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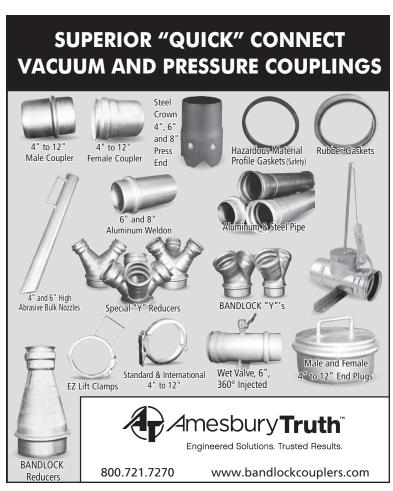
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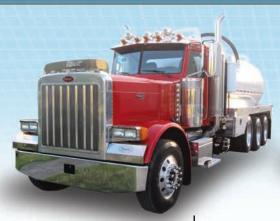
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12 Tasks That Will Make **Your Business Better**

Keep your management hand on the throttle in 2017 with these month-by-month small-business improvement tips By Jim Kneiszel, Editor

ou've celebrated the holidays and your New Year's Eve celebration is but a foggy memory. Now it's time to plan for taking care of your business in 2017.

Perhaps in recent years you've just let the business happen. You've been content to take any new customers who've come along, and tried your darndest to continue giving good service to your regular clientele. Your crew seems happy to roll along with the status quo, so you haven't instituted any new benefits programs or reviewed their wages.

Everybody seems happy. Don't rock the boat. Has that been your mission statement lately? In an effort to reset your expectations for 2017, I present a month-by-month business refresher that will hopefully lead to more revenue, lower expenses and even happier employees. Follow these tips and let me know how you fared at the end of the year:

January - Plan for labor needs

Look back at the past few years. Have crews been working longer hours, causing burnout and raising overtime expenses? Have service lead times drawn out longer than you're comfortable with? This is a business where most customers who call need work done yesterday, and adding to emergency workload can stretch your workforce to the extreme. Maybe you expect enough work this year to add a driver and vacuum truck, or put someone on system inspection or maintenance work full time. Remember, adding employees doesn't only impact you on the expense side. You should raise significant revenue with each new worker you put online.

February - Address training and continuing education

Training opportunities abound this time of year as state associations and groups like the National Association of Wastewater Technicians offer many and varied classes. And the WWETT Show in Indianapolis features several days of seminars and sessions with national experts in the wastewater field. This year's event is Feb. 22-25, and you can learn more about seminar offerings by visiting wwettshow.com. It's wise to knock out training required by your state or local permitting agency during the slower winter.

March - Order supplies

Organize the warehouse space and take inventory of consumable items like paper products and bacteria treatment. Get on your trucks and assess the condition of vacuum hose. Pop the hood and check out filters, belts and hoses. Talk to your equipment vendors about expected product availability, shipment delays and any specials for bulk purchases. Anticipate your needs

Choose a cause near and dear to your heart and partner with that charity on a project ... Do your part for the community and then don't be afraid to tell the world about it through your Facebook page or company website.

based on last year's usage and forecast your demand for 2017. It's better to stock the warehouse as much as is practical before the busy season starts. Explore whether you can enter into agreements for bulk purchases with your friendly competitors.

April - Make sure your technology is working

Check your accounting, routing or other computer software programs for updates before seasonal business picks up. Clean up the customer database, adding and deleting contacts as needed. Assess your company smartphones and tablets for continued viability. If they are more than a few years old, consider replacement to speed up your workflow. Processor speeds and operating systems evolve rapidly in these hand-held devices, and older units can leave you sitting in the truck waiting for important data to transfer or routing maps to load. Reduced battery life can also cause headaches when front-line workers are unexpectedly out of touch. It might not always feel like it, but you're money ahead keeping technology equipment refreshed and ready to go.

May - Plan community involvement

In the days of social media, reputation building is a big deal. If your growth strategy doesn't include donating your time and expertise in some way to civic service, it's time to start thinking of ways you can pitch in. Call local festival organizers and see if you can trade some modest services for a sponsorship opportunity. You don't want to lose out on a paying gig, but you could add value to your paid service by donating back a percentage of your bill. Choose a cause near and dear to your heart and partner with that charity on a project. It could be anything from providing portable restrooms for a fun run to installing a septic system for a Habitat For Humanity family. Do your part for the community and then don't be afraid to tell the world about it through your Facebook page or company website.

June - Perform spot checks in the field

You trust your drivers, sure. But don't take for granted that they're providing the best service possible every day. Ride along with or behind your crews one day this month. You can choose whether or not to tell them in advance about the spot checks. Watch how they follow safety procedures. Make sure they leave a work site as clean as they found it. Call all of their route customers the next day to see if they were happy with the service. After the spot checks, sit down for a constructive meeting with technicians and share what you learned. Work hard to make it a positive experience — your people might not be thrilled with the idea, but it's a win-win if customer service protocol is validated or improved in the process.

July - Review equipment maintenance

Equipment breakdowns are especially costly in the midst of the busy season. Patches and Band-Aid solutions used by technicians to keep trucks on the road can present a looming safety hazard. Inspect your trucks on a staggered schedule, planning to look at the entire fleet over the course of a month. This includes the engine and drivetrain, the vacuum system (pump, tank, hoses and fittings), chassis and interior. Address any issues you find immediately to avoid stranding a driver on the side of the road or having to reschedule customers to account for a truck that unexpectedly goes out of service for a week.

August - Review marketing plans

Emergency calls will throw a wrench into your scheduling the closer you get to the end of the season. How about sending out a mailer to your septic customers to remind them to call now for service rather than putting it off until the toilet backs up at their Thanksgiving gathering? You could offer an August special for \$10 off a pumping job to fill the routes in the dog days of summer and avoid some of those last-minute, late-season calls. This is also a good time to look back at early season spikes in business and figure out how to better use advertising dollars, your website and social media marketing to even things out a little.

September - Trim business expenses

You've been focused on building revenue for the past several months of high call volumes. The key has been filling routes with as many paying jobs as possible. Take a step back this month and try cutting business expenses. Look at how much you paid for supplies and ask vendors if there are ways to cut those costs. Review various insurance policies, from auto to business to health. Are those policies cut to the bone? Compare your building rent or mortgage interest rate to see if there are ways to economize. Remember that spending efficiency — just like adding a few new customers — raises the bottom line.

October - Celebrate successes with your team

Your crew has gone out every morning and busted their butts for your business. Now it's time to show them you appreciate the effort. There are many ways to send a clear message that you value employees, from serving them burgers off the grill in the parking lot to giving everyone a paid day off when business starts to slow down. Actions are important, but you also need to tell them how they've helped support your business.

November - Review the employee benefits package

You showed employees you care in October; now look at initiatives that will keep employees on your team for the long haul. Review the benefits package for your employees and compare it to what similar companies in your area are offering. Your local Chamber of Commerce or members of your state wastewater association can probably help you make the compari-

son. Do you offer paid vacations, flex scheduling, a retirement account or health and life insurance to your workers? If not, what steps could you take to add those benefits? Remember that employee retention is a huge issue, both because quality workers are as valuable as gold and finding new ones is expensive and time-consuming.

December - Give thanks

Express gratitude to your customers for their loyalty, to your family for their patience, and to your community for providing a great place to live and work. The message can go out in many ways, from a holiday postcard to customers, to an ad in the local paper to give a shout-out to your neighbors.





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PRODUCTIVITY IS MONEY

reliable equipment is key

Big Bore Drilling Certified Septic and Hydroflushing makes its big bucks by installing septic systems. That's why the company's pair of John Deere 710 backhoes are among its most valuable machines. Company co-owner Henry Damm explains how quality excavation equipment keeps his business in the black.



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In the midst of a remarkably cold Minnesota winter, the timing was just right for Fiedler's Your Pumping Specialists to purchase its Landa hot-water jetter. A season full of frozen septic lines kept owners Jeff and Cindy Tiemann plenty busy. See why the couple considers it a worthy investment regardless of the temperature.

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Adding capable machines and learning on the job is the best way to successfully diversify a pumping operation, says Henry Damm of California's Big Bore Drilling

By Ken Wysocky

enry Damm remembers the day in the early 1970s when he saw a truck-mounted drilling rig at a neighbor's house with the name Big Bore Drilling & Certified Cesspool emblazoned on the side. "The workers were installing a seepage pit for a septic system," he recalls. "I was about 12 years old at the time and I wanted to jump in that truck and play with it."

Ironically enough, Damm's wish came true — it just took 17 years or so to happen. Since 1989, Damm and his wife, Beverly, have owned the 57-year-old septic pumping, onsite installation and repair company, now known as Big Bore Drilling Certified Septic and Hydroflushing. And they've spent nearly three decades making their own memorable impression on customers in and around Fresno, California.

(continued)







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324 Leaside Avenue Stoney Creek, ON Canada L8E 2N7 Tel: 905-662-6552 / TF: 1-800-663-9003 Fax: 905-662-5412 "Whatever we promise to do for a customer, we try to do even more," says Damm, explaining why word-of-mouth referrals have been his best marketing tool. "Providing great customer service is really key. We get just one opportunity to install a septic system, so we want to go above and beyond ... so they tell their neighbors to use Big Bore Drilling, too.

"A lot of times, our customers mention that their grandfather hired Big Bore," he adds. "If we'd have messed up (years ago), that family wouldn't be calling us again."

Established in 1959, the company has experienced a lot of changes since it was first profiled in Pumper magazine 22 years ago. "For starters, I still had hair back then," quips Damm.

In terms of gross revenue, the company is roughly 2 1/2 times bigger. It employs 11 people and has built up a sizable fleet of equipment. Cellphones and GPS units have replaced radio dispatching, email has rendered faxing obsolete, and the internet is displacing phone book advertising. In addition, newer and more stringent California laws governing engine emissions and septic system installations have added to the cost of doing business. But one thing has remained the company's calling card: An unswerving commitment to customer service.

NEW CAREER PATH

Damm never expected to be a player in the septic pumping industry. In fact, from ages 18 to 28, the industrious entrepreneur — now 55 years old — started and ran his own window-washing company in Fresno.

"I'm pretty good with my hands," he adds. "I'm very capable of doing things and figuring out how to do them better. We competed on speed in the window-cleaning business, so I was always all about continual improvement, and being faster and better than the next guy. I also liked being my own boss and having the flexibility to work the hours I wanted while attending college."

That drive and determination, coupled with a strong work ethic and an independent streak, served him well

after he decided to trade squeegees for vacuum hoses.

"When I was first approached about the opportunity, I thought to myself, 'Be a septic contractor — are you kidding me?" he laughs. "No one dreams about being in the septic industry when they grow up. But the business are the septic industry when they grow up.

Providing great customer service is really key. We get just one opportunity to install a septic system, so we want to go above and beyond.

— Henry Damm



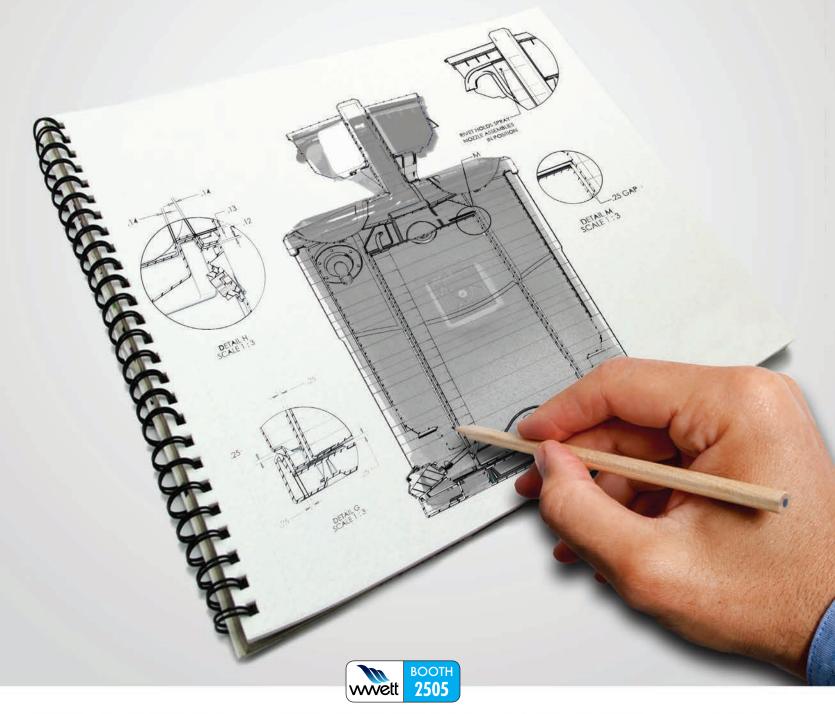
Above: Foreman Marcello Ruiz checks the Calweld drill rig on a job site.

Below: Jason Damm, left, talks with his father, Big Bore Drilling owner Henry Damm, who is about to hop into the company's newest pumping rig, built out by Imperial Industries with an NVE blower.





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How to minimize employee turnover

Most employees at Big Bore Drilling Certified Septic and Hydroflushing have been with the company for more than 10 years, and several for more than 20 years. But Henry Damm, who owns the company with his wife, Beverly, believes the days of long-tenured employees are slowly fading away.

Like so many contractors nationwide, Damm is far more worried about just finding qualified people to hire in the short term, much less keeping them on board for decades. In fact, he's found it far more viable to hire family members, such as his nephews, Jeremy Davis and Brice Liden, and his son, Jason, than casting a wider hiring net.

"The few times I've used outside services to find new employees, they've turned out to be the worst people I've ever hired," says Damm.

Referrals from current employees used to be a great way to recruit new employees. But now that most of his employees are edging closer and closer to retirement, their friends and acquaintances are older, too, so they can no longer connect Damm with the younger people he needs to keep the company going for another generation. That's a painful realization, he says.

"Many of my employees are getting closer to retirement ... and I'm having a very difficult time finding that next generation of workers," he says. "We need to start training that next generation so that when Jason takes over, he has a staff in place that's able to do what we do. That's part of my exit plan." He says he's even started to ask pastors at churches if they know of good potential employees.

Hiring good people is critical because training them, then losing them shortly thereafter, is an expensive proposition. "We need to invest a lot of money in training, plus they need to get a commercial driver's license," he explains. "That all costs money, so I need to know they're going to stick around."

To retain employees, Damm says he pays competitive wages and also gives cash bonuses if the company is doing well. He says that as the backbone of the business, employees need to be rewarded when the company does well financially. In addition, the company offers employees a 401(k) program, free work uniforms and vacation time. "And if they don't use all of it, I pay them for the unused time." he adds.

The company also invests in good, reliable equipment. That can help recruiting efforts because no one likes to work with machines that constantly break down, he notes.

Furthermore, Big Bore considers employees part of the family. "We try to treat them the way I'd like to be treated," he notes. Moreover, Damm practices a hands-off management style that he believes also contributes to low employee turnover. He welcomes new ideas about how to improve operations and processes and encourages employees to try new techniques and strategies. "If it doesn't work, we'll learn from it and move on," he says. "But I don't dictate how things should be done."

ness had a great customer base ... it looked like a really good opportunity. Plus, I remembered seeing Big Bore Drilling when I was a kid. That really intrigued me."

ng Big Bore Drilling when I was a kid. That y intrigued me."

Damm's father-in-law, Don Davis, helped

tank at a Shaver Lake, California, home.
(Photo by Jason Damm)

John Wink sets a 1,500-

gallon Jensen Precast septic

him finance the purchase of the business. (Damm bought out Davis' share of the business about 10 years ago.) He also credits much of his success to Bob Boone, who was the general manager of Big Bore when Damm bought the company. Damm asked Boone to stay on board to help with the ownership transition and he ended up staying for 10 more years.

RUGGED EQUIPMENT

The company is named for one of its most important pieces of equipment: A big-bore bucket drill rig, made by Calweld and mounted on a 1999 Interna-

I love to explain what we're going to do and leave their yards looking better than we said they would. It's so much better to have happy customers than having people wish you hadn't come.

— Henry Damm

tional truck chassis. Capable of drilling a hole up to 10 feet in diameter, the drill is used to dig seepage pits, which are sometimes used instead of leach chambers because of the area's rocky terrain.

"In certain areas, there's 10 to 15 feet of hardpan around here, so there's no way to get drainage," Damm explains. "So we drill seepage pits that are usually 30 to 50 feet deep and 4 feet in diameter, then line them with bricks." The whole process takes about four hours on average, and the cost is comparable to installing a conventional leach line, he adds.

The company also owns a vacuum truck built out by Imperial Industries on a 2016 Peterbilt chassis with a 3,600-gallon aluminum tank and a National Vacuum Equipment blower; a Vactor 2100 vacuum/hydroexcavat-

ing truck, built on a 2012 Kenworth truck with a 12-cubic-yard debris tank, a 1,500-gallon water tank and a Howden Roots blower; and a 1964 Peterbilt flatbed truck that carries a 10-ton-capacity crane made by Quick Lift.

(continued)

Marcello Ruiz excavates using a John Deere backhoe as technician Rodrigo Serna looks on.





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Jason Damm, left, and Henry Damm.

In addition, Big Bore relies on a 1999 International with a Reliance Trailer dump body for hauling rock (25-ton capacity); a transfer trailer made by Reliance; two John Deere 710K backhoes; a Myers truck-mounted water jetter (65 gpm at 2,500 psi) equipped with a 1,500-gallon water tank and hoses made by Piranha Hose Products; and a 5-ton International flatbed truck, used for hauling bricks. Miscellaneous equipment includes a GenEye pipe detector made by General Pipe Cleaners (a division of General Wire Spring Co.) and a Crust Busters tank agitator made by Schmitz Bros. For installations, Damm says he uses concrete septic tanks made by Jensen Precast.

DIVERSIFICATION EFFORT

The Vactor vacuum truck/hydroexcavator and the trailer-mounted Myers water jetter are emblematic of the most dramatic change at Big Bore during the last 10 to 15 years: service diversification. Initially, Damm says he was content to take an if-it-ain't-broke, don't-fix-it approach with the already successful business. "But eventually, we started adding more services," he explains. "We started doing anything we could do to serve our customers better."

Today, septic pumping, installations and repairs still account for the lion's share of the company's revenue — roughly 90 percent. The rest comes from waterjetting pipelines and hydroexcavating, he says.

Damm's entry into jetting pipelines came about entirely by happenstance. He was working for a local plumbing contractor pumping out septic tanks and performing septic system repairs, when the plumber was bought out by a national chain that didn't want to do waterjetting. "So he asked me to buy some of his equipment," Damm says. "I bought the Myers jetter, and the next day we cleaned a line at a local college.

"We basically learned how to use it through on-the-job experience, but the machine paid for itself after two weeks," he continues. "Then we realized that a lot of people were moving dirt from point A to point B on farm pipelines and dairy lines. So around 2001, we bought a Vac-Con vacuum truck to

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To learn more about Big Bore Drilling Certified Septic and Hydroflushing, check out a video sidebar on the company at www.pumper.com.

suck up the dirt as we jetted. And when that truck wore out, we replaced it with the Vactor."

Expanding into pipeline cleaning jobs made sense because it complemented Big Bore's existing services. It also allowed the company to leverage its existing customer base, because many existing farm and dairy customers already used the company to clean and repair their septic tanks, Damm explains.

A BRIGHT FUTURE

Looking ahead, Damm says he's comfortable where the company is right now, but he's also not opposed to further growth. In that vein, he envisions hydroexcavating and pipeline waterjetting becoming bigger contributors to the company's bottom line. Those services will help offset the loss of customers created as the city converts more homes from septic to sewer service, he adds, noting that his own house is now served by sewer service instead of a septic system.

"I also hope to buy a camera van and start a second leg in that (pipeline jetting) industry," he says. "I'd like to provide both pipeline cleaning and video services for municipalities that don't have that equipment. The septic business keeps moving away from us. ... We have to go out farther and farther because sewer lines keep taking customers away as the city grows. That used to concern me, but it's never really affected our work, aside from the fact that we have to travel further."

Damm is also preparing for his son, Jason, to eventually run the company. There's no formal time frame for that, but he hopes such a succession occurs when Damm and his wife decide to retire.

In the meantime, Damm says he has no regrets about jumping into a field he never expected to enter. "I still really enjoy meeting with customers — talking to them and seeing how we can meet their needs," he says. "I love to explain what we're going to do and leave their yards looking better than we said they would. It's so much better to have happy customers than having people wish you hadn't come."

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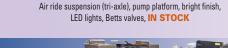




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State of Washington Expands Septic System Replacement Loan Program

By Doug Day

he Washington departments of Ecology and Health have expanded a septic system replacement program in the western part of the state to cover more counties. Loans of up to \$15,000 are available at variable low-interest loan rates and flexible repayment options over 180 months based on income guidelines. The loan length can be extended up to five additional years. Along with primary residences, rental units and second homes are eligible if the system is at least 25 years old, if it is failing and there is evidence to support it, the homeowner has been contacted by local health officials, or if orders have been issued to make repairs.

Connecticut

The town board in Beacon Falls has denied a petition from one of its members to create a property tax credit of up to \$500 for people with septic systems. The town's sewer system is supported by tax money rather than user fees, so people not hooked up to it are paying for its operation. Selectman Kurt Hummel presented the petition with 25 signatures, but the board voted to take no action. Hummel, who says he pays \$380 annually to have his septic tank pumped, has been paying taxes for the sewer system for 20 years even though he can't connect to it because it hasn't been extended down his street. The town is looking to enter into a regional wastewater agreement with a nearby town, which would result in a change to user fees to support the sewer system.

Ohio

After 10 years of operating under onsite wastewater rules imposed by the U.S. Environmental Protection Agency, Trumbull County (east of Cleveland) is now subject to the same regulations as all other counties in Ohio. The county was under the more strict EPA regulations due to a consent decree

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signed in 2006 because of the number of septic systems that were discharging raw sewage to ditches and bodies of water. Sand filters or secondary treatment are no longer required for systems that discharge water offsite, which added about \$3,000 to the cost. The county may now also grant variances from connecting to a sewer system if a property has a functioning septic system, and can consider septic systems for lots that were not eligible under the consent decree but are under state regulations. The EPA has provided funding for repair and replacement of septic systems; \$300,000 in 2015.

Maryland

While the legislature has yet to take formal action on Gov. Larry Hogan's reversal of a requirement to use the best available technology for all septic systems in the state, Wicomico County is following the lead with plans to repeal its own impact fee for septic systems. Hogan's action would overturn a 2012 law and require BAT only in environmentally sensitive areas, such as proposed by the governor. In reaction, County Executive Bob Culver announced a proposal to permanently repeal the \$5,200 impact fee on new home construction, which has been the subject of a moratorium in 2016 as proposed by Culver and approved by the County Council. The local impact fee was created about 10 years ago to pay off debt from school construction and repairs.

South Carolina

The owner of a South Carolina septic company has been sentenced to 18 months in federal prison and a \$10,000 fine for illegally dumping septage. Timothy Howard, 51, owner and operator of American Waste Inc. was charged in federal court for two violations of the U.S. Clean Water Act. He was convicted of dumping septic waste into a grease trap at a restaurant in April 2011 and into a local sewage system in June 2013. Court documents also said he made false statements to local police and hid more than 85 percent of his septage-handling activities from records submitted to the state. "Intentional acts by rogue septic haulers pose serious risks to the health of our community and environment," Andy Castro, assistant special agent in charge of EPA's criminal enforcement program in Atlanta, said in a news release from the U.S. Attorney's office. "Those who operate within this industry must adhere to the regulations and laws for which they are permitted."

Idaho

The Idaho Department of Environmental Quality has begun the process of updating the technical guidance manual for septic systems. The proposed changes involve soil design groups, graywater systems and conditions for approving the use of composting toilets. Specific changes are available on the agency's website.

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offerings and do more water and sewer hookups for construction contractors."

The plan worked from the get-go.

The company started hiring within months and brother Jason joined the company a few

years later. Today, the company employs 27 people. A satellite office in Shediac about 25 miles away employs two. Pumping and jetting make up about 35 percent of the business. Portable restrooms represent 20 percent. The remaining 45 percent is excavation, construction, septic installation and lateral relining.

Katrina Carter, marketing

sets up a unit from Rich

Restrooms at a local

special event.

coordinator for VIP trailers.

The brothers have specific responsibilities: Brad takes care of septic pumping, liquid waste, portable restrooms and pipe patching; Wayne is responsible for construction, excavation and new septic system installs; and Jason is responsible for the fleet, including the in-house maintenance shop.

"We have our little scuffles, but each of us knows our place and we don't doubt each other's decisions," says Carter. "We realize that not everything you invest in will make money, but that each of us is doing our best for the business."

A FIT FLEET

The main vacuum fleet is made up of six trucks, all with steel tanks: a 2015 Peterbilt 345 with 3,850-gallon tank and Fruitland pump built out by Imperial Industries; a 2016 Freightliner and 2009 International with 3,850-gallon tanks and Moro pumps from Cusco; and a 2001 Sterling Acterra, with 3,600-gallon tank and Moro pump from Cusco. Rounding out the fleet is a Vactor 2100 combo unit mounted on a 1999 Ford L8000.

Brad Carter pumps a septic tank using a Peterbilt vacuum truck built out by Imperial Industries with a Fruitland pump. The company promotes the use of BioClean (Statewide Supply) for septic tank maintenance.

"We realized early on that we would go stale if we relied only on septic pumping," says Carter. "You can only grow so big on that and there's a big slowdown in winter when we have maybe 10 septic

pumping jobs in a week. To keep busy, we have a policy of attempting to pump almost anything at least once. We pump everything from toxic liquids to grease traps, gasoline and fuels, waste oil and oil spills, and caustic soda. We've pumped gravel from drain systems, removed blown insulation from attics, and beer from the floor drains of a local brewery."

However, Carter's no longer offers to pump fly ash, which never settles in the tank and clogs filters.

Handling the pumping of toxic materials requires additional certification for employees and also requires the inside of waste tanks to be steam-cleaned between off-loads.

The portable restroom business has grown significantly over the years from a small inventory of 20 and now employs two operators full time. Contracts are about 70 percent construction with events and smaller government contracts making up the rest.

(continued)

Paying attention to retention

The owners of Carter's Septic Tank Service Ltd. in New Brunswick, Canada, pride themselves on a solid record of employee retention. Among its 27 employees, seven have been on the company payroll in excess of 25 years.

"Rewarding our employees well for what they do is part of our business plan," says Brad Carter, one of three brothers who own the company. "A busi-

ness doesn't make money on its own
— it's the employees who are making
money for the business. Heavy staff
turnover is not only disruptive to the
business, but requires a company to
needlessly divert resources to training
and retraining. We have a turnover rate
of maybe one staff person per year."

The company offers employees an optional pension plan. If they agree to deduct 5 percent of their salary from each paycheck, Carter's will match it. While the provincial government's health care plan provides medical coverage for all residents, the company will pay half the cost of an optional private medical plan that covers eye care, dental care and prescription drugs.

"The pension plan and medical coverage is completely optional," says

Rewarding our employees well for what they do is part of our business plan. A business doesn't make money on its own — it's the employees who are making money for the business. ... We have a turnover rate of maybe one staff person per year.

- Brad Carter

Carter. "Not all of our employees choose to enroll, and they appreciate being able to make that choice themselves."

Carter notes that too many businesses build success for their owners while expecting employees to simply scrape by.

"If we're successful we want to be generous to our employees so that they're also successful," he says. "When one of our employees comes home at 9 o'clock at night after putting in some extra hours, we want their families to feel good about the fact that they're being rewarded for their effort."

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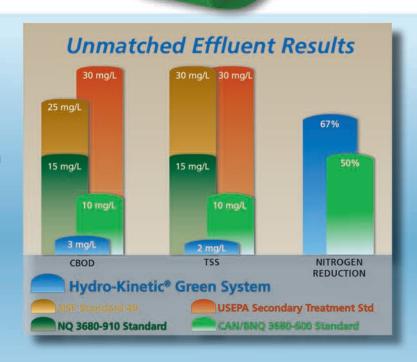
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RESTROOM INVENTORY

Carter's current lineup of restrooms includes 300 standard portables, 20 flushing with sinks and 10 wheelchair-accessible units, all from PolyJohn Canada. They're transported by two trailers: a 22-unit made by Linkletter's Welding Ltd. and a 10-unit by McKee Technologies - Explorer Trailers. In addition, the company offers eight restroom trailers — six Rich Specialty Trailers, one from Room To Go and a new five-station unit from Comforts of Home. Two portable shower units are from PolyPortables. PolyJohn Canada also provided six hand-sanitizing stations and 20 stand-alone sinks.

"We bought our first washroom trailer five years ago after my wife talked me into it," says Carter. "A few day after delivery, one of my competitors rent-

Equipment operator James Cook cuts a grade using a John Deere 160 excavator during an onsite system installation. Brad Carter is shown at the right. ed it from me for a long weekend in May, and then his client wanted to rent it from me until the end of September. We've had solid demand for trailers in this market — they're out all of the time. After five years we convert the special event trailers into construction trailers."

We've had solid demand for trailers in this market — they're out all of the time. After five years we convert the special event trailers into construction trailers.

- Brad Carter

Three delivery vehicles also provide waste service, all with steel tanks and Elmira Machine Industries / Wallenstein Vacuum pumps: a 2012 Chevy 1-ton with 420-gallon waste/240 freshwater tank from Vacutrux; and a 2011 Chevy 1-ton with 300-gallon waste/180 freshwater tank from Vacutrux. A 2008 GMC Topkick with SwapLoader variously hauls a 600-gallon freshwater/300 waste tank by Vacutrux, a polyethylene 1,200-gallon potable water tank, a dump body, and a salting unit to assist with snow removal work in winter.

Bathroom tissue and hand soap are both supplied by Wood Wyant and deodorizers are Green Way Products by PolyPortables.

The company's largest event was the FIFA Women's World Cup Canada 2015 held in Moncton. The job required three or more services a day for 17 days on 160 units, six washroom trailers and two shower trailers. For this and many other events, Carter insists on keeping staff on site to ensure the units are kept spotless.



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ONSITE WORK

The construction business continues to grow organically from the company's first forays into septic tank construction. On the installing side, 60 percent of the work is conventional septic systems, and 40 percent in-

Three generations of Carters are represented in this group shot. Seated, from left, are Jason and Wayne Sr. Standing are, from left, Wayne Jr., Matthew, Cass, Mark and Brad.

volves advanced systems. For installation work, Carter's relies on concrete tanks from Casey Concrete and risers and lids from Polylok.

Septic construction work led to general excavation, full build-outs of sewer and water connections and even related sales of sand, stone and gravel.

The excavation fleet includes: two Caterpillar 420D backhoes; two Case 850E dozers; two Hitachi excavators, a 160 and a 225; a John Deere 160 excavator; a Case CX50B mini-excavator; four Volvo L60 loaders; and a JCB skidsteer. Dump trucks include a 2016 Western Star Twin-Steer; a 2014 Western Star tandem; a 2006 Sterling tandem; and two Freightliners — a 2011 and a 2013. Dump trailers include: a 2012 Peterbilt tandem; a 2011 Peterbilt triaxle; a 2010 Western Star tandem; and a 2007 International tandem.

A 2012 Peterbilt with an 8,400-gallon KROHNE stainless steel tank delivers water for various residential and commercial customers.

A BUSY SHOP

The in-house service shop overseen by brother Jason employs a fulltime mechanic who works afternoon shift from 4 p.m. to midnight.

"That keeps more equipment on the road during the day," says Carter. "During the summer we handle most regular maintenance, but during the winter we will handle anything from transmission replacement to changing out an engine. That keeps a couple of our regular guys on the payroll and helps keep up morale."

Carter's also jets and relines sewer laterals using the PipePatch (Source One Environmental) epoxy resin cured-in-place liner system.

"We use a camera from General Pipe Cleaners to scope the damage and then insert the bladder," says Carter. "When a construction company broke a lateral in town last year they expected it would take road closure and two days worth of excavation to fix it. We repaired it without road closure in two hours."

For root-infested laterals, the company has recently begun offering RootX, a chemical treatment to soften and dissolve roots prior to flushing and jetting.

GETTING THE WORD OUT

The company commits to a substantial advertising and promotion budget. Carter says that phone book advertising still works for the business,

although the ad has prominent placement — the full back cover of the directory. The company website and Facebook page are also big draws.

"We've tried newspaper and radio, but we weren't getting the bang for the buck that we expected," he says. "Our three best promotions are wordof-mouth, the name painted on our company trucks and our employees."

The company is an active member of the New Brunswick Association of Onsite Wastewater Professionals. "If you're not on top of the changes in the industry, your business will lose touch with the market," says Carter.

The Carters regularly attend the WWETT Show to make new business connections and learn about new technologies and equipment. "When people ask how I can justify going to the show, I tell them I don't understand how they can justify not going to the show," says Carter. "When I leave I'm excited to go back to work and try out some new ideas."

Carter says the business remains eager to explore new options for growth.

"It's too easy to say 'no' to a customer," he says. "We'll never turn down an opportunity to do something new or challenging or different."

MORE INFO

Comforts of Home Services, Inc.

630/906-8002 www.cohsi.com (See ad page 101)

Cusco

800/490-3541 www.wastequip-cusco.com

Elmira Machine Industries / Wallenstein Vacuum

800/801-6663 www.wallensteinpumps.ca (See ad page 63)

Fruitland Manufacturing

www.fruitlandmanufacturing.com (See ads, pages 19, 69)

General Pipe Cleaners

800/245-6200 www.drainbrain.com

Green Way Products by PolyPortables, Inc.

800/241-7951 www.polyportables.com

Imperial Industries, Inc.

800/558-2945 www.imperialind.com (See ad page 93)

KROHNE, Inc.

800/356-9464 us.krohne.com

McKee Technologies -Explorer Trailers

866/457-5425 www.mckeetechnologies.com (See ad page 67)

Moro USA, Inc.

800/383-6304 (See ad page 59)

PolyJohn Canada

800/465-9590 www.polyjohncanada.ca

Polylok, Inc. / Zabel

www.polylok.com

PolyPortables, LLC

800/241-7951 www.polyportables.com (See ad page 21)

Rich Specialty Trailers

Room to Go

www.roomtogo.ca

800/844-4974 www.rootx.com

Source One Environmental

www.s1eonline.com

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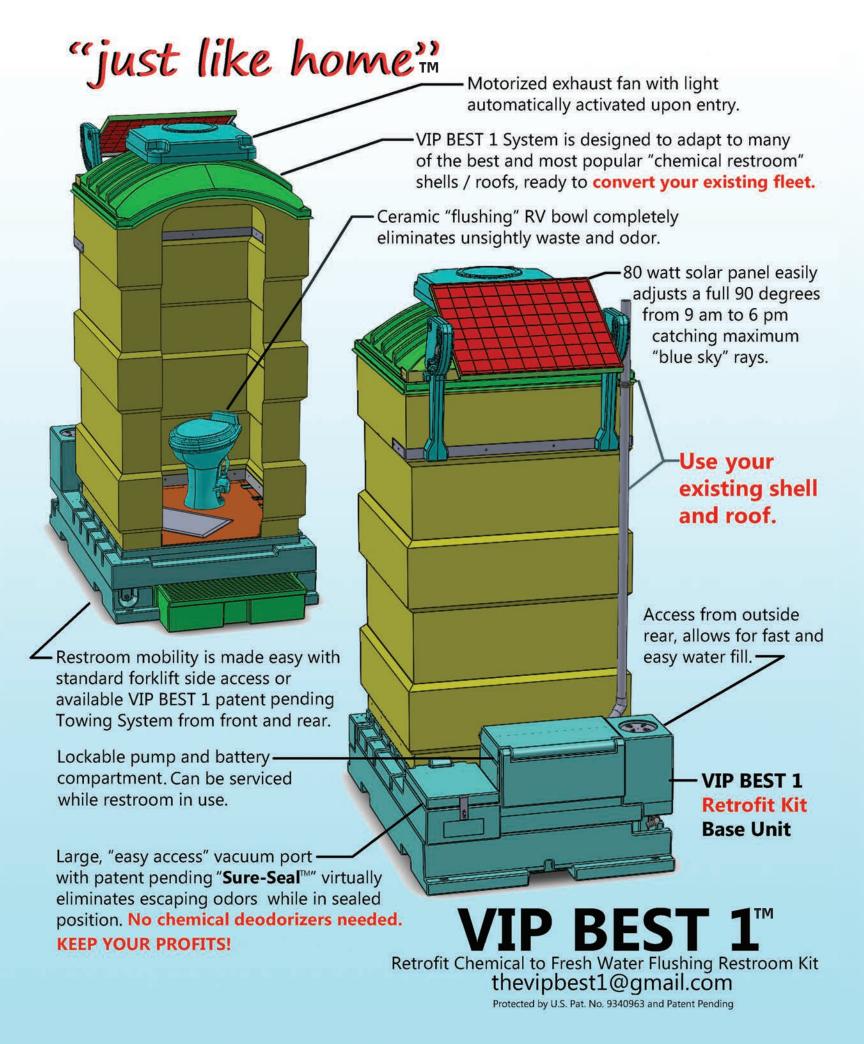


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THE VIP BEST 1 features the following:

- **1.** A solar panel unit that will recharge the battery to power the 12-volt water pump that provides flushing abilities 24/7 to the RV porcelain bowl. No matter where you are on this earth, you can adjust the tilt of the panel to capture the sun.
- **2.** An odor exhaust fan to remove odors.
- **3.** The water and waste tank holds about 43 gallons water and 68 gallons waste.

Note: Frequency of pumping will depend on volume, etc.

- **4.** We use non-potable water so as not to waste drinking water.
- **5.** An RV bowl that flushes only 16 ounces per flush or half full, to carry the solids through the neck of the bowl.
- **6.** Chemical deodorizers are not needed to control odors.
- **7.** A pressure plate switch below the polyethylene mat, allowing the lights and fan to turn on and off upon entry and exit.
- **8.** An electric 12-volt water pump creates a washdown feature so anyone having a fecal accident can clean the unit without the help of others. You can clean the interior first, then refill the water tank. There's no need to move the pump truck or drag a hose around or between the units.
- **9.** The water fill, battery box and waste tank openings are all in the rear of the unit, so attendees can still use it while it's being cleaned. Without having to get equipment in and out of doors, you can clean it faster than a chemical portable restroom.
- **10.** The Sure Seal™ odorless waste tank design is like a P-trap in your home. No chemical deodorizers are needed, so profits are saved.

 The unit vent pipe above to the rear will exhaust the fecal odor gases.

- **11.** The invention of plastic produced three great products in the early 1970s, the models of Poly-Portables, PolyJohn and Tufway. Other portable restroom products have since come to market, but we've been told these have been the most sold over time.
- 11a. Because of that, we have adopted these three models for our retrofit kit. Vendors who own one of these great portable restroom shells will not need to purchase another model. The existing model will fit on our retrofit tank, solar panel roof top, and fan adapter.

 The idea is to use your existing models and reduce the cost of another purchase of walls, doors, and roof tops, while still owning a restroom with a solar panel feature. Use older models for construction. Save your profits.
- **12.** These units are not air conditioned. They're designed as an inbetween of the high-end air conditioned units and chemical portable restrooms.
- **13.** The industry standard of the chemical portable restroom is over 45 years old.
- **13a.** The cost to purchase a chemical portable restroom is about \$450-\$1,200. *Cost to purchase a single air conditioned unit is about \$3,900 to \$5,000. Nice units.*
- 14. Construction of our retrofit kit.

 We have designed the water, waste tanks and skid to be about 200 pounds of polyethylene material, 70 pounds for the water and waste tanks, and 60 pounds for the skid that holds the two tanks together. After adding the shell and bowl and fan adapter and solar panel system the unit will be heavy. A chemical restroom weighs about 100 to 175 pounds.

- **14a**. We created on the tank's side a set of forklift ports for easier placement and removal/loading onto the truck with a forklift. You can load it full of 43 gallons of water for delivery to an event. The size of the VIP Best 1 unit is about 48" x 72" long. Four can fit atop the typical truck bed.
- **15.** We made an adapter to recess into the roof and hold the exhaust fan to remove odors. The side vents must be sealed to work properly.
- **16.** We offer an 80 watt solar panel; it produces almost 3.5+ amps per hour. Frequency of use to restoration will determine the size of battery wattage needed.

 The solar panel bracket is also mounted on the back wall of the unit. It is reinforced by two aluminum 1/8" straps inside and outside.

 The existing walls are about 1/8" thick and not enough to support the panel and adjuster alone.
- **17.** We have developed a patent pending towable dolly system attachable to the base of the unit; it is available as an option. Used only for hard top surfaces.
- **18.** We were issued a utility patent pending by the U.S. Patent Office for copyright protection.
- **19.** Our goal is to remove the sight and odor. These are the most common complaints you have received by everyone who uses the chemical restrooms. If at all possible, women will not use them.

We think you can increase **YOUR** business over others and at the same time increase your profits with a quality product. We charge more rental than everyone else but still get orders. We have customers who will never go back to chemical portables.

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Please share your contact information and email address. We are looking at this as a part of our market study. Your comments will definitely help and be appreciated.

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Today's portable chemical restrooms are not able do what THE VIP BEST 1 can do.

Thank you all, VIP BEST 1 LLC.



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Arkansas Onsite Wastewater Association www.arkowa.com

California

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

Colorado

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

Connecticut

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

Delaware

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

Florida

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

Georgia

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

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

Idaho

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

Illinois

Onsite Wastewater Professionals of Illinois www.owpi.org

Indiana

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

lowa

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

Kansas

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

Kentucky

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

Maine

Maine Association Of Site Evaluators www.mainese.com.

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

Maryland

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

Massachusetts

Massachusetts Association of Onsite Wastewater Professionals www.maowp.org; 781/939-5710

Michigan

Michigan Onsite Wastewater Recycling Association www.mowra.org

Michigan Septic Tank Association www.msta.biz; 989/808-8648

Minnesota

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

Missouri

Missouri Smallflows Organization www.mosmallflows.org; 417/631-4027

Nebraska

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

New Hampshire

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

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

New Mexico

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

New York

Long Island Liquid Waste Association, Inc. www.lilwa.org; 631/585-0448

North Carolina

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

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

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

Ohio

Ohio Onsite Wastewater Association www.ohioonsite.org; 866/843-4429

Oregon

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

Pennsylvania

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

Pennsylvania Onsite Wastewater Recycling Association www.powra.org

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

Tennessee

Tennessee Onsite Wastewater Association www.tnonsite.org.

Texas

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

Education 4 Onsite Wastewater Management www.e4owm.com; 713/774-6694

Virginia

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

Washington

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

Wisconsin

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

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

NATIONAL

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

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

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

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

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British Columbia Onsite Sewage Association www.bcossa.org; 778/432-2120

Manitoba

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

Onsite Wastewater Systems Installers of Manitoba, Inc. www.owsim.com: 204/771-0455

New Brunswick

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

Nova Scotia

Waste Water Nova Scotia www.wwns.ca; 902/246-2131

Ontario

Ontario Onsite Wastewater Association www.oowa.org; 855/905-6692

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

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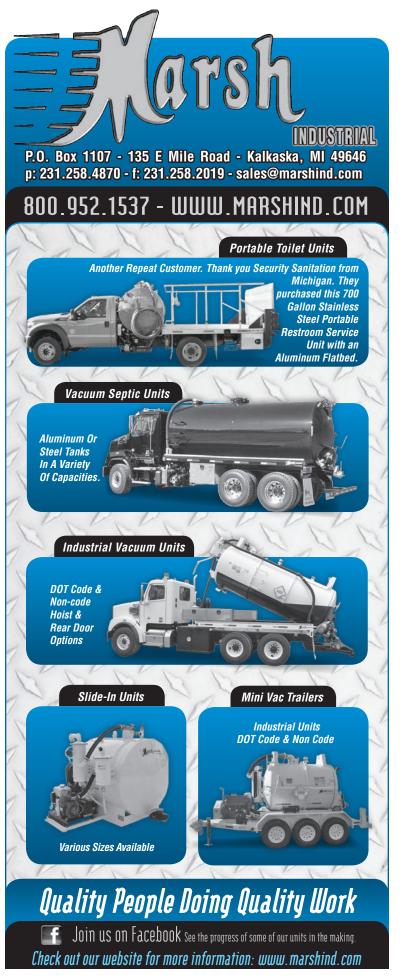


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Jim Anderson, Ph.D., is an emeritus professor at the University of Minnesota Department of Soil, Water and Climate and recipient of the pumping industry's Ralph Macchio Lifetime Achievement Award. Email Jim questions about septic system maintenance and operation at editor@pumper.com.

Finding New Uses for Abandoned Tanks

In drought-stricken regions, pumpers may find work repurposing old septic tanks for graywater recycling systems By Jim Anderson, Ph.D.

spend a good deal of time working in the U.S. Southwest. There has been an ongoing drought spanning approximately a decade throughout the region. Although substantial El Niño rains and snows have helped, they have not alleviated the water shortages brought on by consumption and the drought conditions. As a result, efforts have been made to conserve water and reduce consumption or pumping from groundwater reserves, as well as encouraging measures to recharge groundwater.

As an example, communities promote the use of low-flow or no-water toilets and recycling of household graywater flows. Now another potential way to recycle or reuse part of a septic system has come into play. The suggestion is that if a septic tank or system is to be abandoned, the septic tank can be repurposed as part of a rainwater harvesting system. Rainwater collected in the tank can then be used to water landscape plants, reducing the use of potable water (or reused water for that matter) that had been pumped from deep aquifers.

A recent article on the topic suggested that having an abandoned septic tank cleaned and disinfected for reuse would cost \$200 to \$500 less than properly abandoning the tank. Now, this is coming from an area in California where the houses are being hooked up to a "big pipe" system, so not a positive necessarily for our industry but may result in work for some installers and septic service providers during the changeover, which is not a bad thing for them.

I believe this is a worthwhile approach. Water conservation initiatives should be considered, even in "water-rich" areas like the Midwest, where I live. However, there are a few factors conservation proponents and homeowners need to be aware of that may not be immediately obvious, and I believe our industry will run into more questions like this even in areas slated to be serviced by a wastewater treatment plant.

SAFETY FIRST

First, the authors of the article suggest that all of the tanks in the area could be used in this manner. As septic professionals, we all know this may not be the case depending on the age and quality of the tanks. Therefore, a first step is to inspect the tanks for structural soundness. And, given the large numbers of cesspools and seepage pits used in areas of the Southwest, we need to determine if these are actually tanks that could hold water.

Every year we hear about a person walking through their backyard and falling through the deteriorated tank cover of an improperly abandoned septic tank or seepage pit, sometimes with fatal consequences. It is key that a repurposed tank will be structurally sound, so no cracks, no deteriorated concrete and proper access points for future cleaning after the initial disin-

It is key that a repurposed tank will be structurally sound, so no cracks, no deteriorated concrete and proper access points for future cleaning after the initial disinfection.

fection. If any of these negative conditions are present, the tank should not be used until or unless it can be repaired or upgraded.

If a septic tank drainfield system exists, the piping into and out of the septic tank must be removed, the connections completely removed, and trenches filled leading back to the house. There would be nothing worse than filling a tank with water and then having it find its way back to the residence through piping or trenches left behind. Similarly, any connections to a drainfield or seepage pit need to be permanently closed. Seepage pits should be properly abandoned by caving in the sides and filling cavities with granular material (soil, sand or rock) to prevent future collapse.

If the tank to be repurposed was used as a pump tank, all pumps and electrical connections should be removed and disposed of properly. Pump controls with mercury switches must be disposed of according to applicable regulations. Any openings in the tank for electrical lines should be closed and sealed.

When decommissioning a drainfield, mound or at-grade system, human contact with materials should be avoided. Any part of a system that has been in contact with sewage should be considered contaminated material and handled accordingly. Any soil waste that has mixed with sewage would be considered septage and would fall under the Federal 503 regulations. So a record of custody would need to be maintained and agreements on the part of sewage treatment plants or landfills be obtained between the accepting facility and the service provider doing the work.

Contaminated piping, geotextile fabric, rock or other trench media should be dried and disposed of in a mixed municipal solid waste landfill or other designated disposal site.

A NEW SERVICE?

Going forward I expect our industry to be faced with similar questions and challenges. It means the job will continue to evolve and change, and we need to keep our minds open to new approaches and perhaps other service niches we can fill.

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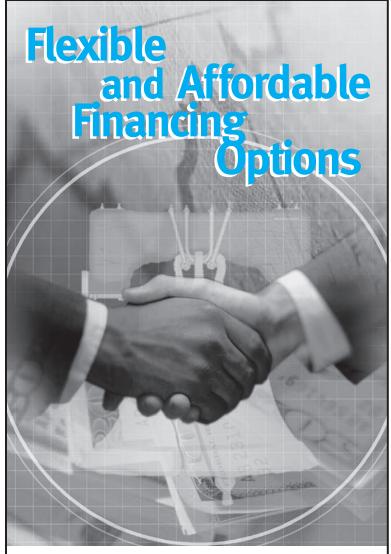


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11 Little Ways the Words We Use Are Killing Our Business

Passive and ambiguous language, cursing in the wrong company can turn off customers and co-workers, costing your pumping company money. By Ryan Robinson

e often take them for granted, but the words we use have a very real, often unnoticed, effect on our ability to become successful in business.

A study by The Economist found that nearly all (97 percent) of business executives have experienced misunderstandings due to poor communication, while 83 percent have actually seen negative business outcomes from something as simple as a poor choice of words. On the other hand, businesses and individuals with more mature communication profiles have much stronger chances of achieving higher levels of efficiency, flexibility and profitability.

It's not difficult to conclude that the words we choose to use, how we position ourselves during negotiations, and even how we speak to ourselves will have a lasting impact on our lives.

The sooner you can identify and eliminate the words and phrases you use that drain your team's motivation, diminish your customers' interest in your business, and erode your own sense of self-confidence, the quicker you'll be able to start making the positive changes you seek.

Naturally, much will depend on the circumstances, but here are the words I've found to be most counterproductive to achieving success in business.

1. "I should have"

We all make mistakes. After all, a career in business means taking risks, trying new things, and pushing the limits on what we're capable of. Don't waste time and energy lamenting over what you should have done. Learn your lesson, move on, and do it right the next time.

2. "I could"

As much as possible, speak in realistic absolutes. Instead of "I could," choose to use a more confident statement like "I will." This shows your commitment to taking the action you're contemplating, and goes to great lengths to eliminate any hint of doubt.

3. "I would have"

It's great (and necessary) to take time to reflect on your achievements, failures and everything in between, when it's a meaningful experience. However, once you internalize the takeaways you've learned from each experience, it's time to apply them toward your future, rather than lose sleep about the past.

As much as possible, speak in realistic absolutes. Instead of "I could," choose to use a more confident statement like "I will." This shows your commitment to taking the action you're contemplating.

4. "I'm not sure"

Being honest is a wonderful virtue, but saying you're "not sure" frequently will cast doubt on your competence and subject matter expertise. Instead, focus on anticipating the scenarios heading your way, so that you can do your research and be as informed as possible. You'll achieve much higher levels of certainty by making yourself an expert in your domain.

5. Curse words

Swearing has its purpose, but is often very out of context in the work-place. Social media entrepreneur Gary Vaynerchuk argues that while using curse words can grab attention, it can also alienate customers and cause harm to your business brand. In a blog, he said "Plenty of people find swearing off-putting in public, even if they occasionally swear themselves. So instead of creating connection, swearing creates discomfort ... the truth is that a huge segment of the population finds this more offensive than just about anything."

6. "Maybe if"

There's only one way to find out, right? After considering possible solutions and workarounds to your business challenges, make your shortlist, rank the most promising options and try them in that order, as cost-effectively as possible. Eliminate your "maybe ifs," and instead put them to action.

7. "I think"

In many cases, I've found that introducing a statement with the phrase "I think" connotes a sense of uncertainty and lack of confidence, inviting a deluge of alternative opinions. Use the phrase when encouraging open conversation, but avoid it at all costs when making an authoritative statement.

8. Unnecessary acronyms, industry jargon and clichés

I'm a huge advocate of honing your knowledge and becoming an expert in your field. However, that status doesn't give you license to invoke obscure



technical terms, industry jargon and business clichés every chance you get, just to show off. These words aren't going to magically make you sound more knowledgeable. On the contrary, they tend to alienate people, highlight self-doubt and open you up to more opportunities for misusing said terms.

9. "When I get the chance," "ASAP" and other vague time frames

When setting deadlines or schedules for your work, remember you're building a milestone for yourself. Being specific about dates and times will go a long way in helping both you and your customers. Going with a statement like "Give me two days to formulate an alternative," versus "I'll try to sort this out ASAP," conveys a sense of refined professionalism and helps make your customers (and co-workers or employees) more confident in you.

10. "Probably"

Employees and customers alike prefer clarity and certainty over ambiguity and doubt. When speaking or writing, make your statements definitive so your audience will understand exactly what you mean and what you intend to do. Leave no room for alternative interpretations.

11. "Really," "very" and other emphasis-boosting words

Less is more in this scenario. If you often use "really" or "very" to make your statements more emphatic, you may want to consider unlearning the habit. Liberally using filler words like this tends to dilute the impact of your message.

A CONFIDENCE BOOST

Remember, the trick to presenting a positive self-image is to refrain from using words that show doubt, insecurity, lack of confidence or negativity in business.





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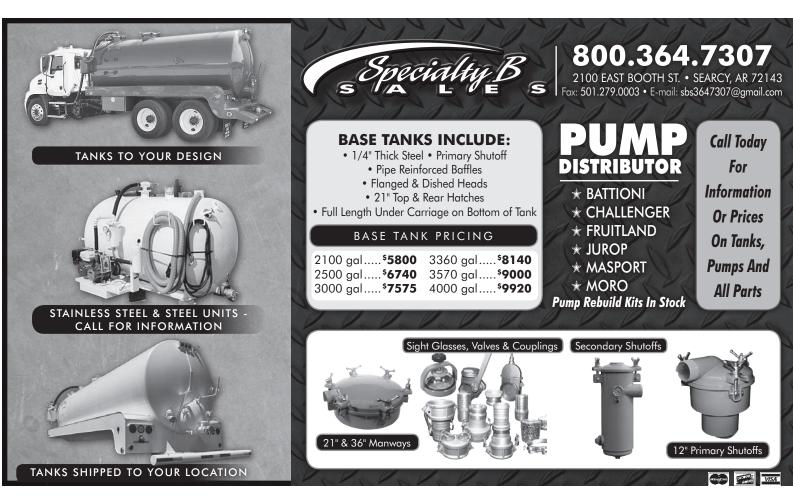
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Installer Licensing Will Raise Industry Professionalism

Vermont leaders currently license onsite system designers, but are now working with the wastewater industry to offer broader certification and continuing education By Doug Day

As things stand today in Vermont, only designers of onsite wastewater systems are licensed by the state. There is no registration or certification of installers or maintenance providers. That could change in 2017, as the Agency of Natural Resources' Drinking Water and Groundwater Protection Division is looking at the possibility of licensing installers, according to program manager Ernie Christianson.

Septage haulers are permitted by the Waste Management and Prevention Division. Solid Waste Compliance Chief Barb Schwendtner says it is a fairly simple program with straightforward permitting requirements.

What's the status of licensing installers in Vermont?

Christianson: We've been looking into it for more than a year. We had several meetings around the state with designers and installers and will continue discussing it this year with the hopes, if we have the support, of going to the legislature with a bill next year to have a licensing program. The reaction so far is very positive. They would like to have it be a recognized profession with continuing education. One of the stipulations that I gathered from the meetings is if we go down this road, we need to be able to provide good continuing education classes.

What are the prospects and timeline?

Christianson: I think it's too early to tell because we need a larger sampling of the installers to get a general agreement. It looks very positive. We still need to go in front of the legislature. If we do, we need to present a sound proposal prior to the session that starts in January.



Installers contact Ernie Christianson at 802/585-4884 or ernest.christianson@ vermont.gov

Haulers contact Barb Schwendtner at 802/249-5904 or barb.schwendtner@ vermont.gov

So who is licensed in Vermont?

Christianson: We have approximately 300 designers in three classes. Class 1 are professional engineers who have completed a college-level soils identification course. They are licensed by the Secretary of State and the Vermont Board of Professional Engineering and can design any wastewater system.

Class A and Class B designers are licensed by the Agency of Natural Resources. We give the exam and determine the continuing education requirements, which are 12 hours every two years with four of those being field or laboratory courses. Class A can design wastewater systems that do not

require site modifications that will serve a single-family residence with a design flow of 1,350 gallons per day or less. Class B can design systems that may require site modifications or the use of approved innovative and alternative (I & A) products that will serve a single-family residence with a design flow of 1,350 gallons per day or less. I & A includes any system designed to lower BOD and TSS. There are also Class B's who can design systems for more than one single-family residence and commercial systems.

Generally, the homeowner hires a designer and the state approves the design. The homeowner then hires an installer, and the designer certifies the final installation and submits that to the state. I & A systems are also required to have a maintenance agreement. The treatment unit must have a vendor-approved service provider and they are the only one allowed to service it.

Schwendtner: Septage haulers only need to apply for a permit, there is no test. They have to give us information about the trucks they want to

I & A systems are also required to have a maintenance agreement. The treatment unit must have a vendor-approved service provider and they are the only one allowed to service it.

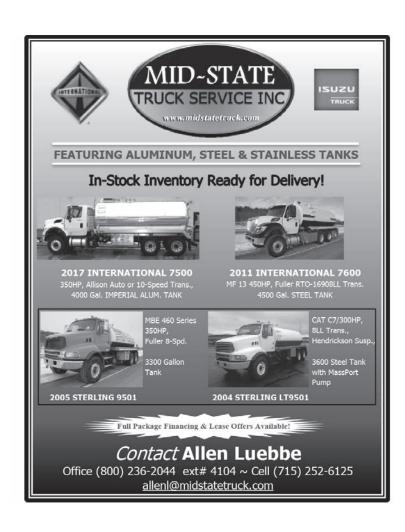
- Ernie Christianson

register, including VIN and license plate numbers. There is also a background check for the company and key employees, those with financial decision-making roles. There are some violations that prohibit you from getting a permit. If you have more than one serious environmental violation you can be prohibited from getting a permit, then there is a category for the typical felonies like murder, extortion, bribery, and that kind of thing.

Individual drivers do not have to be licensed or registered with the Agency of Natural Resources. If it is a sole proprietorship, the permit is issued to that individual. If it's a

corporation, the permit is issued to the corporation. There are about 400 licensed waste haulers, but that includes all waste transporters, including garbage haulers.

(Disposal of septage is regulated by the Department of Environmental Conservation Watershed Management Division. Septage can be landapplied, sent to a wastewater treatment plant or out-of-state incinerator, or dewatered and landfilled.)



How do you communicate with the licensed designers?

Christianson: I started a quarterly newsletter to inform them of updates, program changes or legislation, and we have a designer page on our website where they can keep up with continuing education courses being offered. They can also access the more recent information on our policies and guidance documents.

What are the big issues for onsite wastewater right now?

Christianson: There haven't been any, but we are in the process of rewriting our rules. Once we finish, it will go back to our Technical Advisory Committee for review.

The design criteria basically remain the same. It's more of an update and minor changes, and we've added new dispersal methods and technologies, including a provision allowing bottomless sand filters. Manufacturers now can request approval of new systems and technologies under our I & A provision and we can allow them even though they may not be specified by the rule. But a bottomless sand filter is not a proprietary technology with a manufacturer, so it needs to be incorporated into our rules.

If all goes well, we'll have a new set of rules by the end of this year or early next year. ■



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Erik Gunn is a magazine business writer in Racine, Wisconsin. Direct inquiries to him at editor@pumper.com.

Is It Time to Consider a Profit-Sharing Program?

Spreading the wealth to employees when times are good can be a valuable motivational tool — and it's not just a big-company perk By Erik Gunn

he business is doing well and you'd like to show your employees some extra appreciation — and maybe encourage them in a meaningful way to keep up the good work.

Consider profit sharing.

We mostly think of profit sharing as a big-company benefit. Where I live and work, in Racine, Wisconsin, home care products giant SC Johnson is famous for doling out hefty profit-sharing bonuses to all employees. It's so well known that some big-ticket retailers, such as car dealers, have tied sales promotions to the annual profit-sharing payday.

But what about small businesses like yours? Can a small septic pumping business really set up a profit-sharing plan? Is it worth considering?

WHO SHARES PROFITS?

The consensus among economists is that profit-sharing plans boost productivity. How much is hard to say, because plans and the companies using them can differ widely. Still, the general trend favors them, as a 2010 report from the National Bureau of Economic Research found.

Roughly one in five employers offers some kind of profit-sharing plan, says Kerry Chou, an expert on the subject at WorldatWork, an organization that offers advice, training and certification programs for human resources professionals. WorldatWork's primary focus is on pay, benefits, work-life matters, and strategies to attract, motivate and retain employees.

The available statistics don't detail whether the companies that participate in such plans are most likely to be large, small, or in between, but Chou is confident that size doesn't matter: "Profit sharing can be an effective plan at any-size company," he says. "It promotes the cultural element in the company that we're a family — we're going to win or lose together."

They have other things going for them. "One of the biggest advantages to a profit-sharing plan is that, regardless of the company's size, it's very simple to understand," says Chou. "If the company makes profits, we are simply going to be sharing those with the employees."

The typical profit-sharing plan is just what it sounds like: The employer takes a fixed percentage of company profits and pays that money out in the form of bonuses to employees.

HOW TO PAY?

The bonus is typically an annual payment, although nothing stops a business from making payments more frequently — once a quarter, for instance.

It's also possible to set up a deferred payment plan — contributing the

bonus to an employee's 401(k) or other retirement plan, or breaking a payment into two chunks paid over two years "so the employees have to stay another year to get it," Chou says.

But variations like those can make accounting a lot more complicated — and also less powerful as an incentive because deferred payments "are less of a value to the employee," he notes.

Profit sharing can be an effective plan at any-size company. It promotes the cultural element in the company that we're a family — we're going to win or lose together.

Kerry Chou

"The predominant practice is to simply cut the employees a check to give them the actual cash," Chou says. "Most employees like cash because they can spend it right away." And if they want to invest it on their own, they can simply do that.

You're sold on the idea — so what do you do next? Step one, Chou says, is to determine competitive pay levels for the positions at your organization. Check with local wage surveys (there are many sources, including state and federal agencies, your local employers association, and private consultants)

to see where you stand. Don't simply look at base pay; see what forms of variable pay, such as profit sharing or other bonus plans, prevail in your area as well.

Then identify some expert advisers who understand how profit-sharing programs work — a human resources consultant or a suitably qualified attorney or certified public accountant.

HOW GENEROUS?

The typical plan may set a flat percentage of net income or of EBIDTA — Earnings Before Interest, Taxes, Depreciation and Amortization — to be distributed, usually after profits clear a certain threshold. But you don't want to make the choice off the top of your head.

Instead, Chou says, take a close look at how much you can realistically afford to share and how much you are willing to pay out if profits hit the target at which the bonus is triggered. Of course, you'll need to think hard about what that target should be in the first place.

There's also the question of how to divide the total pool. Again, Chou says, your compensation survey information will be important.

Some employers might take the position that everyone should get the

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same amount, perhaps with incremental increases based on how long a person has been with the company. But market considerations lead most to scale the bonus according to management rank, he says.

Line workers, for instance, might get a payment amounting to 5 percent of their base pay, while higher managers' bonuses might be 10 or even 20 percent of base. In essence, that means the higher a person is up the ladder, the more of his or her pay is at risk.

CHECK THE FINE PRINT

There aren't a lot of regulations over profit-sharing plans — but there are some.

An important thing to remember, Chou says, is that under federal wage-and-hour laws, the typical profit-sharing payment is generally considered part of an employee's regular rate of pay. That's because it's "nondiscretionary" — the employer has committed in advance to paying the bonus if a certain target is met.

This becomes especially important when calculating overtime pay. Because the profit-sharing bonus gets added to the employee's earnings, it effectively increases the individual's standard hourly wage. That also leads to an increase in the employee's overtime premium (half the hourly wage, paid on top of the regular wage for overtime hours). When the profit-sharing bonus is paid out, a sum representing that retroactive additional overtime pay must be paid out, too.

"One thing employers need to do is make sure that their payroll departments are able to get those numbers included, and make sure that a retroactive payment is made if additional overtime is required," says Chou. Failure to do so could lead to fines and other penalties in addition to an order to pay the back wages owed.

"Discretionary" bonuses — awarded at the whim of the employer with no advance communication to employees — don't have to be included in overtime calculations. But they limit the ability to motivate performance because you didn't tell employees in advance about them — or how to earn them. And if the employer awards such bonuses every year, they may become an annual expectation and may be viewed as nondiscretionary in the event of a wage-and-hour regulations audit — and once again, make the business subject to penalties.

"It's much better just following the law," Chou says.

A BIG THANK-YOU

All those considerations point to the care required when setting up a profit-sharing plan. But if it's something you can afford, it may be well worth it.

After all, what better way is there to tell your workers that everyone's in it together? \blacksquare

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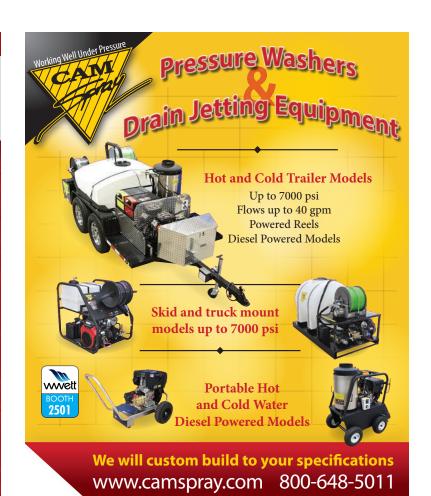
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Prepare for a Future With More Floods and Drought

The wastewater industry will have to tweak septic system design and operation to deal with inevitable changes caused by climate change, experts say By David Steinkraus

ccording to two experts in the decentralized wastewater industry, there is no point in arguing about climate change. It's here. And they say it's high time the industry prepares for a future demanding different solutions for wastewater treatment.

George Loomis is a research and extension soil scientist at the University of Rhode Island and director of the New England Onsite Wastewater Training Center. Jose Amador is a professor at the university and oversees its Laboratory of Soil Ecology and Microbiology. They have been working

on what climate change will do to the onsite industry, and with Jennifer Cooper, who worked with them as a graduate student, have published scientific papers that make a start at answering these questions.

Broadly speaking, climate change means more water or less water depending on what area of the country you're talking about,





Reach Jose Amador and jamador@uri.edu and George Loomis at GLoomis@uri.edu.

Amador says. Rising sea levels will mean less dry soil available for treatment in coastal areas because groundwater will be closer to the surface. There will be more water from above as large storms that were once infrequent become more common. Other parts of the country will be drier, making water conservation more important and making wastewater more concentrated.

There's also temperature, he says. All microbes and biological systems react to temperature, and the warmer temperatures of climate change will affect a number of biological processes that treatment depends on.

STORM CLOUDS LOOMING

Climate scientists say you cannot tie any single event to climate change because through history we have seen extreme weather, Loomis says. For example, the storm that caused extreme flooding in Louisiana in August 2016 — with some instruments recording more than 2 feet of rain in 48 hours — may or may not have been the result of climate change. What the science says is that storms like this will become more frequent, according to Loomis.

"It's real. It's happening now. It has been happening for a while," he says.

The National Weather Service reported that a storm like the one in Louisiana has a probability of 0.1 percent in any given year. To put it another way, one storm like it will occur once every 1,000 years.

"It's going to mean the industry has to become more adaptable. They have to first realize this is an issue that needs to be on the agenda," Loomis says. "Other industries are already doing this. Our industry is always comparing itself to the big-pipe industry, and the reality in this situation is they are already responding with plans and actions to help reduce the impact of climate change."

Loomis says people in the onsite industry may believe what they wish about climate change, but the reality is that other people are using climate change as a competitive advantage. For example, if a community is trying to make a decision between centralized and decentralized wastewater systems

and wants it to be climate-changeready, then the onsite industry must be able to show it is also ready.

And onsite industry people need to consider whether their business can be successfully passed to children or younger relatives.

"So you want an industry that is as robust as possible because that means more people will be interested in buying your business, because they see it has a future," Loomis says.

Areas that are dry now will become drier with climate change, and water will become even more valuable than it is now. ... You won't try to get rid of the gallons. You'll do everything possible to reuse those gallons.

- George Loomis

DIFFERENT APPROACHES

Research is only beginning to figure out what will happen to onsite systems as climate change progresses. For example, a scientific paper published in the journal PLOS ONE by Cooper, Loomis and Amador looked at nitrogen removal in

three drainfield types: a pipe-and-stone system, a low-pressure pipe, and a shallow, narrow drainfield with geotextile fabric, which received advanced-treated effluent.

Compared to advanced drainfield systems, the traditional pipe-and-stone system removed more nitrogen under conditions simulating climate change. That's probably because there is less oxygen lower in the soil and more carbon in septic tank effluent, and the microbes were using the carbon quickly to process nitrogen, Amador says. Because it's cleaner, effluent from advanced systems contains less carbon to begin with, so there would be less carbon available for microbes. On the other hand, there was less phospho-

rus removal in all three drainfield types under climate change.

But that's not the whole story, Loomis says. Advanced systems are likely to be more effective overall at removing nitrogen because they can target different substances in various components of the treatment train. In the soil you have to accept whatever happens. In other words, nitrogen or other substances will be treated within components of the treatment train before water reaches the soil, Amador says.

This means the industry has a great opportunity to work on new technologies that target specific contaminants, Loomis says. Those that are a problem now — nitrogen, phosphorus and bacteria — are likely to remain problems in the future.

LOOKING AT WETLANDS

Some of those technologies will involve what installers already know: pumps and switches. Others will not.

There are alternative systems that use engineered wetlands to treat ef-

To read a study by Jose Amador, Jennifer Cooper and others, "Modeling Nitrogen Losses in Conventional and Advanced Soil-Based Onsite Wastewater Treatment Systems **Under Current and Changing** Climate Conditions," go to the journal PLOS ONE at: journals.plos.org/plosone/ article?id=10.1371%2Fjournal. pone.0158292

fluent, Amador says. This is already common in Europe but is not widely accepted in the U.S. Yet, when the choice is between a \$30,000 advanced system of pumps and switches, and a gravity-powered, nonelectrical biological system costing much less, acceptance may change - but not necessarily in all places, because wetlands do not work efficiently during winter in cold climates.

The drawback to wetlands is the area of land they require, Loomis says. Where land is at a premi-

um, wetlands will not be the chosen solution. It's the system with the smallest footprint that will win, he says.

"Areas that are dry now will become drier with climate change, and water will become even more valuable than it is now. Reclamation and source separation will be important there. You won't try to get rid of the gallons. You'll do everything possible to reuse those gallons," Loomis says.

Areas that are wetter — because of sea level rise or increased rainfall can expect more movement of disease-causing bacteria and viruses, Amador says. This will happen because saturated soil moves water so quickly that there is less time for pathogens to stick to soil particles. And warmer and wetter soil may allow bacteria to grow more. Viruses need living cells to reproduce, so there won't be more of them, but they will still move faster through saturated soils.

ON THE HORIZON

If there is one topic researchers should look at next, it is what happens in soil, Amador says. Soil is the end recipient of effluent, and the quality of onsite wastewater treatment depends on what happens there. But the standard descriptions don't work. For example, in addition to denitrification by denitrifying bacteria, in nitrogen removal there is also denitrification by nitrifying organisms, nitrous oxide produced by those nitrifying organisms, nitrogen gas produced by anaerobic ammonia oxidation, and more, he says.

"I would have to go with Jose's response," Loomis says. "We think we know what's going on in the soil, but we're not really sure. For instance, we have textbooks that say this is what takes place in the nitrification process, and there are these two microorganisms involved. But this knowledge is 30 years old, and it's based on the only two microbes that we could grow in a laboratory culture dish. That was all we could do back then."

"But now we have the technology. We can look at the genes. We can look at the DNA for the whole soil microbial community and say, wait, there is one gene for this and another for that, yet we have not gotten away from those obsolete explanations," Amador says.

If we don't do the research, we will not understand the system, Amador says. That means we cannot tweak a system to favor one outcome over another. It also means we cannot redesign or re-engineer systems to favor the microbial communities that can adapt to the stresses of climate change,

"It would be good if our industry at least remains open to discussion and new ideas because some of this research is showing us that nature is more dynamic than we thought," Loomis says.

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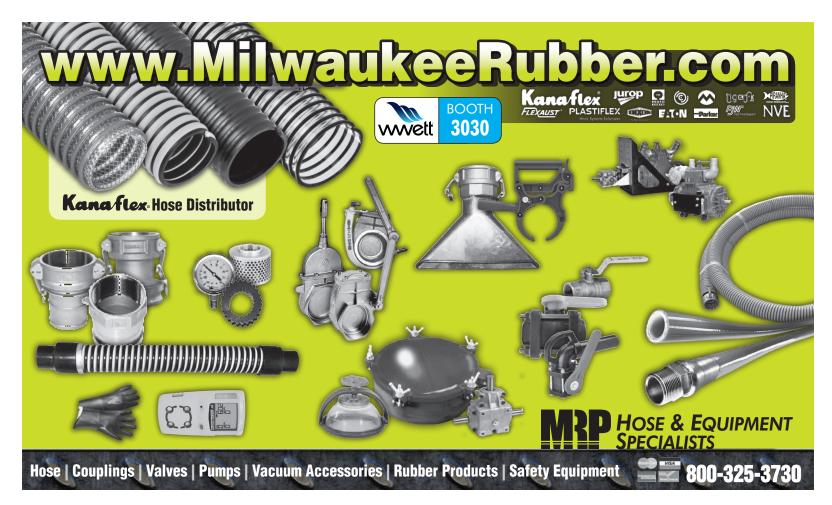
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wner Ryan McGuire bought a gunmetal gray and white 2005 Kenworth T800 with a 3,300-gallon steel tank and a 75-gallon freshwater tank, and 500 cfm Fruitland pump built out by Keith Huber. The rig is powered by a 400 hp Cummins engine and 10-speed Eaton Fuller transmission. The tank was cut down from a larger, damaged tank that was on a truck serving Hurricane Katrina cleanup efforts. The truck features aluminum wheels, chrome stacks, 20-inch top and rear manways, a rear sight tube and a rear work light. Graphics were produced in-house. The drivers are Grant Golden and Jake Brunette, and the truck is used for residential and commercial septic service.

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\$16,495





2002 Kenworth W900 Vac Unit

\$72,500

C-12 Cat @ 380+98, air ride, 8LL, 20k/46k axles, cruise, jake, power divider, 4.33 ratio, 3/4 rear opening/dumping tank, light board, boom with extenda, pendent control, Whisp Air 18" Hg rotary lobe blower, tool box's, hose reel and piston pump is available for this unit, right now just set up as a vacuum unit, 1,500 gal, freshwater tanks



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1997 International Hydro/ \$27,500 **Jetter Vac Truck**

DT466 @ 250 hp., Hendrickson spring/beam susp., 18k/40k axles, Allison automatic, 96k showing, 22.5 rubber, Vactor 2112 series body, 1,500 gal. freshwater, 11 yrd. debris body, full opening/dumping rear, hyd. driven 2,500 psi piston pump, SN:96-09-5920, front mount jetter reel, extenda boom, Perkins aux. motor with 545 hours. showing, single blade fan, remote



2001 International 5600i \$72,500 **Hydro/Jetter Unit**

Cat 6NZ C-15 @ 500 hp., 10 spd., Hendrickson spring/beam susp., 20k/58k axles, power divider, ac/cruise, signal board, 22.5 rubber, alum. rims, block heater, 84,240 miles showing, Vactor 2115 sewer cleaning body, 3/4 opening rear, dumping body, front mount jetter real, telescoping boom with dual control, hi pressure reel, 1,300 gal, fresh water, high volume pressure piston pump, Roots rotary lobe blower 18"hg



1992 International 4900 \$12,500 **Street Sweeper**

DT 466 dsl., automatic, 35k showing, 8k hours, Vac/All Vacuum system, Cummins dls. aux. motor, 2,639 hours, 194"WB, 4' center boom, 2'right broom, spring susp., 4X4, right hand steer, hyd. dump body, water tank, ac

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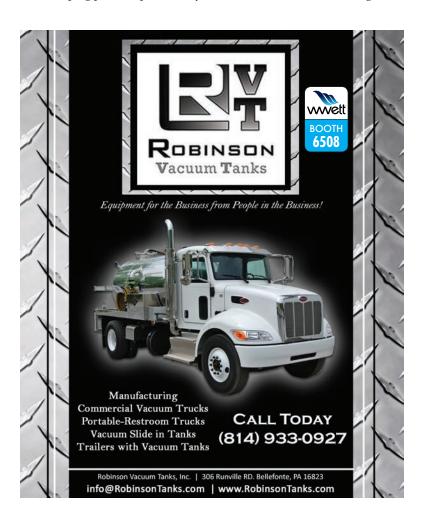
Water Cannon Pressure Washer Offers Industrial Cleaning Power

By Craig Mandli

n the wastewater industry, diversifying services can mean the difference between profitability and spinning your wheels. That's why Water Cannon, a longtime manufacturer of pressure washing equipment, has veered into producing products that can not only be used for cleaning sewer pipes and portable restrooms, but also industrial and oil rig cleaning. The company's newest unit, a high-volume/high-pressure washer, was on display at the 2016 Water & Wastewater Equipment, Treatment & Transport Show.

"This is a unit that can move mud or be used for jetting, cleaning sewers, portable restrooms, or anytime when you need to potentially move a lot of dirt," says Mark Williams, the national sales manager and product manager for Water Cannon. "This is something that allows us to market our products to different fields of the industry."

Pumping power is provided by the RTX Line of industrial-strength An-





novi Reverberi triplex pumps that come in five options, offering flows from 8 to over 26 gpm and pressures from 1,800 to 4,500 psi. The large crankcase enables longer running times for industrial needs. The pumps run at 1,450 rpm and have a 30 by 80 mm solid shaft with a 1-inch inlet and 1/2-inch outlet. They have a 76-ounce oil capacity. The version on display at WWETT 2016 was equipped with an RTX70 pump offering 18.5 gpm at 2,200 psi.

"This is the midlevel RTX pump, which is a good multipurpose pump for a septic

Mark Williams, right, the national sales manager and product manager for Water Cannon, discusses his company's new high-volume/ high-pressure washer with an attendee at the 2016 WWETT Show. While the line is available in multiple versions, the display unit was equipped with an Annovi Reverberi RTX70 pump offering 18.5 gpm at 2,200 psi. (Photo by Craig Mandli)

pumper that has portable restrooms but also wants to diversify into some industrial or sewer cleaning," says Williams. "Once you get into the bigger pumps, you're looking at mounting them on industrial vacuum trucks, and more of the hydrotrenching and excavating market."

The pump is powered by a CH980 32 hp Kohler gas engine with electric start, and the whole unit comes skid-mounted with 50 feet of 1/2-inch jetting hose. Williams says that not only were pumping and drain cleaning contractors interested in learning more about the unit at the WWETT Show, industrial cleaners and jetters saw an application for it as well.

"The nice thing about this show is the mix of smaller equipment up through large industrial units that are on display," Williams says of the WWETT Show. "It's a great mix of everything that's out there, and really gives a lot of great options for operators looking to diversify. Certainly the interest we are seeing in this is going to urge us to look at producing even bigger units in the future."

The 2016 WWETT Show was Water Cannon's first as an exhibitor, and Williams says based on the interest and amount of leads he picked up in the first couple days, they'll definitely be back.

"A lot of the people at this show have been drawn in by seeing our high-volume unit right out front, but once we start talking to them, we can tell them about all the other products we offer," says Williams. "That has definitely created interest in several of our other units that might be a better fit for them. Not only are the people here diversifying what they do, it's causing us to diversify what we offer." 800/333-9274; www.watercannon.com.



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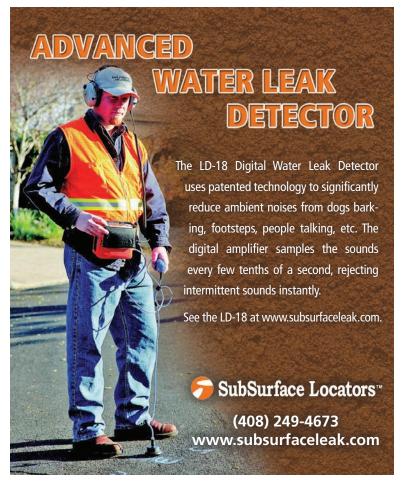


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Product Preview

Professionals will have the opportunity to see the top wastewater tools and equipment in the industry on the WWETT 2017 show floor by Craig Mandli

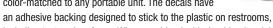
The Water & Wastewater Equipment, Treatment & Transport Show will fill the Indiana Convention Center Feb. 22 to 25 with the best products and services the industry has to offer. To make sure you don't miss out on any of the new, innovative industry offerings in Indianapolis, be sure to check out the interactive floor plan on the WWETT website (www.wwettshow.com). All attendees are sure to bring home a new idea or product to assist them in the coming year.

Here's a look at some of the most exciting products and services that will be on the WWETT Show floor:

BOOTH #4138

Allied Graphics

Portable restroom decals from Allied Graphics are available in custom shapes and sizes, and can be color-matched to any portable unit. The decals have



including textured surfaces. When combined with durable ultraviolet-cured ink, they will hold up to the harsh environments portable restrooms are typically subjected to. 800/490-

9931; www.allied-graphics.com



Amazing Machinery Viztrac Max

The Viztrac Max camera from Amazing Machinery has the same durability and super-slick push cable as previous Viztrac cameras. with a 22 percent larger 9-inch LCD color display, and a rechargeable lithium-ion battery pack capable of up to eight hours of field use before recharge. The unit includes an AC/DC adapter for direct power supply, a 512 Hz sonde transmitter, and a DVR recorder that records to standard SD cards. A 4GB card is included. 800/504-

7435; www.amazingmachinery.com



Amthor International Matador

The 4,000-gallon aluminum Matador vacuum tank from Amthor International comes standard with a 5/16-inch-thick side shell and



floor, full head baffles and no external rings. It is available as a dumping tank with or without full-opening rear doors, code or non-code, as well as with off-road construction options for various oilfield and mining applications. Various pump models are available, as are chassis and stock tanks. 800/328-6633; www.amthorinternational.com

BOOTH #4200

Anua PuraSys SBR

The PuraSys sequencing batch reactor from Anua

batches treatment in cycles, including aerobic and anaerobic steps, to clean water and reduce total nitrogen. It allows nitrification and denitrification to occur in the same chamber, saving space. The smart controls adjust aeration for varying flows, eliminating excessive air that can lead to system failure through sludge bulking. Flexible tank configurations include the retrofit of existing tanks. The system can reduce BOD5 and TSS to less than 10 mg/L and provide greater than 50 percent total nitrogen reduction, according to the manufacturer. It can be scaled up for commercial applications. 336/547-9338;



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BOOTH #2201

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The Roll-Off Dewatering Unit from AQUA-Zyme Disposal Systems can reduce liquid sludge vol-

ume by 80 percent, with reductions in BOD, COD, FOG and TSS up to 98 percent. Solids can be landfill-ready in 24 hours. Units are mobile and can be transported with a standard rolloff truck. They are watertight, with 1/4-inch steel floor plate and 7-gauge sides, a rollover tarp, quick-connect fittings, dual inlet ports, multiple drain ports with caps, and a life span of 12 to 14 years. Standard sizes of 15 and 30 cubic yards are in stock, with custom sizes available. 979/245-5656; www.aqua-zyme.com

BOOTH #4235

Arcan Enterprises Septic-Scrub

Septic-Scrub from Arcan Enterprises is a chemical additive that removes sludge that develops in the biomat. When a system is holding water with sluggish drainage, Septic-Scrub offers options before drainfield replacement. It is fast-acting (within 24 hours) so the user will know guickly if the problem is resolved. It has a proven track record of successful outcomes. 888/352-7226; www.arcan.com;



BOOTH #2033, 2039

Armal Wave

The Wave portable restroom from Armal has an expanded color pallet featuring new colors such as white and lime green panels. It offers maximum ease of use for its operators and a design that shows the company's eye for detail for the needs of those in the portable restroom rental business. 770/491-6410; www.armal.biz

BOOTH #4234, 4237 & 4238

ART Company 207-W

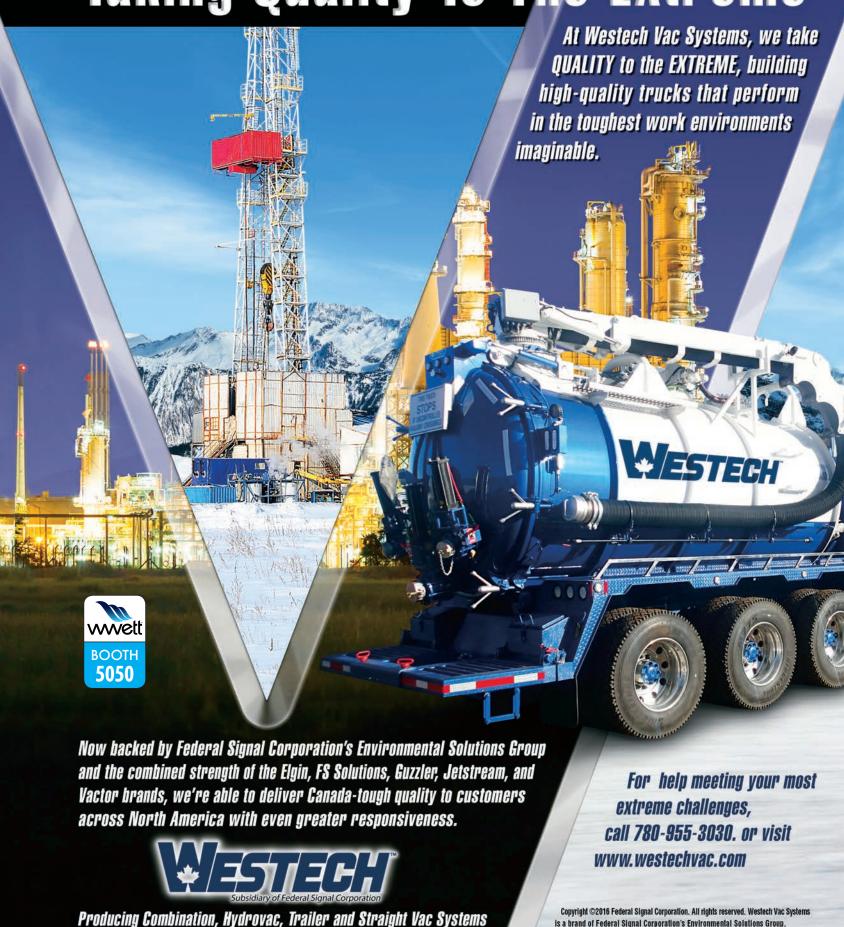
The 207-W restroom trailer from ART Company (A Restroom Trailer Company) is designed for fast and easy setup with a sleek, streamlined appearance. The 20-foot seven-station unit is avail-



able in several exterior and interior color combinations to match any existing fleet colors. It has a 780-gallon waste tank, 200-gallon freshwater tank, heavy-duty steel frame, integral trailer skirting, a 2 5/16-inch trailer hitch, heavy-duty tongue jack, maple cabinetry, Corian countertops with integrated sinks, and ducted heat and air conditioning. 269/435-4278;

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BOOTH #5231

Bio-Microbics Recover

The **Recover** greywater treatment and recycling system from **Bio-Microbics** helps reduce water usage by up to 30 percent. It is listed with IAPMO (International Association of Plumbing and Mechanical Officials) Research & Testing Inc. — Reclaimed Water Conservation System for Flushing



Toilets (Standards CSA B128.1-2006; CSA B128.2-2006). The built-in safety features not only protect public health, but go beyond the product standard requirements. The smart controller further improves the system efficiency and detects toilet leaks, potentially saving another 13 percent. It includes auto away mode, a self-cleaning filter procedure, auto toilet size detection, and maintenance reminders. 800/753-3278; www.biomicrobics.com



BOOTH #5112

Brenlin Company Seal-r

Seal-r septic tank lids from Brenlin Company create a strong seal between the septic tank and the riser, eliminating water infiltration between the riser and the tank. They are made of durable materials, range from 12 to 42 inches, and can be personalized with a service provider's company information. The 42-inch lid meets growing demand for bigger risers to accommodate new technology

equipment. 888/606-1998; www.seal-r.com

BOOTH 4221

Bright Technologies Belt Filter Press

The 1.7-meter, trailer-mounted belt filter press unit from **Bright Technologies** has an insulated control room with FRP walls, air conditioning,



electric heat, a refrigerator, stainless steel desk, tool storage, locker, closed-circuit TV and remote operator controls. The modular design allows the room to be custom manufactured to fit most single-drop trailers. Units are made for rapid setup, with folding conveyor and operator walkways. No special lifting equipment is required. 800/253-0532; www.brightbeltpress.com



BOOTH #2501

Cam Spray Model TT4025HZ-350

The Model TT4025HZ-350 sewer jet from Cam Spray is rated to 25 gpm at 4,000 psi with a Hatz H50 liquid-cooled, turbocharged diesel engine producing 74 hp. It is EPA Tier 4 Final compliant and comes with a wireless remote to control en-

gine functions and water flow. It has a hydraulic-powered

swivel reel, over-center clutch, 500 feet of 5/8-inch hose and a 350-gallon tank. The remote control/valve package was engineered from the ground up. **800/648-5011**; **www.camspray.com**

BOOTH #3012

Chempace bioForce

The **bioForce** biological line from **Chempace** can be used on septic, grease trap and municipal lines. From liquids to private labeled packets, solutions are biodegradable and environmentally friendly. New bioForce Maxx drainfield treatment is now available. **800/423-5350**; www.chempace.com



BOOTH #5465

Commercial Credit Group

Commercial Credit Group can help companies get the financing needed to make their next equipment purchase. Even if they're experiencing cash flow or collection issues, options include financing or leasing new and used equipment, converting rentals into purchases or refinancing, loan consolidation and cash out loans. The credit analysis model looks at

the whole picture, not just a credit score. Dedicated to the waste industry, the company is familiar with the equipment looking to be purchased. They work through the full process to provide a quick response to financing needs. **704/944-2771**,

www.commercialcreditgroup.com

BOOTH #1773

CPACEX POWRPAK

The **POWRPAK Series** for portable restrooms and holding tanks from **CPACEX** offers continuous odor control and fragrance for up to seven days in the extreme heat of the summer. The additional effervescence ensures that the packet will dissolve quickly and disperse evenly throughout the holding tank. The packets are available in five different formulations



to fit specific applications and climates. Packs are biodegradable and contain non-staining rich blue dye. **419/450-6208**; **www.cpacex.com**



BOOTH #2561

Crescent Tank Vacuum Tank

The **Crescent Tank Vacuum Tank** is completely flat inside and out. No baffles allow it to be emptied

completely to avoid internal corrosion. With the included pump at specified cfm, unnecessary fatigue of the structure is eliminated and life of the tank is prolonged. It is made from 1/4-inch steel, making it structurally strong. The workstation is designed for the portable restroom industry. It can carry up to 10 portables based on model, and the weight capacity is the same as a flatbed truck. Freshwater is held inside of the 1/2-inch-thick poly tank externally to avoid internal wastewater contamination. 585/657-4104; www.crescenttank.com





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BOOTH #5005

Crust Busters

The **Crust Buster** hand-held power agitator from **Crust Busters** has an 80-inch shaft and two- or three-blade propeller that mixes a 1,000-gallon septic tank in five minutes. Options include 2-, 4-, 6- and 9-foot extensions, and a short three-blade shaft that adapts to the two-blade unit. **763/878-2296**; www.crustbusters.com



BOOTH #1560

Duracable DM140

The **Duracable DM140** is ideal for smaller jobs. With a 1/4 hp motor running at 200 rpm, it can handle smaller jobs easily. It is easy on the user, too, as there is no heavy machine to carry from the truck to the job. It can be operated horizontally or vertically, and uses 75 feet of 3/8-inch cable standard or, with the optional flat

drum, 75 feet of 1/4-inch cable. The standard package comes with a revolving arm and a 14-inch enclosed polyethylene reel. Both reel options are lightweight and keep splatter contained. 877/244-0556; www.duracable.com

BOOTH #1767

Dynamic Decals & Graphics Lil' DG

After tremendous success with Monster Stick adhesive (a.k.a. Death Grip), customers asked for something a little less aggressive and more cost-effective for surfaces that aren't as textured, yet requires a tough decal. Lil' DG (Monster Stick Jr.) from Dynamic Decals & Graphics is less aggressive and has a thinner



layer of adhesive, but is a big step up from the industry standard of Super Stick for smooth, low surface energy plastic. 800/472-0285; www.dynamicdecals.com





PRO-PUMP/HC liquid live bacteria from **Ecological Laboratories** is a blend of over 30 microorganisms selected for broad-spectrum application in industrial and wastewater treatment. Its performance results in the rapid breakdown and removal of fats, oils and greases that build up in septic tanks and absorption fields. It is a consortium of vegeta-

tive nonspore-forming bacteria that exhibit performance in low-oxygen facultative anaerobic environments. Regular treatment eliminates surface solids, bottom solids and odor, satisfying customers and making pumpouts more cost-effective. **800/326-7867**; www.propump.com

BOOTH #5211

Eljen Corporation GSF

The GSF (Geotextile Sand Filter) from Eljen Corporation is a non-mechanical advanced wastewater treatment and dispersal technology. It provides treatment and dispersal in the same footprint, while keeping installations easy and maintenance minimal. It is NSF

40 certified. 800/444-1359; www.eljen.com





BOOTH #6024

Envirosight Quickview airHD

The **Quickview airHD** camera from **Envirosight** captures HD video from sewers, and transmits it wirelessly to a touch-screen tablet for live viewing. Its motorized tilt, in-manhole centering capability and hands-free stabilization enable easy setup,

as both the operator's hands remain free to operate the tablet. It has an HD zoom camera with 30X optical zoom (plus 12X digital) tuned to deliver maximum detail from within pipes. Its Quad-Haloptic light engine combines four offset LED/reflector pairs to surround the camera with powerful, focused illumination aligned for maximum range and optimum viewing at any distance. 866/936-8476; www.envirosight.com

BOOTH #1062, 1068

Enz USA Cutting Ball

The water-driven **Cutting Ball** nozzle from **Enz USA** moves easily around curves in 4- to 6-inch PE, steel or concrete pipes while safely removing roots and mineral deposits, resulting in no damage to the pipe. It works without impact, but has the ability to switch to a vibrating nozzle.

nizle.

It has a hard metal front blade for pipes that are more than 50 percent clogged. The side blades are self-sharpening and maintain their sharpness over their entire service life. It operates with controlled rotation speed and is capable of running on recycled water. It is leakage free. 877/369-8721; www.enzusainc.com



BOOTH #5050

F.S. Solutions Guzzler LR Classic

The **Guzzler LR Classic** industrial vacuum truck from **F.S. Solutions** can effectively vacuum dry material. The 60 72-inch filter bags make the difference. The unit has

dual pumps, a heated debris body and more. Other custom applications available include larger debris bodies, lower clearance heights, special loading ports, and trailer and skid versions. 800/627-3171; www.fssolutionsgroup.com

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2016 Peterbilt Model 337 with 2,500 gallon vacuum tank

PACCAR PX-9 330 HP engine, Allison 3000 RDS-P transmission, Dana 12k front/21k rear axles. 2,500 gallon Pik Rite steel tank with Masport HXL 400 pump. Several units in stock.



2015 Peterbilt Model 348 with 3,600 gallon vacuum tank

PACCAR PX-9 350 HP engine, Allison 3000 RDS-P transmission, Dana 20k front/40k rear axles. 3,600 gallon Pik Rite steel tank with Masport HXL 400 pump. Stock # 393983.



2016 Peterbilt Model 348 with 4,000 gallon vacuum tank

PACCAR PX-9 350 HP engine, Eaton Fuller 10-speed transmission or Allison 3000 RDS-P, Dana 20k front/40k rear axles. 4,000 gallon Pik Rite polished aluminum tank with a Masport HXL-400WV or NVE Challenger 607 pump. Several units in stock.



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BOOTH #3113

Five Peaks 250-Gallon Holding Tank

The **250-Gallon Holding Tank** from **Five Peaks** has a 17-inch profile that slides easily between the

wheel wells in most pickup trucks and trailers. The durable

tank comes with one manhole cover (plus an optional second) along with six fittings, offering multiple plumbing configurations. Made from rotomolded polyethylene, the holding tank has heavy-duty grab handles for easy transport and a sloped design that prevents water from pooling. 866/293-1502; www.fivepeaks.net



BOOTH #6147

Flowmark Isuzu NPR

The **Isuzu NPR** 999-gallon aluminum portable restroom service truck from **Flowmark** has an aluminum vacuum tank with capacities of 700 gallons of waste and 299

gallons of freshwater. Power is provided by a Masport

HXL4 156 cfm vacuum pump, and it includes a FloJet water pump, LED lighting, and two-unit fold-up toilet hauler. It is designed for efficient operation. **855/653-8100**; www.flowmark.com

BOOTH #2271

Forbest Products 1-Inch Mini Self-Leveling Color Camera Head

The high-resolution **1-Inch Mini Self-Leveling Color Camera Head** from **Forbest Products** is available with a built-in 512 Hz sonde transmitter CHDT-

C26, which comes with durable sapphire glass,

stainless steel spring kit and 15 LED lights. The CHDT-C26 can work with Forbest portable 65-, 100- or 130-foot fiberglass cable and reel. With an adapter, it can also be used on 150-, 220-, 300- or 400-foot cable and reel. With the self-leveling function, users can always have upright pictures. **877/369-1199**; www.forbestusa.net



BOOTH #6333

Foremost 1200 Non-Code Hydrovac

The **1200 Non-Code Hydrovac** from **Foremost** is a full-size unit, offering 10.5 cubic yards of debris capacity and

1,200 gallons of freshwater storage. This package is normally mounted on a tandem chassis with a single drop axle. Foremost designs and manufactures vehicle-mounted vacuum equipment for use in the oil and gas, municipal, industrial and utility market segments across North America. 403/742-6686; www.foremost.ca

BOOTH #6010

GapVax MC Series Combo JetVac

The **MC Series Combo JetVac** from **GapVax** is made of 3/16-inch ASTM A572 Grade 50 Exten steel. The debris body ranges from 5 to 12 cubic yards, and is



also available in stainless steel. The stainless steel water tank can hold up to 2,000 gallons. It has a unitized water and debris tank with a double subframe. A heavy-duty double acting single-lift cylinder provides a stable 50-degree dump angle. Vacuum pump options range from 3,500 to 5,000 cfm with up to 27 inches Hg. It has an 8-foot front-mounted telescopic boom with dual lift cylinders, reaching 26 feet with a 180-degree rotation. The front-mounted hose reel has 800 feet of 1-inch hose capacity. 888/442-7829; www.gapvax.com



BOOTH #4125

General Pipe Cleaners JM-1000 Mini-Jet

The compact, lightweight **JM-1000 Mini-Jet** from **General Pipe Cleaners** offers an easy way to clear small lines, clogged sinks and laundry drains from 1 1/2 to 3 inches with 1,500 psi

of cleaning power. The powerful little jetter hits the stoppage with a high-pressure, wall-to-wall water spray and flushes it away. Pulse helps slide the hose around tight bends and farther down lines. It resists job site abuse, too, as the pump and motor assembly are safely contained in a rugged diamond plate metal case. To protect the unit from damage, a sensor automatically stops the motor if water stops flowing though the pump. 800/245-6200; www.drainbrain.com

BOOTH #5050

Guzzler CL with Gerotto Lombrico Mini-Excavator

Guzzler Manufacturing and FS Solutions, in conjunction with a distribution partnership with Gerotto of Italy, will showcase the latest advancements in hands-free industrial vacuuming equipment. Equipped with the Gerotto Lombrico mini-excavator, a Guzzler Classic

Gerotto Lombrico mini-excavator, a **Guzzler Classic** industrial vacuum truck will be on hand to demonstrate



the robotic attachment's ability to remotely control the end of the vacuum hose for a completely hands-free application. A track drive system allows the compact unit to access tight locations that may be hard to reach using traditional methods. The Lombrico mini-excavator includes customizable head configurations for a variety of applications. The Gerotto Lombrico mini-excavator is available exclusively at FS Solutions' nationwide locations. 800/627-3171; www.guzzler.com

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BOOTH #3107

Hammelmann Corp. Pipemaster

The **Hammelmann Corp. Pipemaster** is a manually operated, high-pressure hose rotating system used to remove both soft and hard deposits from the insides of pipes and



pipelines, including those with bends and vertical sections. A high-pressure supply hose line is fixed between the pump and the rotary joint on the hose rotating unit. A second hose is connected to the rotary joint and runs via the deployment unit into a protective hose to the positioning device at the work piece. The rotation of the second high-pressure hose around its longitudinal axis is effected by a chain drive from a pneumatic motor to the rotary joint. The rotation speed can be smoothly adjusted with throttle check valves. 800/783-4935; www.hammelmann.com

BOOTH #5053

Hathorn Corporation Portable

The **Portable** camera system from **Hathorn Corporation** has a small, compact frame, is lightweight and easy to use. It includes a 7.4-inch daylight-readable monitor, Wi-Fi video transfer to any mobile device, 125 feet of pushrod, a text writer and footage counter, 512 Hz sonde transmitter,

rechargeable battery pack, and adjustable lighting. Options include self-leveling camera heads, USB recording and adjustable sun shield/

monitor cover. 905/604-7040; www.hathorncorp.com

BOOTH #2560, 2563

In The Round Dewatering horizontal dewatering drum

User-friendly horizontal dewatering drums from **In The Round Dewatering** are mount-



ed on a roll-off frame. They can dewater 18,000 to 25,000 gallons per fill, providing liquid-free material overnight. The drum provides results with any material that will flock, including grease. Filling can be done multiple times prior to rotation, and the unit turns every two hours, usually overnight. It is energy efficient, as it only requires 1/4 hp to operate. 317/539-7304; www.itrdewatering.com

BOOTH #5258

Infiltrator Water Technologies IM-Series

IM-Series tanks for septic, pump and potable water applications from Infiltrator Water

Technologies are lightweight, durable, watertight and engineered for performance. The two-piece design is available in a variety of sizes including the IM-540 pump tank, the large-capacity IM-1530 septic tank, and the IM-1760C potable water tank. This enables a wide range of installation options, including shallow, multiple and serial tank configurations. All IM-Series tanks have integral heavy-duty lids that interconnect with the TW Riser System. They have structurally reinforced access ports, ribbing and fiberglass support posts to provide additional strength. **800/221-4436**; www.infiltratorwater.com

BOOTH #2422

J&J Chemical Disintegrator

Disintegrator from **J&J Chemical** is a self-dissolving packet designed to clean restroom trailer tanks. It will remove residual waste and paper buildup from those



hard-to-reach places inside the tank and on the walls. It helps eliminate lingering odors in as little as 12 hours. Its advanced, super-concentrated formula is packed with natural enzymes that target and penetrate buildup on the interior walls, making it a powerful and safe solution for cleaning the holding tank. It is environmentally friendly, fast dissolving and easy to use. Drop one packet per 100 gallons, fill the tank to capacity and let it sit for 12 to 24 hours. 800/345-3303; www.jjchem.com

Jetstream RotoMag X22 2-D nozzle

In production for several years, the **Jetstream**

RotoMag X22 2-D self-powered rotary nozzle for vessel cleaning and pipe cleaning applications has a stainless steel body and rotor, and a body shroud to protect the nozzle while cleaning. It is available as a single tool rated up to 22,000 psi. A magnetic braking system controls rotational speed for minimal wear and maximum impact without streaking. Spinning on a film of high-pressure water, it has no ball bearings to replace, making field service simple. 800/231-8192;

www.waterblast.com

BOOTH #3026

Lenzyme/Trap-Cleer Field and Line Cleaner

Field and Line Cleaner from Lenzyme/Trap-Cleer effectively helps restore clay fields. It can be used in jetting machines to clean lines and leave a biocoat in the line. It works on all septic systems, going to work immediately. The cleaning agents and strains of bacteria cleanse deeply into the field, helping to cause a disruption with crystalizing biomat or grease buildup. 800/223-3083; www.lenzyme.com



BOOTH #2833

Liberty Pumps ProVore

The **ProVore** grinder pump from **Liberty Pumps** is designed for use in residential applications where the addition of a bathroom or other fixtures below sewer lines requires pumping. It features the same V-Slice cutter technology utilized in Omnivore Series 2 hp grinder pumps. Powered by a 1 hp motor, it is designed to operate on a standard 115- or 230-volt circuit requiring a 20-amp breaker. No special wiring is needed. Compact factory-assembled systems are available in both simplex and

duplex versions. 800/543-2550; www.libertypumps.com



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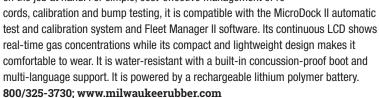




BOOTH #3030

Milwaukee Rubber Products Gas Alert Micro Clip

The **Gas Alert Micro Clip** from **Milwaukee Rubber Products** provides protection from atmospheric gas hazards. It offers visual compliance at a glance with the flashing green IntelliFlash. Easy one-button operation reduces training time and lets workers focus on the job at hand. For simple, cost-effective management of re-





BOOTH #2200

MyTana MS11-NG2

The **MS11-NG2** midsize inspection system from **MyTana** has a USB for recording and storage. The system is suitable for inspecting 3- to 6-inch lines with the choice of 150 or 200 feet of pushrod. The unit has a 64GB internal drive as well as two onboard USB ports, and a 32GB removable USB drive. The one-piece

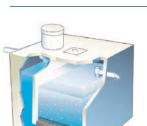
design is lightweight with a handy carrying handle. The camera head is color, self-leveling with a built-in 512 Hz transmitter for locating trouble spots, even in cast iron pipes. The monitor provides a clear picture. 800/328-8170; www.mytana.com

BOOTH #2401

National Vacuum Equipment 887

designs. 800/253-5500; www.natvac.com

The **887** 500 cfm rotary vane vacuum pump from **National Vacuum Equipment** is a makeover of the 866, and includes enhanced pressure capabilities and continuous-duty vacuum to 25 inches Hg. A positive function ballast check system turns on or off as vacuum level passes 18 inches Hg. It includes NVE vanes and an NVE oil pump for precision oil delivery. It can be packaged in a variety of ways to fit any installation and drive system. It includes an enhanced, efficient oil catch muffler and sound-deadening



BOOTH #2853

Norweco Phos-4-Fade Phosphorus Removal Filter

The Phos-4-Fade Phosphorus Removal Filter from Norweco can significantly reduce total phosphorus in wastewater effluent to levels that protect local waterways, while meeting or exceeding stringent regulations. It is a non-mechanical component that can be easily installed

as part of any onsite wastewater treatment system. The filter is user friendly, easy to install and maintain, and provides effective total phosphorus removal for any onsite wastewater treatment system. 800/667-9326; www.norweco.com

BOOTH #1454

NozzTeq MANTA Series Bottom Cleaner

The MANTA Series Bottom Cleaner from NozzTeq is recycled water friendly, with interior surfaces and interchangeable rear jetting plates made of stainless steel and ceramic parts to stand up to hard water and grit. It is more than 50 pounds, and slides on wide runners that are replaceable. It is designed to stay on the bottom of large-diameter pipes for effective jetting, and the nozzle doesn't wear out. The jetting plate is also interchangeable and replaceable, and plates come in eight-, 10- and 12-jet configurations.

866/620-5915: www.nozzteg.com



BOOTH #3101

OMSI Transmissions

OMSI Transmissions, Inc. engine no.

OMSI Transmissions offers split-shaft and engine power take-offs used in sewer cleaning

machines, drilling rigs, concrete pumpers, fire fighting vehicles, along with mechanical/hydrostatic combined drive groups used in street sweepers, street flushers and airport support equipment. The company's axles, transmissions and gearboxes are used in agricultural and industrial machines, while railway transmissions are used in railway maintenance vehicles, and mining transmissions and drives are used in mining equipment. 330/405-7350; www.omsitransmissions.com

BOOTH #6152

One Biotechnology Liquid BioOne

Liquid BioOne from **One Biotechnology** is a 100 percent natural drainline, septic and grease trap maintainer. Applied on a regular basis after a drain or septic treatment, it can help to maintain free-flowing drains, eliminate odors and reduce the number of backups between scheduled pumpings. It doesn't contain enzymes or caustic agents and is safe for people, pets and pipes, displaying the EPA's Safer Choice Program logo that "allows customers to quickly







Park Process Sludge King

The **Sludge King** dewatering container from **Park Process** is an innovative design from the AquaCat line. This design includes radiused edged filter screens providing extra filter area and eliminating 90-degree angles that

can trap cake when dumping. Between the bottom ends of the wall filters and middle wall filters are installed Cake Away thick plastic panels. The panels fill the void in the container bottom where water could collect and facillitate the dumping of cake from the container by providing a nonstick surface. It has two center wall filter panels offering 33 percent more filter area. This extra surface area translates into dryer cakes and faster dewatering times. 855/511-7275; www.parkprocess.com



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BOOTH #4213

Pik Rite used tank service work

Pik Rite provides complete makeovers to used trucks. This 2004 Sterling cab was repainted to a clean white and the 4,000-gallon Pik Rite tank was cleaned up and repainted as well. New aluminum hose trays replaced the old



ones, along with new wiring and toolboxes. In the end, this 12-year-old tank and chassis was made to look new again. One smooth transition at Pik Rite, rather than subbing it out to various shops, allowed for a complete team approach, and the components fit together seamlessly, from paint to wiring, and chassis and tank fit-up. 800/330-3965; www.pikrite.com



BOOTH #2505

PolyPortables Axxis

The **Axxis** portable restroom from **PolyPortables** has selfclosing hinges that operate from an internal stainless steel spring, a heavy-duty rotary latch that is tough enough for rugged users, a deep ambidextrous door pull for convenience and a re-engineered door frame for structural integrity. It includes a 60-gallon waste tank, rotationally molded plastic skid, urinal, coat hook, and a three roll toilet paper holder. **800/241-7951; www.polyportables.com**

BOOTH #6002

Presby Environmental EnviroFin

The **EnviroFin** passive onsite wastewater treatment and dispersal system from **Presby Environmental** is designed with the same principles as Enviro technology. It is designed to ship easily and fit into a smaller space than the other Presby technology while maintaining high treatment levels. **800/473-5298**;



www.presbyenvironmental.com



BOOTH #1572

Reelcraft Series HD70000

Series HD70000 hose reels from Reelcraft are designed to accommodate up to 100 feet of 3/8-inch-I.D. hose or 75 feet of 1/2-inch-I.D. hose. The heavy-duty base design, all-steel construction and a baked-on powder-coat finish combine to produce a rugged, corrosion-resistant product. A newly redesigned latching mechanism

provides longer service life of the latch components. The containerized drive spring offers safer and easier handling during maintenance. Two sealed ball bearings produce a smoother spool rotation and easier operation. The guide arm adjusts to seven positions for various mounting locations and applications. 800/444-3134; www.reelcraft.com

BOOTH #5312, 5313, 5317 & 5319

Rich Specialty Trailers

Commercial-grade restroom and shower trailers from **Rich Specialty Trailers** are both attractive and durable. Each restroom trailer is built with all-aluminum studded wall superstructure and a seamless, dent-resistant, qual-



ity gel-coat fiberglass exterior. Durable and elegant decors are available for all occasions, in layouts from two to 20 Stations. **260/593-2279**; www.richrestrooms.com

BOOTH #1354

RIDGID CS65x

The **RIDGID CS65x** enhanced digital reporting monitor allows users to provide immediate drainline inspection footage using Wi-Fi and Bluetooth capabilities to simplify footage viewing and transfer while improving workflow efficiency. The upgraded model has the same technology of the CS65, providing one-touch image recording for fast, efficient documentation of inspections, along with a new quad-core

processer and solid-state hard drive. A companion app is available for download and is compatible with Android and iOS devices. **800/769-7743**; www.ridqid.com

BOOTH #4300

Ritam Technologies Summit Rental System

The **Summit Rental System** from **Ritam Technologies** allows users to keep their familiar QuickBooks environment



and take advantage of automated billing. Every transaction is instantly memorized, meaning the user only has to touch accounts when something changes. Billing is automatic, whether monthly, 28-day, or special event. It allows for automatic "from" and "to" billing dates, prorations, damage waivers and delivery charges. Routes can be built from a single point of entry, and inventory assigned instantly. QuickBooks continues to capture revenue totals, balances the checkbook, and an accountant can continue using it for tax reporting. It enables route optimizing with the latest mapping software and mobile route management. 800/662-8471; www.ritam.com



BOOTH #6002

RootX chemical root control

Chemical root control from **RootX** is designed as a long-term solution to pipeline root intrusion, as it stunts new root growth without damaging the pipe, clearing pipeline roots that can cause blockages resulting in sanitary sewer overflows. The simplicity of the application means crews can perform root control on demand or as scheduled preventive

maintenance. It is registered with the EPA for both sanitary and storm use (EPA Reg. No. 68464). **800/844-4974**; www.rootx.com



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BOOTH #3000

Salcor 3G UV Wastewater Disinfection Unit

The **3G UV Wastewater Disinfection Unit** from **Salcor** is proven for residential, commercial and municipal uses, and is UL certified NEMA 6P Floodproof and NSF/Wash-



ington State Protocol 6-month tested (with 21 upstream treatment systems). It inactivates pathogens, including superbugs. Rated at 9,000 gpd gravity flow, it is a reliable building block for large water recovery/reuse systems. When installed in 12-unit parallel/series arrays with ABS pipe fittings, systems are disinfecting over 100,000 gpd. Gravity flow equalizes without distribution boxes. Each unit has a foul-resistant Teflon lamp covering, two-year long-life lamp, speedy installation, minimal annual maintenance, and energy efficiency of less than 30 watts. **760/731-0745**



BOOTH #4030

Satellite Industries Global

The newly designed **Global** from **Satellite Industries** has 10 new features to improve its performance, durability and styling. A heavyduty, blow-molded door adds strength and dura-

bility to the entire restroom. The quality of the shelf, paper guard and urinal has been upgraded using higher-grade plastic and improved designs. The urinal has a longer lip to catch drips and the paper guard now holds three rolls of paper. The tank has also been improved. 800/328-3332; www.satelliteindustries.com/global

BOOTH #5336, 5337

ScreenCo Systems Mega Screen

The **Mega Screen** septage receiving station from **ScreenCo Systems** is designed for industrial-scale processing that can quickly off-load large tankers and fleets. A 6-inch inlet with dual fan spreaders



feeds a 40.5-square-foot screening area. Front screens are self-cleaning and process up to 1,000 gpm. The dual-screen design uses gravity to separate trash from the waste stream. The standard unit has all-aluminum construction with stainless steel 3/8-inch-gapped bar screens on opposing angles that meet 503 regulations. The unit can be set up with dual 4-inch inlet hoses capable of off-loading two trucks simultaneously. Built-in forklift skids make the unit portable. An OSHA-compliant catwalk is included. 208/790-8770; www.screencosystems.com



BOOTH #2202

ScreenTech Imaging decals

High-quality graphics from **ScreenTech Imaging,** a division of Roeda Signs, are printed on a tough high-tack permanent adhesive vinyl with UV fade-resistant ink to adhere to

rough surfaces, like portable toilets, garbage totes and other plastic products. They are produced fast — usually in three to five business days on most orders. Thousands of ready-to-ship stock decals are also available. **800/829-3021**; www.sanitationgraphics.com

BOOTH #3121

Sewer Equipment Model 900 ECO

Sewer Equipment has announced the delivery of its 7,000th unit, a **Model 900 ECO** combination sewer



cleaner. This unit is equipped with a 12-yard debris tank, Duraprolene water tanks carrying 1,400 gallons of onboard water, and has a Hydro Drive powertrain system, which completely eliminates the need for a transfer case. Complete with a triplex plunger-style pump that is capable of 55 gpm at 3,000 psi, and 4,400 cfm blower at 18 inches Hg, built on an eco-friendly platform, this truck provides greater fuel efficiency and offers noise reduction. 888/477-7611; www.sewerequipment.com

BOOTH #2405

Sim/Tech Filter pleated filter

Pleated filters from **Sim/Tech Filter** are available for gravity effluent filtration in septic tanks and turbine pump filtration in pump tanks. Filtration size is 3/32 inch in two dimensions. Flow channels in the pleated material result in increased longevity. All filter types start at over 2,000 square inches of filtration area. The 45 percent open area (over 900 square inches) is equivalent to 800 linear feet of 3/32-inch slots. Various configurations and larger units are available. **888/999-3290**; **www.simtechfilter.com**

BOOTH #2504

SJE-Rhombus MySpy

The **MySpy** Wi-Fi messenger system from **SJE-Rhombus** provides remote notification of potential alarm conditions, including sump high water level or over/under temperature alarms, via text or email. Alarms notify the user both locally (audible and visual alarms) and remotely via an existing Wi-Fi network. The alarm will



notify up to four contacts for alerts. The system has a NEMA 1-rated enclosure for indoor use, automatic alarm reset and 9-volt DC battery backup. The touchpad includes test and silence buttons for the alarm horn and LED indicators for alarm (red), power on (green) and network status (blue). Optional float switch models and splice kit are available. 888/342-5753; www.sjerhombus.com

BOOTH #5032

Spartan Tool Soldier

The midsize **Soldier** trailer hydro jetter from **Spartan Tool** delivers 3,000 psi at 12 gpm for pipe sizes 3 to 12 inches in diameter. With a standard antifreeze

system, it can be used in any weather conditions. An optional Warthog nozzle lets the user make quick work of ice, grease and tough root blockages. It has a pivoting hose reel for full access to any drain location. With its compact form, fully enclosed and lockable engine cover, and 200-gallon water tank, it is ready to handle stubborn stoppages. A skid-mount version is also available. 800/435-3866; www.spartantool.com



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BOOTH #5144

StoneAge Tools Switcher

Switcher cleaning heads from StoneAge Tools eliminate extra runs by switching between pulling



and descaling jets. They allow technicians to use the same tool to quickly run down the line, engage full cutting force to clear obstructions or roots, then switch again to move debris. Every time the pump is idled down and brought back to pressure, the tool alternates function between two different sets of jets. Field use of Magnum tools with a Switcher head versus the traditional method of using two tools demonstrates marked water and time savings. 866/795-1586; www.sewernozzles.com



BOOTH #6244

Super Products Camel 1200 with wastewater recycling

Available on the Camel 1200 sewer

cleaner, Super Products' wastewater-recycling system has a six-stage water filtration process that enables effective sewer cleaning action without the need for freshwater, leading to substantial water, time and money savings for municipalities and sewer contractors. Its ejector plate serves as a full-body primary filter that thoroughly separates solids from liquids collected in the debris body. The collected water then travels through a series of filters, strainers and a separator that removes particles from the liquid using centrifugal action. 800/837-9711; www.superproductsllc.com

BOOTH #4110

Superior Signal 5E Electric Smoker

The 5E Electric Smoker from Superior Signal offers a cost-effective solution to find



difficult leaks and odors in residential and commercial plumbing systems. Connect the blower to any plumbing clean-out or vent, or to the septic tank, and use an appropriately sized smoke candle to force smoke through faults and cracks to identify the sources of odor and hard-to-find leaks. It handles all residential and commercial smoke testing applications using smoke candles from 30 seconds to three minutes. The unit comes with an 8-foot industrial-grade flex-hose, weighs just 8 pounds, and requires no maintenance. 800/945-8378; www.superiorsignal.com



BOOTH #1537

SUPERVAC2000 Triton

The **Triton** combination sewer cleaner from SUPERVAC2000 has a water-recycling system that uses a Juggler filter to allow continuous work without downtime for water filling. It filters water collected in

the debris tank and transfers it to a water reservoir used by the Jeter water pump. It comes with a 2,500-gallon debris tank with stainless steel liner and vibrator, 1,500-gallon water tank, hydraulic boom and dump, and a full-opening rear door. Vacuum is provided by a 3,800 cfm at 27 inches Hg Robuschi blower, while jetting power is provided by an 80 gpm, 2,500 psi Pratissoli water pump. The rear door-mounted hydraulic hose reel holds 600 feet of 1-inch hose. 866/839-5702; www.supervac2000.com

BOOTH #5259

Trans Lease







BOOTH #5358, 5361, 5363, 5465

UltraLav UltraSite

The UltraSite restroom trailer from UltraLav is designed to address the needs of today's construction site and field office needs. It boasts two restrooms with running hot water, a 330-gallon

waste tank and a 105-gallon freshwater tank. It has plen-

ty of working space with its 60-square-foot office with restroom access. All of this is connected to an air-conditioning unit to ensure that users are always comfortable. The trailer also includes a 125-square-foot garage space with heavy-duty roll-up door. 877/301-3837; www.ultralav.com

BOOTH #5055

USB-Sewer Equipment Corporation Turbo S600

The Turbo S600 chain cutter from USB-Sewer Equipment Corporation is made of tempered stainless steel and has a continuously adjustable quide skid. The chain retainer is driven by a high-perfor-



mance turbine on a robust body to remove concrete, calcium deposits, hardened grease and tuberculation from 12- to 24-inch sewer lines. Its optimized 3-D hydromechanics in conjunction with ceramic nozzle inserts allow the cutter to be used with recycled or clean water. 866/408-2814: www.usbsec.com



BOOTH #1061

Vac-Con **Omnibus Precision Power Control System**

The Omnibus Precision Power Control System from Vac-Con gives the operator control authority over all vacuum, water and engine functions. One simple control operates all of the vacuum and water system functions of Vac-Con combination machines, allowing the operator to use only as much power as needed, saving time and fuel while allowing precise movements of the hydraulic components. It uses an upgraded electrical system (CANbus) that improves hydraulic performance and optimizes hydrostatic vacuum efficiencies, which include lower engine rpm and increased vacuum performance. It includes an easy-to-use, full-color operator display that contains all necessary operator functions on a single screen, along with a dedicated diagnostics page, chassis page and virtual circuit breaker. 904/284-4200; www.vac-con.com



BOOTH #1061

Vector Technologies Vac-Con VecJet

The **VecJet** trailer jetter, manufactured by **Vector Technologies**, brings a new dimension to Vac-Con, and an



alternative entry into the market. This simple and robust trailer jet will be available in 350-and 700-gallon configurations, with water systems from 25 gpm at 4,000 psi to 40 gpm at 3,000 psi. It will be powered by a 99 hp Kubota diesel, with available gasoline option, two hose reel sizes and other options. **800/832-4010**; www.vector-vacuums.com

BOOTH #5255

Water Cannon 16T55

The **16T55** turnkey jetter package from **Water Can- non** is road-ready with an onboard 200-gallon water tank capacity and customizable jetter hose up to 500 feet. It includes a two-wheel road-ready commercial jetter trailer, electric-rewind high-capacity hose reel that can hold 500 feet of 3/8-inch or 350 feet

of 1/2-inch hose, poly toolbox, lights, front jack with wheel, safety chains, and aluminum fenders. The jetter includes a Honda GX690 twin-cylinder electric-start engine, V-belt drive, trailer-mounted skid, and 15-gallon EPA- and CARB-approved poly fuel tank. Its TS-Series General triplex plunger pump supplies 8 gpm at 3,500 psi. It has a pump-mounted jetter pulse valve, foot valve with 8-foot jumper hose, and three jetter nozzles – the Penetrator, Flusher and De-Greaser/De-Icer. 800/333-9274; www.watercannon.com



Westech Vac Systems Predator

Westech Vac Systems, a member of the Federal Signal Environmental Solutions



Group, will feature a **Predator** DOT 407/412 liquid vacuum truck. It combines high vacuum and pressure off-loading designed to deliver reliable performance in the most demanding applications. Available for rental or purchase, with features available such as a dumping 3,000-gallon DOT-certified tank, full-opening rear door and a powerful 28-inch Hg rotary vane vacuum pump, the unit is designed to handle bulk liquids, sludge and semisolid waste in industrial applications. **780/955-3030; www.westechvac.com**



BOOTH #5134

Westmoor Conde' ProVac Liquid Waste Pumping System

The preassembled industrial **Conde' ProVac Liquid Waste Pumping System** from **Westmoor** is designed to promote efficient grease trap pumping. The unit is quiet and

lightweight and pumps at 120 gpm. Flip a switch to start the unit in vacuum mode for pumping. The built-in exhaust deodorizer keeps odor at a minimum. Flip the switch to pressure mode for off-loading. It can be used for servicing locations not suitable for large vacuum truck hoses, including indoor or remote, difficult-to-access jobs.

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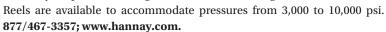
Sewer and Drain Maintenance

By Craig Mandli

HOSE REELS

HANNAY REELS N700 SERIES

N700 Series spring rewind reels from **Hannay Reels** are designed for 1/4- through 1/2-inch-I.D. hoses for use with lubrication, steam, washdown, air tools, high pressure and general industrial applications. Standard reels have a narrow frame and non-sparking ratchet assembly to prevent damage from reverse winding.



PW81100 OHP



REELCRAFT INDUSTRIES

The **PW81100 OHP** hose reel from **Reelcraft Industries** has been fitted with a nickel-plated, carbon steel, Aflas-sealed swivel, specifically for pressure-wash applications. The reel holds up to 100 feet of 3/8-inch-I.D. hose. Its rigidity, compact design and nearly impervious powdercoat finish make it usable for outdoor all-weather and truck-mount applications. The steel guide arm and base

are stamped with ribs and gussets to ensure maximum strength and light weight. The reel comes in standard Reelcraft red, but other colors are available upon request. 800/444-3134; www.reelcraft.com.

JETTERS

AMAZING MACHINERY BOSSJET MAX

BossJet Max jetters from Amazing Machinery offer versatile hose reel configurations: no reel, a fixed reel or a 360-degree stainless steel pivoting reel, and with a mounting bracket for an optional remote hose reel for indoor jetting. They

come with Honda, Kohler, Yanmar or Vanguard engines, with or without electric start. Pump options include CAT, A/R and General, with pressures up to 4,200 psi and flow rates up to 5.5 gpm. The frame is powder-coated 1.5-inch tubular steel, which wraps around the engine and pump for protection. Each unit comes with a laser nozzle and washdown accessories with 50 feet of leader hose. **800/504-7435**; www.amazingmachinery.com.



The **Toolbox Series** by **American Jetter** offers the features of a larger jetter



in a compact and lockable toolbox. It operates with the door open, and includes up to 300 feet of 3/8-inch hose or 200 feet of 1/2-inch hose on its dual-direction powered reel. The included hose guide provides consistent hose direction. Power is provided by a Kohler gasoline engine with a belt-drive Udor pump. Optional flows range from 5 to 12 gpm, to 4,000 psi on the standard model. Custom units can be configured with higher gpm. The optional 1-mile open-range wireless remote allows for water on/off, engine shutdown and hose reel control. **866/944-3569**; www.americanjetter.com.



RING-O-MATIC 550

The Ring-O-Matic 550 dual-pump combination jetter and vacuum excavator offers the advantages of a dedicated combination jetter/vacuum truck in a compact trailer unit. It jets and vacuums sewer lines up to 20 inches in diameter

in spaces too confined for stand-alone jetters and vacuum excavators, or a carrier-mounted combo rig. Powered by an 81 hp CAT turbo diesel, the machine has a 1,000 cfm blower and can deliver 27 gpm at 2,700 psi up to 400 feet with 3/4-inch jetter hose. Its trailer axles are rated to 16,000 pounds to allow the 550-gallon spoils tank and 500-gallon freshwater tank to be towed by a suitably equipped 3/4- or 1-ton truck.

VAC-CON HOT SHOT

The **Hot Shot** high-pressure water jet machine from **Vac-Con** is designed for removing stones, bottles, cans, grease, sludge and other debris from sanitary sewer and/or storm drainlines. Engineered for



one-person operation, all high-pressure water and hose reel controls are located at the front of the machine for ease of operation and increased safety. Models are available with 1,000- and 1,600-gallon water tanks. Options include variable flow, articulating hose reel, polyethylene water tanks, 30 gpm at 3,000 psi water pump system, auxiliary engine or hydrostatic drive, cold weather recirculation system, side-mounted toolboxes, air purge system, hose footage counter, arrow board, strobe lights, inspector cam, high-pressure spray bar, hose rewind guide, 600 psi hand-gun system with 25 feet of hose and a selection of nozzles. 855/336-2962; www.vac-con.com.



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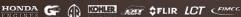
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VAC-TRON EQUIPMENT JTV 873 PTO

JTV 873 PTO from Vac-**Tron Equipment** is a PTO truck-driven system that



combines vacuum excavation with high-pressure jetter capabilities. The PTO drives a positive displacement vacuum blower that produces 1,000 cfm at 16 inches Hg. It comes standard with reverse pressure, an 800-gallon debris tank, 300-gallon water supply, 15 gpm at 3,000 psi water pump, hydraulic rear claw door, Big Red filter housing, and a jetter hose reel that holds 500 feet of 1/2-inch hose. All components are controlled from the truck, eliminating the extra weight, space and cost of the pony motor. An optional towing package allows the user to tow other equipment to the job site to help with efficiency. 888/822-8766; www.vactron.com.



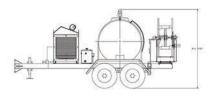
VACTOR MANUFACTURING RAMJET 850 SERIES

The RamJet 850 Series truck jetter from Vactor Manufacturing offers a choice of front or rear hose

reel locations. Equipped with a Jet Rodder water pump, the unit breaks up blockages in sanitary lines, flushes out debris and scours sewer lines. Park-N-Clean technology allows the operator to park near the job and start cleaning with minimal setup. The standard front hose reel has a capacity of 800 feet of 1-inch hose and can telescope up to 15 inches forward and rotate up to 270 degrees, providing direct alignment. The aluminum heated enclosure keeps the pump and plumbing covered and protected. The standard rear hose reel has a capacity of 700 feet of 1-inch hose and can rotate 180 degrees — 90 degrees to curbside and 90 degrees to street side. It offers a 0 to 80 gpm flow at a variable pressure up to 2,500 psi at the hose reel. 800/627-3171; www.vactor.com.

VECTOR TECHNOLOGIES VECJET

The VecJet from Vector Technologies is offered in both 350and 700-gallon configurations.



The unit is powered by diesel or gasoline Kubota engines and uses Giant water pumps. These trailers represent a blend of Vector trailer construction and Vac-Con water jets. They include HDPE water tanks up to 700 gallons, water systems up to 40 gpm at 3,000 psi, tubular steel Vector trailers and Vac-Con hose reels with up to 1,000-foot hose capacity. 414/247-7100; www.vector-vacuums.com.

SUPERIOR SIGNAL COMPANY **5E ELECTRIC SMOKER**

The **5E Electric Smoker** from **Superior**

Signal Company connects to any clean-out or inspection port to smoke test an entire system in just a few minutes. Smoke testing can be an effective technique for finding sources of odors and many other faults throughout the building plumbing, laterals, the septic system and leachfield. The unit gently pushes smoke throughout the system to find cracks and leaks, and quickly identify problems; sets up and shows results quickly. It comes with an 8-foot industrial-grade flex hose. 800/945-8378; www.superiorsignal.com.



VIVAX-METROTECH SPAR300

The Spar300 utility surveying system from Vivax-**Metrotech** collects positions in the site coordinates with a package that adapts to a range pole, ATV, riverboat or pushcart. It continuously logs the utility depth and offset, with statistical confidence and automatic offset calculations. Using a Bluetooth or USB link, the instrument outputs the 3-D positions to a Trimble TSC3 or tablet for real-time display on the Trimble Access map, independent of its own per-

spective with respect to the utility or the GNSS antenna. When a complex locate scenario is encountered, it applies automatic tolerance masks to the position data, flagging these areas on the map. 800/446-3392 www.vxmt.com.

NOZZLES

HYDRA-FLEX SWITCHBLADE AND RIPSAW

Switchblade static, zero-degree and Ripsaw rotating nozzles from Hydra-Flex have improved impingement

and stream quality to allow operators to dig faster and use dramatically less water to ensure greater job site efficiency. The heavy-duty, high-impact nozzles operate at up to 3,200 psi and are constructed with stainless steel housings and tungsten carbide wear surfaces. Both are designed to withstand harsh environments and provide long life. A nonconductive urethane coating on the nozzle body extends the life of the nozzle, while protecting the safety of the user and sensitive underground assets. A range of flow rates and spray patterns are available for applications such as potholing and trenching. 952/808-3640; www.hydraflexinc.com.



NOZZTEQ MANTA **BOTTOM CLEANER**

The Manta Bottom Cleaner from NozzTeq includes interior surfaces and interchangeable rear jetting plates made of stainless steel and ceramic parts designed to stand up to hard water and grit. The 50-plus-pound nozzle slides

on wide runners that are replaceable, and stays on the bottom of large-diameter pipes, where it will do the most good. Its bottom surface will never wear out. Its jetting plate is interchangeable and replaceable, and comes in eight-, 10- and 12-jet configurations. 866/620-5915; www.nozzteq.com.

PUSH CAMERAS

CUES MPLUS+

The CUES MPlus+ lateral and mini mainline push system is designed for easy operation with an all-in-one setup, and flexibility with quick removal of the control unit to be used separately. The system integrates video observation coding, observation coding interface and digital recording. This lightweight system includes large and durable wheels for portability and a bal-anced footprint for stability. It is manufactured for reliability and rigorous field use. 800/327-7791; www.cuesinc.com.

MYTANA MANUFACTURING
MS11-NG2

The MS11-NG2 mid-size inspection system from MyTana Manufacturing has USB for recording and storage. The system is suitable for inspecting 3- to 6-inch lines with the choice of 150 or 200 feet of pushrod. The unit has a 64GB internal drive as well as two onboard USB ports, and a 32GB removable USB drive. The one-piece design is lightweight with a carrying handle. The camera head is color, self-leveling with a builtin 512 Hz transmitter for locating trouble spots,

even in cast iron pipes. The monitor features a clear pic-

ture. 800/328-8170; www.mytana.com.

R.S. TECHNICAL SERVICES QUICK PEEK

The Quick Peek all-in-one, fully portable video inspection system from R.S. Technical Services is a compact, lightweight solution for drainline condition assessment in lines 2 to 10 inches in diameter up to 300 feet in length. It has a 7-inch bright LCD handle-mounted monitor with a sun shield/screen protector that can be positioned for a comfortable viewing angle. Easily accessible monitor controls include power mode, aspect ratio (screen size) and menu, plus set buttons for color, brightness, contrast, tint and volume. The side-mounted AC/DC power source houses controls for all camera functions, and provides a camera test terminal, AC/DC input, video/audio output, keyboard input and a condenser microphone with on/off switch. It has a high-resolution, low-lux color camera, keyboard for annotation, video/audio output, a microphone, and is fully locatable with a 512 Hz inline transmitter. Options include battery power, a self-leveling camera, 512 Hz receiver, roller skids, laptop interface, SD card reader and Wi-Fi interface. 800/767-1974; www.rstechserv.com.

ROOT CONTROL - CHEMICAL/MECHANICAL

DUKE'S ROOT CONTROL RAZOROOTER II

Diquat-based **Razorooter II** rootcontrol herbicide from **Duke's Root Control** is registered by the U.S. Environmental Protection Agency for controlling nuisance tree roots in sanitary



sewer line collections systems, and received a classification of "evidence of noncarcinogenicity for humans." In 2014, the EPA further approved an amendment of labels to lower the signal word from "warning" to "caution." Crews insert a hose from manhole to manhole, preparing to fill the affected sewer pipe with herbicide. The foam is released, compressing against pipe surfaces and penetrating cracks, joints and connecting sewers. Roots are killed on contact, decay naturally and slough away. Application is designed to prevent root-related stoppages for two to three years. **800/447-6687**; www.dukes.com.



LENZYME/ TRAP-CLEER FOAMING ROOT CONTROL

Foaming root control from **Lenzyme/ Trap-Cleer** has double the dichlobenil active ingredient of previous solutions and a latex base that helps it stick to roots longer. It is easy to apply and

provides a slower foaming action designed to coat the entire pipeline and eliminate fast-foam-over messes. 800/223-3083; www.lenzyme.com. ■



INDUSTRY **NEWS**

Westech launches new website

Westech Vac Systems launched a new website following an acquisition by Federal Signal. The redesigned website covers the company's products and services in the U.S. and western Canada, and places an emphasis on improved navigation and user experience.

Vactor HXX ParaDIGm named finalist in Innovation Awards

The Vactor HXX ParaDIGm hydroexcavator was named a top 100 final-





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2014 KENWORTH T800 VACUUM TANK TRUCK CUMMINS ISX15 @ 535 HP, FULLER 18 SPEED TRANSMISSION, 20/46 ON HENDRICKSON AIR RIDE SUSPENSION, ITI TANK, 120 BARREL, VE PUMP



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(2) 2010 PETERBILT VACUUM TANK TRUCKS 389 / 357, CUMMINS ISX15, 18 SPEED TRANSMISSION, 20/46 ON AIR RIDE SUSPENSION

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PRODUCT **NEWS** By Craig Mandli TOWER LIGHT FROM MILWAUKEE TOOL KEEPS JOB SITES ILLUMINATED AND SAFE Every pumper has late-night emergency calls, A customer's septic system backed up and they need the tank pumped immediately. It's important that the pumping technician effectively light the job site

for safety. The M18 Rocket LED Tower Light/ **Charger** from **Milwaukee Tool** will do that. With setup in five seconds, the tower provides 3,000 lumens of high-output light for both task and area lighting, and can charge any M18 battery through a built-in charger. "The M18 Rocket Tower Light has the capability to provide high-intensity task and area lighting in any environment

where there is no ready access to AC power, or where it can be dangerous to string cords due to present water," says Jason Isaacs, product manager for Milwaukee Tool. "For pumping or portable sanitation professionals who frequently move from job site to job site, the portability of the M18 Rocket is huge. It can collapse down to 40 inches for easy transport and storage."

The unit delivers multidirectional light through three independently rotating, adjustable light heads. It has a runtime of up to 17 hours with TRUEVIEW Technology to deliver a consistent beam, optimized color temperature and true representation of colors and detail, leading to a more productive work area. Its rotating and pivoting light head extends from 4 to 7 feet to light overhead work or minimize shadows when casting light downward.

"It's been clear for years that temporary lighting was a major obstacle for productivity and safety," says Isaacs. "Logging hundreds of hours on the job site, we interact with users on a daily basis to learn about their frustrations and ideas. This drives us to develop solutions professionals truly want and need to perform their job productively."

The unit has an AC/DC input with an integrated M18 Charger. When plugged in, this charger can charge all M18 battery packs so users can quickly get back to the job at hand and have a battery ready to go when they need it. Its impactresistant, reinforced legs and low center of gravity provide a stable base. A durable polycarbonate lens design can survive harsh job site use, delivers impact durability, and the light heads nest into a protective shroud. Additionally, with an IPX4 rating, the unit is water resistant.

"We saw a huge opportunity to deliver a versatile and durable solution that professionals have not had before," says Isaacs.

800/729-3878; www.milwaukeetool.com.

COXREELS **UL-APPROVED PRODUCTS**

COXREELS added the PC19 and PC24 to its Underwriters Laboratories-approved product line. The PC (Power Cord) Series are industrial-grade reels designed as a solution to tangled power cords. They feature 1/4-inch bas-



es, lubricated precision bearings and noncorrosive stainless steel springs for retraction. 800/269-7335: www.coxreels.com.



GUZZLER VACUUM TRUCK

The LR (Liquid Ring) Classic vacuum truck from Guzzler Manufacturing is designed to provide lower-temperature discharge and quieter operation. Based on the Guzzler

Classic truck platform, the LR Classic features dual 1,820 cfm liquid ring pumps as the vacuum source instead of a blower. The vacuum system operates from more than 1,000 feet away, through suction lines up to 8 inches in diameter, and features an 18-cubic-yard debris body. The filtration system consists of a radial deflector, a cyclone centrifugal separator and 60 70-inchlong Dacron bags. 800/627-3171; www.guzzler.com. ■



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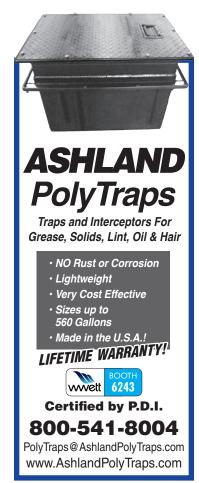


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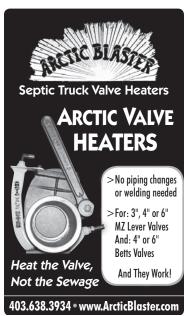
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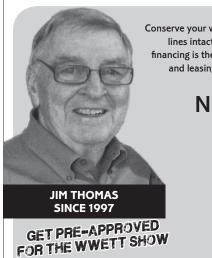


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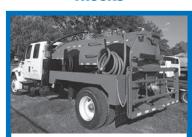
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2 Decons, 28' Tonto, 18' Royal, 2001 ASCI, 16' Presidential, 26' Presidential, portable toilet hauler trailers. 315-437-1291, NY. (PBM)

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For information & more pics pflynn@superiorportables.com Pat 330-733-9000, OH

2001 Chevy 3500 toilet service truck: Automatic, gas, 148,000 miles. 425-gallon waste tank, stainless steel, made by Mid State Tanks. 225-gallon chem. tank, 65-gallon washdown tank. SureFlo washdown pump with 50-foot hose on a reel, 4 tool boxes. Conde #6 vacuum pump, electric start. 2-inch rear hitch. Tires in great condition. \$15,000. 217-827-3180

2012 Ford F550: 4x4, Satellite 950MD, fresh water wand. 170k miles. Tires 50%. Sharp, kept inside. \$36,000. 641-420-5310. (P01)



2006 Chevrolet C5500: 150,000 miles, new injectors turbo & fuel pump at 100,000. Nearly new tires. 900 waste/300 fresh. Owner operated, well maintained. \$25,000

507-920-9509, MN



2010 Hino 268: Under CDL, 1,500-gal-Ion Keith Huber Princess II 1.100/400. Dual side service lowered work station. Masport HXL75, Burks washdown pump. Allison automatic transmission. 257k miles. \$48,000

For information & more pics pflynn@superiorportables.com Pat 330-733-9000, OH P02



2009 Hino 338: CDL needed, Keith Huber 1,700-gallon (1,300/400), Single side service lowered work station. Masport HXL75V, Burks washdown pump. Allison automatic transmission. 210k miles. Built in 2010. \$49,000

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2007 Ford F550 4x4: New 11' flatbed, new 800-gallon portable toilet slide-in tank -540/260. Conde Super 6, 70cfm, 5.5hp electric start Honda. Bucket fill, 30' Tiger Tail. Ready to work. \$27,995. Denver CO. 303-789-9440 Ask for Matt. (PBM)

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217-239-5646, IL P01 ipt-info@gullifordservices.com

2012 Ford F550 flatbed: Crescent tank 350 gal./650 gal., Model 900. 171,000 mi. Contact: Brix 815-946-2813; brixb@bigjohnn.

2008 Ford F550: 4WD, Progress slide-in unit with stake body and 4' liftgate. 2005 Chevy 5500: 500-gallon Progress tank, hot shift PTO, 2nd hose reel. Contact Cory @ 330-807-1490; email cjursik@tomssewer.net

2008 Isuzu NPR HD: 120,000 miles, Crescent flat tank 550w/250f. 6-unit carrier, Thieman liftgate, Masport pump, exhaust brake, diesel/automatic. Serviced every 5,000 miles. \$42,000, 203-948-8869 (P01)

2008 Ford F550: 173,985 miles, 4WD, Progress slide-in unit with stake body and 4' liftgate. 2005 Chevy 5500: 273,762 miles, 1,500-gallon Progress tank, hot shift PTO, 2nd hose reel. Contact Corv @ 330-807-1490; email: cjursik@tomssewer.net (P01)

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2006 Ford F550 4x4: New 11' flatbed, new 950-gallon portable toilet slide-in tank -650/300. Conde SDS6, 9hp electric start Honda. Bucket fill, 30' Tiger Tail. Ready to work. \$29,995. Denver, CO. 303-789-9440 Ask for Matt. (PBM)

2007 International 4300 1,350-gallon \$39,500; 2006 International 4300 1,350-gallon \$37,500; 2002 International 4300 1,350-gallon \$21,000. 256-757-9900 or www.pbsos.com (PBM)

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P01

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NEW 2015 International 7300 with warranties, MF-DT engine, 230hp, 6-speed, new 1,850-gallon vacuum tank, new WV75 Masport pump. Under CDL.

www.pumpertrucksales.com Call JR @ 720-253-8014, CO PBM



2005 Volvo VHD-64-T quad axle, D-12, 435/465hp, low miles, HD4560 6-speed auto., new 6,000-gallon septic tank, 18k/46k on Hendrickson Air Ride, (2) new steerable pusher axles. Stock #4769B.

608-842-3040, WI sales@ptatrucks.com



2002 GMC Kodiak with Abernathy 3,300-gallon septic/grease tank. CAT with automatic transmission. 45,000 miles. Excellent condition. \$38,500

KLM Companies 617-909-9044

P02



2012 International 4300: 245hp Allison automatic, 12,000 front axle, 21,000 rear axle. Under CDL. Air ride, 180,000 miles. 2,500-gallon waste, 200-gal-Ion freshwater, Jurop RV360 vac pump. AR 4,000psi jetter with 150' 3/8" jetter hose. \$69,500

318-780-1731, LA



2000 Peterbilt 357 tri-axle with Presvac 5,000 gallon vac tank. New CAT 425 engine, new Eaton Fuller 13-speed transmission, new Wittig 1000 vane pump. \$50,000 OBO

Call Jim 717-989-2222. PA P01 or email jquerinx2@gmail.com



2005 International 4400: Original owner, 132,500 miles, clean (garaged), Masport HXL400WV, 7-speed manual, new clutch 12/15, 3,200-gallon aluminum tank, 50-gallon freshwater tank. Looks great, runs and pumps with ease.\$62,500

> **Scott's Enterprises** 989-275-5011, MI

P02



1995 Ford F-800: 8.3 Cummins. 6speed, 254k miles. NVE pump. 2,200gallon tank. \$18,500 OBO

951-830-4840, CA



2001 Volvo VNL64T: N14 Cummins, select Fuller 13-speed, 595,000 miles. 3,600-gallon steel tank (new in 2008), Masport 420cfm pump. Heated valves, see-level gauge on tank. 100 ft. of 3-inch hose. Tires are 80%. Complete history on file. Ready to work, used every day. \$38,000

419-466-1349, OH



NEW 2017 Hino Toilet/Septic Combo Truck: Aluminium tank, 1,900-gallon waste/400-gallon fresh. \$108,000

Call Rodney Lane 270-832-3793



2004 GMC 7500: Duramax diesel, 250hp, 6-speed manual. 1,500-gallon vac tank, Jurop pump.

www.pumpertrucksales.com Call JR @ 720-253-8014, CO PBM



2003 Peterbilt 357: Cummins ISM with only 4,364 hours on the motor, 8-speed transmission, mileage 174,718. 607 Challenger pump with a 4,200-gallon vac tank. Tri-axle. \$70,000 OBO

Mike 254-410-9010, TX P01

2003 Peterbilt 357: ISM Cummins motor with 8-speed. Chassis has only 174,835 miles, motor has 4,183 hours since rebuild. Setup with a 4,200-gallon tank with a 607 Challenger pump. \$70,000 OBO. Call Mike 254-410-9010.

2001 Mack RD688: Automatic, 105k miles. 3,360-gallon tank with 2015 NVE Challenger pump. Pictures upon request. \$39,500. timothyking25@comcast.net 804-325-4100

1997 AutoCar/Volvo: Cummins N14 525hp engine, Eaton 8LL 10-speed transmission. 2009 PikRite 5,000-gallon vacuum tank with Presvac LPK vac pump. Excellent running condition. \$36,500. Used Presvac PV750 vac pump for sale, recently overhauled. \$2,500. Contact Frank@ActionKingServices. com or 978-452-7750. (PBM)



2015 Keith Huber Knight: 6,100cfm blower, 21 ft. boom. Excellent condition.\$275,000

Call 850-682-4440. FL



2001 Western Star 4964SX: Detroit 430hp, 300,000 miles, 4,500 gallons, Prime Industry tank, jake brake, hoses included, tri-axle, heated mirrors. One owner. Call for more pictures. ... \$40,000

201-445-3188. NJ davidzuidema@aol.com

P01



2005 Sterling 9500. Keith Huber Dominator. 95k miles. 4,300/200-gallon aluminum tank, full-tilting. Valve warmers, axle and wheel locks, digital level gauge. Truck is work-ready. \$85,000 OBO

Scott 785-841-0399. KS



2004 Peterbilt 357: 4,500-gallon T-Line tank, liquid-cooled pump. Nice truck. \$39,000 OBO

920-627-7867, WI

2006 Kenworth T300: 2,500-gallon Abernethy steel tank. 172,000 miles. 6-speed transmission. Cummins. 33,000 GVW. Very good condition, 973-942-3131 (P01)

1992 Kenworth T800 with 8-speed Eaton Fuller. 3176 CAT motor. 2,300-gallon tank with Jurop PN106 pump. Contact Brenda at septicdoctor@vahoo.com or 636-296-1211. (P01)

P01

SEPTIC TRUCKS



2007 International 4400 Series septic truck, 206,000 miles. Masport water-cooled pump. DT466 with 6-speed transmission. \$35,000 OBO

Call 740-391-5514, OH



1999 International 4700: 1,500-gallon Lely portable toilet tank, T444E 5-speed, 2-speed rear end. Non-air brake. Pump about a year old. \$16,000

903-563-4229. TX



1993 Peterbilt 377: 3.600-gallon tank. New NVE pump, Used daily. Bought new truck. \$35,000

> Aaron 276-620-0533, VA r rseptic@yahoo.com



2007 International 7600: 10-speed transmission, 375,000 miles. New 2,500gallon carbon-steel tank, new Jurop R260 Razor Pak R260 pump. ... \$54,000

27th Trucks Inc. 1175 E 25th St., Hialeah, FL 33013 305-835-9030 www.27th-trucks.com



2006 Freightliner M2: Mercedez Benz engine, 10-speed Eaton Fuller transmission, 492,818 original miles. New 3,600-gallon carbon-steel tank, new Masport HXL420 pump. Special price\$59,999 FET included.

27th Trucks Inc. 1175 E 25th St., Hialeah, FL 33013 305-835-9030 www.27th-trucks.com P02



2000 International 8100 septic tanker, Caterpillar C-10 diesel engine, 9-speed transmission, single axle, 131,958 miles, 2,500-gallon capacity. Asking \$34,900 or offers within good reason.

Steve 607-857-1312, PA

Three (3) Trucks for Sale: 1995 International with 5,000-gallon Imperial steel tank and Masport 400 - \$15,000, 1988 Mack with 42.00-gallon steel tank built new in 2008, Masport HXL75 - \$10,000. 2006 International flat tank portable toilet service truck, hauls 8 units, 900/450, under CDL! Call Brad for pictures or any questions 920-979-7711. (P02)

2007 Freightliner M2: CAT C7 250hp, 6-speed manual, 225k miles. New tires, wheels, brakes, drums, Frame and axles sandblasted and painted black. Cab wet sanded and polished. NEW 2,500-gallon tank, 425cfm pump, LED light package. Large tool box, heated valves available. Best of everything! \$52,000, includes delivery and warranty. Call or text 734-309-2093. (P01)

1997 International 4900 septic pump truck: 1HTSDAAN5VH442104, 2,000-gallon tank, hoses included. Runs great, in use now, closing when sold. \$20,000. For pics go to: www.sumteramericanautosales.com Proline Utilities, LLC 803-775-2344. (P01)

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Trucks for Sale, all work-ready. 2001 F550 w/PikRite slide-in unit, \$18,000. 1998 F550 toilet truck with Satellite tank, \$18,000. 1996 Peterbilt septic truck w/4,000-gallon, \$38,000. 1996 International septic truck w/4,000-gallon, \$32,000. 1998 Dodge Ram 3500 toilet delivery truck, \$10,000

814-277-6227, PA

PN3

(PBM)



2001 Sterling: ISM 330hp Cummins engine, 263,114 miles, 20,000 lb, front axle, 46,000 lb. rear axle, 4,500-gallon tank, Jurop LC420 pump. \$53,000

715-889-1544

1992 International 2654 with a 4,000-gallon, carbon-steel unit, Extremely low mileage municipal truck. (Stock# 6246C) www. VacuumSalesInc.com (888) VAC-UNIT (822-8648)

Pre-owned 3,000 U.S. gallon carbon steel vacuum tank with a Masport H75W vacuumpressure pump installed on a 2000 Mack CH613 cab and chassis. (Stock# 8498C) www.VacuumSalesInc.com (888) VAC-UNIT (822-8648)

2007 Freightliner M2 Business Class: CAT C-7 with 250hp, 6-speed manual transmission, 185k miles. NEW 2,500-gallon tank, Jurop LC 420 vacuum pump. Lined hose travs. 3" inlet. 4" discharge. ALL NEW virgin tires with aluminum rims. Large toolbox, LED lights. Many other options available to suit your needs!! \$57,500 delivered to your door. Call or text 734-309-2093. (P01)



2007 International 4300: 1.000 waste, 500 freshwater steel tank. PTO pump. Engine overhaul at 250,000 miles. Text or call 949-244-8698.http://www.commercialtrucktrader. com/listing/2007-International-DURASTAR+ 4300-119628631

1998 International 4300 vacuum truck. 156,000 miles with 300 miles on rebuilt 466DT engine, 6-speed, 2,500-gallon Transway tank, Fruitland 500cfm pump in excellent condition. \$30,000. Contact DJ Suggs 575-526-5442.

1987 Kenworth T600A: CW CAT 6-cylinder. Eaton-Fuller 15-speed. 8-bag A-R suspension. 3,365-gallon vacuum tank, Masport 75 pump. \$31,000. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO. (PBM)

1996 Western Star: Detroit Series 60, 18-speed transmission. Hendricks suspension. 3,365-gallon vacuum tank, Masport 400 pump. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO.

1994 Peterbilt 377: Detroit Series 60. 10-speed transmission. 3,365-gallon vacuum tank, Masport HXL pump. www.pumpertrucksales.com. Call JR. @ 720-253-8014,

Eight great older pump trucks - \$35,000 each. Big power. Jake brakes. 3,365-gallon vacuum tanks, Masport pumps. All makes & models, www.pumper-truck.com, Call JR @ 720-253-8014, CO. (PBM)

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TANKS



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Pre-owned 2.000 U.S. gallon, stainless steel vacuum tank with a Masport HXL75V vacuum pressure pump package (Stock# 6008C) www.VacuumSalesinc.com (888) VAC-UNIT (822-8648) (PBM)

100 - 2011 Wichita 500 bbl. (21,400 gallons) portable frac tanks. Epoxy lined. Delivery available. Geneva Equipment, Inc.
Call 815-341-0375
or tom@genevaequipment.com
www.genevaequipment.com PBM

Vacuum Tanks - New: Sizes from 1,000-4,300 gallons. All complete! Delivery available. www.JEagleTanks.com. Contact Jerry: JEagleTanks@yahoo.com or 800-721-2774. (PBM)

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TOYS

Septic pumper and vacuum die-cast toy trucks: In your choice of colors and logos, several cabs available. Call 877-450-2100, write to Granite State Collectibles, PO Box 440, New Ipswich, NH 03071; or www. granitestatecollectibles.com. (PBM)

TRAILERS-VACUUM/TANKER



1981 Presvac 5,460 c/s vacuum tank trailer. (Stock# 1920V) **www.VacuumSalesinc. com (888) VAC-UNIT (822-8648)** (PBM)

1982 Fruehauf 5460 c/s vacuum tank trailer. (Stock# 2305V) **www.VacuumSalesInc. com (888) VAC-UNIT (822-8648)** (PBM)

2002 Super Products Camel 3-cubic-yard vacuum trailer with Roots 412 blower package. (Stock# 0197C) www.Vacuum-SalesInc.com (888) VAC-UNIT (822-8648)

TRUCKS - MISCELLANEOUS



715-533-2262, WI PO



Mike 254-410-9010, TX P01



1997 International Eagle w/new paint, tires and brakes. 3,200-gallon dump tank.

802-232-2222

2007 International 4400: Automatic, 160k miles, 2,800-gallon aluminum tank with hoist, Masport 400 pump. Pictures on request. \$64,900. timothyking25@comcast.net 804-325-4100 (P01)

2006 Freightliner Columbia: 301,740 miles, D60 motor with 10-speed. 5,300-gallon trailer with Challenger 607 pump attached to the truck. \$75,000 OBO. Call Mike 254-410-9010. (P01)

Four (4) Pump Trucks for Sale: Fixer-up Specials! 1 - 2001 F550 w/1,000-gallon tank. 1 - 1999 Mack CH613 w/3,500-gallon tank. 1 - 2000 Mack CH612 w/2,500-gallon tank. 1 - 2002 Mack CH613 w/3,500-gallon tank. All complete trucks with vacuum systems intact. Contact Jeff at jeffc@mahoneyes.com for details and pricing. (P01)

TV INSPECTION



2006 Ford F550 CUES video inspection/sealing truck for sale in Seminole County, Florida. In good working condition. For inquires please call:

407-339-1326

P01

P01

VACUUM LOADERS



1999 International Guzzler vacuum excavator: Totally refurbished, purchased new for Big Dig Project. 27" blower, CAT engine, auto remote. Special noise-suppression equipment. Tri-axle. High-pressure wash-down system - 300-gallon water tank. \$85,900 OBO. Also available 1997 Ford Guzzler vacuum excavatorsame features as 1999 International. No washdown system. \$85,900 OBO.

617-212-0162, MA

1991 Western Star Model 4864F with a Cusco Turbo Vac 2127, carbon steel 3,000-gallon unit. (Stock# 8905) www. VacuumSalesInc.com (888) VAC-UNIT (822-8648) (PBM)

Pre-owned GapVax HV-57 industrial vacuum loader, with a Roots Hibon PD blower mounted on a 1997 Mack RD688S cab and chassis. (Stock# 4602C) **www.Vacuum SalesInc.com** (888) **VAC-UNIT** (822-8648) (PBM)

2009 Sterling LT9500 with a Vacall AVRB-18 industrial vacuum loader. (Stock# 4792C) www.VacuumSalesInc.com (888) VAC-UNIT (822-8648) (PBM) 2014 Freightliner 114SD with a Vacall AVRB-18 industrial vacuum loader. (Stock# 9116C) www.VacuumSalesInc.com (888) VAC-UNIT (822-8648) (PBM)

Pre-owned Super Products Supersucker industrial vacuum loader, with a Roots TRI-NADO blower mounted on a 2009 Sterling L9500 cab & chassis. (Stock# 4366C) www. VacuumSalesInc.com (888) VAC-UNIT (822-8648) (PBM)

1996 Sterling chassis with Guzzler Classic: \$65,000. 2007 Mercedes Benz chassis with Guzzler Classic: \$75,000. 2007 Sterling chassis with Guzzler Classic: \$85,000. All trucks have 18" blowers, wet/dry with bag houses. Ready to work! Call Aaron at 423-635-9739. (P02)

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We are looking to purchase used portable toilets and half-high toilets. Please contact Lance at 561-346-9296 or lance@redtoilets.com (P01)

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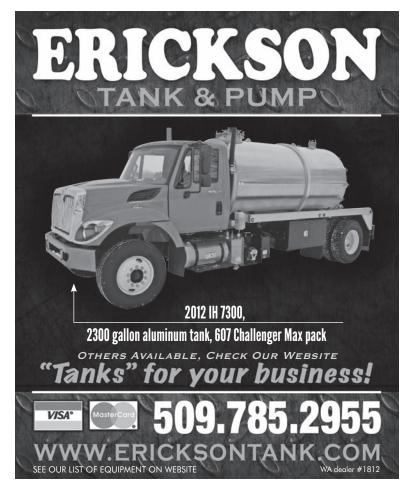
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2 toolboxes

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