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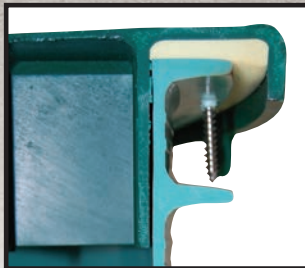
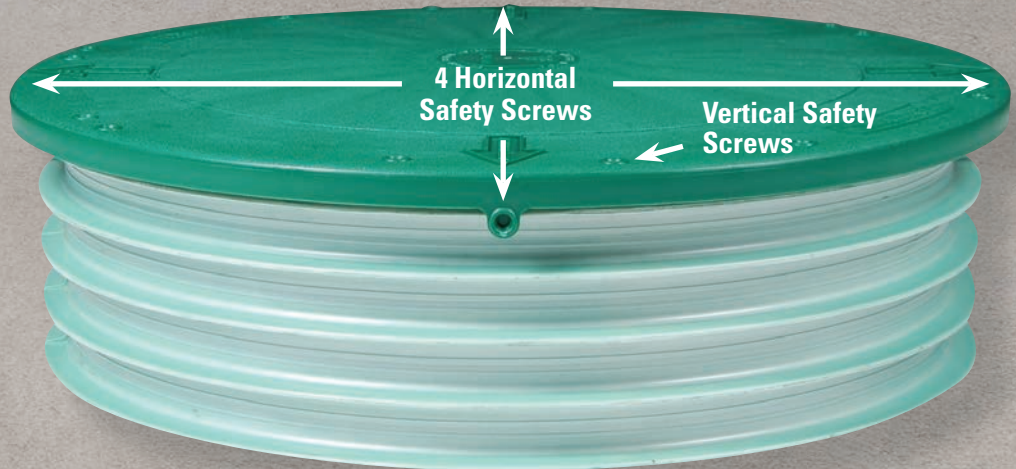
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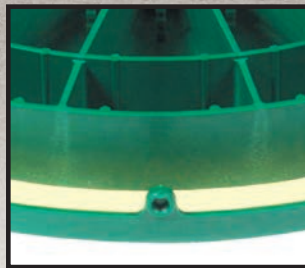
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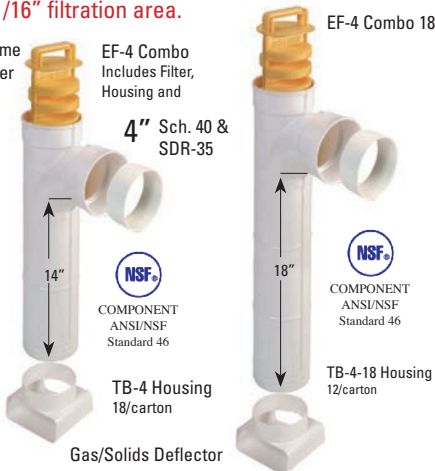


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Published monthly by

COLE publishing

1720 Maple Lake Dam Rd. • PO Box 220  
Three Lakes, WI 54562



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7:30 a.m.-5 p.m. Central time, Mon.-Fri.

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Visit [www.onsiteinstaller.com](http://www.onsiteinstaller.com) for options and pricing. To order reprints, call Jeff Lane at 800-257-7222 (715-546-3346) or email [jeff.lane@colepublishing.com](mailto:jeff.lane@colepublishing.com). To order back issues, call Nicole at 800-257-7222 (715-546-3346) or email [nicole.labeau@colepublishing.com](mailto:nicole.labeau@colepublishing.com).

## CIRCULATION

Circulation averages 20,842 copies per month. This figure includes both U.S. and International distribution.

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# Don't Let Your State Miss Out On Coverage

Our State of the States feature has promoted wastewater industry professional activities in every corner of the United States and Canada over the past three years. Is your state still on our to-do list?

By Jim Kneiszel



**T**his summer marks three years of the State of the States feature in *Onsite Installer* magazine. We've covered the people and programs of many state and provincial wastewater trade associations across North America. It's enlightening to see how issues differ from the southeast United States in Florida to the western reaches of Canada in British Columbia. It's good to follow how these grass-roots groups work to enhance the professionalism of onsite and pumping industries ... and in so doing, improve the environment of their friends and neighbors.

We've covered most of the states and provinces, but we look forward to talking to professionals in the remaining regions. Writer Doug Day has

reached out, but has had no response from trade associations in Delaware, Idaho, Kentucky and Maine. He has also called on regulators in states that don't have organized wastewater associations. Those are Hawaii, Louisiana, Nevada, New Jersey, North Dakota, Rhode Island, South Carolina, Utah, Vermont, West Virginia and Wyoming.

If you are involved in associations in the states yet to be featured, or if you are a regulator in the wastewater field where no association has been established, please contact me and help us cover industry initiatives in your area. In

some cases, it's possible we have the wrong contact person for some of these states. I'd appreciate your help in rectifying that so we can be sure to truly provide coast-to-coast coverage of the industry.

In addition to the State of the States (or Provinces) feature, we track wastewater news from across the U.S. and Canada every month as part of our Rules and Regs column. From those reporting efforts, we have a suggestion for leaders of the many regional trade groups: Look to update your website with new content on a more regular basis.

Just like any business going online, constantly adding new information will make your web presence more relevant for association members and the

general public who visit to learn more about their onsite systems or wastewater hauling options. It appears that too many trade association websites suffer from neglect — whether it's through turnover in leadership or lack of volunteer content contributors.

The first rule of a dynamic web or social media presence is keeping materials fresh. Be sure to post contact information for your latest slate of association officers. Seek out contributions from your members, whether it's a legislative update, company ownership changes or updates, or photos of work being done in the field. The more you post, the more exciting your website will be ... and that will prompt a lot of return traffic from people who want to learn more.

One piece of content to consider is a member profile to bring your community closer together. Include a photo and a brief story about some of your most active members and encourage others to contact them and discuss the programs and benefits of getting more involved in the work of the association. This is a concept we're exploring for a potential new feature in *Onsite Installer*. Stay tuned.

## BULLISH ABOUT ONSITE

There's good reason to be upbeat about the state of the onsite industry. Good things happen when studies show there is a need to build and improve the wastewater infrastructure at the same time that state and federal funds are being earmarked for septic system upgrades and replacements. Every month I read about at least one community introducing a grant program for septic system maintenance, repair or replacement.

As an example, the Georgia Department of Public Health recently announced funds would be available through the U.S. Environmental Protection Agency to improve decentralized wastewater systems in the Silver Creek Watershed (in Polk and Floyd counties in northwest Georgia). Qualifying residents could receive as much as \$1,115 in financial aid for repair and replacement of systems, while other residents may apply for a \$200 voucher to go toward pumping a septic tank. One installer estimated the cost of replacing a septic tank is between \$2,500 to \$3,000.

"While no one is sure about all the sources of contamination in Silver Creek, there's a good reason to suspect that some of it is coming from malfunctioning septic tanks. We're trying to address that part of the problem," Tim Allee, district environmental health director, told the *Northwest Georgia News*.





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This is evidence that federal money is starting to trickle toward improving the infrastructure of private onsite systems like it has steadily flowed toward public wastewater treatment systems for many years. The change is the result of a realization by federal and state health officials that an estimated 25 to 30 percent of Americans utilize septic systems to treat their wastewater. This information is being pushed by wastewater industry associations that believe assistance has been unfairly weighted toward municipal treatment systems in the past.

You want to hear some staggering numbers? Try \$353.7 billion. That's what the environmental services industry — which includes onsite installers — generated in 2014, according to a report released recently by Environmental Business International. The number was up 3.9 percent over the previous year, with 14 sectors in environmental services representing almost 3 percent of the U.S. gross domestic product. The conglomerate of industry companies employed a staggering 1.74 million workers in 2014, and it's trending upward. Wastewater treatment has consistently exceeded the GDP by 1 to 3w percent since 2000, according to the report.

This bodes well for installers. The demand for your services has been established and continues to grow in importance as private wastewater systems are aging and standards for clean water are strengthening. At the same time, your potential customers are now starting to enjoy government assistance to offset the costs associated with upgrading or replacing onsite systems.

More and more customers will be in the pipeline, calling on your expertise. Now it's your job to be prepared to serve them. That means bolstering your crews that may be challenged by an aging workforce, and the need to train young people with strong backs and technical know-how. But that's a topic for another time. □

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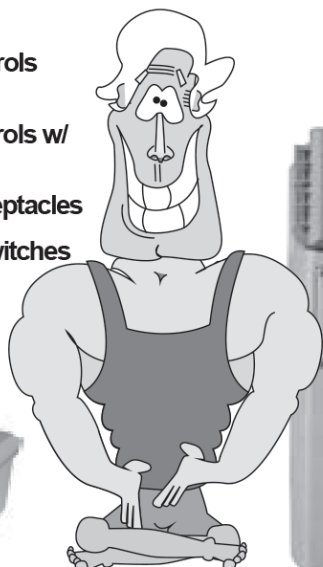
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## CUSTOMER COACHING

### Tips to Extend System Life

Depending on why a system needs to be repaired, there are many areas where the property owner may need some extra education to help their repaired system perform properly. Homeowner education is key to a successful system repair. Here are seven things to remind customers about to keep their system working as long as possible after a repair. [onsiteinstaller.com/featured](http://onsiteinstaller.com/featured)



## SAFETY NET

### Protect Your Business

If you're looking to cut expenses, it may be tempting to drop workers' compensation insurance. In some states it may be required coverage, however; and it is usually the only way to guard against the risk associated with workplace injuries or accidents. Here's everything you need to know about workers' comp insurance. [onsiteinstaller.com/featured](http://onsiteinstaller.com/featured)

## Overheard Online

"Many of the chemicals in dishwashing products that contain fragrance are the same chemicals in cigarette smoke, and yet there are no regulations for the fragrance industry."

- Septic Care: Explaining the Effects of Detergents  
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## REACH YOUR AUDIENCE

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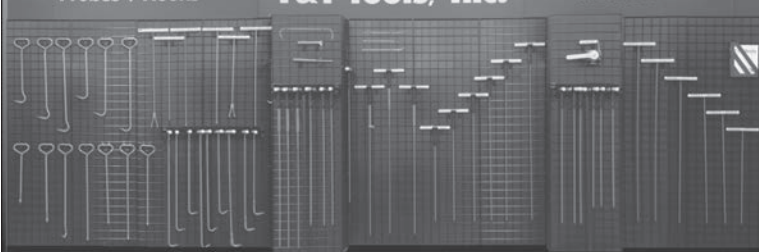


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# MAN DOWN, BUSINESS UP

An injury sidelined hardworking installer Jon Jouvenaux long enough for him to kick strategic planning into high gear

By David Steinkraus | Photos by Bruce E. Stidham

If its co-owner hadn't been injured and laid up for a while two years ago, BBB Septic would not be the growing company it is today. The shoulder surgery wasn't serious, but because of it Jon Jouvenaux couldn't drive a truck or run equipment at the Bentonville, Arkansas, onsite wastewater company.

"I was 49 at the time. But what the injury also did was force me to work *on* the business rather than *in* the business," he recalls. He and partner Dave Davis had always been busy with the daily details of running their company and serving customers — too busy. "We never had the time to figure out how to afford another employee or see what that next level of business looked like. But my injury changed our entire outlook and led to the growth spurt we have been in."

It has led them to develop the market around Bentonville. If the town sounds familiar but you can't remember why, try this name: Wal-Mart. "Through the '70s and '80s, this region was covered with chicken farms for Tyson and other companies. Then (transportations logistics company) J.B. Hunt and Wal-Mart started to grow, and our cities, Bentonville and this region, have become almost the hub of the spoked wheel of international business. Worldwide, everybody wants to do business with Wal-Mart."

Fayetteville, Rogers and Springdale cluster with Bentonville in the northwestern corner of Arkansas, on the edge of the Ozarks. Combined the cities hold about 260,000 people. "When the economy was hot a few years ago, this was the fastest-growing region of the country, and the infrastructure never kept up. As a result, only a few minutes from downtown Bentonville there are neighborhoods on septic systems."

BBB was formed in 1988 by a local man who drew the company name from his own name, which began with B, and the names of his two sons,

## BBB Septic, Bentonville, Arkansas



<b>OWNERS:</b>	Jon Jouvenaux and Dave Davis
<b>FOUNDED:</b>	1988
<b>EMPLOYEES:</b>	7 full time, up to 12 with temporary
<b>SERVICE AREA:</b>	Benton, Washington and Madison counties in Arkansas
<b>SERVICES:</b>	Jetting, pump installation, wastewater system installation and repair, pumping, sump pump repair, portable restroom rental, storm shelters and safe rooms
<b>ASSOCIATIONS:</b>	None
<b>WEBSITE:</b>	<a href="http://www.bbbseptic.com">www.bbbseptic.com</a>



**<<OPPOSITE PAGE:** The BBB Septic team includes, front row from left, Rachel Weldon, Joey Newbrough, Jonathan Hall, Tony Townsend, Patrick Hall and Jon Jouvenaux; back row from left, Dave Davis, James George, Bryan Scott, Dustin Lamp, Brook Cannedy and Brandon Scott. They are shown with a Freightliner vacuum truck from Longhorn Tanks and a Jurop/Chandler pump.

which also began with B. When the founder became ill, his sons already had other careers. Jouvenaux, Davis and a third friend, who left the company last year, acquired it in the mid-1990s.

## INSTALLING BASICS

Much of the company's work is for small businesses and dwellings. Only a handful of new developments feed wastewater to a municipal treatment plant. More common are septic tanks at each home feeding effluent to an individual or community drainfield. A small percentage of installations are ATUs, Jouvenaux says.

Pumps are another standard feature. Because of the topography, water is often pumped uphill to a drainfield. Arkansas allows drainfields of pipe and gravel, 8-inch gravelless pipe, and Infiltrator Water Technologies chambers and EZflow. Lateral pipes surrounded with gravel are common, but Jouvenaux and his crew prefer Infiltrator chambers. They store more water than the standard pipe-and-gravel solution, and they're better for maintenance, he says.

When a pipe-and-gravel system clogs, maybe an additive or jetting inside the pipe will help, but you can never reach the soil around the lateral; only the inside of the pipe is directly accessible. But when chambers are in place, you can dig a hole at the end of each lateral and flush or jet the entire system, Jouvenaux says.

About one-third of BBB's business is septic system installation or repairs. Most of the rest is split between portable sanitation and septic and grease trap pumping. Recently the company added storm shelter and safe room installation, an in-demand service in a part of the country prone to tornadoes and heavy storms.

"This was not a planned strategy. It happened by accident," Jouvenaux says. A customer asked if the company installed shelters. Well, Jouvenaux thought, it's really just a big septic tank without the pipes. He called Hausner's Limited, one of BBB's tank suppliers and a long-standing Arkansas maker of precast products. It turned out storm shelters and safe rooms were Hausner's primary line of business. BBB employees were trained and certified in installation.

"The bigger plus to this is we are not contacting only people with wastewater needs. Now our audience is anybody who owns a home, built a home or bought a home," Jouvenaux says. "When they need wastewater services, they already know us."

## IN THE GARAGE

BBB also does some work on the Wal-Mart campus, which has private lift stations to connect their wastewater system to the municipal system of Bentonville. That's



**ABOVE:** Tony Townsend runs a snake through a pipe to determine the distance between the house and a septic tank.

**BELOW:** Dustin Lamp operates a Bobcat trackhoe during a system repair job.







Dustin Lamp uses a Viztrac push cable video system from Amazing Machinery.

where one of the company's trucks comes in handy. It's a 2011 Chevrolet 3500 with a crane from Auto Crane Co. of Tulsa, Oklahoma. It's the best way to lift and lower the large pumps in the Wal-Mart lift stations. "We almost never have to get into a lift station with a person because that crane gives us the muscle to pull pumps," Jouvenaux says.

The rest of the fleet is:

- A 2001 GMC 6500 with a Satellite Industries 1,000-gallon waste/500-gallon freshwater steel tank; a 2006 GMC 5500 with a Satellite 700-gallon waste/300-gallon freshwater steel tank; and a 2004 International 4300 with a Longhorn Tank Company stainless steel 1,000-gallon waste/500-gallon freshwater tank. All three trucks use Jurop/Chandler pumps. The tanks were purchased at auction and BBB added them to the chassis in their own shop.
- A 2000 Freightliner FLD112 with a Specialty B 2,300-gallon steel tank and Jurop/Chandler pump — this truck also carries a pressurized water tank adapted from a concrete truck, particularly useful to serve restaurant grease traps; a 2000 Freightliner FLD112 with a Longhorn 3,700-gallon aluminum tank and Jurop/Chandler pump — this truck also carries a freshwater tank custom built by Longhorn to fit between the cab and frame; and a 2011 Peterbilt 388 with a 4,700-gallon Pik Rite steel tank and Masport pump.
- A 2013 Dodge Ram 3500 1-ton pickup; two 2014 Ford F-350 1-ton trucks (Jouvenaux and his partner drive these to visit customers or run equipment to job sites, or they're used in service if one of the regular service trucks is out of service); a jetter producing 40 gpm at 2,000 psi; and two Bobcat trackhoes, a 325 and a 430. The company also uses a Viztrac push camera from Amazing Machinery and a Goldak Triad locator to pinpoint onsite components.

## MAKING THE MOST OF TECH DEVICES

Leave home for the job site and what goes along in the truck depends on the project for the day. But for BBB Septic in Bentonville, Arkansas, there are a few technology tools that go along with every worker every day: the company's iPhones and iPads. And there are many reasons why these are indispensable devices, says Jon Jouvenaux, co-owner of the company.

There is easy communication with the office, and there is easy access to any document. The company has an account set up with the online storage service Dropbox. Each job has a separate folder, and in it are copies of permits and other documents a technician might need to call up while in the field. Registration documents for the company's various trucks are there, too, so no matter what vehicle a technician is driving, the paperwork for it is available at the tap of a screen. The office staff has a Dropbox folder not accessible to everyone, and there they keep master copies. If a permit or some other document is accidentally erased from a job folder, it's a simple matter to move a new copy into the appropriate folder.

The iPhones and iPads also have calculators. Their calendars interface with the master calendar for scheduling, and The Service Program software allows technicians to generate and complete job forms. Technicians also use the phones to gather satisfaction ratings from customers when a job is over, and there is an electronic level to quickly determine the slope of a pipe.

"Pretty much if my partner and I, who are in our 50s, can dream something up and put it online, our guys can pick it up quickly. Most of them are in their 20s and 30s, and I think the oldest is in his early 40s. When we tell them about an idea, they're like, 'Oh, yeah, we meant to tell you about that a year ago,'" Jouvenaux says.



Dustin Lamp pauses while working with the Bobcat trackhoe to call into the office.



Joey Newbrough pumps a septic tank. BBB Septic is a diversified operation that pumps, repairs and installs septic systems.

## NEW WAYS TO COMMUNICATE

Some of the tools that make the most difference to business at BBB are the company's computers and mobile devices. About four years ago, a couple of years before Jovenaux's shoulder injury, the company switched to Apple computers. Neither he nor his partner are technical guys, and Macs are simple, more resistant to viruses and have fewer problems, Jovenaux says.

At first, Davis printed off a daily schedule for employees. Then they shifted to using Apple's free iCal calendar software. They still use that as

**"We never had the time to figure out how to afford another employee or see what that next level of business looked like. But my injury changed our entire outlook and led to the growth spurt we have been in."**

**Jon Jovenaux**

a backup, but have shifted to The Service Program from Westrom Software, a fully integrated software package that handles scheduling, routing, billing and other chores. Everything is linked to technicians' mobile devices in the field, and financial information entered there flows automatically into QuickBooks.

When a service call is complete, the technician hands his smartphone to the customer and invites them to rate the quality of the call on Rate a Biz, a branch of Yodle, which hosts the BBB website and provides other business services. If a customer hands the phone back with a rating of only two or three stars, the technician is right there to ask what they can do to make it a five-star rating. That's why BBB has only four- and five-star ratings online, Jovenaux says.

When a customer calls for an appointment, the office staff first captures an email address. When a service call is over, the customer receives another email with links to the company's Facebook page, and to Angie's List and other business-rating services, and the customer is invited to rate BBB there, too. Not every customer does it, Jovenaux says, but only a few responses on a service like Angie's List greatly increase the visibility of the business.

For the same reason, BBB recently hired a freelance writer to produce copy for the company's blog and other social media outlets. Again, the reason was Jovenaux's need to work on the business rather than in it. Analytics for the website showed traffic dropped in January when he didn't have time to post entries, he says.

Jovenaux talks very knowledgeably about all these technical topics and the ins and outs of social media platforms, yet his knowledge is new. It is



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Dustin Lamp uses a Goldak Triad 2310 SC locator to find a septic tank during a service call.

another result of the injury and an illustration of what someone can do and learn in a couple of years.

## PEOPLE SKILLS

Jouvenaux meets with real estate brokers to educate them about onsite wastewater systems, why the systems should be maintained, and why they need time-of-sale inspections, which is generally not required in the region. He also meets with property owners' associations to educate them about wastewater systems.

From three employees, the company has expanded to seven full-time people, which increases to 12 with temporary help when workload is heavy. In the early 2000s, many onsite systems were installed as the area expanded, but owners did not do maintenance, so many are now having problems. Relationships with real estate brokers are key to getting this business because they may provide referrals to BBB before a homeowner has a problem.

Hiring good employees is also a key to success. In many cases, the BBB management knows new employees in other ways. Dustin Lamp, the employee with the greatest longevity, was a friend from church working in an auto repair shop that was not doing well. At the same time, BBB was spending a lot of money to have repairs done outside the company. It was a natural pairing to bring in-house a skilled mechanic who could also operate equipment and a pump truck.

**"We believe there's more than enough work to go around. And we keep our standards really high."**

Jon Jouvenaux

Brook Cannedy, another employee, has a background in electrical work, was a family friend, and was ready for a new job at the same time BBB was looking for a person to take over the pump service and installation side of the business. Jouvenaux found a source of qualified workers in the local school district. Through his wife, Julie, a teacher, he found school bus drivers who hold commercial licenses and have hours free in the middle of the day. Some of them became portable restroom technicians.

## ON THE HORIZON

Jouvenaux and Davis have not stopped thinking about the future. They're currently mulling treatment options. There's a lot going on in watersheds around his area, Jouvenaux says. Aging infrastructure and a lack of investment mean municipal wastewater plants are limited in how much septage they can accept or, because a few people dumped contaminated loads, refuse to let any pumper discharge at plants.

So at the WWETT Show in Indianapolis, Jouvenaux explored small-scale products to process wastewater. Options could include a small treatment plant or dewatering equipment. He and Davis are still thinking about that and



are also considering expanding their portable restroom business.

There is competition for BBB, of course. But Jouvenaux refuses to worry about it.

"We believe there's more than enough work to go around," he says. "And we keep our standards really high." □

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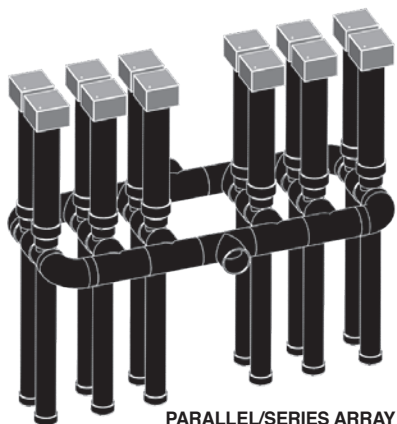




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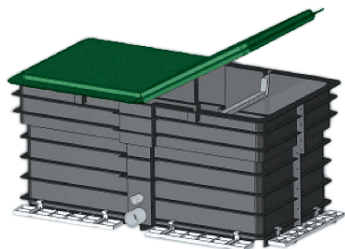
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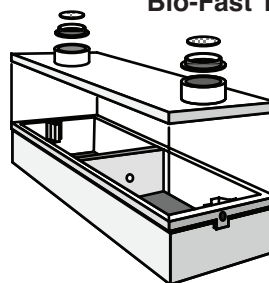
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# Trade Associations Play Watchdog, Partner Roles With States

In Oregon, wastewater professionals gather to lobby regulators and raise training standards

By Doug Day

**T**he Oregon Onsite Wastewater Association was formed in 1995 over concerns about a substantial rewrite of regulations in the state. Designed as both a watchdog and a liaison between the private sector and the Department of Environmental Quality, association president Brannon Lamp says the relationship has worked well ever since.

With nearly 300 members, O2WA is governed by a 13-member volunteer board with representatives of manufacturers, engineers, soil scientists, installers, pumpers, septic tank manufacturers, O & M providers, an environmental health specialist and a county regulator.

## How does O2WA work with the DEQ?

**Lamp:** The DEQ's onsite program coordinator, Randy Trox, is an ex-officio member of our board of directors. DEQ keeps us apprised of the goings-on in their program and occasionally comes to us for input and comments on policies and procedures. We'll sometimes give them recommendations about how the program is operated. Largely, it's been a success. Keeping that line of communication open is critical, and we're striving to do more all the time.

**"The industry is busier than it's been in quite a few years. I think it's primarily because of the strong housing market. A lot of people are buying and selling real estate, and there's also a lot of commercial development going on."**

Brannon Lamp

## What is the biggest issue you're dealing with?

**Lamp:** There are concerns about consistency in regards to how the program is operated state-wide. O2WA recently formed an ad hoc committee to review and address some of those concerns. Geography, site and soil variabilities are certainly part of it, as are materials concerns and installation techniques. Things are supposed to be done uniformly no matter what side of the state or which county you are in. We and our members, particularly installation

contractors, have found that that's not always the case. They might cross a county line and find a completely different way of doing things that may or may not be consistent with the rules.

## Brannon Lamp

Oregon Onsite Wastewater Association president,  
at 503/922-2149 or [brannon@aquar-resource.com](mailto:brannon@aquar-resource.com)

**O2WA**



A few years ago, DEQ was involved in a dispute with an environmental group claiming (the DEQ wasn't) doing enough to meet the Coastal Zone Management Act. Part of those negotiations did affect onsite wastewater in that they initially were going to start a mandatory inspection program for systems in the coastal zone. Eventually they compromised and did not make it mandatory, but they did come up with a framework, form and format for conducting inspections. Now, anywhere in the state where a system inspection is performed, the qualified person is supposed to follow the same procedure.

We weren't part of the negotiations, but did provide input on the format of the inspection program and what sort of individuals are qualified to perform them. We provided the initial draft of the form to DEQ that we put together in an ad hoc committee. They didn't accept everything we put in front of them, but they did accept a lot of our input. There are questions about the efficacy because inspections aren't mandated, but it's good to have that consistent framework to use.

## Tell us about your certification programs for wastewater professionals.

**Lamp:** I think we have a reasonably robust certification program. We have licensing and certification requirements for installers that start with a one-day training course with an exam. Installers are required to obtain 18 continuing education hours every three years to maintain certification. We have something similar for certified operation and maintenance providers. That's a two-day course with an exam and the same continuing education requirements. The exam is administered by Chemeketa Community College through an agreement with DEQ.

The exam courses are put on by longtime industry professionals. O2WA provides the training materials and we have quarterly meetings with the college. For continuing education, O2WA provides occasional training seminars and courses across the state with various individuals presenting



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them. We also have our two-day annual conference and one-day mini conference. Those conferences are the primary source of CEU credits for many practitioners.

For design professionals, we use professional engineers and registered environmental health specialists who have their own certification requirements, many of which do overlap.

Currently, you don't need to be certified to be a pumper, but you do need a sewage disposal license from the DEQ. Many of our pumpers do chose to get some sort of certification, whether it be through the National Association of Wastewater Technicians or some other entity, so they can do things like system inspections that they wouldn't otherwise be able to do. We have many pumpers in our association.

### Is there anything coming up that will demand your attention?

**Lamp:** I'm sure we're not alone with this, our program at the state level seems to be poorly funded and supported. We do have challenges ahead of us in regard to how we fund and staff that program adequately so it can operate in an efficient manner. We do have concerns about the ability for the program to operate adequately in the future.

### How much lobbying do you do to influence legislators?

**Lamp:** Unfortunately, I would say at this point, not enough. We've certainly worked with DEQ on various bills in the past, but with pretty limited success. The program is not something that people find particularly attractive, therefore we find it's not well supported. Historically, much of the legislation put forth doesn't end up getting too far, but that changed just recently with the passage of Senate Bill 1563A, which requires the DEQ to award grants for the purpose of developing and administering loan

programs to provide low-interest loans for purposes related to onsite septic system repairs, replacements, upgrades and evaluations.

We are looking at the possibility of working with a lobbyist. It's on our radar and will be discussed at future board meetings. We recognize there's a need for us to perhaps be a little more vocal and try to affect some change at the policy level of the legislature. I believe DEQ would welcome that, especially if we can operate with a unified front.

### Have you been working internally on any new ideas?

**Lamp:** Like most organizations, we have an annual two-day conference, but last year we added a second one-day mini conference in November. We'll continue to hold that in a rural area of the state so that people who wouldn't normally attend our annual conference have a chance to attend and have dealings with our organization.

We have a good scholarship program and are setting up a separate, nonprofit organization so we can allow tax-deductible donations. Now it's funded by organization revenues and fundraisers.

### How's business in Oregon?

**Lamp:** Without question, business is booming. The industry is busier than it's been in quite a few years. I think it's primarily because of the strong housing market. A lot of people are buying and selling real estate, and there's also a lot of commercial development going on. The bigger cities like Portland are just running out of room for folks, and density is increasing with a lot of apartment and condominium buildings going up in areas that had been primarily single family. We actually have a deficit in housing, especially affordable housing, in Oregon at this point. We're looking forward to supporting our members as they're able to make hay. □



# Minnesota Looks to Ban 'Flushable' Designation for Wipes Products

By Doug Day

The Minnesota Pollution Control Agency has proposed a ban on labeling wipes as "flushable" or "safe for septic or sewer systems." Instead, those products would be required to carry a label saying "Do not flush." MPCA will seek legislation to enact the ban this year. In its proposal, the agency says, "Disposable wipes – used for changing diapers, personal hygiene, housecleaning, and more – cause major problems when flushed down toilets. Because they don't break down the way toilet paper does, these wipes clog homeowner and municipal sewer pipes, put stress on community wastewater collection and treatment equipment, and cause cities to spend thousands on premature equipment repair and replacement. Wipes snag on any imperfection in sewer pipes, catch passing debris and grease, and create a 'ball' that will grow to plug the pipe."

Four Minnesota cities are involved in a class-action lawsuit against wipe manufacturers. A federal judge last October put six such lawsuits on hold, saying the government should determine the meaning of "flushable." Weeks later, the U.S. Federal Trade Commission finalized a consent order that required Nice-Pak Products to stop advertising its moist tissue and cloth products as "flushable" or "safe for sewer and septic systems," unless it can substantiate the claims.

Also, MPCA says it won't fine the unincorporated community of Reading, Minnesota, for violating pollution laws over many years. The town has no sewer system, and only one of its 52 properties has a compliant septic system. A notice of violation was issued in 2012 and MPCA says it won't issue fines as long as the town shows it is trying to solve the problem. Most sewage flows through a tile system and into a creek. The community is petitioning for a sewer district to help garner grant money for a central sewer system, though people who have or install a compliant septic system would not be required to hook up.

## HAWAII

With the swipe of his pen on March 11, Hawaii Gov. David Ige has banned new cesspools in the state. The Hawaii Department of Health has been trying to enact the ban for a few years; former Gov. Neil Abercrombie did not sign a previous version of the new administrative rules before leaving office in December 2014.

Hawaii is the last state to enact a ban on new cesspools. They have been allowed on most of Hawaii Island and parts of Maui and Molokai. There are about 88,000 in operation and the state has been approving about 800 new cesspools annually. According to a DOH announcement of the signing, "Cesspools provide no treatment, and inject about 55 million gallons of raw sewage into Hawaii's groundwater every day, potentially spreading diseases and harming the quality of drinking water supplies and recreational waters."

The new rules also implement the 2015 law providing a tax credit of up to \$10,000 to upgrade cesspools to septic systems or connect to a sewer system. That credit only applies within 200 feet of the ocean, streams or

marsh areas, or near drinking water sources. There is a limit of \$5 million in credits annually. Opponents of the ban have argued that many homeowners won't be able to afford the \$20,000 to \$30,000 cost of a septic system. They say a cesspool can be installed for around \$3,000.

## NEW YORK

Suffolk County on New York's Long Island has recognized Long Island Liquid Waste Association (LILWA) certification training and continuing education as the basis for new licensing requirements for Liquid Waste License holders. New rules also require license holders to apply for endorsements for specialized services they provide. There are 11 license endorsement categories ranging from septic tank and grease trap servicing and portable restrooms to haulers, conventional or alternative system installers and service providers. A two-year license comes at a cost of \$400 and includes one endorsement. Each additional endorsement is \$200.

Many of the endorsements will be covered by LILWA training. Other required training includes OSHA 10-hour general industry online training (portable restroom operators), a two-day conventional inspection class (conventional system inspectors), and a one-day innovative and alternative (I/A) treatment system class (I/A installers and service providers, which also must be certified by the manufacturer of the technology being used).

Suffolk County is also conducting a second septic lottery. About 70 percent of the county is served by onsite systems and it would cost \$9 billion to provide public sewer service to everyone. Winners of the lottery get a free advanced wastewater treatment system, including installation, monitoring and maintenance for five years. The county had a similar contest in 2014 and gave away 19 systems valued at up to \$16,000 each; more than 150 people entered the random drawing. The county will decide how many systems to give away this year based on the response to a request for equipment donations from manufacturers.

## RHODE ISLAND

A law proposed in Rhode Island would require pharmaceutical companies to pay the cost of collecting and disposing human waste from cancer patients treated with toxic drugs. Companion bills of the Safe Cytotoxic Waste Disposal Act have been introduced in both the state's Senate and House. While other states have regulations concerning disposal of drugs and medicines, the National Conference of State Legislatures says this is the only bill ever introduced to regulate collection of human waste that may contain the drugs. The act would establish a stewardship program starting in July 2017, funded by drug companies, to cover the estimated \$8 million annual cost of collecting human waste for proper treatment and disposal in order to prevent the toxic substances from getting into the environment from sewer or septic systems.



## MISSISSIPPI

Due to budget cuts, the Mississippi Health Department has instituted an online system to schedule and document septic system applications and inspections. Rather than needing to go to an office to set up a soil test, it can be scheduled online. Inspectors have tablet computers to document the tests and develop system recommendations, which will be emailed to the consumer. Once the system is installed, the homeowner can contact the local health department for a final inspection.

## NORTH CAROLINA

Some septic system installations are now subject to sales and use tax in North Carolina. Regulation changes this spring caused a lot of confusion among businesses. The sales tax must be charged if a business qualifies as a "retailer" under the law, meaning "the majority of their revenue is from retailing tangible personal property, digital property, or services to consumers." The Department of Revenue publication uses an example of a septic installer with \$5 million in revenue, of which \$4 million is from the retail sale of septic system components and \$1 million is from installation charges. In that case, all sales transactions must be treated as retail sales and would be taxed. However, the new rules state, "A person engaged solely in the business of installing and repairing inground septic tank systems is a real property contractor. The person is not a retailer of repair, maintenance and installation services, no matter that the person may charge a fee for troubleshooting a problem with the septic tank system."

## PENNSYLVANIA

The Pennsylvania Infrastructure Investment Authority (PENNVEST) and the Pennsylvania Housing Finance Agency (PHFA) have expanded eligibility for the Homeowner Septic Program that provides low-interest loans to pay for repair and replacement of onsite wastewater systems. Along with eliminating a limit on household income, the application process has been streamlined and a previous cap of \$17,500 for manufactured homes has been eliminated so that \$25,000 is the maximum loan for all properties.

## TEXAS

A Denver man has been charged with a felony for repeated violations involving a failed septic system in a small subdivision near Kerrville, Texas. Corey Abel works for Tobusch LLC, which owns the cluster system that serves 28 homes. The operating permit for the system was revoked and the owners were under orders to have it pumped daily. The charge is unauthorized discharge of waste, connected to alleged malfunctions that deposited raw sewage on the surface since last summer. The Texas Commission on Environmental Quality has also opened an investigation.

## WISCONSIN

The Wisconsin Department of Safety & Professional Services has issued guidance to confirm what electrical work installers of onsite wastewater systems can do themselves rather than hiring a licensed electrician. The industry has been seeking such an exemption for years, according to the Wisconsin Onsite Water Recycling Association. With the change in state law, onsite professionals can now:

- Lay all the cables in the trench.
- Attach the junction box to the manhole riser.
- Install any electrical wiring or equipment within any tank.
- Connect all conductors associated with the system within the junction box at the dose chamber.
- Connect all conductors associated with the system to the nearest disconnecting means at the house.

## NATION

The U.S. and Canadian governments have agreed to develop plans to reduce phosphorus runoff in Lake Erie over the next two years to cut down on algae blooms. Fertilizers and livestock manure from farms are cited as the primary source of phosphorus, though it can also come from wastewater treatment plants and failed septic systems. The agreement calls for a 40 percent reduction in phosphorus in the central and west sections of Lake Erie, which were hit with large algae blooms in the last few years.

## CANADA

### British Columbia

A group of neighbors in the Nicola Valley of British Columbia, Canada, pitched in to buy land near their drinking water well to prevent it from being used for land spreading of biosolids from wastewater treatment plants. The 19 neighbors bought the 320-acre property for \$450,000. It is located about a mile from the water well.

### Nova Scotia

A 12-year-old girl's science project has cast a spotlight on a well-known issue along the LaHave River in Nova Scotia, Canada. Stella Bowles has been taking water samples and posting results on her Facebook page, showing that levels of *Enterococcus* bacteria exceed Canadian health guidelines. Her results have been validated by a government laboratory. Authorities have known of the existence of straight pipes discharging to the river for decades. One community is now discussing a program to remove 600 straight pipes, install septic systems and bill homeowners over 10 years to cover the estimated \$13.1 million cost. ▣

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# Treatment Tips for a Tight Squeeze

A small residential lot with obstacles in every direction pointed to an onsite solution utilizing a membrane bioreactor and a compact drainfield design

By David Steinkraus

**H**ow do you install a complex onsite system when you're working on a very small lot? You get creative — and you really pack in the equipment. Zeiter's Septics Unlimited did that in a subdivision in Shorewood, Illinois, a community about 40 miles southwest of Chicago.

"In the backyard there was no room, maybe a 20-by-20 area to work with. On one side of the house was a driveway. On the opposite side was a

pool. The front yard had telephone, power, and other utilities running through it," says installer Dave Zeiter.

This was a system replacement. Local officials installed a new connector road to reach a nearby interstate highway, Zeiter says. "The owner's old system fed a tile that crossed the road and discharged somewhere, perhaps into another tile. The road construction damaged the tile system, and effluent from the owner's land began surfacing and flowing into the ditch beside the road." Local officials told the owner to repair the system.

## SYSTEM PROFILE

<b>Location:</b>	Shorewood, Illinois
<b>Facility served:</b>	Private home, 5 bedrooms
<b>Designer:</b>	Zeiter's Septics Unlimited, Morris, Illinois
<b>Installer:</b>	Zeiter's Septics Unlimited, Morris, Illinois
<b>Type of system:</b>	Bio-Microbics BioBarrier
<b>Site conditions:</b>	22 to 24 inches of black, permeable loam
<b>Hydraulic capacity:</b>	1,000 gpd

## TUNING THE FLOW

From the house, wastewater emerges through a 4-inch pipe and runs about 8 feet into a 2,100-gallon tank from Grove Concrete. The tank is partitioned into an 800-gallon settling tank and a 1,300-gallon tank that houses a pair of Bio-Microbics BioBarrier MBRs. A SaniTEE filter at the outlet of the 800-gallon tank bridges the two parts of the tank.

Zeiter set Tuf-Tite risers and lids: a 12-inch riser above the clean-out and a 24-inch riser above the SaniTEE for easy access. A pair of 30-inch Infiltrator Water Technologies TW risers were installed above the BioBarrier units for convenient servicing.

The BioBarrier installation was two 0.5 units combined to reach a 1,000 gpd flow for the new system. Two Goulds stainless steel pumps built into the MBRs pushed treated water out through 2-inch pipes about 25 feet to the front of the house where the drainfield was laid under the lawn.

A Bio-Microbics panel controls the system. Zeiter typically installs globe



**<<OPPOSITE PAGE:** The crew from Zeiter's Septics Unlimited prepares to set a tank at a small field installation in Shorewood, Illinois. The front yard of the home was the only place for the drainfield, and the sections of Infiltrator Water Technologies chambers mark the spot.

**BELOW:** The BioBarrier allowed the use of a very small drainfield, essential in the restricted space at the Shorewood, Illinois, project. From a Tuf-Tite distribution box, pipes feed three sections of Infiltrator chambers. Treated water falls on bare soil except for cement pavers used as a splash pad to prevent soil erosion where water enters the chambers.

**>>RIGHT:** Technicians from Zeiter's Septics Unlimited fit a drainline and risers to the tank holding a Bio-Microbics BioBarrier. From back to front are: Matt Moser, Shaun Pratscher and Mike Gifford. The tank is fitted with four risers: a Tuf-Tite 12-inch over the clean-out, a Tuf-Tite 24-inch over the effluent filter separating the trash and MBR sections of the tank, and two Infiltrator 30-inch risers above each of the MBR units for easy service access. (Photos courtesy Dave Zeiter)



**"In the backyard there was no room, maybe a 20-by-20 area to work with. On one side of the house was a driveway. On the opposite side was a pool. The front yard had telephone, power, and other utilities running through it."**

**Dave Zeiter**

valves in the discharge tubing of MBRs. This allows fine-tuning the flow through the MBRs. Experience has taught him the slower the water is pulled through the reactor membranes — especially a flow of less than 3/4 gpm — the longer the required interval between membrane cleanings. The risk of this technique is a high-water alarm if the dwelling occupants suddenly increase their water usage.

Before reaching the drainfield, the pipes first enter a Tuf-Tite distribution box where the pipe diameter increases to 4 inches. These feed three laterals, each inside 20-foot sections of Infiltrator

chambers. A piece of paving tile inside serves as a splash pad to prevent erosion where the feed line enters the chamber, but otherwise the soil is bare. The flow rate is so small — at most 1.5 gpm when both pumps are running — that nothing more is necessary.

"Strictly speaking, we didn't really need that third run, but in some parts of life more is better, and this will ensure the hydraulic load doesn't exceed the capacity of the soil. Also, there is still a considerable savings compared to systems that require 500 or 600 linear feet for laterals," Zeiter says.



It was a relatively straightforward job, done in the course of a day with the help of Zeiter's Bobcat 273 skid-steer and Komatsu PC50 mini-excavator.

### **VARIANCE EASES THE SQUEEZE**

Because of the tightness of the space to install the system, Zeiter received a variance from the county to drop the tank only 6 feet from the foundation wall of the house. Code requires 10 feet. He and his crew had to cut out about 50 square feet of asphalt from the driveway and a 3-foot section of sidewalk to install the discharge pipe feeding the drainfield. And they had to work around a 2-inch discharge line from a sump pump. Because it was already the end of November when this rush job was done, Zeiter only backfilled the excavations to grade with soil. The owner said she would handle restoration herself.

On many jobs, Zeiter will increase the capacity of the BioBarrier assembly. A single 0.5 unit may do the job even in a four-bedroom home, yet if someone is doing laundry while the kids are taking showers, the extra load may trigger a high-water alarm. "This is a water recycling system, not a wastewater system pumping out 20 gpm. It's a green technology with many pluses, but one of the negatives may be high-water alarms if not enough treated water is being pumped out," Zeiter says.

Because the home was occupied, Zeiter started the MBRs right away. Normally that isn't the case, because once wet, the components must remain wet in order to continue functioning, he says. So in most jobs he or a technician will come to a property about a week before occupancy, fill the tank and turn on the blower.

### **QUICK INSTALLATION**

"I think we put this project together in a week. We were also able to expedite the permit through the county," he says. And although the space was



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The completed MBR installation shows only a few riser lids peeping above grade. Notice the restricted space to the left and right of the home. The backyard was similarly small, necessitating placement of the drainfield in the front yard.

**"Strictly speaking, we didn't really need that third run, but in some parts of life more is better, and this will ensure the hydraulic load doesn't exceed the capacity of the soil."**

**Dave Zeiter**

tight, the system went in easily, with only about 30 minutes when the homeowner couldn't send wastewater out of the house.

The existing septic tank was small and was abandoned in place. "We pumped it out, popped a hole in the bottom, and then we pulled the sides in. We don't like spanning a caved-in tank unless we can fill it with stone to support a pipe above. Sometimes we'll leave a corner of the wall up for support. In this case we could install a 22-degree bend plus a 45 and miss the old tank site entirely," Zeiter says.

The soil was 22 to 24 inches of black loam. "It was so good we had a hard time keeping the tubes full during the infiltrometer hydraulic load tests."

As a result, the homeowner went into winter with a fully functioning wastewater system that will last on the property for years and protect the local environment.



**MORE INFO:**

**Bio-Microbics, Inc.**  
800/753-3278  
[www.biomicrobics.com](http://www.biomicrobics.com)  
(See ad on page 22)

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[www.goulds.com](http://www.goulds.com)

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(See ad on page 3)

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# The Latest Gadgets and Gizmos for Your Truck and Van

Take a look at tools and technology to boost horsepower, go through snow and convert to propane power as seen at the NTEA Work Truck Show

By Ed Wodalski

**F**rom pills that dissolve in your fuel tank to alternative fuel conversion kits, safety chains at the flip of a switch, swivel ramps and rear-vision cameras, hundreds of products are designed to improve truck performance and reduce your workload.

Among the gizmos and gadgets at this year's NTEA Work Truck Show in Indianapolis was the Max View safety partition from Ranger Design ([www.rangerdesign.com](http://www.rangerdesign.com)). Voted the most innovative product at the show, the partition is made to snugly fit Ford Transit Connect, Ram Promaster City and Mercedes-Benz Metris

**"We've had folding ramps for a long time, and customers asked for a swivel option. The locking mechanism on the right-hand side is removable. If you had a pallet and needed to put something in the cargo area, you could easily go right over it."**

Michael Hof

cargo vans. Molded from clear thermoformed ABS and polycarbonate, the impact-resistant, see-through partition enhances cargo space visibility, eliminates blind spots and improves cabin comfort by reducing noise and allowing full seat travel.

Tired of soot reaching your diesel particulate filter? How about a pill that lets your DPF breathe better? While it might not go "plop,

plop, fizz, fizz," DPF Remedy ([www.dpfremedy.com](http://www.dpfremedy.com)) bonds with the fuel, allowing combustion to occur at lower temperatures, and claiming to improve fuel efficiency by 10 to 20 percent. Drop a dissolvable tablet into each tankful of diesel or gasoline.

As the name implies, DPF Remedy is an organic diesel fuel catalyst that prevents particulates from forming and reaching your truck's diesel particulate filter. The company claims its tablets reduce DPF regen by up to 800 percent, decrease emission by 50 to 90 percent and boost horsepower by 3 to 5 percent.

## HITCH-AND-GO

A handy option for installers, pumpers and plumbers is the rearview camera with Tow-Hitch Assist. Available with the Ford Transit, the hitch assist takes the guesswork out of trailer backing. The camera transmits an image to your rearview mirror or multifunction display on the center dash. Colored guidelines provide a simple-to-follow roadmap.

Another one-person loading gadget is the 180-degree Swivel Ramp from Link Manufacturing ([www.linkmfg.com/swivel\\_ramp](http://www.linkmfg.com/swivel_ramp)) — swing it out when you need to load, swing it in when you're ready to roll. Designed for cargo van and box truck applications, the 30- to 47-inch-wide aluminum ramp offers up to 1,500 pounds of loading capacity. The bifold ramp latches in stowed and fully open position. The removable latching module provides open floor space for loading or transporting oversized loads.

"By swiveling, you get easy access to the back of your vehicle," says Michael Hof, vice president of sales and marketing.



DPF Remedy tablets bond with your truck's fuel to promote better combustion and reduce particulate matter reaching the filter.



The Tow-Hitch Assist, an option on Ford Transit vans, enables one person to easily attach a trailer.



The Onspot automatic tire chain system provides on-demand grip when you hit snow and ice.



**ABOVE:** Mark Denton, of Alliance AutoGas, holds the propane plug-and-play fuel conversion kit.

**>> RIGHT:** The bifold Swivel Ramp from Link Manufacturing has a 1,500-pound capacity and swings out of the way when not in use. (Photos by Ed Wodalski)



Predrilled bolt holes allow for easy installation in Promaster, Nissan, Transit and Sprinter vans. Ramps can be installed by an upfitter or in the shop; instructions and hardware are included.

"We've had folding ramps for a long time, and customers asked for a swivel option," Hof says. "The locking mechanism on the right-hand side is removable. If you had a pallet and needed to put something in the cargo area, you could easily go right over it."

### RETRACTABLE CHAINS

Anyone who drives on icy, snow-covered roads would appreciate the Onspot automatic tire chain system ([www.onspot.com](http://www.onspot.com)). With the flip of a dashboard switch, the system offers the traction of a single set of conventional snow chains without stopping. The system works in forward, reverse or while braking in either direction. Six lengths of chains spaced at 60-degree intervals on the chainwheel ensure there are always two strands of chains between the tire and road surface. When no longer needed, flip the switch and chains return to their resting position.

The automatic chain system is designed for long hauls at speeds up to 35 mph and plowing through up to 6 inches of snow. Suited for spring- or air-suspended vehicles, the permanently installed system is DOT approved in all 50 states.

Another handy cold weather gadget is the Webasto coolant heater that provides a warm start to your day without having to run your truck engine ([www.webasto.com](http://www.webasto.com)). The Thermo Top C is designed for trucks and off-road equipment. Using less than a gallon of fuel per hour, it delivers up to 17,000 Btu of heat, quickly bringing your engine up to operating temperature.

### CLEAN FUEL CONVERSION

Looking to convert all or part of your fleet to a clean-burning fuel? Alliance AutoGas offers a plug-and-play solution for most diesel- and gasoline-powered trucks ([www.allianceautogas.com](http://www.allianceautogas.com)). Designed to run on propane, Alliance's system can be installed on new or existing fleet vehicles. All wiring is precut and brackets are designed to be installed without drilling or fabrication. Vehicle conversion is about \$5,800 with potential for grants and tax incentives further reducing the cost.

Alliance performed a live install on a 2016 Ford F-150 at the NTEA truck show, completing the conversion in about two hours.

"You still have the luxury of gasoline as a backup," says Mark Denton, vice president, business development. "If you run out of propane, it goes back to gasoline."

Alliance also provides propane refueling stations that can be placed on your property or shared with another propane user nearby. Proprietary fuel cards protect against theft.

"It works on about 80 percent of commercial vehicles," Denton says. "If you're running a fleet, we have (U.S. Environmental Protection Agency) certifications on almost all the Ford products. We've got the Transit. We've got the E Series and the F Series."

Other applications include the 3.6L RAM Promaster, 6.0L Chevrolet Silverado and Express, and Isuzu NPR. It can also be used on the 14L Detroit Diesel Series 60 and Volvo 12.8L D13.

### GRILL GUARD

American Midwest Fleet Solutions has a handy gadget that protects full-size Chevy and Ford van grills from impact with deer and other animals. Made of high-strength steel, the grill guard is designed to keep your van on the road and not in the shop. □

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# Infiltrator Water Technologies Introduces the EZ Snap Riser

By Craig Mandli

Septic system installers value modular components that are durable and easy to install. Those are the ideas that Infiltrator Water Technologies engineers had in mind when they rolled out the EZ Snap Riser for the first time at the 2016 Water & Wastewater Equipment, Treatment & Transport (WWETT) Show.

“It’s a riser system that doesn’t require any tools to assemble or install,” says Jim Bransfield, Infiltrator marketing manager. “It’s a modular system that actually snaps together simply by twisting, allowing the installer to make as tall a riser as desired on a system.”

The risers are made from glass-reinforced polypropylene and can be used with either concrete or plastic tanks. They will be available in green with a 24-inch diameter. Slip-resistant lids are fastened using stainless steel screws. The lids are made from virgin polyethylene, providing strength and increased impact resistance. The urethane gasket creates a watertight seal. Lids can withstand a wheel load comparable to the weight of a full-size pickup truck.

The risers were unveiled for the industry at the 2016 WWETT Show, and Infiltrator plans to have them ready for the market by fall.

“The EZ Snap is in the beta test phase at this point, but the feedback we’ve received on it so far has been overwhelmingly positive,” says Bransfield. “Installers are always on the lookout for products that are efficient and make installing and servicing their systems easier, and this is a product designed to do that.”

The risers can be installed on modified Infiltrator septic tanks, or can be retrofit to any tank. They are available in 6- and 12-inch versions, and can be nested together for more efficient shipping. When snapped together, multiple risers create a watertight gasket-to-gasket seal. They are also compatible with Infiltrator’s riser Safety Lid System. The fiberglass-reinforced lid systems provide secondary protection if a primary riser lid is damaged or removed. They fit in the uppermost riser stack of the EZ Snap Riser, preventing unintended tank entry.

“Safety is a priority in the industry, so we’re designing this riser to work with our safety lids and pans,” says Bransfield. “The safety components are



At the WWETT Show, Jim Bransfield, left, of Infiltrator Water Technologies, shows how the snap system works on the company’s new EZ Snap Riser. (Photo by Craig Mandli)

certainly something we recommend all installers utilize.”

Because they are a modular product, the risers can be easily replaced if damaged. An installer can unsnap the damaged riser, and snap a new one into place in minutes. “Again, there are really no tools involved in switching out a broken riser,” says Bransfield. “That turns it into a pretty quick job for most installers.”

Infiltrator Water Technologies easily met the company goals at the WWETT Show. In addition to selling its product lines, the company identifies installers at the show who are willing to beta test new products such as the EZ Snap Riser, according to Bransfield.

“Not only is that a way to thank our good customers, it lets us make inroads with potential new customers,” he says. “Overall we had great traffic and a lot of interest in multiple items in our product line. It was a very good week for us.” 800/221-4436; [www.infiltratorwater.com](http://www.infiltratorwater.com). □



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# Alarms, Controls and Monitor Systems

By Craig Mandli

## ALARMS

### Alderon Industries 7992 Wireless Versa'larm

The 7992 Wireless Versa'larm from Alderon Industries provides remote signal up to 3,250 feet, monitors liquid levels for water or wastewater applications and is shipped with a 15-foot weighted/pipe clamp float switch, 2.5-foot post and 2-inch riser kit. The system includes an indoor-rated high-water alarm with an outdoor-rated wireless remote sensor, riser connection kit and optional mounting post. When the liquid level rises, the float switch activates the transmitter and sends a signal to the unit, activating the alarm buzzer, alarm indicator light and auxiliary contacts. The auxiliary contacts can be used to connect an auto-dialer or to connect to an existing security or building automation system. The wireless transmitter is waterproof and has an internal lithium battery with a life of approximately five years under normal operating conditions. 218/483-3034; [www.alderonind.com](http://www.alderonind.com).



### Polylok Filter Alarm (Smart Alarm)

The Polylok Filter Alarm (Smart Alarm) is a wired indoor/outdoor filter alarm, which provides audio/visual warning for home or business owners that their septic tank filter needs cleaning. The smart alarm switch activates when the filter cartridge reaches about 90 percent full of solids built up during the filtering process. It has a manual alarm test switch and horn silence, an alarm horn rated to 82 dBA at 10 feet, and 15 feet of cable (with longer lengths available). It is specifically designed to fit Polylok, Zabel or Best filters, ensuring proper placement of the switch. 877/959-7751; [www.polylok.com](http://www.polylok.com).



### Septic Services Red Alert LB50 high-water alarm

The Red Alert LB50 high-water alarm from Septic Services monitors water level conditions in multiple applications including lift stations, alerting of high water levels before potential sewer backup into buildings. It has a warning light and 83 dBA audible alarm, along with an easily accessible three-position switch to change the alarm between normal operation mode, alarm silence mode and alarm testing mode. It can be used in residential sewage systems, dosing chambers, lift stations, cisterns, and other water and sewage systems that require high-water detection to prevent equipment damage or failure. It is easy to install by connecting the level control switch to terminal blocks and plugging the 7-foot power cord with grounded plug into a 115-volt outlet. 800/536-5564; [www.septicserv.com/store](http://www.septicserv.com/store).



### See Water HLA Liquid Level Alarm Series

The HLA Liquid Level Alarm Series from See Water includes the HLA Type 1 indoor-rated alarm, the HLA-4X indoor/outdoor robust alarm, and the HLA-4X-X — a variety of models ranging from two to 10 alarm points. The alarm panels may be used for tank monitoring, sewage pump chambers, sump pump basins and other liquid level monitoring applications. They are UL-listed. 888/733-9283; [www.seewaterinc.com](http://www.seewaterinc.com).



### Septronics interior alarms

Interior alarms from Septronics can monitor high and low liquid level conditions of a tank, filter or sump. Single or multiple control switches activate an interior audiovisual alarm. The horn can be silenced, with an LED light that remains illuminated until the liquid level returns to an acceptable level. Whether using a single alarm or dual alarm with a color-coded alarm indicator, the units will automatically reset, and plug into a 120-volt outlet. All units come completely assembled, have a power-on light indicator, 9-volt battery backup safety feature, an external mounting system and quick disconnects to simplify installation, and automatic alarm reset and horn silence to simplify usage. 262/567-9030; [www.septronicsinc.com](http://www.septronicsinc.com).



### SJE-Rhombus MySpy WiFi Messenger

The MySpy WiFi Messenger indoor alarm system from SJE-Rhombus monitors and reports any residential alarm condition (contact closure), including sump high water level or over/under temperature alarms. When the contact closes, the alarm notifies the user both locally (audible and visual alarms) and remotely via SMS text messages and/or emails to a smartphone, tablet or computer using the existing Wi-Fi network (or Ethernet). It will notify up to four contacts (two email, two text contacts) for alerts, including alarm, power lost, power restored, low battery and alarm offline. It has a NEMA 1-rated enclosure for indoor use, automatic alarm rest and 9 VDC battery backup with low-battery chirp. Auxiliary alarm contacts are included for attaching remote devices. Float switch models and a splice kit are available. 888/342-5753; [www.sjerrhombus.com](http://www.sjerrhombus.com).



### Sump Alarm 2L outdoor tank alarm

The 2L version outdoor tank alarm from Sump Alarm is a weatherproof high tank alarm designed for simple and fast installation with no on-site wiring. Position the float switch, mount the head unit and plug into





an outlet. Versions are available for high- and low-level detection, and custom units are available. It has a 1-inch LED red pilot light visible from a distance with an integrated 90 dBA alarm and an always-on white light pump power indicator. It is available with mercury-free float cords in 10-, 16-, 33- and 100-foot lengths, which allow it to be positioned near a secondary power source in a highly visible area for line-of-sight installations. 314/787-8059; [www.sumpalarm.com](http://www.sumpalarm.com).

## LEVEL CONTROLS

### Aquaworx by Infiltrator IPC Panel

The Intelligent Pump Control (IPC) Panel from Aquaworx by Infiltrator uses simple pressure transducer technology to enhance pump system performance and make installation easier. Powered by an embedded microprocessor in the pump controller and a floatless pressure transducer in the pump chamber, it monitors liquid levels, controls pumping time intervals and logs events in real time. The panel stores up to 4,000 events and calculates daily system flow. Using the MARC as the user interface, the unit offers a solution with expanded capability. The MARC is a hand-held device designed to program the unit. Installers and service providers have the option of removing the unit to use on multiple panels. 800/221-4436; [www.infiltratorwater.com](http://www.infiltratorwater.com).



### Clarus Environmental control panel

Timed or demand dose control panels from Clarus Environmental provide residential and commercial customers with a reliable means of controlling single-phase pumps in onsite installations. A programmable timer activates and deactivates pumps. Using float switches, a panel can be set up to have low-level cutoff, timer run or high-water indicator. In a low-level situation, the circuit is not complete and the pump will not be activated. In a high-water situation, an alarm will sound with audio and visual indicators. Simplex or duplex models are available. Applications requiring a timed dose panel include media filter systems, pressure distribution systems and mound systems. Demand dose control panels turn pumps on and off based on water levels in the tank or basin. All panels have integrated audible and visual alarms, motor contactors, circuit breakers and pump run switches. Units are available in either simplex or duplex versions and operate under a variety of voltages. 800/928-7867; [www.clarusenvironmental.com](http://www.clarusenvironmental.com).



### Flygt - a Xylem Brand MultiSmart

The MultiSmart pump station manager from Flygt - a Xylem Brand combines PLCs, RTUs and pump controllers in a comprehensive package. The pump station manager integrates numerous control panel components. It includes preprogrammed logic specifically designed to significantly reduce operating costs. It includes an easy-to-configure setup wizard for commissioning a new station. It has built-in local SCADA. Remote control programming reduces maintenance cost and frequency of site visits. 855/995-4261; [www.xylem.com](http://www.xylem.com).



### Goulds Water Technology — a Xylem brand Aquavar SPD

The Aquavar SPD from Goulds Water Technology — a Xylem brand is a variable-speed drive for single-pump booster applications. It is configured for submersible groundwater and surface motor characteristics, so programming

setup takes less than 10 minutes. It can be used for either three- or single-phase input, and has a prewired pressure transducer and a hand/auto option that enables the drive to run at full speed for longer periods of time. The cycle-on time can be configured to a 5 psi system pressure drop or 20 psi system pressure drop. Dual-system set pressure allows the configuration of a timer for multiple set pressure configurations, 70 psi setting for domestic use and 40 psi for irrigation overnight use. 866/325-4210; [www.goulds.com](http://www.goulds.com).



### Jet Inc. Model 197

The Model 197 control panel from Jet Inc. monitors operation of the Jet treatment system aerator and additional components. It can monitor single or dual aeration systems with selectable high- and low-amperage monitor settings. The panels have dedicated alarm and control circuits with separate power circuits for aeration devices. In addition to the aerator control circuits, the panel contains three auxiliary 120-volt output circuits for external device control relays. The panels include three low-voltage auxiliary input circuits selectable for N/O or N/C alarm inputs. An integrated pump power control relay is automatically disabled in an auxiliary device alarm condition. A signal array includes a power indicator LED and four additional equipment alarm indicator LEDs. The integrated alarm buzzer has an output for an optional remote-mounted audible alarm. 800/321-6960; [www.jetincorp.com](http://www.jetincorp.com).



### Orenco Controls OLS Series

Corrosion-resistant OLS Series control panels from Orenco Controls contain integrated variable-frequency drives to optimize system operation, reduce energy usage and decrease hard starts and water hammer. They are used for any pumping application where consistent flow and energy-efficient operation are essential, such as lift stations, dewatering or sludge pumping. They can be used as a SCADA patch, connecting peripheral equipment to an existing SCADA system. Multiple drives can be configured. Engineers can preprogram user interfaces to the site-specific needs of an installation. Maintenance staff can easily adjust settings and monitor the system remotely. These outdoor-rated control panels, housed in weatherproof enclosures, have circuit protection, heat dissipation systems (fan or A/C), phase and voltage protection, and level controls. 877/257-8712; [www.orencocontrols.com](http://www.orencocontrols.com).



### Septic Products 80000-007

The 80000-007 control panel from Septic Products combines the features of a dosing panel, a spray panel and a compressor alarm. This universal controller will accommodate a dosing pump (controlled by a repeat cycle timer), a spray pump (controlled by a 24-hour timer) and a compressor. The spray side is equipped with a timer override feature. Separate audio and visual alarms for the compressor (amber) and high water (red) are standard, as are Pump Hand-Off-Auto switches, DP Contactors and a control circuit breaker. Extra compressor hook-ups are available. It is UL-listed. 419/282-5933; [www.septicproducts.com](http://www.septicproducts.com). □





# When Should Homeowners Be Involved in System Diagnostics?

There may be pitfalls in a national trend to allow layman users of advanced treatment systems to perform required scientific sampling

By Jim Anderson and David Gustafson

A recent newspaper article from Iowa pointed out that homeowners in Muscatine County who are served by septic systems covered under a National Pollutant Discharge Elimination System general permit No. 4 are required by federal and Iowa law to have treated effluent samples tested twice a year. Homeowners are required to provide the results of the effluent test to the county zoning office. Examples of discharging systems listed that require testing were sand filters, coco filters, peat filters, mechanical aerobic treatment units, constructed wetlands or other bio-media filters.

The article stated effluent samples must be conducted only by a qualified sampler as defined by the Iowa Department of Natural Resources. Failure to comply would violate provisions under the NPDES permitting system and may subject homeowners to penalties under Iowa law. An educational program was set for homeowners about the sampling program.

This created some questions in our minds about the program and the involvement of homeowners in the process. In workshops and education sessions, we often discuss the need to sample and evaluate the performance of permitted systems. In fact, we would go so far as to highlight that if alternative technologies such as those mentioned above are used, they need to be periodically evaluated for performance and be on a regular maintenance and sampling program.

## SAFETY AND ACCURACY

We have concerns about homeowners carrying out the sampling, as considerable attention needs to be paid to the process to end up with accurate results and a true picture of the system performance. Many factors must be considered when collecting samples, including timing of sampling, sampling location, sample collection, sample containers, sample volume, sample transport, laboratory and interference. If these are not given attention, a sample may be contaminated or give results that are not representative of the sample, or can misinterpret how the system is operating.

Perhaps even more important, from our perspective, are the safety risks involved with homeowners accessing parts of the system. For example, it is important for professionals to use proper personal protective equipment when collecting wastewater samples. This usually consists of a quality pair of latex gloves, eye protection and hand sanitizer.

A larger concern is that the homeowner must understand the risks

involved in opening parts of the system. They should be aware to never enter a tank or any confined space, and to be cautious due to the risk of being overcome by toxic gases and falling into an open tank.

A final issue is the use of household equipment and hoses to perform the sampling. These items may come in contact with untreated or partially treated sewage, opening the possibility of coming in contact with pathogens.

**There is a growing recognition that if additional pretreatment is going to be used and certain performance is expected, sampling is a must. As an installer or service provider, you will probably be expected to provide sampling results in the future if this is not already a part of your service.**

## PROPER TRAINING

Given these concerns, we looked at the requirements for a "qualified sampler" from the Iowa rules overseen by Iowa DNR. Here is what the rule says: "The owner is responsible to have the private sewage disposal system sampled to ensure compliance with this general permit. Only a 'qualified sampler' shall conduct effluent sampling for compliance monitoring. 'Qualified samplers' shall be one of the following:

- A county or city environmental health staff person.
- An Iowa-certified wastewater treatment operator.
- An individual who has received training approved by the department to conduct effluent sampling."

There is not a description of the exact training needed, but guidelines do highlight the need for proper training to take the samples.

Iowa is not alone in promotion of increased sampling. There is a growing recognition that if additional pretreatment is going to be used and certain performance is expected, sampling is a must. As an installer or service provider, you will probably be expected to provide sampling results in the future if this is not already a part of your service.

Performance is one of the two major reasons that sampling will be needed. These samples are taken to provide a picture of how well the system

is performing and whether it meets regulatory requirements, which is the case in Iowa. It is a response to a federal requirement of the statewide general permit for the discharge systems. There are other cases of regulatory requirements where sampling is necessary, such as in nitrogen reduction. The sampling can also give information about necessary changes to attain desired performance.

## COMPLEX ISSUES

Another reason to sample is to diagnose or troubleshoot a system status issue and potential changes that might be needed. System diagnostics associated with troubleshooting and mitigation usually require information on both the hydraulic load to the treatment train and the sample analysis from the component in question. So there may be the need to take more than one kind of sample as well as samples from different locations in the treatment train. The combined hydraulic and constituent load can provide a detailed view of system performance.

Sampling locations are usually at the inlet or outlet point of a treatment component. Effluent samples collected following final treatment may serve the purpose of either diagnostic evaluation or compliance monitoring. It is clear that sampling will be an important skill to develop in the future. In coming articles we will explore some sampling specifics. □

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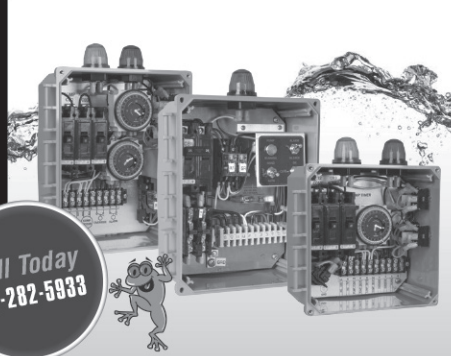


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Dan Miller (left), president and CEO of Manitou Americas, and Francois Piffard (right), executive vice president of sales and marketing for Manitou Group, present the 2015 Manitou Top Dealer award to Pete Smeretsky of Transport Equipment Sales.

## Ditch Witch honors top individuals, dealership

Ditch Witch, a Charles Machine Works Company, presented the Harold Chessnut Award to Archie Sours of Ditch Witch of Virginia. Kenny Mangrum of Ditch Witch of South Louisiana received the Service Excellence Award. Ditch Witch of South Louisiana was recognized as the top dealership for service and support in 2015.

## Oldcastle Precast acquires Colorado Precast

Oldcastle Precast, a manufacturer of precast concrete, polymer concrete, composite and plastic building products, acquired the assets of Colorado Precast Inc. with a manufacturing location in Loveland, Colorado.



## Mustang-Gehl Company adds Texas State Rentals to dealer network


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## TOPP Industries receives chamber of commerce award

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David Birchmeier (left), vice president, and Kevin Birchmeier, president and CEO, of TOPP Industries



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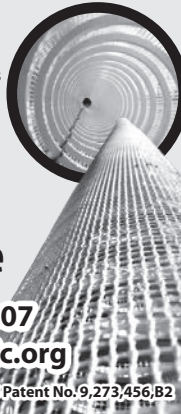
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