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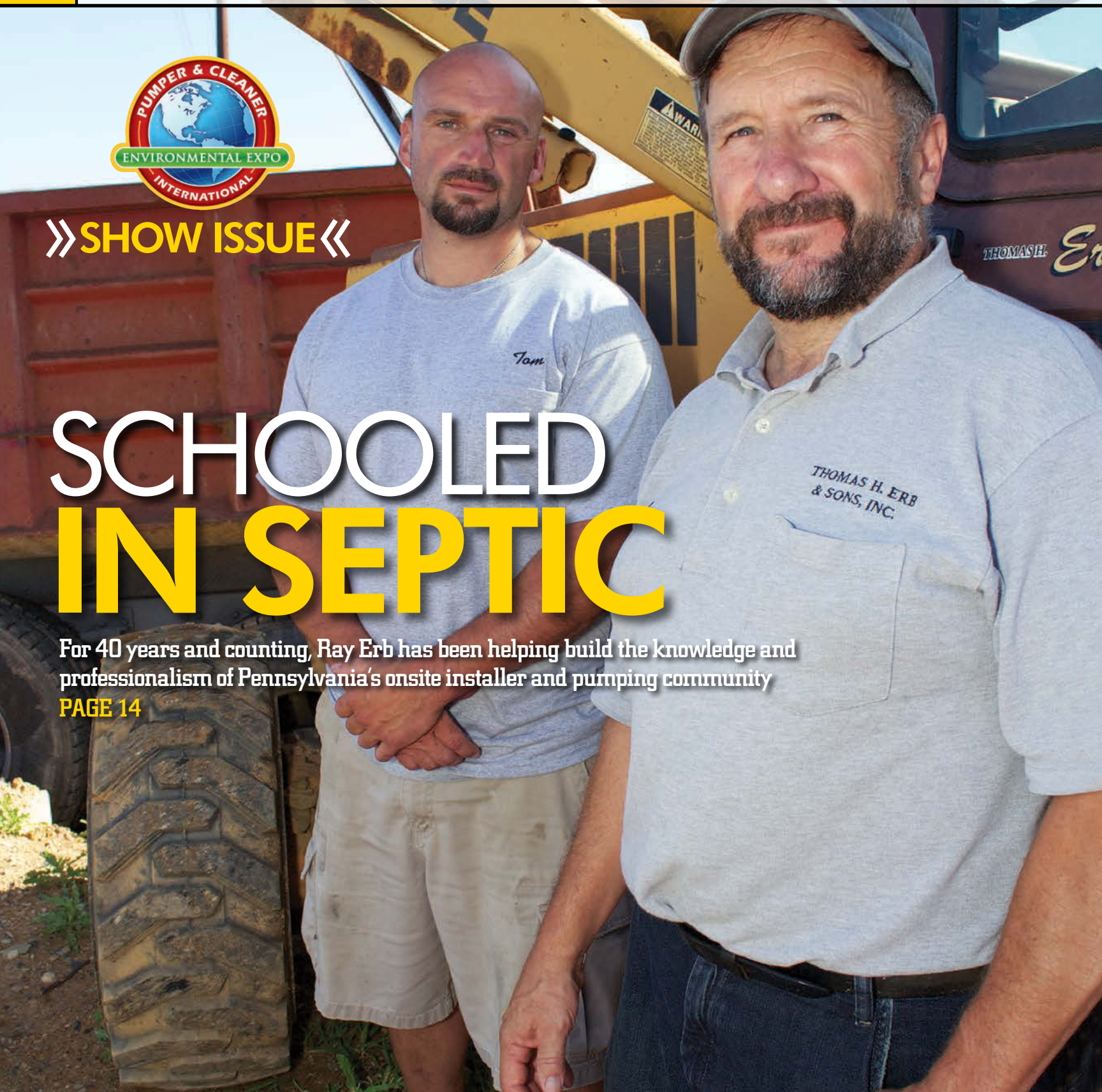


» SHOW ISSUE «

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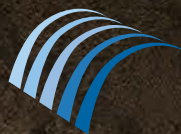


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Education Day: Feb. 24, 2014 Exhibits Open: Feb. 25 - 27, 2014
Indiana Convention Center, Indianapolis, Indiana

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Changing with the Times

The industry is growing and evolving, and so is your trade show

By Bob Kendall, co-founder of COLE Publishing



During late winter 1981, the first annual Liquid Waste Hauler's Equipment & Trade Show was held in Nashville, Tenn. The show was promoted to the 12,000-some readers of the recently launched *Midwest Pumper*. That very first show was a huge success – lauded by the couple hundred people who attended and a few dozen exhibitors.

The following year, the Liquid Waste Hauler's Equipment & Trade Show would see its first name change. The change was subtle: we only added one word – “International.” Because, after all, we didn't want to shun our friends from Canada.

In 1984, COLE Publishing launched an additional title – *Cleaner* – aimed squarely at sewer and drain cleaning contractors. This meant the show had now become more than just a liquid waste event. It would take more than a decade, but in the mid-1990s the International Liquid Waste Hauler's Show again changed its name. This time, we would fully encompass everything we stood for – The Pumper & Cleaner Environmental Expo International. May no man, woman, child, country or profession ever be excluded again! So we thought.

The event would continue to grow, eventually hundreds of attendees became thousands, and dozens of exhibitors became hundreds. The Expo hopped through several cities – Nashville, Biloxi, New Orleans, Dallas, Fort Worth and Louisville. We even tried a few western destinations and visited Las Vegas, Palm Springs, Phoenix and Long Beach.

Now, after more than 20 years, it is time to make another name change. We're not just a show for “pumpers and cleaners” – we've grown and evolved into so much more, and so have you. The industry and profession has surpassed what many of us could have ever imagined way back in 1979, when *Pumper* was delivered to mailboxes across a few Midwestern states.

In 2015, the Pumper & Cleaner Environmental Expo International will become WWETT – the Water and Wastewater Equipment, Treatment & Transport show. A little better snapshot of what we have become and where we are heading. It's a show for an entire industry of hard-working people who maintain the flow in our sewer and water infrastructure, properly treat and dispose of wastewater, keep water safe, and our environment healthy.

We haven't forgotten our roots, we just planted them a little deeper – and thanks to you they'll always have water. See you at WWETT 2015. □



Through the years the name, technology and locations have changed, but the event has always been an industry favorite.



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A Teachable Moment

Continuing education is a key component to your company's success, and you'll find plenty of opportunities to learn at the Pumper & Cleaner Environmental Expo International

By Jim Kneiszel



There are many and varied reasons onsite installers make the annual trek to Indianapolis for the Pumper & Cleaner Environmental Expo International. We've all seen the abundance of equipment – the best the industry has to offer – on display in the exhibit hall. And if you've made the trip before, you know what a valuable networking opportunity it presents.

And then there's the chance to learn something new. Over my 10 years of Expos, Education Day has grown into a fantastic collection of seminars laser-focused to serve wastewater professionals. Installers will benefit from a variety of talks on business marketing, human resources and safety, as well as presentations on how to best utilize the latest tools of the trade.

But a highlight of the education program on Feb. 24 is a track of a dozen seminars organized by the National Onsite Wastewater Recycling Association. These courses are dedicated to the onsite installer community and presented by installer trainers, engineers and industry experts. I hope you can take advantage of the NOWRA seminar track, which includes these sessions:

How to do a Good Site Evaluation

Without a top-notch site evaluation, the effectiveness of a design and installation are in question. It's plain and simple: you need to know what's going on with the hydrological flow characteristics on the land where you plan to lay that new system. **Randy Miles**, a soil scientist at the **University of Missouri**, will focus on internal soil properties and critical communication between the site evaluator, installer and homeowner.

Designing For Tough Sites

With a proper soil evaluation in hand, the designer sets out to customize the new system to the property for maximum treatment efficiency. That's what **John R. Buchanan**, Ph.D., P.E., of the **University of Tennessee** will talk about in this session. The best configurations for various sites and potential site improvements will be explored.

Good Installation For Long-Term User Satisfaction

Of course, effective treatment and environmental protection are your top priorities when planning for a new system. But don't forget that customer satisfaction can also hinge on a satisfactory landscaping plan and trouble-free maintenance in the years ahead. Buchanan stresses the many ways you

can improve the long-term viability of a system and ensure happy homeowners when you leave the work site.

Rest Stops: A Case Study of Challenging Wastewater

Crumbling infrastructure. You hear about it all the time when legislators talk about the country's highways and bridges. Located along many of those deteriorating transportation corridors are rest stops utilizing onsite systems that are more than 30 years old. **Sara Heger**, an engineer at the **University of Minnesota**, talks about that state's aging rest stops and truck garages, and the challenges faced by professionals designing and replacing their onsite systems.

The highlight of my week in Indy is meeting the contractors who are the backbone of the industry. ... With your help, the industry is maturing and solving some of the biggest challenges in decentralized wastewater treatment.

Installation Mistakes: How to Avoid and Fix Them

Everybody makes mistakes ... even onsite installing professionals. You have either had to backtrack yourself to fix a problem, or you've been called in to repair someone else's mistake at one time or another. Heger explores topics including protecting natural soil conditions, proper bedding of system components and working on challenging sites. Predicting and avoiding problems down the road can save the installer time and money, and take care of the customer.

Marketing & Customer Service For Small-business Owners

Designing and installing onsite systems competently is not enough to ensure your business thrives. So says **Tom Fritts**, of **Residential Sewage Treatment Co.** Fritts will share ideas for easy marketing methods to jumpstart your profits and grow the small business you pour your heart and soul into. Fritts says installers have all the skills and tools at their disposal to get started.

OUTSIDE THE BOX

Education Day seminars outside of the NOWRA track that will be of interest to installers include the following:

What's New With OSHA Safety Requirements?

As a business owner, you may dread hearing that four-letter acronym that means someone from the federal government is coming to check out your operation. But speaker **Anthony Kuritz**, an industrial hygiene consultant with the **Bureau of Safety Education and Training** within the Indiana Department of Labor, will demystify the sometimes-complex initiatives of the U.S. Occupational Safety and Health Administration. Take part in a valuable safety discussion and learn how to keep your company in compliance with the latest rules and regulations.

Personal Safety

Worker safety is key to the success of any business, but it's doubly important to an onsite installer with only a handful of skilled workers to carry the load. Speaker **John Chadwell**, western regional manager for **EHS International**, will share tips for improved workplace safety through personal awareness training.

DOT Carrier/Driver sessions

U.S. Department of Transportation trucking regulations come into play for companies that haul excavation equipment down the highway. Knowing the DOT's Compliance, Safety, Accountability requirements is critical to your company continuing to run within regulations and operating safely. **Buddy Mauger**, a former police officer and motor carrier safety expert, will give three presentations on topics relating to the DOT: implementation of CSA 2010, DataQ challenge protocol and recent updates and proposed regulations.

Be Always Profitable sessions

An installer isn't necessarily a natural when it comes to making a sale and following it up with stellar customer service. That's where four seminars with contractor **Frank Taciak**, of **C.E. Taciak & Sons**, will prove valuable. Taciak shares techniques and tactics installers can use to maximize sales, charge prices that ensure profitability and create a winning customer service experience. He breaks down all the elements of a successful sales effort and makes sure attendees leave with the skills and motivation for success.

A FULL DAY OF INSTALLER TRAINING

On Wednesday, Feb. 26, COLE Publishing's Onsite Installer Course provides eight hours of basic training with **Dave Gustafson**, of the University of Minnesota, and **Jim Anderson**, the education coordinator for the National Association of Wastewater Technicians. The course is the perfect opportunity to get your new employees up to speed with the tools and equipment they'll be using on the job, or as a refresher for the old hands on your crew.

WELCOME TO THE BIG SHOW

I hope you can make it to the Pumper & Cleaner Expo later this month. If you're reading this column in Indianapolis – welcome to the biggest trade show for environmental services professionals. And thanks for coming.

When you're at the Expo, I invite you to visit members of the magazine team at the COLE Publishing editors' booth (#4028). The highlight of my week in Indy is meeting the contractors who are the backbone of the industry. You are the ones most responsible for keeping our environment clean, ensuring a safe drinking water supply wherever onsite systems are used, and adapting to the myriad of onsite product advances that have come along over the years.

One great way to network with other installers is at the Roundtable Discussion breakfast set for Thursday, Feb. 27, beginning at 8 a.m. in the food area at the Indiana Convention Center. Each table will start with a different topic, and participants can move from table to table to meet new people and discuss new issues. I will be moderating a table, as will several industry experts.

With your help, the industry is maturing and solving some of the biggest challenges in decentralized wastewater treatment. And I'm anxious to share your stories with the rest of the installer community. Tell me about your company and the biggest challenges you face. Share your best system install story from the past year. I'm looking forward to seeing you. □

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SCHOOLED IN SEPTIC

For 40 years and counting, Ray Erb has been helping build the knowledge and professionalism of Pennsylvania's onsite installer and pumping community

By **Scottie Dayton**

A high school introduction to ornamental horticulture proved useful when an abrupt detour in Ray Erb's career routed him into the onsite industry. After working 12 months at a nursery, Erb decided his dad was a much better boss. In 1974, the 19-year-old returned to Thomas H. Erb & Sons, a pumping company in Lititz, Pa., and never left.

Thomas H. Erb III began the business in 1970, assisted by his father, Thomas H. Erb II. "My parents called me Ray because the mail was already too confusing," says Erb, who now owns the company.

In 1988, Ray Erb joined the Pennsylvania Septage Management Association, a decision that launched a parallel career when he volunteered to serve on the group's Education Committee. Elected its chairman in 1998, Erb was instrumental in developing onsite inspection guidelines recognized by Pennsylvania courts as the industry standard, and the vacuum truck training program – later adopted by the National Association of Wastewater Technicians.

In 2006, PSMA created the Ray Erb Leadership Award to honor his accomplishments. He remains the sole recipient. In 2013, NAWT leaders and Bob Kendall, cofounder of COLE Publishing, presented Erb with the industry's prestigious Ralph Macchio Lifetime Achievement Award.

AN ONSITE HERITAGE

Returning from the Korean War, Erb III worked for excavating firms until a pumping company that was going out of business offered its customers to him. A relative of the owner sold Erb an International tank truck with a Gorman-Rupp centrifugal pump. Within four months, he had enough work to become a full-time pumper. His father rode along to prime the pump and help expose 5-foot-deep tank lids with a pick and shovel.

Thomas H. Erb & Sons, Lititz, Pa.



- OWNER:** Ray Erb
- YEARS IN BUSINESS:** 43
- EMPLOYEES:** 8 full time and 4 part time
- MARKET AREA:** 40-mile radius
- SPECIALTY:** Onsite installation, design, repair and inspections; septic pumping; pipe inspections and cleaning
- AFFILIATIONS:** Pennsylvania Septage Management Association, Pennsylvania Association of Sewage Enforcement Officers, National Association of Wastewater Technicians

<< The Thomas H. Erb and Sons Inc. team includes, left to right, Kevin Geesey, Tom Erb, Ray Erb, Joel Keith and Eric Pinkerton.

>> With the RIDGID SeeSnake Micro reel and Micro CA 300 display, Ray Erb identifies the location of system components during a preliminary investigation for the installation of a sewer line at a residence. (Photos by K. Scott Kreider)

In 1972, the brutal labor ceased when Erb bought a backhoe.

“Customers began asking Dad to install conventional systems or to replace their drainfields,” says Erb. “We got some how-to books from Penn State University and one from the federal government, then learned by doing.”

The township’s sewage enforcement officers occasionally helped the family by sketching how to install a system and explaining the rules. Ray Erb became an SEO in 1994. “I learned mechanical drawing, landscape design, erosion control and how to grow grass in my high school vocational classes – all disciplines that easily crossed over into working with onsite systems,” he says.

“Helping homeowners solve difficult onsite problems is my favorite way of making a difference in the industry.”

Ray Erb

His mother, Joan, was as much a driving force in the company as her husband. She brought her bookkeeping skills to the business, then became an IRS Enrolled Agent. In the late 1970s, she suggested the younger Erb grow a beard. Employees and customers had confided that her son looked too young to be in charge of anything. Erb has worn a beard ever since.

Today, pumping accounts for 60 percent of revenue. To transport 3 million gallons of septage annually, Erb prefers Peterbilt rigs. His newest is a 2007 tandem-axle chassis with 4,000-gallon aluminum tank and National Vacuum Equipment 607 pump purchased from Imperial Industries. The 2000 single-axle truck has a 3,000-gallon aluminum tank and Demag Wittig vacuum pump (Gardner Denver). A 1990 tandem-axle rig with 3,500-gallon steel tank and Utile Engineering Co. pump from Eldredge Equipment Services completes the trio. A 1993 Peterbilt 378 semi-truck pulls the 6,000-gallon stainless steel Polar tank trailer.

Also in the company’s equipment inventory are a Case 1840 skid-steer, Gehl 383Z mini-excavator, Caterpillar 312B excavator, Case 580E backhoe, Electric Eel sewer and drainline cleaning equipment, a FallTech confined-space tripod and T&T hand tools for subsurface locating jobs.

MAINTENANCE AND REPAIR

The company’s five-member onsite installation crew also breaks into maintenance and repair teams.



Tackling the inspection challenge

Inspecting onsite systems is not for the fainthearted, as Ray Erb of Thomas H. Erb & Sons can attest. When the new owners of a 1970s campground hired him to evaluate the patchwork septic systems, Erb found six of them instead of three, and one of those was being abandoned.

The only documented system was seven years old and had three 2,000-gallon septic tanks. Erb's team discovered that half of the 12-trench drainfield was dry, while liquid in the downslope trenches on the opposite side was 3 inches from the surface and ready to overflow. "The two siphons pressure-dosing the drainfield weren't working," he says. "Our report recommends replacing them."

To find undocumented septic tanks, the crew used flushable transmitters (Prototek). After exposing a tank, they pushed a mini-SeeSnake (RIDGID) through the outlet to locate the rest of the system. In one case, they found two badly deteriorated 1,250-gallon concrete septic tanks. The remainder of the system passed inspection. The report recommends replacing the tanks.

When the park was at capacity, staff at a refreshment stand with lavatories reported liquid occasionally surfacing in a gravel overflow parking area and running down the driveway. The team found the building and one cabin serviced by a two-compartment, 1,000-gallon septic tank, a distribution box, and two supply lines feeding a 60- by 12- by 3-foot-deep stone-and-pipe drainfield with 3 feet of crushed stone. The report recommends upsizing the absorption bed.

A paved road covered another system serving campsites. "The septic tank had a manhole, which was our only access point," says Erb. "The system hadn't been used all winter, so the tank was dry."

The crew used a hammer drill to bore through the asphalt, then they probed with a rod to determine the amount of liquid in the stone-and-pipe drainfield. It also was dry. "The system appeared to be functioning when we ran water into it," says Erb. "We're recommending a second evaluation when the campsites are full."

The last system — two 2,000-gallon septic tanks with stone-and-pipe drainfield — served a shower house with lavatories. It passed inspection.



Thomas Erb and Sons Inc. president Ray Erb uses a RIDGID KD-4550 locator/receiver to locate the edge of an existing septic tank to connect a public sewer line to a home.

Installations and repairs generate 40 percent of revenue, but new installations account for only 2 percent of the work. "Our goal from the beginning has been to focus on repairing residential systems," says Erb.

As other contractors gravitated toward easy repairs, Erb saw a window of opportunity open. He built the company's reputation for innovative solutions and tenaciousness by targeting challenging repairs. A recent example involved a three-bedroom home in a development with natural springs. During heavy spring rains, the five-year-old elevated sand mound resembled a spring. Multiple companies had failed, because the problem would solve itself, then reappear.

"Analyzing where the water entered the system was frustrating," says Erb. "The water table changed quickly from low to high and vice versa, and it happened sporadically."

Over three months, the team hand-dug 6-inch diameter test holes to evaluate the soil and identify water patterns. They also pumped the septic tank as needed. By returning during downpours, they noticed groundwater wicking up and filling the sand berm.

The solution was a curtain drain installed 15 feet above the mound. The team dug a 5-foot-deep trench 100 feet long, bedded it with stone and laid a 4-inch PVC perforated pipe draining to a stream. "That solved the problem," says Erb. "During wet periods, hydraulic pressure on the full pipe sends the water shooting out."

INSPECTION CONNECTION

In the late 1980s, a new challenge appeared. An escalation in court cases involving buyers of homes with failed septic systems prompted mortgage companies to request onsite inspections. Acknowledging the need, Erb, two other members of the PSMA Education Committee, and Curtis Eldridge as the lead met with Paul Robillard, associate professor of agricultural and biological engineering, College of Agricultural Sciences, at Penn State University to develop an inspection program.

"We searched across the country to see if any organization had some kind of inspection program — and found nothing," says Erb. "A few members were doing inspections on their own, so we incorporated their methods. We looked at state or local health department regulations for how they wanted systems inspected, and gleaned what was applicable. Then we compiled everything and introduced our guidelines in 1989."

The new program encountered some resistance. When people made negative comments, the team asked to hear their solution to the problem. "The strategy worked, because many of their ideas had merit," says Erb.

Tom Erb puts on a Tyvek suit before utilizing a FallTech tripod to enter a confined space to replace a check valve in a residential onsite system. Eric Pinkerton stands ready to assist.



Every three years, the team reviews and updates the guidelines, then develops training manuals that reflect the changes. Although the courts recognized the guidelines as the industry standard, the state never adopted them into law. New Jersey, however, modified the PSMA standards and passed the document into law.

TRAINING EFFORTS

“By 2006, the inspection program had become so successful that companies wanted PSMA to develop a vacuum truck training course for new hires,” says Erb. “Gil Longwell, PSMA executive secretary at the time, and I did it. It was a neat but time-consuming adventure.”

“We searched across the country to see if any organization had some kind of inspection program – and found nothing. ... We looked at state or local health department regulations for how they wanted systems inspected, and gleaned what was applicable. Then we compiled everything and introduced our guidelines.”

Ray Erb

The course, available year-round through NAWT or PSMA, also is available online courtesy of the National Environmental Health Association. “I feel honored to have been involved with it, and interest keeps growing,” says Erb. “Nova Scotia recently required pumpers to be licensed, and the provincial government adopted our vacuum truck course.”

Erb also helps coordinate the PSMA annual Spring Training Event focusing on inspections for real estate transactions. “We offer Beginners 101, Advanced 102, and SR1, a standards refresher course,” says Erb. “More than 120 people registered this year.”

The Pennsylvania College of Technology grades the exams and returns certificates with the Penn State logo. “That logo elevates certification to a whole different level of professionalism,” says Erb.

To organize the field work associated with the course, Erb solicits help from an inspector or PSMA member in the area. That person finds a suitable location, then the event team visits the site to evaluate the system. “We offer the course throughout Pennsylvania in July and September,” says Erb. “The inspection program takes a lot of everyone’s time and is exhausting work.”

(continued)

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Tom Erb fills in stone with a Gehl 383Z mini-excavator during the installation of a sand filter at a residence in Brickerville, Pa.

LOOKING AHEAD

In 2010, Erb became the liaison representative between PSMA and the Pennsylvania Association of Sewage Enforcement Officers. His first success was arranging for each organization to provide the other with a free booth at its trade show. “The next objective is combining the two annual conferences, which would greatly benefit vendors and attendees,” says Erb. “Finding a compatible date has been the major obstacle, but I hope we’ll see it happen in 2015.”

Erb also would like PSMA to work with NAWT to bring its Designing Systems course to Pennsylvania. “NAWT debuted it as part of Education Day at the 2013 Pumper and Cleaner Environmental Expo,” he says. “Some PSMA members enrolled, and I’ve heard nothing but good things about it.”

Although Erb appreciates state and national recognition, the high point for him and his wife, Sharon, has been watching son Tom, 36, and daughter Caitlin, 29, mature into great people. “Tom supervises our excavating and repair crew and will eventually take over the business. Caitlin gave us our first grandchild, Claire, last April,” he says.

Erb finds his greatest personal satisfaction in the little rewards of jobs well done. “Helping homeowners solve difficult onsite problems is my favorite way of making a difference in the industry,” he says. □

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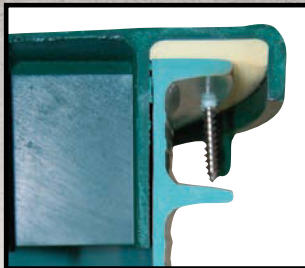
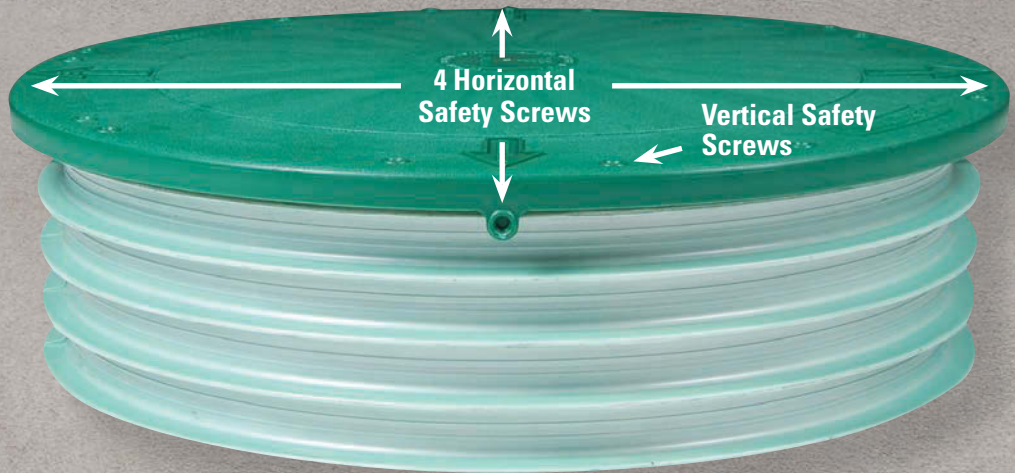
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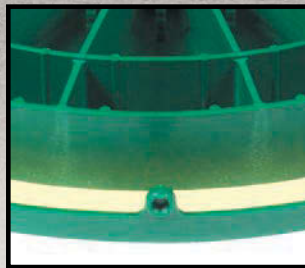
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- Simple to install
- May also be used as Outlet Tee with Solids Deflector

Everything is Connected

From your hotel to the classrooms and exhibit floor, focus on getting the most out of your time in Indy

By Luke Laggis

It's Expo time. Soon the Indiana Convention Center will be filled with the newest and best tools and equipment the industry has to offer. Thousands of environmental services contractors will be in attendance, and you should be too.

This will be my third trip to the Pumper & Cleaner Environmental Expo International, and I'm excited to get back to Indianapolis and see so many industry professionals together in one place. Even a casual observer could learn a great deal over the four days of the Expo, and if you spend some time

Talk to manufacturers and find the tools that will help you grow and improve your business. That's what the Expo is all about.

on the show floor and attend a few education courses, you'll get enough out of the show to keep breathing new life into your business all year long.

The thing about the Expo, and its venue in downtown Indianapolis, is that everything is connected and the opportunities to grow in your industry are everywhere, from the moment you leave your hotel room to the very end of the night. In the elevator on the way down to the lobby, at breakfast, on the walk to the convention center and all throughout the day, you'll have no problem striking up conversations with your peers wherever you go.

And don't forget to give in the give-and-take. Just as you can learn from your peers, there are plenty of other installing professionals out there who could benefit from your story and the insights you have to share. We can even help with that.

This year we're going to have a live video booth set up on the show floor so people can share their stories with all our readers and website viewers. We're looking for some good candidates in advance, people who'd like to answer a few questions and tell their stories to our audience. These three-minute videos will be posted at www.onsiteinstaller.com and participants will all receive a free "3-Minute Pumper" T-shirt for their time.

Above all, whether you're walking the show floor or sitting in a classroom, the Expo is about education. My advice: Pick a few topics you'd like to learn more about and focus on those as you plan your week in Indy. Whether it's grease trap service or industrial vacuum loading, seek out opportunities to learn everything you can about those subjects. There's no better place to get a thorough education.

Use the online planning tools at www.pumpershow.com to get familiar with the schedule of education seminars, event schedules and the vendors who will be exhibiting.

When the show floor opens Tuesday morning, take your first walk and note the tools and equipment you really want to see and learn more about. If the vendors are swamped with the initial blitz of contractors vying for their time, mark it on your map and stop back later.

Talk to manufacturers and find the tools that will help you grow and improve your business. That's what the Expo is all about.

Take the time to plan out your Expo visit so you can get the most out of your stay in Indy. You and your business will see the benefits all year long. □

About the author

Luke Laggis is editor of *Cleaner*, *Municipal Sewer & Water* and *Gas Oil & Mining Contractor* magazines for COLE Publishing.



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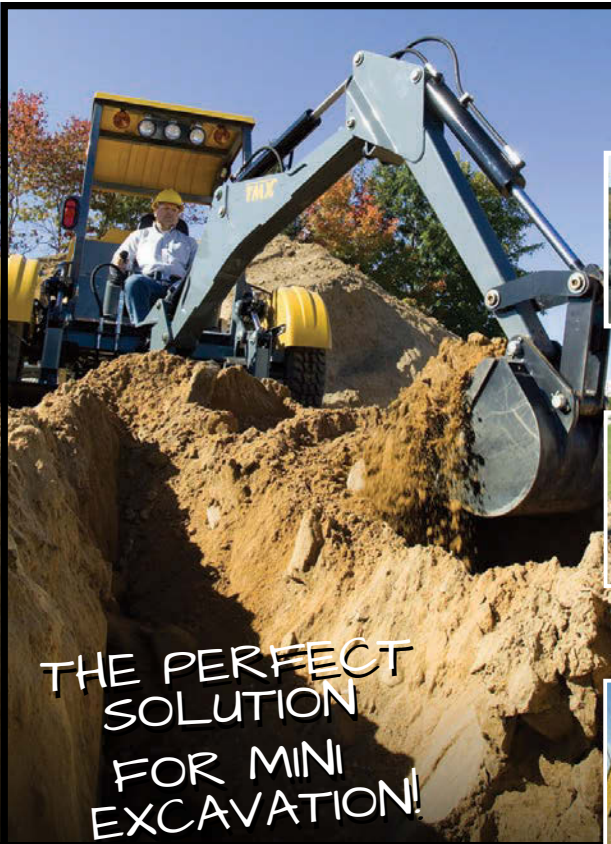
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New Jersey watershed association plans wetlands-based onsite system

By Doug Day and Sharon Verbeten

The Stony Brook-Millstone Watershed Association in New Jersey is building a wetlands-based wastewater treatment center at its new \$7.5 million environmental center. Expected to be completed in fall 2014, the new system will use the natural cleansing quality of plants, creating a more effective way to treat human waste and remove more pollution than a conventional septic system, the association reported.

Wastewater from the toilets, showers and sinks will flow into a tank where solids will be removed. The water will be pumped into the first wetlands stage, a container where microbes in the plants' roots will attack bacteria, then flow through the rest of the system. The water will move horizontally through the wetland system, which will break down contaminants and clean the water, which later will be released into the ground.

Florida

An engineering firm conducting a study on septic tank regulations in the state has requested a one-year extension, until January 2016, to finish its work. A delay would continue to prevent the Florida Department of Health from instituting nitrogen reduction laws until the study is completed. The \$5.1 million study, and the enforcement delay, was ordered by the state legislature in its 2008-09 budget. The legislature also passed a measure in 2012 to prevent local government from requiring advanced septic systems until the study is done.

The engineering firm says inconsistent funding from the state has delayed completion of the study. The legislature provided funding in the first year of the three-year study, but none in the next two budgets.

New York

One New York state agency has fined another and the two have reached an agreement to replace 30 septic systems in five state parks. The Department of Environmental Conservation and New York State Office of Parks, Recreation & Historic Preservation entered into a consent order to upgrade the septic systems. The parks department will also pay a \$25,000 fine, plus another \$25,000 if the terms of the consent order are not met in three years. The decades-old systems did not meet current treatment standards.

The action followed notice from Peconic Baykeeper of a lawsuit it intended to file because the parks were allegedly violating the U.S. Clean Water Act. The group says it still intends to file the lawsuit because it wants to see the use of more advanced treatment technology, including denitrification.

Louisiana

A former state septic tank inspector was sentenced to five years of probation for accepting bribes from a contractor. The 71-year-old contractor, Glenn Kelly Johnson, who had felony environmental convictions and had served prison time, died before he could be tried. Alan Forrest Pogue, the 52-year-old former employee of the Louisiana Center for Environmental Services, admitted to accepting \$50,000 in bribes from May 2009 to June 2011. The federal court indictment said the septic tank inspector provided a list of those who applied for septic tank permits so the contractor could try to get their business.

An inspection of all septic systems in Tangipahoa Parish showed that 63 percent of aerated treatment units were not working correctly – many because they were not plugged in. Of 83 homes with conventional septic systems, 79 failed the inspection, mainly because their tanks had not been pumped. The ongoing program in the parish seeks to help homeowners and businesses to make sure their septic systems are working as designed. □

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Pour Another Cup

Fellner Soil & Septic provides a wastewater solution to overcome an expansion obstacle for a Wisconsin restaurant and coffee roasting and sales operation

By David Steinkraus

When the owners of Door County Coffee & Tea Co. realized they had to do something with the growing wastewater flow from their business, they sought out the onsite installers who had helped them before: Doug and Loreen Fellner of Fellner Soil & Septic Service Inc. in Sturgeon Bay, Wis.

THE CLIENT

Door County Coffee & Tea Co. started as a small operation, but it has grown dramatically. The business roasts its own coffee and sells it all over the country, says Doug Fellner. It had expanded in other ways, too. There are now 24 employees, and the original coffee shop has grown to include a 62-seat restaurant, a 30- by 40-foot retail store and a large complex for

**“People say, ‘Why are you insulating?’
This is Wisconsin. We insulate everything.”**

Doug Fellner

roasting and distributing coffee. It is also located on a main highway in Door County, one of Wisconsin’s biggest tourist areas. That meant a new system had to be in place for the spring, summer and fall seasons when most businesses in the area generate the bulk of their annual revenue.

The business is located on an 8.5-acre parcel of land roughly square but with a chunk cut out of a corner for two other businesses. Roads run along two sides of the parcel. Fellner Soil & Septic had already helped by separating the holding tank, which had been shared by Door County Coffee & Tea and the neighboring building.

The problem that needed solving was handling an ever-increasing amount of wastewater.

SYSTEM PROFILE

Location:	Carlsville, Wis.
Facility served:	Door County Coffee & Tea Co.
Designer:	Dan Vander Leest, Vander Leest Soil Testing, Sturgeon Bay, Wis.
Installer:	Doug Fellner, Fellner Soil & Septic Service Inc., Sturgeon Bay, Wis.
Type of system:	Modified mound system fed by SludgeHammer aerated pretreatment system
Hydraulic capacity:	2,819 gpd

For many years, the business met its needs with a very large holding tank. But as the volume of wastewater increased that solution became less and less viable and much more costly. At peak flows, a local pumping contractor emptied the 8,000-gallon holding tank about once a week, Fellner says. Not all of that was wastewater. The holding tank was old and leaky, and groundwater easily infiltrated.

The challenge was to give the business owners an economical solution for the projected flow of 1,879 gpd. The system proposed by designer Dan Vander Leest, of Vander Leest Soil Testing in Sturgeon Bay, was a series of treatment tanks emptying into a compact, above-ground distribution system that would be housed on the extra acreage the owners had acquired behind their building.

<< The distribution cells for Door County Coffee & Tea Co. lie in a large field behind the business. Design flow for the system is 2,819 gpd. (Photos by David Steinkraus) >> In fall 2012, workers install the five septic tanks that became part of the new onsite treatment system for Door County Coffee and Tea Co. In the foreground is the dosing tank for the modified mound system. Behind that is a settling tank, then two aerated tanks for pretreatment, and last in the group is a septic tank that collects wastewater from the business, which occupies the long building at top right. (Photo courtesy of Fellner Soil & Septic)



CHEAPER AND BETTER

The Fellners and Vander Leest sat down with business owners Vicki and Doug Wilson and went through the numbers to demonstrate that the new system, although expensive, would pay for itself in just a few years compared to the cost for a new, larger holding tank and required pumping. The owners would also save money because construction of the compact mound system was cheaper than the traditional mound alternative, Doug Fellner says.

The problem in this case was not the soil. "We have about a foot of bedrock," Fellner says.

A traditional mound system would have created a large and unsightly hill in the open and relatively flat field behind the business. So the design uses a modified mound: only about 3.4 feet above grade.

SYSTEM DETAILS

From the business, wastewater flows into a 3,000-gallon septic tank. Then it flows into a



The SludgeHammer S-86 units at Door County Coffee & Tea Co. are aerated by Hiblow pumps. Mike Fellner, at top, installs PVC pipe to connect the pump in its riser to the pretreatment tank. The pump at bottom is being tested. All power wiring meets in the elevated junction box at top left.

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Chad Christiansen, left, Doug Fellner, center, and Mike Fellner work on the pretreatment tanks. The two black risers at bottom are for the septic tank. The middle four black risers provide access to a pair of pretreatment tanks connected in sequence. The black risers in front of Christiansen and behind Fellner access a settling tank, and the single green riser is access for the dosing tank.

3,000-gallon aerated treatment tank, and from there into a second 3,000-gallon aerated treatment tank. The aerated tanks are equipped with six SludgeHammer S-86 units, three per tank, supplied by Wisconsin distributor Chris Fellner, (the Fellners' son) of Advanced Soil and Wastewater LLC of Sturgeon Bay. The aeration is accomplished using Hiblow pumps.

After pretreatment, wastewater flows into a 3,000-gallon settling tank, and then into a 5,000-gallon dosing tank. From there a pair of Goulds 3885 WEO 7H pumps send wastewater through a 2-inch force main and into 2-inch-diameter manifolds that feed 1.25-inch laterals. In total the mound consists of four, 100-foot cells built with EZFlow drainfield media from Infiltrator Systems Inc. Below each cell is 1.4 feet of mound sand, and the entire system is covered with 12 inches of topsoil. With pretreatment of the effluent, the sand can be loaded to 3,200 gpd. Dosing is timed and controlled by a 1FS panel from SJE-Rhombus. The system is designed to reduce BOD to less than 30 mg/L.



Doug Fellner installs the SJE-Rhombus control panel for the wastewater system at Door County Coffee & Tea Co. The panel is mounted next to the 5,000-gallon dosing tank and controls timed dosing between two distribution beds. The red light on top signals a malfunction, but Fellner also repurposed a float from the old septic tank so it will sound an alarm inside the business if a pump fails.

The force main is not only covered but is also insulated as is the collection pipe delivering waste from the business. "People say, 'Why are you insulating?' This is Wisconsin. We insulate everything," Fellner says. So on top of the force mains are two layers of 1-inch R-5 Foamular 150 boards (Owens Corning).

To keep the system working, the SJE-Rhombus panel is tied into three floats. There is a low-water float to shut down the system, a middle float that tells the computer to start the regular dosing cycle and a top float that trips an alarm light on the panel box if the pumps fail. Because the panel is a couple of hundred feet from the back of the building, Fellner connected the high-water alarm from the old holding tank back into the system. It rings inside the building, so spotting an emergency will not depend on whether an employee notices a blinking alarm light way out in back.

CONSTRUCTION SCHEDULING

The system for Door County Coffee & Tea Co. was done in two phases. That was a help to the owner because it spread the project over two fiscal years, Fellner says. In the fall of 2012, Fellner and his crew installed all the new tanks. All of the tanks except the dosing tank were made by Premier Concrete Inc. The dosing tank was from Wieser Concrete.

Through the winter the system operated as a large-capacity holding tank. Even though that is a slower season, judge the reduction in infiltration by this: Pumpers picked up about 5,000 gallons once a week.

When spring came, Fellner and his crew were on a deadline. With the Memorial Day weekend comes the traditional start of the summer tourist season and the need to have the system finished, connected, tested and ready to work. Mother Nature had a different view. A cold and late spring punctuated with snow showers and regular rain pushed back the date when Fellner could get into the field. He scheduled the job as an early one, and in



Chad Christiansen, left, and Mike Fellner begin to cover the mains taking treated wastewater to the distribution field. On top of the pipes are two pieces of 1-inch-thick R-5 Foamular 150 insulation. "This is Wisconsin. We insulate everything," says installer Doug Fellner.

the end he made it happen. During the second week of May, he and the crew built the mound, installed the treatment units and air pumps, wired the controls and tested the entire system.

With a designed flow of 2,819 gpd and total tankage of about 18,000 gallons, Door County Coffee & Tea Co. now has a modern, efficient wastewater system that can accommodate many more years of growth. □

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A Passion For the Stage

Fresh off winning the CMA 'Song of the Year' award, Lee Brice brings his hits to the Pumper & Cleaner Expo's Industry Appreciation Party Feb. 26

By Craig Mandli

The timing couldn't be better for country star Lee Brice to arrive in Indianapolis for the Pumper & Cleaner Environmental Expo International Industry Appreciation Party. Fresh off his Song of the Year award for "I Drive Your Truck" at the 2013 Country Music Association Awards in November, Brice is quickly becoming one of the brightest and most sought-after performers around.

"Winning the CMA award was definitely toward the top," says Brice, when describing where the prestigious honor ranks among his career highlights. "It is simply amazing!"

While this will be Brice's first trip to the Expo, it's entirely possible that, had things gone a bit differently a decade ago, he would be a regular attendee. Brice attended Clemson University on a football scholarship and majored in engineering, fully intending to become a civil engineer. In fact, while Brice grew up in a musical family and has always had a passion for performing, he wasn't focused on music right away. It wasn't until a forearm injury forced him to step away from his role as the long snapper on the Clemson football team that he decided to take a serious look at a music career.

NASHVILLE HITMAKER

Brice latched on as a songwriter with Curb Music Publishing, cowriting some 150 songs his first year. Some of his writing credits include "Still" for Tim McGraw, "Not Every Man Lives" for Jason Aldean, "Crazy Days" and "What it Takes" for Adam Gregory, "More Than A Memory" for Garth Brooks, and "Crazy Girl," which became one of 2013's biggest hits for the Eli Young Band. Brice holds eight of the 13 writing credits on his newest album, "Hard 2 Love," and considers writing a big part of who he is as an artist.

"It's awesome! That is one thing that never gets old," says Brice of the feeling he gets hearing another popular artist perform one of his songs on the radio. "It is always cool to hear people take what you wrote and give life to it in their own way."

DRIVING YOUR TRUCK

While Brice writes much of his own music, a song he can't take the writing credit for, "I Drive Your Truck," took the CMA honor. Cowritten by Connie Harrington, Jessi Alexander and Jimmy Yeary, the song could have been recorded by a number of major Nashville acts, but Brice was forward-thinking enough to know a powerful song when he heard it. Or rather, when he felt it.

"The first time I heard the song, it absolutely slayed me. It brought me to tears," says Brice. "It became personal to me the very first time that I heard it, and I had a feeling that people were really going to be moved by it. The writers took a broad subject on a specific event and made it accessible for anybody to listen to and connect with through lyrics, and everybody does."

The tune was inspired by a National Public Radio report on the sacrifice of Army Sgt. 1st Class Jared Monti, who died in Afghanistan while trying to save a fellow soldier. Jared's father, Paul, keeps the memory of his son alive by regularly driving Jared's Dodge Ram pickup. Brice's label threw a party to celebrate the song reaching No. 1 on the country charts last May, and Paul Monti was there to meet Brice and the writers whose work has made his son an inspiration to millions.

"It was a very moving experience to meet Paul. There is such a personal

story attached to the song that you cannot forget Paul, and Jared's service to our country," says Brice. "It is such a positive song about being able to connect with that someone you've lost in your life. Already knowing the story, being able to meet the family was just even more powerful and added more inspiration for the song."

FAMILY FIRST

While Brice continues his passion for his music, he is even more passionate for his family - his wife Sara and two young boys. A tireless writer and performer, Brice took December off to spend with his growing family.

"My family is everything to me," says Brice. "They inspire me to be my best, and I'm fortunate enough to get to do what I love and have a supportive wife and family behind me. I want to do well and continue doing well for them."

In his downtime, Brice enjoys hunting and watching football. "The usual guy stuff," he says. "I can also always be found writing, listening to and recording music. It's my passion and I enjoy it even in my spare time."

AND A GOOD SHOW

When Brice takes the stage Wednesday, Feb. 26, at the JW Marriott Grand Ballroom in Indianapolis, Expo attendees can expect a mix of his upbeat hits such as the catchy "Parking Lot Party," "Four On The Floor," "Hard To Love," and "Carolina Boys," along with heartfelt, emotional tunes like "Love Like Crazy," "Beautiful Every Time," "See About A Girl," "A Woman Like You," and, of course, "I Drive Your Truck."

"My thing is, I just have a ball doing what I do. I grew up watching a lot of shows. I saw Garth Brooks one time, and I just loved that he could come out and rock you in your face, and then all of a sudden just break down to a guitar and sing to you ... kind of like a roller coaster dynamic," says Brice. "That's what I like to do ... what I try to do anyway." □



Country star Lee Brice will perform for the Industry Appreciation Party at the JW Marriott Hotel Grand Ballroom on Wednesday, Feb. 26.

Inside the Industry Appreciation Party

For more than 30 years, COLE Publishing has thrown an Industry Appreciation Party during the Pumper & Cleaner Environmental Expo International. This year's party, slated to begin at 5 p.m. on Wednesday, Feb. 26, at the JW Marriott Hotel Grand Ballroom, promises to be another high-energy celebration. We recently sat down with COLE Publishing founder Bob Kendall to discuss the history of the party, and find out what's in store this year.

Why do you throw a party every year?

Kendall: The whole idea is to recognize the attendees for the hard work they do throughout the year. Often what they do goes unrecognized. They are the focal point of the industry, and deserve to be celebrated.

You've had some big-name entertainers perform in the past. Who stood out to you?

Kendall: Just a few include the Oak Ridge Boys, Big & Rich, Montgomery Gentry, Neal McCoy, Dierks Bentley, Lonestar, Trace Adkins, Rodney Atkins. Craig Morgan did a great job last year. I love Sawyer Brown, and we've had them back several times. Jeff Foxworthy was a lot of fun, too.

How do you choose which artist you'd like to perform?

Kendall: We always look for country talent that's on the rise. We've had the privilege of working with one of Nashville's premier booking agents, Autumn Farrell of Prime Source Entertainment Group, for several years, and she's always gotten us great names.

Another highlight of the Party is, of course, the 25 cent tap beers. How did that come about?

Kendall: That's all part of the party. We've always offered choice refreshments to our attendees as a way to recognize and appreciate what they do.

This year's performer, Lee Brice, is one of the most sought-after performers in country music right now. How did you land him?

Kendall: Having Lee at the 2014 show is certainly great timing. We actually booked him months before his CMA award, and I have to admit I was pretty excited to see him take home that huge honor in November. That will certainly add to the excitement of the evening.

You've switched the night of the party to Wednesday this year, after holding it on Tuesday evening for several years. Why is that?

Kendall: Wednesday is always the most well-attended day of the Expo, and we wanted to accommodate as many Expo attendees as we could. The evening is a terrific way for attendees to network with both their peers and exhibitors in a more laid-back setting, preferably over a frosty cold one.

Why should attendees plan to attend the Industry Appreciation Party?

Kendall: First off, it's free with full registration. All they have to do is show their badge at the door. Second, the JW Marriot Grand Ballroom is a great setting. These are performers who are typically used to performing in front of sold-out arenas and stadiums, and our attendees can get right up next to them. It's a very intimate setting. That's what makes it the must-attend event for our industry.

Jim Anderson, Ph.D., and David Gustafson, P.E., are connected with the University of Minnesota onsite wastewater treatment education program. David is Extension Onsite Sewage Treatment Educator. Jim is former director of the university's Water Resources Center and is now an emeritus professor, as well as education program coordinator for the National Association of Wastewater Technicians. Readers are welcome to submit questions or article suggestions to Jim and David. Write to ander045@umn.edu.

Restore the Soil Treatment Area

When abandoning a septic system, it's not enough to deal with the tank and distribution components. You have to dig deeper for proper remediation.

By Jim Anderson, Ph.D., and David Gustafson, P.E.

Last month we addressed abandoning sewage treatment tanks and other pretreatment devices such as ATUs and media filters. This month we turn to properly abandoning the soil treatment area.

Often when an onsite system is replaced, the old soil treatment area is left intact. This is an acceptable practice recognized in most state and local codes. If there are inspection ports, or risers over drop or distribution boxes, these should be removed and disposed of. If effluent was surfacing over the area, it can be treated with hydrated lime and allowed to dry, with some topsoil added and vegetation reestablished. In all cases, the vegetative cover should be maintained over the area.

Remember that when a system is abandoned or removed, measures must be taken to protect the installer, homeowner and others from any current safety or health hazards or those that could arise in the future. Every year we read about someone being hurt or killed by falling into

There is usually a requirement to inform the local government when the work is completed. ... It is the installer's responsibility to know these rules and discuss the abandonment with the proper local authorities before proceeding.

abandoned parts of onsite systems that were not properly abandoned or removed. Often these are old cesspools or seepage pits, but not always; they can be holes left due to improper filling of tank or trench cavities. It is probably a good practice on the part of the installer to go over the property with the homeowner to see if there are other older systems or other parts of the system that should be addressed.

In many cases, the soil treatment part of the system must be removed because the homeowner desires to use that area of the lot for another purpose. Mounds or at-grade systems are other situations where the system must be replaced. Here, part of the replacement process means removal of the system and rebuilding from the ground up at the same location.

Whenever soil treatment and dispersal systems are removed, contaminated materials from the system must be properly handled to prevent human contact. Contaminated materials include the distribution or drop boxes, the distribution media, rock chambers, etc., any distribution

piping, and soil or sand within 3 feet of the bottom of the system.

When the tank or tanks are pumped, the distribution or drop boxes should also be pumped. This material should be treated like septage and disposed of in accordance with federal and state requirements. Our state requires an agreement between the sewage receiving facility and the service provider to ensure proper disposal practices. If the waste is land-applied offsite, it must be handled according to the federal 503 regulations and meet any additional state and local requirements.

When a system is taken out of service and the tanks are pumped, allow sufficient time for the soil treatment area to dry out. If the system is being rebuilt on the current site, this may not be feasible, but as much of the liquid should be removed as possible. Before any other construction activities take place, it is important to allow the soil surface to completely dry out where the mound or at-grade will be replaced. Additional surface preparation may be required to ensure the area for the replacement system is ready when the new system is installed.

Your state may have specific handling and storage requirements if the plan is to use or spread the excavated soil and sand on the site and lawn area. The installer is responsible for knowing these rules. In Minnesota, if the material is going to be spread or used on site it must be stockpiled on site in a location meeting all the soil and setback requirements for a soil treatment area. So there must be three feet of soil to any limiting layer, lake, stream or building, and other setback requirements must be met and maintained.

The material should then be covered with 6 inches of uncontaminated soil and erosion control measures should be taken to prevent runoff. After a year, all of the material can be spread on site, topped with 6 inches of topsoil and the vegetative cover established. After one year the material can also be used to fill holes or voids where the sewage tanks were abandoned. This is not a common practice, however, due to length of time you have to wait and because most of the material would not meet the requirements of clean sand or other granular materials used to fill the tanks.

All of the piping should be removed, along with the trench media and any geotextile fabric used in covering the system. The material should be dried thoroughly and taken to a mixed municipal solid waste landfill. Whether additional fill is hauled in or the materials excavated are used to



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fill and grade across the site, a good vegetative cover of some type should be established.

When a system is abandoned, there is usually a requirement to inform the local government when the work is completed. Sometimes this is a part of the permit for the replacement system; sometimes a special form and permit are required. As in the other cases, it is the installer's responsibility to know these rules and discuss the abandonment with the proper local authorities before proceeding. □

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EDUCATION DAY

MONDAY FEBRUARY 24, 2014

NASSCO NATIONAL ASSOCIATION OF SEWER SERVICE COMPANIES

- 8 a.m. Lessons Learned During Sewer Rehab on Public and Private Property
- 9:30 a.m. Pipe Bursting a Mature and Diverse Trenchless Technology
- 11 a.m. Resurgence of Chemical Grout Industry: Niche Business Opportunities
- 1:30 p.m. Chemical & Biological Control of F.O.G. in a 2,500-Mile Collection System
- 3 p.m. Lateral Rehabilitation, What's Available
- 4:30 p.m. Fiber Optic Temperature Sensing Technology for CIPP Cure Quality Control

NEHA NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION

- 8 a.m. DEER in the Headlights
- 9:30 a.m. Basic Chemistry of Onsite Wastewater Treatment Systems
- 11 a.m. Making the Most of Experience: Training and Credentials for Wastewater Pros
- 1:30 p.m. Winners Communicate
- 3 p.m. Best Available New Technology
- 4:30 p.m. Best Available New Technology: How to Get Your Regulators on Board

NPCA NATIONAL PRECAST CONCRETE ASSOCIATION

- 3 p.m. 7 Things About Design, Installation & Maintenance of Precast Concrete Tanks
- 4:30 p.m. Grease Interceptors: A Slick Solution to a Greasy Problem

WJTA-IMCA WATERJET TECHNOLOGY ASSOCIATION INDUSTRIAL & MUNICIPAL CLEANING ASSOC.

- 8 a.m. Preparing for your First High Pressure Waterjetting Job
- 9:30 a.m. Vacuum Truck Operation and Safety
- 11 a.m. Hydroexcavation: Getting the Best Bang for Your Buck

SAFETY SESSION JOHN CONLEY

- 8 a.m. Preventing Tank Truck Rollovers

PSAI PORTABLE SANITATION ASSOCIATION INTERNATIONAL

- 9:30 a.m. State of Global Sanitation
- 11 a.m. Industry Image
- 1:30 p.m. Visions of the PSAI and the Education Initiative
- 3 p.m. What's New with OSHA Safety Requirements
- 4:30 p.m. An Introduction to Entering the Federal Government Contracting Arena

SALES & CUSTOMER SERVICE FRANK TACIAK

- 8 a.m. Be Always Profitable: Setting up the Sale
- 9:30 a.m. Be Always Profitable: Your Best Sales Presentation
- 11 a.m. Be Always Profitable: Servicing Your Sale
- 1:30 p.m. Be Always Profitable: Our Attitude to Success

NAWT NATIONAL ASSOCIATION OF WASTEWATER TECHNICIANS

- 8 a.m. CSA 2010 Implementation/Impact on Carriers/Drivers
- 9:30 a.m. DataQ's: When and How to Challenge
- 11 a.m. US DOT Update/Recent, Upcoming and Proposed Regulations
- 1:30 p.m. What is a Good Septic System Inspection?
- 3 p.m. The History of the PSMA Hydraulic Load Process
- 4:30 p.m. Improving Arizona's Inspection Program to Meet Modern Challenge

NOWRA NATIONAL ONSITE WASTEWATER RECYCLING ASSOCIATION

» SITE EVALUATION AND DESIGN OF ONSITE WASTEWATER TREATMENT SYSTEMS

- 8 a.m. Why Do We Care About Soils?
- 9:30 a.m. Design for Dummies
- 11 a.m. How to Do a Good Site Evaluation
- 1:30 p.m. Designing for Tough Sites
- 3 p.m. Wastewater and Soils: Clean It Up AND Get It To Go Away
- 4:30 p.m. Good Installation for Long-Term User Satisfaction

» FROM INSTALLATION TO MARKETING YOUR BUSINESS AND EVERYTHING IN BETWEEN

- 8 a.m. Look Out for Gophers! Taking Care of Mound Systems
- 9:30 a.m. ATU's - How to Make them Work
- 11 a.m. Rest Stops: A Case Study of Challenging Wastewater
- 1:30 p.m. Troubleshooting Onsite Systems
- 3 p.m. Installation Mistakes: How to Avoid and Fix Them
- 4:30 p.m. Marketing & Customer Service for Small Business Owners

SSCSC SOUTHERN SECTION COLLECTION SYSTEMS COMMITTEE

- 8 a.m. Personal Safety
- 9:30 a.m. Understanding the Nuances of a Quality CCTV Inspection Program
- 11 a.m. In the Trenches with Trenchless Pipeline Repair and Renewal
- 1:30 p.m. Nozzle Application: What, Why, Where, When and How?
- 3 p.m. Stop It! A Closer Look at Plugging
- 4:30 p.m. Getting the Most out of Your Combination Unit

BUSINESS TRAINING & MARKETING SUZAN CHIN

- 1:30 p.m. Marketing on a Shoestring
- 3 p.m. Getting Some... Brand Recognition
- 4:30 p.m. The Online Marketing Toolbox

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TUESDAY SESSIONS

February 25, 2014

SSCSC TRACK

- 8 a.m. Don't Fear the Shapefile
- 9:30 a.m. What's Important for Your Company; Is it Size, or Profit or Both?
- 11 a.m. 1 + 1 = 14: Cleaning and Inspection Equipment Working as an Entity

NAWT LAND APPLICATION TRACK

- 8 a.m. Be Ready to Land Apply
- 9:30 a.m. Soils and Cropping Systems
- 11 a.m. Land Application Rates and Nutrient Management

SAFETY COMPLIANCE TRACK

- 8 a.m. OSHA Confined Space and Fall Protection Untangled
- 9:30 a.m. Air Monitoring Application for the Liquid Waste Industry
- 11 a.m. Waterjetting Hose and Nozzle Safety

MUNICIPAL TRACK

- 8 a.m. Sealing - Take Control of Inflow & Infiltration in Manhole Sealing Systems
- 9:30 a.m. DC Water is Utilizing CIPP to Rehabilitate the Nation's Capital
- 11 a.m. Nozzle Explanation and Selections

INSTALLER TRACK

- 8 a.m. Septic Tank Bells and Whistles
- 9:30 a.m. Aeration Units for On-Site Septic Systems
- 11 a.m. Understanding ATU's, their Service Requirement, and Maintenance

GENERAL TRACK

- 8 a.m. Portable - The Best of Both Worlds - Liquids vs. Portion Control Deodorizers
- 9:30 a.m. Vacuum Loaders - Taking the Mystery out of Vacuum Truck Operation
- 11 a.m. DOT Compliance - The Value of DOT Certification for Vacuum Trucks

CUSTOMER SERVICE & EMPLOYEE DEVELOPMENT

- 8 a.m. Gen Y + Gen X + Baby Boomers = #@\$%???
- 9:30 a.m. Get and Keep the Best Co-Workers
- 11 a.m. Win, Win, Win in Residential Service Contracting

WEDNESDAY SESSIONS

February 26, 2014

BUSINESS TRACK

- 8 a.m. Improving Profitability through Tracking
- 9:30 a.m. How Paperless Operations Save Time and Money
- 11 a.m. Book More Calls - Wow More Customers

PORTABLE TRACK

- 8 a.m. Deodorizers and Making the Right Choices
- 9:30 a.m. Oh Shift! 6 Future Trends You Must Gear Up For to Compete and Succeed
- 11 a.m. Portable Restroom Service Units

MUNICIPAL TRACK

- 8 a.m. Sewer Cleaning 101
- 9:30 a.m. Underground Coatings - Restore Deteriorated Infrastructure
- 11 a.m. How Small Contractors Can Make Big Money Doing Manhole Rehabilitation

LIQUID WASTE TRACK

- 8 a.m. Right Sizing Your Pump System
- 9:30 a.m. Make More Money by Using a Biological Product with Your Services
- 11 a.m. Septic Drainfield Restoration

ADVERTISING & MARKETING TRACK

- 8 a.m. Advertising and Marketing for Service Companies
- 9:30 a.m. Getting Sales Personnel to Properly Price and Present
- 11 a.m. 7 Incredibly Effective Ways to Improve Your Sales



ONSITE INSTALLER COURSE

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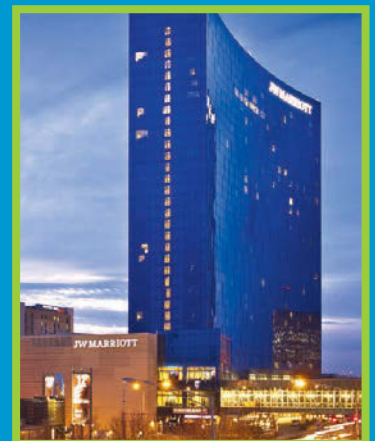
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Plug It In

With a fleet of trucks and construction vehicles, installers can save significant expense by performing their own engine diagnostics. But what type of scanning equipment should a small garage buy?

By Peter Kenter

The first on-board diagnostic (OBD) computers trace back to the late 1960s. Today, diagnostic scanning devices have become more sophisticated and less expensive.

What sort of diagnostic capability makes sense for the average installing professional's fleet?

Gerry St. John, of Alpha-Bid.com operates an online business selling engine diagnostic equipment.

"Whether you call them scanners, code readers, scan tools or OBD devices, they amount to the same thing," he says. "They read the error codes from the computer in your engine."

The most basic and inexpensive scanners will read codes and erase some of them.

"These are often all you need if you want to do basic repairs, have a unit with your vehicle at all times or to hold an outside mechanic accountable," says St. John.

ADDED FUNCTIONALITY

However, more expensive scanners feature additional functionality. Some of the advanced features offered by more expensive readers include:

- Antilock Brake System or Airbag capability: Allows the user to reset these codes.
- On Screen Definitions: Lower cost units display a code, and provide a printed codebook. More expensive readers allow users to see full definitions on screen.
- Printing ability: Results can be sent to a printer.
- Live Data: Users can view engine sensors and performance in real time, as they drive.
- Updatable: The reader can be updated online to keep up with changes in vehicle protocols.
- Memory: Saves data in the scanner's memory for later viewing.

DEFINITIONS

OBD-I: On-board diagnostics

OBD-II: Second-generation and current on-board diagnostics system

CANbus: Controller area network bus, one of five vehicle protocols used in the OBD-II vehicle diagnostics standard



The Innova 31703 ScanTool at work diagnosing a problem in the garage. (Photo courtesy of Innova Electronics Corp.)

- Vehicle Identification Number (VIN) capability: Displays the VIN, allowing mechanics to more easily identify proper replacement parts.

The scan tool should match up to the protocol offered by the vehicle's engine. Each protocol uses the same 16-pin connector, but employs a different type of pin activation.

"That problem is solving itself as older vehicles drop out of service," says St. John. "Vehicles made after 2008 use a common OBD-II standard known as CANbus, which was introduced in 2003. You can find out what protocol your vehicle uses by checking for a label under the hood."

St. John notes that as a general rule, low-cost universal readers have the most compatibility issues.

"I can determine whether we need to send the job out, or whether it's something like an electronic unit pump, which I stock and can change myself. The investment in scanners paid for itself on three repair jobs."

Kyle Lahousse

"They're designed to work on the most common models and don't offer the programming to cover all of the protocols from all vehicle manufacturers," he says. "From my experience, about 98 percent of low-cost readers we sell work fine."

PRICE GAP NARROWS

However, St. John notes that the price gap between the top-end and low-end scanner has narrowed so significantly that higher-end scanners may sell for only a few dollars more than their low-end counterparts.

As the technology becomes readily available, basic OBD scanners can cost less than \$20 and run up past \$200, and are available through many sources and chain automotive equipment retailers. St. John's best scanner retails for less than \$40. High-end units using manufacturer's proprietary software can cost quite a bit more.

St. John doesn't deal in top-level garage scanners, which may cost thousands of dollars.

"I don't generally recommend these for cars or light trucks unless you operate a garage as a business," says St. John. "In addition to the cost of the equipment, you need to purchase manufacturer-specific software modules to get full functionality. Even my garage customers tell me that they may buy one of the expensive units and take turns using it while most mechanics in the shop rely primarily on less expensive scanners."

Small shops can also use laptops to diagnose car engine problems. All that's required is a connector – either a cable, Bluetooth or WiFi variety – a laptop and diagnostic software. These tools can allow the user to perform a wide range of functions, including real-time monitoring of engine rpm, mpg, coolant temperature and fuel pressure.

"The cables cost no more than hand scanners, but you need to have a laptop handy," says St. John. "You can use free scanning software that can be downloaded from the Internet, such as OBD Gauge, OBD-II Logger and Real Scan, or you can buy professional packages such as Digimoto,

(continued)



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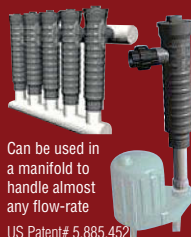
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BIGGER RIGS, CONSTRUCTION EQUIPMENT

For installers who own larger trucks and construction equipment, code reading becomes more complex – and expensive.

Ed Dailey is the president of the Construction Equipment Maintenance Association and superintendent of Pyne Sand and Stone, a construction business located in Douglas, Mass.

"We just went through the exercise of deciding which computer diagnostics we wanted to invest in at our shop," says Dailey. The shop's fleet is divided between Mack and Caterpillar equipment. On the Cat side: four loaders, a backhoe, an excavator, a rock truck, a bulldozer and miscellaneous crushing/screening equipment. On the Mack side, Pyne operates three 10-wheel trucks and five tractors.

With 15 years in automotive maintenance, eight in construction, shop foreman Kyle Lahousse investigated the cost of diagnostics for the fleet. He notes that diagnostic equipment for construction equipment is largely proprietary, so universal scanners won't provide diagnostic value.

"We investigated Caterpillar diagnostics, but much of our equipment is from older model years," he says. "Unless you have newer units, the diagnostic equipment won't provide a complete range of readings, so the cost of the scanners and software couldn't be justified. We might consider that option when the fleet is upgraded."

QUICK PAYOFF

On the other hand, Lahousse wanted to ensure the shop could diagnose problems with the three Macks.

"If a truck is going to the garage, I have to figure in the labor cost of taking it to the garage, and another worker to take the driver back, the truck downtime and the cost of the repair," he says. "It came down to buying a top-of-the-line universal scanner or buying a laptop scanner with dealer-specific software."

Lahousse says he chose the dealer package and hasn't looked back since. "If I scan the engine with the dealer software, I won't miss a code," he says. "I can determine whether we need to send the job out, or whether it's something like an electronic unit pump, which I stock and can change myself. The investment in scanners paid for itself on three repair jobs that we did in-house over a space of two weeks. However, if we'd had three different brands of trucks, it would have taken us longer to make up the cost."

Lahousse says a knowledge of automotive diagnostics doesn't translate automatically to large truck diagnostics.

"If you're not already familiar with them, you'll need the help of service manuals to understand all the codes," he says. □

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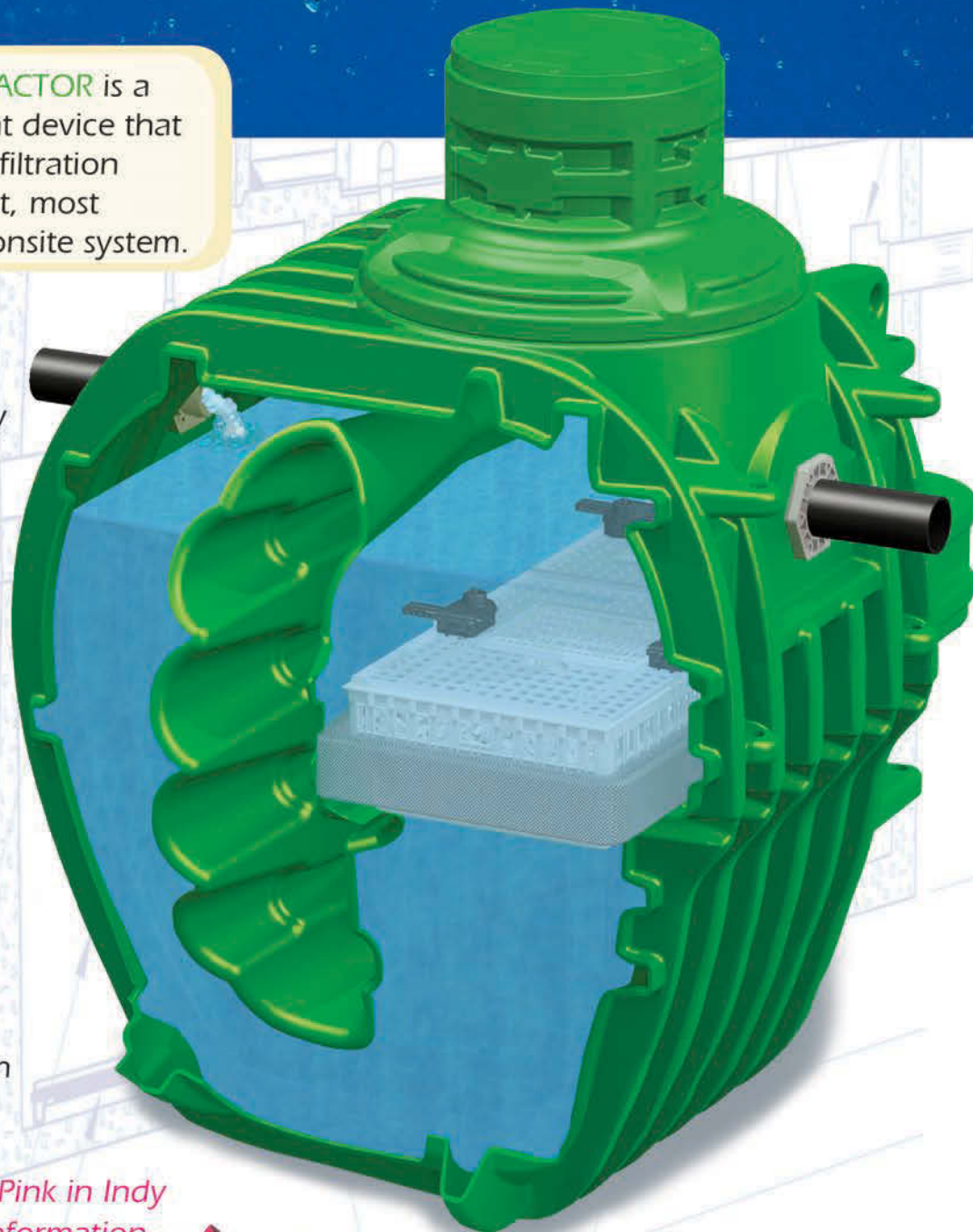
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Education in Indiana

Pumper & Cleaner Expo host state's wastewater association grows as it promotes protection of public health

By Doug Day

Despite legal restrictions that prevent it from lobbying, the Indiana Onsite Wastewater Professionals Association has plenty of influence on the success of the industry in the Hoosier state. With a good membership mixture ranging from installers and local health officials to state regulators, the association fosters partnerships aimed at protecting the water resources of the state.

As the host state association for the Pumper & Cleaner Environmental Expo International Feb. 24-27, the IOWPA will have a booth (1062) on the exhibit floor in Indianapolis.

Under the direction of Executive Director Donna Sheets and President Jerry Maule, the group has 481 members: 302 contractors, 122 health department representatives and 57 vendors. The pair discuss association activities:

What is the main focus of the Indiana Onsite Wastewater Professionals Association?

Sheets: Our mission statement is, 'IOWPA is committed to protecting the public health and the environment of Indiana by improving and increasing access to wastewater treatment for individuals and communities living beyond centralized wastewater treatment facilities.'

We only had about 100 members when I came on board in 2007. I credit the growth entirely to the certification program. That is really our driving force, along with the relationships we have with our health departments.

We began offering the Installer Certification course in 2005 and added the continuing education component in January 2009. We now have 295 certified installers, only a handful of our installer members are not certified.

In August 2013, at the urging of the Indiana State Department of Health, IOWPA rolled out our first Inspector Certification program and certified 29 contractor inspectors plus six health department officers. Being certified as an inspector gives our installers another revenue stream.

Although the National Association of Wastewater Technicians has a thorough inspector's certification, it did not cover some of the codes specific to Indiana. Our three-day training includes two hands-on system inspections and evaluations. The certification committee developed a very detailed checklist that is available on our website [www.iowpa.org].

We also partner with the vendors to certify installers on specific products that have been approved by the state of Indiana. Some vendors have also submitted their continuing education programs to us.

We have several installer training and exam opportunities throughout the state, along with an annual conference. We also have a booth at the Pumper & Cleaner Environmental Expo International. Our members and board members will staff the booth and we'll give away at least one free membership.



Donna Sheets can be reached at 317/889-2382 or at www.iowpa.org.

It is interesting that you don't do any lobbying. Why is that?

Sheets: As a 501(c)(3) educational organization, IOWPA cannot lobby. However, many of our members actively participate in reaching out to their legislators on a variety of issues that might impact the industry.

There has been some talk about reforming as a 501(c)(6) trade association and then we could lobby, but that's not something that is really on the radar.

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If we did that, we would keep the 501(c)(3) as a foundation for our scholarship program and things like that. It is something other organizations should be aware of, especially if you are forming a new one.

Do you find that you still have a voice in the regulatory process without lobbying?

Maule: We do. IOWPA can't say we take this or that position, but we can encourage our members to contact their representatives. We have embraced local and state health department professionals by offering them complimentary membership and installer certification opportunities. With the support of our regulators, we have successfully reached installer professionals around the state, elevating their level of professionalism with training and certification opportunities several times a year.

The state Department of Health has revised the codes numerous times and they always reach out to us and ask for our input. They don't always agree, but they always ask us and give us an opportunity to review new regulations.

Many of the regulators also give freely of their time to IOWPA. Our vice president [Alice Quinn] is with the Indiana State Department of Health. We have many county health department people who are excited about the organization and like learning more about septic systems, sharing information with the members and learning from our members. It's a really good give-and-take and exchange of information.

Sheets: Without that relationship, we would not have been able to accomplish some of the things we have accomplished. While we have a state code, each county can have specific ordinances that are set by their County Commissioners.

There are also some regulatory issues right now that are important to our soil scientist members. And one of our board members [Gary Steinhardt] is from the Purdue University Department of Agronomy, so we have expertise available in that area.

You are also involved in the community. Tell us about your Field Day.

Sheets: For the past several years IOWPA has held a Field Day to help a family or organization in need. We request candidates with the help of health departments who know about failed systems and people who need assistance. In October 2013, with the help of the Steuben County Health Department and the Indiana State Health Department, about 25 IOWPA contractors and suppliers volunteered to install an elevated sand mound system for a disabled Vietnam veteran. Our members donated and sponsored labor, equipment, product, money and food. The total value of the donations was more than \$16,000, including 210 tons of sand donated by six local gravel pits.

What is the history of IOWPA?

Maule: It was legally formed in September 2000. The key organizers at the time were Greg

Miller, then with Infiltrator Systems and now with A & R Waste Management, Don Jones of Purdue University, Greg Lake, Tim Strombeck, John Vanderbosch, and Forrest Hershberger to name a few. Greg [Miller] wanted to bring in the support of the manufacturers to help professionalize the onsite wastewater industry. At the time, training was available to state and county regulators, but there wasn't much for the rest of the industry, which led to IOWPA.

The group traces its roots back to 1982 when it was the Northern Indiana Pumpers Association, which grew into the Indiana Pumpers Association. It was formed to help the pumpers deal with the EPA 503 regulations regarding septage hauling and land application. □

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ABOUT THE AUTHOR

Tom Fritts is President of the National Onsite Wastewater Recycling Association (NOWRA) and owner of Residential Sewage Treatment Co., Grandview, Mo. NOWRA is the only national organization dedicated to representing and educating all segments of the onsite/decentralized industry. For more information or to join, visit www.nowra.org or call 800/966-2942.

Ahead of the Curve

Continuing education is the key for onsite installers to stay competent and competitive in a fast-changing marketplace for wastewater services

By Tom Fritts

All of us have heard that “time is money” and how true it is. Education is the same way. The more time you put into pursuing continuing education, the more money you are likely to make. In any career you want to make yourself as highly valued as possible, and continuing education can do that by adding new skills to broaden your offerings to the customer.

The National Onsite Wastewater Recycling Association is one of several organizations giving Education Day presentations Feb. 24 at the Pumper & Cleaner Environmental Expo International in Indianapolis. NOWRA is offering two tracks of seminars at the Indiana Convention Center designed to build industry professionalism.

Today when people purchase an onsite wastewater system, most are surprised at the level of technology and – more important – the cost of the system. Today’s customer is looking for the most qualified contractor available. Knowing how to install all the evolving technologies will position you to handle any installation. More important, you will be able to discuss all the options with the customer.

The customer is looking for choices. They are also looking for someone who knows all the choices, knows how to explain them and is proficient at installing them. When I teach classes in areas where the local permitting authority has mandated continuing education, I often hear grumbling about taking time off and spending the money for the continuing education.

Our industry has evolved so quickly it is leaving many behind. As recently as 40 years ago – one generation – the typical onsite wastewater contractor (or septic system installer as we referred to them in those days)

was someone who owned a backhoe and probably purchased it to do something other than onsite wastewater. Installing systems was something to do when you were not busy with other work.

Many contractors are still doing that. They are being left behind. Customers spending thousands of dollars for something they probably did not even budget into their building cost are looking for someone they can feel comfortable will do the job right, represent themselves as a professional and, most of all, feel they got a product that justified the amount of money they never thought they would have to spend.

How do you become this proficient? The one people talk about? The one your competitors fear? Continuing education. Having the knowledge to do all these things is like having a head start in the race. You need to understand you are not just a backhoe operator; you are an entrepreneur. Some pretty heavy baggage comes with that job description. Some you are already familiar with: long hours, vacations only when it rains, making payroll and not enjoying Friday night as the break from work until Monday morning.

Another aspect that many overlook is acquiring as much knowledge as possible to uphold the title of “entrepreneur.” Any industry that evolves technologically as rapidly as ours must be supported by continuing education. It will be the determining factor of who moves forward and those who are left behind.

We are very lucky there are so many opportunities to acquire this type of education. The National Onsite Wastewater Recycling Association is a leader in our industry at supplying continuing education. With a catalog of classes totaling more than 120 hours (check it out at www.nowra.org), NOWRA is equipped to fulfill a wide variety of needs. ■



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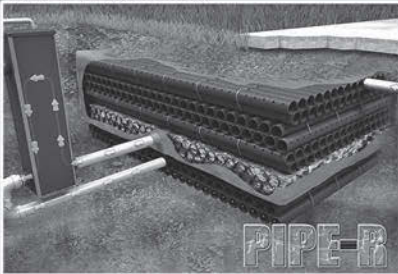
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Dining Out

When you get a hunger on at the Pumper & Cleaner Expo, head out to these popular Indy eateries for a bite

By Judy Kneiszel

The Pumper & Cleaner Environmental Expo International gives attendees the chance to check out the latest offerings from equipment manufacturers. It also provides the opportunity to check out the latest food offerings from Indianapolis restaurateurs. When your head is swimming with new information and your stomach is growling with hunger, you've got countless options for dining in the Circle City. Here are a few interesting Indy eateries to get you started.

Note, price ranges are a per person estimate not including tax, tip or beverage.

Bazbeaux Pizza

334 Massachusetts Ave. | 317/636-7662 | www.bazbeaux.com

Voted Indy's best pizza every year since 1986, you can buy it by the slice or get a whole pie. Choose white or wheat crust; thin or thick. If you can make it past the menu's 13 meat pizzas and 11 vegetarian options, Bazbeaux also has sandwiches, salads, an array of appetizers and several Italian dessert choices.

Hours: Sun. - Thurs., 11 a.m. to 10 p.m.; Fri. & Sat., 11 a.m. to 11 p.m.

Price range: Slices range from \$2.50-\$3.25; whole pies from \$7.25 for a 10-inch; \$22.95 for a 16-inch large specialty pizza. Sandwiches range from \$6.95 to \$8.95.

Menu sampling: *Bazbeaux special pizza with fresh basil, garlic and sun-dried tomatoes; Colossus pizza with pepperoni, Italian sausage, ham, mushroom, red onion, green pepper, black olives; Stromboli stuffed with Italian sausage, green pepper, mushroom and onion, baked with tomato sauce and cheeses; sorbet and gelato desserts.*

Dick's Bodacious Bar B Q

50 N. Pennsylvania St. | 317/916-9600 | www.dicksbbq.com

This place looks and feels like Texas but when you walk out the door you'll still be in Indiana! From barbeque chicken on the bone to pulled pork and beef brisket ... you name it, they smoke it and you can get it in a sandwich, as a plate or on a salad. Just don't get it on your shirt if you're going back to the Expo.

Hours: Mon. - Thurs., 11 a.m. to 9 p.m.; Fri. & Sat., 11 a.m. to 11 p.m.; Sun. noon to 8 p.m.

Price range: \$5-\$18

Menu sampling: *Loaded smoked baked potato, chili cheese nachos, smoked salmon salad, barbeque chicken wings, pulled pork sandwich, ribs, sugar cream pie.*

Slippery Noodle Inn

372 S. Meridian St. | 317/631-6974 | www.slipperynoodle.com

Established in 1850, the Slippery Noodle is the oldest bar in Indiana, and

has been called one of the nation's top blues bars by *Rolling Stone* magazine. The Noodle serves up a full menu as well as live blues seven days a week.

Hours: Full menu available till 11 p.m. nightly; late night menu offered. Open every day at 11 a.m.

Price range: \$8-\$20

Menu sampling: *Shooter of shrimp, BBQ chicken quesadillas, whiskey pepper cheeseburger, filet mignon, Southern style pork barbeque, chicken and broccoli Alfredo, toasted turkey sub.*

Harry & Izzy's

153 South Illinois St. | 317/635-9594 | www.harryandizzys.com

Created by the owners and operators of the legendary St. Elmo Steak House, Harry & Izzy's provides a more casual, updated environment, but features some of the same items St. Elmo is famous for, like the "World Famous St. Elmo Shrimp Cocktail." Harry & Izzy's has something for every budget from four different \$5 sliders to a \$50 steak.

Hours: Lunch: Mon. - Sat., 11 a.m. to 4 p.m.; Sun., 10:30 a.m. to 4 p.m. Dinner: Mon. - Thurs., 4 p.m. to 11 p.m.; Fri. & Sat., 4 p.m. to 12 a.m.; Sun., 4 p.m. to 9 p.m.

Price range: \$5-\$45

Menu sampling: *Prime rib sandwich, brick oven baked pizzas, 14-ounce New York strip steak, smoked pork chops, roasted half chicken, shrimp po boy sliders, blackened catfish, bread pudding.*

Shapiro's Delicatessen

808 S. Meridian St. | 317/631-4041 | www.shapiros.com

Named one of the Top 10 delis in the country by *USA Today*, Shapiro's is a must for corned beef fans! Quick cafeteria-style service means more time to savor your sandwich, contemplate dessert from their full service bakery or simply get back to the Expo!

Hours: 6:30 a.m. to 8 p.m. everyday

Price range: \$5-\$14

Menu sampling: *Sandwiches including Reuben, pastrami, and smoked turkey; Matzo ball soup; cabbage borscht; Shapiro's bagels; stuffed cabbage; short ribs; stuffed peppers; potato pancake; sour cream egg noodles; hot German potato salad.*

Ocean Prime

Keystone Crossing Corridor, 8555 N. River Road | 317/569-0975 | www.oceanprimeindy.com

If your party can't decide between steak and seafood, Ocean Prime is the place for you. "Prime" refers to the quality of steaks and seafood, as well as their handcrafted cocktails and award-winning wines. Ocean Prime also features a raw bar, and offers a menu of gluten-free dining options.

Hours: Mon. - Thurs., 5 to 10 p.m.; Fri. & Sat., 5 to 11 p.m.; Sun., 5 to 9 p.m.

Price range: \$30-\$50

Menu sampling: *Lobster bisque, oysters on the half shell, Chilean sea bass in champagne truffle sauce, jumbo lump crab cakes, aged prime steaks from an 8-ounce petite filet mignon to a 16-ounce rib-eye, ten-layer carrot cake.*

Maxine's Chicken & Waffles

132 N. East St. | 317/423-3300 | www.maxineschicken.com

Hearty home cooking is always on the menu at Maxine's where their slogan is "A Taste of Love in Every Bite." This is a menu full of made-from-scratch comfort food.

Hours: Mon: Closed. Tues: 10:30 a.m. to 2:30 p.m.; Wed. - Fri: 10:30 a.m. to 8:30 p.m.; Sat: 9 a.m. to 8:30 p.m.; Sun: 9 a.m. to 6 p.m.

Price range: \$5-\$15

Menu sampling: *Jumbo fried chicken wings and waffle topped with peach butter, omelets with house potatoes, smothered chicken, catfish or tilapia with grits, half-pound burgers, fried green tomatoes, candied yams, black-eyed peas, seasonal cobbler.*

The Eagles Nest at Hyatt Regency

1 S. Capitol Ave. | 317/632-1234 | www.indianapolis.hyatt.com

The Eagle's Nest, perched high atop the Hyatt Regency, slowly revolves giving diners stunning views of the skyline. The menu, which changes seasonally, provides elegant and creative takes on classic American continental cuisine.

Hours: 5-10 p.m. daily

Price range: \$40-\$80

Menu sampling: *Dry-aged peppercorn-crusted bone-in New York strip steak; pan-seared halibut with Parmesan potato gratin; lobster corn chowder; strawberry crème brûlée.*

Fast Burrito Mexican Grill

111 Monument Circle | 317/917-8090 | www.fastburritomexicangrill.com

If you need lunch in a hurry, but want something a bit healthier than a greasy fast food burger, Fast Burrito offers fast, fresh cuisine prepared using authentic Mexican recipes. Four salsas from mild to extra hot will add just the right kick to your meal.

Hours: 7:30 a.m. to 3 p.m. every day

Price range: under \$10

Menu sampling: *Burrito with choice of fillings; burrito bowl; grilled quesadilla; tacos; nachos; salad with chipotle ranch dressing. Fillings include marinated chicken, skirt steak, barbacoa (marinated beef brisket), ground sirloin or sautéed peppers and onions.*

Loughmiller's Pub & Eatery

301 W. Washington St. | 317/638-7380 | www.loughmillerspub.com

A patriotic décor welcomes diners to this relaxed, casual, independently owned pub serving up an array of burgers, sandwiches and other traditional American favorites. Choose one of their 35 beers to wash down the hearty pub grub.

Hours: 11 a.m. to 12 a.m. Mon.- Sat.

Price range: \$8-\$15

Menu sampling: *Bacon and cheese fries; Southwest nachos; homemade chili; Indiana Cobb salad; Loughmiller's Little Cuban sandwich; pulled pork sandwich; English beef sandwich with cheddar and horseradish.* □

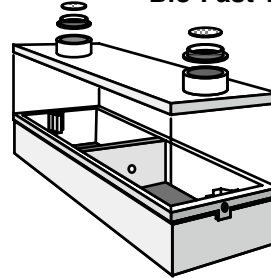
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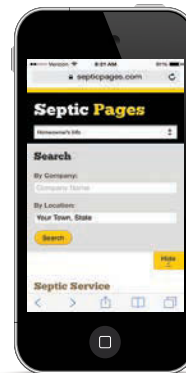
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928/443-0333

Arkansas

Arkansas Onsite Wastewater Association;
www.arkowa.com

California

California Onsite Wastewater Association;
www.cowa.org;
530/513-6658

Colorado

Colorado Professionals in Onsite Wastewater;
www.cpow.net;
720/626-8989

Connecticut

Connecticut Onsite Wastewater Recycling Association;
www.cowra-online.org;
860/267-1057

Delaware

Delaware On-Site Wastewater Recycling Association;
www.dowra.org

Florida

Florida Onsite Wastewater Association;
www.fowaonsite.com;
321/363-1590

Georgia

Georgia Onsite Wastewater Association;
www.onsitewastewater.org;
678/646-0379

Georgia F.O.G. Alliance;
www.georgiafog.com

Idaho

Onsite Wastewater Association of Idaho;
www.owaidaho.org;
208/664-2133

Illinois

Onsite Wastewater Professionals of Illinois;
www.owpi.net

Indiana

Indiana Onsite Waste Water Professionals Association;
www.iowpa.org;
317/889-2382

Iowa

Iowa Onsite Waste Water Association;
www.iowwa.com;
515/225-1051

Kansas

Kansas Small Flows Association;
www.ksfa.org;
913/594-1472

Kentucky

Kentucky Onsite Wastewater Association;
www.kentuckyonsite.org;
855/818-5692

Maine

Maine Association Of Site Evaluators;
www.maine.com

Maine Association of Professional Soil Scientists;
www.mapss.org

Maryland

Maryland Onsite Wastewater Professionals Association;
www.mowpa.org;
443/570-2029

Michigan

Michigan Onsite Wastewater Recycling Association;
www.mowra.org

Michigan Septic Tank Association;
www.msta.biz;
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Minnesota

Minnesota Onsite Wastewater Association;
www.mowa-mn.com;
888/810-4178

Missouri

Missouri Smallflows Organization;
www.mosmallflows.org;
417/739-4100

Nebraska

Nebraska On-site Waste Water Association;
www.nowwa.org;
402/476-0162

New Hampshire

New Hampshire Association of Septage Haulers;
www.nhash.com;
603/831-8670

Granite State Designers and Installers Association;
www.gsdia.org;
603/228-1231

New Mexico

Professional Onsite Wastewater Reuse Association of New Mexico;
www.powranm.org;
505/989-7676

North Carolina

North Carolina Septic Tank Association;
www.ncsta.net;
336/416-3564

North Carolina Portable Toilet Group;
www.ncportabletoiletgroup.org;
252/249-1097

North Carolina Pumper Group;
www.ncpumpergroup.org;
252/249-1097

Ohio

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www.ohioonsite.org;
866/843-4429

Oregon

Oregon Onsite Wastewater Association;
www.o2wa.org;
541/389-6692

Pennsylvania

Pennsylvania Association of Sewage Enforcement Officers;
www.pa-seo.org;
717/761-8648

Pennsylvania Onsite Wastewater Recycling Association;
www.powra.org

Pennsylvania Septage Management Association;
www.psmna.net;
717/763-7762

Tennessee

Tennessee Onsite Wastewater Association;
www.tnonsite.org

Texas

Texas On-Site Wastewater Association;
www.txowa.org;
888/398-7188

Virginia

Virginia Onsite Wastewater Recycling Association;
www.vowra.org;
540/377-9830

Washington

Washington On-Site Sewage Association;
www.wossa.org;
253/770-6594

Wisconsin

Wisconsin Onsite Water Recycling Association;
www.wowra.com;
608/441-1436

Wisconsin Liquid Waste Carriers Association;
www.wlwca.com;
608/441-1436

NATIONAL

Water Environment Federation;
www.wef.org;
800/666-0206

National Onsite Wastewater Recycling Association;
www.nowra.org;
800/966-2942

National Association of Wastewater Technicians;
www.nawt.org;
800/236-6298

CANADA

Alberta

Alberta Onsite Wastewater Management Association;
www.aowma.com;
877/489-7471

British Columbia

WCOWMA Onsite Wastewater Management of B.C.;
www.wcowma-bc.com;
877/489-7471

Manitoba

Manitoba Onsite Wastewater Management Association;
www.mowma.org;
877/489-7471

New Brunswick

New Brunswick Association of Onsite Wastewater Professionals;
www.nbaowp.ca;
506/455-5477

Nova Scotia

Waste Water Nova Scotia;
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Ontario Association of Sewage Industry Services;
www.oasisontario.on.ca;
877/202-0082

Saskatchewan

Saskatchewan Onsite Wastewater Management Association;
www.sowma.ca;
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Canadian Regional

Western Canada Onsite Wastewater Management Association;
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Gregg Leslie



Don Smyth

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Don Smyth, senior technical advisor, retired from Polylok Inc. & Zabel Environmental. He joined the company as a technical advisor in 1999 with a background in construction and engineering. □

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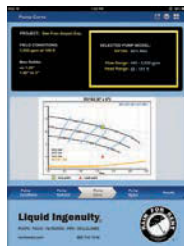


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Ditch Witch ride-on tractor

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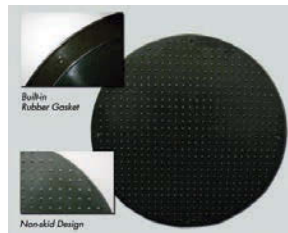
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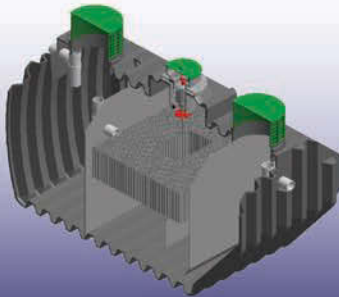
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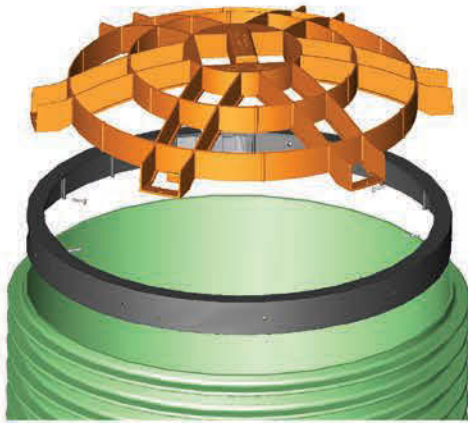


Panel Mounting Post & Kits

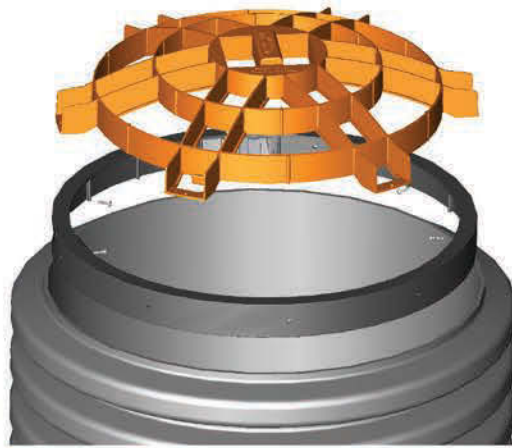
Check out our new panel mounting post, riser mounting kit, simplex and duplex installation kits which provide easy installation of control panels! The post features a removable access door for easy wiring and accommodates panel enclosures up to 14x12x6".

NEW

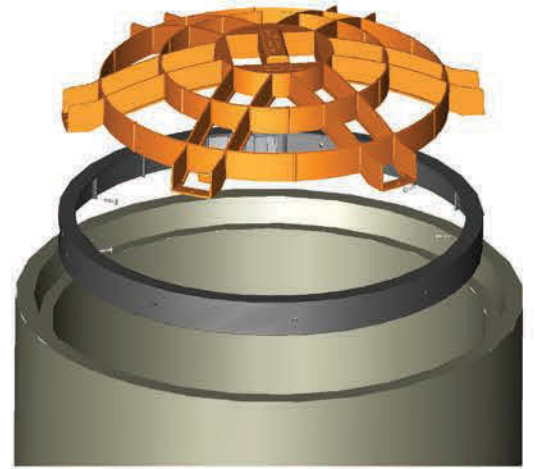
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