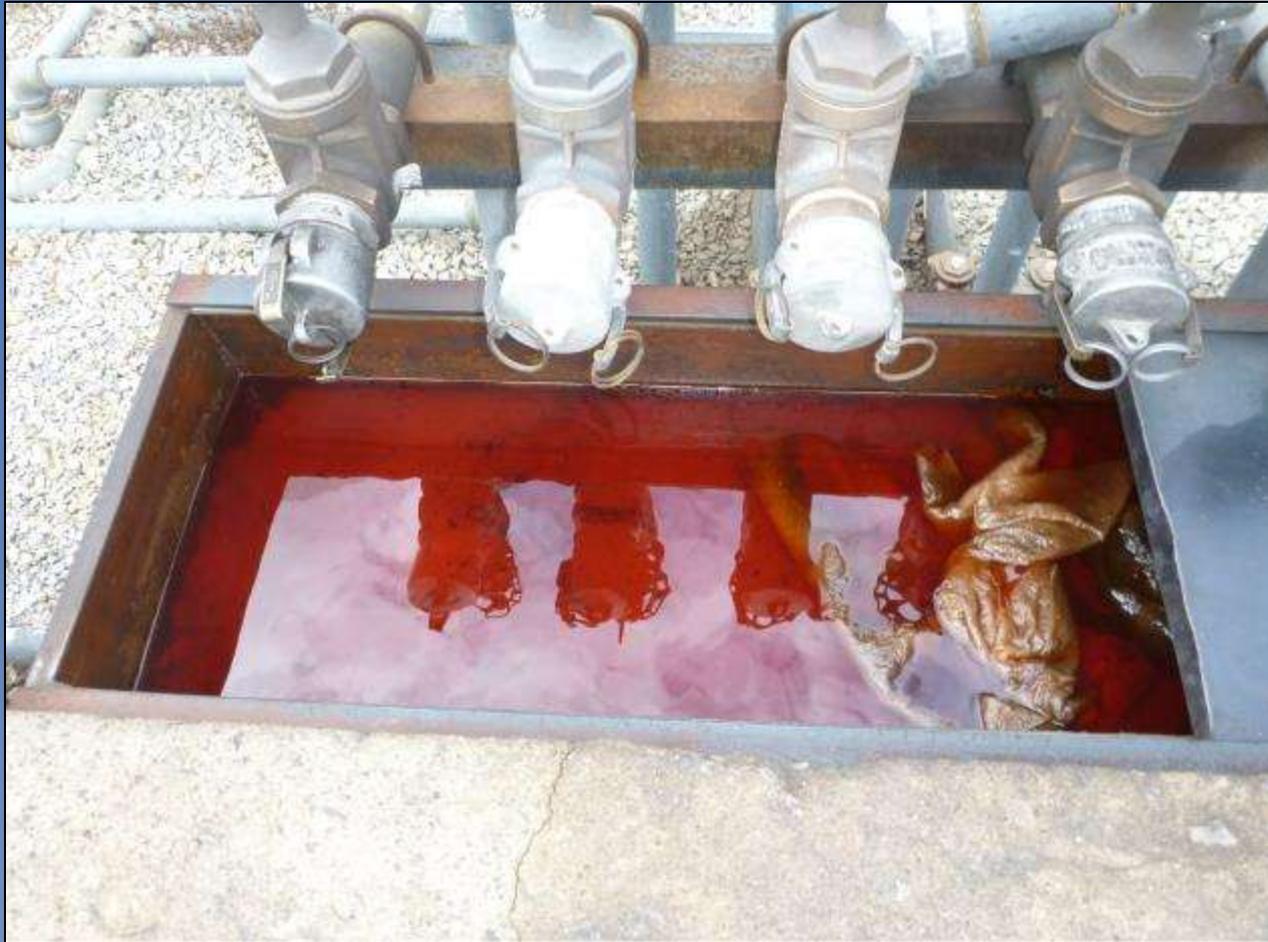
- Remove and properly dispose of any liquid and debris in the delivery spill containment.



Spill Containment Insufficient



Spill Containment Insufficient



AST

5 . AST Containment, Open Dike Drain Valve

- Approximately 6% of issues cited
- “Serious” issue (15 Day)
- Documentation required

2 CSR 90-30.050(30)

- The dike drain valve must be closed at all times to prevent product and contaminated liquid from escaping containment in the event of a spill or leak.



AST Containment, Open Dike Drain Valve



AST Containment, Open Dike Drain Valve



AST

6 . Dispenser Sump Contains Liquid/Debris

- Approximately 5.5% of issues cited
- “Recommendation” issue (No Due Date)
 - Prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances.
 - Inspection/Corrosion.
 - Recommend remove and properly dispose of liquid and debris in dispenser sump.



Dispenser Sump Contains Liquid/Debris



Dispenser Sump Contains Liquid/Debris



AST

7 . Secondary Containment, Inadequate (Dispenser)

- Approximately 5% of issues cited
- “Recommendation” issue (No Due Date)
 - Containment not sealed tight allowing liquid in/out of containment system.
 - Recommend addressing the specified issue so that the secondary containment is tight and operating according to manufactures specifications.



Secondary Containment Inadequate (Dispenser)



Secondary Containment Inadequate (Dispenser)



AST

8 . Leak in Fuel System at Tank (with containment)

- Approximately 4.1% of issues cited
- “Other” issue (60 Day)
- Documentation required

2 CSR 90-30.050(7)

- Provide documentation of repair to the leaking fuel system at the specified piping area or dispensing unit to document compliance.
- Considered “contained” if inside proper secondary containment, i.e. Dike.
- The dike drain valve must be closed at all times to prevent product and contaminated liquid from escaping containment in the event of a spill or leak.



Leak in Fuel System at Tank



Leak in Fuel System at Tank



Leak in Fuel System at Tank



AST

9 . Dispenser Hose Deteriorating

- Approximately 3.9% of issues cited
 - “Recommendation” issue (No Due Date)
-
- Dispenser maintenance including hoses is important:
 - Prevent releases
 - Customer safety and satisfaction



Dispenser Hoses Deteriorating



AST

10 . Leak in Fuel System at Dispenser (with containment)

- Approximately 3.8% of issues cited
 - “Other” issue (30 Day)
 - Documentation required
- Leak/weep occurring inside or over containment
 - Provide documentation of repair to the leaking fuel system at the specified piping area or dispensing unit to document compliance.



Leak in Fuel System at Dispenser

Inside Dike

Leak



Leak in Fuel System at Dispenser



Under
Dispenser
Containment

AST Inspection Findings Summary

- Liquid/Debris –
 - Spill Containment Insufficient – 7%
 - Dispenser Sump Contains Liquid/Debris – 5.5%
- Leak in Fuel System -
 - Leak in Fuel System at Dispenser (no containment) – 12%
 - Leak in Fuel System at Tank (with containment) – 4.1%
 - Leak in Fuel System at Dispenser (no containment) – 3.8%
- Metal in Contact with Soil/Backfill – 22%
- Tank Overfill Prevention – 11%
- AST Containment, Open Drain Valve – 6%
- Secondary Containment, Inadequate (Dispenser) – 5%
- Dispenser Hoses Deteriorated – 3.9%





Questions?

R&A