



Registration & Insurance

- ▶ Is the registration / insurance effective?
- ▶ Is the owner and operator information correct?
- ▶ If the insurance policy had expired since the last registration renewal, proof of insurance renewal will be required.



Corrosion Protection

Sacrificial Anodes

- ▶ Anodes are buried and attached to the UST
- ▶ Anodes suffer destructive effects of corrosion instead of the steel tank they are attached to

Impressed Current

- ▶ Rectifier provides direct current protection through anodes
- ▶ Steel is protected because the current going to the steel overcomes the corrosion-causing current

CP Testing

- ❖ Sacrificial Anode & Impressed Current Systems
- ❖ Testing conducted by NJ certified CP tester
- ❖ Passing criteria
 - ❖ -0.850 v (or more negative)
 - ❖ 100 mv shift (impressed only)
 - ❖ Minimum 3 readings per tank
 - ❖ 2 remote readings per tank for STI test method
- ❖ 3 year test
- ❖ 6 months retest after a repair or upgrade
- ❖ Impressed system must maintain a 60 day rectifier log

Sacrificial Anode Passing Test

Voltage	N/A	Amps	N/A	Reason for Test:	Triennial Compliance		
Potential Measurements (all readings are in millivolts DC unless otherwise noted)							
Structure	Soil Location	On Potential	Instant Off Potential	Pol Decay Time "Off"	Pol Decay Potential	Pol Decay Difference	Result
Super Tank	Extractor Pit	-1149					Pass
Super Tank	ATG Pit	-1073					Pass
Super Tank	STP Pit	-1055					Pass
Super Tank	Remote 1	-959					Pass
Super Tank	Remote 2	-963					Pass
Plus Tank	Extractor Pit	-1002					Pass
Plus Tank	ATG Pit	-1032					Pass
Plus Tank	STP Pit	-1012					Pass
Plus Tank	Remote 1	-905					Pass
Plus Tank	Remote 2	-910					Pass
Plus Tank	Extractor Pit	-1016					Pass
Plus Tank	ATG Pit	-951					Pass
Plus Tank	STP Pit	-1064					Pass
Plus Tank	Remote 1	-965					Pass
Plus Tank	Remote 2	-969					Pass

Impressed Current Passing System

Potential Measurements							
Structure	Local Soil Location	Remote (1)	Remote (2)	Local On (mv)	Instant Off (mv)	Polarization Decay	Result
Regular 1 Tank Bottom	Drill Hole #1			-942	-764	-663 (2 hours)	Pass > 100mv shift
Regular 1 Tank Bottom	Drill Hole #2			-901	-880		Pass > 850mv inst off
Regular 1 Tank Bottom	STP			-860	-858		Pass > 850mv inst off
Regular 1 Tank Bottom	Monitor Well "B"			-929	-904		Pass > 850mv inst off
Regular 2 Tank Bottom	Drill Hole #1			-1281	-1151		Pass > 850mv inst off
Regular 2 Tank Bottom	Monitor Well "A"			-1395	-1054		Pass > 850mv inst off
Regular 2 Tank Bottom	Drill Hole #2			-924	-851		Pass > 850mv inst off
Regular 2 Tank Bottom	Drill Hole #3			-1079	-873		Pass > 850mv inst off
Super Tank Bottom	Drill Hole #1			-1849	-1409		Pass > 850mv inst off
Super Tank Bottom	Monitor Well "A"			-1355	-1038		Pass > 850mv inst off
Super Tank Bottom	Drill Hole #2			-1029	-914		Pass > 850mv inst off
Super Tank Bottom	Drill Hole #3			-1049	-863		Pass > 850mv inst off
Diesel Tank Bottom	Monitor Well "C"			-1196	-1009		Pass > 850mv inst off
Diesel Tank Bottom	Drill Hole #1			-1200	-1113		Pass > 850mv inst off
Diesel Tank Bottom	Drill Hole #2			-1223	-1110		Pass > 850mv inst off
Diesel Tank Bottom	STP			-891	-864		Pass > 850mv inst off
Diesel Tank Bottom	Monitor Well "D"			-1629	-1065		Pass > 850mv inst off
Regular 1 STP Transition	STP			-860	-858		Pass > 850mv inst off
Regular 2 STP Transition	STP			-815	-744	-640 (2 hours)	Pass > 100mv shift
Super STP Transition	STP			-820	-776	-668 (2 hours)	Pass > 100mv shift
Diesel STP Transition	STP			-891	-864		Pass > 850mv inst off

Comments

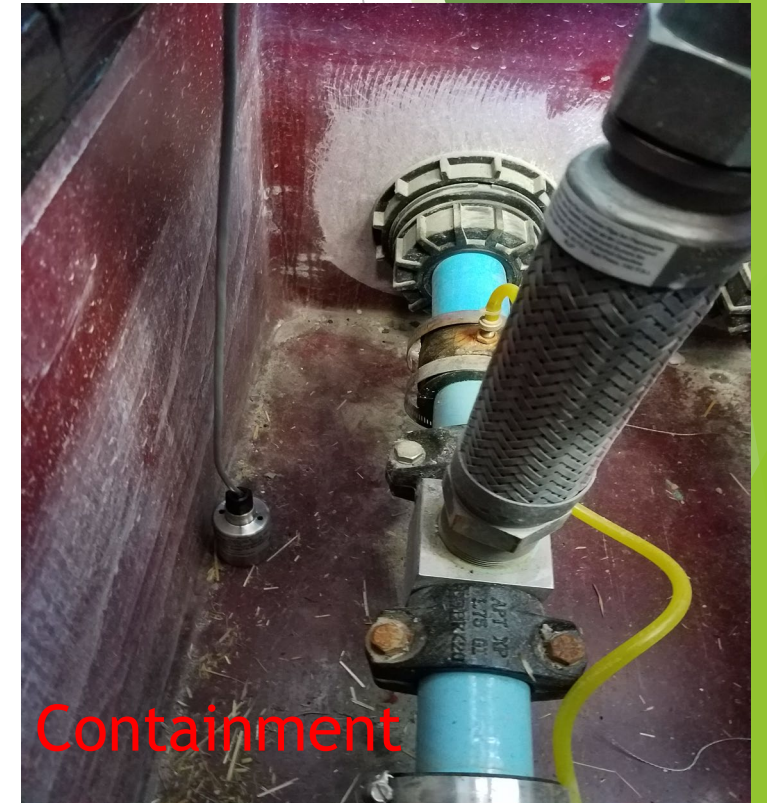
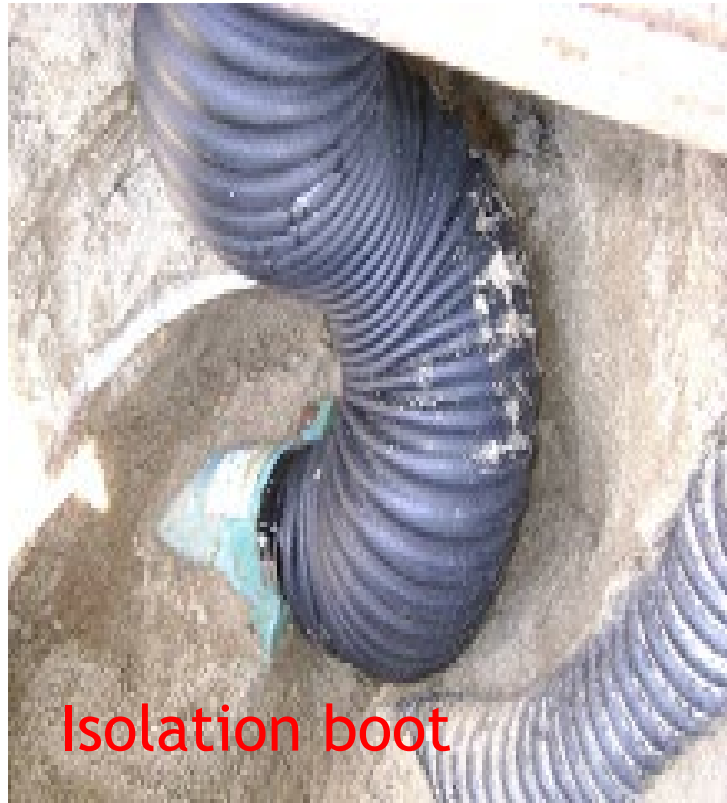
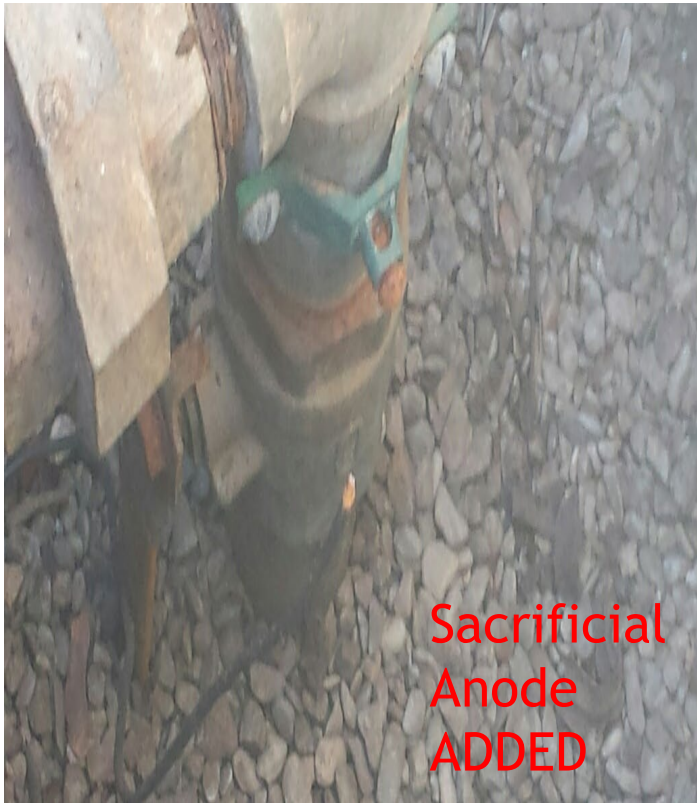
22 mv @50/10 shunt. Unable to verify output settings. No containment on site at MPDs or STPs. Lines are SW FRP. STP transition is steel in soil and reads continuous with tanks and IC CP system. At both gasoline MPDs, all steel transition is fully visible above soil and CP is not needed. Diesel dispenser transition enters pan through a PVC sleeve, cannot visually confirm entire flow.

UST	Test Location	Half Cell Location*	Results (millivolts)	PASS/FAIL
T1 8,000 gallon Super:	Tank Invert	Ball Float	-572	FAIL
	Tank Invert	Turbine Sump/Super	-466	FAIL
	Test Wire	Ball Float	-611	FAIL
T2 4,000 gallon Reg. #1 Middle:	Tank Invert	Interstitial	-715	FAIL
	Tank Invert	Ball Float	-676	FAIL
	Tank Invert	R1	-787	FAIL
	Test Wire	Ball Float	-676	FAIL
T3 4,000 gallon Reg. #2 East End:	Tank Invert	Interstitial	-814	PASS
	Tank Invert	Ball Float	-902	PASS
	Tank Invert	Turbine	-947	PASS
	Tank Invert	R1	-868	PASS
	Test Wire	Ball Float	-936	PASS
FLEX at Turbine T1 Super	Turbine	Flex at Turbine Sump	-1,046	PASS
FLEX at Turbine T1 Reg. (Middle)	Turbine	Flex at Turbine Sump	-767	FAIL
FLEX at Turbine T2 Reg (East End)	Turbine	Flex at Turbine Sump	-904	PASS

What is wrong with these tests?


<u>Location</u>	<u>Remote</u>	<u>Local</u>	<u>P/F</u>	<u>Location</u>	<u>Remote</u>	<u>Local</u>	<u>P/F</u>
reg front frsr		-0.877	pass				
reg stp rsr		-0.881	pass				
reg2 frsr		-0.868	pass				
reg2 stp rsr		-0.872	pass				

Transition Piping Protection





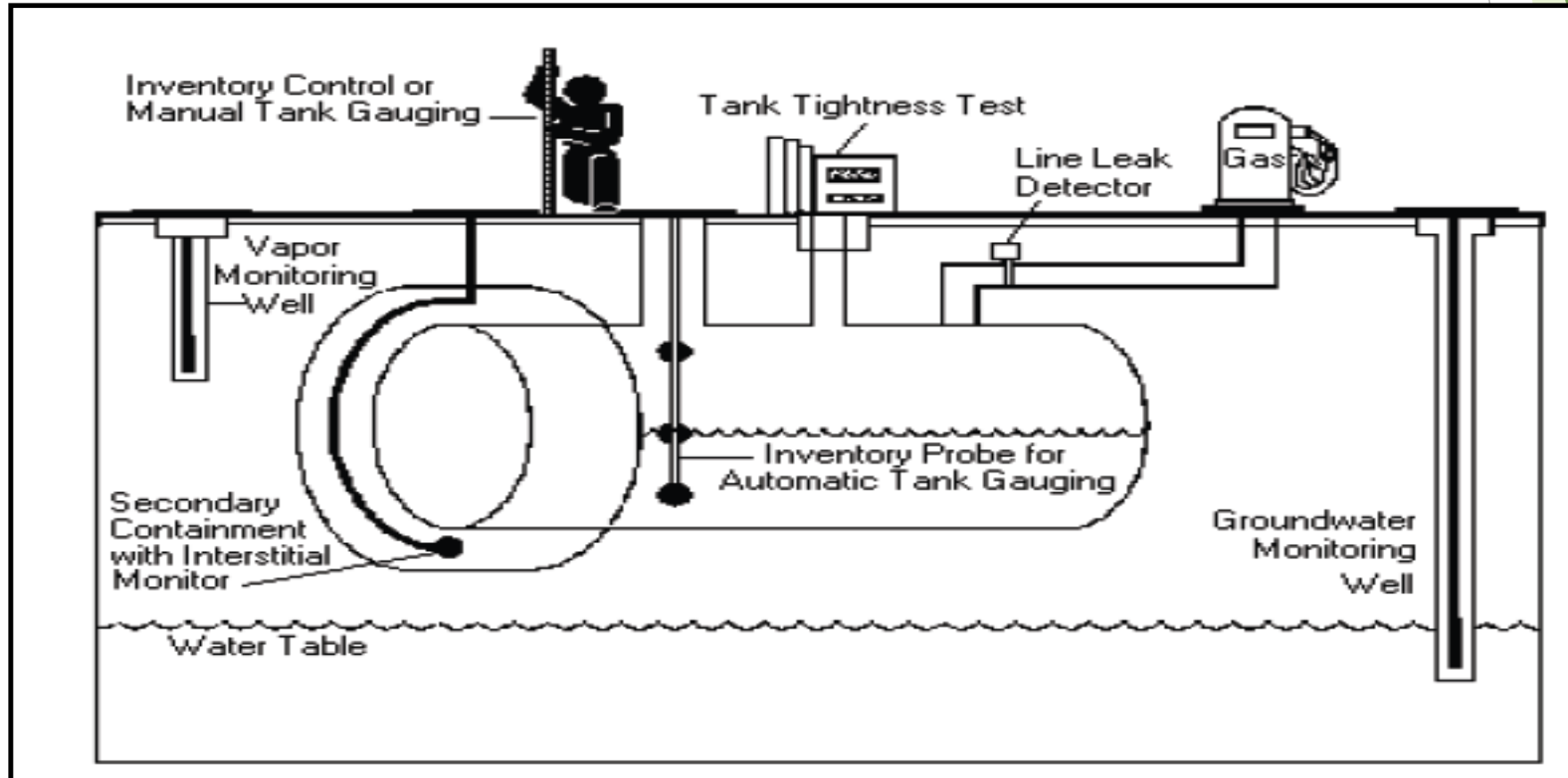
Internal Lining

- ▶ Installed for CP or for compatibility
 - ▶ Update tank registration to identify lining installation date
 - ▶ Inspection schedule:
 - ▶ 10 years after installation
 - ▶ Every 5 years after
- 



Release Detection Monitoring

- ▶ 1 method minimum for tank
- ▶ 2 methods minimum for lines (pressure)
- ▶ Method of release detection depends on construction and installation date



Release Detection Monitoring Automatic Tank Gauging (ATG)

- ✓ Most common for single wall tanks
- ✓ Can detect a 0.2 gph leak
- ✓ *Passing* test every 30 days
- ✓ Certified annually
- ✓ Needs 2-4 hours downtime and 50% volume to complete a test
- ✓ CSLD/SCALD
 - ✓ Volume decrease to 10-15% volume
 - ✓ Less downtime - “grabs” data and calculates result
- ✓ ATG certified every year
- ✓ Keep certifications and monthly pass - 5 years
- ✓ IF ATG is not functioning = high level overfill alarm will NOT function



APR 17, 2017 10:39 AM

LEAK TEST REPORT

T 1:Unleaded
PROBE SERIAL NUM 752814

TEST STARTING TIME:
JUL 12, 2015 5:55 PM

TEST LENGTH = 1.0 HRS
STRT VOLUME =23608.9 GAL

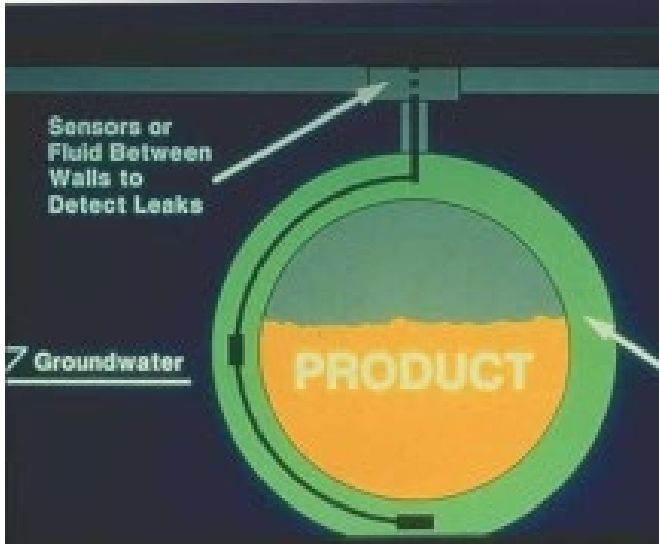
LEAK TEST RESULTS
0.20 GAL/HR TEST INVL

0.20 GAL/HR FLAGS:
RECENT DELIVERY
LEAK TEST TOO SHORT
PERCENT VOLUME TOO LOW
PRODUCT LEVEL INCREASE

* * * * * END * * * * *

Proof of ATG monitoring

- > Monitoring system can be programmed to auto print testing
- > System will print last attempted test
- > Look at the slip!
 - Did the test pass or fail?
 - Was the test done in the last 30 days?

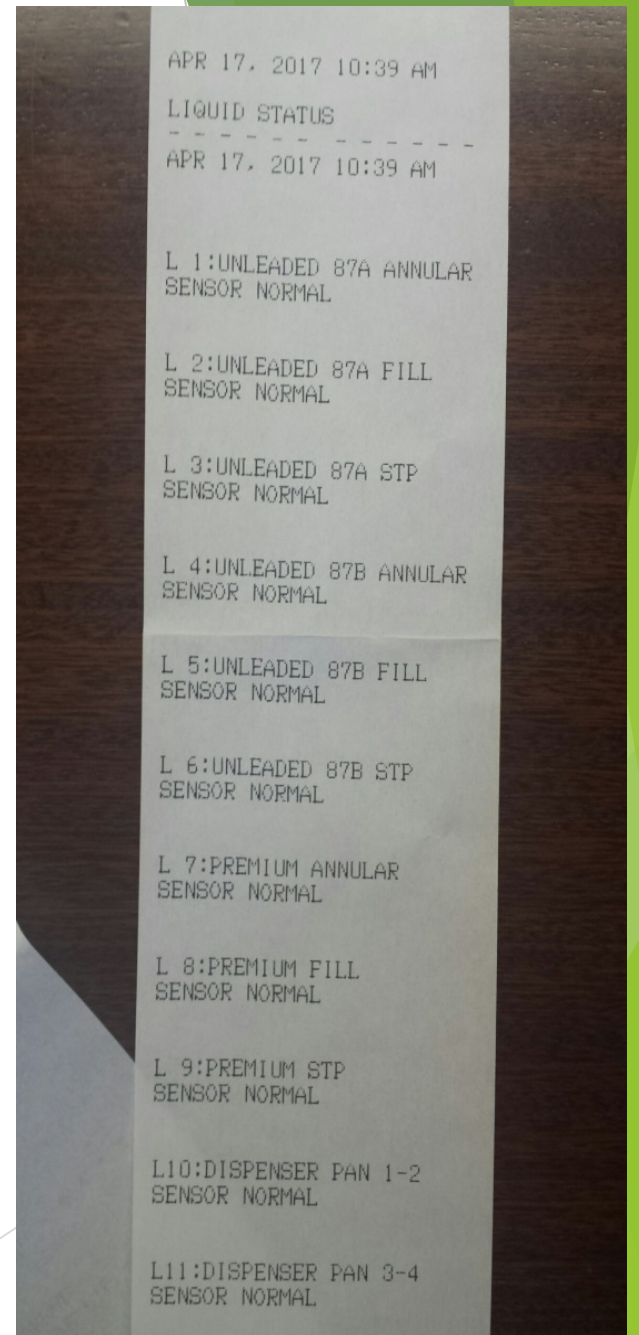


Release Detection Monitoring Interstitial Monitoring

- ▶ Double wall tanks only
- ▶ Continuously monitors the space between the inner and outer tank walls
- ▶ Sensor normal = passing RDM
 - ▶ Fuel alarm / sensor out alarm must be investigated within 7 days
- ▶ Sensors certified annually

Proof Of Monitoring

- ▶ Systems do not automatically print this report!
- ▶ At least 1 time a month, print and save sensor status printout
- ▶ Keep printouts for 5 years



Release Detection Piping

Pressurized Piping

- ▶ Turbine in sump pumps fuel to dispensers
- ▶ Faster fueling
- ▶ Always under pressure
- ▶ 2 forms of monitoring
 - ▶ Line Leak Detector
 - ▶ 2nd form depends on construction



Line Leak Detector

- ▶ Required for ALL pressurized systems
- ▶ Mechanical or Electronic
- ▶ Tested annually
- ▶ 3.0 gph leak rate



Pressurized Leak Detection

- ▶ Line Tightness Test - annual 0.1 gph test
- ▶ Pressurized LLD - monthly 0.2gph test
- ▶ Continuous Interstitial
 - ▶ Annual sensor certification
 - ▶ 3 year containment testing - STP & UDC



Not in Compliance



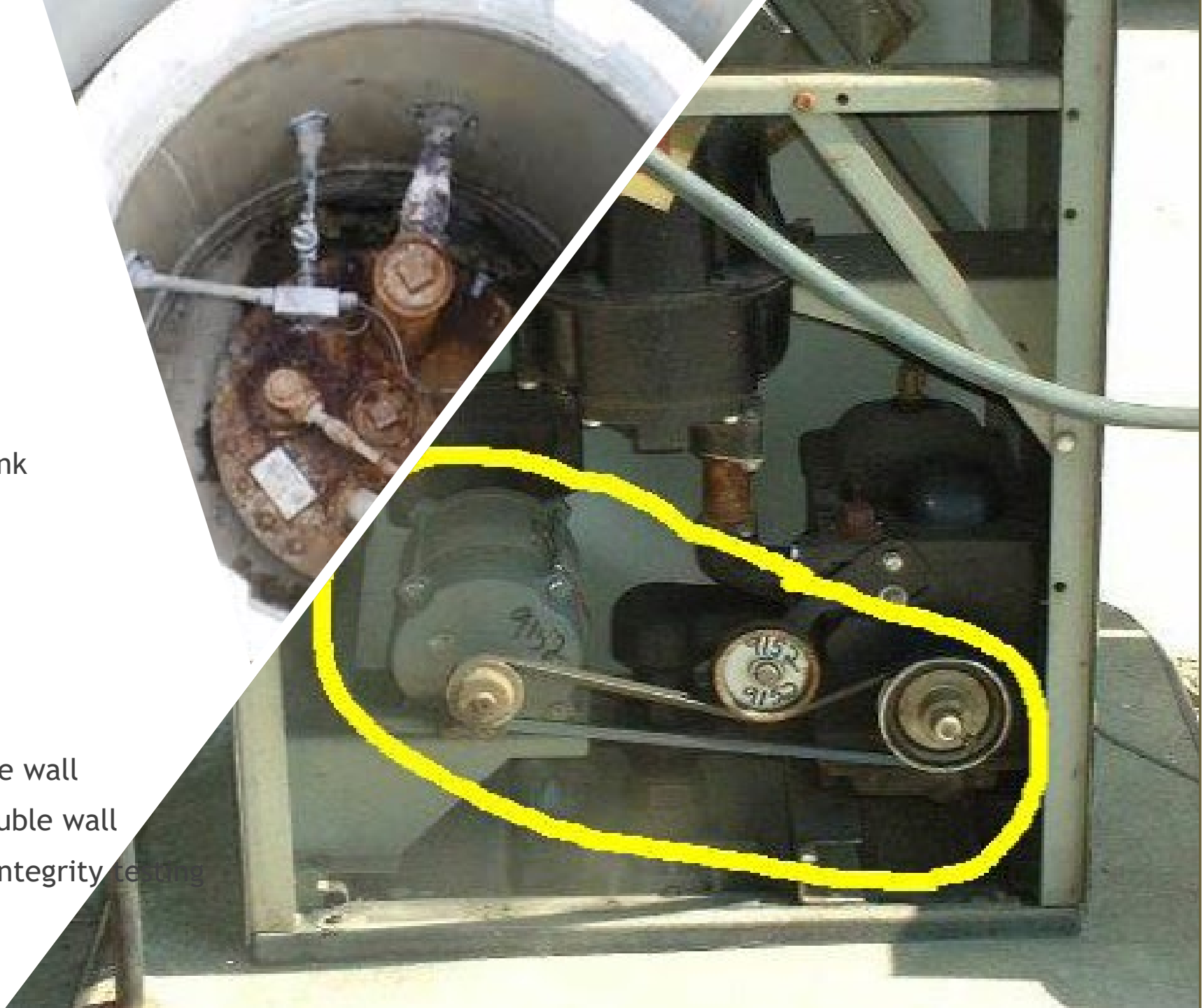
Suction Systems

▶ European Suction

- ▶ No check valve at tank top
- ▶ Product drains back into tank
- ▶ NO RDM required

▶ American Suction

- ▶ Check valve at tank top
- ▶ Product remains in line
- ▶ 3 year tightness test - single wall
- ▶ Continuous interstitial - double wall
 - ▶ Sensor certification / integrity testing



7-day investigation

What to do?

- ▶ Confirm or disprove a suspected release
 - ▶ Visual inspection
 - ▶ Contractor testing
- ▶ Confirmed discharge - shut down system & call DEP hotline

When?

- ▶ Sudden loss
- ▶ Leak alarm
- ▶ Fuel alarm
- ▶ High water alarm
- ▶ Sensor out
- ▶ ATG/CSLD test fail
- ▶ Warm Start Mode



- Located at each fill port
- Inspected before/after each delivery OR once every 30 days (whichever is more often)
- Remove water/fuel/debris
- Integrity tested once every 3 years
 - 1st round was due by Oct. 13, 2018

Spill Prevention



Failing Spill Buckets

Take out of service if:

1. Crack or hole visible
2. Integrity test fails

WARNING
HORN BLOWS
WHEN FULL

STOP
DELIVERY

EMERGENCY
STOP

Overfill Prevention: High Level Alarm

- ▶ Gravity or Pressurized Deliveries
- ▶ Visible/Audible to delivery driver
- ▶ Activate at 90% full
- ▶ Certified annually



Overfill Prevention: Flapper Shutoff

- ▶ Gravity Deliveries
 - ▶ 61 F-stop is compatible with pressurized
- ▶ Installed in drop tube
- ▶ Shutoff at **95%** full
- ▶ Certified every 3 years
 - ▶ 1st round was due Oct. 13, 2018
- ▶ Bypassing shutoff device = no overfill prevention. No gauging sticks in drop tube!

Overfill Prevention: Ball Floats



- ▶ Gravity Deliveries
 - ▶ No compatible with suction systems
- ▶ Set at **90%** full
- ▶ Certified every 3 years
 - ▶ 1st round was due Oct. 13, 2018
- ▶ Failing ball floats can not be repaired or replaced
 - ▶ Must install alternate overfill device
 - ▶ If installing shutoff flapper, entire cage must be removed (not just the float)



Release Response

- ▶ Release Response Plan
- ▶ Immediately stop the discharge
- ▶ Take necessary actions to contain and cleanup
- ▶ NJDEP hotline (877) WARN DEP
 - ▶ Failure to notify will result in a penalty assessment
 - ▶ \$5,000 - 1st offense
 - ▶ \$10,000 - 2nd offense
 - ▶ \$20,000 - 3rd offense

Walk Through Inspections



- 30 day inspections
 - Spill buckets
 - Document passing release detection
 - Visual inspection of uncontained sumps or UDCs with no sensor
- Annual Inspection
 - Visual inspection
 - Piping sumps, STP sumps, dispensers
 - Document annual testing & certifications