

January

2011

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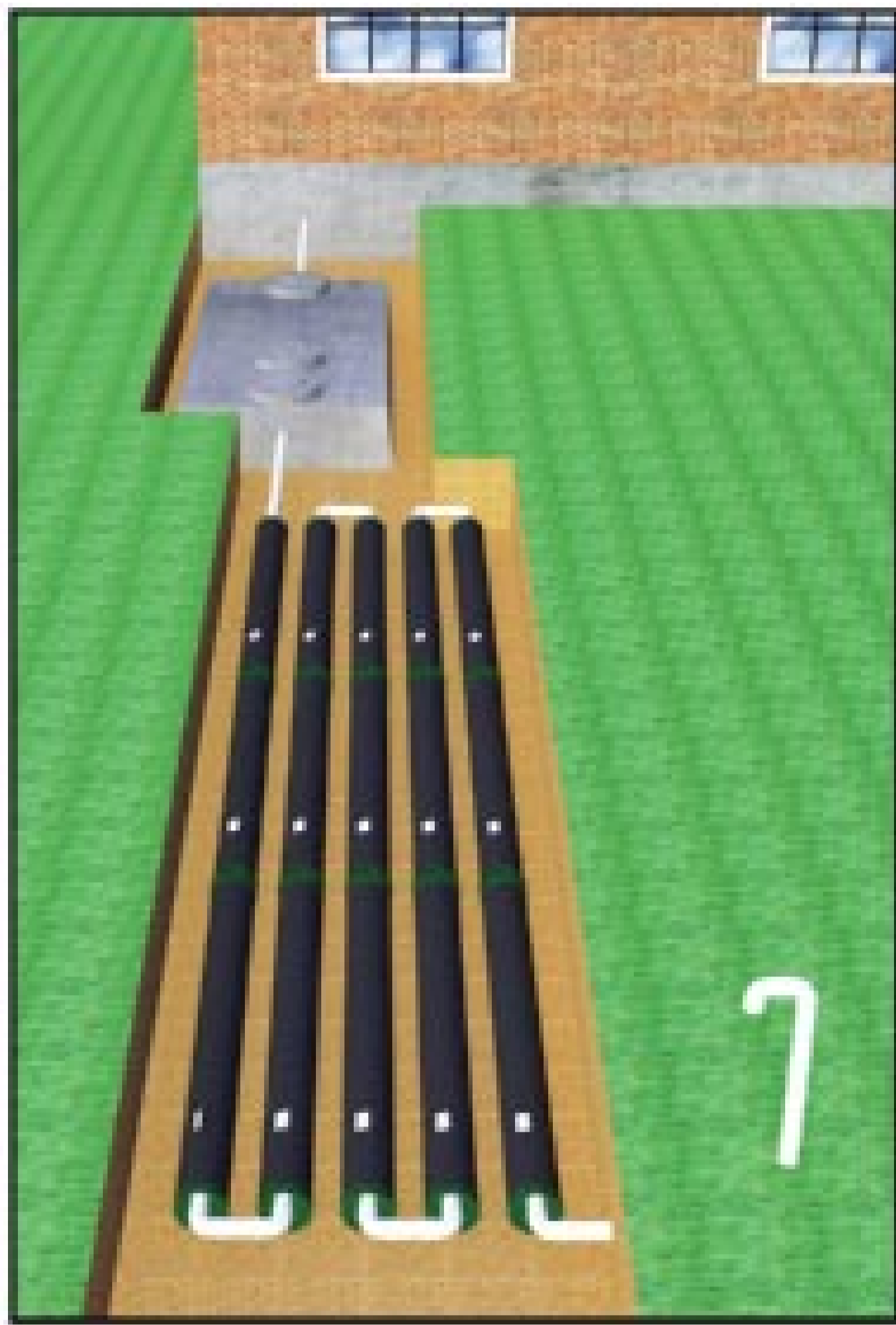
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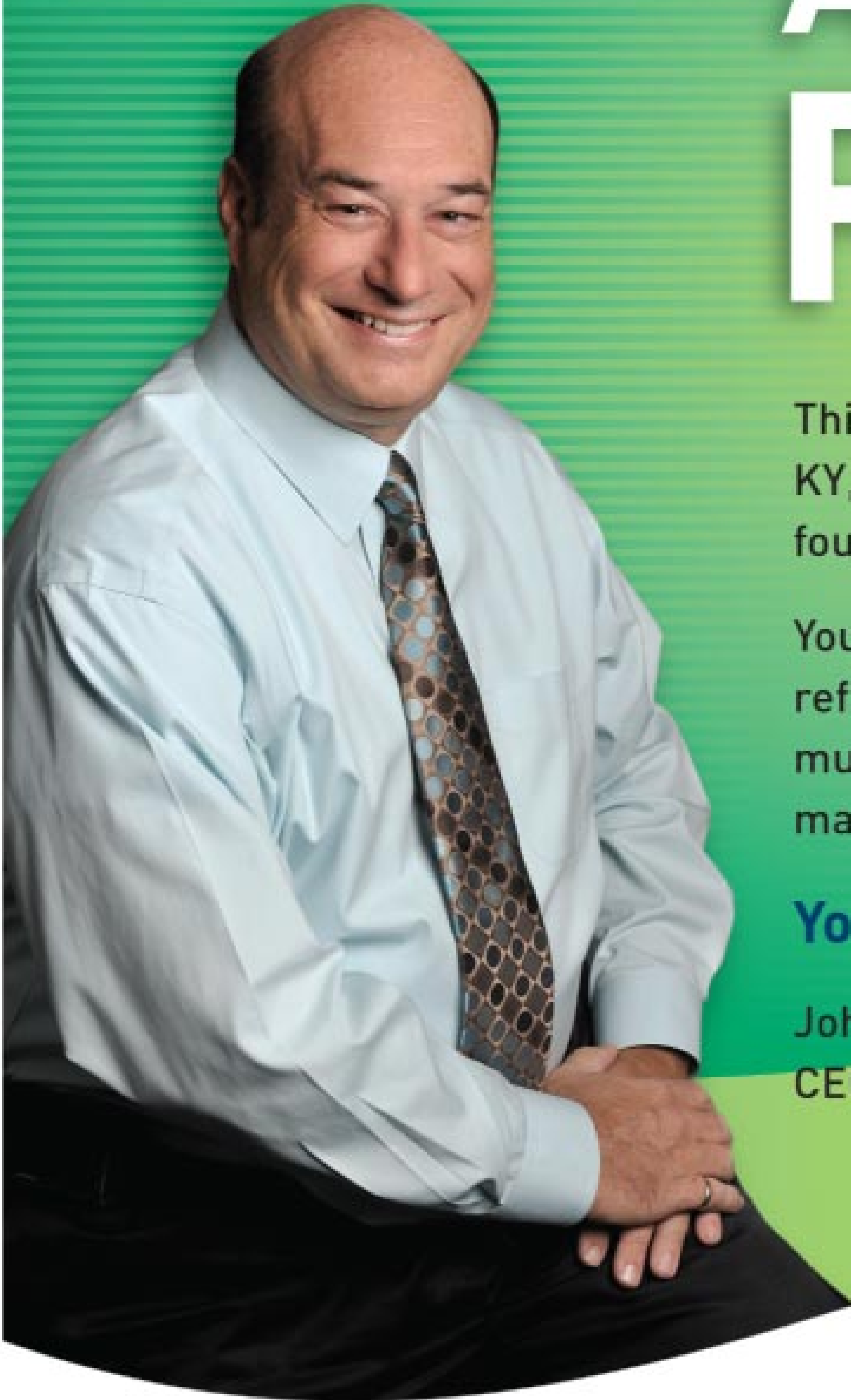
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Being Vigilant

Onsite system inspectors and other professionals should know the warning signs for systems affected by meth labs

By Ted J. Rulseh, Editor

At first glance it seems like a problem too rare even to worry about, and yet methamphetamine (meth) labs continue to raise concern in the onsite industry.

The concern is great enough so that the Washington On-Site Sewage Association has published a Meth Lab Fact Sheet for its members.

"This continues to be a persistent problem for our industry and for rental property owners, along with a growing issue in rural communities," says an editor's note to the fact sheet. "The important thing for those in our industry is to be aware and educate your employees on what to do when they recognize an issue."

Methamphetamine has become a scourge, especially in rural areas. This illegal drug is a highly toxic and powerful central nervous system stimulant to which many users become addicted, with devastating consequences.

Not surprisingly, meth producers, wanting to avoid detection, often

set up shop in isolated rural homes, where the byproducts of their operation are discharged to the septic system. "Manufacturing or 'cooking' meth can leave behind large amounts of toxic waste," the WOSSA fact sheet observes.

Assortment of dangers

Meth labs are characterized by toxic chemical fumes, spills, explo-

"No one should enter a place that has been used as an illegal drug lab without appropriate personal protective equipment unless the area has been ventilated and decontaminated. This includes servicing the onsite system."

sions and fires. Waste dumped down the drain will destroy an onsite system and can expose service personnel to health hazards. "If you recognize that a system you are working on may be contaminated, you need to step back and regroup," the fact sheet says.

"Exposures to high levels of con-

taminants found in meth labs can cause shortness of breath, cough, chest pain, dizziness, lack of coordination, chemical irritation, and burns to the skin, eyes, mouth and nose, and in severe cases, death.

"Symptoms such as headache, nausea, dizziness, and fatigue have occurred in people who entered a meth lab after the bust was completed, but before the property was

forced doors.

The property may have deteriorated, and you might see large quantities of trash, such as containers for antifreeze and drain cleaner, glass containers, and empty propane gas tanks. Residents may go outside to smoke cigarettes. Children or pets may look neglected, and the residents may act unfriendly or seem secretive about their activities.

If you suspect illegal drug lab activity is going on at a site you visit, you should contact local law enforcement, WOSSA advises.

What about the system?

If a property has been contaminated by a meth lab, you should not work on it until you contact the local health agency for guidance and that agency determines that the site has been properly decontaminated.

"No one should enter a place that has been used as an illegal drug lab without appropriate personal protective equipment unless the area has been ventilated and decontaminated," the fact sheet says. "This includes servicing the onsite system."

Methamphetamine is a serious problem, and its hazards are not to be ignored. Know what to look for, and know how to respond, so you can avoid putting yourself and your employees at risk. ■

properly cleaned and ventilated. If you experience any of these symptoms, contact your health care provider."

Knowing the signs

As an onsite professional, you should watch for signs that you might be dealing with a property where meth is being made. One symptom may not indicate a problem, but several of them together should raise your level of suspicion.

You may detect a strong chemical odor coming from the house, a garage, or a detached building. You may notice that the occupants have made unusual efforts to cover the windows or have installed rein-



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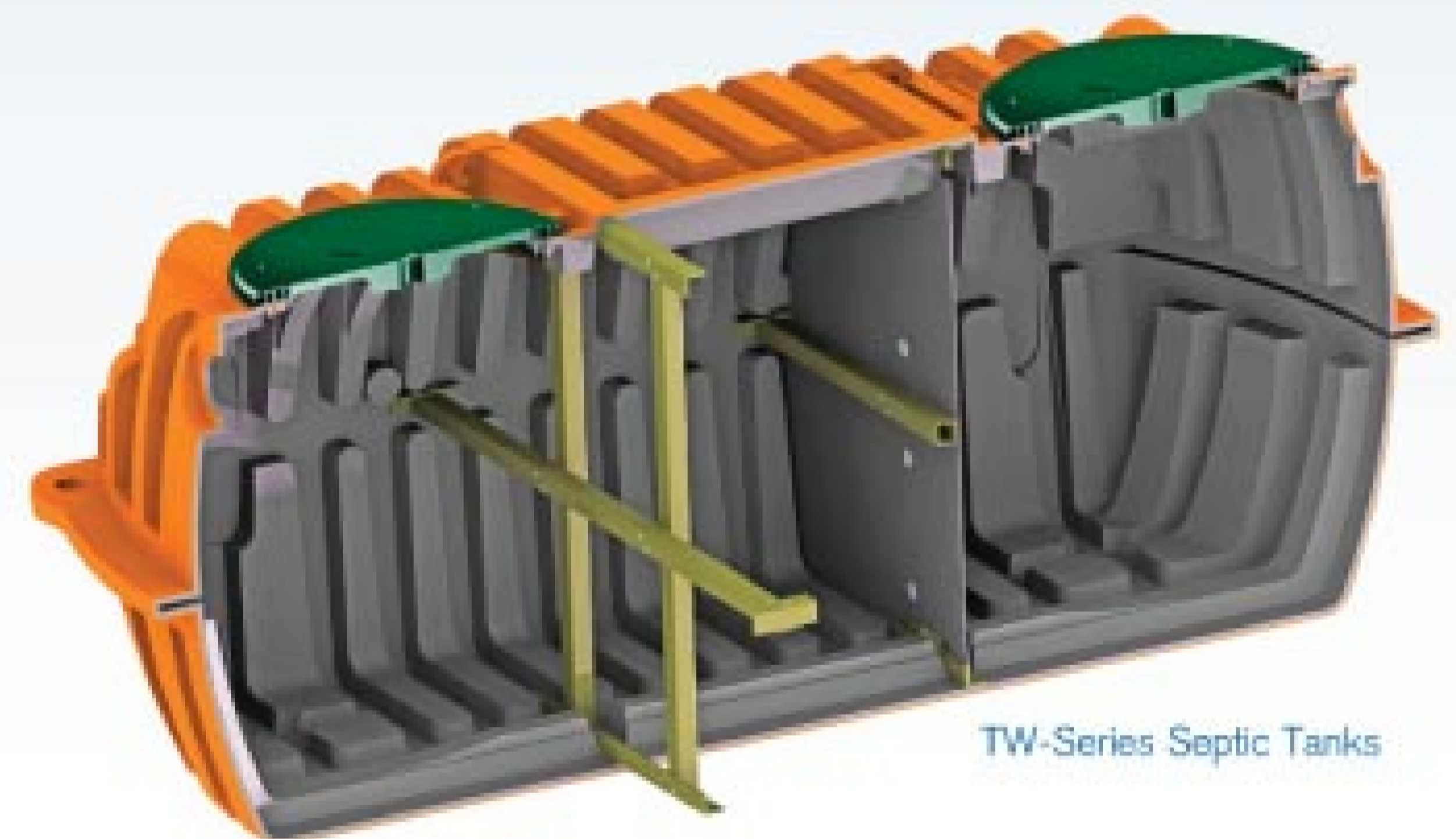
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When Inspections Reveal Problems

Your November column was a good article and a good idea ("If I Were an Onsite Inspector," *Onsite Installer*, November 2010). As I held all trade credentials in Minnesota, as inspector, installer, soil tester and designer, I found many places where a point-of-sale inspection brought problems to the attention of many different parties.

An inspection for a refinance might become a problem where a homeowner found himself faced with denial of a loan because of underlying problems that became evident. In such cases, the onsite system works fine, but it does not meet the present code, either because of tank issues or some other problem.

A new owner, on the other hand, finds there is a need for a complete new system, and the pristine landscape she pictured for the home will be turned into an excavation site. I found the best option was to start the point-of-sale inspection with an explanation of what will be done and what is involved with the results of inspection. A quick survey of the property and system is then conducted to rule out obvious failing (non-conforming) red flags or signs.

If the tanks do not meet code, the best option at that time is to stop the inspection and move on to the design stage, by doing soil borings, layout and design to replace the system. This also gives everyone a chance to decide on a cost sharing arrangement or to move on to another property to consider.

If the design is prepared and presented to the present owners with a package, including a cost estimate, they can present it to the local unit of government that has responsibility for permits or enforcement of codes for use in making a decision on the system replacement.

The same package also can be used for the buyer and seller to come to terms on what to do next and to provide a chance for either to proceed with an escrow of funds to bring the system up to code. It also gives the local unit of government an insight into the property condition without having to issue a letter of non-compliance, and a permit can be obtained for the future improvements.

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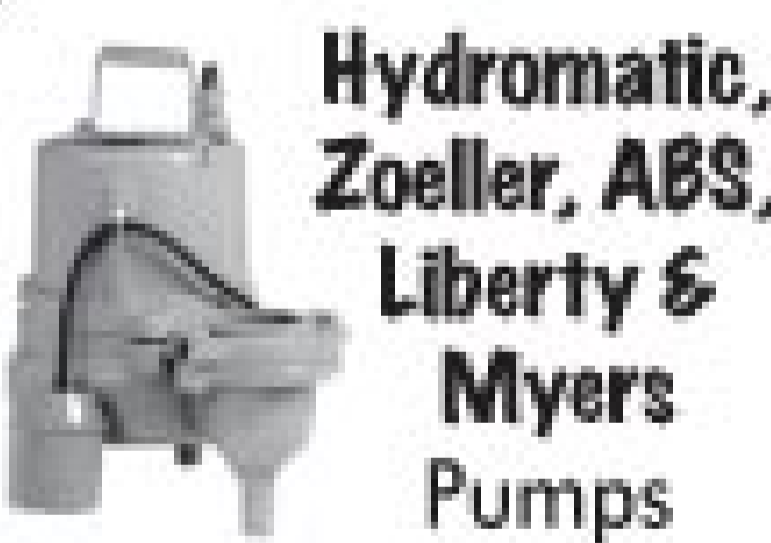
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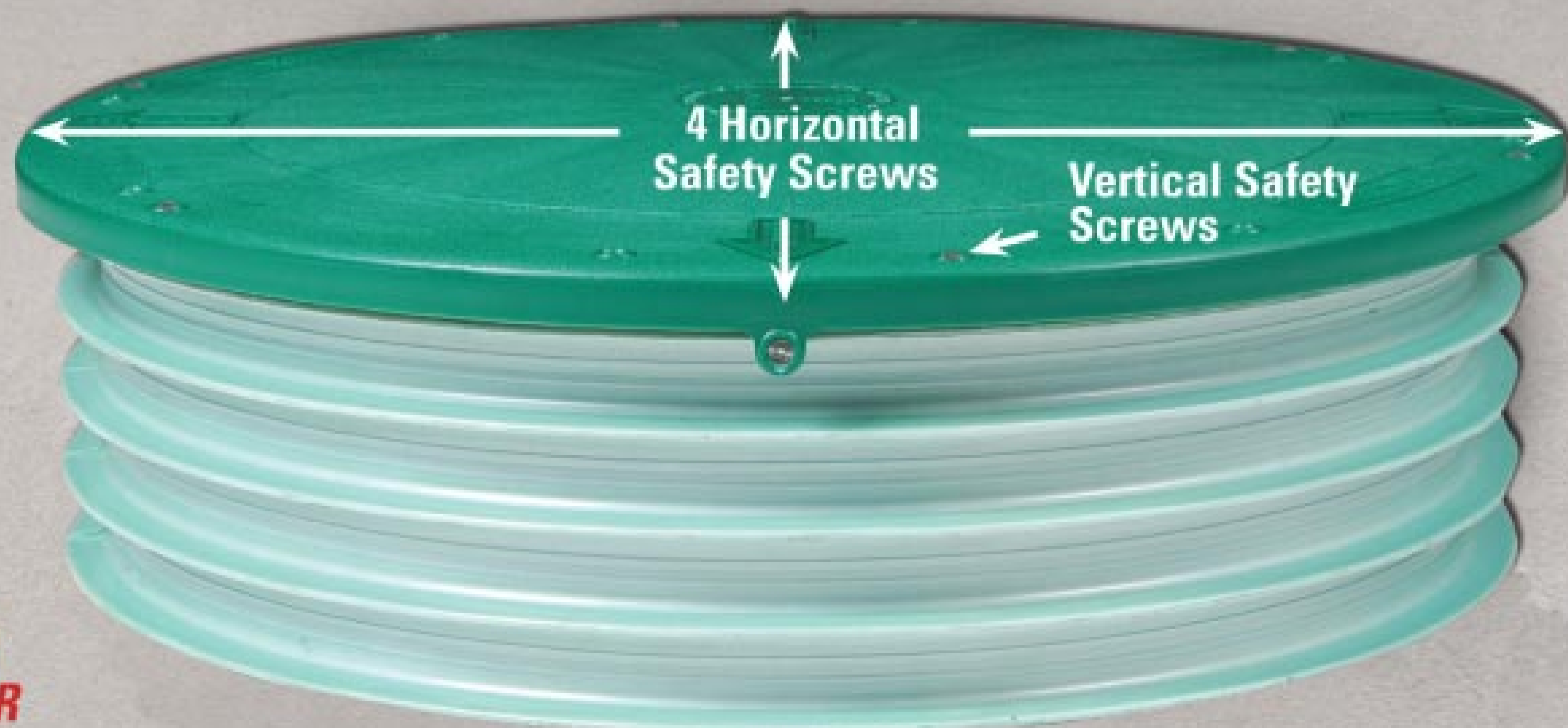
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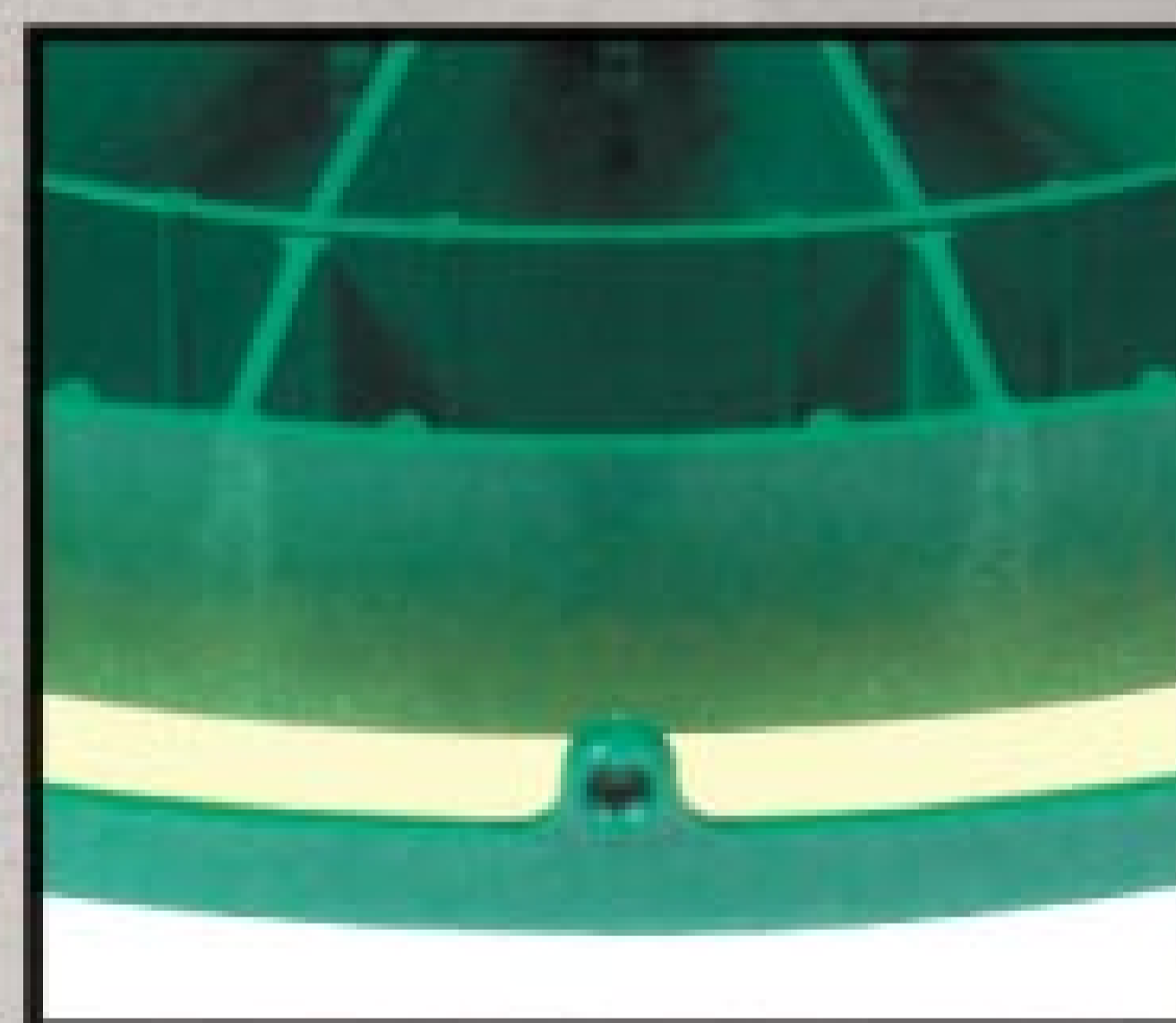
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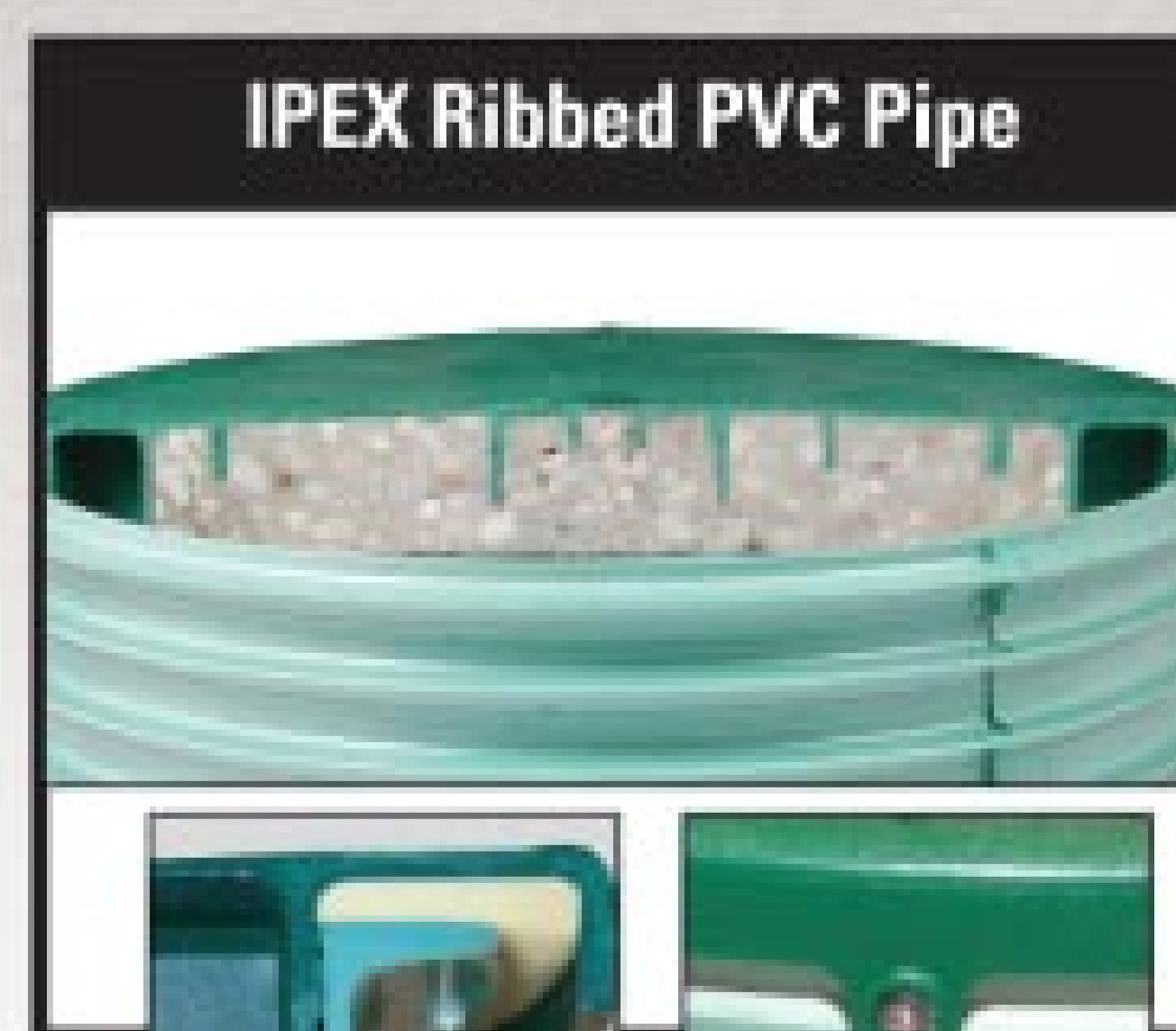
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Joint

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Horizontal
Safety Screws

Owner Scott Johansson checks float operation in a pump vault during a service call. (Photography by Stephanie Neal)

Glad to Be Forgotten

Scott Johansson attends to every detail on every installation job so that customers will never need to call him back for rework

By Gil Longwell

Scott Johansson wants customers to appreciate the quality work he has done for them, yet he also wants them to forget him.

"If I do an installation and the customer never has cause to think of me again, that customer becomes my greatest asset," he says. Johans-

son, owner of Alta Perc Testing in Heber, Utah, never wants to be called back to a job. By investing time to analyze and understand a situation, and then designing a solution to meet the needs, Johansson makes sure his systems perform for the long haul.

His business philosophy seems to have been formulated in a reverse mode: He defined what he didn't want to be known for, crystallized those thoughts, then went the opposite direction. Defining and excluding failure has moved Alta Perc Testing to success.

From a base in Heber, about 35 miles southeast of Salt Lake City, the company works in three counties in about a 50-mile radius. About 60 percent of the firm's onsite business consists of repairs, and the balance is installations for new construction.

More home time

Johansson came relatively late

"On my job sites, good enough is not good enough. It must be 100 percent right every time. Because of this, I've been told I'm not the easiest person to work for."

Scott Johansson

to the onsite profession. He held a high-pressure, long-hours, holiday-busy job as executive chef in a major conference hotel, supervising as many as 100 employees. But after missing too many holidays with his family and missing being home to watch his kids' growing-up years, he decided that wasn't the life he wanted.

"I wanted something I could do by myself," he says. About the time he reached that conclusion, he found someone who wanted to use a government grant to install a high-pressure irrigation system. "So, I leased a backhoe and did the work that needed to be done," he says. As a result, people who were having problems getting onsite sys-

tem permits and general building permits began to seek his services.

"I went to a conference to learn about these systems before installing the first one," Johansson says. That led him to attend other training events, where he learned about newly emerging onsite technologies. Not being shy, he asked regulators lots of questions. "One of those regulators took the time to show me how to do it right," he says. When finally prepared to do it right the first time, he took on his first installation job — about a dozen years ago.

Ceppers and monbackers

Johansson has seen installers return to sites, "donating" thou-

Alta Perc Testing, Heber, Utah

OWNER:
Scott Johansson

YEARS IN BUSINESS:
12

MARKET AREA:
50-mile radius

EMPLOYEES:
Contract labor

AFFILIATIONS:
Utah Onsite Wastewater Association





Scott Johansson, owner of Alta Perc Testing, is shown at the left and on his Bobcat 763 skid-steer loader as he spreads topsoil for finish on a drainfield.

sands of dollars of labor and machine time to repair a \$2.50 part that was not installed correctly. He is so focused on doing the job right the first time that he has coined two terms.

"When I do a job right from the start, I never build a 'ceffer,'" he says. "A 'ceffer' happens when you look across a job site and say it all looks great 'ceffer' that pipe joint that was glued but not primed." His job sites are "ceffer"-free.

"Monback," meanwhile, is what customers expect an installer to do when there is a problem with the work. "Ceffer" generate "monbackers."

A key insight Johansson brings to his business is that systems or components do not fail in times of diminished use. "Things fail when they are stressed — at Christmas,

Thanksgiving or during large family celebrations," he says. "Dealing with a 'ceffer' on Christmas is the last thing I want to be doing."

He acknowledges that paying close attention and using quality materials and techniques add to the price of a job. He operates at the top of both scales and, fortunately, he finds that price has not scaled back demand for his work: "Quite the contrary."

Quality assurance

Johansson has no full-time employees. His wife, Jennifer, does the company's bookwork and accounting. Other than that, he relies on casual day laborers with whom he has long-standing relationships. Leaving nothing to chance, he works side by side with them, continually building their skills and confidence.

"On my job sites, good enough is not good enough," he says. "It must be 100 percent right every

Empowered by Training

"I can fall asleep digging holes," says Scott Johansson, owner of Alta Perc Testing. But put him in a learning environment and he is instantly alert and focused.

"I like to keep my mind working," he says. Without hesitation, he identifies the Utah Onsite Wastewater Association's training as the primary source of his onsite knowledge. The association is also a key player in the state's onsite system regulation processes.

Working with the Utah Division of Drinking Water, the association saw success when its training became a prerequisite for credentialing for perc testers and installers. But the credential itself is not enough to enable a practitioner to go to market in those areas. A state-issued

contractor's license is also required, and Johansson and others value the two-step process.

Johansson has seen the impact of the slowing economy: "More people are now willing to dig around in sewage." That is driving more interest in installation certification. "As more guys become certified, they're learning the right way to do the things they have been doing incorrectly for years, and that is good for the industry," he says.

Johansson attributes the introduction of advanced treatment units to the association's work. Feeling strongly about the association's value, Johansson gave his time, talent and energy to help build its new training facility in Logan, Utah.

time. Because of this, I've been told I'm not the easiest person to work for." In addition to mentoring, Johansson is the quality-control person on each job site. "I work side by side with my men," he says. "There is no task I will not do, and they respect that. Likewise, I know their skills and strengths and make assignments that match task to talent."

Johansson pursues at least two strategies to set himself apart from his competition. One is doing it right, and the other is selectively steering away from some tasks. "I am fully qualified and properly credentialed to perform service work on all of the advanced treatment systems I install," he says. "However, I have chosen not to perform service work."

He believes the time is not yet right for management services because regulations are extending the service intervals for advanced treatment systems. "The after-installation service interval increases as each particular system demonstrates its successful performance," he says. That diminishes long-term income opportunities.

Johansson contracts with septic pumpers on certain jobs, such as

pumpouts that precede repairs he is making. He provides the pumpers with a written service standard to follow. "I want to see the condition of the tank before and sometimes during the pumpout process," he says. "I am there for my customer."

Niche in inspection

One area that appeals strongly to Johansson is inspection of onsite systems, both as a service to homebuyers and as an opportunity to identify problems he can solve. Using a protocol he created, Johansson succeeds through attention to detail and a willingness to dig deeper and learn all he can about a system's history and current performance.

"My inspections begin with a thorough homeowner interview," he says. "That is just the first step in the discovery process." He tracks down health department records to learn site and soil details and to be sure that what is installed is in fact what was permitted. Pumpers with knowledge of the system's history are also on his contact list. He routinely asks them: What did you see and what did the system tell you?

"Two of the most common prob-



Johansson, with his Cat 416B backhoe and front-end loader, does a routine inspection of an existing septic system.

lems we see are collapsed or settled building sewers or inlet connections," he says. Sloppy installation contributes to those failure points. County records usually identify the system installer.

Johansson probes and on occasion digs into absorption areas to understand subsurface conditions. He believes the void spaces between

pieces of aggregate are not storage space but an interconnected channel for air circulation.

Judicious investments

To stay lean, Johansson owns no dump trucks or other maintenance-intensive equipment. His modest, job-focused fleet includes a Bobcat 763 skid-steer, a Cat 416B backhoe,



Johansson checks an SJE-Rhombus control panel and records dose cycles while making a service call.

a Komatsu PC200 trackhoe, and a 2008 Ford F-350 pickup that hauls parts, pieces and hand tools. "My next acquisition will be a mini-excavator that I can tow behind the pickup," he says.

Having aggregate delivered eliminates the need for dump trucks, and it also forces accurate purchasing and job planning. He depends on others to move the backhoe and trackhoe. When a job is done, the machines are moved to the next job site, not back to his yard.

Trading equipment ownership and scheduling challenges for lower overhead has brought Johansson greater control of his capital resources. His precision eliminates "ceffers" from his job sites and lets

"My inspections begin with a thorough homeowner interview. That is just the first step in the discovery process."

Scott Johansson

him avoid costly and reputation-busting "monbackers."

In an industry where digging holes is easy, Johansson enjoys success at the high end of every scale. He measures success by never having to tell a customer, "I'm sorry." ■

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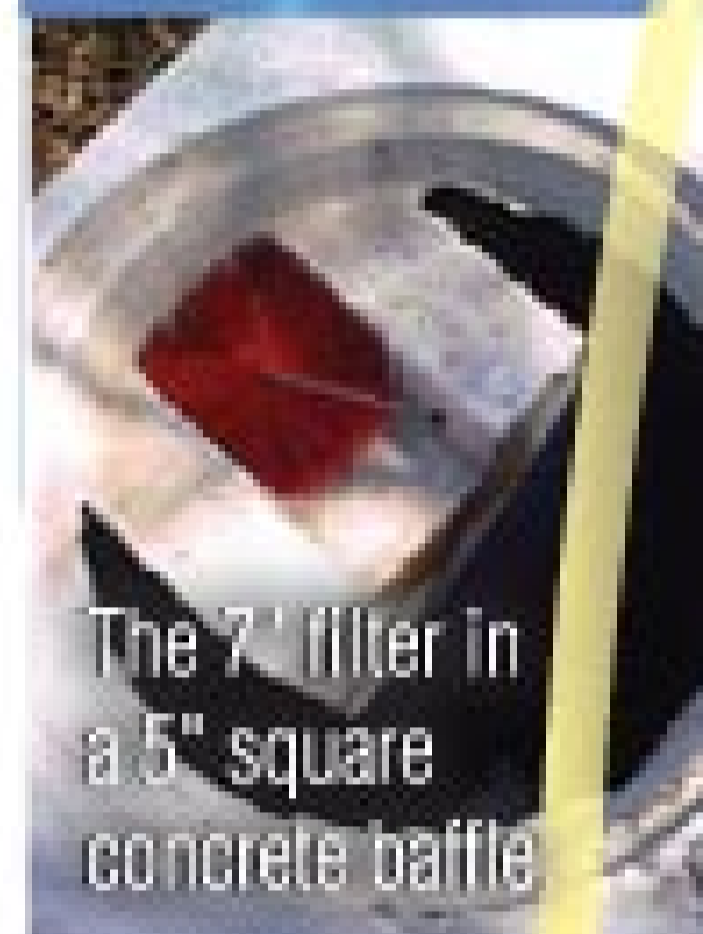


The STF-100 series pressure filter will:

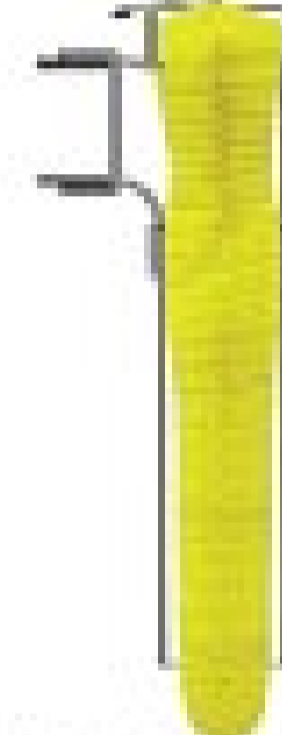
- » Lower total suspended solids (TSS)
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- » Satisfy your customers

Gravity Flow Bristle Filters for residential or commercial systems, septic tanks, onsite systems, or even your pond!

Very effective at filtering tissue, hair, lint, and other solids common to waste water. And flexible enough to fit just about anywhere, most common applications are standard "tees" and square concrete baffles as shown below.



The 7" filter in a 5" square concrete baffle



The 4" filter in a 4" Tee.



Sizes Available:
4" yellow
6" white
7" red
8" blue

Patent# 6,811,892

Polycarbonate Covers

- » 8,000 lb wheel load rating (H10 Rating)
- » The Ultimate in UV protection and appearance
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- » Large open area
- » No moving parts to stick
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Patent# 5,167,914

Float Tree Accessories

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- » No float hang-ups
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- » No entering tank
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A Lot to Learn

The 31st Pumper & Cleaner Environmental Expo offers 84 seminars with advice on improving business practices and in-the-field performance

By Ted J. Rulseh

This year's Pumper & Cleaner education program offers 84 seminars given by industry experts covering a full range of topics for environmental service professionals.

The lineup includes instruction on industry-specific in-field techniques as well as sound business and management practices of interest to any business owner. Once again, the lineup for Education Day (Wednesday, March 2) is broken into tracks hosted by leading industry associations.

Seminars on Thursday and Friday, March 3 and 4, provide more learning opportunities and include an expanded lineup of sessions presented in Spanish. Here is a brief look at the education program. For more information on seminar times, locations and speakers, visit www.pumpershow.com.

EDUCATION DAY

Leaders Resource Network

This series of seminars emphasizing business skills attracts large crowds every year. Sessions include:

- Profile of a Successful Business
- Successful Business Best Practice Discussion
- Successful Business Profile sessions (three)
- Panel discussion with couples in business together

These seminars dispense general business knowledge but have a special focus on portable restroom and septic system service companies.

Southern Section Collection Systems Committee

These sessions are of special inter-



est to sewer service contractors and municipal managers in charge of collection systems. Sessions include:

- Sewer Collection System History and the Evaluation of Pipeline Materials and Problems
- Combo Vacuuming: A Forgotten Art
- Keeping Your Standard CCTV Inspection Program Relevant
- Growing Your Business by Building Your Company Image
- Pump Station and Lift Station Fundamentals and How to Achieve Maximum Service and Reliability
- Making Sense out of Nozzle Nonsense

NASSCO

This track provides insights on the finer points of pipeline inspection, evaluation, and rehabilitation, especially with trenchless technologies. Seminars include:

- Grout: Its Use and Application for the Total Collection System
- Look Ma, No Hands: Using Automated Controls in Temporary Bypass Pumping Applications
- Pipe Bursting Tools for Everyday Utility Installations
- How Will You Know if You



Education Day at the 2010 Expo.

- Need to do a Sewer System Evaluation Survey (SSES)?
- Laser Profiling Applications for Documenting Piping System Conditions
- Advancements in UV Technology for Curing CIPP

National Environmental Health Association

This series covers a broad range of topics of interest to professionals who install, inspect and service onsite wastewater treatment systems. Seminars include:

- The Qualified O&M Service Provider: An Opportunity to Do Well While Doing Good
- Effluent Screens and Filters for Onsite Applications
- Develop Champions for Your Decentralized Wastewater Projects by Harnessing the Smart Growth Concept
- The Business of Management
- Developing O&M Inspection Actions in Partnership to Improve the Quality of O&M
- Building a Successful O&M Program: Working with Regulators, Regulations and Industry

National Onsite Wastewater Recycling Association

This track covers more topics related to the design, installation and management of onsite systems. Seminars include:

- Pumps: A Basic Understanding
- Selling the System to the Site Conditions
- Effluent Dispersal and Water Management Around Soil Absorption and Treatment Systems
- Troubleshooting Our Modern Waste Stream
- System Remediation: Why, What, When, Where and How
- Sampling Sewage Treatment Systems

WaterJet Technology Association

These sessions cover topics of interest to professionals in the high-pressure cleaning and industrial vacuum sectors. Seminars include:

- Estimating the Vacuum Job for Fun and Profit
- How to Maximize the Power of Your Waterjetter Through Tip and Hose Selection
- Waterjetting: Financial Startup Considerations and Real-World Application

Portable Sanitation Association International

Two sessions in this track highlight keys to profitable operations in the portable restroom industry. Seminars include:

- Understanding Your True Cost Per Service For Special Events
- Understanding Your True Cost: PSAI panel of experts

Safety Management Systems

A single session is offered: Avoiding Violation Fines & Tickets with DOT Safety Compliance Required.

National Association of Wastewater Transporters

NAWT presents six sessions dedicated to professionals in septic system pumping, operations and maintenance, grease pumping, waste treatment and system installation. Seminars include:

- So You Think You Want to Own a Waste Treatment Facility?
- Grease as a Resource
- Resource Recovery: Methane and Septage
- O&M Problems on Drip Distribution Systems
- O&M Problems We Have Seen
- O&M Problems With Media Filters

Scott Hunter

Here is a special series of five seminars on building leadership skills and establishing a strong and prosperous business, given by motivational speaker and business coach Scott Hunter. Seminars are:

- The Mindset of Leadership, Part One
- The Mindset of Leadership, Part Two
- The Mindset of Leadership, Part Three
- Creating an Outrageously Successful Organization, Part One
- Creating an Outrageously Successful Organization, Part Two

THURSDAY, MARCH 3

Business Track

- 45 Marketing Tips in 45 Minutes
- The Benefits of Vehicle Routing Software in Today's Economy
- Unleashing the Power to

Profit and Freedom

Liquid Waste Track

- The Evolution of Effluent Filters
- Life Cycle: From Waste to Windfall
- Take Confined Space Seriously: A Matter of Life and Death

New Business Opportunity Track

- Centripipe (Centrifugally Cast Concrete Pipe)
- Valve Exercising and Fire Flow Testing for a Reliable Water Distribution System
- The Basics of Buying and Selling a Septic or Sewer Business Company

Municipal Track

- Think Like Grout: For Better Point Repair of Below Grade Structures
- CCTV Inspections Evolve to Unparalleled Heights
- Manhole Chimney Section Rebuilds

Installer Track

- Membrane Bioreactor (MBR) Technology for Decentralized Wastewater Systems
- Shallow Pressurized Drainfields for Soil-Based Effluent Dispersal
- Onsite System Solutions for Shallow Installations

Spanish Track

- Técnicas Corrientes de Limpieza de Tuberías (Current Pipeline Cleaning Technologies)
- Avances en la Evaluación de Tuberías y Tecnologías sin Zanja para Rehabilitación de Tuberías (Latest Advances in Pipeline Assessment, Pipeline Rehabilitation and Trenchless Technologies)
- La Elección de Boquillas en la Limpieza de Drenajes (The Selection of Nozzles for Sewer Cleaning)

Advanced Installer Course

- Introduction and Site Evaluation
- System Sizing and Basic Design Principles
- Pumping to Systems
- Installations of ATUs
- Installing for Management
- Troubleshooting Systems

FRIDAY, MARCH 4

Municipal Track

- Large Pipe Inspection
- Chemical Grouts & Grouting Methods
- Sectional CIPP Repairs Per ASTM F2599

Business Track

- Save Money – Go Paperless
- Marketing Your Septic/Drain Service Business
- Evolving Your Business with Digital Solutions

Spanish Track

- Abriendo Caminos/Pathways: How to Start a Business in South America, Marketing and Importing/Exporting
- Efficient Cleanup Operations of Any Latin American Sewer Network
- Rodding Equipment and Simple Tools for Sewer Cleaning

Liquid Waste/Installer Track

- Grease Interceptor 101

- Data Logging for Onsite Septic System Diagnosis
- Belt Press Performance Optimization

Sewer & Drain Cleaning Track

- Inline Cutting Tools — Taking Science to the Sewer
- Waterjetting: Impact on Drain Cleaning
- Jetters: Don't Underestimate Your Cable Machines

Portable Restroom Track

- Routing Efficiency and Analysis
- Give Me 3 Reasons Why I Should Advertise My Portable Restroom Company
- Pathways: How to Start a Business in South America, Marketing and Importing/Exporting

Early registration costs just \$40 per person (until Jan. 28). At-the-door registration is \$60 for the full program. To find out more, visit www.pumpershow.com or call 866/933-2653. ■

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2011 PRODUCT PREVIEW

MARCH 2-5, 2011 • KENTUCKY EXPOSITION CENTER • LOUISVILLE, KY



JUST FOR YOU!

Pumper & Cleaner Environmental Expo exhibitors offer a preview of their latest technologies and services

By Ed Wodalski

Ask anyone who's been to the Pumper & Cleaner Environmental Expo and they will tell you one of the reasons they keep coming back is to see the latest products and services for their industry. With hundreds of exhibitors, thousands of products and more than 500,000 square feet of floor space to cover, it's difficult to see it all.

To make sure you don't miss out on any of the new breakthroughs at the Kentucky Exposition Center, show sponsor COLE Inc. has dedicated an area exclusively to new products. Introduced in 2010, this year's exhibit is moving to larger quarters and is expected to double in size. The display opens on Wednesday, March 2, for a pre-show sneak peek and will remain open during regular show hours.

There's also an interactive floor plan on the Expo website (www.pumpershow.com) to help you pre-plan your visit. So whether you're a first-time visitor or long-time guest, we're certain the 31st Annual Expo will have what you need to become more efficient and your business more profitable. As a start, here's a look at some of the products and services you don't want to miss.

FILTERING, DISINFECTING

- 1 Bear Onsite**
Color-coded ML3-910, ML3-925, ML3-948 and ML3-964 effluent filters from Bear Onsite join the ML3-916 and ML3-932 product line. The black and blue ML3-910 and ML3-916 filters are designed for demanding residential wastewater applications and have a final filtration level of 1/10 and 1/16 of an inch, respectively. The green and brown ML3-925 and ML3-932 filters are designed for wastewater containing high levels of hair, lint and grease. They have a filtration level of approximately 1/25 and 1/32 of an inch, respectively. The yellow and red ML3-948 and ML3-964 are designed for industrial applications. The filters have a final filtration level of approximately 1/48 and 1/64 of an inch, respectively and require frequent servicing and should be used with audio/visual alarms to indicate when they require cleaning. 877/653-4583; www.bearonsite.com, Expo booth 3009.

- 2 Polylok/Zabel**
The high-pressure pump filter from Polylok/Zabel is designed to spread effluent in difficult drainage environments and protect media from clogging. Serving as a second level of filtration to keep orifice lines clean, the filter mounts directly onto the discharge end of any septic pump. Filters are available in heavy-duty stainless steel or reinforced plastic. A 300-micron sock can be used for fine filtration (other size socks available). The filter's twist-and-lock cover provides a watertight seal and offers easy access for maintenance. An extension handle is available for deep installations. 877/765-9565; www.polylok.com, Expo booth 3115.

- 3 GeoFlow Inc.**
The Geoshield disc filter for onsite wastewater from GeoFlow Inc. features antimicrobial protection on the polypropylene discs for reduced maintenance and extended drip system life by inhibiting the growth of bacteria and other organisms. Self-cleaning or manual-clean filters are available in multiple sizes for residential, commercial, industrial and municipal use. 415/927-6000; www.geoflow.com, Expo booth 3167.

- 4 Salcor Inc.**
The ultraviolet onsite wastewater disinfection unit from Salcor Inc. has a two-year lamp life and offers increased protection against the effects of flooding. Features include easy accessibility, fouling-resistant Teflon, quick installation and minimum annual maintenance. 760/731-0745; Expo booth 9049.

MAINTENANCE

- 5 One Biotechnology**
BioOne biological drain, septic and drainfield maintainer/rejuvenator from One Biotechnology features natural, live vegetative microbes to degrade fats, oil and grease. The stabilized liquid has no emulsifiers, added enzymes or surfactants. It is accepted by most municipalities and is recognized by the U.S. Environmental Protection Agency's Design for the Environment program. 800/951-4246; www.1biotechnology.com, Expo booth 4040.

- 6 Cape Cod Biochemical Co.**
AfterShock bioremediation restorative from Cape Cod Biochemical Co. is a combination of BIO-REM E-D, a USDA-approved granular bacteria/enzyme product and oxidizers. Designed for residential and commercial septic systems, grease waste systems and for restoring drainage, the product is made to accelerate the digestive action of bacteria and help degrade sulfides in the soil for greater



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soil absorption. The product is compatible with bacteria, enabling the leaching facility to be treated in one application. [800/759-2257](tel:8007592257); www.septiconline.com, Expo booth 3201.

7 Custom Biologicals Inc.

DrainLine Fizzytabs from Custom Biologicals Inc. are designed to open slow drains, prevent future buildup and eliminate odors. The tablets contain natural enzyme-producing bacteria that biodegrade soap scum, fats, oils, grease and minerals that build up inside of pipes. Safe for septic systems, showers, toilets and garbage disposals, one tablet mixes with a gallon of water. No stirring or mixing is needed. One tablet can treat an entire house or be used as part of a monthly maintenance program. [561/998-1699](tel:5619981699); www.custambio.com, Expo booth 149.

8 Del Vel Chemical Co.

Nature's Solution solid bio-enzymatic grease trap block from Del Vel Chemical Co. uses concentrated bacteria to digest grease and reduce odor. The grease digestant lasts 30 to 90 days, depending on water flow. It is nonflammable, nonhazardous and contains no VOCs, acids or alkalis. The digestant also is available in liquid. [609/714-2424](tel:6097142424); www.delvel.com, Expo booth 7122.

9 Ecological Laboratories Inc.

The Pro-Pump/Septic Saver package from Ecological Laboratories Inc. features liquid Pro-Pump HC and ready-to-use Pro-Pump/SP packets bundled as a monthly treatment program. The bio-formulations are designed to reduce odor and break down solids in lines and tanks and assist naturally occurring bacteria in onsite systems in breaking down waste products, such as tissue, grease, fats and oils. [800/326-7867](tel:8003267867); www.propump.com, Expo booth 4094.

10 Septic Services Inc.

Whirlwind STA-60 (500 gpd) and STA-80 (750 gpd) series linear compressors from Septic Services Inc. feature easy installation and quiet, oil-free operation. No tools are needed to replace the filter. The light and compact units have a 6-foot, pre-wired cord and outlet pipe threaded on the inside. The STA-80 also has an oversized, thicker diaphragm and larger shuttle. [800/536-5564](tel:8005365564); www.septicerv.com, Expo booth 6095.

11 Crust Busters/Schmitz Bros.

The Crust Buster handheld power auger from Crust Busters/Schmitz Bros. LLC is made for septic tanks, grease traps and sand traps. Powered by a 2.5 hp Emak engine, the auger has an 80-inch shaft and two- or three-blade propeller. Designed to mix a 1,000-gallon septic tank in about five minutes, features include 2-, 4- and 6-foot extensions, aluminum mounting brackets, vinyl cover for the power head and short three-blade shaft that adapts to the two-blade unit. [888/878-2296](tel:8888782296); www.crustbusters.com, Expo booth 64.

12 SIM/TECH FILTER Inc.

The TruCore sludge sampler from SIM/TECH FILTER Inc. enables samples to be quickly taken without excessive turbulence. The sampler contains no valves, stoppers or flaps. It has an inside diameter of 1 3/8 inches and nearly 10-ounce capacity per foot. The tube, clearly marked every foot, is made of polycarbonate and PVC fittings, and is available as an 8-foot unit or two 4-foot sections. An extension kit is available. [888/999-3290](tel:8889993290); www.simtechfilter.com, Expo booth 4176.

PUMPS

13 Champion Pump Co.

The 2 hp grinder pump from the Champion Pump Co. delivers flows to 44 gpm and heads to 104 TDH. Features include a double-seal configuration with seal-failure alarm option for extra motor protection. The 230-volt, ball-bearing, oil-filled motor has the option of providing starting components in the pump, eliminating the need for control panels. Other features include 50-foot quick-disconnect sealed cord for easy replacement without having to disturb wiring in the panel and conduit, stainless steel shredder and shredder ring. The pump is offered as a packaged system complete with guide rails to specifications. A standard leg kit is provided for applications where a rail system is not required. [800/659-4491](tel:8006594491); www.championpump.com, Expo booth 7006.

14 Liberty Pumps

The Omnivore LSG-Series 2 hp grinder pump from Liberty Pumps features V-Slice Cutter Technology, providing 372,000 cuts per minute for superior shredding performance in demanding applications. The pump's open-volute design eliminates the cutwater, improving solids flow and reduces potential jamming. Other features include one-piece cast-iron body, quick-disconnect power cord, stainless steel impeller and dual-shaft seals. Complete pre-assembled systems are available. [800/543-2550](tel:8005432550); www.libertypumps.com, Expo booth 9215.

15 Weber Industries Inc.

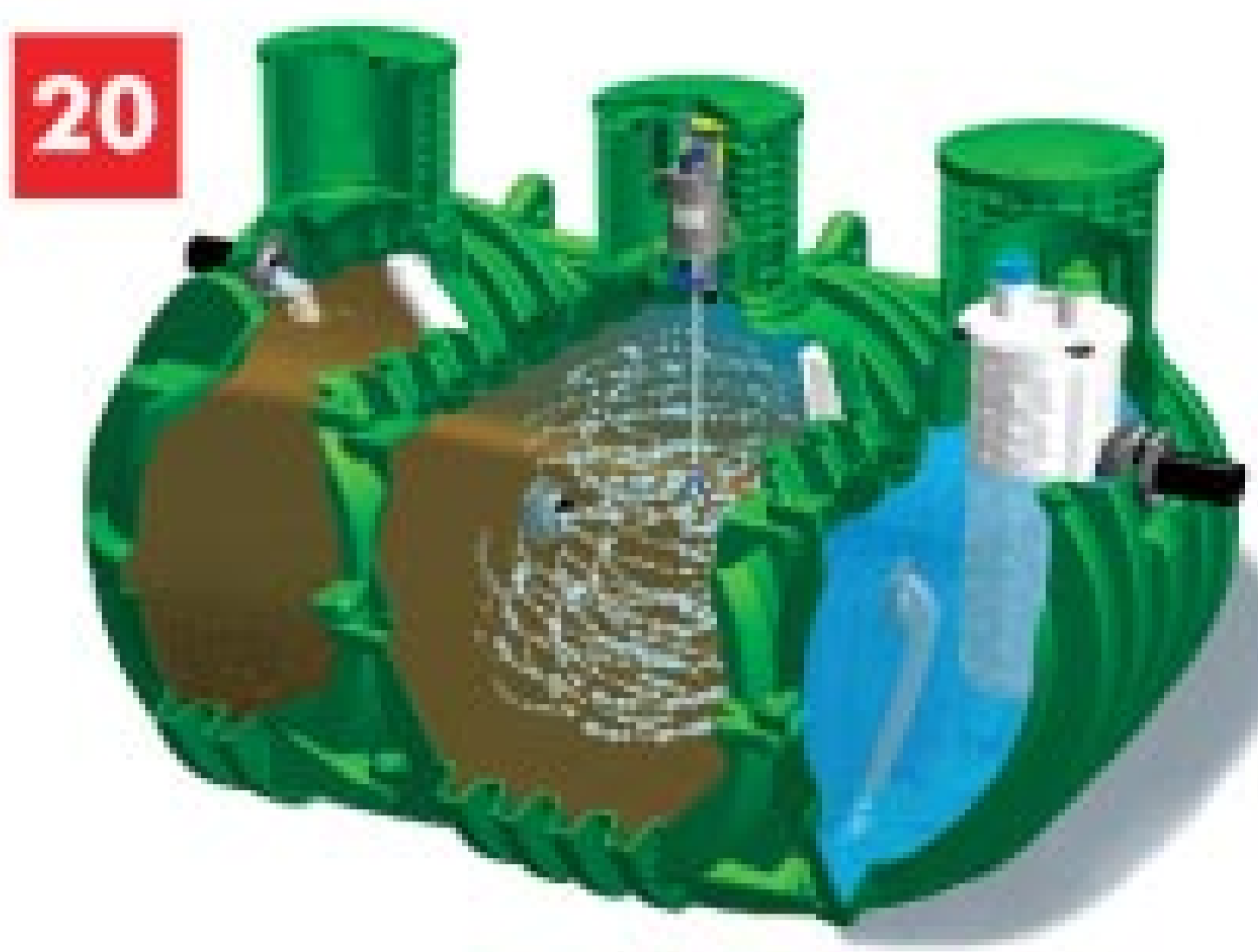
Webtrol effluent, sewage and grinder pumps from Weber Industries Inc. feature a recessed impeller for reduced bearing load and clogging. Potted cord seals as well as silicon carbide mechanical seals and secondary lip seals protect the motor from water. [800/769-7867](tel:8007697867); www.webtrol.com, Expo booth 9123.



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2011 PRODUCT PREVIEW

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INSTALLATION COMPONENTS

16 Containment Solutions Inc.
Flowtite fiberglass tanks from Containment Solutions Inc., designed for both aerobic and anaerobic septic applications, feature a watertight access joint and enclosure, eliminating infiltration and exfiltration contamination. 877/274-8265; www.containmentsolutions.com, Expo booth 3143.

17 Infiltrator Systems Inc.
The Quick4 Plus Standard Chamber from Infiltrator Systems Inc. is designed for 36-inch-wide septic drainfield trench installations. The 4-foot-long chamber features a latching mechanism for quick installation. The Quick4 Plus All-in-One 12 Endcap can be used at the end of a chamber row or installed mid-trench to allow for a center feed with pipe connections at the sides, ends and top. Also available is the Quick4 Plus All-in-One Periscope that allows 180-degree directional inletting for raised inlet elevations, optimal for serial or crossover trench designs. 800/221-4436; www.infiltratorsystems.com, Expo booth 1040.

18 RotoSolutions Inc.
Polyethylene septic lids from RotoSolutions Inc. are available in 24- and 12-inch diameters, weigh 8 pounds empty (24-inch) and have a 3,500-pound load rating. The lids can be customized with company logo, name and phone number. 800/868-0973; www.rotosolutions.com, Expo booth 30.

19 Tuf-Tite Inc.
The 24-inch, Heavy Duty Flat lid from Tuf-Tite Inc. fits most risers and corrugated pipe. For added safety, the center of the lid is designed to hold 70 pounds of concrete. It also has a molded-in, permanent polyurethane gasket for an air/watertight fit. The riser lid comes with six vertical and two horizontal safety screws for secure installation. 800/382-7009; www.tuf-tite.com, Expo booth 1218.

TREATMENT SYSTEMS

20 Norweco Inc.
The Singulair green aerobic wastewater treatment system from Norweco Inc. features a four-step treatment process in a durable, watertight, rotationally molded polyethylene tank with support ribs that ensure structural integrity. 419/668-4471; www.norweco.com, Expo booths 5219, 6219.

21 Orenco Systems Inc.
The AdvanTex AX20-RT wastewater treatment system from Orenco Systems Inc., approved by NSF for 500 gpd, is made for repairs, small lots and shallow installs. The system is pre-packaged with factory settings for plug-and-play installation. Designed to produce high-quality effluent (BOD and TSS of less than 10 mg/l) and reduce nitrogen by 60 percent, the system is housed in a 102- by 62- by 72-inch watertight fiberglass basin. The unit includes pump system with sheets of textile media that can be hosed off if overloaded. No separate discharge basin is required. Also included is a remote telemetry control panel or MVP digital programmable controller. 800/348-9843; www.orenco.com, Expo both 6115.

22 Premier Tech Aqua
The Ecoflo ready-to-use polyethylene septic system from Premier Tech Aqua is designed for a three-bedroom residence. Delivered ready for installation (filtering media and internal components factory assembled), the system combines strength and light weight for flexible installation. Fiberglass and concrete systems are available. 800/632-6354; www.premiertechaqua.com, Expo booth 163.

23 Presby Environmental Inc.
The Advanced Enviro-Septic (AES) NSF-40 Class 1 certified onsite system from Presby Environmental Inc. combines treatment and dispersal in one footprint, without the need for special maintenance or media replacement. The system's passive process features non-biodegradable components for long-lasting performance. 800/473-5298; www.presbyenvironmental.com, Expo booth 114.

24 Clarus Environmental/Zoeller Pump Co.
The Fusion Series wastewater treatment system from Clarus Environmental uses anaerobic and aerobic zones to produce secondary quality effluent. The "drop-in" system makes for easy installation. The polypropylene filter media never needs to be removed or replaced. Key features include constant recirculation of treated wastewater and a twice-daily automatic backwash cycle that returns residual sludge to the head of the system. A programmable compressor delivers oxygen to aerobic zones, while consuming as little energy as a 65-watt light bulb. 877/244-9340; www.clarusenvironmental.com, Expo booth 8145.

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25 Eljen Corp.

The Geotextile Sand Filter (GSF) passive wastewater treatment system from Eljen Corp. is a non-mechanical process designed to exceed NSF/ANSI Standard 40 specifications. The system's design allows for the treatment and disposal of septic wastewater in the same footprint and reduced drainfield sizing. Its low profile and shallow placement minimizes site impact. The lightweight modules can be hand-carried into position. Each module is comprised of a cusped plastic core, woven with geotextile fabric that creates air and filtration channels within the module to filter septic tank effluent. The design offers increased surface area and oxygen exchange that supports an aerobic environment for biological treatment. 800/444-1359; www.eljen.com, Expo booth 4144.

ALARMS

26 Septronics Inc.

Dual-alarm pump control units from Septronics Inc. feature pump cycle counters. The exterior Nema 4X junction box control has a removable terminal board supporting a built-in event counter. Each time the pump engages, one pump event is added to the counter for a quick look at pump wear and how much liquid is being moved. A poly pedestal protects wiring and provides an area for tank connections. 262/567-9030; www.septronicsinc.com, Expo booth 59.

27 SJE-Rhombus

The C-Level floatless sensor for Installer Friendly Series control panels from SJE-Rhombus uses FLOATLESS technology to detect the liquid level in the tank, sending a signal back to the IFS panel for display in inches or centimeters. Pump activation and alarm levels can be adjusted using the touch pad on the inner door. The compact sensor takes the place of four floats and works with IFS and IFS

In-Site, single-phase simplex and duplex demand/time-dosed control panels. 888/342-5753; www.sjerhombus.com, Expo booth 6069.

EQUIPMENT, MARKETING

28 Williams Innovations LLC

The TeleSwivel 400 frame-mounted trailer hitch from Williams Innovations LLC features a 2.5-inch receiver box (2 inches with adapter sleeve). Made for medium- and heavy-duty truck frames with a 15,000 to 40,000 GTW tow capacity, the hitch eliminates the need for precise truck and trailer alignment by extending out and swiveling side to side, increasing the target zone by 25 times. The hitch also eliminates the need to "muscle" trailers into place and enables most drivers to attach a trailer in a single pass. 888/835-7948; www.teleswivel.com, Expo booth 7198.

29 Ditch Witch

The RT23, 22.3 hp hydrostatic trencher from Ditch Witch is designed for electrical, plumbing and other aboveground construction professionals. The unit can dig trenches 48 inches deep and 8 inches wide. In difficult digging conditions, chain speed can be adjusted by substituting a 10-tooth sprocket for the standard 12-tooth chain. Features include hydraulic skid-steer-style steering and high-flotation tires. Heavy-duty tracks that oscillate 12 degrees can be added for stability and traction. 800/654-6481; www.ditchwitch.com, Expo booth 9048.

30 AlturMATs

Ground protection mats from AlturMATs are designed to protect landscapes and keep heavy equipment from becoming stuck in mud, sand or snow. The half-inch-thick mats are available in black or white with cleats on both sides, one side or smooth on both sides. Sizes range from 2 feet by 4 feet up to 4 feet by 8 feet. 888/544-6287; www.alturmat.com, Expo booth 7102.

31 Lenzyme Inc.

The Private Labeled Marketing Package from Lenzyme Inc. is designed to create more pumpouts and service work through emotional marketing. The package includes private-labeled Lenzyme septic tank treatment, private-labeled educational brochures and a private-labeled, 12-ounce bag of Cow candy to connect with customers. 800/223-3083, www.lenzyme.com, Expo booth 6151.



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The First Step: Planning

A careful review of the system design and the site can help save you many costly problems during the installation process

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

Since this issue leads off the New Year, we thought it would be appropriate to start at the beginning of the installation process. As the snow piles up higher here in Minnesota, now is a good time to think about planning.

The first step if you are the installer and not the designer is to review the plans the designer has provided and the soils information provided by the site evaluator. This includes reading all the construction notes and plan specifications.

If from your experience you have questions about any of these aspects, or if something seems not right based on your experience, that is the time to contact the designer. In fact, some designers ask installers to notify them in advance when construction is to proceed so they can be available for questions and modifications.



Soil evaluation is an important part of the planning process.

Bid carefully

From the design plans, you will develop your bid for the project, so it is essential to take all aspects of the design and soils information into account. We will never forget the time an installer told us about being asked to bid on a mound system for which the soil survey said the area was a borrow pit.

When he looked at the site, he declined to bid, because he knew the installation would be much more complicated than the design indicated. He took great pleasure in highlighting how his competitor lost money big-time because he didn't look into available information about the lot.

This just highlights that you should be thorough in your planning and investigation, before offering a bid or moving into the construction phase. It is interesting how often we hear, "I only need to be able to read a plan and to build what is on paper." Nothing could be further from the truth. Successful installers don't leave things to chance. Just like any other good businessperson, they investigate all aspects.

Know your soils

Another area of the planning process is to read and evaluate soil boring logs and percolation test data. Here again, you do this to see if there is any evidence that may influence how or where the system should be constructed.

Jim Anderson and Dave Gustafson are connected with the University of Minnesota onsite wastewater treatment education program. Dave 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 Transporters. Readers are welcome to submit questions or article suggestions to Jim and Dave. Write to ander045@umn.edu.



It's essential to check for proper setback from the septic tank to the building.

You need good soil skills to distinguish soil texture and soil colors. Texture relates to the size of the system, and color can indicate the presence of seasonally saturated soil. You need to know both how to read the information and how to recognize these features in the field. Again, it is amazing how many times installers or local regulators tell us that the installer does not need to know these characteristics.

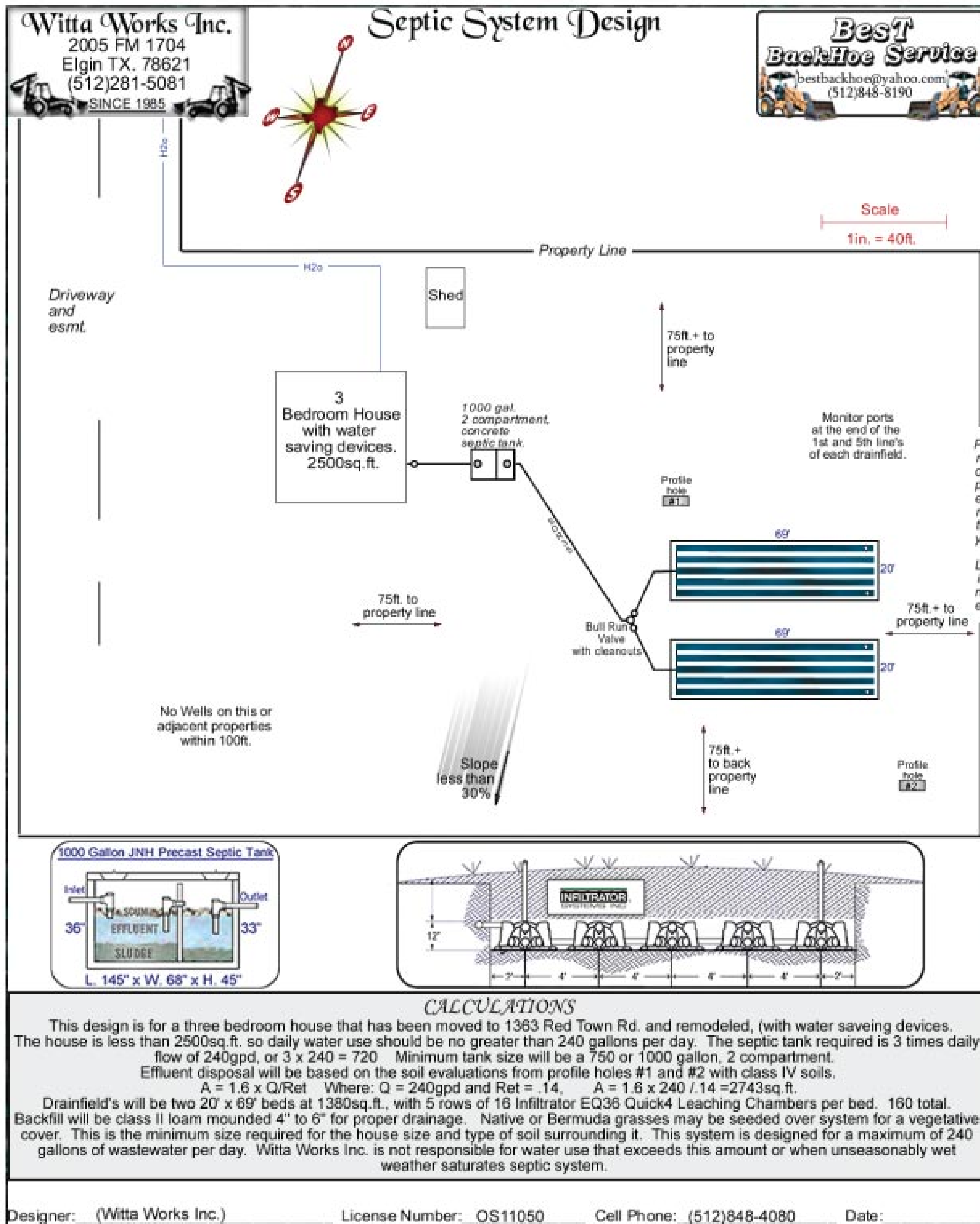
The site map portion of the design or plan should show all relevant aspects of the site, including any easements, large trees, boulders, wetlands, water-supply wells and required setback distances. This should allow you to begin planning how the installation will proceed. It will also help you determine where you can stockpile ma-

terials and how the septic tank or other tanks will be delivered.

All these items, with the relevant measurements, should be on the plan. While you can plan on this basis, you should check each of these measurements in the field before starting work. It is an expensive lesson when the local inspector shows up on the job site and highlights that you are five feet too close to the lake and you have to move everything.

Check the layout

The overall site layout is important. The shape of the lot relative to contours, and the presence of natural or protected features such as wetlands, streams or existing structures, can restrict access to the site. Wetlands may require special permits to cross and special mitigation



A typical plan layout for an onsite treatment system.

efforts after construction and disturbance. These conditions will add time to the job and may limit your equipment choices.

The site map should also provide slope contours, and you should pay attention to them. At a minimum the contour interval should be every two feet, and every one foot is desirable. This allows you to evaluate any slope abnormalities you

need to consider during installation.

If a drainage way shows up on the contour maps and the system is proposed to be installed across it, you need to have a conversation with the designer. Since water will flow at the surface and below ground in that location, there is a high potential to flood the system out, and the design should be changed to avoid the problem.

Again, you need to check all this on the site, but a preliminary review can highlight specific areas that need investigation once you get there. Steep slopes may limit the type of equipment and the construction methods you can use. System type may also affect those choices. For example, you need to use small tracked equipment when installing a treatment mound.

Check elevations

The plan should also show a cross section of all the system components. Their finished elevations and grade elevations should be shown along with the existing elevations of nearby structures or features. Construction specifications are also to be provided here, and the profile should show that the system components meet any slope requirements or separation distances to any limiting soil condition, such as high water table, bedrock, or dense soil layers.

If from your experience you have questions about any of these aspects, or if something seems not right based on your experience, that is the time to contact the designer.

If other structures (such as the house) are to be built at about the same time, you should consult the other contractors. You may need to stage installation to coordinate with their work. (See our article in the November 2010 issue on protecting the system site from damage.)

Talking with the homeowner is also a critical planning step. Here is where you can find out what the owner considers important. Now is when you find that you need to work around that oak tree rather than cut it down; or that you have to avoid a perennial garden that is in one of your prime pathways for equipment.

Each site is different, and everyone has a little different view of what is important, so this discussion is essential. It is also a good opportunity to walk the owners through your approach to installation so they have a picture of what will take place.

There is much more we could say about planning, but this should demonstrate that planning is not an exercise in going through the motions. It is one of the most important steps in the installation process. ■

"Rules and Regs" is a monthly feature in Onsite Installer. We welcome information about state or local regulations of potential broad interest to onsite contractors. Send ideas to editor@onsiteinstaller.com.

Bill Requires Ohio to Adopt Statewide Rules

By **Scottie Dayton**

Provisions of Substitute Senate Bill 110 became effective Sept. 17, 2010, requiring the state Department of Health to adopt statewide onsite rules by Jan. 1, 2012. They must:

- Require a site evaluation for proposed onsite installations.
- Allow failing systems to be repaired instead of replaced.
- Include vertical separation reductions for subsurface drains, pretreatment and soil elevation.
- Establish reasonable maintenance requirements.
- Require bonding for installers, service providers, and

septage haulers, and set standards for inspecting septage-hauling tanks.

- Ensure that septic and related tanks are structurally sound and watertight.

The Ohio Onsite Wastewater Association will be a major stakeholder in advising the rule advisory committee.

New Mexico

At least 78 percent of the 3,100 septic systems permitted by the state Environment Department in San Juan County since 2005 are flawed or invalid, according to an internal agency audit mandated by

environment department secretary Ron Curry. The audit was to identify how rampant fraud was among liquid waste permits issued through the Farmington field office.

A 2008 investigation alleged that the Farmington office mismanaged and falsified liquid waste permitting documents, allowing an unknown number of septic systems in the county to be illegally installed. Major concerns identified in the audit include systems missing paperwork and approval of equipment or systems inadequate for the necessary treatment level. Violations such as missing or altered agency inspection documents were considered minor deficiencies.

During 2006, about 85 percent of all permits issued through the Farmington office had major errors. Only 3 percent of all permits approved that year were done accurately.

The environment department will review the invalid paperwork to correct the information or void permits. It also is working to locate more than 100 permits that have no documentation. Officials have not inspected the more than 2,400 illegal systems.

Arizona

The Department of Environmental Quality proposed rules that would increase general permit fees from \$3,600 to \$7,500 for onsite systems with flows of 3,000 to 24,000 gpd. The rule also covers fee increases for alternative designs, installations, operational features, and grease interceptors, and establishes an annual \$200 report fee. The department is seeking to have the rules effective by July 1, 2011.

South Carolina

Charlotte County Health Department Commissioners have amended

the county code to eliminate aerobic treatment unit requirements for homes and businesses. ATUs may still be required if lots are too small for a septic tank, but the determination would be up to the agency.

The county agreed to require ATUs instead of conventional onsite systems for smaller undeveloped lots as part of a 1998 legal settlement with the state over a sewer plan dispute. ATUs were seen as an alternative that created less pollution. County commissioners now say that they are expensive.

Florida

Residents, commissioners, health department officials, and state legislators are working to repeal a septic tank law that was to become effective on Jan. 1. Rep. Marti Coley, R-Marianna, said that she would offer a bill to repeal it if re-elected, provided the law is not repealed in a special session before then.

Sen. Al Lawson, D-Tallahassee, had prepared a similar bill for any upcoming special session. Sen. Don Gaetz, R-Niceville, has joined with Coley and other legislators to modify or repeal the mandate. Sen. Durrell Peadar, R-Crestview, and Rep. Greg Evers, R-Milton, sent letters to the governor asking for a postponement in the bill's implementation.

The law requires septic tanks to be inspected every five years and possibly replaced if they do not meet standards stipulated by regulations that are still being drafted. Inspections costing \$800 to \$1,400 would include a soil analysis, exposing and pumping of the tank, and evaluation of the tank's structural integrity. ■

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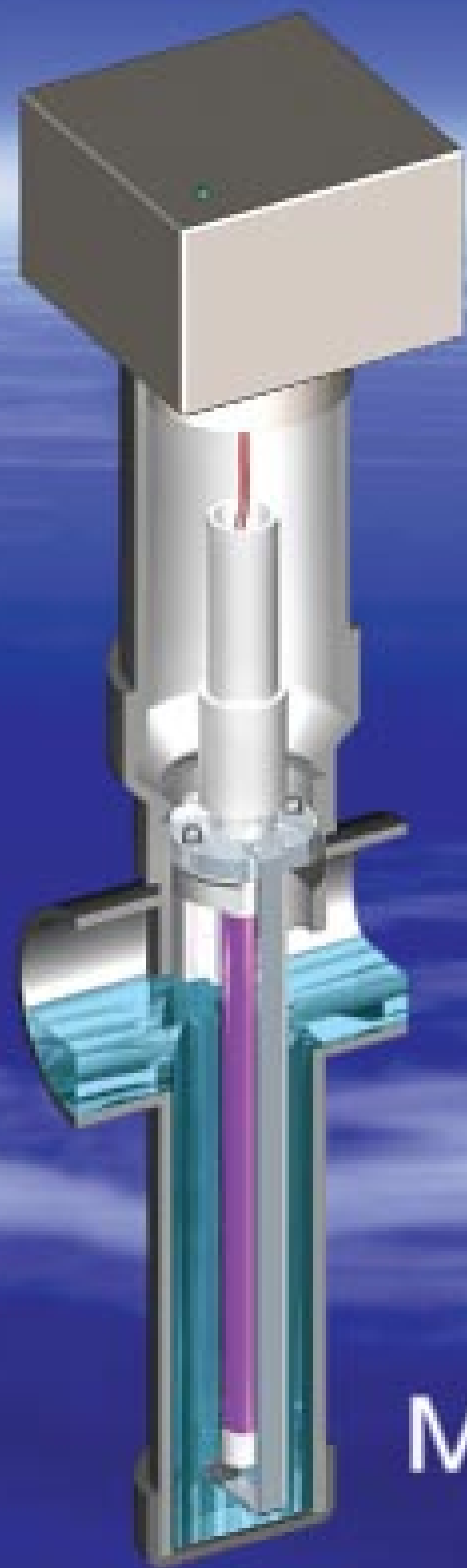
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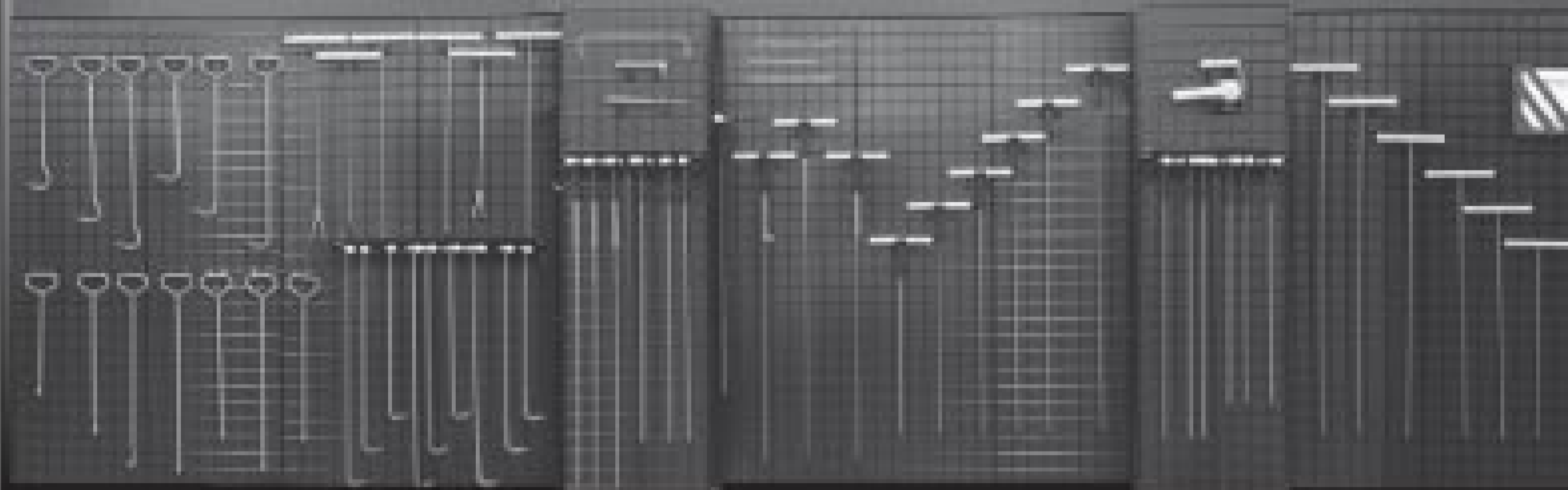


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They Had a Hammer

An aerobic bacterial generator helps a designer and installer replace a failed mound system on a Native American reservation in northwest Wisconsin

By **Scottie Dayton**

Onsite systems installed 35 years ago as part of a work program on the Bad River Indian Reservation in Ashland, Wis., were failing from age. Because many systems were next to the Bad River or tributaries feeding Lake Superior, tribal elders worked with the U.S. EPA and Indian Health Service to replace them.

A typical system was a two-bedroom mobile home and a three-bedroom house on the same lot. When the mound near the mobile home failed, the owner rerouted the lateral to surface discharge 10 feet behind the building and near a ravine draining to the Bad River. The house had effluent ponding from two rusted steel septic tanks.

William Baudhuin, P.E., R.L.S., of Baudhuin Engineering in Sturgeon Bay, Wis., designed the replacement system. Tony Brown, of Brown Plumb-

ing and Heating in Ashland, won the bid to install it.

Baudhuin specified Xypex, a concrete admixture, to increase the life expectancy and impermeability of the tanks. Because of the tight quarters, he also specified a Sludge-Hammer aerobic bacterial generator to pretreat the effluent before the mound.

"The system had to fit in a 60-foot-wide space between the two driveways," says Baudhuin. "I had no room for individual systems." Pretreatment also enabled him to reduce the mound's footprint by one-third. The system, now in compliance, is producing effluent with 30 mg/l BOD and TSS.

Site conditions

Soils are loam. The high seasonal water table is 21 inches below grade. The topography is low and flat.



Shawn Hoppwood, left, from Wieser Concrete and Jake Baudhuin from Baudhuin Engineering set the 5-foot-tall risers on the 1,800/1,100-gallon triple septic tank. (Photos courtesy of Brown Plumbing and Heating)

System components

Baudhuin designed the system to handle 750 gpd. Its major components are:

- Low-profile 1,800/1,100-gallon septic tank with aerobic, effluent, and pump chambers from Wieser Concrete.
- S-86 aerobic bacterial generator, SludgeHammer Group Ltd.
- PL-525 effluent filter, Polylok.
- WEO 512 high-head 1/2 hp Goulds pump.
- EPS foam, Mikey Block.
- 140 feet of EZflow by Infiltrator geosynthetic aggregate from Infiltrator Systems.
- Control panel from SJE-Rhombus.

System operation

The 111-foot-long 4-inch lateral from the mobile home enters the north side of the 1,260-gallon aro-

bic chamber. The 75-foot-long lateral from the house ties in from the south. The aerobic generator, sitting on the bottom of the tank, has 150 square feet of surface area on which proprietary bacteria colonize.

An air pump at the surface introduces oxygen into the unit. The resulting vigorous circulation directs wastewater through the generator at 15,000 to 20,000 gpd, ensuring that the liquid is processed 20 times in 24 hours.

Treated clear water flows into the 540-gallon effluent filter compartment before entering the 1,100-gallon pump chamber. The pump runs five times per day, delivering 500 gallons to the mound. The microbes digest the nutrients in the effluent so completely that nothing remains to create a biomat.

The 88- by 32-foot mound has a 2-inch PVC force main supplying

System Profile

Location:	Ashland, Wis.
Facility served:	Bad River Indian Reservation
System designer:	William Baudhuin, P.E., R.L.S., Baudhuin Engineering Inc., Sturgeon Bay, Wis.
Installer:	Tony Brown, Brown Plumbing and Heating, Ashland
Site conditions:	Loam soils; high seasonal water table 21 inches below grade
Type of system:	S-86 aerobic bacterial generator, SludgeHammer Group Ltd.
Hydraulic capacity:	750 gpd



EZflow by Infiltrator media is shown in the 4-foot-wide trenches.



Project manager Greg Brown from Brown Plumbing and Heating uses a laser to set the elevation on a 4-foot-wide trench.



Greg Brown sets observation ports in the mound. Geotextile fabric covers the media.

two 70- by 3-foot zones six feet apart, each with three 12-inch drainage bundles. The center of each bundle is a drain tile housing 1.5-inch Schedule 40 perforated PVC pipe with 3/16-inch orifices three feet apart and facing down.

On either side of the drain tile is a 12-inch-diameter bundle of lightweight geosynthetic aggregate. Polyethylene netting holds the trio together.

Installation

Project manager Greg Brown and crew collapsed and abandoned the existing tanks and tore down the existing mound, using its sand for bedding the septic tank and backfilling. "One thing we discovered that led to the mound failures was that they contained no rock," says Brown. "They were pure sand with one distribution pipe running through the center."

Using the backhoe bucket, the

operator plowed the rows for the mound, pulling up the soil and folding it over in furrows. "The site had no slope," says Tony Brown. "The elevation was 607.98 feet on one end of the mound and 608 feet on the other." The men built up the grade with six inches of C-33 washed sand. The west end of the mound was 10 feet from the highway right-of-way.

Les Dykstra of Dykstra Construction in Ashland excavated the trenches for the drainage bundles, while Brown's crew slipped 10-foot lengths of perforated pipe into the drain tile housings. After plumbing the field, they laid geotextile fabric over the bundles and extended it two-thirds of the way down the sides. "We capped the mound with six inches each of sand and topsoil on the top and six inches of sand along the sides, then seeded it," says Brown.

Dykstra, meanwhile, excavated

the hole for the septic tank 20 feet east of the mound and hit water. "It was hard to hold the ditch," he says. "The soil below four feet was spongy and the sides of the excavation kept caving in. We continued trenching back until we had a 10-by 20-foot hole five feet deep for an 8.5- by 15-foot tank."

After Brown's men bedded the hole with 24 inches of sand, a Wieser Concrete crane operator lowered the tank. "We had to set it deep to accommodate the lateral from the house, which came in at 46 inches," says Brown. "To prevent hydraulic pressure from pop-

ping the tank out of the ground, we mounded topsoil on top of it, then extended the three risers 18 inches." Setting the SludgeHammer required hooking up the air pump and inoculating the unit with a microbial stick that started the colonies growing.

Excavating the trenches for the building laterals and laying the 4-inch PVC pipe was time consuming. "We had to insulate all 186 feet of pipe with Mikey Block," says Brown. "The Ashland distributor, LDC Cattle Co., cut the 2.5- by 9-foot-long by 4-inch-thick foam for us. We laid the pipe in the trench, backfilled with six inches of sand, laid the insulation over it, and covered it with topsoil."

After soil structure, Brown's second biggest issue was soil settling. "I'm still returning to the site to top it off, especially around the tank," he says. The system was installed in two days.

"The site had no slope. The elevation was 607.98 feet on one end of the mound and 608 feet on the other."

Tony Brown

Maintenance

Brown Plumbing and Heating has the one-year maintenance contract. Once the remaining systems are installed, Brown and Baudhuin will sponsor an operation and maintenance training session for the homeowners.

"We don't want them unplugging aerobic generators or pushing buttons on control panels," says Brown. "We've already had two alarms because the mobile home had a leaking toilet. The septic tank was taking on twice as much water as was time-dosed to discharge." Since the leak was stopped, there have been no more alarms. ■

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Made to Order

The 19th Annual NOWRA conference focused on the challenges and solutions of subsurface discharge

By **Scottie Dayton**

The National Onsite Wastewater Recycling Association's 19th Annual Technical and Education Conference focused on the challenges and solutions of subsurface discharge. The conference, at the Millennium Hotel in St. Louis, Mo., Oct. 25-28, prepared industry professionals for changes such as an expected Illinois ban on direct discharge of secondary effluent, to take effect on Jan. 1, 2013.

Here are some highlights of the conference:

Opening shots

The general session Tuesday, Oct. 26, covered surface discharge-related experiences in Iowa, Ohio and Maine. U.S. EPA regional wastewater officials Alex Owutaka and Morris Beaton offered their perspectives from the Midwest. Illinois state legislator Mike Tryon discussed recent legislation addressing surface discharge problems.

Other presentations covered permitting, codes, compliance, record-keeping and enforcement. With agencies limited by staff and budget, the best opportunity to discover surface discharges that require NPDES permits is through time-of-transfer inspections. Health departments often have no regulatory follow-up until a complaint is filed.

New NSF standards

Two new NSF standards are nearing completion. Draft NSF Standard 360, Field Performance Verification, establishes consistent site selection, sampling, laboratory analysis, and data evaluation methods for obtaining field performance results for systems meeting CBOD₅ and TSS requirements and nitrogen reduction.

Draft NSF Standard 350, Onsite Residential and Commercial Reuse Treatment Systems, establishes minimum materials, design and construction, and performance requirements for onsite residential and commercial reuse treatment systems. Systems can be evaluated for treating bath water only, laundry water only, or both. Reuse applications include toilet and urinal flushing and surface irrigation.

Winners

NOWRA executive director Eric Casey reported on a 2008 study by the William E. Smith Institute for Association Research showing that associations help make professionals successful. During a business session on Wednesday, Oct. 27, Casey observed, "Associations provide a critical venue for successful people in a profession or industry to access resources, identify themselves, network with their peers, and form mutually beneficial communities."

NOWRA seeks to provide benefits such as continuing education and other services as state affiliates request them. Casey said NOWRA has expanded its Resource Library on the Web and plans to help affiliates with newsletters and provide a database of speakers for association conferences. Since contractors comprise more than three-fourths of the membership, the organization plans more educational opportunities for them.

NOWRA's participation in the U.S. EPA Partnership for Sustainable Decentralized Wastewater Management Memorandum of Understanding helps keep members abreast of national issues. The association is exploring hiring a Washington

lobbyist to secure more federal funding for the onsite industry. The directors also are considering a presence on Facebook, posting Septic Locator on Twitter, and allowing vendors to upload product information to the NOWRA website.

According to president-elect Dick Otis, NOWRA plans to create a quality installation checklist and treatment process fact sheets for homeowners, and a responsible management entity (RME). The Model Code is to be updated to include soil components, regional rules, and barriers to implementation at state levels.

tions for materials and labor, and performance schedules.

In the field

Thursday's field trip covered five treatment systems in St. Charles County. Wastewater system inspector Sandy May, from St. Charles County Government Building Division, conducted the tours, which proved the necessity of maintenance agreements.

One site had a recirculating sand filter growing weeds and a small tree, which May said she would ask the homeowner to remove. Another site had too much

"Associations provide a critical venue for successful people in a profession or industry to access resources, identify themselves, network with their peers, and form mutually beneficial communities."

Eric Casey

Massive fraud

Link Summers, author of onsite sections and statues for New Mexico, discussed permit fraud in the industry and the lack of regulations to protect consumers. He cited an audit by the state Environmental Health Department of liquid waste permits issued by one from 2005-10. It revealed that 70 percent of the permits are invalid or defective. Banks or homeowners noticed the fraud during foreclosures or time-of-sale inspections.

Summers said the only way for homeowners and installers to protect themselves is to require written contracts for design, installation, maintenance, inspection, testing and pumping. The sections should have minimum requirements that include quantities and specifica-

effluent in the distribution box and a soggy conventional drainfield, and May planned to contact the installer to adjust the flow from the distribution box.

A third site with on-demand dosing had effluent ponding on a Wisconsin mound. May was to contact the installer to install time dosing, which would solve the problem caused by the residents washing six loads of laundry per day.

Other sites included a tavern with two 1,000-gallon septic tanks and a 3,000-gallon time-dosed pump tank to a biofilter, and a dressage training facility with ATU, distribution box, and 500 feet of drainfield.

New tools

The Tabletop Expo attracted 21 manufacturers of pretreatment and

related technologies. Among new offerings was the Advanced Enviro-Septic wastewater treatment system from Presby Environmental in Whitefield, N.H.

The system also can replace failed drainfields in a smaller footprint. The flexible pipe treats flows directly from the septic tank, removing 99 percent of pollutants without mechanical devices or computer controls. A three-bedroom home requires 250 feet of pipe, which adapts to

any configuration or slope. The product meets NSF Standard 40 Class 1 Certification.

Looking to 2011

NOWRA will hold a Superconference June 16-20 at the Hyatt Regency in Columbus, Ohio in conjunction with the National Environmental Health Association and the State Onsite Regulators Alliance. Watch for more information at www.nowra.org. ■



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INDUSTRY NEWS

January 2011

Water Cannon Launches Online Store

Water Cannon Inc. has launched an online store at www.cole-mart.com/watercannon. The store offers the convenience of 24-hour shopping, the ability to research and compare products, and a simple order process.

Grundfos Pumps Launches Facebook Page

Grundfos Pumps Corp. launched its Facebook Fan page, www.facebook.com/grundfospumpsusa, providing news and information about the company, including its sustainability initiatives, product launches, trade shows, special events and community activities.

Webinar Highlights Jetter Selection

US Jetting will sponsor a webinar on "Selecting a High-Pressure Jetting Unit for Maximum Use Applications and Profits" on Thursday, Feb. 3, from 4 to 5 p.m. Eastern time. *Cleaner* magazine will host the session.

Presenters from US Jetting are Ryan Peake, southeast regional sales manager, and Danielle Young, new unit and international sales coordinator. They will explain why purchasing a high-pressure jetting unit is a capital investment that must be researched thoroughly.

A profitable jetting unit needs to cover a wide range of pipe cleaning applications, and the wider the range, the greater the potential profits. The webinar will focus on selecting a unit with the pressure, water flow, water storage capacities and engine horsepower to fill the needs of any sewer cleaning operation. The seminar will last 45 to 50 minutes and will allow 10 minutes for the presenters to answer submitted written questions.

To register, visit www.onsiteinstaller.com/webinar. ■

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Wisconsin Promotes Onsite Evaluator Program

The Wisconsin Onsite Wastewater Recycling Association had a booth at the Wisconsin Realtors Association convention to promote its certified onsite evaluator training program and explain the benefits of recommending certified inspectors. The organization followed up with an e-mail to Realtors who visited the booth. The association then repeated its efforts at the Wisconsin Association of Home Inspectors autumn seminar.

Small But Accurate

The Ontario Rural Wastewater Centre added a 1:3 scale model of a 1,000-gallon concrete septic tank to its Arkell training facility. Dyes introduced into the transparent structure demonstrate the different flow patterns in single- and dual-compartment tanks, and the small dead zone created by the outlet in the two-chamber tank. For more information, e-mail Andrew Oosting at aosting@uoguelph.ca.

Corrosion Data Sought

The Wisconsin Precast Concrete Association developed a spreadsheet to collect data on the statewide issue of prematurely corroding septic tanks. The organization asked pumpers and installers to record details on an ongoing basis, then fax the data to 608/251-8192. To get a copy of the spreadsheet, e-mail Ann Gryphan at agryphan@ekgmail.com.

CALENDAR OF EVENTS

Jan. 11-13

Michigan Septic Tank Association Waste Water Conference, Kellogg Center, East Lansing. Call 989/275-4947 or visit www.msta.biz.

Jan. 12-13

Iowa Onsite Waste Water Association Conference, Polk County Convention Complex, Des Moines. Call 515/225-1051 or visit www.iowwa.com.

Jan. 17-19

Missouri Smallflows Organization Conference and Exhibit, Holi-

day Inn Select, Columbia. Call 417/739-4100 or visit www.mosmallflows.org.

Jan. 18-19

Ohio Onsite Wastewater Association Conference and Trade Show, Ramada Plaza Hotel and Conference Center, Columbus. Call 866/843-4429 or visit www.ohioonsite.org.

Jan. 20-22

North Carolina Septic Tank Association Convention. Call 336/416-3564.

Jan. 20-21

Alberta Onsite Wastewater Management Association Convention and Trade Show, Capri Convention Centre, Red Deer. Call 780/489-7471 or visit www.aowma.com.

Jan. 23-25

Pennsylvania Decentralized Wastewater Conference and Trade Show, Lancaster County Convention Center, Lancaster. Call Stacy Henninger at 717/763-7762 or visit www.pasma.net.

Jan. 24-25

Tennessee Onsite Wastewater Association Conference, Murfreesboro. Visit www.tnonsite.org.

Jan. 26-28

Kansas Small Flows Association Conference and Trade Show, Prairie Band Casino & Resort, Mayetta. Call 913/594-1472 or visit www.ksfa.org.

Jan. 28-29

Wisconsin Onsite Water Recycling Association and Wisconsin Liquid Waste Carriers Association Joint Convention, Holiday Inn, Stevens Point. Call 800/377-6672 or visit www.wowra.com.

Jan. 28-29

Washington On-Site Sewage Association Conference, Yakima Convention Center, Yakima. Call 253/770-6594 or visit www.wossa.org.

Jan. 31-Feb. 1

Indiana Onsite Wastewater Professional Association Annual Con-

vention, Camp Camby, Indianapolis. Call 317/889-2382 or visit www.iowpa.org.

Feb. 3-4

Ohio Water Quality & Waste Management Conference, University Plaza Hotel, Columbus. Call Holly Bartholomew at 843/471-2357 or visit www.setll.osu.edu/programs/owqwm_conf.html.

Feb. 16-17

Nebraska On-Site Wastewater Annual Convention and Trade Show, Lancaster County Event Center, Lincoln. Call 402/476-0162 or visit www.nowwa.org.

March 2-5

Pumper & Cleaner Environmental Expo International, Kentucky Exposition Center, Louisville, Ky. Call 800/257-7222 or visit www.pumpershow.com.

TRAINING & EDUCATION

NAWT

The National Association of Wastewater Transporters has these sessions:

- Feb. 28-March 1 – Inspector Training, Louisville, Ky.
- Feb. 28-March 1 – Operation and Maintenance, Louisville, Ky.
- March 1 – Vacuum Truck Technician, Louisville, Ky.

For Pennsylvania classes, call NAWT at 800/236-6298 or visit www.nawt.org.

Connecticut

The Connecticut Onsite Wastewater Recycling Association has an Installer School Jan. 13, 20, 27, Feb. 3, 10 and 17. The snow date is Feb. 24. Students are automatically enrolled in Education Day at the Pumper & Cleaner Environmental Expo International on March 2, as the information is part of the 2011 Installer exam.

The COWRA Pumper/Cleaner School is Feb. 17 with a snow date Feb. 24. All classes are at Wesleyan University, Middletown. Call 860/267-1057 or visit www.cowra-online.org.

Minnesota

The University of Minnesota Extension has these classes:

- Feb. 8-9 – Installer Continuing Education, Hinckley
- Feb. 9 – Pipelayer, Hinckley
- Feb. 16-17 – General Continuing Education, Fergus Falls
- Feb. 22-24 – Pumping and Maintaining Onsite Systems, St. Cloud
- March 7-9 – Introduction to Onsite Systems, Owatonna
- March 10-11 – Installing Onsite Systems, Owatonna
- March 22-23 – Installer Continuing Education, Grand Rapids
- March 23 – Pipelayer, Grand Rapids
- March 29-31 – Advanced Design and Inspection on Onsite Systems, Mankato

Call Nick Haig at 800/322-8642 or visit www.septic.umn.edu.

Oregon

The Oregon Onsite Wastewater Association is offering the Consortium of Institutes for Decentralized Wastewater Treatment Educational Institute National Installer course Feb. 3-4 in Portland and Feb. 17-18 in Grants Pass. Call 541/389-6692 or visit www.o2wa.org.

Washington State

The Washington On-Site Sewage Association and Washington State Department of Health in cooperation with Washington State University are offering these certification courses at the training center in Puyallup unless stated otherwise:

- Feb. 2 – Design of Subsurface Drip Systems, Spokane
- Feb. 10 – Liens and Contracts
- Feb. 16 – Exploring and Understanding Soil, Mt. Vernon
- Feb. 23 – Matching System to Site Conditions, Mt. Vernon
- March 9-10 – Using and Interpreting WAC246-272-A
- March 16-17 – Exam Review
- March 23 – Pumper Basics, Vancouver

Call WOSSA at 253/770-6594 or visit www.wossa.org. ■

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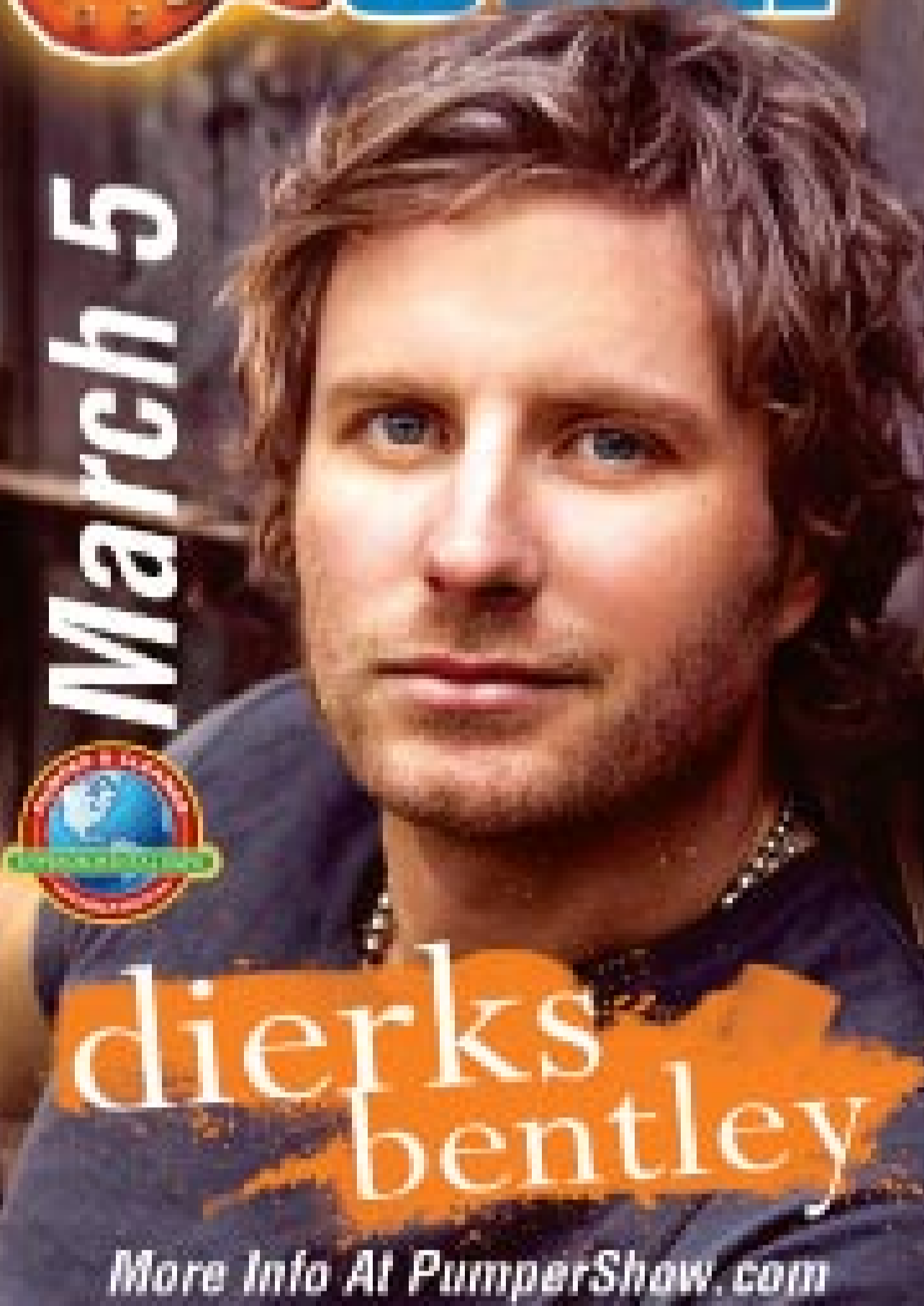
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Saturday Evening Jam



March 5



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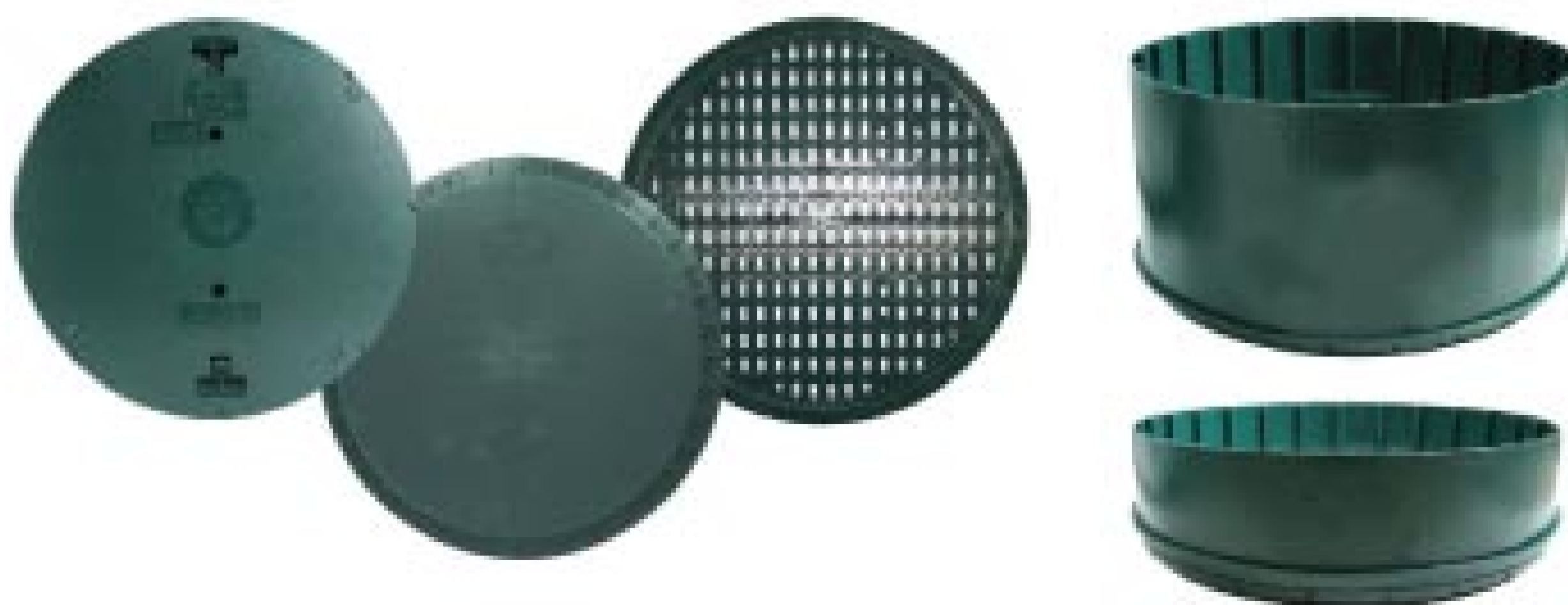
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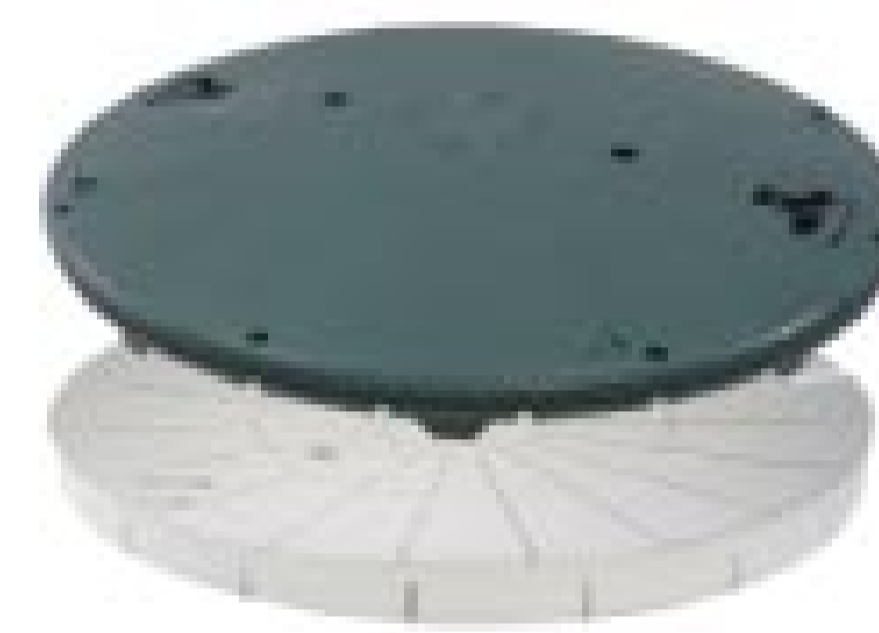
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