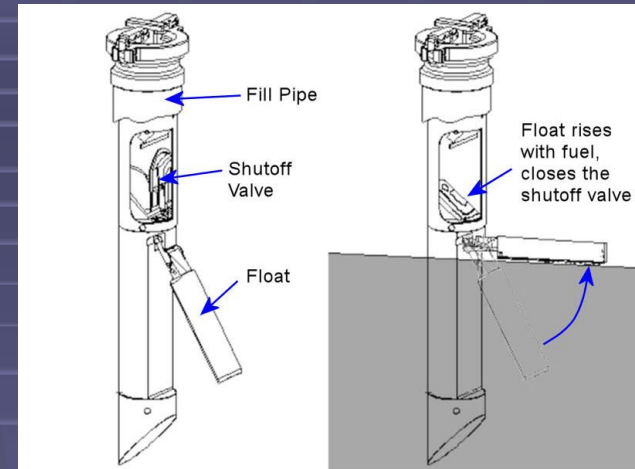
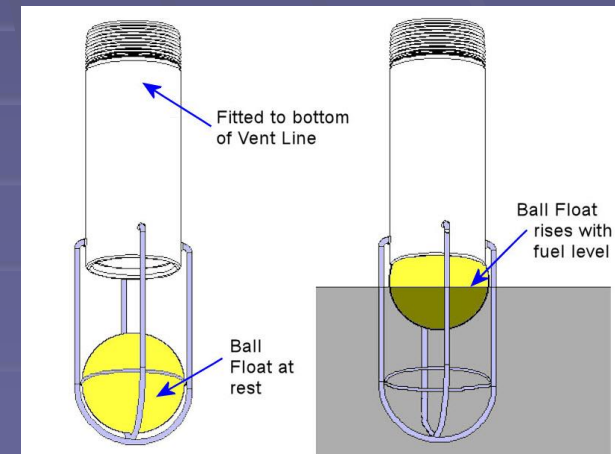


PEI RP 1200 Overfill Equipment Inspections



Edward S. Kubinsky Jr.
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Director of Regulatory Affairs,
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National Tanks Conference
Workshop Monday 09/10/2018



Overfill Equipment Options (vary by state):

- 1. Ball Floats set no higher than 90% tank capacity or 30 minutes prior to overfilling
- 2. Automatic shutoff devices (drop tube shut off devices) set no higher than 95% tank capacity
- 3. High Level Alarms set no higher than 90% tank capacity or within 1 minute of being overfilled



PEI RP 1200 Committee Position

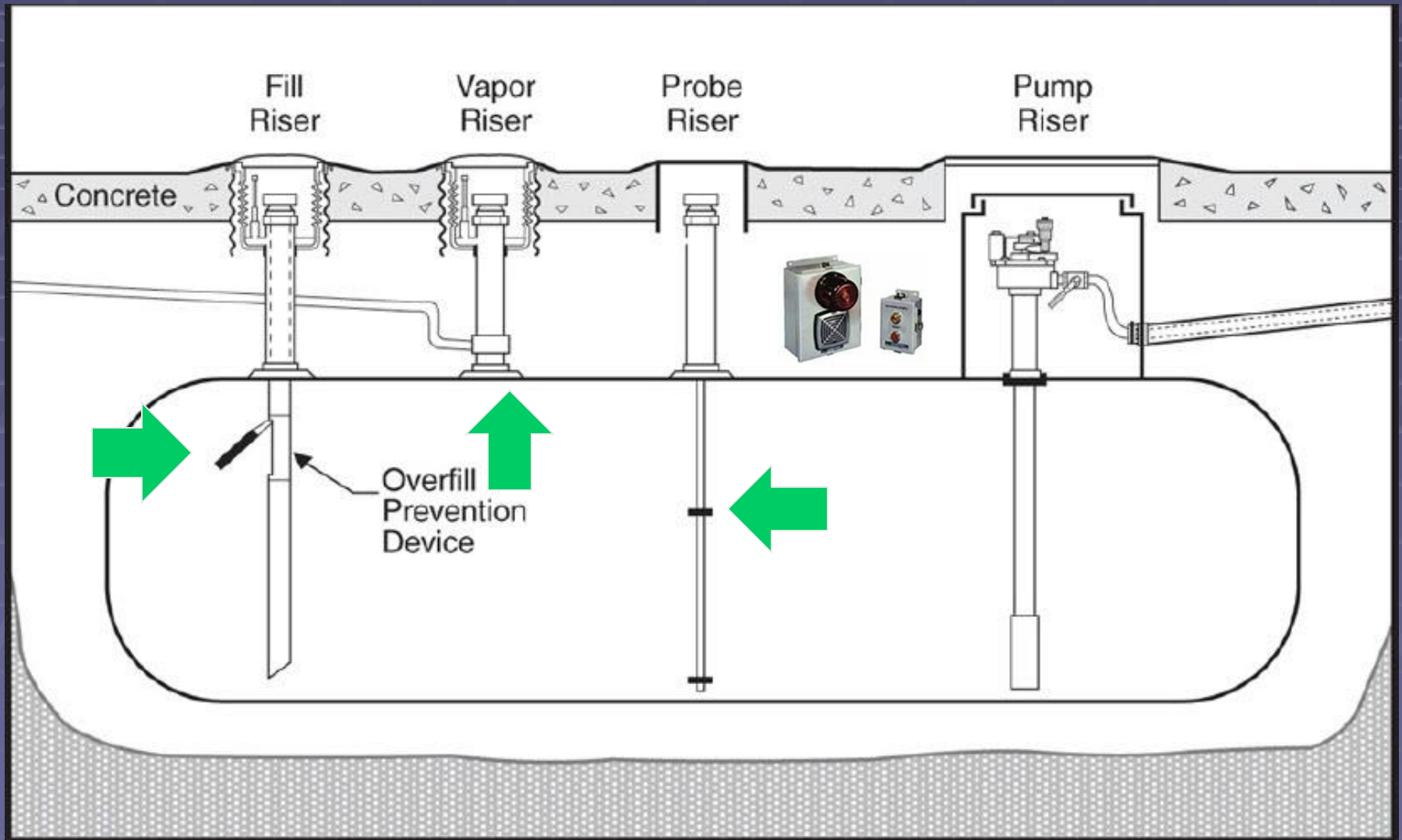
- Committee felt that for practical purposes, it would be difficult, if not nearly impossible to determine during field inspections that an overfill device would restrict flow “30 minutes prior to overfilling” or “alerting” the operator 1 minute before overfilling or exposing the top of the tank to fuel. Therefore these options were not included in the RP 1200 document and 90% restriction/alarm and 95% shutoff were used as proper levels for overfill equipment inspections.

More About PEI RP 1200

While RP 1200 is the recognized “code of practice” for performing this work, regulations state that testing and inspections can be performed according to:

- A) Manufacturer’s requirements, or
- B) Code of practice developed by a nationally recognized association or independent testing laboratory, or
- C) Requirements determined by the implementing agency to be no less protective of human health and the environment

Overfill Equipment Options



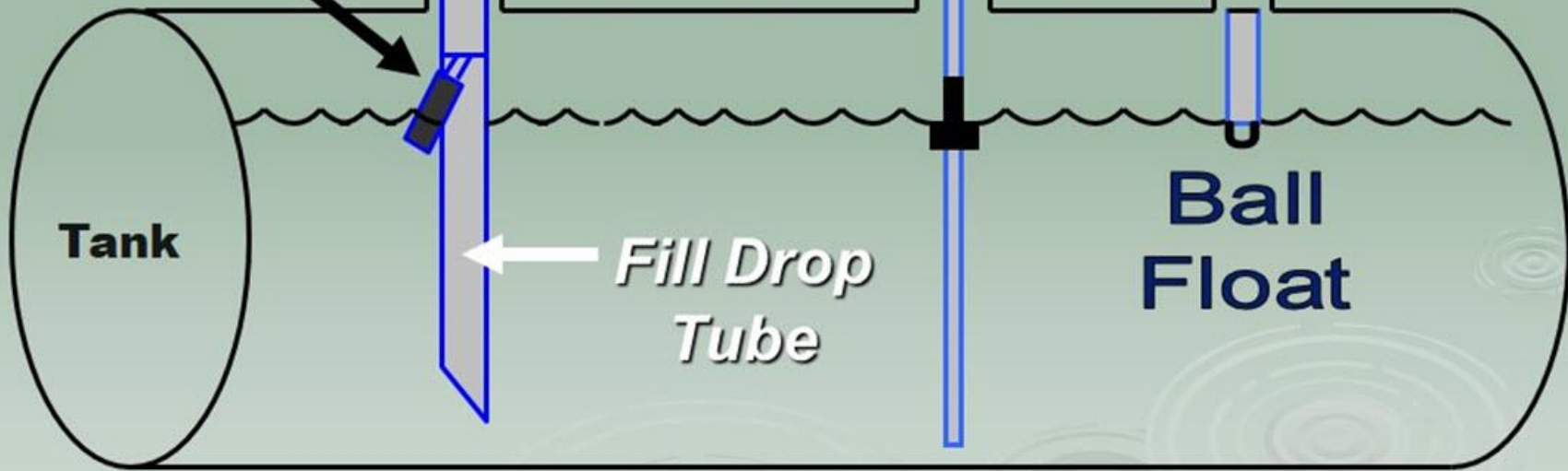
Devices



Flapper Valve

**Audible
Visual
Alarm**

Vent




**Ball
Float**

*Fill Drop
Tube*

Tank

No Matter Which Type Of Device You're Inspecting, You Need Tank Charts!

<div><div>XERXES[®] CORPORATION <small>a subsidiary of ZC Corporation Inc. www.xerxesco.com</small></div><div>Calibration Chart 10,000 Gallon - 8' Diameter Double-Wall Tank</div></div>											
DIPSTICK READING	GALLONS	DIPSTICK READING	GALLONS	DIPSTICK READING	GALLONS	DIPSTICK READING	GALLONS	DIPSTICK READING	GALLONS	DIPSTICK READING	GALLONS
0-1/8"	4	3-3/8"	387	14-5/8"	981	21-1/8"	1789	28-1/8"	2689	35-3/8"	3643
0-1/4"	8	3-1/2"	396	14-3/4"	993	21"	1784	28-1/4"	2688	35-1/2"	3650
0-3/8"	12	3-5/8"	405	14-7/8"	1006	20-5/8"	1786	28-3/8"	2702	35-5/8"	3677
0-1/2"	16	3-3/4"	414	15"	1018	20-1/2"	1813	28-1/2"	2718	35-3/4"	3694
0-5/8"	20	3-7/8"	424	15-1/8"	1030	20-3/8"	1829	28-3/8"	2735	35-7/8"	3712
0-3/4"	24	4"	433	15-1/4"	1043	20-1/2"	1843	28-3/4"	2751	36"	3729
0-7/8"	28	4-1/8"	442	15-3/8"	1056	20-5/8"	1858	28-7/8"	2767	37-1/8"	3746
1"	32	4-1/4"	451	15-1/2"	1069	20-3/4"	1872	30"	2784	37-1/4"	3763
1-1/8"	36	4-3/8"	460	15-5/8"	1081	20-7/8"	1887	30-1/8"	2800	37-3/8"	3781
1-1/4"	40	4-1/2"	469	15-3/4"	1094	20"	1902	30-1/4"	2817	37-1/2"	3798
1-3/8"	44	4-5/8"	478	15-7/8"	1107	20-1/8"	1917	30-3/8"	2833	37-5/8"	3815
1-1/2"	48	4-3/4"	487	16"	1119	20-1/4"	1932	30-1/2"	2849	37-3/4"	3833
1-5/8"	52	4-7/8"	496	16-1/8"	1132	20-3/8"	1947	30-5/8"	2866	37-7/8"	3850
1-3/4"	56	4-7/4"	505	16-1/4"	1145	20-1/2"	1962	30-3/4"	2882	38"	3867
1-7/8"	60	4-7/8"	514	16-3/8"	1158	20-5/8"	1976	30-7/8"	2899	38-1/8"	3885
2"	64	4-1/4"	523	16-1/2"	1171	20-3/4"	1993	31"	2916	38-1/4"	3902
2-1/8"	68	4-5/8"	532	16-5/8"	1184	20-7/8"	2008	31-1/8"	2932	38-3/8"	3919
2-1/4"	72	4-1/2"	541	16-3/4"	1197	20"	2023	31-1/4"	2949	38-1/2"	3937
2-3/8"	76	4-5/8"	550	16-7/8"	1211	20-1/8"	2038	31-3/8"	2965	38-5/8"	3954
2-1/2"	80	4-3/4"	559	17"	1224	20-1/4"	2054	31-1/2"	2982	38-3/4"	3971
2-5/8"	84	4-7/8"	568	17-1/8"	1237	20-3/8"	2069	31-5/8"	2999	38-7/8"	3989
2-3/4"	88	4-7/4"	577	17-1/4"	1250	20-1/2"	2084	31-3/4"	3015	39"	4006
2-7/8"	92	4-7/8"	586	17-3/8"	1264	20-5/8"	2100	31-7/8"	3032	39-1/8"	4024
3"	96	4-1/4"	595	17-1/2"	1277	20-3/4"	2115	32"	3049	39-1/4"	4041
3-1/8"	100	4-5/8"	604	17-5/8"	1290	20-7/8"	2130	32-1/8"	3065	39-3/8"	4059
3-1/4"	104	4-1/2"	613	17-3/4"	1304	20"	2146	32-1/4"	3082	39-1/2"	4076
3-3/8"	108	4-5/8"	622	17-7/8"	1317	20-1/8"	2161	32-3/8"	3099	39-5/8"	4093
3-1/2"	112	4-3/4"	631	18"	1331	20-1/4"	2177	32-1/2"	3116	39-3/4"	4111
3-5/8"	116	4-7/8"	640	18-1/8"	1344	20-3/8"	2192	32-5/8"	3132	39-7/8"	4128
3-3/4"	120	4-7/4"	649	18-1/4"	1358	20-1/2"	2208	32-3/4"	3149	40"	4145
3-7/8"	124	4-7/8"	658	18-3/8"	1372	20-5/8"	2223	32-7/8"	3166	40-1/8"	4163
4"	128	4-1/4"	667	18-1/2"	1386	20-3/4"	2239	33"	3183	40-1/4"	4181
4-1/8"	132	4-5/8"	676	18-5/8"	1399	20-7/8"	2255	33-1/8"	3200	40-3/8"	4198
4-1/4"	136	4-1/2"	685	18-3/4"	1413	20"	2270	33-1/4"	3216	40-1/2"	4216
4-3/8"	140	4-5/8"	694	18-7/8"	1427	20-1/8"	2286	33-3/8"	3232	40-5/8"	4233
4-1/2"	144	4-3/4"	703	19"	1440	20-1/4"	2302	33-1/2"	3250	40-3/4"	4251
4-5/8"	148	4-7/8"	712	19-1/8"	1454	20-3/8"	2317	33-5/8"	3267	40-7/8"	4268
4-3/4"	152	4-7/4"	721	19-1/4"	1468	20-1/2"	2333	33-3/4"	3284	41"	4286
4-7/8"	156	4-1/4"	730	19-3/8"	1482	20-5/8"	2349	33-7/8"	3301	41-1/8"	4303
5"	160	4-1/2"	739	19-1/2"	1496	20-3/4"	2365	34"	3318	41-1/4"	4321
5-1/8"	164	4-5/8"	748	19-5/8"	1510	20-7/8"	2380	34-1/8"	3335	41-3/8"	4338
5-1/4"	168	4-1/2"	757	19-3/4"	1524	20"	2396	34-1/4"	3352	41-1/2"	4356
5-3/8"	172	4-5/8"	766	19-7/8"	1538	20-1/8"	2413	34-3/8"	3369	41-5/8"	4373
5-1/2"	176	4-3/4"	775	20"	1552	20-1/4"	2429	34-1/2"	3386	41-3/4"	4391
5-5/8"	180	4-7/8"	784	20-1/8"	1567	20-3/8"	2444	34-5/8"	3403	41-7/8"	4408
5-3/4"	184	4-7/4"	793	20-1/4"	1581	20-1/2"	2460	34-3/4"	3420	42"	4426
5-7/8"	188	4-7/8"	802	20-3/8"	1596	20-5/8"	2476	34-7/8"	3437	42-1/8"	4444
6"	192	4-1/4"	811	20-1/2"	1610	20-3/4"	2492	35"	3454	42-1/4"	4461
6-1/8"	196	4-5/8"	820	20-5/8"	1624	20-7/8"	2508	35-1/8"	3471	42-3/8"	4479
6-1/4"	200	4-1/2"	829	20-3/4"	1638	20"	2524	35-1/4"	3488	42-1/2"	4496
6-3/8"	204	4-5/8"	838	20-7/8"	1652	20-1/8"	2540	35-3/8"	3505	42-5/8"	4514
6-1/2"	208	4-3/4"	847	21"	1667	20-1/4"	2556	35-1/2"	3522	42-3/4"	4531
6-5/8"	212	4-7/8"	856	21-1/8"	1681	20-3/8"	2572	35-5/8"	3540	42-7/8"	4549
6-3/4"	216	4-7/4"	865	21-1/4"	1696	20-1/2"	2588	35-3/4"	3557	43"	4567
6-7/8"	220	4-1/4"	874	21-3/8"	1710	20-5/8"	2605	35-7/8"	3574	43-1/8"	4584
7"	224	4-1/2"	883	21-1/2"	1725	20-3/4"	2621	36"	3591	43-1/4"	4602
7-1/8"	228	4-5/8"	892	21-5/8"	1740	20-7/8"	2637	36-1/8"	3608	43-3/8"	4619
7-1/4"	232	4-1/2"	901	21-3/4"	1754	20"	2653	36-1/4"	3625	43-1/2"	4637

<div><div><div>Modern Welding Company Subsidiaries Nationwide www.modweldco.com modern@modweldco.com</div></div></div> <div>Tank Calibration Chart Cylindrical Tank / Horizontal Orientation Stickler Plate: 0 inches Diameter: 120 inches Length: 164.58 inches Total Volume: 8,058 gallons</div>											
Depth (inches)	Volume (gallons)	Depth (inches)	Volume (gallons)	Depth (inches)	Volume (gallons)	Depth (inches)	Volume (gallons)	Depth (inches)	Volume (gallons)	Depth (inches)	Volume (gallons)
0.000	0	4.500	98	9.000	275	13.500	468	18.000	758	22.500	1,046
0.125	0	4.625	102	9.125	280	13.625	505	18.125	766	22.625	1,054
0.250	1	4.750	106	9.250	286	13.750	512	18.250	773	22.750	1,063
0.375	2	4.875	111	9.375	292	13.875	519	18.375	781	22.875	1,071
0.500	4	5.000	115	9.500	297	14.000	526	18.500	789	23.000	1,079
0.625	5	5.125	119	9.625	303	14.125	532	18.625	796	23.125	1,088
0.750	7	5.250	124	9.750	309	14.250	539	18.750	804	23.250	1,096
0.875	8	5.375	128	9.875	315	14.375	546	18.875	812	23.375	1,105
1.000	10	5.500	132	10.000	321	14.500	553	19.000	820	23.500	1,113
1.125	12	5.625	137	10.125	327	14.625	560	19.125	827	23.625	1,122
1.250	14	5.750	141	10.250	333	14.750	567	19.250	835	23.750	1,130
1.375	17	5.875	146	10.375	339	14.875	574	19.375	843	23.875	1,138
1.500	19	6.000	151	10.500	345	15.000	581	19.500	851	24.000	1,147
1.625	21	6.125	155	10.625	351	15.125	588	19.625	859	24.125	1,156
1.750	24	6.250	160	10.750	357	15.250	595	19.750	867	24.250	1,164
1.875	27	6.375	165	10.875	363	15.375	603	19.875	875	24.375	1,173
2.000	29	6.500	170	11.000	369	15.500	610	20.000	883	24.500	1,182
2.125	32	6.625	174	11.125	375	15.625	617	20.125	891	24.625	1,190
2.250	35	6.750	179	11.250	381	15.750	624	20.250	899	24.750	1,199
2.375	38	6.875	184	11.375	388	15.875	631	20.375	907	24.875	1,208
2.500	41	7.000	189	11.500	394	16.000	639	20.500	915	25.000	1,216
2.625	44	7.125	194	11.625	400	16.125	646	20.625	923	25.125	1,225
2.750	47	7.250	199	11.750	407	16.250	653	20.750	931	25.250	1,234
2.875	50	7.375	205	11.875	413	16.375	661	20.875	939	25.375	1,242
3.000	54	7.500	210	12.000	419	16.500	668	21.000	947	25.500	1,251
3.125	57	7.625	215	12.125	426	16.625	675	21.125	955	25.625	1,260
3.250	60	7.750	220	12.250	432	16.750	683	21.250	963	25.750	1,269
3.375	64	7.875	225	12.375	439	16.875	690	21.375	972	25.875	1,277
3.500	68	8.000	231	12.500	445	17.000	698	21.500	980	26.000	1,286
3.625	71	8.125	236	12.625	452	17.125	705	21.625	988	26.125	1,295
3.750	75	8.250	241	12.750	458	17.250	713	21.750	996	26.250	1,304
3.875	79	8.375	247	12.875	465	17.375	720	21.875	1,004	26.375	1,313
4.000	82	8.500	252	13.000	472	17.500	728	22.000	1,013	26.500	1,321
4.125	86	8.625	258	13.125	478	17.625	735	22.125	1,021	26.625	1,330
4.250	90	8.750	263	13.250	485	17.750	743	22.250	1,029	26.750	1,339
4.375	94	8.875	269	13.375	492	17.875	750	22.375	1,038	26.875	1,348

Hopefully, the owner can provide charts to the service provider....good luck!

Containment Solutions Tanks:

<http://containmentsolutions.com/petroproduct-library.html>

ZCL/XERXES Tanks:

<https://www.zcl.com/en/document-library/>

Modern Welding has a tank chart generator for steel tanks:

<https://www.modweldco.com/tank-chart>

Highland Tank has a tank chart generator for steel tanks:

https://www.highlandtank.com/_gauge-charts/

Determine 90% or 95% in Tank



7901 XERXES AVENUE SOUTH
MINNEAPOLIS, MN 55431-1288

www.xerxescorp.com
952-887-1890

Dipstick Calibration Chart for 10,000 Gallon - 8' Diameter **SW & DWT-I** Tank

DIPSTICK READING	GALLONS	DIPSTICK READING	GALLONS	DIPSTICK READING	GALLONS	DIPSTICK READING	GALLONS	DIPSTICK READING	GALLONS	DIPSTICK READING	GALLONS
---------------------	---------	---------------------	---------	---------------------	---------	---------------------	---------	---------------------	---------	---------------------	---------

90"	9799
90-1/8"	9802
90-1/4"	9805
90-3/8"	9808
90-1/2"	9810
90-5/8"	9812
90-3/4"	9814
90-7/8"	9815
91"	9816
91-1/8"	9816

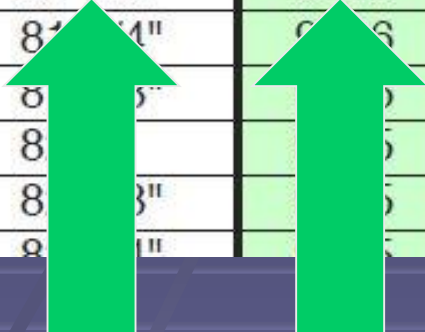


Steps:

- Take the full tank "actual" capacity from the chart and multiply by .95 or .90 (do not use nominal tank capacity)
- $9816 \times .95 = 9325$ (automatic shutoff device)
- $9816 \times .90 = 8834$ (HLA or ball float)

Determine 90% or 95% in Tank

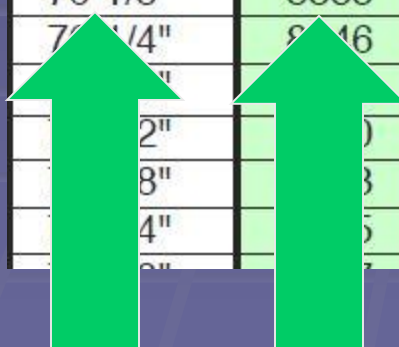
81-3/8"	9306
81-1/2"	9316
81-5/8"	9326
81-3/4"	9336
81-7/8"	9346
82"	9356
82-1/8"	9366
82-1/4"	9376
82-3/8"	9386
82-1/2"	9396



Steps:

- Find the closest inch mark on the chart and determine the height in the tank of the corresponding volume
 - $9816 \times .95 = 9325$ (automatic shutoff device)
 - 81.625"
- $9816 \times .90 = 8834$ (HLA or ball float)
- 76.125"

76-1/8"	8833
76-1/4"	8846
76-3/8"	8859
76-1/2"	8872
76-5/8"	8885
76-3/4"	8898
76-7/8"	8911
77"	8924
77-1/8"	8937
77-1/4"	8950



So, an automatic shutoff device has to be set to shut off 9.5" from the top of this tank (91.125" full volume – 81.625" 95% volume = 9.5") or at the 81.625" level as measured from the bottom of the tank

A high level alarm or ball float would need to be set to alarm or restrict 15" from the top of this tank (91.125" full volume – 76.125" 90% volume = 15") or at the 76.125" level as measured from the bottom of the tank

Use tank stick as a reference when determining where the equipment is installed in the tank.







How to Inspect Overfill Equipment – Chapter 7

PEI/RP1200-17

Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities



PEI/RP1200-17

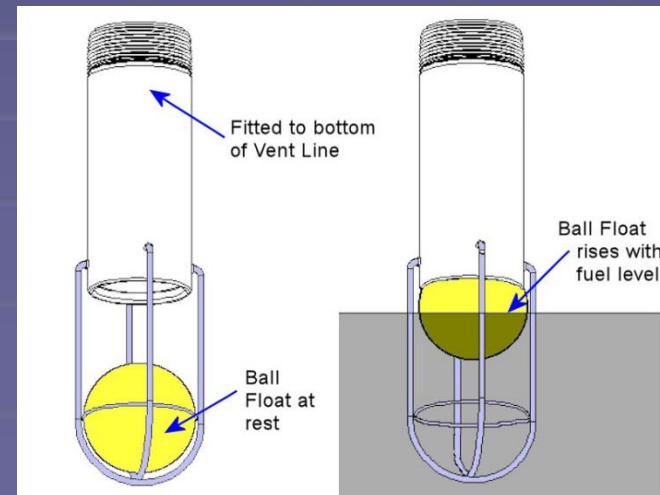
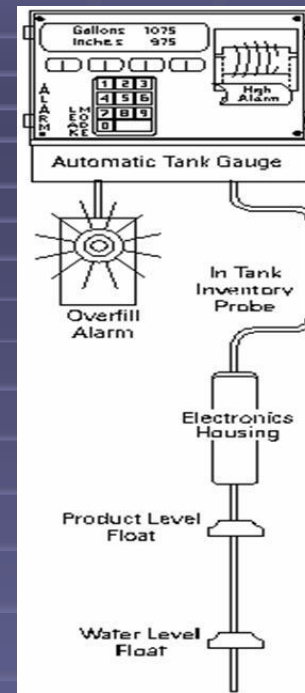
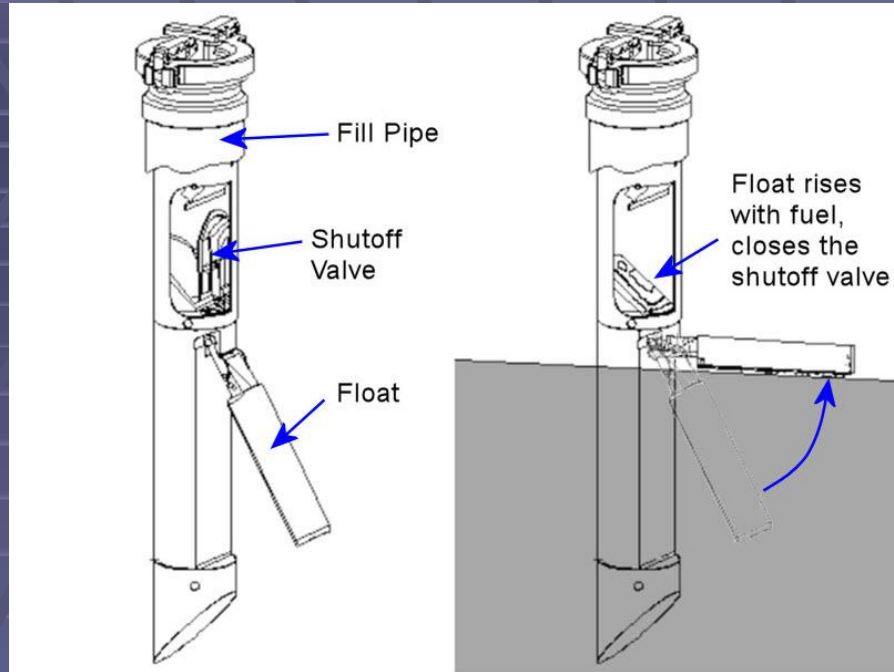
7. UST OVERFILL EQUIPMENT VERIFICATION, INSPECTION AND TESTING

Although the effectiveness of overfill prevention devices can be tested by attempting to overfill an underground storage tank (UST) with product and determining how well the device functions, this approach is not recommended. Any malfunction in the overfill prevention device could result in a product release that could result in a threat to public health and safety and environmental damage.

Federal UST rules require that overfill prevention equipment automatically restrict flow or alert the transfer operator when the tank is no more than 90 percent full or shut off flow into a tank when it is no more than 95 percent full. Other alternatives to prevent overfills are the restriction of flow during a delivery 30 minutes prior to overfilling; alerting the operator 1 minute before overfilling may occur; or automatically shutting off flow into a tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

The PEI Overfill, Release Detection and Release Prevention Equipment Testing Committee has written the recommended practices for automatic shutoff devices to reflect that the devices must be set to shut off flow when the tank is no more than 95 percent full, and flow restriction and overfill alarm devices must automatically restrict flow or alert the transfer operator when the tank is no more than 90 percent full. This approach reflects the more conservative application of the rules.

Overfill Equipment Verification, Inspection and Testing



Overfill Prevention: Automatic Shutoff Device



Overfill Prevention: Automatic Shutoff Device

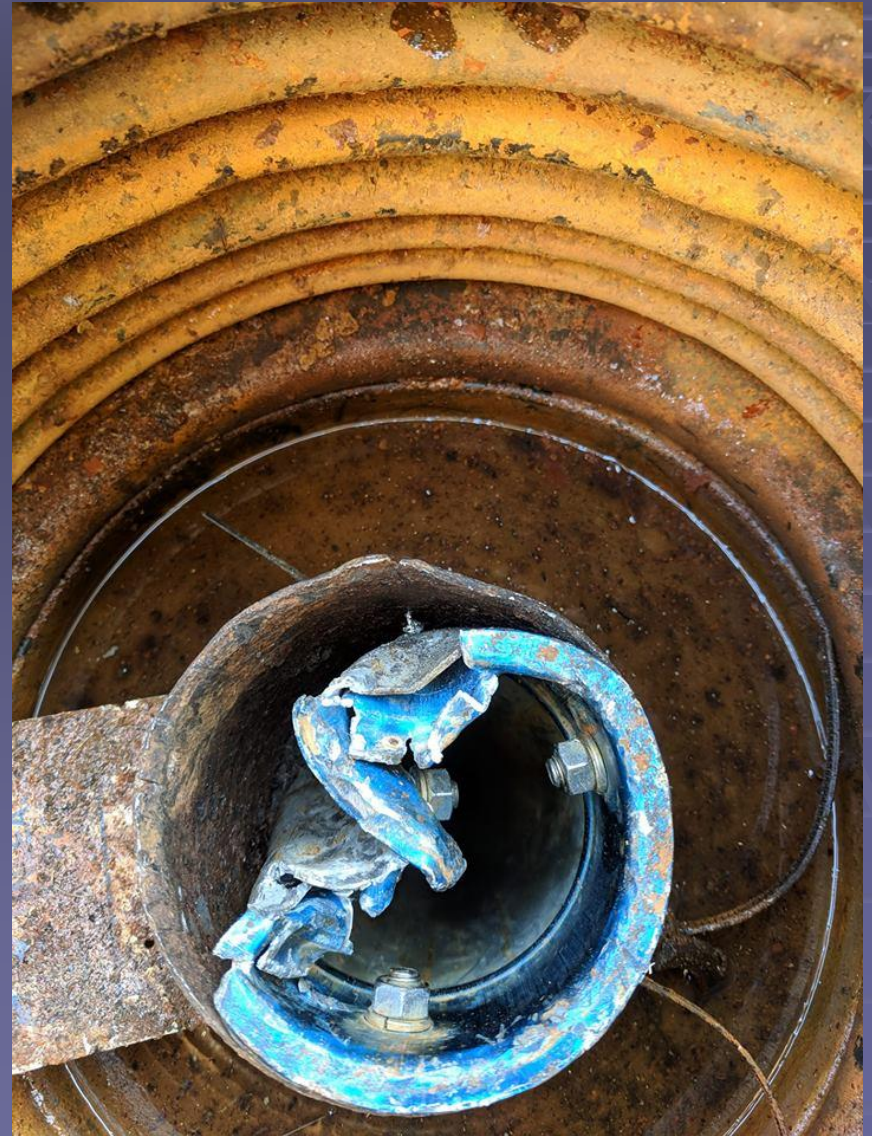
RP 1200:

- Remove and inspect for damage
- Float moves freely
- Latch mechanism works
- Valve moves into flow path of fuel
- Bypass valve open (if possible)
- Verify 95% level shutoff (tank chart)

To Remove the drop tube or not to remove, that is the question....

- Manufacturers are now providing procedures for inspecting their overfill equipment without removing it from the tank. There are pros and cons to this, however, following MFG procedures should be fine with most AHJ's.
- The PEI RP 1200 committee discussed this at length and being that this document is an industry "best practice" document, the committee determined that it is in the best interest to "exercise" and periodically remove the valves for inspection.

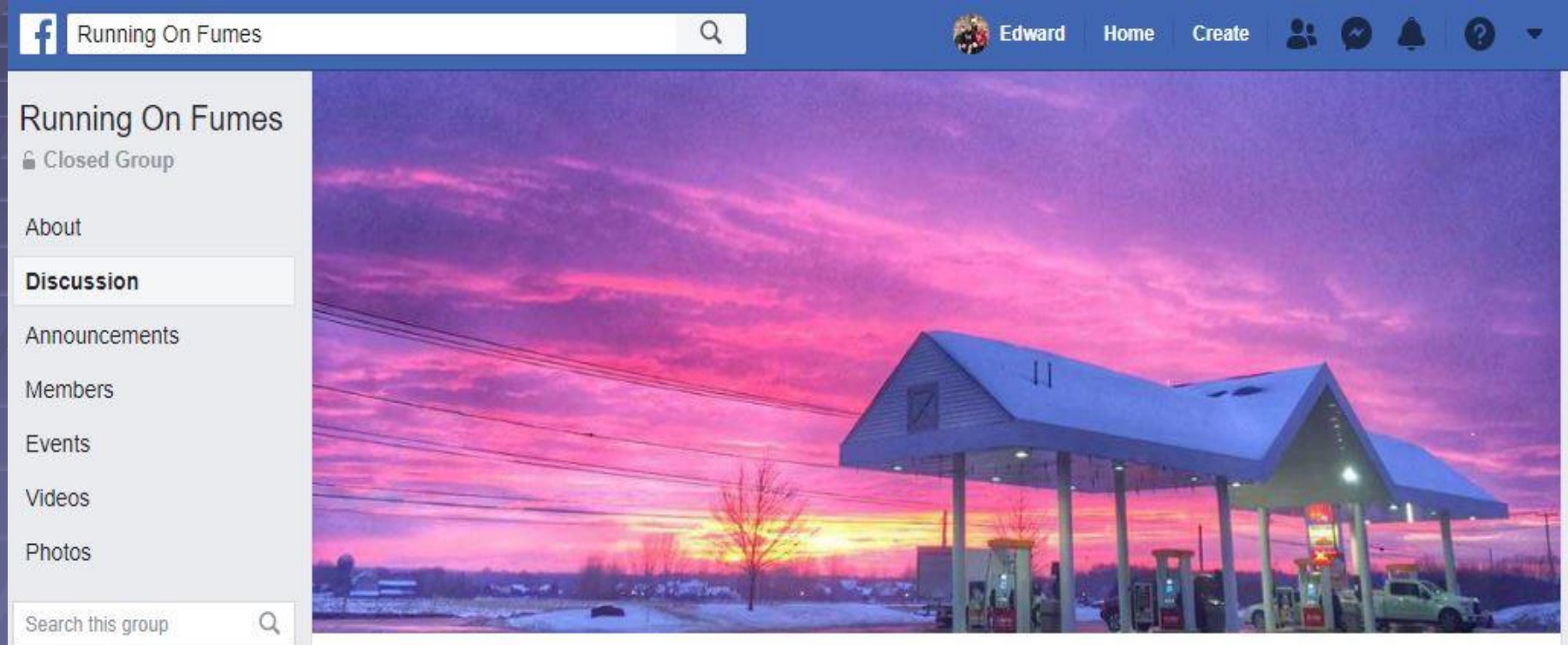
Here's a few reasons why to remove...



Here's a few reasons why to remove...

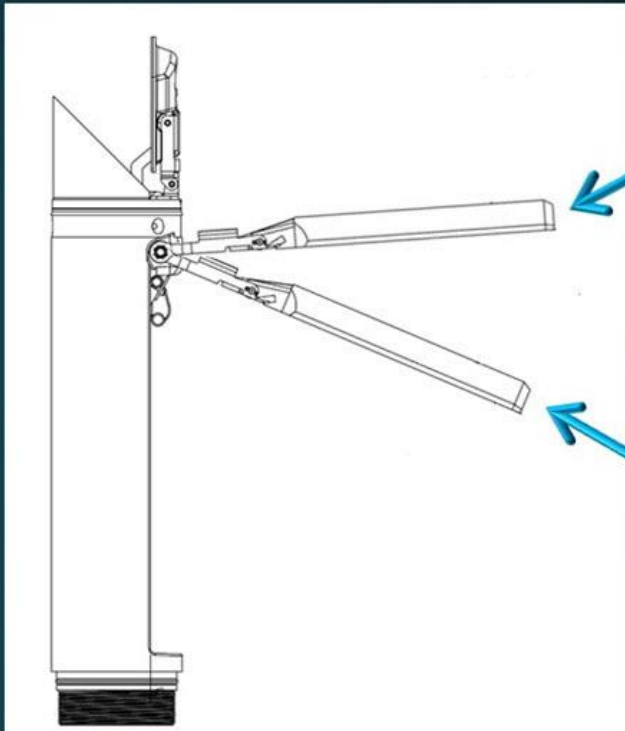


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From OPW Presentation – NEWIPCC Webinar on 5/10/17

How a 71SO Overfill Prevention Device Works



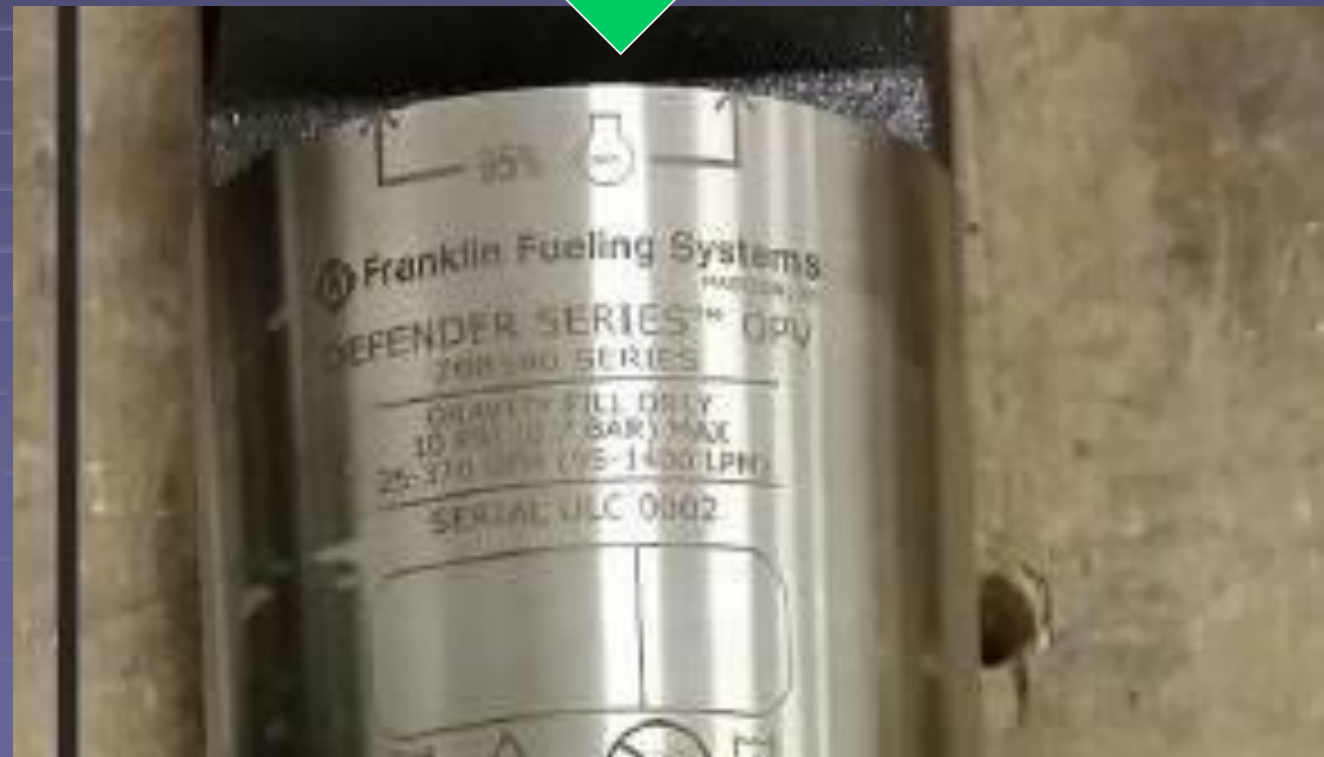
Stage 2 – Automatic Overfill Prevention

- Occurs only if fuel deliverer does not cut off flow from tank
- Float arm continues to rise, closes secondary orifice
- Flow is completely shut-off, preventing fuel from reaching tank top

Stage 1 – Overfill Detection

- Float arm pushes valve flap beyond protective bend in upper tube
- Main valve flap immediately sealed closed by fuel flow
- Fuel deliverer is notified tank is nearing full by hose jump
- Fuel reduced to 3-5 GPM through secondary orifice to empty hose

- Some newer shutoff valves state exactly where 95% is located on the valve!



Problems we occasionally encounter in the field....

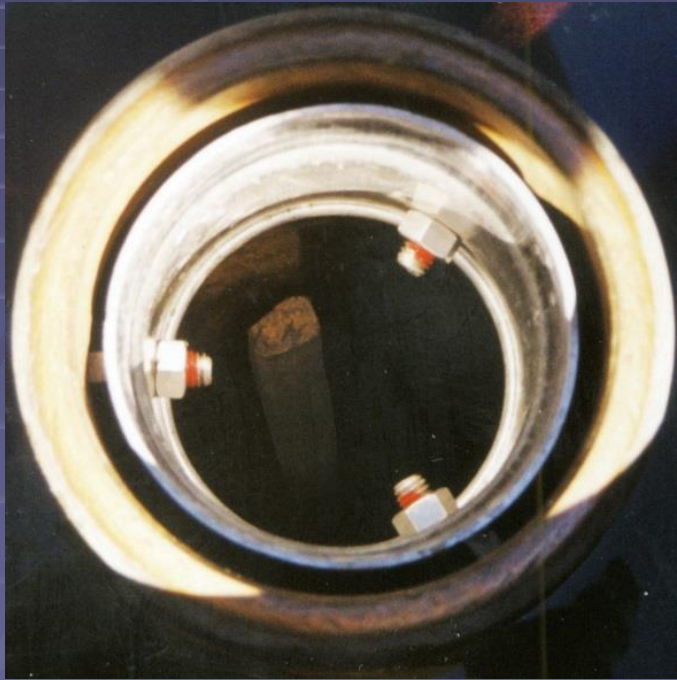






FIGURE 7-1. Check the drop tube and flapper for damage. Make sure that the flapper moves freely and will move into the product flow path.

7.1.7 Pass/Fail Criteria. If the automatic shutoff device functions as designed and complete shutoff of product flow is able to occur when the tank is no more than 95 percent full, the automatic shutoff device passes the inspection.

If the automatic shutoff device does not function as designed or complete shutoff of product flow is unable to occur until the tank is more than 95 percent full, the automatic shutoff device fails the inspection.

Pass/Fail

Overfill Prevention: Ball Float



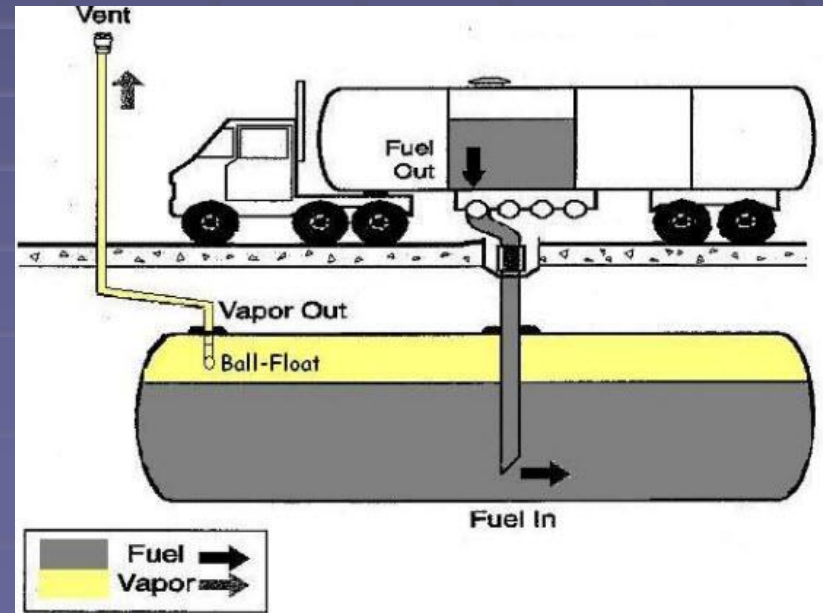
Overfill Equipment – Ball Floats

- What you need to know:
 - Ball floats are **not compatible** with the following systems:
 - Tanks that use coaxial Stage I Vapor Recovery
 - Suction pumps with air eliminators
 - Tanks that have remote fill piping
 - Underground tanks that receive a pressurized delivery
 - PEI RP 1200 Committee recommends removal
- **May not be used** as the primary method of overfill protection on **new or replaced** systems (date depends on state)
- If ball float is existing (date depends on state), may continue to be used
- Once the device needs to be repaired or replaced, another form of overfill protection must be used
- If following PEI RP 1200 the ball float will be checked to restrict flow at no higher than 90% tank capacity (use tank chart)
- **Must be removed for inspection** (can be a problem if never removed)

Ball Float Valve



Ball float valve as seen from inside the tank



They
come in
all
shapes
and
sizes



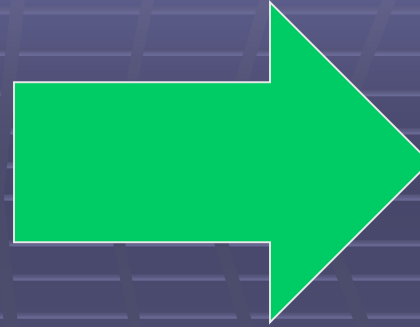
Overfill Prevention: Ball Float

RP 1200:

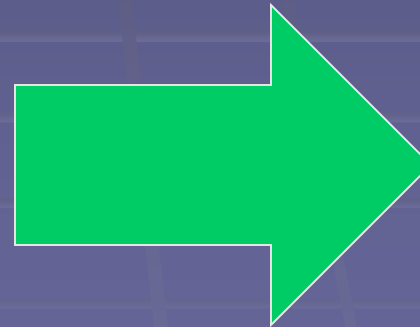
- Remove ball float & inspect for damage
- Check ball for holes & cracks and moves freely
- Check vent hole
- Check for 90% level (tank chart)
- Visually verify tank-top fittings are vapor-tight

Problems....

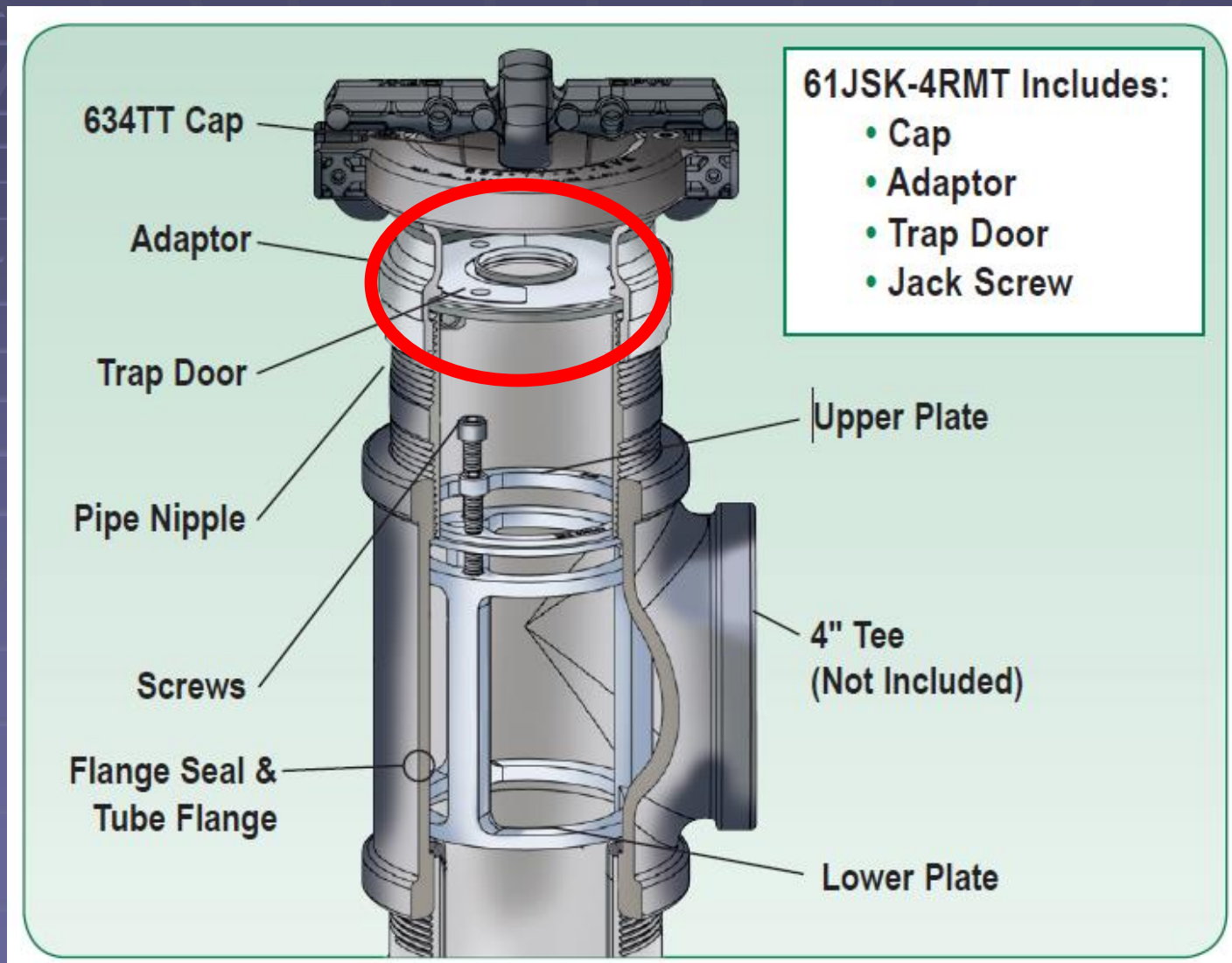
**Bleed hole
corroded**



**Cage
corroded**



Overfill Prevention: Ball Float Installed w/ Remote Fill Pipe



Pass/Fail

7.2.7 Pass/Fail Criteria. The ball float valve passes the inspection if the ball float valve functions as designed, flow restriction occurs when the tank is no more than 90 percent full, and the tank-top fittings are vapor-tight.



FIGURE 7-3. To avoid damage when removing or reinstalling the ball float, use an extractor tool recommended by the ball float manufacturer.

If any of the following configurations exist, the overfill prevention system fails the inspection:

- ball float valves are installed in storage systems that are equipped with suction pumps and air eliminators;
- the ball is cracked or damaged;
- **the ball float cannot be removed;**
- the orifice is not at the top of the assembly, or is clogged with debris or corroded, which would prevent proper air flow after activation;
- ball float valves are installed with coaxial Stage I vapor recovery;
- ball float valves are used on tanks equipped with remote-fill pipes and gauge openings without the use of “trap door” devices; or
- ball float valves are installed in storage systems that also are equipped with automatic shutoff devices and the ball float valve is set to restrict flow before the tank is 95 percent full.

If the ball float valve does not function as designed, flow restriction does not occur until the tank is more than 90 percent full, or the tank-top fittings are not vapor-tight, the ball float valve fails the inspection.

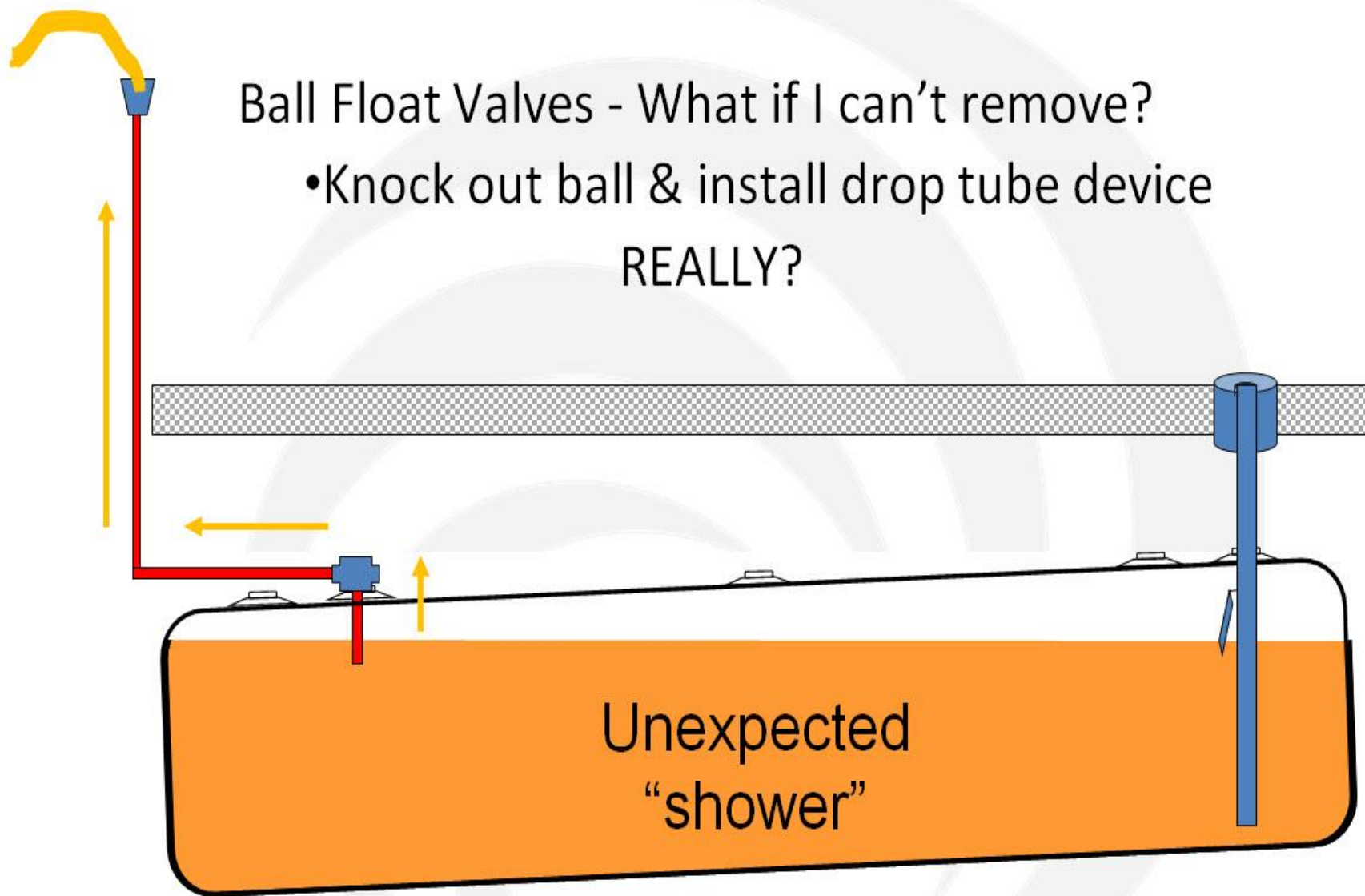
NOTE: When permanently removing a ball float, ensure that the entire assembly is removed so as not to interfere with other methods of overfill prevention.

Sorry Kevin Henderson, I liked this picture too much not to share!

Ball Float Valves - What if I can't remove?

- Knock out ball & install drop tube device

REALLY?



Overfill Prevention: High Level Alarm



Overfill Prevention: Alarm

RP 1200:

- Compare ATG fuel level to stick level
- Check that overfill alarm is “on”
- Activate overfill alarm button (if available)
- Remove ATG probe
- Move float to activate alarm
- Check float height is at 90% when alarm occurs

Pass/Fail



7.3.7 Pass/Fail Criteria.

- If the overfill alarm(s) activates when the tank is no more than 90 percent full, the overfill alarm passes the test.
- If the fuel level on the console does not agree with the gauge stick reading, the system fails the test.
- If the overfill alarm(s) does not activate in the test mode, it fails the test.
- If the overfill alarm(s) does not activate or activates at any product level above 90 percent tank capacity, it fails the test.



Documentation

PEI RP 1200 provides sample forms:

Several states have developed forms (AL, GA, IL, MS, NC, PA, SC, WV):

PEI/RP1200-17

APPENDIX C-5

UST OVERFILL EQUIPMENT INSPECTION AUTOMATIC SHUTOFF DEVICE AND BALL FLOAT VALVE

Facility Name: _____ Owner: _____
 Address: _____ Address: _____
 City, State, Zip Code: _____ City, State, Zip Code: _____
 Facility I.D. #: _____ Phone #: _____ Date: _____
 Testing Company: _____

This data sheet is for inspecting automatic shutoff devices and ball float valves. See PEI/RP1200 Section 7 for inspection procedures.

Product Grade	Tank Number	Tank Volume, Gallons	Tank Diameter, inches	Overfill Prevention Device Brand	Type
					<input type="checkbox"/> Automatic Shutoff Device <input type="checkbox"/> Ball Float Valve

AUTOMATIC SHUTOFF DEVICE INSPECTION

1. Drop tube removed from tank?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Drop tube and float mechanisms free of debris?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. Float moves freely without binding and poppet moves into flow path?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Bypass valve in the drop tube open and free of blockage (if present)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Present
5. Flapper adjusted to shut off flow at 95% capacity?*	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

A *No* to any item in Lines 1-5 indicates a test failure.

BALL FLOAT VALVE INSPECTION**

1. Tank top fittings vapor-tight and leak-free?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Ball float cage free of debris?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. Ball free of holes and cracks and moves freely in cage?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Vent hole in pipe open and near top of tank?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. Ball float pipe proper length to restrict flow at 90% capacity?***	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

A *No* to any item in Lines 1-5 indicates a test failure.

Test Results	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Comments:							

* Use manufacturer's suggested procedure for determining if automatic shutoff device will shut off flow at 95% capacity.
 ** If a ball float is found to fail the inspection, another method of overfill must be used.
 *** Use manufacturer's suggested procedure for determining if flow restriction device will restrict flow at 90% capacity.

Tester's Name (print) _____ Tester's Signature _____

UST-22A Annual Overfill Prevention Equipment Operability Check

(for components installed on or after 11/1/2007 or when returning any UST system to service from temporary closure)

This form must be used to document the operability check of overfill equipment annually for UST systems installed on or after November 1, 2007 (this includes existing UST systems that have installed or replaced these components on or after November 1, 2007) or for any existing UST system regardless of installation date prior to returning to service from temporary closure.

> Inspect overfill prevention equipment for operability, proper operating condition, and calibration in accordance with manufacturer guidelines and/or the "Overfill Prevention Equipment Inspection Procedure" listed on page 2 of this form. Only complete page 3 if tank fill must be determined per guidelines listed on page 2.

> Results must be maintained for at least one year at the UST site or the tank owner or operator's place of business, and be readily available for inspection.

UST FACILITY

Owner / Operator Name: _____ Facility Name: _____ Facility ID#: _____
 Facility Street Address: _____ Facility City: _____ County: _____

CONTRACTOR/PERSON CONDUCTING INSPECTIONS

Company Name: _____ Phone: _____ City: _____ State: _____

I certify, under penalty of law, that the testing data provided on this form documents the UST system equipment was checked in accordance with the manufacturer's guidelines and the applicable national industry standards listed in 15A NCAC 2N .0500.

Print Name of person conducting inspection: _____ Signature of person conducting inspection: _____ Inspection Date: _____

Overfill Equipment Check	Tank #	Tank #	Tank #	Tank #	Tank #
Tank chart volume (gallons):					
Tank diameter (inches):					
Product:					
Tank Type:	<input type="checkbox"/> FRP <input type="checkbox"/> Steel	<input type="checkbox"/> FRP <input type="checkbox"/> Steel	<input type="checkbox"/> FRP <input type="checkbox"/> Steel	<input type="checkbox"/> FRP <input type="checkbox"/> Steel	<input type="checkbox"/> FRP <input type="checkbox"/> Steel
If FRP Compartment tank select:	<input type="checkbox"/> Base <input type="checkbox"/> End	<input type="checkbox"/> Base <input type="checkbox"/> End	<input type="checkbox"/> Base <input type="checkbox"/> End	<input type="checkbox"/> Base <input type="checkbox"/> End	<input type="checkbox"/> Base <input type="checkbox"/> End
Flapper Valve/Auto Shut Off:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Tight fill adapter installed and in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Auto shut off device components and seals in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Current length from tank top to flapper shutoff point (inches) FSP					
Percent tank volume when complete shutoff occurs (%)					
Ball Float Valve	Yes No	Yes No	Yes No	Yes No	Yes No
Cage intact & ball in good condition, ball moves freely & seats firmly	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Tank top fittings tight	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Current length from tank top to ball float set point (inches) BFSP					
30 minute flow restrictor installed (if ball float set at more than 90%)	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Percent tank volume when flow restriction occurs (%)					
High Level Alarm (HLA)	Yes No	Yes No	Yes No	Yes No	Yes No
Alarm is audible and visible to fill ports and delivery driver?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Alarm occurs when float is moved to alarm set point?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Percent tank volume when alarm occurs (%) (attach alarm setup)					
	Pass Fail	Pass Fail	Pass Fail	Pass Fail	Pass Fail
Inspection result	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail

Comments and explanation of failing results and other problems noted during inspection:

NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WASTE MANAGEMENT, UST SECTION
 1546 MAIL SERVICE CENTER, RALEIGH, NC 27669-1546 PHONE: (919) 707-9171 FAX: (919) 715-1117 <http://www.wasteinfo.nc.gov/web/wm> 10/15

Questions/Comments?

