

# L.U.S.T.LINE



A Report On Federal & State Programs To Control Leaking Underground Storage Tanks

## Where Compassion and LUST Remediation Meet

by Gary Lynn

In New Hampshire, petroleum remediation is a kind of “McDonald’s” of the state environmental programs: high volume, assembly-line efficiency delivered at a low cost to the state. We are comfortable enough with our program that we can laugh at jokes such as: Do you also offer a free order of fries with every tank pull? It started during the 1990s, when our program was hit by a rapid increase in new LUST sites. To address the onslaught, sites were triaged into two basic categories: high-priority, high-risk sites permanently assigned to project managers, and all other lower-priority sites. Low-priority site reports were placed in a slow-moving, first-in-first-out queue. The unassigned-site report backlog was kept under control using a cookie-cutter type process that emphasized making progress at the site with a minimum of individualized attention.

About five years ago, the backlog stabilized and the New Hampshire Department of Environmental Services (NHDES) started to permanently assign project managers for the low-priority sites. The goal of this initiative was to achieve adequate progress toward closure for every site. However, as the remedial assembly line slowed slightly to make sure that all sites were on it, it became apparent that some sites could not be managed with a business-as-usual approach. For one reason, project managers learned that some of the owners were very sick (i.e., brain tumors, Alzheimer’s, cancer, heart attacks), recently deceased, or bankrupt. The properties were sometimes abandoned, foreclosed, or taken for back taxes. New approaches were required to address these difficult sites, and our response evolved over time into New Hampshire’s petroleum-brownfields program.

### Bringing Compassion to the Assembly Line

Three key adaptations were made to our existing petroleum-remediation program: 1) a system was put in place to identify and track petroleum-brownfields sites, 2) all available programs and tools were catalogued and incorporated into efforts to address sites, and 3) resources were allocated to deliver the required services to the sites and



Meadow Road Realty site buildings and rubble.

site owners. The best way to illustrate these changes is by way of example.

### A Dry Cleaning Site and an Owner with Alzheimer’s

NHDES project managers identify petroleum brownfields sites on a weekly basis. Sites are typically identified as dormant, a potential enforcement candidate, or inactive. It is important to have a system that tracks and follows up

■ continued on page 2

### Inside

- 3 Hiding in Plain Sight
- 4 Green Energy Gateway Fuel Station—Lawrence, KS
- 7 UST Rules for a New Century
- 9 Reducing the LUST Backlog
- 11 UST Insurance Matters
- 12 New Recommended Practices for ASTs
- 13 Emerging Fuel Storage Issues
- 14 FAQs from NWGLDE: Sensors, Part I

## ■ LUST Remediation from page 1

on the site once it is identified. In the case of Profile Cleaners, there was no question that the site qualified as a brownfields site. The owner of the property was in a nursing home suffering from Alzheimer's, and her husband was deceased. The property had a Medicaid lien placed on it, and the children were actively trying to sell the property. Unfortunately, contamination was discovered when two Stoddard solvent (a petroleum distillate) tanks were removed and sufficient funds were not available to pay for the tank-removal contractor, let alone investigate and clean up the site.

Once NHDES recognized that Profile Cleaners was a site requiring brownfields assistance, we initiated efforts to identify partners and resources that could help. The North Country Council (NCC), one of nine New Hampshire Regional Planning Commissions, has a USEPA petroleum-brownfields-assessment grant. NHDES introduced the children of the site owner to the NCC brown-



Meadow Road Senior Housing project.

fields contact person and worked with NCC on expediting a site investigation of the property. After helping to resolve a tricky background polycyclic-aromatic-hydrocarbon (PAH) issue at the site, NHDES was able to issue a certificate of no further action. The property is now in the process of being sold. Medicaid, the tank-removal contractor, and the children's out-of-pocket expenses will finally be paid off. Also, this idle commercial property will be redeveloped because NHDES properly identified it as a brownfields site, assembled resources from other programs, and then expedited reviews at a critical juncture in time to move the site through the closure process. The site is now closed and about to be purchased for redevelopment, much to the family's relief.

### HUD, (um) Ladies Underwear, and LUSTs

The Meadow Road Realty site abuts the Town of Newport's recreation complex and the Sugar River. The property was initially used by the Peerless Manufacturing Company for the manufacture of ladies undergarments starting in the 1890s. After changes in fashion resulted in the demise of Peerless, the property was used by a warehouse and trucking transportation operation. As the site experienced a long downward spiral of neglect, its ten mill buildings became structurally deficient, and the site was strewn with rubble and debris. Additionally, in 2005, leaking underground-diesel-storage tanks installed as part of the trucking operation were discovered.

Southwestern Community Services (SCS) submitted an application

to the federal Department of Housing and Urban Development (HUD) for the construction of elderly housing on the property. As part of this process, an initial site characterization report was submitted to NHDES and HUD in September 2005. The report documented the contamination from the underground-diesel-storage tanks. HUD's multifamily accelerated processing (MAP) guidance requires that all cleanup activities and monitoring wells be removed prior to obtaining HUD assistance. Based on this guidance, HUD rejected the application for housing assistance.

SCS contacted NHDES to see if we would be willing to discuss the contamination problem with HUD. We did and provided SCS with a letter that committed State Petroleum Reimbursement Fund resources for an expedited cleanup of the contamination. Based on NHDES assurances, HUD accepted the grant application and SCS was awarded the grant. The grant approval had one major caveat, however: the cleanup had to be completed within 18 months before HUD would provide any assistance.

NHDES developed an aggressive remedial approach for the site to meet the fast-track, 18-month deadline. The approach consisted of removing the petroleum-contaminated soil and then injecting pure oxygen to accelerate the biodegradation of the remaining groundwater contamination. The contaminated soil removal was complicated by an unstable, nearby building, and to complete the soil removal, partial demolition of the building was required. Delineation of the extent of contaminated soil was completed by January 2006. Soil excavation was completed by



### L.U.S.T.Line

Ellen Frye, *Editor*  
Ricki Pappo, *Layout*  
Marcel Moreau, *Technical Adviser*  
Patricia Ellis, PhD, *Technical Adviser*  
Ronald Poltak, *NEIWPCC Executive Director*  
Amanda Driggers, *USEPA Project Officer*

LUSTLine is a product of the New England Interstate Water Pollution Control Commission (NEIWPCC). It is produced through a cooperative agreement between NEIWPCC and the U.S. Environmental Protection Agency.

LUSTLine is issued as a communication service for the Subtitle I RCRA Hazardous & Solid Waste Amendments rule promulgation process.

LUSTLine is produced to promote information exchange on UST/LUST issues. The opinions and information stated herein are those of the authors and do not necessarily reflect the opinions of NEIWPCC.

This publication may be copied. Please give credit to NEIWPCC.

NEIWPCC was established by an Act of Congress in 1947 and remains the oldest agency in the Northeast United States concerned with coordination of the multimedia environmental activities of the states of Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont.

NEIWPCC  
116 John Street  
Lowell, MA 01852-1124  
Telephone: (978) 323-7929  
Fax: (978) 323-7919  
lustline@neiwpc.org



LUSTLine is printed on recycled paper

July 2006, and a 32-point Matrix pure oxygen-injection system was operational by August 2006.

The Matrix system's flexible operation became very important in January 2007, when NHDES quickly shifted injection points to a new location where groundwater stubbornly remained above standards. By April 2007, the site was closed and all onsite groundwater-monitoring and oxygen-injection wells were decommissioned. NHDES and SCS achieved site closure exactly 18 months after the HUD grant was awarded.

Following completion of cleanup activities, HUD awarded \$3.37 million dollars for the project. The Town of Newport actively supported this project and contributed \$350,000 of their Community Development Block Grant (CDBG) money. The CDBG and HUD grant money paid for site demolition activities and construction of a new, 24-unit elderly housing complex. The elderly housing project is the first in over 15 years for Newport and will be 100 percent occupied by low and moderate income seniors.

The project addresses Newport's urgent need for elderly housing (44 percent of Newport's poor are 65 and older). As part of the project, the town is upgrading the adjacent park and streets. On October 15, 2008, the Meadow Road Senior Housing project celebrated its grand opening. All 24 housing units are now occupied.

The non-profit developer has publicly declared NHDES to be a "housing hero" and the Town of Newport is thrilled to have eliminated an unsafe eyesore near their town recreation complex. Multiple groups of politicians have toured this project and have been delighted with the progress. In this case, NHDES' understanding of HUD's multifamily housing program and its environmental guidelines was essential for successfully taking a property that was virtually abandoned and turning it into a point of pride for a community.

#### From Good to Great

Based on the strides states have made in cleaning up petroleum-contaminated sites and upgrading tank

systems, it is clear that our nation benefits from the many highly successful state petroleum release-prevention and remediation programs. However, NHDES believes that there is still room for improvement, and that it is possible to go from good to great, even with the frustrating resource constraints and impediments cast our way.

An effective petroleum-brownfields program raises the profile of state UST/LUST programs in a way that our day-to-day competence and efficiency seems unable to do. Higher profile programs tend to get more resources—the currency that must be available to run a great program. As a side benefit, we have found that staff members are energized by finding solutions for difficult sites and helping people. Difficult sites are actually opportunities for profiling the many strengths of state UST/LUST programs. ■

*Gary Lynn is Manager of the NHDES Petroleum Remediation Program. He can be reached at Gary.Lynn@des.nh.gov.*



### A MESSAGE FROM CLIFF ROTHENSTEIN

*Director, USEPA Office of Underground Storage Tanks*

## Hiding in Plain Sight

In Trenton, New Jersey, the city opened a new firehouse a few years ago. Along Kansas

City, Missouri's Prospect corridor, several ethnic restaurants line the streets. In eastern Washington's Town of Rosalia, the Steptoe Battlefield State Park has a new visitor center. On Fruitville Avenue in Oakland, California, residents are now living in new Habitat for Humanity homes. In Hammond, Indiana, the community has a new small neighborhood park. In Sparks, Nevada, the Reno Sparks Indian Colony is redeveloping an urban site and will use the tax revenues to support a health clinic, halfway house, and schools for local children. And every business day, 1,600 USEPA employees go to work in the new Potomac Yard Office Complex.

None of these stories is particularly remarkable, except for one thing. All of this development took place on former brownfields sites with petroleum contamination. For too many years, these properties—vacant land and abandoned buildings—were hiding in plain sight, attracting crime but not investors. Fortunately, after much hard work, each of these old vacant

properties is now valuable real estate and a source of revenue and pride for the community.

There are thousands of other vacant properties just like these that are hiding in plain sight. Littering our highways and urban neighborhoods, there may be 200,000 or more abandoned gas stations, just waiting to be cleaned up, reclaimed, and returned to productive use. These abandoned stations are so commonplace that some people no longer even notice them—to others, they are too small to worry about.

But to many of us, these old, abandoned corner gas stations provide communities with an opportunity to clean up and reinvigorate a neighborhood. It's true that these sites are found everywhere and may be smaller than a typical brownfields site, and therefore less appealing to some investors. But as we have already witnessed, small abandoned gas stations are often great places for new restaurants, urban parks, and even homes. And with the nation's shift toward alternative fuels and hybrid vehicles, these sites may also be ideal for locating new biofuel filling stations or electric-vehicle recharging stations. With a little elbow grease and a good plan, we can unlock the

■ *continued on page 4*

**CLIFF ROTHENSTEIN** from page 3

hidden potential at many more of these sites.

Fortunately, we have a plan. USEPA's new Petroleum Brownfields Action Plan, just released in October, includes four strategic initiatives and 17 specific actions that government and the private sector can take to promote revitalization and sustainability of petroleum-contaminated brownfields properties.

Through the implementation of this new plan, which is available on USEPA's website, <http://www.epa.gov/oust/rags/petrobfactionplan.pdf>, we expect to:

- Bolster our communication and outreach to petroleum-brownfields stakeholders;
- Provide targeted support to state, tribal, and local governments;
- Explore and evaluate policies to facilitate increased petroleum-brownfields-site revitalization; and
- Forge partnerships to promote investment in and the sustainable reuse of petroleum brownfields.

I am happy to be working directly with David Lloyd and his staff in USEPA's Office of Brownfields and Land Revitalization to unveil and help execute this plan. Our new action plan does not reinvent the wheel; instead, it builds on the progress we've already made. It gives us a new updated road map to help us avoid dead ends and construction zones that cause delays, and it helps us better navigate our way along the petroleum-brownfields highway.

Our hope and expectation is that by expanding our partnerships; improving our outreach; providing targeted support to state, local, and tribal governments; and evaluating policies to facilitate reuse of petroleum brownfields, we can achieve greater success. Through all of our efforts, we can seize our opportunities, return even more abandoned gas stations that are hiding in plain sight into productive use, and by doing so, give neighborhoods new hope. ■

# First Green Energy Gateway Fuel Station Opens in Lawrence, Kansas

by Michael Pomes

The June 30th opening of the first Green Energy Gateway Fuel Station in the country, Zarco 66 Earth Friendly Fuels, in Lawrence, Kansas was an energetic event. John B. Askew, USEPA Region 7 Administrator, presented owner Scott Zaremba with a Blue Skyways Collaborative Partnership Award to mark the opening of his facility, which showcases the blending of biodiesel and ethanol fuels at the pumps, demonstrates the generation of electricity with solar panels and wind turbines, features a green roof and rain garden, and allows customers the opportunity to find out more about alternative fuels and sources of energy. Other speakers at the grand opening included Rep. Dennis Moore, D-Kan, Adrian Polansky, Secretary of the Kansas Department of Agriculture, and Mike Dever, Mayor of the City of Lawrence.

During the Kansas Department of Health and Environment (KDHE) approval process for the facility, it became apparent that Zaremba was doing something special with that site. KDHE notified USEPA Region 7 about the project from the standpoint of establishing an educational partnership. As a result, the Green Energy Gateway Fuel Station came into being as a public-private demonstration project with USEPA Region 7, other participating agencies, companies, institutions, and organizations.

In presenting the award to Zaremba, Askew said, "EPA is here today to celebrate the innovations and technology found at this station, and the collaborative efforts that made it all happen." Region 7, which includes the states of Iowa, Kansas, Missouri, and Nebraska, intends to evaluate the energy and pollution-reduction benefits of this project to develop a framework for other fuel stations that wish to "go green."



Biodiesel and ethanol dispenser offering an array of fueling options. The "Information Station" (not shown) features a computer hooked up to the World Wide Web and offers information on flexible-fuel vehicles. Compact fluorescent light bulbs above the kiosk provide lighting. Also not shown is a large sign that indicates which vehicles are compatible with E-85.

Besides EPA Region 7 and KDHE, other participants in the project include the Kansas Departments of Agriculture, Commerce, and Revenue, the University of Kansas, Kansas Soybean Commission, Kansas Corn

Growers, and Petroleum Marketers and Convenience Store Association of Kansas. Each of these agencies, institutions, and organizations has a role in the regulatory oversight of gas stations or the promotion of biofuels.

Other participants in the project include Hydrotech, Inc. (Chicago, IL) who installed the green roof on top of what will become a drive-thru coffee shop. Installation of the wind turbine (Windterra, Inc., San Ramon, CA) and solar panels (PowerFilm, Inc., Ames, IA) on the gas station canopy is expected to take place this fall, as will construction on the rain garden and sustainable pavilion. Neil Steiner and Peter Zuroweste, architectural engineering students at the University of Kansas, designed the garden and pavilion and are heading the construction effort.

Dr. Peter Sam, USEPA project manager, says the goal of the Green Energy Gateway Fuel Station is to demonstrate sustainable practices by getting as close as possible to zero-net environmental impacts at the site. Besides renewable fuels, zero-net impacts will be demonstrated by waste reduction and recycling practices and energy production through solar and wind power. Roof and rain gardens will reduce the urban heat-island effect and stormwater runoff, as well as filter pollutants and greenhouse gases from the air. Pollution-prevention practices will be put into place to reduce or eliminate the creation of pollutants.

### Switching from the Old to the New

The project also marks redevelopment of the property, the site of a former gas station that had a gasoline release in 1994. Groundwater at the site is being sampled semiannually for the next two years as part of monitoring performed under the Kansas Petroleum Storage Tank Release Trust Fund.

Zaremba removed the old USTs and at least three sets of product pipelines. Concrete was crushed and reused as backfill for the new installation. Steel rebar recovered from the concrete was recycled. Compact fluorescent light bulbs and light-emitting diode panels for fuel pricing replaced the sign and light poles.

The new UST system includes single-walled product lines and five 10,000-gallon single-walled fiberglass



*Architectural rendering by Neil Steiner and Peter Zuroweste, University of Kansas, showing the rain garden and sustainable pavilion that will be built behind Zarco 66 Earth Friendly Fuels. The rain garden will reduce stormwater runoff from the site.*

USTs and product lines rated to be compatible with petroleum products, E-100 ethanol, and B-100 biodiesel. Kansas follows the option provided in the Energy Policy Act of 2005 for manufacturer and installer financial responsibility—UST owners and operators in the state are not required to install double-walled systems. Instead, KDHE holds current certificates of pollution-liability insurance showing coverage for a minimum of \$1 million with an aggregate of \$2 million from the manufacturers of the Zarco tanks and pipes, as well as the licensed installer of the system.

The E-100 and B-100 USTs are also equipped with watertight fiberglass pump sumps and manways. The regular unleaded gasoline, clear-diesel, and dyed-diesel USTs also include pump sumps. Tank and line release detection is provided by an automatic tank gauge equipped with magnetostrictive probes and electronic line-leak detectors. Dispenser pans were also installed. Kansas also does not require the installation of submersible turbine and dispenser pans. However, owners and operators of USTs can install these as an option.

Water is one of the major concerns with the storage of biofuels. It promotes the degradation of biodiesel. In tanks with ethanol, the ethanol attracts

water to the gas, causing phase separation in the fuel and the potential for water accumulation in the tank. Zaremba addresses water issues from both sides of the UST system. Besides the watertight sumps and manways, he uses water-absorbent pads, or “socks,” in the spill buckets for the tanks containing E-100 ethanol and B-100 biodiesel. The vent lines of these tanks are also equipped with desiccant-containing canisters that keep water from entering the tanks.

Customers at Zarco 66 Earth Friendly Fuels fill their vehicles from dispensers that are in single-hose and dual-hose configurations. These first-of-their-kind fuel dispensers are capable of blending products at the pump, allowing for multiple ethanol (E-20, E-30, E-85) and biodiesel (B-2, B-5, B-10, B-20, and B-100) blends. E-10 is also available, but through separate hoses on the ethanol dispensers, so owners of vehicles that are not designed for handling higher grades of ethanol can also patronize the station without being concerned about receiving fuel with too much ethanol. Additionally, the biodiesel dispensers are heated and have hoses that are warmed with a hot water system to prevent the fuel from gelling and allow for dispensing during colder months.

■ *continued on page 6*

■ **Green Energy Fuel Station**  
from page 5

**Learn as You Pump**

The new station will also function as a gateway to environmental education. While filling their vehicles, customers can watch environmentally themed public service announcements or view videos on solar and wind power on fuel-dispenser displays capable of high-quality video output. Customers will also be able to view information on sustainable practices or visit the websites of participating agencies and organizations from a plasma television touch screen, located on the center island of the gas station, which is connected to the Internet.

Zaremba says that customers normally waiting five or six minutes to fill their cars can learn about the benefits of biofuels and roof gardens. He sees his gas station as a place where the public can be educated on these and other topics like pollution-prevention practices to reduce or eliminate the creation of pollutants, as well as waste reduction and recycling.

"If everyone does a little, we can have a huge impact on the environment," says Zaremba. "The same works for the Green Energy Gateway Project, as each of the participating agencies, companies, institutions, and organizations has contributed to something that will have a huge impact on gas stations across the country." ■



*The vents for the USTs containing B-100 biodiesel and E-100 ethanol have black canisters filled with a desiccant to prevent water vapor from reaching the fuel. (Photograph: Michael L. Pomes, KDHE).*

*Michael L. Pomes is the Chief of the Preventative UST Unit in the Storage Tank Section at KDHE. He can be reached at [mpomes@kdhe.state.ks.us](mailto:mpomes@kdhe.state.ks.us). For more information on the project, contact Stan Walker, Region 7 EPA, at [walker.stanley@epa.gov](mailto:walker.stanley@epa.gov). Disclaimer: The use of company names is for identification purposes only and does not constitute an endorsement by KDHE or USEPA.*

**The North America Hazardous Materials Management Association Honors the Kansas Department of Health and Environment and USEPA Region 7**

The Kansas Department of Health and Environment (KDHE) and USEPA Region 7 were honored by the North America Hazardous Materials Management Association (NAHMMA) at its 23rd Annual Hazardous Materials Management Conference Household and Small Business Waste Award Banquet in Burlington, Vermont this October. Aboard a dinner boat cruise on Lake Champlain, KDHE and USEPA Region 7 received NAHMMA's prestigious Outstanding Product Award for their work on the Green Energy Gateway Fuel Station. "NAHMMA is excited to honor hard-working agencies like KDHE and USEPA Region 7," said NAHMMA President, Kolin Anglin. "They are representative of all the stellar household hazardous waste programs in our industry." Each year NAHMMA recognizes organizations, programs, and individuals that manage household hazardous waste and Conditionally Exempt Small Quantity Generator waste at its annual conference. ■

**SNAPSHOT FROM THE FIELD**

After installing a diesel generator UST at a federal facility in the midwest, the owner decided to relocate the smoking lounge directly on top of the tank pad! According to the ever-vigilant man with the camera, Ben Thomas of Ben Thomas Associates, Inc., to date, no smokers have used the spill bucket for an ashtray.



# Tank -nically Speaking

by Marcel Moreau

Marcel Moreau is a nationally recognized petroleum storage specialist whose column, *Tank-nically Speaking*, is a regular feature of LUSTLine. As always, we welcome your comments and questions. If there are technical issues that you would like to have Marcel discuss, let him know at [marcel.moreau@juno.com](mailto:marcel.moreau@juno.com).

## UST RULES FOR A NEW CENTURY

### Do you remember a time when:

- The Web had something to do with the inter-relatedness of life that you learned about in ecology class?
- Windows were things that you opened to let the breeze in?
- Amazon was a river in South America?
- Google (i.e., googol) was an incredibly large number?
- Mouse was something you caught in a trap?
- Federal UST rules were new?

I write this on the 20th anniversary of the publication of the final federal UST rules: September 23, 1988. Much has changed in the world at large and in the UST world too. Those of us who were in the UST business then now have a lot more experience (and a few extra inches) under our belts. With all of this in mind, USEPA plans to take a look at the regulation to see if some targeted changes are appropriate.

The UST rules have served us well over these two decades, but it is time to replace the roof, do some remodeling, apply some fresh paint, and perhaps put on a new addition. For the technology and customs of a quarter century ago, no matter how fashionable then, are in some cases dreadfully out-of-date today.

So here are some of my thoughts on what I would do differently today if I were the architect of the UST rule remodeling process:

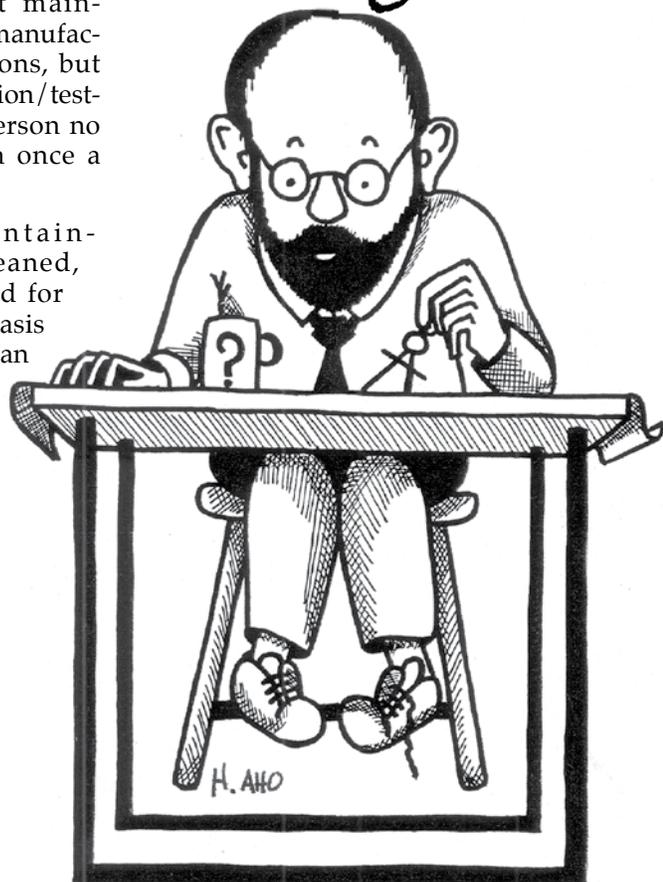
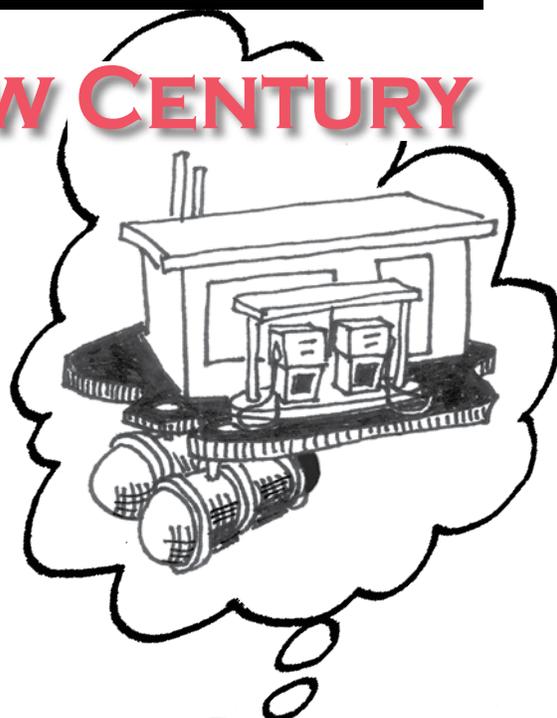
- **Add a new section to the rule requiring proper operation and maintenance of UST systems.** Requirements should include:
  - Having a written delivery procedure for each UST facility.
  - Having a written incident-response plan describing how to respond to various inci-

dents, such as spills, driveoffs (vehicle leaving with nozzle still inserted in gas filler neck), leak alarms, and suspected releases.

- Having equipment maintained according to manufacturer recommendations, but with required inspection/testing by a qualified person no less frequently than once a year.
- Having spill-containment manholes cleaned, inspected, and tested for leaks on a periodic basis so that these devices can be replaced when they fail.
- Having trained personnel as per the Energy Policy Act of 2005.

Guidance for complying with this section of the rule could be obtained from industry recommended practices such as PEI RP500, *Recommended Practices for Inspection and Maintenance of Motor Fuel Dispensing Equipment*, and PEI RP900

■ continued on page 8



## ■ Tank-nically Speaking

from page 7

*Recommended Practices for the Inspection and Maintenance of UST Systems.*

- **Remove the deferral of leak-detection requirements for emergency-generator tanks.** Why on earth shouldn't generator tanks have leak detection?
- **Remove groundwater and soil-vapor monitoring as acceptable methods of leak detection.** These methods are little used, outdated, and often applied ineffectively.
- **Redefine inventory control as a leak-detection method.** Get away from the "1% + 130 gallon" standard and adopt a leak threshold based on simple trend lines calculated by Excel or some other simple, commonly available trend-analysis program. This will encourage continued use of inventory, a fundamental leak-detection technique, and make it much more effective by utilizing today's technology rather than a methodology that dates back to the day when pencil and paper was the only way to do math. Inventory control can see leaks that are invisible to most other methods of leak detection (e.g., leaks in fill pipes, submersible-pump manifolds).
- **Revise the rule language to acknowledge that the 1998 deadline passed a decade ago.** Address today's upgrading issues, such as:
  - How many times can you repair the lining in a tank?
  - Under what circumstances can CP or lining be added to a tank that already underwent one of these upgrading techniques ten years ago?
  - How much time is allowed to repair a CP system that is not functioning properly before some type of penalty (tank must be removed?) is assessed?
- **Set a timetable in the rule for retiring all upgraded storage systems and replacing them with new ones.** Otherwise, we

have a rule that allows every tank to leak before it is required to be replaced. While CP and lining techniques are measures that extend tank life, these techniques do not make tanks immortal.

- **Require that secondary-containment systems be tested at installation and periodically thereafter.** We are headed down a road where secondary containment will be the prevailing method of leak detection, but this method will prove a disappointment if the containment systems themselves are not tight. To ensure that secondary containment will work, we need to be sure that it is tight.
- **Require that secondary-containment systems (both tank-top and dispenser sumps) be continuously monitored.** The current rule allows visual inspection on a monthly basis, which is difficult to do well and too easy to fake. We live in an electronic world and there is no justification for allowing a monthly visual inspection to serve as a primary means of leak detection.
- **Require that devices used to test line-leak detectors be certified by a third party to ensure that they can find the size leaks specified by the rules.** Right now, most devices used to test line-leak detectors are homemade and of dubious accuracy and dependability. Get this equipment out of the garage workshop and let's get professional about it.
- **Figure out what to do about line-leak detectors and high-throughput facilities.** The present standard for finding leaks in a one-hour timeframe is not achievable with today's technology at high throughput facilities. A solution for this is essential so the rule does not make outlaws of all high-throughput facility owners.
- **Clarify that sensors in secondary containment are not the equivalent of line-leak detectors.** Neither PEI nor NFPA recognizes sensors as line-leak detectors.

- **Revisit the entire tank overflow-prevention approach.** It is clear that current technology is not working. The goal would be to implement overflow-prevention techniques that are user friendly, automatic, and not easily bypassed. At the very least, the rule should delete "vent restriction" as an overflow-prevention technique and phase out all existing ball-float valves. In the ideal, European approaches to overflow prevention (e.g., automatic control of the delivery by devices that monitor the fuel level in the tank and control the flow of fuel from the truck) should be investigated and similar techniques written into 40CFR280.
- **Establish guidelines for UST-worker certification programs and require all states to implement a tank-worker certification program.** Many states have such programs now, but they are a mish-mash of requirements with some that are more effective than others. Set a national standard so that there can be consistency among state programs. Improving the quality of tank work is key to reducing future LUST cleanups.
- **Bring statistical inventory reconciliation (SIR) into the regulatory fold rather than treating it as an "other method" stepchild.** Define some terms and meanings like "pass," "fail," and "inconclusive" that would be required terms when reporting results. Set limits on the use of SIR, specifically throughput. Right now SIR is being applied to truck stops and other high-volume facilities when the software has not been evaluated for anything close to the throughputs at these facilities. Throughput limits should be set based on the sales volumes that were used in the test records when the evaluations were done. This is consistent with tightness testing and automatic tank gauges, where limits are based on tank size. Require all SIR methods to be re-evaluated according to the new protocol.

So that's my list, what's yours?  
Send your thoughts to:  
[marcel.moreau@juno.com](mailto:marcel.moreau@juno.com). ■

# Wander LUST

A roving column by reporter Patricia Ellis, a hydrologist with the Delaware Department of Natural Resources and Environmental Control, Tank Management Branch. Pat served as a member of USEPA's Blue Ribbon Panel on MtBE. She welcomes your comments and suggestions and can be reached at [Patricia.Ellis@state.de.us](mailto:Patricia.Ellis@state.de.us).



## REDUCING THE LUST BACKLOG DEALING WITH THE OLDIE MOLDIES

**B**low away the dust. Wipe away the cobwebs. I am sure that Delaware is not the only state dealing with LUST cleanup backlogs, although being Delaware, we're probably dealing with it at a smaller scale. We had a collection of LUST projects that had been collecting dust for years. All of the projects involved have had a letter sent to their responsible parties (RPs) requiring some sort of investigation. Some of the RPs had gotten some investigation work done, but it wasn't suf-

ficient, while for others, there had been no response whatsoever to our original request.

Back in those early days, sites were coming in so quickly that the small staff had to keep moving on to newer sites with higher environmental priorities. Nobody had time to send a pile of follow-up letters or make numerous phone calls to cajole a response. As staff changed and the number of people that once knew anything about a site left, the sites grew older and (yes) moldier.

The older they got, the harder they became to deal with—tracking down someone to address the investigation and cleanup, missing documentation, problems identifying responsible parties, recalcitrant responsible parties, lack of recent data that would support a closure decision, including MtBE analyses and/or sampling in former dispenser areas. I think we were all hoping that natural attenuation would simply work its magic.

### The LUST Special Project

Delaware's Tank Management Branch received about \$150,000 in funding from USEPA to help reduce this backlog—an initiative we call our LUST Special Project, or LSP. It is a short-term project limited to the life of the funding or the end of FY 2009, whichever comes first. Funds are used for conducting limited site assessment activities at selected federally regulated LUST sites. Normally, site assessments consist of sampling any existing monitoring wells or collecting soil and groundwater samples using direct-push methods. Our direct-push rig also has the capability for running electrical-conductivity logs.

Sites being addressed are typically 10–15 years old, with little or no recent activity. File reviews often indicate that the project may be close to closure if updated information could be obtained. In many cases, the

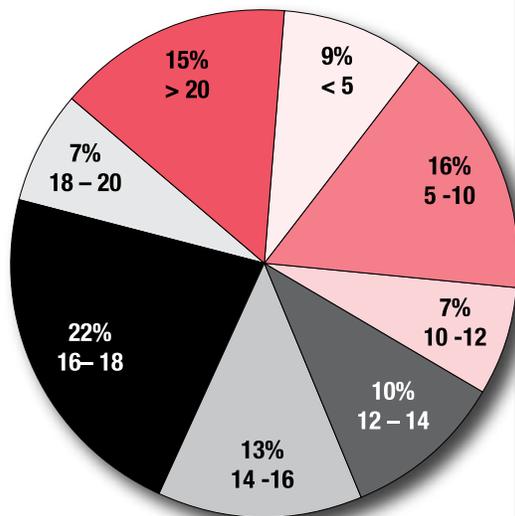
■ continued on page 10



## ■ WanderLUST from page 9

current property owner had no idea that an open LUST case even existed, if they purchased the property without performing due diligence prior to purchase. USEPA did attach one string to the grant funding: we have the goal of 40 additional site closures beyond our regular cleanup goal.

### Age Breakdown of Sites (in years)



### Getting Started

As a start, each project officer conducted file reviews and database searches of his/her assigned sites to compile a list of potential target sites. Letters were first sent out to property owners in January 2007, explaining the program. The letters contained the background of how the site became a LUST project and what investigation or remediation had occurred, if any. The owner was given two options: hire a consultant to get the work done, or accept our generous offer and we'll do the work.

The letter explained that if accepted into this program, limited hydrogeologic investigative work would be performed by both environmental consultants and laboratories contracted by the State of Delaware and state employees utilizing this LUST Special Project funding. It explained that the goal of this program is to gather enough data to close open LUST projects. However, the results of any investigation per-

formed may suggest that closure is not an immediate option, in which case, additional work would be required. These additional activities would be paid for at the responsible party's expense. We do not cost-recover the costs of our investigations, based on Delaware's policy that no cost recovery would be done on sites where costs were under \$10,000. The introductory letter included a series of UST ownership questions, investigation options, and an access agreement.

Procedurally, once the forms are received and a site is qualified for the LUST Special Project program, the DNREC-Tank Management Branch (TMB) establishes what data are necessary for the LUST project to be considered for closure. Prior to any work being performed, the RP is contacted by her TMB project officer to discuss the required investigation activities and make the final site access arrangements. The DNREC-TMB then acquires any necessary permits, materials, utility markout information, and makes the necessary arrangements with laboratories and/or drillers, as required. We try to group the sites geographically so that, in some cases, several investigations can be completed in one day. Usually the sampling team mobilizes for a three-day period, completing a number of sites during one mobilization.

Following completion of the investigation activities, the RP receives a copy of the laboratory results along with a letter detailing the work conducted at the site. If all results are favorable, a No Further Action (NFA) determination accompanies the laboratory results. If results are unfavorable for project closure, further work will be required. To assist with this scenario, we provide recommended next steps and information on other DNREC-TMB financial programs, since funding is limited under this program and can not be used for activities beyond the initial reassessment of the site.

During our initial review of the "oldie moldies," we identified approximately 80 sites as potential LSP candidates. Thirty of these sites are still pending, meaning RPs are waiting for an invitation from us to join the program, have received

the invitation but have not yet responded, or have been accepted and have field work pending. It took a lot of convincing to get some of the people to apply for the program. Some consulted with their lawyers, others called their state representatives, but we've had a lot of success getting participation.

Forty sites have been closed through the program. A few of these were accomplished by simply cleaning up our database (e.g., NFA letters had been issued but were not in the database). Some RPs were issued closures following a review of their file (e.g., LUST issues had been addressed but some documentation had been missing). A number of the invitation letters resulted in submission of reports of investigations that had not been submitted previously. More than 30 site assessments were conducted and more than half of these sites were closed after field sampling was conducted by the TMB. One or two "invitees" have turned down our offer to investigate, but have conducted the investigation themselves.

Roughly ten of the sites where we conducted investigations have resulted in a determination that additional sampling and/or corrective action is necessary. More than half of these sites have been qualified as eligible for state funding for additional work, while several others have contracted to complete the additional investigations recommended. We may need to go to enforcement on a few sites to ensure that further investigation or remediation are completed.

Our Geoprobe has had more of a workout in the past year or two than it did in its previous ten years, since Delaware is an RP-lead state, and we're limited in what work we're allowed to do ourselves. The increase in field work has been used as training for our staff, as well as for staff from several other programs. It's given a few people a chance to get rid of that pallor that comes from too much time spent in the office.

### Costs for Investigation

As part of the startup costs for the project, we purchased two new sampling pumps and a carbon-filtration system for purging water, bailers,

tubing, liners for the core barrels, bentonite, asphalt patch, expendable sampling points, and some additional tools. These cost approximately \$6,000.

We are required to have a licensed driller onsite if sampling involves the collection of groundwater samples. The costs for a licensed driller have been \$400-\$500 per day, and we have done between one and four site assessments in a day, depending on the number and type of samples and the distance between sites.

Laboratory analytical costs have averaged about \$1,800 per site, so far. Assessments are averaging \$2,100 per site, including everything but staff time. Two to four staff members usually participate during a sampling event. One person is the designated coordinator for each event and has the responsibility for getting plans from the project officers on anticipated number and type of samples, coordinating with the lab for glassware and analytical time, getting utility markouts from "Miss Utility," contracting for the driller, and other planning details. Hydrologist Patrick Boettcher has ably served as the project leader.

### Meeting the Goals

The LUST Special Project is doing what it was designed to do—reduce our backlog of federally regulated LUST sites. We've knocked about 40 sites off our backlog of around 250 sites, and we still have time, money, and sites remaining. Also helping is the fact that we're nearly at full staff on the LUST side of the program, after being at about half staff for the last two or three years. Without the available staff time in addition to the funding, we probably wouldn't be getting these closures, because we'd be spending our time on sites that pose higher environmental risk. Being understaffed helped get us into the backlog problem, and it's a lot easier to work on a site where the RP actually wants to achieve closure and is doing the work requested of him. Without the extra funding and staffing, the expectation to close 40 additional low-priority sites would still be a figment of our database and taking the back seat to sites that warrant our attention more highly. ■

# UST Insurance Matters.....

## The Assurance Is in the Details

All storage tank pollution insurance policies reportedly provide the coverage necessary to comply with the state and federal financial responsibility requirements. However, all policies do not provide the same level of protection, given that contract wording varies. An insurance policy is, in fact, a contract that is agreed to between the insurance carrier and the insured. Coverage is proposed by the insurance company, accepted by the policyholder, and ratified in the payment and acceptance of the quoted premium.

Tank owners using insurance for financial responsibility must understand certain critical details in their contracts. Two examples of detail distinctions in policy language can be found in the claims reporting requirements and the noncompliance exclusion.

### Claims Reporting Requirements

Below are two actual examples of wording from commonly used tank insurance policies outlining the duties of an insured in the event of a release from a covered storage tank.

#### Company A

*You must see to it that we are notified promptly of an "underground storage tank incident" which may result in a claim, request, demand, or proceeding to impose an obligation on the insured for damages because of "bodily injury" or "property damage" or for "corrective action costs."*

#### Company B

*The "insured" must provide the insurer with immediate notice in the event of a "storage tank incident." Such notice shall be provided as soon as reasonably possible, but in any event, not less than seven (7) days after a "responsible insured" first became aware of, or should have become aware of, a "storage tank incident."*

In the first example, the policy's reporting requirements for a storage tank incident are far less stringent than those in the second example. While Company A requires that they are "notified promptly," Company B's requirements are "as soon as reasonably possible, but in any event, not less than seven (7) days after" the insured first becomes aware "or should have become aware" of a storage tank incident.

Many times a tank owner may have a failing monthly tank test or an inventory shortage and elect to wait a few weeks to see if the problem was some sort of anomaly. Other times, the test failure may be reported up to management and the process of getting the proper testing/verification could take several weeks. In either of these cases, a tank owner may find himself well beyond seven days since first becoming aware of a storage tank incident. Depending on the insurance policy, a responsible party could find himself without coverage due to late reporting.

### Noncompliance Exclusion

Most, but not all, tank pollution policies have an exclusion addressing releases from tanks that are not in compliance. However, like the previous examples of differences in reporting requirements, the contract wording will vary. In the case of noncompliance, the insurance contract will read, "This policy will not pay for claims or loss..." in the following circumstances:

#### Company A

*Arising from "pollution conditions" based upon or attributable to any "responsible insured's" intentional, willful, or deliberate noncompliance with any statute, regulation including those set forth in Title 40 of the Code of Federal Regulations, ordinance, administrative complaint, notice of violation, notice letter, executive order, or instruction of any governmental agency or body.*

■ continued on page 16

## Field Notes

from Robert N. Renkes, Executive Vice President, Petroleum Equipment Institute (PEI)

# PEI Releases New and Improved Recommended Practices for ASTs

Historically, petroleum products at service stations and other motor-vehicle-fueling sites have been stored in underground tanks. But to avoid the cost of complying with USEPA's underground storage tank requirements and given the improvements in petroleum storage tank technologies, aboveground storage tanks (ASTs) at motor-vehicle-fueling sites have become much more common. In fact—although USEPA does not keep records on ASTs like they do USTs—I wouldn't be surprised if the AST population in vehicle-refueling service outnumbers that of the USTs.

The installation of all types of liquid motor-fuel storage systems is highly complex and requires a wide range of construction knowledge and experience. In addition to designing aboveground systems properly, reliance on tank installers who possess both the experience and the integrity to insist on following industry-wide recommended practices constitutes the greatest protection against tank-system failure and liability exposure.

PEI has revised its *Recommended Practices for Installation of Aboveground Storage Systems for Motor Vehicle Refueling* (PEI/RP200) document—a concise reference that describes recommended practices for the installation of ASTs at service stations, marinas, and other motor-vehicle-fueling sites. In this document, PEI suggests ways to minimize the possibility of aboveground storage system failure and reduce fire-safety and environmental hazards, while avoiding practices that will needlessly increase installation costs.

The recommendations contained in PEI/RP200 may be applied to horizontal and vertical tanks, single- and multi-walled

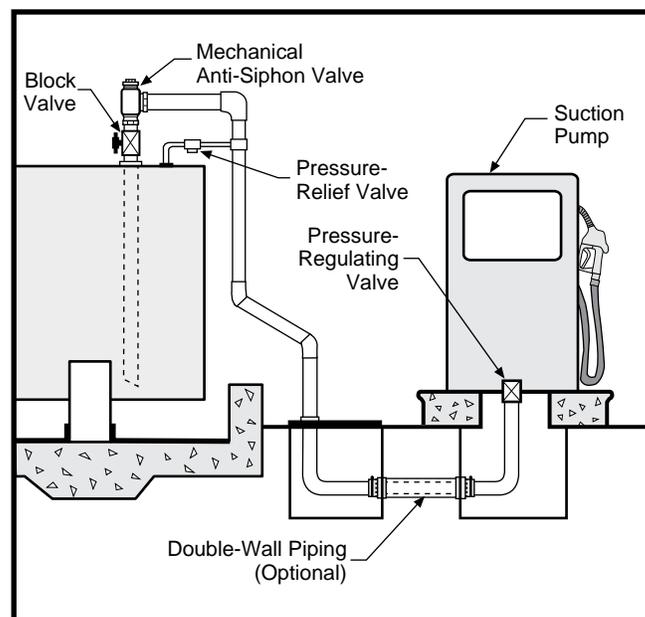
tanks, as well as protected and fire-resistant tanks. Tanks covered in these recommended practices are intended for the storage of liquid motor fuels at or near atmospheric pressure. Product piping associated with these tanks may be aboveground, underground, or a combination of both.

The 2008 edition of PEI/RP200 supersedes and replaces the 2003 edition. Over 100 comments to the 2003 edition were received by PEI's Aboveground Storage Tank Committee from regulators, installers, manufacturers, tank owners, and consultants. Over 60 percent of those comments were accepted in some manner and are reflected in the text or diagrams in the document. This is the third time the original RP200 has been updated, and each time we go through the process it serves as a reminder that AST installation practices continue to evolve and that PEI's recommended practices must change to reflect current technology and practices.

The manual contains updated information on all phases of proper AST installation, including site planning; foundations; support and anchorage; dikes; vaults and special enclosures; tanks, pumps, and valves; fills, gauges, and vents; piping and fittings; corrosion protection; electrical installation, testing, and inspection; and documentation, maintenance, and training. Three

appendices describe size calculations for dikes, venting, and fire-code requirements. An appendix of documents used for reference is also included.

The single-copy price for RP200/08 is \$40 for PEI members and government officials; \$90 for everyone else. You can place an order on-line or download an order form at [www.pei.org/shopping](http://www.pei.org/shopping). You can also request an order form from PEI by calling (918) 494-9696 or faxing (918) 491-9895. ■



**Suction System.** Typical piping and valve arrangement for product piping exiting the tank top. Aboveground portions of the piping must be securely supported. Supports are not shown in the diagram for clarity.

# Emerging Fuel Storage Issues Noted at PEI Conference

by Ellen Frye

**I**n his opening remarks at the Petroleum Equipment Institute (PEI) and National Association of Convenience Stores conference in Chicago in October, PEI Executive Vice President Robert Renkes brought up several issues that are likely to impact his industry members. Some of these issues are also worth mentioning as a heads-up for tank regulators. Here's the scoop:

## • What about That Urea?

New federal emission standards require diesel engines manufactured in 2010 and beyond to convert nitrous oxides to nitrogen and water. According to Renkes, there are two ways you can do this: one is to recycle vapors in the engine compartment, which few manufacturers do. The other is to inject a substance, like liquid urea, into the exhaust stream, where it reacts with the nitrous oxides. Most engine manufacturers will opt for this technology.

Urea is a colorless, odorless crystalline solid ((NH<sub>2</sub>)<sub>2</sub>CO). In solution it decomposes to ammonia and carbon dioxide upon extended exposure to elevated temperatures, leading to an odor similar to ammonia-based household cleaning products. According to Vijay Srinivasan, in his *The PEI Journal* article, "Diesel Exhaust Fluid," "Urea is the first significant consumable non-fuel fluid to be added to any car or truck in the history of the automotive industry."

Srinivasan says distributors have the option of bringing in granular urea, concentrated urea, or a 32.5 percent solution. He says the selection of the incoming state of urea will be based on the trade-off among storage capacity, throughput, and convenience. End-users include truck stops, truck-fleet facilities, truck dealers, automotive dealers, and automotive service facilities.

The tank in the truck that holds the urea will be between 20 and 40 gallons. Urea consumption will vary, but it is expected that most vehicles will burn 2 to 4 percent urea for every gallon of diesel fuel burned. Prac-

tically speaking, at this burn rate engines will likely require urea refueling during every other diesel refueling. There will be some equipment issues associated with handling urea. For instance, urea can't be hauled in tank trucks that have hauled fuel. It needs to be stored in either stainless-steel or carbon-steel tanks lined with plastic. Weights and measures departments will probably have to approve the dispenser.

Aboveground or underground storage tanks can be used, but urea needs to be kept between 20 and 85 degrees F to ensure its integrity, so tanks and lines will be insulated and, in some cases, heated. And nozzle spout diameters will be smaller to fit the urea tank opening.

Renkes says there are 4,500 travel plazas and truck stops in the United States. Those 4,500 sites pump three-quarters of all diesel fuel sold at retail. It is estimated that there will be 108,000 heavy-duty diesel rigs on the road by the end of 2010 that will require urea from one end of the country to the other. There will be over a half million by the end of 2014. The prevailing view is that ultimately urea will be stored in bulk tanks and sold through a urea dispenser that stands right alongside the diesel dispenser. Although urea is not listed on the CERCLA Hazardous Substance List, these tanks and their piping lines will be side by side with regulated fuel-storage components. Regulators need to be aware of this. Why? Well, it's a bit of a cliffhanger—urea may or may not present problems. "We don't know yet, but regulators should at least be aware," says Renkes.

To find out more on this subject, see *The PEI Journal* article, "Diesel Exhaust Fluid," by Vijay Srinivasan, Ph.D. at <http://www.thepeijournal.org/content/3q08/dieselexhaust.php>.

## • Will UL List Biodiesel Equipment?

Renkes thinks there is a "better than 50/50 chance" that Underwriters Laboratories will end up listing

equipment for different blends of biodiesel fuels, much like they are doing with ethanol.

## • Will Ultra Low-Sulfur Fuel Have an Impact on UST Systems?

Some folks in the industry have noticed that there is something going on with ultra low-sulfur diesel fuel that causes seals, gaskets, and other components in storage and dispensing systems to react with the fuel and produce a brownish substance that clogs filters and strainers. Could corrosion be an issue here? At present, neither the cause nor effect has been identified, but the committee chair responsible for the ASTM specification for ultra low-sulfur diesel is looking into the problem and hopes to find the cause and suggest a solution.

## • Where Have All the Retailers Gone?

Now that the large end-user oil companies are out of retail marketing, 62 percent are single-station owners, says Renkes. Kiplinger predicts the country will lose 5,000 gas stations this year, more than twice as many as last year and the worst dropout rate since the 2001 recession. The likely dropouts are the single-station owners, the companies that are least able to cope with rising expenses in the form of skyrocketing credit-card transaction fees and utility costs and have trouble getting financing when money is tight.

Renkes suspects that when confronted with a major capital expense, a chunk of them will simply give the keys back to the lender. Using Florida as an example, he notes that all USTs owned by the 9,000 petroleum marketers in Florida must have secondary containment—at an average cost of \$260,000 to \$300,000—by the end of 2009.

Distributors and installers that work in the state tell PEI that they expect between 1,000 and 2,000 retail petroleum stations that were around at the turn of the century will cease to exist come 2010. If that is indicative of what might happen around the rest of the country if large expenses like enhanced vapor recovery are mandated, regulators need to prepare for the possibility of numerous closed/abandoned retail facilities. ■

# FAQs from the NWGLDE

...All you ever wanted to know about leak detection, but were afraid to ask.

## Questions about Sensors, Part I

*As the new secondary-containment requirements come into effect across the country, electronic interstitial monitoring will soon become the norm instead of the exception. Since electronic interstitial monitoring usually involves some type of sensor, in the next two issues of FAQs from the National Work Group on Leak Detection Evaluations (NWGLDE), the work group will answer questions concerning sensors listed on the NWGLDE website at [nwgldc.org](http://nwgldc.org). (Please Note: the views expressed in this column represent those of the work group and not necessarily those of any implementing agency.)*

**Q.** How can I find interstitial sensors on the NWGLDE website?

**A.** To find all the listings of interstitial sensors that perform a similar function, refer to the "Test Method Index." This index can be found by clicking on "Testing Methods" on the left side of the NWGLDE home page. Once the "Test Method Index" appears, all NWGLDE leak-detection test-method categories will appear. These categories are based on evaluations using different standard protocols that can be found by clicking on "Protocols" at the bottom of the NWGLDE home page. The NWGLDE leak-detection test methods categories that contain interstitial sensors are:

- Interstitial Detector (Liquid-Phase)
- Continuous Interstitial Monitoring Method (Liquid-Filled)
- Continuous Interstitial Line-Monitoring Method (Pressure/Vacuum)
- Continuous Interstitial Tank-System-Monitoring Method (Pressure/Vacuum)

Once the category of interest is located, click on the "Testing Methods" link to bring up a list of all the sensors that fall within that category. To bring up each sensor listing, click on the "Equipment Name" link adjacent to the vendor's name. This is a good procedure for tank owners or installers to use when they need to look at a group of sensors that can be considered for use with a particular application. However, finding the right sensor can be somewhat confusing because these categories contain sensors with many different operating principles, and some sensors may be listed under more than one category.

A better way to locate a listing for a particular sensor found during an inspection is to enter the model name and/or model number in the search engine form at the top right corner of any NWGLDE website page and click on "go." This will open a "Search Results" page with links to any relevant information based on the search criteria.

**Q.** Why are some sensors listed with consoles, some listed without consoles, while others appear to be listed as part of a complete system?

**A.** How the sensor is listed is dependent on how it was evaluated. Sensors identified in the "Interstitial Detector (Liquid-Phase)" category have been evaluated either matched with a console or as a "stand-alone" (a sensor without a specific console identified). Those that were evaluated with a console have the console model number under the manufacturer's name on the NWGLDE listing. Sensors included in the "Continuous Interstitial Monitoring Method (Liquid-Filled)," "Continuous Interstitial Line-Monitoring Method (Pressure/Vacuum)," and "Continuous Interstitial Tank-System-Monitoring Method (Pressure/Vacuum)" categories have been evaluated as part of a complete interstitial leak-detection system.

Like sensors evaluated with a console, sensors evaluated as part of a complete leak-detection system are evaluated using a particular console that was validated by an evaluation meant to receive and display the signal produced by a particular sensor. Such system evaluations specify a particular sensor or sensors that will work with the system console. The design of some of these sensors, whether they are stand-alone or evaluated while paired with a console, may allow them to work with consoles or systems other than those that were used during the evaluation. For example, a sensor that acts like a single-pole, single-throw (SPST) switch (e.g., like an ordinary home or office light switch) may have been evaluated with a specific console but in reality will work as designed with a variety of consoles.

NWGLDE listings occasionally include information from the evaluation report stating that (with regard to the console or system) it is allowable to use other applicable sensors that appear on the NWGLDE List. However, before using or accepting the use of a sensor not specifically evaluated with a console or interstitial monitoring system, the sensor manufacturer should be contacted to make sure the sensor is compatible for use with the proposed console or system.

**Q.** Are sensors and probes the same?

**A.** No. Sensors and probes are distinguished by their specificity of function and location in the UST system. Sensors broadly monitor areas outside the primary tank for the presence or absence of product and/or water; gross changes in the level of a monitor-

ing fluid; or significant changes in the pressure or vacuum in an interstitial space. In contrast, probes measure very small changes in the level of product inside the primary tank.

**Q. How do the different interstitial monitoring methods shown on the NWGLDE List work?**

**A.** Interstitial Detector (Liquid-Phase) sensors are used to continuously monitor normally dry-tank or piping interstices, sumps, and under-dispenser containment areas for product and/or liquids that should not be in there. Depending on the type of sensor, this method may or may not indicate whether the leak is from the primary or secondary wall. In rare circumstances, when there is a breach in the primary and secondary wall of the system, product leaking from the inner wall could leak out of the secondary wall without activating a sensor.

Sensors used with the "Continuous Interstitial Monitoring Method (Liquid-Filled)" method continuously monitor a liquid-filled tank or piping interstice for a rise or fall of the liquid. This rise or fall indicates a problem in either the inner or outer wall of the interstitial space.

The "Continuous Interstitial Line-Monitoring Method (Pressure/Vacuum)" and "Continuous

Interstitial Tank-System-Monitoring Method (Pressure/Vacuum)" systems continuously maintain a pressure or vacuum in the interstitial spaces of piping and tanks and use sensors to detect a decay of the pressure or vacuum in the interstitial areas. These systems have a distinct advantage over other interstitial-monitoring systems, because they monitor the integrity of both the primary and the secondary walls of a secondary-containment system at the same time. ■

**About the NWGLDE**

The NWGLDE is an independent work group comprising ten members, including nine state and one USEPA member. This column provides answers to frequently asked questions (FAQs) the NWGLDE receives from regulators and people in the industry on leak detection. If you have questions for the group, please contact NWGLDE at [questions@nwglde.org](mailto:questions@nwglde.org).

**NWGLDE's Mission:**

- Review leak-detection system evaluations to determine if each evaluation was performed in accordance with an acceptable leak-detection test method protocol and ensure that the leak-detection system meets USEPA and/or other applicable regulatory performance standards.
- Review only draft and final leak-detection test method protocols submitted to the work group by a peer review committee to ensure they meet equivalency standards stated in the USEPA standard test procedures.
- Make the results of such reviews available to interested parties.

**USEPA Issues Guide for Developing a Third-Party UST Inspection Program**

USEPA has provided state and regional UST programs with an electronic version of its new publication, *Developing a Third-Party Underground Storage Tank Inspection Program: A Guide to Assist States* (EPA-510-K-08-001, September 2008). The guide provides states with information on how to develop a third-party inspection program or enhance an existing one. It summarizes USEPA's inspection grant guidelines and outlines steps states should follow in developing a third-party inspection program. It also includes examples of existing state programs. To access the guide, go to <http://www.epa.gov/oust/pubs/thirdpartyinspection.htm>. ■



**L.U.S.T.LINE** Subscription Form

Name \_\_\_\_\_  
 Company/Agency \_\_\_\_\_  
 Mailing Address \_\_\_\_\_  
 E-mail Address \_\_\_\_\_

**One-year subscription:** \$18.00.

**Federal, state, or local government:** Exempt from fee. (For home delivery, include request on agency letterhead.)

Please enclose a check or money order (drawn on a U.S. bank) made payable to NEIWPCC.

Send to: **New England Interstate Water Pollution Control Commission**

116 John Street, Lowell, MA 01852-1124

Phone: (978) 323-7929 ■ Fax: (978) 323-7919 ■ [lustline@neiwppcc.org](mailto:lustline@neiwppcc.org) ■ [www.neiwppcc.org](http://www.neiwppcc.org)

**L.U.S.T.LINE INDEX**  
 August 1985/Bulletin #1 – November 2007/Bulletin #57  
 The **NEW** version of the LUSTLine Index  
 is **ONLY** available online.  
 To download the LUSTLine Index, go to  
<http://www.neiwppcc.org/lustline/>  
 and then click on  
**LUSTLine Index**

■ **UST Insurance Matters**

from page 11

**Company B**

*Based upon, arising out of, or attributable, whether directly or indirectly, to intentional disregard of or knowing, willful, or deliberate noncompliance with any statute, regulation, administrative complaint, notice of violation, notice letter, instruction of any governmental agency or body, or executive, judicial, or administrative order by any "responsible insured."*

With the first example (Company A), the release must be attributable to the insured's intentional willful or deliberate noncompliance; whereas with the second example (Company B), the release may be attributable directly or indirectly. These few words (directly or indirectly) open up the result of the noncompliance to a lot of scrutiny. Further, the language in the second example goes beyond deliberate or intentional disregard, and states that simply "knowing" of a noncompliance issue may be grounds for denying a claim. All things considered, it is best (if available) to avoid policies with a noncompliance exclusion. ■

---

*Chris Montgomery is a principal with Custom Environmental Insurance. He can be reached at 877-TANKCOV (826-5268) or Chris@tankcov.com.*

---

# 21st Annual National Tanks Conference & Expo

March 30 – April 1, 2009 in Sacramento, California

On behalf of the New England Interstate Water Pollution Control Commission, USEPA's Office of Underground Storage Tanks and Region 9, the California Environmental Protection Agency and State Water Resources Control Board, and the Association of State and Territorial Solid Waste Management Officials, it is our pleasure to invite you to join us in Sacramento, California, for the 21st Annual National Tanks Conference and Exposition. The conference will be held March 30-April 1, 2009, at the Sacramento Convention Center.

The 2009 Annual National Tanks Conference will be slightly different than historical conferences as we are integrating the National Tanks Conference and the State Fund Administrators Meeting. By combining these two annual events, we have been able to create one conference that comprehensively addresses all the issues related to managing underground storage tank programs.

Registration for the conference opens November 7, 2008. To register for the conference and learn more about it, go to the conference website ([www.neiwpc.org/tanksconference](http://www.neiwpc.org/tanksconference)). The conference website will be updated regularly with the latest information, so please visit it often. For answers to specific questions about the conference, please contact NEIWPC at [NTCInfo@neiwpc.org](mailto:NTCInfo@neiwpc.org). ■

March 30 - April 1, 2009



21<sup>st</sup> Annual National  
**TANKS CONFERENCE**  
NEIWPC SEPA ASTSWMO CAL/EPA SWICB & EXPO

## L.U.S.T.LINE

New England Interstate Water  
Pollution Control Commission  
116 John Street  
Lowell, MA 01852-1124

Non-Profit Org.  
U.S. Postage  
**PAID**  
Wilmington, MA  
Permit No.  
200