UST Walkthrough Inspections

Overview of EPA and PEI RP900 Requirements

Tanknology

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Walkthrough Inspections: Outline

- Review of EPA 2015 UST Regs
  - 40 CFR 280.36
- PEI RP900 Overview
  - Recommended Practice for Inspection and Maintenance of UST's
  - Monthly & Annual Inspections
  - "Optional" Inspection (was Daily)
- Real World Findings

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EPA § 280.36 Periodic operation and maintenance walkthrough inspections

- . (1) Conduct a walkthrough inspection that, at a minimum, checks the following equipment as specified below: (i) **Every 30 days** (Exception: spill prevention equipment at UST systems receiving deliveries at intervals greater than every 30 days may be checked prior to each delivery):
- (A) **Spill prevention equipment**— visually check for damage; remove liquid or debris; check for and remove obstructions in the fill pipe; check the fill cap to make sure it is securely on the fill pipe; and, for double walled spill prevention equipment with interstitial monitoring, check for a leak in the interstitial area; and
- (B) **Release detection equipment**— check to make sure the release detection equipment is operating with no alarms or other unusual operating conditions present; and ensure records of release detection testing are reviewed and current; and

- (ii) **Annually**:
- (A) **Containment sumps**—visually check for damage, leaks to the containment area, or releases to the environment; remove liquid (in contained sumps) or debris; and, for double walled sumps with interstitial monitoring, check for a leak in the interstitial area; and
- (B) **Hand held release detection equipment**—check devices such as tank gauge sticks or groundwater bailers for operability and serviceability;

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EPA § 280.36 Periodic operation and maintenance walkthrough inspections

- (2) Conduct operation and maintenance walkthrough inspections according to a standard **code of practice** developed by a nationally recognized association or independent testing laboratory that checks equipment comparable to paragraph (a)(1) of this section; or Note to paragraph (a)(2). The following code of practice may be used to comply with paragraph (a)(2) of this section: **Petroleum Equipment Institute Recommended Practice RP 900**, ‘‘Recommended Practices for the Inspection and Maintenance of UST Systems’’.
- (3) Conduct operation and maintenance walkthrough inspections developed by the **implementing agency** that checks equipment comparable to paragraph (a)(1) of this section.

- (b) Owners and operators must maintain **records** (in accordance with § 280.34) of operation and maintenance walkthrough inspections for **one year**. Records must include a list of each area checked, whether each area checked was acceptable or needed action taken, a description of actions taken to correct an issue, and delivery records if spill prevention equipment is checked less frequently than every 30 days due to infrequent deliveries.

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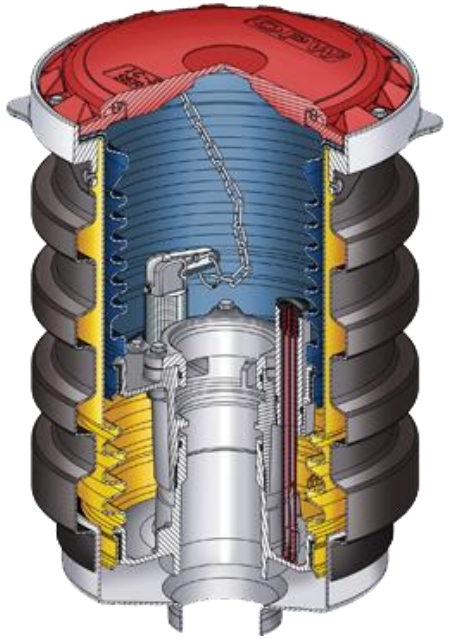
EPA 30-Day Walkthrough Inspection

- Spill Prevention Equipment
  - Check for damage
  - Remove any liquid or debris
  - Check for and remove any obstructions in the fill pipe
  - Check the fill cap to make sure it is securely on the fill pipe
  - Double walled spill prevention equipment with interstitial monitoring check for a leak in the interstitial area
- Release detection equipment
  - No alarms or other unusual operating conditions present
  - Release detection testing records are reviewed and current



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EPA Annual Walkthrough Inspection

- Containment sumps
  - Check for damage, leaks into the containment area, or releases to the environment
  - Remove any liquid or debris
  - Double walled containment sumps with interstitial monitoring check for a leak in the interstitial area
- Hand held release detection equipment (for example tank gauge sticks or groundwater bailers)
  - Check for operability and serviceability

Inspecting a containment sump

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EPA Regulations

- 30-Day vs Monthly
  - Conduct inspections “on or about the same time each month”
- Allows owners/operators to conduct their own inspection or hire 3rd-party inspectors
- Does not specify training requirements
  - Class A or B Operators should already have adequate knowledge
- References PEI RP900 as a code of practice that may be used for inspections
  - If using this code, must use entire code.
- Option for Implementing Agency to develop procedures

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PEI RP900 Overview

- **Comprehensive guide for inspecting and maintaining UST's.**
- **RP900** is the only code of practice in EPA regulations
  - More thorough than the minimum EPA requirements.
- Collective experience of equipment manufacturers, contractors, regulators, and **owner/operators**.
- Represents the consensus of the committee members
  - Not 100% unanimous - some decisions were made by majority vote.

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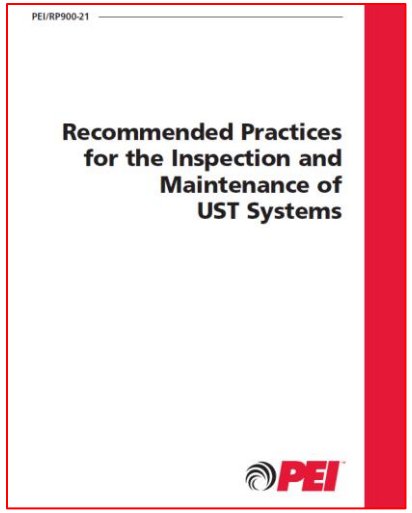
PEI RP900 Committee (2021 Edition)

Brad Hoffman, Chairman
Tanknology, Inc.
Austin, Texas

Scott C. Boorse
PEI Staff

Laura Fisher
California SWRCB
Sacramento, California

Ron Fulenchek
7-Eleven Stores
Dallas, Texas



Ryan Haerer
U.S. Environmental Protection Agency
Washington, D.C.

Eric Hick
CGRS, Inc.
Fort Collins, Colorado

Jim Howard
Speedway LLC
Edison, New Jersey

Jeff Lexvold
Xerxes Corporation
Minneapolis, Minnesota

Wes Loflin
NE Louisiana Wholesale Oil and Gas
Monroe, Louisiana

David J. Piercey
JD2 Environmental, Inc.
West Chester, Pennsylvania

Ed Rachins
Mutual Oil Company
Brockton, Massachusetts

John C. Scandurra
WMRS
Brewster, New York

Ben Thomas
UST Training
Clinton, Washington

Sonny Underwood
Mid-South Steel Products, Inc.
Cape Girardeau, Missouri

Brian Wiegert
R&A Risk Professionals
Urbandale, Iowa

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2021 Edition - Updates from 2017 Edition

- **Removed requirement for daily inspection**
  - Changed daily inspection to an optional periodic operational inspection and moved to Appendix
  - Modified monthly inspection – no daily inspection
  - Updated monthly and annual inspections to mirror EPA requirements
  - Added language that the optional periodic operational inspection is a possible method that can be used to comply with monthly inspection
- Redefined who should complete monthly and annual inspections
- Clarified use of electronics sensors for leak detection
- Clarified use of statistical inventory reconciliation for tank and line leak detection
- Updated monthly, annual, and new periodic checklists

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Qualified Person: Monthly Inspections

- Trained to complete the monthly checklist in RP 900
  - Evaluate problems
  - Perform simple functions involving UST equipment specified by the qualified person's employer:

- Examples can include (but not limited to) following:
  - Knows the method(s) of leak detection in use
  - Reviews monthly leak detection results.
  - Evaluates the condition of fill and vapor caps.

RP900: UST Inspection & Maintenance Online Test

List Price:	$295.00
Member Price:	$75.00
Short Name	Quiz-RP900

Details

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Qualified Technician: Monthly & Annual Inspections

- A person trained to complete the monthly and annual checklists contained in RP900.
- Also trained to inspect, test, evaluate and maintain components of UST equipment that could release product or vapors or cause such a release to remain undetected.

- Received appropriate certification or licensing from regulatory bodies
- Certification from the manufacturer for the specific equipment being serviced.
- Safety checks for returning equipment to service.

ICC INTERNATIONAL CODE COUNCIL®

Franklin Fueling Systems

OPW RETAIL FUELING

VEEDER-ROOT

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Qualified Technician: Annual Inspections

- Also has access to all tools and equipment required to perform these duties in a safe, professional manner
- Has received all necessary safety training and information required to safely and competently execute these duties.

API American Petroleum Institute

API WorkSafe

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RP900: Monthly Inspection

- **Tank Equipment**
  - At-grade inspection of fill equipment (covers, spill buckets, drop tubes)
  - St. I V.R. Cover/Adapters
  - Tank gauge stick
  - Water in tanks
  - Vents
  - Spill Kit

- **Leak Detection Results**
- **Observation Wells**
- **CP Rectifier**
- **Unmonitored Dispensers & STP's**

BUSINESS NAME
ADDRESS
CITY, ST ZIP

F01234567890123

MAY 1, 2015 8:00 AM

CSLD TEST RESULTS
MAY 1, 2015 8:00 AM

T 1:DIESEL –GEN
PROBE SERIAL NUM 012345

0.20 GAL/HR TEST
PER: MAY 1, 2015 PASS

PUT THE INDUSTRY LEADER ON YOUR TEAM

RP900: Monthly Inspection Form – Page 1

APPENDIX A-1: SAMPLE FORM FOR MONTHLY UNDERGROUND STORAGE SYSTEM INSPECTION CHECKLIST – Page 1

Go to www.pei.org/RP900 for an electronic version of this form.

MONTHLY UST SYSTEM INSPECTION CHECKLIST

Facility ID#	Facility Name/Address	Qualified Person Signature	Date

If any problem is found, contact:		Contact information:	

Category	Description	PEI/RP900	N/A	Tank 1	Tank 2	Tank 3	Tank 4
Operator Training	Review site training documents	6.4					
Leak Detection Recordkeeping	**Circle method of tank leak detection: ATG, CIM, SIR, IC, GWM, SVM, MIMT Circle method of piping leak detection: CIM, MPLT, SIR, GWM, SVM, MIMP**	6.5					
Automatic Tank Gauge (ATG)	Passing tank test report printed and properly filed	6.5.1.1					
Continuous Interstitial Monitoring (CIM)	Sensor status report printed and properly filed	6.5.2.1					
Monthly Piping Leak Test (MPLT)	Passing piping leak test report printed/documented and properly filed	6.5.3.1					
Statistical Inventory Reconciliation (SIR)	Last month's SIR results passed and available for inspection	6.5.4.1					
Inventory Control (IC)	Inventory reconciled and within the company or regulatory standard	6.5.5.1					
Manual Groundwater Monitoring (GWM)	Groundwater bailer in good condition	6.5.6.1					
Manual Groundwater (GWM) or Soil Vapor Monitoring (SVM)	Wells sampled and results pass	6.5.6.2					
Manual Interstitial Monitoring for Tanks (MIMT)	Steel tank: interstitial space checked and found dry	6.5.7.1					
	Fiberglass tank: interstitial space checked and found dry	6.5.7.2					
	Fiberglass tank: level of monitoring fluid within normal range	6.5.7.3					
	For steel and fiberglass tanks, vacuum level is within tolerances Tnk 1 vac: Tnk 2 vac: Tnk 3 vac: Tnk 4 vac:	6.5.7.4					
Manual Interstitial Monitoring for Piping (MIMP)	Containment sump (STP and/or remote fill sump) inspected and no liquid found	6.5.8.1					
All Tanks		6.6					
Spill Kit	All components of the spill kit are present and in good condition	6.6.1					
Grade-Level Covers	All covers present, in good condition, seated firmly on the correct tank	6.6.2.1					
Spill Containment Manhole	Drain valve in spill containment manhole in good condition	6.6.3.1					
	Interstitial space of double-walled containment manhole is dry	6.6.3.2					

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CSLD TEST RESULTS
- - - - - - - - - - - -
 DD-MM-YY HH:MM XM

T 2:SUPER UNLEADED
PROBE SERIAL NUM 123002
0.2 GAL/HR TEST
PER: DD-MM-YY PASS
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RP900: Monthly Inspection Form – Page 2

APPENDIX A-1: SAMPLE FORM FOR MONTHLY UNDERGROUND STORAGE SYSTEM INSPECTION CHECKLIST – Page 2

Go to www.pei.org/RP900 for an electronic version of this form.

Category	Description	PEI/RP900	N/A	Tank 1	Tank 2	Tank 3	Tank 4
Drop Tube	Standard drop tube smooth, no ragged edges, in good condition	6.6.4.1					
	Top edge of coaxial drop tube smooth, round, slightly below the top edge of the fill pipe	6.6.4.2					
Tank Gauge Stick	Tank gauge stick can be clearly read, is not warped or broken	6.6.5.1					
Check for Water	No water present in the tank	6.6.6.1					
Tank Vents	Vent cap present, vent pipe solidly supported and vertical	6.6.7.1					
Stage I Vapor Recovery		6.7					
Two-Point (Dual-Point) Vapor Recovery	Cover present, colored orange, seated firmly at grade, not broken, cracked or chipped	6.7.1.1					
	If spill containment manhole is present, no dirt, trash, water or product	6.7.1.2					
	If spill containment manhole is present, no cracks, bulges or holes	6.7.1.3					
	Vapor recovery cap in good condition, seals tightly	6.7.1.4					
	Poppet of vapor recovery adaptor seals tightly	6.7.1.5					
Observation and Monitoring Wells		6.8					
	Observation well cover is properly identified and secured	6.8.1.1					
Corrosion Protection		6.9					
Impressed-Current Cathodic Protection	Record volt and amp readings, readings consistent with previous months	6.9.1.1					
	Record hour meter reading (if present); Reading increases by about 730 hours each month	6.9.1.2					
Unmonitored Dispensers and Submersible Turbine Pumps (STPs)		6.10					
Unmonitored Dispensers	All dispenser components are clean and dry	6.10.1.1					
Unmonitored STPs	No fuel detected in STP access manhole	6.10.2.1					
DESCRIBE ANY DEFICIENCIES HERE:							

RP900: Annual Inspection

- Review Monthly Inspections
- Under Dispenser Inspections
- Sump Inspections (STP, Fill, Other)
- Overfill Prevention (inspect, verify, and look for corrosion)
- ATG Equipment & Functionality
- Leak Detection Devices Tested
- Other Test Results (CP, St. I or II Vapor Recovery)

Basically look at just about everything!

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RP900: Annual Inspection – ATG's, Fill, Overfill

APPENDIX A-2: SAMPLE FORM FOR ANNUAL UNDERGROUND STORAGE SYSTEM INSPECTION CHECKLIST – Page 1

Go to www.pei.org/RP900 for an electronic version of this form.

ANNUAL UST SYSTEM INSPECTION CHECKLIST

Facility ID#	Facility Name/Address	Qualified Technician Signature	Date

If any problem is found, contact:		Contact information:	

Category	Description		PEI/RP900	N/A	Tank 1	Tank 2	Tank 3	Tank 4
Monthly Inspections	Complete monthly checklist and compare to previously completed monthly checklists		7.4.1					
	Monthly inspections reviewed and found adequate		7.4.2					
ATG Manhole			7.8					
ATG Manhole	Cap in good condition, seals tightly, hole sealed where probe wire goes through		7.8.1					
	Wire splices sealed and wire in good condition		7.8.2					
	Junction box has cover, not corroded; intrinsically safe wiring in good condition		7.8.3					
	No exposed wires		7.8.4					
	Probe and floats in good condition, both floats present and move freely (mag probe)	TEST DATE:	7.8.5					
	Verify functionality of ATG probe	TEST DATE:	7.8.6					
	Manhole cover in good condition		7.8.7					
	Adequate clearance between ATG grade-level cover and below-grade components		7.8.8					
Fill Area			7.9					
Drop Tube	Drop tube extends to within 6 inches of the tank bottom (if no flow diffuser present)		7.9.1					
Vapor Recovery Adaptor	Poppet of Stage I vapor recovery adaptor (also known as a "dry break") moves freely, seals tightly		7.9.2					
Single-Walled Spill Containment Manhole	Single-walled spill containment manhole tightness tested within last 3 years	TEST DATE:	7.9.3					
Double-Walled Spill Containment Manhole	Double-walled spill containment manhole tightness tested within last 3 years OR inspected monthly	TEST DATE:	7.9.4					
Overfill Prevention			7.10					
Drop Tube Shutoff (Flapper Valve)	Drop tube shutoff valve passes inspection	EVALUATION DATE:	7.10.1.1					
	For drop tube shutoff valves in diesel tanks, excessive corrosion not present		7.10.1.2					

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RP900: Annual Inspection – Leak Detection

APPENDIX A-2: SAMPLE FORM FOR ANNUAL UNDERGROUND STORAGE SYSTEM INSPECTION CHECKLIST – Page 2

Go to www.pei.org/RP900 for an electronic version of this form.

Category	Description		PEI/RP900	N/A	Tank 1	Tank 2	Tank 3	Tank 4
Ball Float Valve	Ball float can be removed and inspected		7.10.2.1					
	Ball float valve passes inspection	EVALUATION DATE:	7.10.2.2					
	For ball float valves in diesel tanks, excessive corrosion not present		7.10.2.3					
Overfill Alarm	Overfill alarm passes inspection	EVALUATION DATE:	7.10.3.1					
Leak Detection			7.11					
ATG Console	ATG passes annual inspection	EVALUATION DATE:	7.11.1.1					
	Console has no active warnings or alarms		7.11.1.2					
	Alarm history shows no recurring leak alarms		7.11.1.3					
	Verify in-tank leak detection tests are being completed (if used for leak detection)		7.11.1.4					
	Verify correct set-up parameters for electronic line leak detector (if present)	VERIFICATION DATE:	7.11.1.5					
	Verify piping leak detection tests are being completed (if used for leak detection)		7.11.1.6					
Electronic Leak Detection Monitor	Leak monitoring console is operational and has no active warnings or alarms		7.11.2.1					
Line Tightness Testing	If pressurized piping has been tested in the last year, review the results and verify that the test passed	TEST DATE:	7.11.3.1					
	If suction piping has been tested within the last 3 years, review the results and verify that the test passed	TEST DATE:	7.11.3.2					
	ELLD has conducted a 0.1 gph test in the last year	TEST DATE:	7.11.3.3					
Under Pump Check Valve (Suction Pump)	Below-grade piping operates at less than atmospheric pressure		7.11.4.1					
	Below-grade piping slopes continuously back to the tank		7.11.4.2					
	There is only one check valve, and it is located as close as practicable to the suction pump		7.11.4.3					
Tank Tightness Testing	Tank is 10 years old or less		7.11.5.1					
	If a tank test has been conducted within the last 5 years, review the results and verify that the test passed	TEST DATE:	7.11.5.2					
Statistical Inventory Reconciliation (SIR)	SIR results for the previous 12 months are "pass"		7.11.6.1					

PEI/RP900-21

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RP900: Annual Inspection – C.P., V.R., Results

APPENDIX A-2 SAMPLE FORM FOR ANNUAL UNDERGROUND STORAGE SYSTEM INSPECTION CHECKLIST – Page 3

Go to www.pei.org/RP900 for an electronic version of this form.

Category	Description		PEI/RP900	N/A	Tank 1	Tank 2	Tank 3	Tank 4
Continuous Soil Vapor Monitoring	Sensing device tested	TEST DATE:	7.11.7.1					
Continuous Ground-water Monitoring	Sensing device tested	TEST DATE:	7.11.8.1					
Corrosion Protection			7.12					
Galvanic Cathodic Protection	Verify that cathodic protection testing of all metallic components in contact with soil or water has been conducted within the past 3 years and the test passed	TEST DATE:	7.12.1.1					
Impressed Current Cathodic Protection	Verify that cathodic protection testing has been conducted within the past 3 years and the test passed	TEST DATE:	7.12.2.1					
	No exposed wires		7.12.2.2					
Tank Lining	Lining inspected as required and in good condition	TEST DATE:	7.12.3.1					
Miscellaneous Inspection Items			7.13					
Tank Pad & Pavement	Concrete or asphalt over or near tanks is level, no significant cracks		7.13.1.1					
Stage II Liquid Collection Points	Cap in good condition, fits tightly, little or no liquid in bottom		7.13.2.1					
Stage I Testing	Verify that Stage I testing has been conducted and test results are passing	TEST DATE:	7.13.3.1					
Stage II Testing	Verify that Stage II testing has been conducted and test results are passing	TEST DATE:	7.13.4.1					
Site Diagram	Site diagram accurately reflects the site conditions		7.13.5.1					
DESCRIBE ANY DEFICIENCIES HERE:								

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RP900: Annual Inspection - Dispensers

APPENDIX A-2: SAMPLE FORM FOR ANNUAL DISPENSER INSPECTION CHECKLIST

Go to www.pei.org/RP900 for an electronic version of this form.

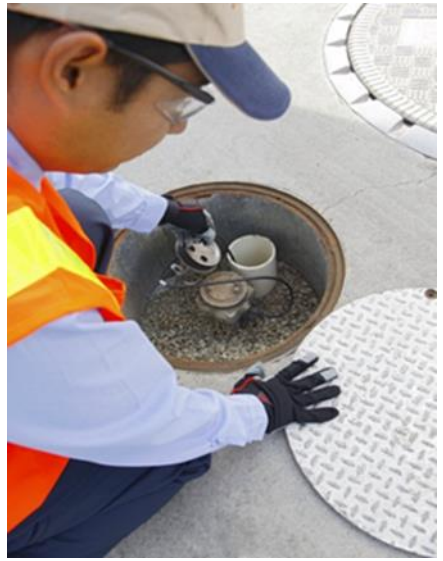
ID#:	ANNUAL DISPENSER INSPECTION CHECKLIST			Date:			
Category	**Description**	**PEI/RP900**	**N/A**	**Disp 1**	**Disp 2**	**Disp 3**	**Disp 4**
Initial Fuel Dispenser Inspection		7.5					
All Dispensers	All dispenser components are clean and dry	7.5.1					
	If dispenser sump is present, sump is dry	7.5.2					
Fuel Dispenser Inspection		7.6					
All Dispensers	Visible piping and fittings show no signs of leaking	7.6.1					
	Piping in good condition	7.6.2					
	Dispenser containment sump free of trash and debris	7.6.5					
	Junction box(es) have covers, not corroded; conduit and intrinsically safe wiring in good condition	7.6.8					
	Flexible connectors not frayed, twisted, kinked or bent beyond manufacturer specifications	7.6.9					
	Shear valves operate freely and close completely — TEST DATE:	7.6.15					
	Stage II piping functional or else capped and sealed at an elevation lower than the fuel dispenser island	7.6.16					
Dispensers Without Sumps	Flex connectors and other metallic product piping are not in contact with soil or water or are cathodically protected	7.6.17					
Dispensers With Sumps	Any water or product removed and disposed of properly	7.6.4					
	Sump free of cracks, holes, bulges, or other defects	7.6.6					
	Penetration fittings intact and secured	7.6.7					
	Piping interstitial space open to the dispenser sump or dispenser pan (open double-walled piping system only)	7.6.21					
	Piping interstitial space closed to the dispenser sump (closed double-walled piping system only)	7.6.22					
Dispensers With Single-Walled Sumps	Single-walled sump tested for integrity every 3 years — TEST DATE:	7.6.18					
Dispensers With Double-Walled Sumps	If not continuously monitored or inspected annually, double-walled sump tightness tested every 3 years — TEST DATE:	7.6.19					
DESCRIBE ANY DEFICIENCIES HERE:							

RP900: Annual Inspection – LD Device Tests

APPENDIX A-2: SAMPLE FORM FOR ANNUAL LEAK DEVICE INSPECTION CHECKLIST

Go to www.pei.org/RP900 for an electronic version of this form.

ID#:	ANNUAL LEAK DETECTION DEVICE INSPECTION CHECKLIST							Date:
Category	**Description**		**PEI/RP900**	**N/A**	**Tank 1**	**Tank 2**	**Tank 3**	**Tank 4**
Leak Detection Device. Describe location (e.g., interstitial, STP, fill, dispenser) on this row:			7.7					
Liquid Sensor	Sensor tested and functional	TEST DATE:	7.7.1					
	Sensor properly mounted at the bottom of the containment sump or pan (containment sump or pan sensor only)		7.7.3					
	Sensor properly mounted at the bottom of double-walled tank (double-walled tank sensor only)		7.7.4					
Discriminating Sensor	Sensor tested and functional	TEST DATE:	7.7.1					
	Sensor properly mounted at the bottom of the containment sump or pan (containment sump or pan sensor only)		7.7.3					
	Sensor properly mounted at the bottom of double-walled tank (double-walled tank sensor only)		7.7.4					
Hydrostatic Sensor	Sensor tested and functional	TEST DATE:	7.7.1					
	Hydrostatic sensor properly positioned		7.7.5					
Vacuum/Pressure Sensor	Sensor tested and functional	TEST DATE:	7.7.1					
	Alarm sounds when pressure or vacuum is released	TEST DATE:	7.7.2					
	Entire interstitial space under pressure or vacuum (closed double-walled piping system only)	TEST DATE:	7.7.7					
Visually Monitored Double-Walled Sump	Leak detection device is within recommended limits		7.7.6					
Dispenser Pan Float Mechanism	Sensor tested and functional	TEST DATE:	7.7.1					
	Dispenser pan float mechanism free to move and properly adjusted	TEST DATE:	7.7.8					
DESCRIBE ANY DEFICIENCIES HERE:								



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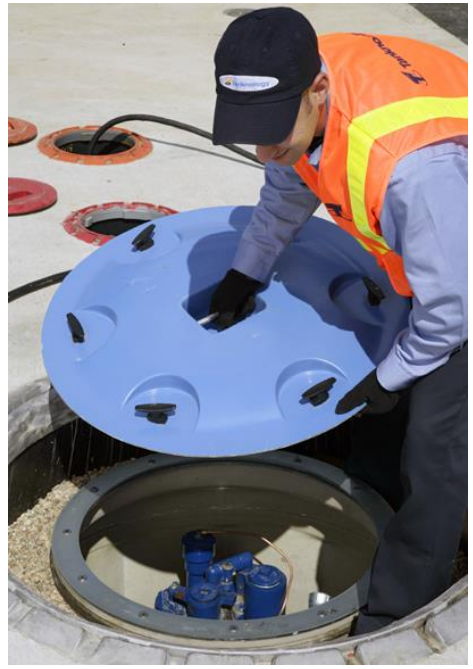
RP900: Annual Inspection – STP's

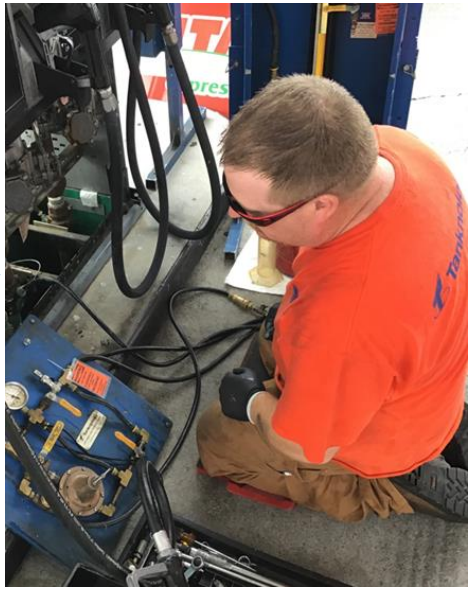
APPENDIX A-2: SAMPLE FORM FOR ANNUAL STP INSPECTION CHECKLIST – Page 1

Go to www.pei.org/RP900 for an electronic version of this form.

PEI/RP900-21

ID#:	ANNUAL STP INSPECTION CHECKLIST							Date:			
Category	**Description**		**PEI/RP900**	**N/A**	**Tank 1**	**Tank 2**	**Tank 3**	**Tank 4**
Submersible Turbine Pump (STP)									
All STP	Visible piping and fittings show no signs of leaking		7.6.1					
	Piping in good condition		7.6.2					
	Excessive corrosion not present		7.6.3					
	Sump free of trash and debris		7.6.5					
	Junction box(es) have covers, not corroded; conduit and intrinsically safe wiring in good condition		7.6.8					
	Flexible connectors not frayed, twisted, kinked or bent beyond manufacturer specifications		7.6.9					
	Mechanical line leak detector properly vented, vent tube not kinked or twisted, vent tube fittings intact and tightened		7.6.10					
	Mechanical line leak detector passes 3.0 gallons per hour (gph) test	TEST DATE:	7.6.11					
	Electronic line leak detector (ELLD) passes 3.0 gph test	TEST DATE:	7.6.12					
	ELLD passes 0.2 gph test	TEST DATE:	7.6.13					
	ELLD passes 0.1 gph test	TEST DATE:	7.6.14					
	Manhole cover at grade in good condition, does not touch sump cover, all bolts present, handles and lift mechanism in good condition (as applicable)		7.6.24					
STP: No Containment Sump	Submersible pump head, flex connector(s) and other metallic product piping are not in contact with soil or water or are cathodically protected		7.6.17					
STP: In Containment Sump	Any water or product removed and disposed of properly		7.6.4					
	Sump is free of cracks, holes, bulges or other defects		7.6.6					
	Penetration fittings intact and secured		7.6.7					
	Piping interstitial space open to the STP sump (open double-walled piping system only)		7.6.20					
	Piping interstitial space closed to the STP sump (closed double-walled piping system only)		7.6.22					
	Sump lid, gasket and seals present and in good condition		7.6.23					
STP: In Single-Walled Containment Sump	Single-walled sump tested for integrity every 3 years	TEST DATE:	7.6.18					
STP: In Double-Walled Containment Sump	If not continuously monitored or inspected annually, double-walled sump tightness tested every 3 years	TEST DATE:	7.6.19					
DESCRIBE ANY DEFICIENCIES HERE:								





RP900: Annual Inspection – All Other Sumps

APPENDIX A-2: SAMPLE FORM FOR ANNUAL FILL CONTAINMENT SUMP INSPECTION CHECKLIST

Go to www.pei.org/RP900 for an electronic version of this form.

ID#:	ANNUAL FILL CONTAINMENT SUMP INSPECTION CHECKLIST							Date:
Category	**Description**		**PEI/RP900**	**N/A**	**Tank 1**	**Tank 2**	**Tank 3**	**Tank 4**
Fill Sump			7.6					
Fill Containment Sump	Any water or product removed and disposed of properly		7.6.4					
	Visible piping and fittings show no signs of leaking		7.6.1					
	Piping in good condition		7.6.2					
	Excessive corrosion not present		7.6.3					
	Sump free of trash and debris		7.6.5					
	Sump is free of cracks, holes, bulges or other defects		7.6.6					
	Penetration fittings intact and secured		7.6.7					
	Junction box(es) have covers, not corroded; conduit and intrinsically safe wiring in good condition		7.6.8					
	Flexible connectors not frayed, twisted, kinked or bent beyond manufacturer specifications		7.6.9					
	Piping interstitial space open to the fill sump (open double-walled piping system only)		7.6.20					
	Piping interstitial space closed to the fill sump (closed double-walled piping system only)		7.6.22					
	Sump lid, gasket and seals present and in good condition		7.6.23					
	Manhole cover at grade in good condition, does not touch sump cover, all bolts present, handles and lift mechanism in good condition (as applicable)		7.6.24					
Single-Walled Fill Sump	Single-walled sump tested for integrity every 3 years	TEST DATE:	7.6.18					
Double-Walled Fill Sump	If not continuously monitored or inspected annually, double-walled sump tightness tested every 3 years	TEST DATE:	7.6.19					
DESCRIBE ANY DEFICIENCIES HERE:								

PEI/RP900-21

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Similar checklist for Fill, Transition, and Other Sumps

RP900: Periodic Inspection (Optional)

- **Leak Detection**
  - ATG functional & no alarms
  - Product levels o.k.
  - Printer has paper
  - MLLD - No Complaints Slow-Flow
  - Inventory O.K.
- **Tank Area**
  - Fill cover in good condition
  - Spill bucket clean & dry
  - Fill cap tight
  - Fill pipe not blocked

This used to be the “Daily” inspection.

“Periodic” inspections are not a required part of EPA walkthrough inspections.

Don’t forget dispensing equipment.

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RP900: Periodic Inspection (Optional)

APPENDIX A-4: SAMPLE FORM FOR AN OPTIONAL PERIODIC UNDERGROUND STORAGE SYSTEM INSPECTION CHECKLIST

Go to www.pei.org/RP900 for an electronic version of this form.

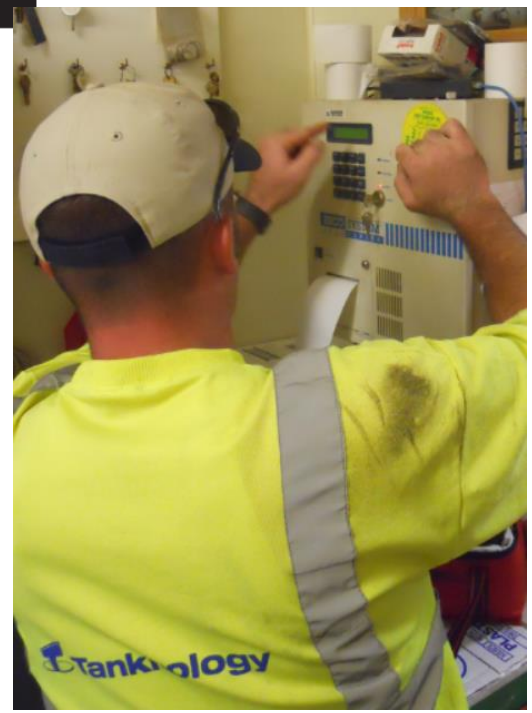
OPTIONAL PERIODIC UST SYSTEM INSPECTION CHECKLIST

Facility ID#	Facility Name/Address	Qualified Person Signature	Date

If any problem is found, contact:		Contact information:	

Category	Description	PEI/RP900	N/A	Tank 1	Tank 2	Tank 3	Tank 4
Leak Detection		A-4.4					
Automatic Tank Gauge (ATG)	The power is on	A-4.4.4.1					
	There are no warning or alarm lights blinking or lit	A-4.4.1.2					
	There is a liquid measurement for each tank and the reading appears accurate	A-4.4.1.3					
	The printer has paper and is in working condition	A-4.4.1.4					
Electronic Leak Detection Monitor	The power is on	A-4.4.2.1					
	There are no warning or alarm lights blinking or lit	A-4.4.2.2					
Mechanical Line Leak Detector	No customers have complained about slow flow	A-4.3.3.1					
Daily Inventory	Inventory records are reconciled daily and daily variance is within the guidelines set by the facility owner	A-4.3.2					
Tank Fill Area		A-4.5					
Fill Cover	Fill cover present, not broken or damaged	A-4.5.1.1					
	Fill covers are identified by color and located on the correct tank	A-4.5.1.2					
Spill Containment Manhole (Spill Bucket)	No dirt, trash, water or product in the spill containment manhole	A-4.5.2.1					
	No cracks, bulges or holes in the spill containment manhole	A-4.5.2.2					
	Below-grade containment manhole properly latched (if present)	A-4.5.2.3					
	Below-grade containment manhole contains oil-absorbent material	A-4.5.2.4					
Fill Pipe	Fill cap in good condition, seals tightly	A-4.5.3.1					
	No obstruction inside the fill pipe	A-4.5.3.2					

DESCRIBE ANY DEFICIENCIES HERE:



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Importance of “Optional” Periodic Inspections

- Many retail facilities check the washroom every day
  - Some check multiple times per day
- Shouldn’t the UST’s be at least as important?!

DAILY **RESTROOM** CLEANING **CHECKLIST**

When **cleaning** and **sanitizing** restrooms, follow **all** directions provided by the manufacturer when determining concentration levels and how to apply chemicals. Follow **all** suggested **Personal Protective Equipment (PPE)** guidelines provided by the manufacturer.

Cleaning Activity	Date / Time / Staff Initials	Date / Time / Staff Initials	Date / Time / Staff Initials	Date / Time / Staff Initials	Date / Time / Staff Initials	Date / Time / Staff Initials	Date / Time / Staff Initials	Date / Time / Staff Initials	Date / Time / Staff Initials
Cleaned and sanitized all toilets (including seats and flush handles).									
Cleaned and sanitized all sink counters (including sink faucet handles).									
Cleaned and sanitized all paper towel dispensing and electric hand drying equipment. Refilled paper towel dispensers when necessary.									
Cleaned and sanitized all push handles to soap dispensers. Refilled soap dispensers when necessary.									
Cleaned and sanitized all handles and/or plates to restroom and stall doors (entrance and exit).									
Cleaned restroom floors (sweep and mop).									
Emptied all trash receptacles (when applicable).									

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Comparison to EPA Regulations

RP900 Recommended Practices Compared With Federal Rule Requirements			
Component/Task	**Monthly**	**Annual**	**Every 3 Years**
Automatic Tank Gauge	PEI/EPA	PEI/EPA	
Check for Water in Tank	PEI/EPA		
Complete Daily Checklist and Compare to Previously Completed Daily Checklists	PEI		
Complete Monthly Checklist and Compare to Previously Completed Monthly Checklists		PEI	
Containment Sumps	PEI	PEI/EPA	PEI/EPA
Drop Tube	PEI	PEI	
Electronic Line Leak Detector	PEI/EPA	PEI/EPA	
Fill Cover	PEI		
Fill Cap	PEI/EPA		
Fill Pipe	PEI/EPA		
Fuel Dispensers		PEI	
Galvanic Corrosion Protection			PEI/EPA
Gauge Stick	PEI	EPA	
Grade Level Covers	PEI		
Groundwater/Soil Vapor Monitoring	PEI/EPA	PEI/EPA	
Groundwater Bailer	PEI	EPA	
Impressed Current Corrosion Protection	PEI/EPA	PEI	PEI/EPA
Inventory Control	PEI/EPA		
Leak Detection Monitor	PEI/EPA	PEI/EPA	
		PEI/EPA	

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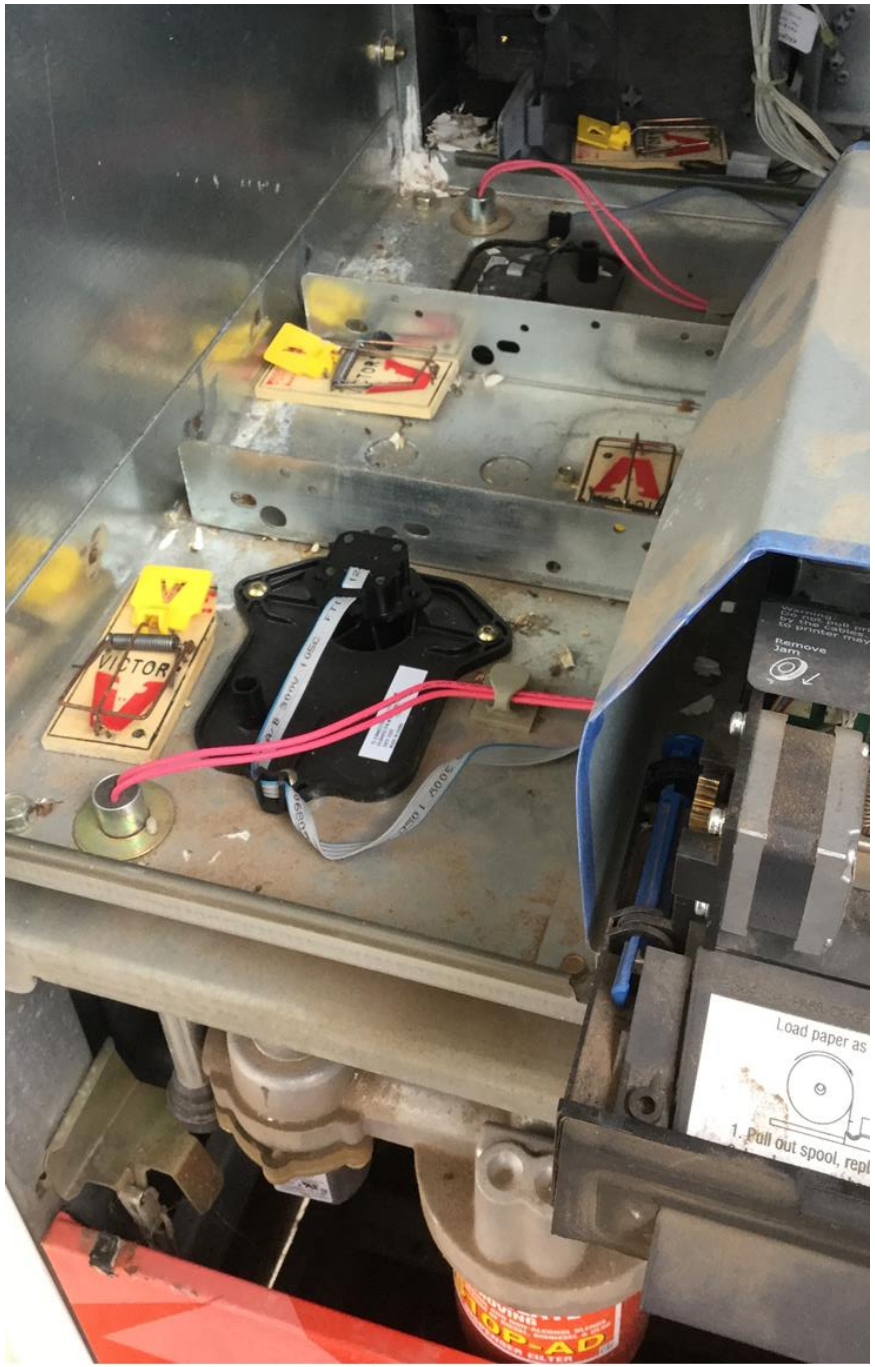
Findings

Watch out for surprises!



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Spill Containers – Liquid and Debris

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Spill Containers – Full of Ice

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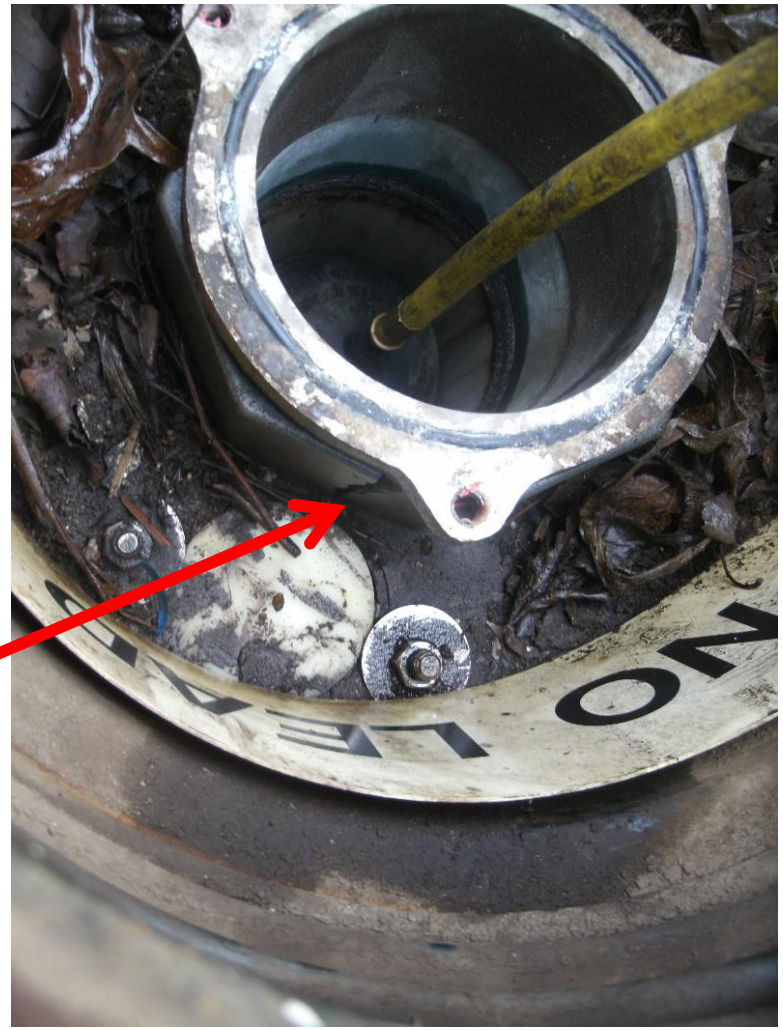
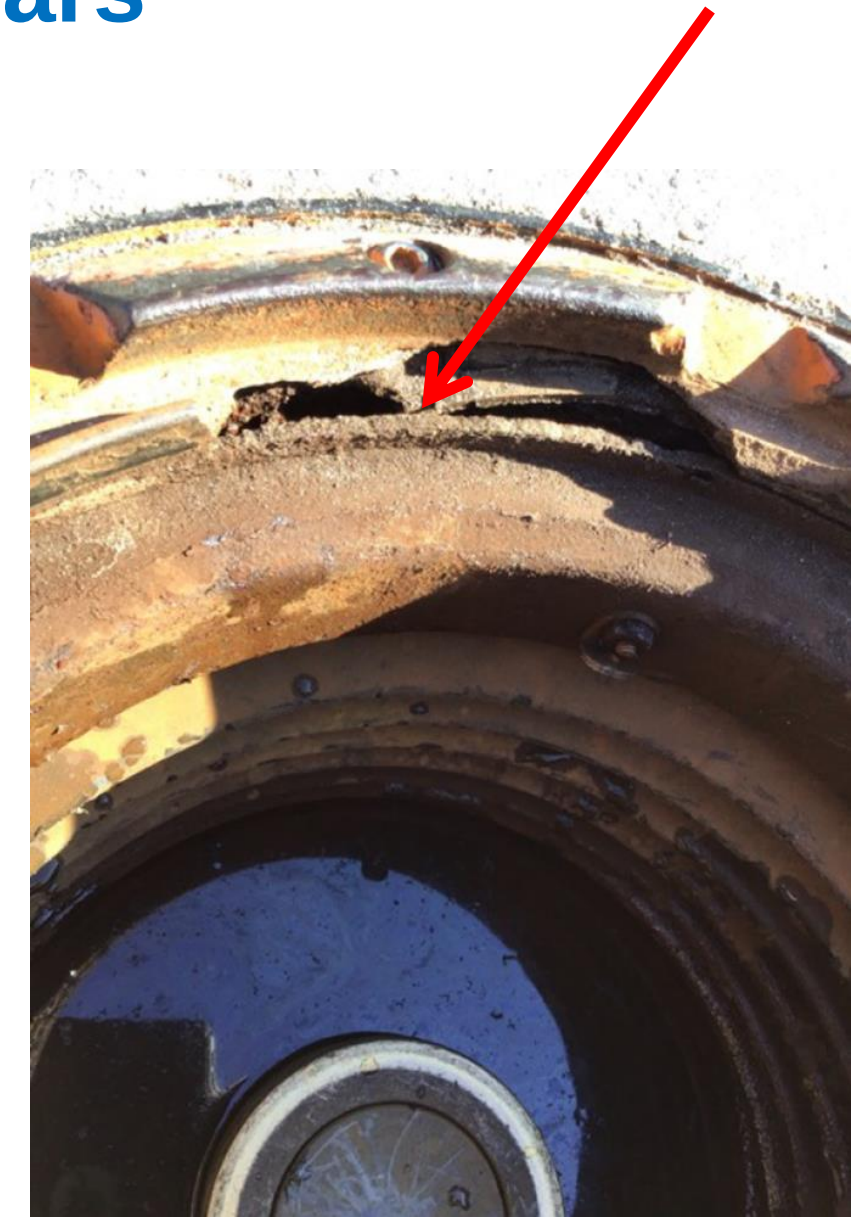
Spill Containers – Cracks & Tears





Spill Containers – Double Wall

- Broken Monitoring Sensors for interstitial.
- Will need 3-year test.

COMMENTS:
All the dispenser pipe unions show signs of previous leaks but none are actively leaking. Regular 1&2 fill buckets have broken overfill gauges. The site attendant mentioned that the fuel drivers might have broken the gauges trying to get their hose coupler to engage properly on the fill adaptors.

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Fill Pipe – Blocked by Tank Stick

- Tank stick prevents flapper valve from working.

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ATG Riser – Full of corrosion in Diesel Tank

Diesel ATG

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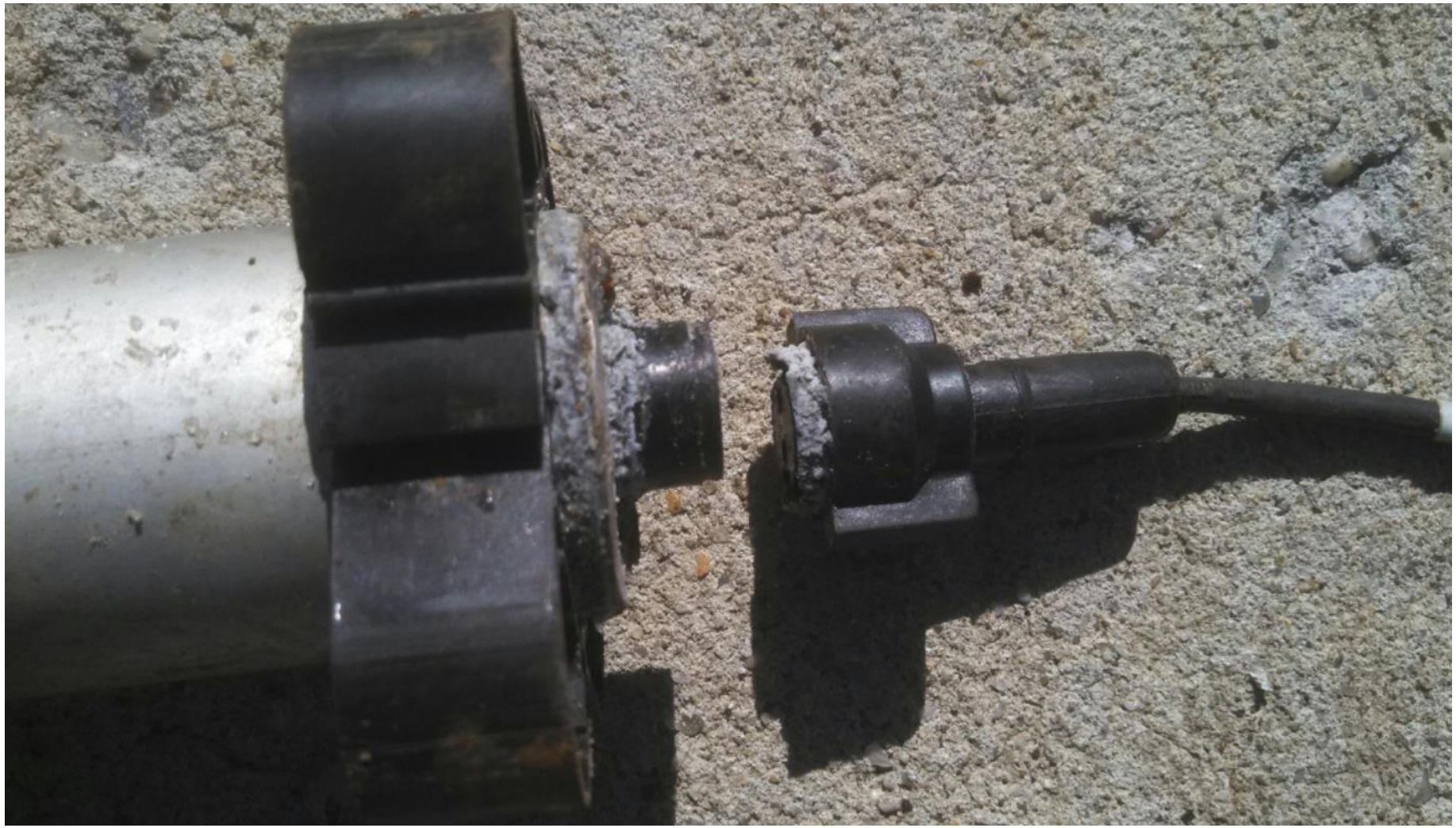
ATG – Probe cable corroded



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Sump – Inside lid cracked

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STP Sump: Leak, Fuel, & Sensor in alarm

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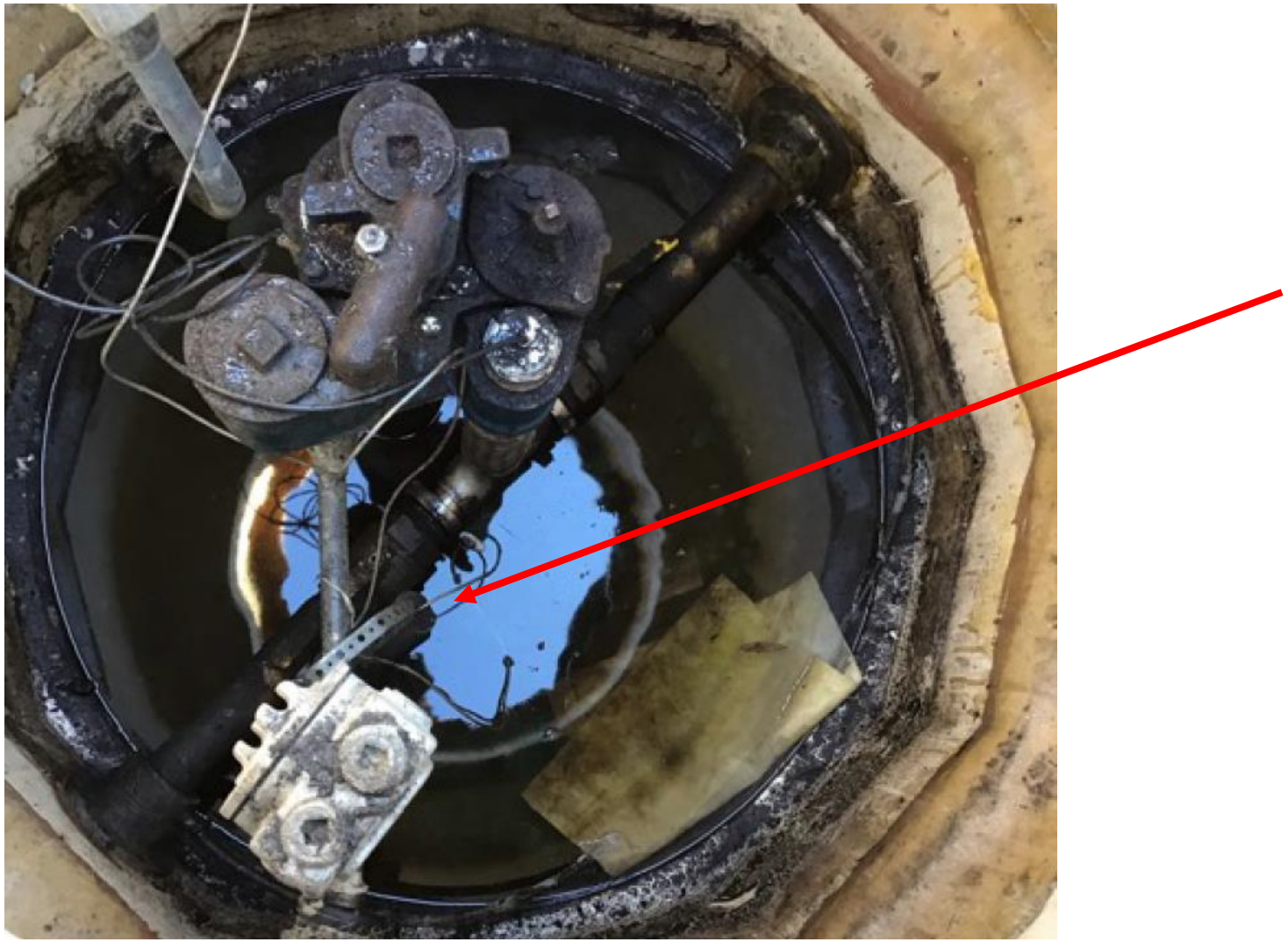
STP Sump. Liquid & Sensor tilted



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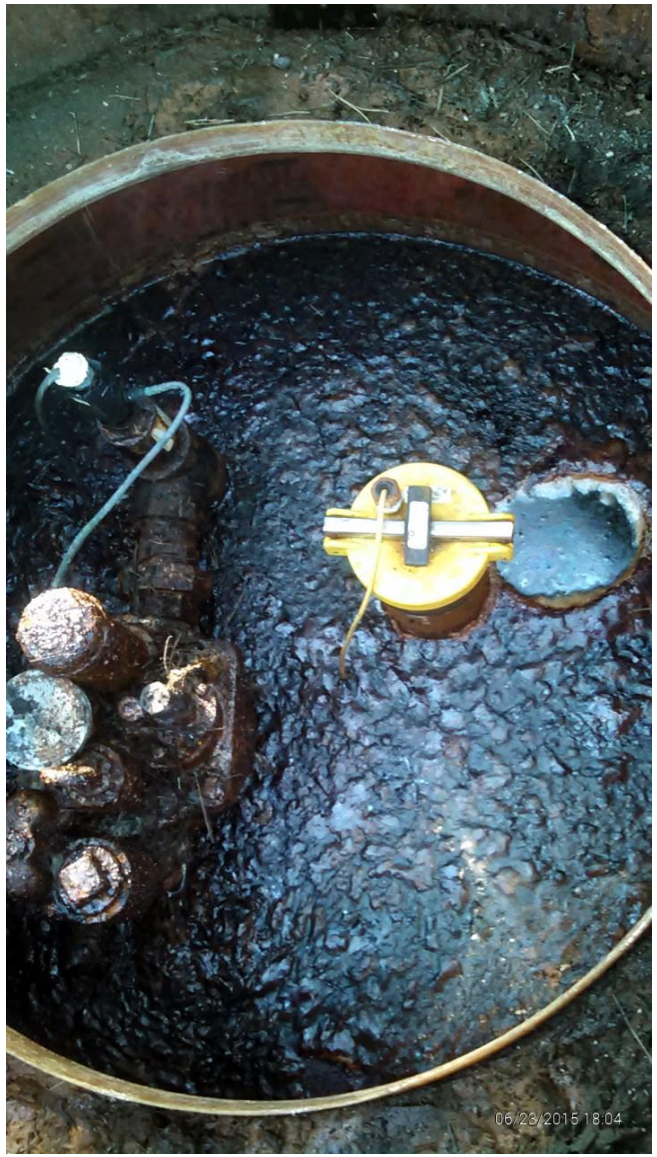
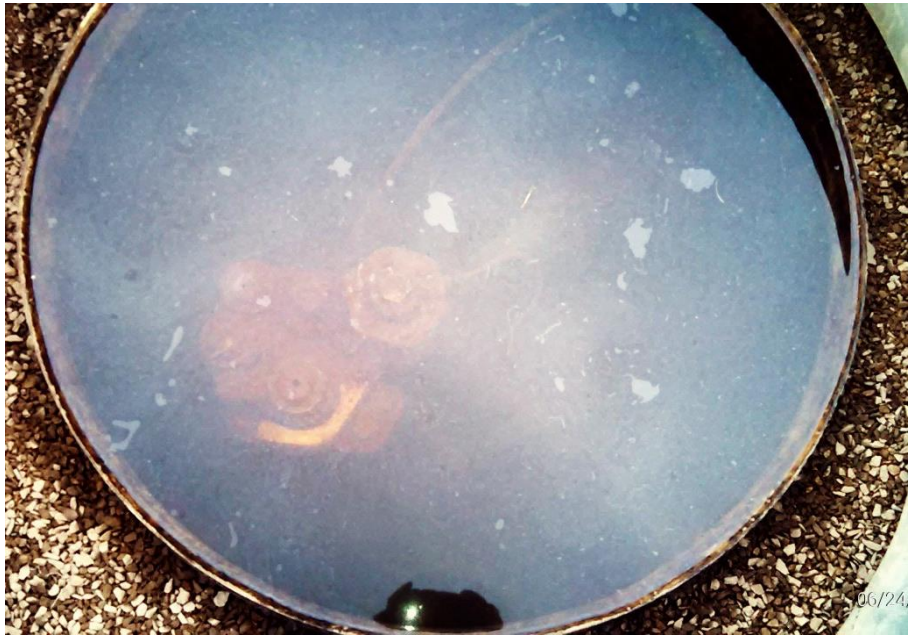
STP Sumps Full of Water and/or Product





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STP Sumps – Cracked Penetration Boots

- This cracked boot would allow a leak to flow into the backfill.

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STP Sumps – Piping Drains Fuel into Sump

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STP Sump – Leaking Ball Valve

- PLLD (passing history)
- Annual LLD test (passed)
- Sump Sensors pulled up
- No sump test done

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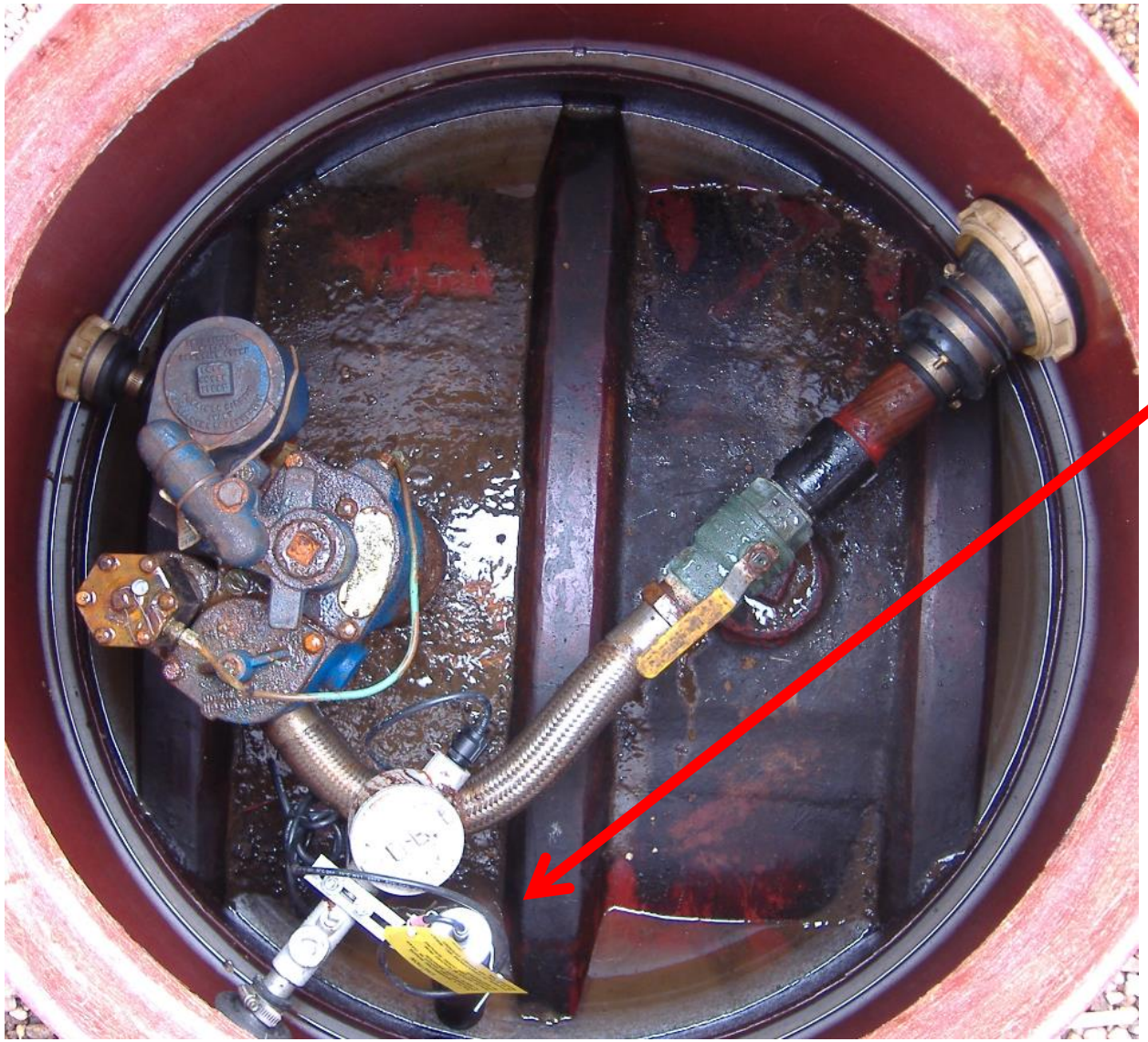
STP Sump – Fuel in Sump, Sensor Lifted Up.



- Fuel in Sump.
- Sump sensor pulled up so alarm won't sound.

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STP Sump full of liquid: Sensor lifted!

- STP Sump full of water.
- Sensor has been moved out of position.
- ATG console indicates *All Functions Normal*!
- Slight product sheen on water.

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STP Sump - Spliced sensor wire

- Spliced sensor wire in STP sump.
- Wrapped with electrical tape but not secured with proper seal-off pack.
- May lead to failure of sensor.

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STP Sump – Excessive Corrosion

Gasoline (E10) STP's inside containment sumps.

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STP – No Sumps. Is annual check o.k.?

Not per RP900. **Must check monthly.**

STP - No Sump.

Seep at Functional Element. Fuel leaks directly into ground.

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Manway – Large hole from corrosion

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Under Dispenser – No Containment – Seep

Wet spot in gravel under dispenser from fuel seep.

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Under Dispenser – Leak at union

- Leaking union.
- Fortunately this location has UDC which has been tested and verified to be tight.

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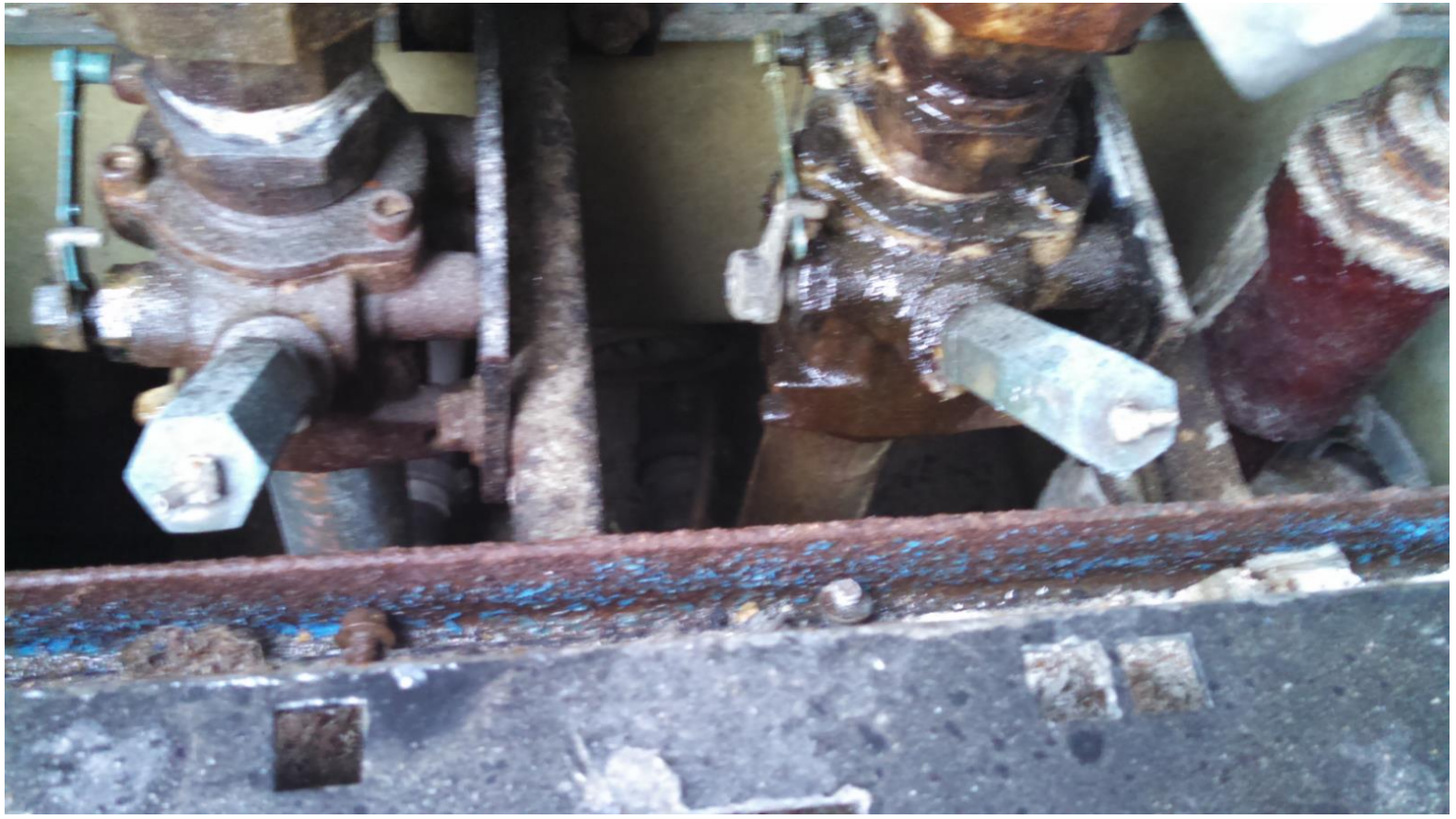
Under Dispenser – Seeps from Impact Valve



- Impact valve seeping fuel.
- Also has “Snap-Tap” fittings in impact valves that should be removed.

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Under Dispenser: Leaking meters

Dispenser 3/4 meters are leaking and have 2" of product in the UDC. The inspector tripped the shear valve and put out of service bags on the dispenser.

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Under Dispenser – Solenoid Valve Leak into Soil

- Stream of fuel from solenoid valve when pump runs.

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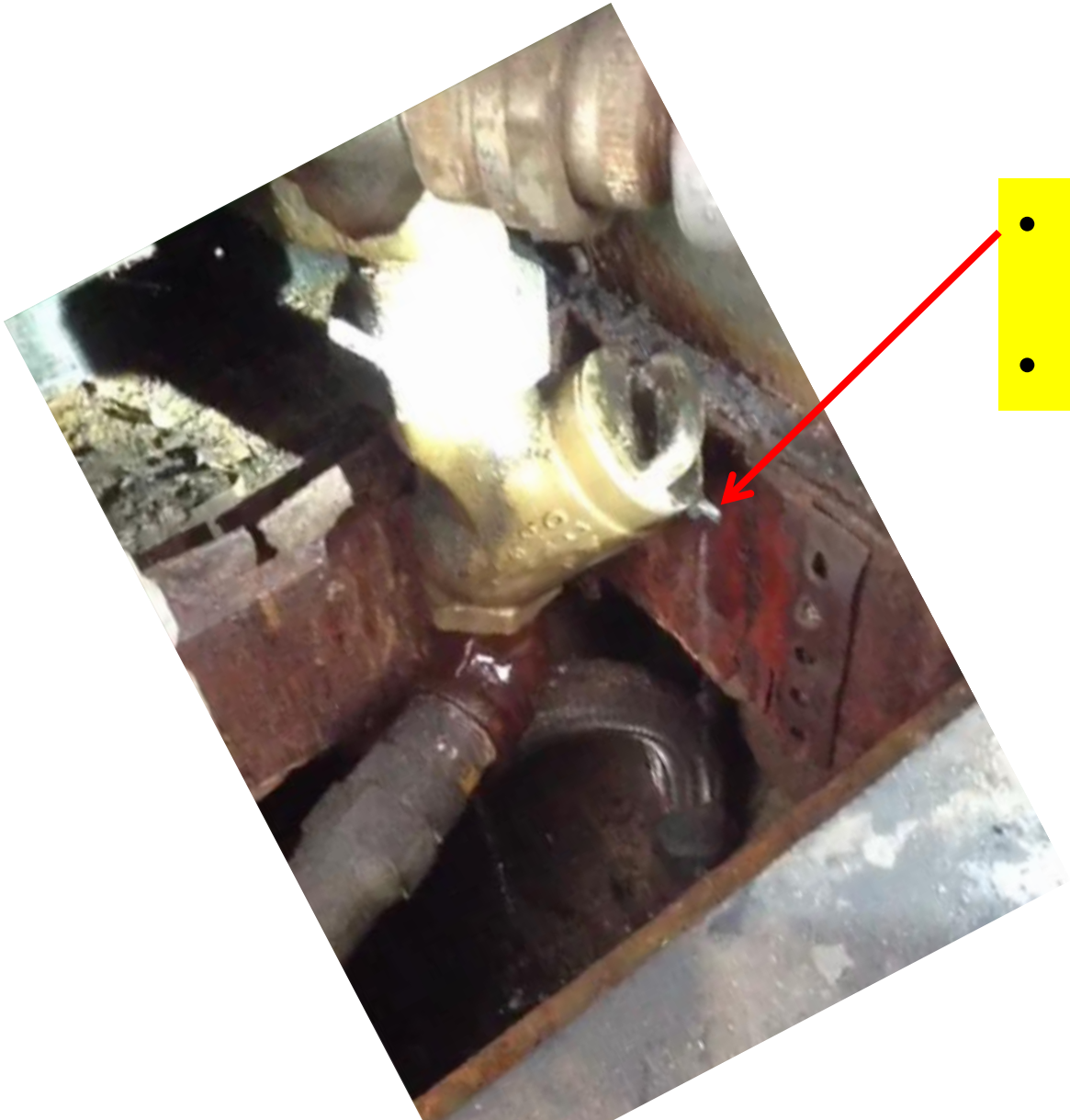
Under Dispenser - Leaking Suction Pump



- Drips fuel into ground while pump is running.
- No UDC.

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Under Dispenser Containment

- Cracked boot on Double-Wall Piping.
- Several inches of fuel and water mixture.
- No Sensors.

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UDC – Contains Liquid and Sensor Lifted

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Vapor Cover – Resting on Adapter

Swivel Adapter Too Tall.

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Manhole Cover – Warped – No Bolts

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Monitoring Well – Missing cover and cap

- Missing manhole cover and cracked rim
- No Lid or Cap on Monitoring Well

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Direct Bury ATG Cable

- Cable for the ATG probes is coming up out of the direct-bury sawcut.

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Vent Caps

- Missing cover for the P/V Vent Cap.
- Rain will collect and drain down the riser.

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Hanging Hardware Inspections

- Cracks & drips

- Bulge in product hose

- Cracked whip hose

PUT THE INDUSTRY LEADER ON YOUR TEAM

- ***Inspect It***
- ***Report It***
- ***Fix It***

Brad Hoffman

800-800-4633

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