



## Alex Ralston: How to apply SP001 to chemical spills

With the significant chemical spill in West Virginia earlier this year and similar incidents elsewhere, both state and federal governments are looking at how to monitor chemical storage tanks, as petroleum storage has been monitored for many years.



In response, chemical storage tank owners and operators are looking for inspection and compliance help. In this article, **Alex Ralston, POE, founder and president of Petcon, Inc.**, describes a recent chemical tank inspection and how, absent specific regulations, SP001 standards can be applied.

[Click here for Alex Ralston's article...](#)

## West Virginia chemical tank spill: CSB investigation finds no record of inspections



On June 16, the Chemical Safety Board published an update on the investigation into the chemical storage tank leak that contaminated the drinking water of up to 300,000 residents of nine West Virginia Counties.

The CSB reported that it has thus far found no record of a formal, industry-approved inspection performed on any of the chemical storage tanks at Freedom Industries prior to the massive leak that occurred on January 9, 2014. Informal inspections may have occurred, preliminary findings indicate, but investigators have found a lack of appropriate engineering inspections with prescribed frequency and rigor.

The leak in the bottom of tank resulted from corrosion due to water seeping through holes in the tank roof.

[Click here for CSB investigation report...](#)

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## Regulators report most common UST violations

The Association of State and Territorial Solid Waste Management Officials published its "UST Common Compliance Violations Report" for 2012 recently.



The authors reviewed more than 32,000 violations nationwide for 2010-2012. Our friends at USTtraining created this summary of the top three UST violations:

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### INSPIRED AND INSPIRING

In June of this year, Acuity Insurance of Sheboygan, Wisconsin, dedicated the national's tallest flagpole, a truly inspiring use of steel.



Acuity Flagpole Project

### IMPRESSIVE

June 17 tornado in Pilger, Nebraska--The town's steel

Figure 4. Release Detection - Piping Breakdown

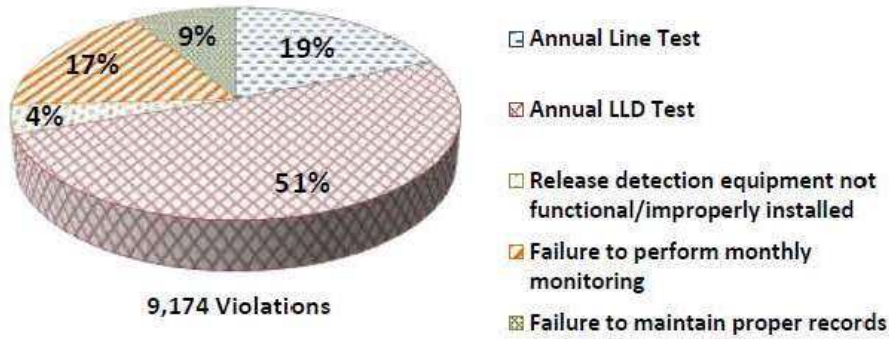


Figure 4, page 8,  
ASTSWMO UST Common Compliance Violations Report - FY 2012

**#1: Release detection for piping saw the greatest number of violations on average.**

- 51% not keeping records
- 19% not performing annual line tightness testing
- 17% not performing monthly testing (sump sensors, electric line leak detectors, SIR)
- 9% not performing leak detector function testing
- 4% with equipment not functioning

**#2: Release detection for tanks had the second-highest number of violations.**

- 41% record-keeping violations
- 39% not performing monthly 0.2 GPH test
- 13% not performing general release detection
- 7% with equipment not functioning

**#3: Spill prevention (spill buckets and overfill devices) was third.**

- 64% of devices not functional
- 34% not being cleaned and maintained
- 2% not undergoing testing (not yet a requirement)

[Read the complete ASTSWMO report here...](#)

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## EPA UST rule revisions in the pipeline

Mark Barolo, Deputy Director of EPA's Office of Underground Storage Tanks (OUST), spoke at a recent NISTM conference, about EPA UST rule revisions that are in progress.

Barolo said that EPA expects to submit UST rule revisions to the Office of Management and Budget later this summer, and release the regulations this fall. He noted that the regulations will focus more on operations and maintenance than "retrofits."



EPA received 200 comments on the proposal. Most noteworthy were:

elevated water tank stands strong through this violent storm.



*Tornado travels immediately behind the elevated water tank; other large structures are tossed.*



*Post-tornado damage. Intact water tank at minute 1:01.*

### Quick Links

#### [Shop Fabricated Tank resources](#)

- [Petroleum Storage Tank Maintenance webinar](#)
- [About ASTs and USTs](#)
- [Codes and regulations](#)
- [Steel and alternative fuels](#)
- [STI's tank technologies](#)



### Industry Calendar of Meetings, Conferences and Events

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**STI/SPFA Education and Certification Programs**  
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[SP001 AST Inspection](#)

- Monthly walk-through inspections.
- Regular and frequent component testing to assure operability, particularly interstitial integrity testing.
- Deletion of groundwater and vapor monitoring.
- Addressing previous deferrals, such as airport hydrant systems and wastewater treatment plants.
- Defining compatibility of emerging fuels (ethanol, ULSD, biodiesel), determining how owner demonstrates compatibility, and leak detection research.

Continued priorities include reducing clean-up backlog, funding state programs, and addressing abandoned tank sites.

The public comment period is now closed, but you can [see the proposed revisions here](#).

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## "Clean and dry" fuel requires filters and maintenance

Engine fuel systems have always required "clean and dry" fuel, and the most recent fuel injection systems are more sensitive than ever to water and particulates.

At the same time, the fuel delivery infrastructure that moves fuel from the refinery to the end-users involves fuel transfers between a significant number of fuel storage tanks and piping systems. Every one of those transfers is an opportunity for fuel contamination.



Roger T. Gault,  
Truck & Engine Manufacturers Assn.

[Read full article by Roger Gault, Truck & Engine Manufacturers Association...](#)

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## Fuel contamination occurs anywhere in the delivery chain



It seems that fuel storage tanks at retail sites often get the bad rap for contaminated fuel-- which makes sense, because it's consumers who ultimately suffer the consequences. However, it behooves all participants in the fuel delivery infrastructure to monitor fuel quality in their components in the chain.

On July 2, Chevron suspended sales of premium and mid-grade gasoline at 500 stations in the Houston area, due to consumer complaints about contaminated premium fuel. "The bad fuel had high levels of a substance that makes valves stick and leaves deposits in injectors, potentially causing engine damage," according to a report in *PetrolPlaza*, an online industry newsletter.

Chevron said that the problem was confined to one batch of premium supplied by a specific Texas terminal. As of mid-July, the company still did not know how the fuel became contaminated. The Texas Department of Agriculture, which inspects and regulates the state's fuel pumps, performed random inspections on re-fueled stations, but has not yet published results.

This incident shows that fuel producers and terminal facilities are also vulnerable to

## Training & Certification

- Sept. 29-Oct. 3, Houston TX
- November 3-7, Owings Mills MD

## Field Erected Water Storage Tank Seminar

Oct. 23, Baltimore MD  
Nov. 13, Phoenix AZ

## Webinar: Safety and Design Factors for Steel Water Pipe

November 21

## Online Offerings Tank Integrity Management Certificate

### Archived webinars

- Petroleum Storage Tank Maintenance
- Steel Water Pipe Fittings and Design
- Regulation of Tanks Inside Buildings: A Guide for Users and Enforcers
- Tank Venting Essentials: PreVENTing Catastrophe

### E-learning modules

- Steel Water Pipe Overview
- Steel Water Pipe Coatings and Linings
- Steel Water Tank Standards
- Steel Water Tank Construction
- Steel Water Tank Coatings and Linings



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making, mixing and selling bad fuel.

[Read the PetrolPlaza article here...](#)

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## Ask the Expert: Why is a tank with factory-attached anodes equivalent to a composite tank?

STI recently received email from a tank owner who is "not a tank expert." For others who may not have years of experience with storage tanks, here are this owner's questions and my responses.



Lorri Grainawi, PE,  
STI's Director of  
Technical Services

**Owner question:** I have a site where two 10,000 gallon sti-P3 tanks were installed in the mid-1990's. The folks onsite have never filled the tank above 8,000 gallons and have no idea whether it has overfill protection. Is that equipment factory-installed?

**Answer:** Overfill protection is a separate piece of equipment that's added onto the tank after the tank is in in the ground, just like the fuel pump. There are several different types of overfill protection equipment. You can [read about some of the options on the EPA OUST website](#).

**Owner question:** The sti-P3 documentation says that the tanks are single walled with galvanic anodes for corrosion protection. The regulations state that "single wall tanks shall be tested for cathodic protection at installation and then in three-year intervals for the life of the installation. Sti-P3 tanks which can also be classified as ACT-100 composite tanks do not require cathodic protection testing." Is periodic testing of the cathodic protection system really not required for such tanks? If so, why?

**Answer:** There are two basic types of corrosion protection available for steel tanks. The oldest and most traditional is cathodic protection. Only cathodically-protected tanks are capable of being monitored to verify that the corrosion protection system is operating as designed. This is true for both steel and fiberglass tanks.

Composite tanks, such as STI's [ACT-100](#), have the best of both worlds when cathodic protection is added. The thick film of fiberglass on the outside of the steel tank completely isolates the steel from the soil, thus preventing corrosion, and the added anodes also give the tank the ability to be monitored, if the owner chooses to do so. But because the fiberglass laminate is already protecting the steel, federal regulations do not require cathodic protection on ACT-100 tanks with anodes to be checked every three years.

[Learn about EPA OUST rules for composite tank testing here...](#)

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## Tank and Petroleum Mishaps

### North Dakota, 5/31/14: COW BLAMED FOR CAUSING SPILL IN OIL PATCH

A cow is suspected of causing a spill of natural gas liquids near a tributary of the Little Missouri River, prompting North Dakota regulators to warn energy companies

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to ensure their facilities are bovine-proof.

State Environmental Health Chief Dave Glatt said Thursday that a cow might have rubbed against a tank valve two days earlier, spilling about 20 barrels of natural gas condensate near Sully Creek, south of

Medora in western North Dakota. Condensate is a byproduct of natural gas production. [More...](#)

### Arizona, 6/12/14: 'SUSPICIOUS DEVICE' EXPLODES POWER PLANT, RUPTURES LARGE FUEL TANK

A makeshift bomb exploded at a Nogales, Ariz., power plant Wednesday, rupturing a large fuel tank and prompting the FBI and federal bomb experts to respond.

Local officials were alerted at 9:30 a.m. to a call of "suspicious activity" at the UniSource Energy Services Valencia Plant. An explosion had ruptured a diesel storage tank and caused what Nogales police Lt. Carlos Jimenez described as a relatively small spill that was confined to the immediate area. [More...](#)

### Siberia, 6/12/14: MASSIVE 'BALLISTIC MISSILE' FLOATS THROUGH FLOODED RUSSIAN VILLAGE, SCARES NEIGHBORS

A flood in Russia is apparently powerful enough to push a giant rocket through a small village. A mysterious metal tube washed up in Malougrenyevo after serious floods swept through Russia's Serbia (*sic*).



Photo courtesy  
New York Daily News

The floods have evacuated thousands and allowed the giant pipe to float down Russian streets and into the front lawn of a local policeman, RT reported. Inside the hollow tube, the villagers found two dogs. [More...](#)

[Click here for more Tank Mishaps](#)

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## Seven dead in Mexico crane accident



According to numerous reports, including one from [www.oedigital.com](http://www.oedigital.com), seven employees of Mexico's largest construction company, ICA Fluor, died while working on Pemex's Ayatsil-C platform during an accident that occurred 11 June, ICA Fluor announced 12 June. Another employee sustained serious injuries.

The accident occurred when a personnel transporter, hoisted by a 600 ton crane, fell from a height of about 131 feet. Five died upon impact, and during the fall the transporter struck another group of workers. Two later succumbed to injuries after being transported to the hospital. The accident occurred while workers were removing scaffolding from the platform.

In a recent article in [BIC Magazine](#), the National Commission for the Certification of Crane Operators said that crane certification is essential for operators. OSHA has delayed the compliance date for crane operator certification until 2017 due to

several comments from stakeholders that certification is insufficient for determining whether an operator could operate equipment safely on a construction site.

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## NEW! Steel Facts: Steel best for large-diameter pipe

STI/SPFA has published the latest in our series of **Steel Facts** sheets. Number 7 is focused on the superior qualities of steel for use in the water infrastructure. Authors are members of the Steel Water Pipe Section.

The Steel Facts documents explain the benefits of steel fabricated products:

- **Steel: The First Choice for Large-Diameter Water Pipe**
- **Newer Fuels and Storage Tank Corrosion**
- **Sustainable Steel**
- **The Strength of Steel**
- **Choose Steel for Lifetime Value**
- **Steel Tanks: Compatible with All Biofuel Blends**
- **Cathodic Protected Tank Inspection**



[Click here to view and download Steel Facts.](#)

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## Alternative Fuel Update

This update is courtesy of PEI's *Tulsa Letter* and Editor Bob Renkes:

- **Minnesota began its 10 percent biodiesel mandate on July 1**, becoming the first state to mandate the fuel blend. The increase to 10 percent biodiesel will only be in place during the summer months (April-October), with the mandate reverting back to 5 percent in the winter months. Minnesota has had its 5 percent mandate in place since May 2009.
- **Iowa Governor Terry Branstad signed into law on May 21 an extension of a tax credit for gasoline containing 15 percent ethanol.** The E15 credit pays 3 cents per gallon for the 15 percent ethanol blended into gasoline sold from January 1 to May 31, and 10 cents per gallon for sales from June 1 to September 15.
- **Missouri now allows the sale of E15 beginning June 1.** It will become the 13th state to approve the sale of the 15 percent ethanol blend.
- **Hyundai says the first hydrogen-powered Tucson Fuel Cell crossover utility vehicles have arrived in the United States**, marking a major milestone for the hydrogen fuel vehicle sector. These vehicles, which are mass-produced on Hyundai assembly lines overseas, will be offered for retail sale in the Southern California market in June. Hyundai notes that availability of the Tucson Fuel Cell vehicle will expand to other regions in the United States as the hydrogen refueling structure grows.



[Click here for PEI's Tulsa Letter...](#)

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## USPS, US Army EPA settlements protect ground water

The [Water Technology](#) website reports that the US Postal Office has reached a settlement with the EPA that is intended to protect groundwater from contamination. The USPS has certified that five of its West Virginia facilities are in compliance with EPA UST regulations.

[Click here for more...](#)

The U.S. Army is taking steps to improve management of its fuel storage tanks and comply with federal laws designed to protect groundwater at Fort Wainwright Garrison, located near Fairbanks, Alaska, according to a settlement with the U.S. Environmental Protection Agency, according to a press release.



*About half  
of US drinking water  
comes from ground water.*

EPA inspections found that from at least 2012 to 2013, Fort Wainwright failed to perform leak detection tests, monitor underground storage tanks regularly and investigate suspected releases as required under the Resource Conservation and Recovery Act.

[Click here for more...](#)

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## STI/SPFA education resources available to all

STI/SPFA has many education opportunities for steel fabricators, tank owners, regulators and anyone interested in the industry:



- **Business Risk Management Seminar**, Tuesday, August 26, Houston
- **Field Erected Storage Tank Seminars**: Baltimore, October 23, and Phoenix, November 13
- **Design and Safety Factors for Steel Pipe Design**, webinar, November 21 (details TBA)

Don't forget our online e-learning modules and archived webinars.

[Click here to see education choices...](#)

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## STI tank fundamentals course at 2014 API Tank Conference



STI presents a one-day course on Storage Tank Fundamentals in conjunction with API's 2014 Tanks, Valves and Piping Conference & Expo, October 13-16 in Las Vegas.



STI's storage tank course takes place on October 14 and is designed for inspectors, engineers, managers and regulators who want to increase their knowledge of storage tank facilities.

Tentative course topics include:

- Regulations: environmental, fire codes, OSHA
- How to use tank standards
- Field erected tanks--API 650, including frangible roof design
- Oil production tanks--API 12F and 12D

- Shop-fabricated tanks--UL 142 and 2085
- Foundations and seismic design
- Tank construction, including steel grades
- Safety
- Roof designs
- Measurement and gauging
- Overfill prevention
- Inlet diffusers and sumps, inspection and maintenance

[Click here for API conference and STI course information and registration...](#)

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## Where in the world is Larry O'Shea?!?



"And WHO in the world is Larry O'Shea?" you may ask...

STI shop-fabricated fuel storage tank fabricators are required to participate in our Quality Control program. Larry O'Shea has directed the QC program for 22 years.

Every STI shop fabricated fuel storage tank member's production is inspected up to four times per year. Larry and his 15 inspectors assess the quality of the tanks produced, ensuring that they meet STI, UL,

SwRI and other applicable standards.

Like Larry, STI inspectors bring their life experience in welding, coatings, fittings and standards to the job. STI inspectors are the primary point of contact for the fabricators, making sure they're up to date with latest technical and regulatory information.

In addition to QC inspections, every STI fuel storage fabricator is required to attend a biennial Quality Control Meeting. The agenda might include safety and health topics, unique aspects of tank manufacture, review of STI and UL specifications, recent trends and learning opportunities from past quality findings. The second day of the meeting is always a tour of an outstanding STI tank fabricator facility.

Regulators and insurers recognize that STI's Quality Control program has been a significant force in raising the bar for shop-fabricated fuel storage tank production.

### So where in the world is Larry O'Shea?

At some point every year, Larry or one of STI's quality inspectors are in Australia, Argentina, Chile, China, Egypt, Mexico, South Africa, South Korea, Taiwan, Thailand and, of course, the United States and Canada.

[Read more about STI's Quality Control Program...](#)

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