

The Reality and Challenges of Sump Integrity Testing



The EPA Rules...



Operation and Maintenance Requirements

- ***40 CFR 280.35 (a)(1) Spill Prevention and Containment Sump equipment testing***
 - Spill Buckets, Under Dispenser Containment, and Piping Sumps must be integrity tested every three years
 - If Double-wall, must also do monthly interstitial monitoring
 - Must use vacuum, pressure or hydrostatic testing

Spill Prevention Equipment

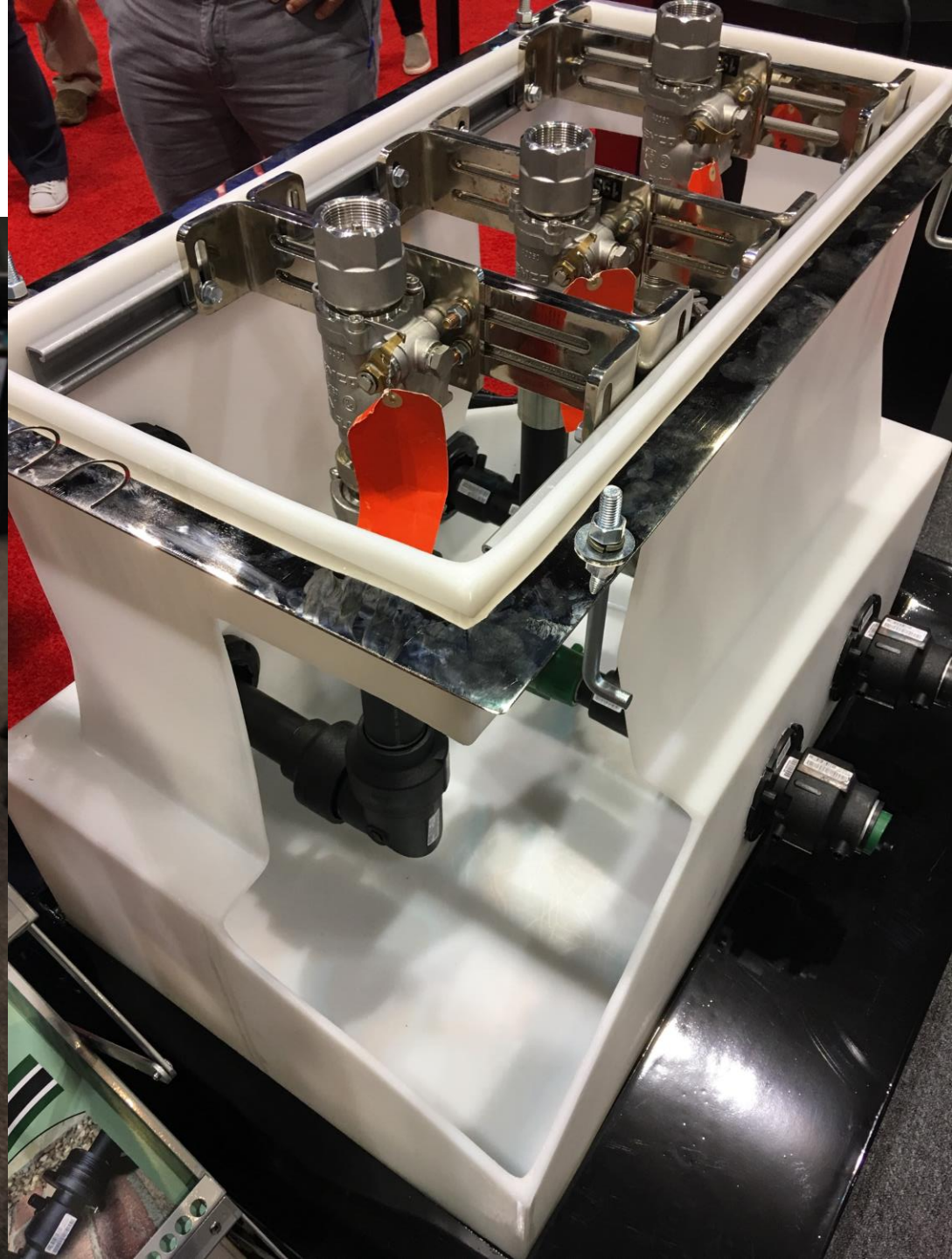
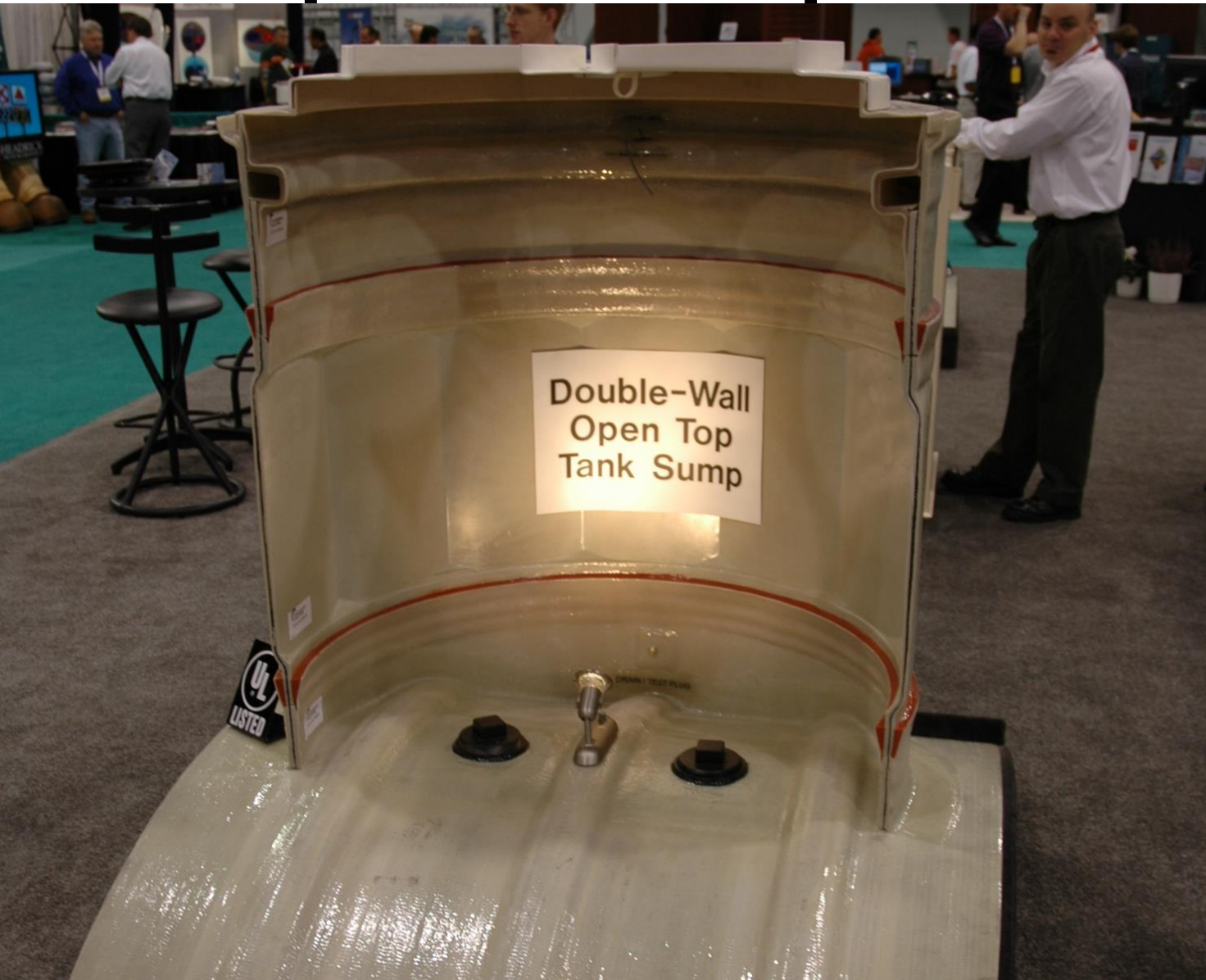
Single-Wall



Double-Wall



Piping Sumps and Dispenser Sumps



Every Three Years...Integrity Testing



The Reality...



Problems with the Integrity Test Requirements

- Longer time to perform the tests
- Staging the Hydro-tests
- Potential to cause contamination
- Generation of an entire new waste stream
- Higher costs for the tank owner
- Higher costs for the tester
- Is there a cost benefit?



The tests take longer time to perform and need staging



Longer times to perform the tests and staging issues

- Customer Coordination – How many sumps, and estimate gallons needing for hydrotesting
- Planning the test staging – What is the most effective order without disruption of marketing or business operations?
- Equipment preparation – Maintenance and backup plans
- Obtaining water for hydrostatic tests – Where? – Often the customers provide, but not always...
- Pre-test precautions – sump-wall penetrations, safety issues

Testers Have to Purchase New Equipment
– Trucks, Trailers, Containers, Pumps,
Vacuum Equipment, and Hoses, and
Usually Hire Additional Personnel



Totes



Trailers



A large, horizontal, orange UL 142 AST tank is the central focus of the image. It is situated in a workshop with plywood walls and a wooden floor. To the left, a wooden workbench holds a red level and various tools. A blue hose is coiled on the workbench. In the foreground, a grey and red engine-driven pump system is connected to the tank. To the right, a thick black hose with red lettering is coiled against the wall. The tank has several labels on top, including a yellow one with 'PBT' and a white one with 'UL 142'.

Tanks – UL 142 AST

A photograph of a white mobile tank on a trailer. The tank is cylindrical and mounted on a white metal frame with a single black tire visible. In the background, several large orange buoys are stacked. The text "Mobile Tanks" is overlaid in the center of the image.

Mobile Tanks

Longer times to perform the tests and staging issues

- Calculate Time to fill sumps – Pump flow rates are important
- Pumps that are safe for working with petroleum vapors
- Time needed for test – One to Three hours – Varies per State
- Test failures and how will they effect staging
- Potential loss of PCW to the Environment
- Sump water removal and sump drying – Shop Vacs and Rags
- Safety

Pre-fill inspection



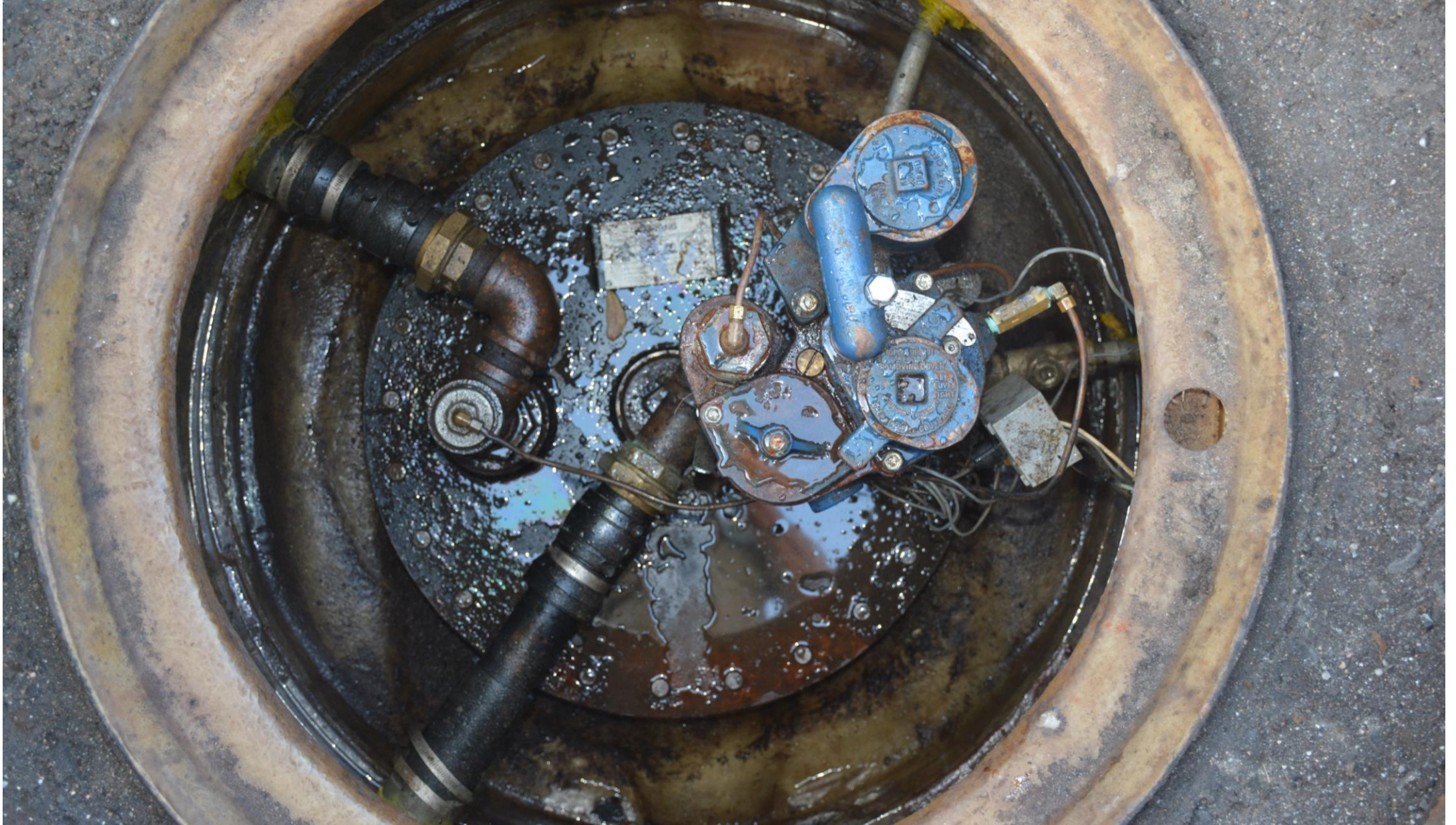
Filling the Sump



Hydrostatic Test Time



Test Water Removal and Sump Drying



Deep Sumps





Under Dispenser Containment Sumps



Similar in Process to Piping Sumps



Can be More Difficult – Space Constraints



**Pressure Head and
Measurement**

Non-Hydrostatic Sump Testing Methods



VPLT –
Accelerated
Electronic
Hydrostatic
Test
developed
by
Tanknology



Other Sump Testing Options

Options include:
Incon TS-STS and
Sherlock Vacuum Tester



Another Issue - Big sites with multiple dispensers



Spill Buckets



Similar in Process to Piping Sumps





Measurement

Hydrostatic Test Liquid Removal – Always PCW Except During Installation



Vacuum Testing – Quicker Option



Integrity Test Major Problems

- **Potential to cause contamination**
- **Generation of an entire new waste stream**
- **Higher costs for the tank owner and tester**
- **Is there a cost benefit?**



- **Potential to cause contamination**



Generation of an entire new waste stream



What do we do with all of this PCW?



Most of the Time, it Goes to a Oil-Water Separator – Not an Optimal Solution



Higher costs for the tank owner and tester

- Costs for the tank owner/operator for the additional testing are three times the prior annual costs
- Costs for the tester have increased as well for additional equipment and personnel



Is There Really a Cost Benefit?



Recommended Solution – Require a Third-Party Assessment of the Sump Integrity – This is Currently Done Prior to the Hydrostatic Test



Questions?

Marshall T. Mott-Smith
Mott-Smith Consulting Group, LLC
marshall@mott-smithconsulting.com
850-391-9835
www.mott-smithconsulting.com

