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June 2019 pumper.com

## STEP RIGHT UP

The third generation of Kelly family owners  
update and reinvigorate Canada's Sanivac

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## RESTROOMS RISING

Texas pumping company B&S Port-O-Jons  
sees its workload continue to shift from septic  
to portable sanitation service

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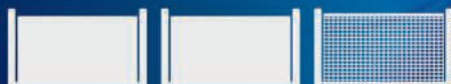


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## 20 Step Right Up

- Betty Dageforde

The third generation of Kelly family owners reinvigorate the diverse Canadian wastewater company Sanivac.

**ON THE COVER:** The new generation of leaders at Quebec pumping company Sanivac are, from left, Vincent Kelly, president; David Kelly, vice president; and Carole-Ann Kelly, director of sales and marketing. They are shown with a Kenworth T880 vacuum truck carrying a Transway Systems tank and Robuschi blower. (Photo by Allen McEachern)

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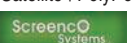





















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# Decentralized Wastewater Treatment Will Not Lose the Blame Game

Hundreds of dairy farm manure pits — not septic systems — are responsible for tainted water in Kewaunee County, Wisconsin **By Jim Kneisel, Editor**

I think pumpers are sometimes unfairly criticized for disposal practices by local government officials who don't understand how the wastewater industry is regulated and a public influenced by an "ick factor" when it comes to conveyance of septic tank waste.

It seems like rural neighbors are quick to play the blame game the first time they note a whiff of odor coming from a septic service business. And nothing packs a town hall as fast as a pumper who wants to expand his operation to include land spreading or storage of septage.

It's easy for the not-in-my-back-yard, or NIMBY, folks to rise and attempt to squash the plans of a legitimate business owner who is taking care of a problem caused by the entire community. Nevermind that everyone out in the country has a septic tank and the contents need to be disposed of responsibly by a county- or state-approved method. Waste producers too often just want the problem to be flushed away and never dealt with again.

This happens occasionally in my area of northeast Wisconsin, where land application is still allowed and is typically conducted in a professional manner and overseen by health department regulators. In one serious and ongoing water crisis in my neighboring county, septic systems and a new type of factory dairy farm operation have seemingly been given equal blame for the problems. Until recently, that is.

## COULD HAPPEN ANYWHERE

The explosive situation in Kewaunee County, along Lake Michigan near Green Bay, showed in 2017 research that 60% of homes had wells contaminated by fecal microbes — which can be found in both failing septic systems and animal waste. In the county with about 20,000 residents and generally shallow depth of soil to bedrock, it doesn't take so much for contaminants to reach the drinking water supply.

It's not unusual for so-called experts to bring up both septic systems and intensive farming operations when reacting to water-quality issues in areas served by onsite systems. Look at the ongoing saga of the so-called red tide of algal blooms plaguing vast tourism areas in Florida. This serious pollution problem is caused by excess nitrates in the water. Many have been quick to blame septic systems for the problem, and they are likely one contributing factor.

In the case of Florida, who would blame anyone for pointing a finger at decentralized wastewater? The state has a problem with failing systems and a very high groundwater table, and legislators can't make up their minds how they want to regulate system performance. In a few short years, state legislators proposed stricter maintenance guidelines for septic systems,

Perhaps the most striking statistic is that Kewaunee County has an estimated 270 manure storage pits — some more than 4 acres in size — located as close as 150 feet from a residential well. ... Imagine the outcry from the public if there were 270 septage pits in your county.

then abandoned them citing high cost of pumping and inspections, and now are swinging back toward stronger oversight.

Lots of systems are outdated and completely ignored, leading folks to doubt the effectiveness of onsite wastewater treatment. Pumpers from across the country frequently tell me they respond to emergency calls where a tank hasn't been pumped in 20 years or more and effluent is surfacing in the backyard. Certainly many of these systems are causing localized pollution issues and must be dealt with.

## IT'S NOT THE SEPTIC

But that brings us back to Kewaunee County and new study results that mostly exonerate septic systems as the cause of widespread contamination. And the emerging evidence in Kewaunee County makes me wonder if septic systems are unfairly shouldering much of the blame for well-water woes and polluted waterways across the country.

New research from the U.S. Department of Agriculture as reported by the Wisconsin Center for Investigative Journalism revealed that septic systems are not linked with the type of nitrate and coliform bacteria contamination found in the tainted Kewaunee County water. High nitrate levels (more than 10 ppm) point to a problem with the county's dairy farms, reports Mark Borchardt, a USDA microbiologist.

This determination seems like common sense if you consider a few factors in Kewaunee County. First, cows outnumber people by a 5 to 1 ratio. These animals — many kept on farms with herds in the thousands — produce an overwhelming amount of manure, most of which is spread on the land. And perhaps the most striking statistic is that Kewaunee County has an estimated 270 manure storage pits — some more than 4 acres in size — located as close as 150 feet from a residential well.

That means in a county of 342 square miles, there is almost one manure



pit for every square mile of land. How many septage lagoons could there be in a county this size? Maybe a few at the most. Imagine the outcry from the public if there were 270 septage pits in your county.

The research shows that manure-handling rules and enforcement are lacking, according to Nancy Utesch, a local beef farmer and member of the group Kewaunee Cares.

"A lot of this pollution is from intentional, deliberate actions that are not best management practices that do a lot of harm. Like spreading close to waterways, spreading when you know rain is going to happen ... and overapplication (of manure)," she says in the report. "And I think we really need to stop digging manure pits. This is from the Dark Ages. Stop permitting them. All the manure pits leak — it's just a matter of when."

## WE'RE BETTER

Septic service professionals can feel somewhat reassured by the report in Wisconsin. The industry is not a major contributor to the problems in Kewaunee County, and the same may be proven over the long term in other regions plagued by polluted water. However, that doesn't mean we don't have plenty of work to do to improve the decentralized wastewater infrastructure.

We should continue to hold the industry to a high environmental standard in both the handling of septage and system maintenance practices. We should embrace calls for mandatory periodic pumping and inspection. We should pledge to follow stringent disposal regulations and lead the way to improving the quality of wastewater treatment. That may mean developing closer relationships with municipal plants or building and operating effective dewatering operations.

### NAWT's Tom Frank wins Macchio award at WWETT Show

Tom Frank, president of Tim Frank Septic Tank Cleaning, in Huntsburg, Ohio, was named the winner of the 2019 Ralph Macchio Lifetime Achievement Award during a meeting of the National Association of Wastewater Technicians Feb. 22 at the Water & Wastewater Equipment, Treatment & Transport (WWETT) Show in Indianapolis. The award was presented by Ralph Macchio and Bob Kendall, founder of COLE Publishing.

The Macchio award is the highest achievement in the pumping industry, and Tom Frank follows in the footsteps of his father, Tim Frank, who won the award 2005. This marks the first time in the history of the award that it was given to two generations of business owners in the same family. Tim Frank was instrumental in the early efforts of NAWT to boost professionalism in the pumping industry.

"Being in the industry this long, that was pretty easy with a father who was really a great role model. It's been really great when you have a family that can support you and you have great guys at home (working in the business) so you can participate in this and not worry about being away," Tom Frank says in accepting the award. "You have a second family (at the WWETT Show) and you get to see all their faces once a year. We do what we can and go back and change it for the kids and grandkids and try to make it a better industry."

Tom Frank was credited with helping his father and other NAWT found-

ing members with industry training at the WWETT Show and beyond, traveling across the country to share with other pumpers how to use the tools of the trade more effectively. He has also served as president of NAWT, and he thanked board members for their support over the years.

Macchio praised the younger Frank, explaining how he started helping out in the business at an early age.

"The award is not given for just one or two feats or successes, but for committing yourself to the industry for a lifetime. (Tom Frank) started out at approximately 2 years old with his father. He would put on his boots and go out with him on the pump truck," Macchio says. "He grew into all types of activities with regard to the industry. He serves on the (NAWT) Education



Gene Bassett, left, the outgoing president of the National Association of Wastewater Technicians, receives an award of appreciation from incoming President Bruce Fox.

Committee, he hosted the first Waste Treatment Symposium at his treatment plant, and this has been in his blood from the very beginning."

Tom Frank was joined at the meeting by his wife, Carol, his father, his children and grandchild.

Also at the NAWT meeting, the outgoing president, Gene Bassett, was presented with an award for serving multiple terms in the top position.

The group also elected a new slate of officers for 2019; they are Bruce Fox, president; Jeff Rachlin, treasurer; Tom Ferrero, secretary; and Kim Seipp, vice president. Seipp is also the education coordinator. ■



Ralph Macchio, left, presents the 2019 Macchio award to Tom Frank, president of Tim Frank Septic Tank Cleaning.

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SEPTIC SYSTEMS OR RESTROOMS?

## this truck does both

Phil Chiarella, 42, is a hybrid in the pumping business. He's a portable restroom operator, but as a member of the fourth generation of a family in the septic pumping business, he's also a septic pumper. He even has a hybrid truck designed to be well suited as a portable restroom service vehicle and a septic pumping rig.

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“Along the path to setting these new goals, we realized revenue had become a vanity metric. It wasn't telling us anything about the health of our company.”

—How to Shift Your Business Focus From Revenue to Profit  
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OVERSEAS EXPERIENCE

## inspiring a wastewater career

While traveling in Angkor Wat, Cambodia, Jennie Callahan met a civil engineer who was restoring temples. Years later, attending a graduate program in environmental engineering at the Colorado School of Mines, she cites the experience as a catalyst for joining the wastewater industry. Read about Callahan's entry into the industry in this online exclusive article.

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SCHOLARSHIP WINNER

## a winding path to wastewater

Rebecca Burke — one of the winners of the 2019 National Association of Wastewater Technicians Hapchuk Scholarships — has seen a decade pass since completing her first undergraduate program. Returning to the academic setting after almost a decade, the scholarship winner took an unusual path through multiple occupations before discovering a passion for wastewater.

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**2012 International**, MFD 230 HP, 6 spd, low miles, 33# GVW, **NEW** 2450 gallon steel vac tank, **NEW** Jurop vac pump.  
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**1-YEAR NATIONWIDE DRIVE TRAIN AND EMISSIONS WARRANTY**



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## NON CDL



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## NON CDL



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FA 20,000, RA 40,000  
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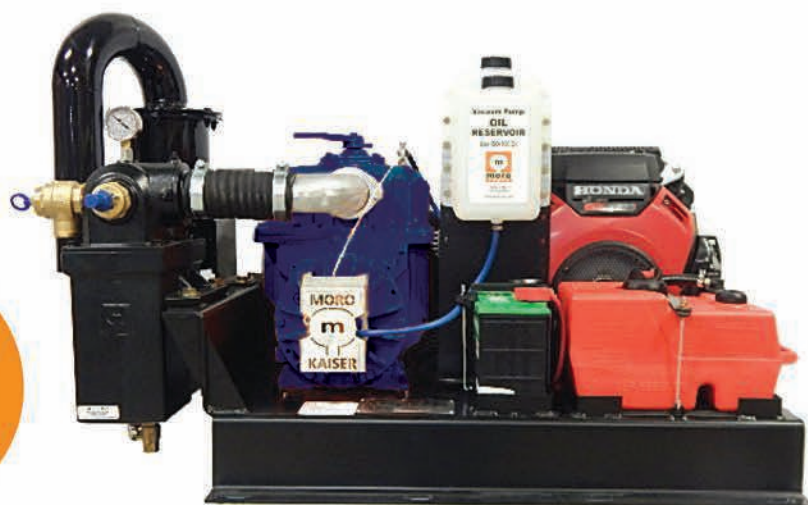
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# STEP RIGHT UP

The third generation of Kelly family owners reinvigorate the diverse Canadian wastewater company Sanivac **By Betty Dageforde**

In 1961, when a Canadian printing technician/part-time policeman got frustrated with how long it was going to take to get his septic tank serviced, he got an idea of how he could follow his dream of small-business ownership. John Kelly bought a used truck, enlisted the help of his wife, Josée Serrurier, and created Sanivac.

The business was a success, but he quickly learned the hard way that an old heating oil tank was not going to work. In the 1970s he was joined by sons, Mark, Dennis, Patrick and Daniel, and by 1987 he was ready to pass the business on to them. Under their leadership, the business continued to grow and new services were added.

By October 2017 the brothers were ready to step down and let the third generation take over. Vincent, David and Carole-Ann Kelly — all under 35 years old (the average age of their 160 employees) — are now running the show. While maintaining the workplace culture started by their grandfather, the younger generation is putting their own stamp on the enterprise and operating with tools and practices of the 21st century.

One carry-over trait through the generations is a passion for innovation and problem-solving. The company creates solutions to company and customer needs, and a team of mechanics, electricians, welders and assembly personnel carry them out.

(continued)

## Sanivac

Notre-Dame-de-l'Île-Perrot,  
Quebec

**OWNERS:** Vincent, David and  
Carole-Ann Kelly

**FOUNDED:** 1961

**EMPLOYEES:** 160

**SERVICE AREA:** 60-mile radius

**SERVICES:** Septic and grease trap service,  
portable sanitation, sewer cleaning, hydroexcavation

**WEBSITE:** [www.sanivac.ca](http://www.sanivac.ca)



The third-generation owners of Sanivac are shown in front of the company headquarters near Montreal, Quebec, Canada. They are, from left, David Kelly, vice president; Vincent Kelly, president, and Carole-Ann Kelly, director of sales and marketing. (Photos by Allen McEachern)





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**Left:** Michel Paquette, left and his son, Michel Paquette, Jr., assemble a hose reel and storage box in the fabrication department at Sanivac. The tank was built by Transway Systems and carries a Fruitland pump.

**Below:** Technician Martin L'Heureux prepares to clean a storm sewer. The truck was built out by Transway Systems and carries a Robuschi blower.



**Right:** Sanivac founder John Kelly is shown at the controls of a backhoe after he started the business in 1961. (submitted photo)



The company is located in Notre-Dame-de-l'Île-Perrot, Québec, a town of about 11,000 on a small island just west of Montréal. They have a working radius of about 60 miles.

## SERVICE LINES

Sanivac no longer provides snow removal and septic installations, but the streamlined operation now includes portable restroom rental, septic tank and grease trap pumping, and sewer cleaning. Septage is hauled to the company's facility, transferred to tankers and taken to government-approved treatment plants.

The company has more than 5,000 PolyJohn portable restrooms (blue for construction and gray for events) and a sizeable number of wheelchair-accessible units, as they're now required in city parks. The company does over 4,000 weekly cleanings. Other equipment includes three refurbished restroom trailers and about a dozen PolyJohn five-station hexagonal urinal units.

A major portion of their work is for construction accounts. A couple of their biggest events include Marathon Oasis de Montréal, the largest running event in Québec (500 units), and the Montréal Grand Prix — 500 units, all cleaned daily in three hours with the assistance of some of their sewer cleaning trucks.

On the sewer side, the company has a number of municipal contracts to service and pump city systems. They also have private-sector construction accounts. Services include drain cleaning, thawing frozen pipes, unblocking sanitary lines, and maintenance of pumping stations and manholes.

The septic division benefits from the requirement in Québec that tanks be pumped every two years. In many places, companies bid on municipal contracts to provide the service to an entire town or county. "We send letters to all the residents and tell them we're going to be in their area between this date and this date, then we pass house by house," Carole-Ann Kelly says. Each team — a driver and a helper — services 20 to 25 tanks per day. The grease trap division collects grease from commercial, industrial and restaurant customers.

“It's very important that everyone is happy. We are a family company, and we want to keep that spirit, whatever size we become. It's the way my grandfather would be happy that we do things.”

**CAROLE-ANN KELLY**

## CREATIVE PROBLEM-SOLVING

The company moved to an industrial park in 2001, added a second building in 2006 and then tripled its size in 2011, and is currently building a third garage. The company will have space to park 100 trucks indoors. There are also facilities to clean all trucks daily. But more room is needed so all vehicles can be kept inside for protection against the weather. They currently rent extra garage space, but a third garage is under construction that will house 33 trucks.

A team of 12 works in a fully outfitted shop to repair and modify portable restrooms for specific needs. For example, since 2015 the provincial code has required that portable restrooms on construction sites with more than 25 employees have flush toilets, sinks with hot water, towels and soap.

(continued)





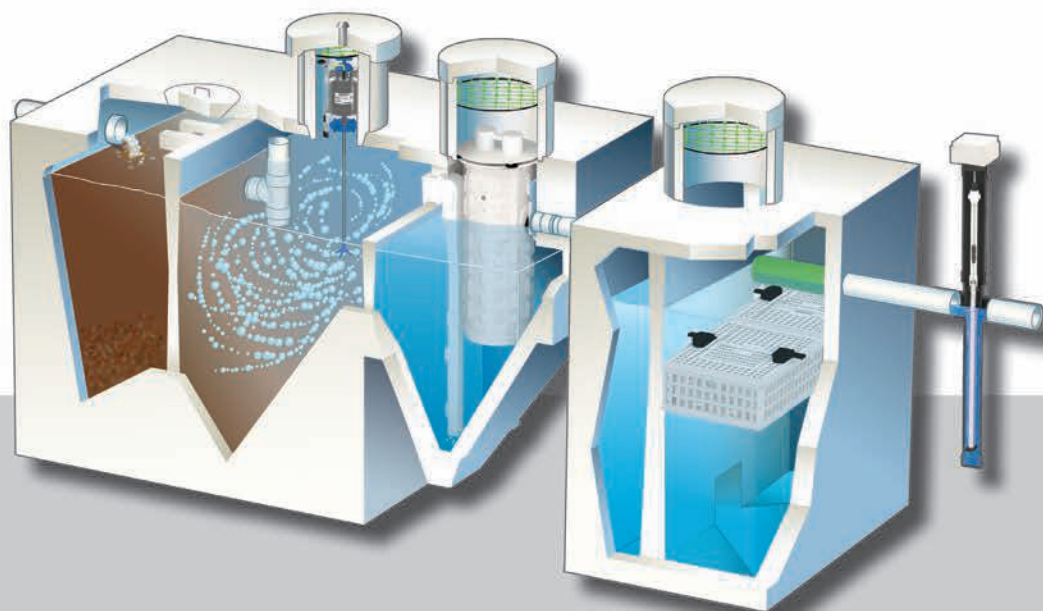
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The company's first idea to accomplish this was too expensive for small contractors so they went back to the drawing board, even renting a 53-foot freezer truck to try out ideas in. The end result was what they call Ecosan — a PolyJohn Fleet flush unit with a sink to which they added ambient heating, a cover around it, sprayed Styrofoam underneath, and a heating element in the sink and electrical box. "There was a revolution in the chemical toilet here in Québec after that law passed," Kelly says. "All that we buy now is that kind of toilet. That is the future of the sanitary toilet." The company has now built 700, all rented out.

Another company-designed unit for use at events is a solar-powered, eight-sink hand-wash trailer with reservoirs for freshwater and graywater.

## BUILDING THE FLEET

The company's creativity also extends to its truck fleet. They have 140 license-plated vehicles including vacuum trucks (mostly Kenworth chassis and tanks from Transway Systems, Omega Liquid Waste Solutions and Supervac), 9,600-gallon tankers (Acro Trailer), company-built equipment transport trailers and delivery trucks (Kenworth and Hino). Pumps and blowers are from Robuschi (Surpresseur 4S) and Fruitland.

Most trucks are built out by the company. The Kellys know the specific requirements of each vehicle since they have operated all of them at some point in their lives. They also consult with operators to ensure a truck precisely suits their needs.

"Our assembly team can create whatever comes to our mind," Kelly says. "No two trucks are the same. We always think each truck is the model for the ones to follow, but we always find

**Right:** Technician Jimmy White works with a Kenworth sewer-cleaning truck built out by Sanivac with a Myers pump, 3,000-gallon reservoir and 1.2 million Btu burner.

**Below:** Justin Spencer welds a box in the assembly and fabrication department at Sanivac.



“No two trucks are the same. We always think each truck is the model for the ones to follow, but we always find something to improve. It takes time, but the truck will be perfect when it is ready.”

CAROLE-ANN KELLY

## Going green

Recycling rainwater and snowmelt is just one way Sanivac tries to be eco-friendly. "We recover all the water that's coming on our roof," explains Carole-Ann Kelly, a partner in the business. "We have six reservoirs for accumulating the water. We also have a well. That keeps us from using the potable water from the city. Each year, I think it's (3.7 million gallons) of freshwater that we're saving." The water is used in every area of their business.

The grease trap division is another area where they are committed to ecological responsibility. They first dewater the grease at their facility using a company-designed and -built system, then take it to treatment plants that produce biomethane. "The grease is reused and given a second life," Kelly says. "The gas that's produced, biomethane, is running generators, and these generators are selling the electricity on the grid."

Other green efforts include using biodegradable paper in their portable restrooms. And in the office, they recycle everything they can. But they want to go one step further. Their current challenge is to go paperless. "A lot of our work orders are still printed, but we're working on a solution so all trucks will be tablet-equipped and paperless," Kelly says. "We try to be as eco-friendly as possible."

something to improve. It takes time, but the truck will be perfect when it is ready."

As one example, in the portable restroom division, after receiving the chassis and tank it's typically another two months in the garage to assemble and adjust it to their standards, Kelly says. "It's important that the truck is ergonomic and user friendly."

## ON THEIR OWN

Rather than having the third generation ease into ownership roles over time, the Kelly family decided the best way to do the transfer was overnight. "One day they were owners and doing everything, and the next day they were advisors," Kelly says of their predecessors. "It worked very well. I don't see how else we could have done it because they were so used to having their business." While Mark and Daniel are fully retired, Patrick and Dennis work on projects that appeal to them.

The three younger Kellys are equal partners, each with different strengths and areas of focus. Carole-Ann Kelly takes care of administration and sales and marketing; Vincent Kelly handles the septic, grease and portable restroom divisions; and David Kelly oversees the pumping division. Working together is both challenging and second nature to them.

"It's something we're used to since 1961, so it's in our blood," Carole-Ann Kelly says. "I could not even see myself not working with the family. But we're



not always with a big smile on our face to each other. We do argue a lot in the background and challenge each other. But that's how we succeed. And what makes things work is we don't hold grudges; we like each other and we're family."

While customer service and employee care are enduring company commitments, the three new owners rewrote the values, mission and vision statements.

"We wrote something that really means something to us and that we want to apply every day," Kelly says. "It's not just words we put together. It's what is tracing our path." She says their goal is not to be the biggest company but to be the best. "We're always there for our customers. Whatever needs or requests they have, we will always say 'yes.' It's such a big no-no here to say 'no.'"

#### GOOGLE BUSINESS MODEL

Kelly says there is a severe labor shortage in their area, but they work hard to attract workers. "We have a very good employer reputation," she says. "It's still a hard job to find employees, but we put our energy to it. We just attended a panel on the employee shift and we were given as a model for recruitment."

The company's new value statement includes the phrase, "pleasure at work" — a commitment to employee well-being. "Pleasure is very important here," Kelly says. "We want to have fun doing what we do because we spend

more time here than with our own families. And it helps us for everything — for sales, recruitment — just to show how life is here." Kelly says they aspire to be the Google of the wastewater industry — not because they want to be the biggest, but because of the way Google treats people, the way they work and how outsiders view them as leaders in the industry.

In addition to good wages and benefits, Sanivac provides training and paid tuition for helpers to get their commercial driver's license. They throw a number of parties during the year in-

cluding one for kids and grandkids at Christmas, complete with a gift-bearing Santa. The field staff is provided with full uniforms including hats, hoodies and winter boots ("Everything but socks and boxers"), while the office staff has a comfortable "anything goes" dress code.

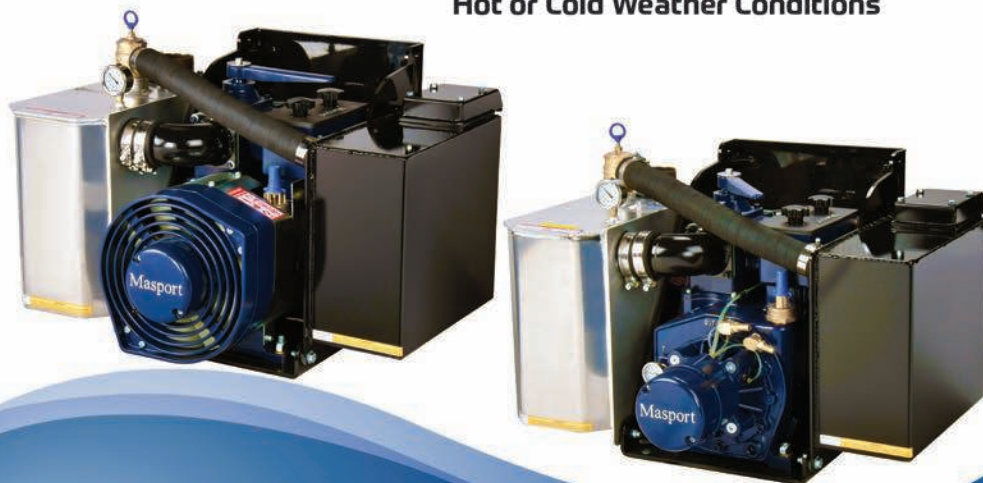
Sanivac is not just a work environment, it's a life environment, Kelly says. "It's very important that everyone is happy. We are a family company, and we want to keep that spirit, whatever size we become. It's the way my grandfather would be happy that we do things." ■

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**J**on Charlonne and Cory Lawrence added a red, gold and cream 1980 Kenworth W900A, adding a 4,000-gallon aluminum Amthor International tank and National Vacuum Equipment 866 vacuum pump. The truck had been kept in a climate-controlled airplane hangar in Virginia since 1984 and was previously used as a crane truck. The rig is powered by an 8-volt 92A Detroit Diesel 435 hp truck tied to a 15-speed Fuller transmission (Eaton Vehicle Group). The owners added the tank themselves and left the truck largely original. Features include a front-mounted sight tube, aluminum toolbox, double frame and aluminum rims. Graphics are from Maineline Graphics. Lawrence is the driver, and the truck is used for residential and commercial septic service. Company mascot Jax the dog is seen in the driver's seat. ■

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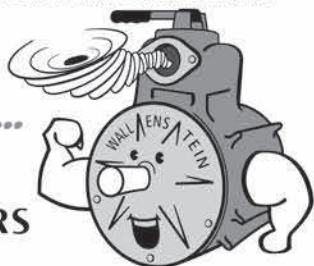
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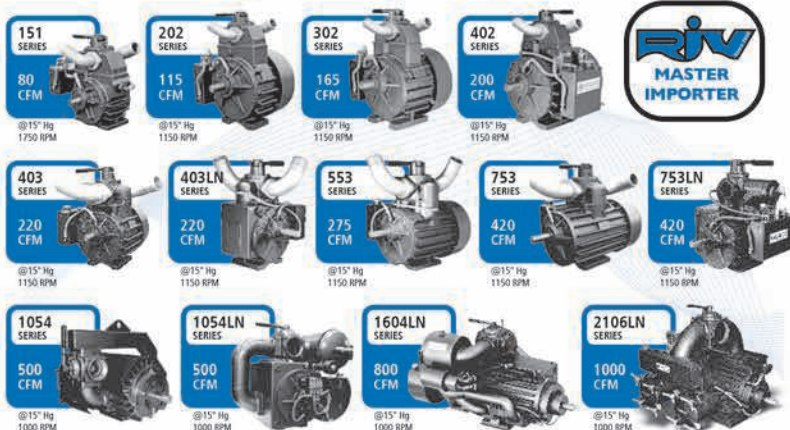


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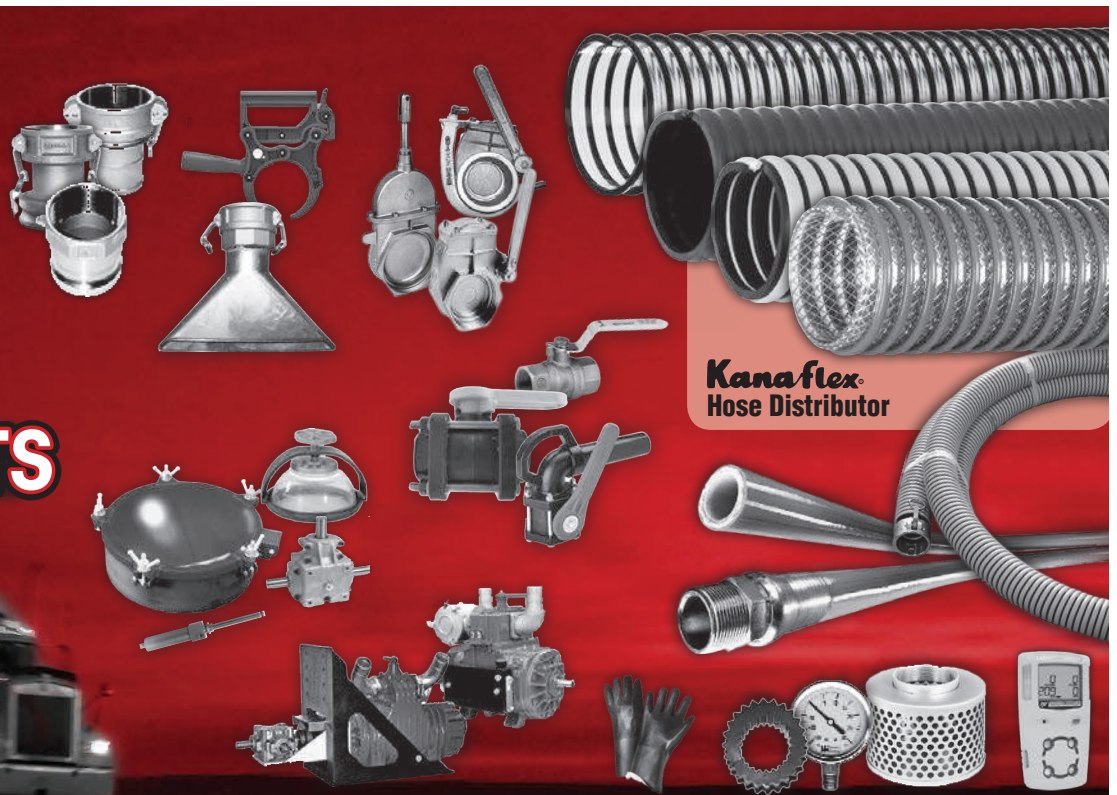




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# Will Peecycling Take Pressure Off Overloaded Septic Systems?

**Ongoing Vermont study aims to show if urine diversion could repurpose a large percentage of decentralized wastewater as a valuable fertilizer resource for farmers**

**By Ken Wysocky**

**T**wo organizations in Vermont are testing a new approach to wastewater management: diverting urine from septic systems, then sanitizing it for use as a nutrient-rich fertilizer.

The Rich Earth Institute is collaborating with the Windham Regional Commission to conduct the feasibility study. So far, nearly three dozen households in areas of the village of Westminster and the town of Dummerston have expressed interest in using urine-diverting or composting toilets. The special toilets divert urine to collection tanks instead of to septic systems, says Kim Nace, executive director of the Rich Earth Institute, a non-profit group that researches ways to use human waste as a resource.

One aspect of the study centers on asking homeowners if they're willing to adopt urine-diverting or composting toilets, as well as taking on the maintenance regimes associated with them, says Emily Davis, a planner at the Windham Regional Commission. Based in Brattleboro, the group provides planning and technical assistance on a wide variety of issues to 27 municipalities in southeastern Vermont. "There's a lifestyle change embedded within these systems, so talking about that is a good conversation to have — how to best manage our waste," she says.

The feasibility study's ultimate goal is double-pronged. The first goal is to better protect both groundwater and surface water from nutrient (i.e., nitrogen) pollution emitted by septic systems in Vermont's many rural villages. Urine makes up an estimated 1% of a centralized municipal wastewater stream, but it accounts for about 80% of the nitrogen and 55% of the phosphorus in wastewater, Nace says.

"Septic systems don't remove nutrients, so they get washed through the leachfields and into the groundwater," she says. "So we have a nutrient-pollution problem. But we can resolve that if we collect, transport, process and land-apply the urine. Through processing, we can collect 80% of the nitrogen in wastewater."

Homeowners are generally open to the discussion when they realize how urine-diversion systems could spare them the huge expense of replacing their septic systems. "People are very interested in saving money," Nace says. "So if we can save people \$20,000 (for a new septic system) by recycling urine ... they're very eager to learn about that."

## **SUSTAINING LOCAL ECONOMIES**

The second goal is sustaining economic growth and promoting sound land-use decisions in smaller communities, where many businesses and residents can't afford to either replace or add more capacity to the existing wastewater treatment infrastructure.

"More than half of the state's 624,000 residents rely on septic systems and live in rural communities ... where the wastewater situation confines and constrains their ability to remain vital," Nace explains. "People don't



always have the financial means to upgrade their septic systems. ... As such, they can't add bedrooms or start local businesses because there's not enough (wastewater treatment) capacity to handle additional growth."

On a larger level, the wastewater issue stymies the state from fulfilling one of its land-use planning goals: promoting "clustered" development, which helps minimize development sprawl and protects natural resources, Davis says. It's difficult to promote clustered development when existing wastewater infrastructure doesn't have the capacity to handle more growth.



Emily Davis

"In Vermont, our historic community centers still actually exist and remain the cultural centers for people who live here," Davis says. "But because they're old and historic and the infrastructure is aged, their wastewater facilities don't meet the demands imposed by more clustered communities."

"When you think about their future sustainability and viability with the current wastewater infrastructure, the situation is a little bleak," she adds, noting that large community wastewater treatment centers are costly. "So reducing the (nutrient) load with closed-loop nutrient systems just might help address some of the larger wastewater issues."

### A WORK IN PROGRESS

Roughly 100 households currently participate in a Rich Earth Institute-run urine-diversion program operating since 2012. Nace says she would like to double the number of program participants by the end of the year. The group has a state permit to run the program for 10 years.

In 2018, participants recycled a little more than 6,000 gallons of urine, using 5-gallon containers that they deliver to a central collection point in Brattleboro. The urine there is stored in 275-gallon IBC tote tanks. From there, a vacuum truck owned by the Rich Earth Institute transports the urine to a farm, where it's sanitized in a mobile pasteurizing unit. The urine also can be sanitized at the Rich Earth Institute's research center in Brattleboro, she says.

Here's how the mobile sanitizer works: Urine is pumped into the electric-powered, fully automated pasteurizer, where it's heated to 176 degrees F for a little more than a minute. The unit is mounted on a 4-by-8-foot trailer. To use as little energy as possible, the unit is outfitted with a heat exchanger that reclaims about 80% of the heat emitted by the hot urine as it leaves the unit through a pipe and then uses that heat to preheat the urine that's getting pumped into the system. It can process nearly 800 gallons of urine a day, Nace explains.

"After urine is sanitized, it's considered a Class A biosolids product, which we land-apply with a custom-built, gravity-fed liquid applicator in spring or fall at two local farms," Nace explains. "The farmers are very eager to have it. They're very happy with its effect on hay — it's a very good fertilizer."

People who participate in the program use different methods to divert urine. Some buy urine-diverting toilets or retrofit existing toilets with a separator. The urine is diverted to a small holding tank, usually located in a basement, while feces still get flushed into a septic tank. Others use small portable urinals to collect urine, Nace says.

Various components of the program are funded by grants from the National Science Foundation, the Long Island Sound Futures Fund, the High Meadows Fund, the Vermont Natural Resources Council and the Canaday Family Charitable Trust, she says.



Kim Nace

The case for so-called peecycling is compelling. Nationwide, it's estimated Americans use more than 1.2 trillion gallons of water a year to flush toilets. And an average person flushes a toilet five times a day, and four of those times it's to dispose of just urine, not feces, Nace says.

Moreover, the average person uses more than 3,000 gallons of clean water every year just to remove urine from toilets. As such, Nace says a solution to wasting water and nutrient pollution is a no-brainer: Stop flushing toilets so often. Nace also points out that just one person produces between 100 and 150 gallons of urine a year. That's the equivalent of about 8 pounds of nitrogen and almost 1 pound of phosphorus annually, she says.

“After urine is sanitized, it’s considered a Class A biosolids product. ... The farmers are very eager to have it. They’re very happy with its effect on hay — it’s a very good fertilizer.”

Kim Nace

### WIDESPREAD ADOPTION

The two groups hope to present a report soon to officials in both test areas that summarizes the study's findings, including an estimated cost for toilet replacements and conversions. What happens after that is anyone's guess, given that so many questions still need to be answered, such as who would install the toilets and what's the best way to overcome many peoples' inherent discomfort with the issue and required lifestyle changes.

Nonetheless, Nace hopes the study could eventually pave the way for more widespread adoption of urine-diversion strategies not only in Vermont, but nationwide, though she acknowledges that could take a long time. "We're pretty well aware that people around the country may be interested in this," Nace says. "So we're approaching this feasibility study as something that could be valuable to other communities."

Is it feasible to do it on a mass scale? "We think it's possible, for sure — even in urban locations," Nace says. "We'd solve so many nutrient pollution problems across the country. But we'd need to make it seamless. ... People are so hesitant to change their bathroom behaviors, so we need to do this in a way that won't challenge them. This study will help us understand how we might do that."

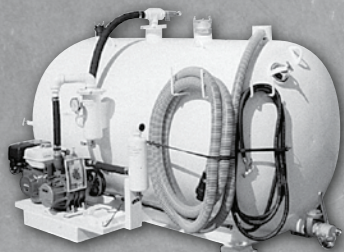
What role might septic pumpers play? Nace sees a day when pumpers would invest in small vacuum trucks dedicated just to collecting urine and transporting it to farms. "I definitely have a vision for that," she says. "Urine-diversion strategies could create jobs for pumpers, haulers and plumbers." ■

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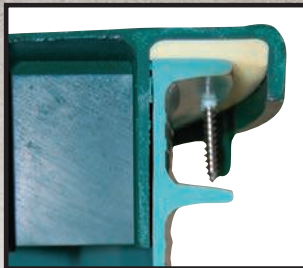
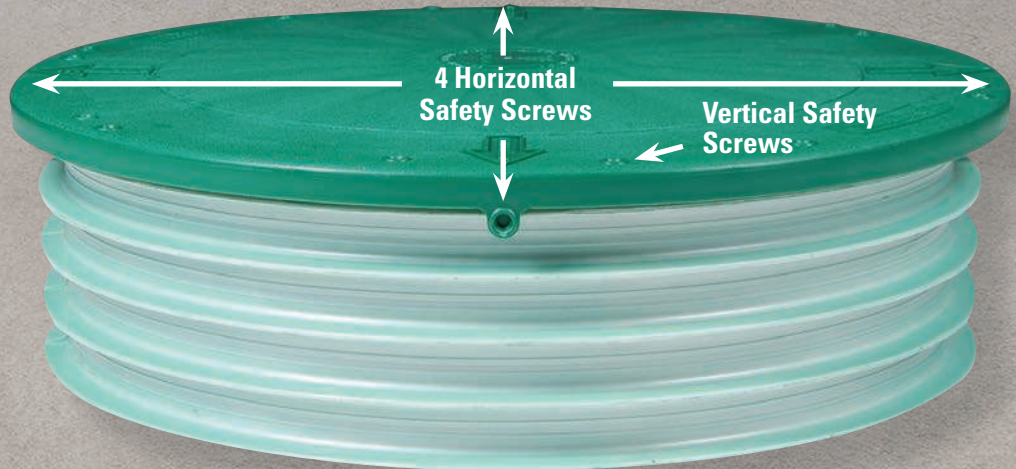
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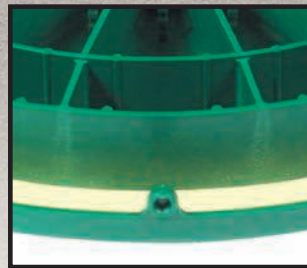
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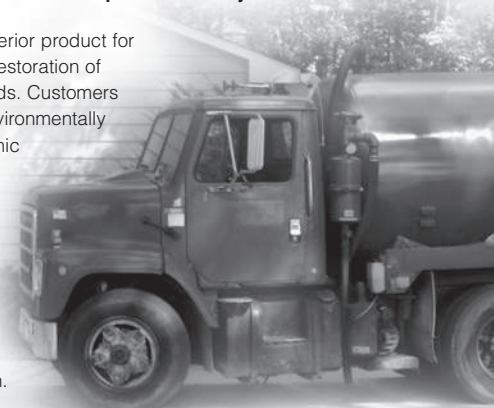
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B&S Port-O-Jons owners Caryn and Clayton Smith with a Dodge Ram flatbed that carries up to eight restrooms and a 250-gallon plastic freshwater tank. (Photos by Eric Guel)

# RESTROOMS RISING

Due to spikes in construction and emerging special event work, Texas pumping company B&S Port-O-Jons has seen its workload continue to shift from septic to portable sanitation service over the years **By Steve Lund**

**A**fter many years working in portable sanitation, Caryn Smith has learned the importance of planning ahead. Owner with her husband, Clayton Smith, of B&S Port-O-Jons in Waco, Texas, she has also learned that customers who need portable restrooms often need help with planning.

"In this business, a lot of people wait until the day of an event and then go, 'Oh, I forgot we need toilets.' We get that a lot," Smith says.

She says she walks clients through a rule-of-thumb formula (200 uses per unit) for how many restrooms will be needed for an expected crowd. But she often finds herself telling customers they are only planning for everyone to use the restroom one time. Some will go more than that, she explains, and when an event involves alcohol or food or more time, more restrooms are needed.

The planning involves mapping out the locations of restrooms as well. Often clients want to put portable restrooms in places that are convenient for users but inconvenient or impossible for servicing.

"That happens at construction sites," Smith says. "We tell them they can put it over there close to where they can use it, but if we can't get to it because there is material or equipment in front of it or there's a mudhole in front of it, then we can't service it. Then, a lot of time, as soon as you say it, they go, 'Oh that's a good idea.'

(continued)

## B&S Port-O-Jons

Waco, Texas

**OWNERS:** Clayton and Caryn Smith

**FOUNDED:** 1995

**EMPLOYEES:** 15

**SERVICE AREA:** Fort Worth to Austin along Interstate 35

**SERVICES:** Portable sanitation, septic and grease trap service, specialty delivery service, restroom warehousing

**WEBSITE:** [www.portojons.com](http://www.portojons.com)





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"A lot of it is education, but people don't want to be educated about toilets," she says.

### DEEP PUMPING ROOTS

Caryn and Clayton Smith were married in December 2017. They had been good friends and co-workers for years before that. Both have children from previous marriages. Two of Caryn Smith's daughters and her son also worked for B&S Port-O-Jons over the years and one still does.

Clayton Smith, 62, describes himself as semiretired now and says he doesn't get involved much in the day-to-day operations of the business. Caryn Smith, 61, runs the office and sometimes works on a vacuum truck for special events.

"I'm kind of hands-on," she says. "I don't go out and run a route. I could, but I don't."

When she started working for Clayton Smith, she was the office manager for Bullet Delivery Service, which operated out of the same office as B&S Port-O-Jons. The partnership that owned B&S Port-O-Jons split in 2001, and



Caryn Smith schedules restroom routes in the B&S Port-O-Jons office.

“Our biggest problem is having enough drivers. That can really throw you when you have events going in five different directions. We laugh our way through a lot of things because that’s about all we can do. You laugh or you would be crying.”

### CARYN SMITH

Clayton Smith became the sole owner. It was at that time when *Pumper* first featured B&S Port-O-Jons in a profile story, and the company has grown significantly since then.

"He asked me if I could manage this business, too," Smith recalls. "I had heard enough going on in the office that I had a pretty good idea what was going on. I said, 'Sure, it's not rocket science.' Of course, I have kind of regretted that statement many times. It's true that it's not rocket science, but there is a lot more to it than people think."

In 2004, B&S Port-O-Jons grew substantially in an unexpected way, taking over the customers of a portable restroom operator in Austin, which is about 100 miles south of Waco.

"We didn't buy it; he went bankrupt," she says. "He said, 'Here's my

customer list. Go take care of them.' And we did."

For several years, B&S Port-O-Jons maintained an office in Austin, but in 2012, the company moved everything back up to Waco.

"The gentleman who was running that office was leaving, and it didn't seem to be worth keeping an office down there, so we pulled back a little bit," she says. "We pulled back from some of the areas where we had been trying to stretch."

That turned out to be a good decision, she thinks.

(continued)

The B&S Port-O-Jons crew includes (front row, from left) Brenna Henry, Debbie Sawyer, Clayton Smith, Caryn Smith, Rachel Bowling and Debra Dicorte. Middle row, from left, is Kenneth Judge, Charles Ervin, Jerry Dorais, Deadrick Love and Andrea Limones. Back row, from left, is Matthew Daniels, Lloyd Cole, Ron Orso, Ronnie Brown, Tim Howlett and Dontravier Sims.





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**Left:** Technician Tim Howlett places Satellite I PolyPortables restrooms at a job site.

**Below:** Ronnie Brown and Ron Orso unload Satellite I PolyPortables restrooms while Dontravies Sims is behind the wheel of the FlowMark truck with a Masport pump.

## SO MUCH CONSTRUCTION

Waco has proven to be a good market for pumping, especially portable sanitation. B&S Port-O-Jons had about 750 restrooms in 2001 but has about 1,200 now. At one point it had close to 1,500 restrooms, but it cut back during the recession a decade ago. Now the company is contemplating more growth.



## Serving celebrity clients

Waco, Texas, is not the world's most glamorous locale, but it has more than its share of celebrities, and those celebrities are clients of B&S Port-O-Jons.

For example, Waco is the home of Magnolia Enterprises, headed by Chip and Joanna Gaines, formerly the stars of the HGTV show *Fixer Upper*. B&S Port-O-Jons supplied portable restrooms to many home-remodeling projects that were the foundation of the show. They have also provided restrooms for special events hosted by the famous couple.

"When they opened up their new Magnolia Table, which is just up from us, we had toilets there until they got their bathroom situation under control and could handle their crowds," says Caryn Smith, one of the owners of B&S Port-O-Jons.

One of the special events B&S Port-O-Jons supplied was a marathon hosted by Magnolia Enterprises in May 2018.

Another noteworthy Waco-area resident is former President George W. Bush, who has a ranch in nearby Crawford. Bush has used B&S Port-O-Jons to provide restrooms for Wounded Warrior events he hosts at the ranch.

"We did some stuff out there when he was governor, and it has grown since," says Smith, who is a graduate of Crawford High School. It was a Wounded Warrior event that prompted B&S Port-O-Jons to start offering clients an ADA-compliant restroom trailer, she says. Later they purchased a 2015 Wells Cargo ADA-compliant restroom trailer.

"It only has one stall, but it has all the bells and whistles of the elite restroom trailers," Smith says.

Clayton Smith, Caryn Smith's husband and one of the founders of B&S Port-O-Jons, says the Secret Service is always involved when there are events at the former president's ranch.

"For any of the special events where we provide trailers at the Bush Ranch, we definitely deal with the Secret Service because they have to approve people to go on the property," he says.

Part of the reason is a great deal of construction in and around Waco.

"There are a lot of subdivisions going in — a lot of work — and they're getting ready to widen Interstate 35 again," Smith says. "We have competition in Waco, but there seems to be plenty to do for everybody."

Originally the company was on a 1-acre site, then it expanded into the lot next door. B&S Port-O-Jons quickly outgrew that space, and in 2004, it bought a 10-acre site that had formerly been the home of a construction company. B&S Port-O-Jons has been able to use all the buildings on the site, including the warehouses. The site has better access to I-35 than the company's previous home, and it's also closer to Baylor University, a regular customer.

The company services restrooms outside the stadium for Baylor football games, as well as other events at the stadium, and it regularly handles special events at the 16,000-student university.

As portable sanitation took off, septic pumping has become a smaller part of the company's business. None of the drivers work exclusively on the septic side. "It's not something we do a whole lot of anymore," Smith says. "We just don't pursue it like we used to."

B&S Port-O-Jons doesn't aggressively seek new septic pumping work, but it still serves residential and commercial clients. Many of the residential clients are also customers of the portable restroom side of the business. The commercial clients include a SpaceX rocket-testing site in McGregor, about 20 miles west of Waco.

"We all know it when they are testing a rocket out there," she says. "It sounds like rolling thunder."

## FILLING THE GARAGE

B&S Port-O-Jons has acquired a large fleet of vacuum trucks and trailers. They include three Freightliners — a 2003, 2004 and 2006 — each one

(continued)



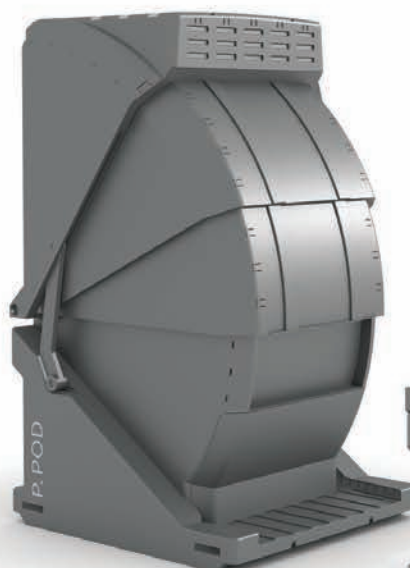
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with a 1,500-gallon waste and 500-gallon freshwater aluminum tank with Masport pumps from Lely Tank & Waste Solutions (used for portable sanitation and septic service); a 2017 Dodge Ram 5500 with a 500-gallon waste and 200-gallon freshwater steel tank and Honda-driven pump from Lely; and a 2005 GMC and 2007 International flatbed, both with 750-gallon waste and 250-gallon freshwater flat steel tanks and Masport pumps, the GMC from Crescent Tank and the International from Lely. The flatbed trucks can carry eight restrooms each.

The vacuum truck fleet also includes a 2001 GMC with a 1,200-gallon waste and 500-gallon freshwater stainless steel tank and Conde pump from Westmoor and built by Best Enterprises; a 2016 Dodge Ram 5500 with a 1,100-gallon waste and 400-gallon freshwater aluminum tank and Masport pump, from FlowMark Vacuum Trucks; and a 1999 International, with a 1,100-gallon waste and 400-gallon freshwater steel tank with a Masport pump.

For hauling restrooms, the company has a 2014 Dodge Ram flatbed that hauls eight restrooms and has a 250-gallon freshwater tank, plus three trucks to pull trailers — a 2006 F-350, 2004 F-350 and 1999 F-350. The trailer fleet includes a 20-unit McKee Technologies - Explorer Trailers, a 2007 John Deere that can haul five regular units or four handicap units, an 18-unit hauler and a couple of homemade trailers: one that holds 10 units and one that holds eight.

The restroom inventory is a mix of PolyJohn and Satellite | PolyPortables units. B&S Port-O-Jons uses aqua units, mostly PolyJohn, for construction sites and red or red, white and blue units for special events. All the special event restrooms are Integra models from Satellite | PolyPortables. The 40 sinks and 25 handicapped-accessible units are from both PolyJohn and Satellite | PolyPortables. Recently added to the inventory are Stowaway hand-wash stations from EndureQuest.

On the luxury end, B&S Port-O-Jons offers two red Boudoir units with flushable toilets from Satellite | PolyPortables that Smith says are popular for weddings; a 2015 Wells Cargo ADA-compliant restroom trailer; and two Advanced Containment Systems restroom trailers, each with five women's stalls, two men's stalls and two urinals and two sinks on each side, and a shower/lavatory unit with two stalls.

## EVENTS AND WAREHOUSING

Servicing construction sites and other regular clients represents about half of the company's business. Special events make up another 35%, and the rest is restroom warehousing and pumping septic tanks. The warehousing part of the business started in 2003. B&S Port-O-Jons would store and assemble units for manufacturers and a trucking company would come pick them up for delivery.

Clayton Smith says the warehousing and assembly has been an important part of a business that started with just 12 portable restrooms. "We've grown in leaps and bounds," he says. "What's really helped a lot is warehousing and assembling for other companies. That's really been a plus for us."

Pumping food trucks have added a new element to the business, although it is still a small revenue stream. "We've had a couple of customers with food trucks, but they are not grease traps; we're pumping off their graywater," Caryn Smith says. Grease pumping is not something they want to expand.

Smith says it's hard to schedule because the grease pumping has to be done separately from septic pumping to avoid having problems at the wastewater treatment plant. "We don't do a lot of that," she says. "It's not worth the hassle. We still do grease traps, but it's not our favorite thing."

Among the special events B&S Port-O-Jons has serviced are a fundraiser for the Muscular Dystrophy Association, an Ironman triathlon, the Heart O' Texas Fair & Rodeo, the Margarita and Salsa Festival in Waco and numerous events for Baylor University. B&S Port-O-Jons is often the winning bidder for events sponsored by the city of Waco, such as the Fourth of July celebration and Brazos Nights. Since 2003, B&S Port-O-Jons has been one of the PROs

serving Chilifest in Snook, which isn't far from College Station, the home of Texas A&M University.

Smith says Chilifest is one of her favorite events, and she personally works on a service truck along with Ron Orso, the company's operations manager. "It's a lot of trouble, but it's fun to see how crazy the kids are going to be," she says.

Orso is a special employee, she says, and not just because he has helped run the daily operations for more than 10 years. He also provides the music for the annual Christmas party for employees and friends of B&S Port-O-Jons and Bullet Delivery Service.

"We decorate the warehouse, cook lots of food and of course provide 'cheer,' but our main event is Ron," Smith says. Orso, in a band that performs in northern Texas and Oklahoma for many years, plays guitar and sings. Smith says he has performed for almost all of the company's parties since he started working there. "He is very 'instrumental' in the success of our annual party, as well as our day-to-day business," Smith says.

## KEEPING IT LIGHT

Smith says she, her husband and Orso often joke about how easy it is for things to go wrong in the portable sanitation business. She has a poster in her office of Murphy's law: Anything that can go wrong, will go wrong.

"Ron says he can't plan anything because every day when he comes in he has to see if everybody's here and if all the trucks start. If Clayton asks me how it's going, and I say, 'The usual,' he'll ask, 'Who quit and what truck broke?'"

Caryn Smith has a special ring tone for Orso's calls. "It's kind of irritating, like a horn honking," she says. "When I hear that before I'm fully dressed and ready to go, I know it's going to be something bad. I hope not to hear that noise early in the morning."

Although some B&S Port-O-Jons employees have been with the company more than 10 years, there always seems to be a few rookies on the crew. "Our biggest problem is having enough drivers," she says. "That can really throw you when you have events going in five different directions. We laugh our way through a lot of things because that's about all we can do. You laugh or you would be crying."

Still, Smith enjoys the work and has no plans to retire.

"We try to always give good service, and we take a lot of pride in what we do. I'm too busy to retire," she says. "We do plan to ease back a bit, but it would be several years. Unless my health gives me a problem, I'll probably go for quite a while." ■

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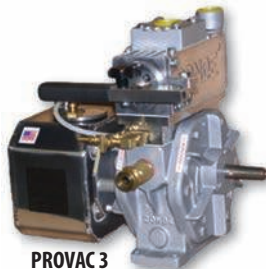
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SDS 12 W/ OILER	OL12SDSCW91 / OL12SDSCC91	180 CFM	1 1/2"	1 1/8"	<del>\$1,493.75</del>	<b>\$1,400.00</b>
ULTRA 12 W/ OILER	OL12ULTCW91 / OL12ULTCC91	230 CFM	1 1/2"	1 1/8"	<del>\$1,939.20</del>	<b>\$1,840.00</b>



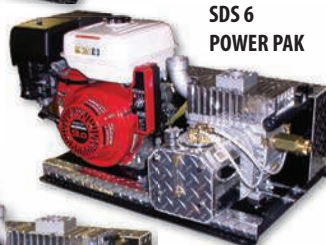
SDS 6  
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SUPER 6 W/ OILER	HD06SSCW91 / HD06SSCC91	70 CFM	1 1/4"	1"	<del>\$1,253.10</del>	<b>\$1,190.00</b>
SDS 6 W/ OILER	HD06SDSCW91 / HD06SDSCC91	115 CFM	1 1/2"	1"	<del>\$1,413.60</del>	<b>\$1,340.00</b>
SDS 12 W/ OILER	HD12SDSCW91 / HD12SDSCC91	180 CFM	1 1/2"	1 1/8"	<del>\$1,658.25</del>	<b>\$1,575.00</b>
ULTRA 12 W/ OILER	HD12ULTCW91 / HD12ULTCC91	230 CFM	1 1/2"	1 1/8"	<del>\$1,955.70</del>	<b>\$1,850.00</b>



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SUPER 6	HDUN06SS05ES	5.5 HP, Elect Start	<del>\$2,506.60</del>	<b>\$2,350.00</b>
SDS 6	HDUN06SDS09E	9 HP, Elect Start	<del>\$3,198.75</del>	<b>\$3,000.00</b>
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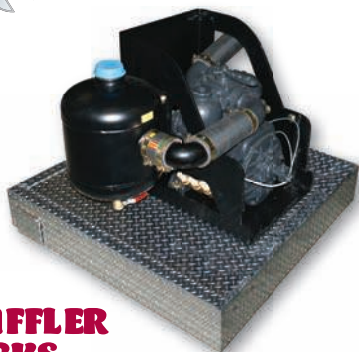
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BEST	MEC13500	489	Ballast Port	3"	<del>\$4,295.00</del>	<b>\$3,650.00</b>	<del>\$4,400.00</del>	<b>\$4,175.00</b>
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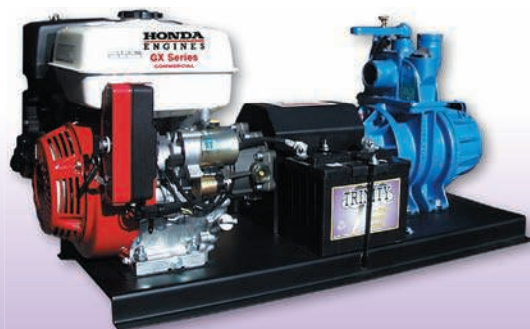
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# Supreme Court to Address Groundwater Pollution Case With Potential Wastewater Industry Implications

By David Steinkraus

**A** case coming before the U.S. Supreme Court this year will look at a critical issue for people who deal with wastewater. That issue is whether regulations can be applied to groundwater carrying pollution from a point source.

The case is *County of Maui v. Hawaii Wildlife Fund, et al.*, and it came about because Maui County for years has pumped treated municipal wastewater into injection wells that carry it deep under the ground — or so everyone said. In 2011, the U.S. Environmental Protection Agency funded a tracer dye study that found wastewater from the wells flowing into groundwater and back into the ocean near Kahekili Beach where it was linked to algae blooms that smother coral reefs and cause other environmental damage. In 2018, the environmental law firm Earthjustice, which represents Hawaii Wildlife Fund, says the county's Lahaina Wastewater Reclamation Facility injected 3 to 5 million gallons of wastewater daily.

A federal district court and the 9th Circuit Court of Appeals have had the case already, and both sided with Hawaii Wildlife Fund and its request that Clean Water Act regulations should apply because the Lahaina plant is polluting the ocean. So the county is asking the Supreme Court for an opinion.

"The case raises a really interesting and important question that implicates two separate areas of water pollution law," says Erin Ryan of the Florida State University College of Law. She is an expert in water law and holds the Elizabeth C. & Clyde W. Atkinson professorship. "One is whether groundwater should be reachable by the Clean Water Act. The other question is how to deal with point and nonpoint pollution."

In the Hawaii case, these issues intersect, Ryan says. The difficulty is how to cope with pollution that is discharged from a point source but that contaminates regulated surface waters through a stretch of groundwater. "How should we think about the connections between surface water and hydrologically related groundwater, and what do we do about the sources of pollution that are really genuine threats to the nation's waters but are conveyed by something not as easily attached to a point source designation, such as a factory pipe?" Ryan says.

More generally, the question is whether groundwater should be treated as connected to the nation's navigable waters, which are regulated under the Clean Water Act, she says.

When the Clean Water Act was written in the early 1970s, it specifically excluded some nonpoint sources such as many agricultural and forestry practices, Ryan says. Instead, lawmakers focused on pollution sources easy to clean up, such as pipes coming out of factories. Where we are now, she says, is deciding how to deal with those remaining sources of pollution.

In science, there is no doubt groundwater is connected to other water. In the courts, that isn't the case, Ryan says. A series of cases interpreting the language of the Clean Water Act and its regulations have set the stage for the current debate over how to view pollution moving from groundwater to surface water.

Recently, in *Rapanos v. United States*, the late Justice Antonin Scalia and three other justices said if there is no direct connection to surface water, then contamination of that waterway cannot be regulated under the Clean Water Act. Four justices on the liberal wing of the court say hydrology is the key, and if pollution is moved by some flow of water into a conventionally navigable waterway, then water all along that route is subject to regulation.

Justice Anthony Kennedy wrote a separate opinion concurring with the result in the Scalia group and siding against regulation in that case, but Kennedy had a different line of reasoning. He says pollution questions should be decided case-by-case; if a hydrologic connection between a tributary and surface water pollution can be proven, then responsibility for the pollution can be assigned. The same analysis could apply to groundwater.

Since that decision, however, lower courts have come up with other trains of thought that either generally link groundwater to surface pollution or reject any linkage. So the Hawaii case will become a way for the Supreme Court to suggest a uniform way to apply the law.

Because of the involvement of groundwater, it is possible this decision will reach into the onsite world, as well as the municipal wastewater world. Federal regulations now differentiate between large-scale and small-scale discharges of stormwater, Ryan says. Something similar might happen with onsite systems. For example, if small systems are treated differently, a single small onsite system on several acres might be exempt from regulation, but a subdivision in which every home is served by an onsite system might be considered a single source subject to regulation under the Clean Water Act.

Brian Perry, a spokesman for Maui County, laid out the ramifications he saw if Hawaii Wildlife Fund prevails.

"The county already has received an appeal from a South Maui condominium complex that seeks to avoid using recycled water because, in part, of fear of being exposed to a lawsuit," he tells the local news website *Maui Now*. "If the (9th Circuit) court's decision were allowed to stand, thousands of residents and businesses could be required to get National Pollutant Discharge Elimination System permits for recycled water irrigation systems, cesspools and septic systems."

It was the cesspool issue that occurred to Dennis Hallahan, P.E., who is technical director for Infiltrator Water Technologies and also chairs the Technical Practices Committee of the National Onsite Wastewater Recycling Association. A cesspool is essentially an injection well, he says.

"Suffolk County, New York, is the biggest example of this as well," he says. "They know they're bad, and yet they cannot get rid of them."

During the past couple years, the county and some of its municipalities passed new regulations banning new cesspools and requiring denitrifying onsite systems in order to reduce pollution of waters near the shore.

(continued)



The biggest barrier to solving issues like this is ourselves, Hallahan says, because we are all resistant to change. Experts have learned some practices such as injection wells are bad, Hallahan says, and we know there is a connection among bodies of water. Yet practices continue for 30, 40 or 50 years.

Recent changes to the Supreme Court are making predictions in this case more complicated. Justice Kennedy retired. Scalia died. There are new personalities on the court, and that changes the court's personality and clouds all the crystal balls.

## Florida

The family of a boy who drowned in a Jacksonville park septic tank has settled a lawsuit against a contractor involved in the incident. Amari Harley, 3, was at a family outing and fell into an open tank and drowned in October 2017. Adults at the outing had lost track of him, and a police search discovered his body several hours later. Sheriff's investigators later found keeping lids on the two tanks at Bruce Park was a continuing problem.

Attorney Kay Harper Williams, who represented the family, did not disclose the terms of the settlement with ERS Corp. The contractor was responsible for maintaining the wastewater system at the park. A separate suit against another contractor, A1 Septic Service Inc., was dismissed.

Williams says the family is still suing the city for its role. It was unclear if that case will go to trial or will be settled out of court.

## Massachusetts

A pair of lawsuits challenge a planned housing complex on the grounds that its wastewater system is inadequate. The 24-unit condominium complex is in South Dennis, a community near the northward bend of Cape Cod. Both lawsuits target the Dennis Board of Health and say it should not have approved a special permit for the project because the onsite system fails to meet all local and state standards.

One lawsuit is on behalf of neighbors. The other is on behalf of commercial fisherman Stephen White who harvests shellfish from a nearby pond that connects to the Atlantic Ocean. White says in the lawsuit that additional nitrogen from the project will be detrimental to the fishery, reports the Cape Cod Times of Hyannis.

His lawsuit says the pond is part of a watershed designated as nitrogen sensitive by the Massachusetts Department of Environmental Protection. The suit alleges nitrogen emissions from the complex's onsite system will be 11.21 ppm, while the health board has a standard of 5 ppm.

In other news, the Massachusetts Alternative Septic System Test Center will receive a \$25,000 state earmark to subsidize the installation of three more alternative septic systems in a pilot project. The Falmouth Water Quality Management Committee voted 5-2 in February to assign the funds, reports *The Falmouth Enterprise* newspaper.

Systems will go in watersheds close to meeting their total maximum daily loads and where municipal sewer is not recommended. Preference will be given to houses with three or more residents and to new construction.

## Tennessee

The state Legislature is considering a bill that would bring relief to people who want to build homes with septic systems but cannot because of a local moratorium on sewer connections.

The issue began in Hamilton County, which includes the city of Chattanooga. State concerns about discharges of raw sewage from the county wastewater plant (in one year, the plant released about 2 million gallons) led to a moratorium on sewer connections. But there is also a state law requiring people to connect to municipal sewer lines if they're available. Rep. Patsy Hazlewood, R-Signal Mountain, tells the Chattanooga *Times Free Press*

that as she understands the law: "If you're in an area that's served by a sewer where there's a moratorium, you can't get a permit for a septic tank prior to the sewer being available."

Hazlewood and Sen. Todd Gardenhire, R-Chattanooga, introduced bills in their respective houses to allow people to build and use onsite systems. Legislators began working on the bills' language so people would not be caught with a double expense — paying for an onsite system only to be told shortly thereafter that they must connect to municipal sewer because it was again available.

## Virginia

Residents of Albemarle, Fluvanna, Nelson and Amherst counties are eligible for grants that may cover between 50% and 80% of the cost to repair or replace a failing onsite system. Financial help is also available to have tanks pumped.

Money comes from a grant from the Virginia Department of Environmental Quality to the Thomas Jefferson Soil and Water Conservation District. The goal was to reduce the levels of *E. coli* in the Hardware and Tye rivers.

The assistance ends Dec. 31.

## Maine

There is another push in the Legislature to extend state inspection rules for onsite systems to properties along the state's lakes. State rules already require inspections of onsite systems along the seacoast when those properties are sold.

A similar bill passed the Legislature in 2017 but was vetoed by former Gov. Paul LePage.

Bruce Bates, director of the Maine Center for Disease Control and Prevention, tells the Committee on Environment and Natural Resources that more inspections are needed.

"Malfunctioning septic systems are a significant threat to public health and are often ignored by property owners," he says, according to the *Sun Journal* of Lewiston. "Proper disposal of sanitary waste is one of our most effective methods of protecting the public from the spread of viral and bacterial disease-causing organisms."

Andy Cashman, a Freeport attorney, tells lawmakers the Maine Association of REALTORS believes the state should not interfere because buyers are able to decide whether an inspection is needed.

## New York

The East Hampton Village Board voted to require denitrifying onsite systems for new single-family homes and for construction that increases a home's floor area by at least 25%.

The village's action follows those of Suffolk County and other county municipalities working to eliminate the cesspools that have provided wastewater treatment for decades. The county, which occupies the eastern tip of Long Island and includes the wealthy communities called the Hamptons, focused on cesspools because of nearshore water-quality problems that led to algae blooms.

## Minnesota

In a draft report, regulators say the state must address failing onsite systems and livestock waste in order to clean up the Minnesota River. Several sections are unsafe for swimming, and four sections of the river have been listed as impaired by *E. coli* since 1994.

The onsite part of the solution will require more frequent inspections of private systems and replacement of those out of compliance. Some systems consist of pipes that deliver untreated wastewater directly to surface water or onto the ground. ■



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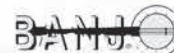
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Kate Zabriskie is president of Business Training Works, a Maryland-based talent development firm. Reach her at [www.businesstrainingworks.com](http://www.businesstrainingworks.com).

# Need Another Driver to Hit the Road This Summer?

Follow these 10 steps to improve your hiring process so you don't get stuck with someone who is a bad fit for your company **By Kate Zabriskie**

*I don't understand what happened. He interviewed so well. But it's six months later, and it's obvious. He's not a good fit.*

*We should have known better. She's just not detail oriented, and this job requires a lot of repetitive work. She's a creative, she's bored and she's leaving. I wish we had somewhere we could use her talents, but we don't.*

*Why do we have such a hard time getting on the same page? We rarely agree on who to hire when we have a new position, and from day one it seems as if only half of us are invested in a new hire's success. It's just sad. We could do better. We need to do better.*

When bad hiring happens, everyone suffers.

Finding the right person for a position is part art and part science. Everyone can improve their hiring success rate by following a methodical step-by-step process.

## **Step One: Know what you want.**

First and foremost, it's important to envision what work will look like with a new person. What will he or she do? How do you envision interactions looking and sounding? What do you expect in terms of quality and quantity of work? What temperament do you envision working best? Does the person need to be creative? Is the work basically the same each day? If this person is going to interact with people other than you, who are they, and what do they want from a new hire? Knowing what you want is essential.

## **Step Two: Create a robust job description.**

Once you are clear about the kind of person you want to hire, it's time to put pen to paper and craft a job description. When you list the duties the person will perform, if you begin each of your sentences with a verb and write in everyday English, you'll be well on your way to solidifying your expectations.

## **Step Three: Think about what it's going to take for someone to be successful.**

Experience and education are essential to success in some jobs, and for others, they're not. What you require can widen or narrow your applicant pool — potentially in ways that could hurt your chances of finding the right person. Think long and hard about what's essential before moving to the next step.

## **Step Four: Create a strong job ad.**

Just as candidates are selling themselves, you are selling your company and the position you are filling. An ad is your opportunity to attract talent.

**If none of the candidates is exactly right, again, think before you make an offer. The wrong person now is rarely as good as the right person a little later**

Spend time creating a strong job title, telling your company's story and briefly describing your essential requirements. If you have a great location, solid benefits or some other selling point, include that information too. Your ad should quickly paint a robust picture of why you're great, what you're looking for and why potential candidates should want to work with you.

## **Step Five: Promote your position.**

The type of job you want to fill should dictate where you'll promote it. Many options exist. Regardless of which you choose, it's important to have a plan and to understand how each promotional avenue works.

## **Step Six: Craft your screening questions.**

In tandem with writing your ad and promoting your position, you'll need to develop questions for screening candidates and interviewing those you eventually choose to meet. This step is essential for several reasons. First, it helps you follow a repeatable process. Second, it helps those who interview to ask relevant and legal questions. Finally, it ensures you are fair and can gather answers you can compare with relative ease.

## **Step Seven: Evaluate candidates, and set a phone screening schedule.**

Once your application process closes, it's time to review the qualifications of those who met your criteria and set a screening schedule. Depending on the number of responses you get, you may choose to screen everyone or rank candidates and screen the top group. Either way, you'll want to talk to applicants before you bring them in to meet in person. Phone interviews offer several benefits. They allow you to get an initial impression of a candidate without having people's physical appearance influence your thinking. They are also an efficient way to address some basic questions.

## **Step Eight: Determine who you will invite to interview in person, and prepare your interviewing team.**

After you've concluded your screening process, it's time to invite candidates into the office. Getting ready is essential. Both you and the prospective employees are auditioning. If you ask others at your company to participate,



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you should discuss the welcoming process, the interviewing order, the questions each person will ask, and how you will close your meetings with candidates and send them on their way. Leave little up to chance. You must have a plan.

#### Step Nine: Gather feedback, and rank the candidates.

When you've finished interviewing people, it's time to rank them. Because you've asked each person the same questions, this should be easier than it could be if you hadn't. If none of the candidates is exactly right, again, think before you make an offer. The wrong person now is rarely as good as the right person a little later.

#### Step 10: Make your offer.

Assuming there are no obvious roadblocks, it's time to make an offer. Be excited when you do, and recognize this is only the first step in effectively integrating an employee into the fabric of your organization.

#### PREPARATION COUNTS

So there you have it. Ten steps can make all the difference. Great hiring is about good discipline and patience. The better you are at establishing and following a strong inclusive process, the stronger your results will be. Now go find that candidate! ■

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# ‘I Straight-Up Love This Industry’

Andrew Gunia of A Advanced Septic Services takes great pride in continuing education and professional standards promoted by the Washington On-Site Sewage Association

*In States Snapshot, we visit with a member of a state, provincial or national trade association in the decentralized wastewater industry. This time we learn about a member of the Washington On-Site Sewage Association.*

**Name and title or job description:** Andrew Gunia, owner and chief executive officer

**Business name and location:** A Advanced Septic Services, Sumner, Washington

**Age:** 56

**Years in the industry:** 34

**Association involvement:** I joined the Washington On-Site Sewage Association in 1998 and have served in many board positions, but now I’m letting the young blood get in there while still maintaining a voice. My son Joshua is a vice president and my son Jeremiah is the operations and maintenance representative.

**Benefits of belonging to the association:** It gives us the ability to influence the industry. We also gain knowledge of proposed regulatory changes and can either influence them or mentally adjust for them before they happen. We’re recognized as an authority. And we can educate competitors because when somebody gets into the business, they don’t know a whole lot about the codes and laws so they’re out there doing things incorrectly. Therefore, we’re not competing on equal ground and the consumer can suffer from their lack of knowledge. These guys mean well; they just don’t know. So we’re really big on sharing and educating everyone. The end result is you’re making investments in these people, and consequently they end up being friendly competitors as opposed to adversaries.

**Biggest issue facing your association right now:** For a while, there was a lack of young guys coming into the industry, but in this robust economy, there are a handful of startups now. So far it’s been hard to get them to participate in the association. They join for the benefits but don’t get involved.

**Our crew includes:** We employ approximately 74 men and women — office staff, pumpers, installers. We also have maintenance providers. In the Northwest, we have what’s called the operation and maintenance program, which is a higher level of service than pumper. And we have a trucking division and have expanded into civil work — street improvements and plat work.

**Typical day on the job:** Starting time is 5:30 a.m. I provide oversight and presence for morning dispatch. I’ve worked myself out of day-to-day affairs, but I meet with my managers throughout the week. I deal with health department and county issues, participating on committees and working to



Andrew Gunia and 2019 Peterbilt 348 from TruckXpress with a 4,000-gallon aluminum tank and Masport pump. (Photos courtesy of A Advanced Septic Services)

keep out rules that don’t benefit anyone. I negotiate vendor contracts. I also provide what I call “janitorial” services for the company. There’s a statistic that says 2% of the people you can’t make happy no matter what. I don’t pay anyone enough to deal with those people, so I do it.

**Helping hands - Indispensable crew member:** Joshua Gunia, co-owner and vice president, and Aaron Peterson, chief operating officer, are responsible for the day-to-day operations. They’re trustworthy and willing to tell me everything people don’t want me to know. There’s a saying around here — everybody’s going to make a mistake today. But once it’s identified and owned and fixed,

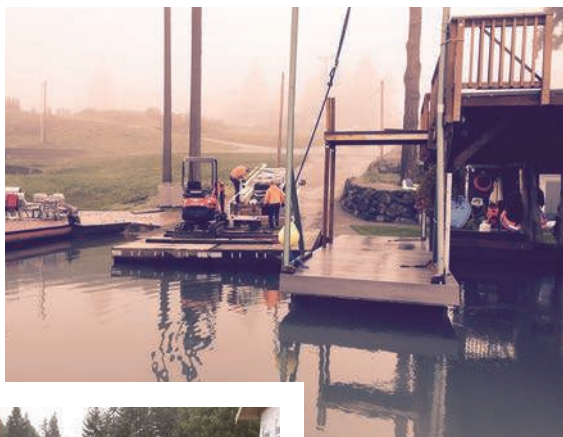
we get to move on. My job is to make it safe for issues to be brought forward — not yell and threaten, but educate and coach.

**The job I’ll never forget:** There was a home on Puget Sound that had no access from the street. The owners had to walk 500 feet on a dirt path to get home every day. When they needed a major repair to their septic system, we had to get special permission, access a boat ramp, and in low tide travel a half mile across the beach with several excavators, vacuum trucks and all our equipment. The project took a couple weeks.

Some equipment we could leave, but every day we had to be out before the tide came in. On top of that, it was a postage stamp-sized lot. We had to remove the decking and install a membrane filter with drip irrigation. One of our pump trucks got stuck in the sand while the tide was coming in. Fortunately one of our dump trucks was nearby and we were able to tow ourselves out before we made the news.

**My favorite piece of equipment:** My favorite is whatever is the right tool for the job — and that’s truly my answer. Growing up in the industry and watching some of my competitors, I’ve seen guys put too big of an excavator on a job, which can cause unnecessary damage to the property, or they use one that’s too small and risk the safety of their men. I invest in tools and equipment that enable us to do the best possible job while sustaining safety and quality and minimizing the cost to the consumer.





**Above:** The A Advanced Septic Services crew transports a Kubota U17 mini-excavator on a barge to install a septic system on a lakefront property with no road access.



**Left:** A crew from A Advanced Septic Services installs a new system from BioMicrobics at a Mexican restaurant.

But after that, our excavators are a preferred choice of equipment. We have 10 ranging from 4,000 to 70,000 pounds (Kubota and Caterpillar). I also like the Terralift (Terralift International Family of Companies) soil restoration equipment. When I saw that many times people were getting replacement drainfields when they didn't need to, we developed this concept of rehabilitating them.

**Most challenging site I've worked on:** A lakefront property that used to be a cabin got remodeled to a 5,000-square-foot house. When the primary drainfield failed, the previous owner had bootlegged the drainfield into what little area was left in the front yard. The new buyer moved in with a family of five and the system blew out in the first 30 days. There was nowhere to go with a repair drainfield and we couldn't purchase an easement from adjacent properties so we had to figure out how to work within the available space, which was occupied by a driveway and a very small front yard that had already been disturbed.

We collaborated with a local designer who was willing to go out on a limb and challenge the codes. Through BioMicrobics membrane bioreactors, we cleaned the effluent to a high level of treatment that actually met stormwater treatment levels. Once we got the county to agree to let us dispose of the effluent as stormwater, that removed many of the restrictive codes. We put the drainfield under the driveway because that was the only undisturbed soil on the property and used stormwater infiltrators because they have an H-20 rating, enabling us to pour a new concrete driveway on top of the drainfield, which health department code does not allow but stormwater code does. In the process, we reached out to the seller and — by carefully navigating through it without accusing him — suggested he'd be ahead if he was willing to contribute half the repair. And we helped the buyer understand he should pay half because he ended up with a new system with the latest technology. It was a win-win for both.

**The craziest question I've been asked by a customer:** Will this new system allow me to flush toilet paper?

**If I could change one industry regulation, it would be:** We're fortunate to work in an area where we have great relationships with all the disciplines in our business, including the regulators. We have been able to address the

issues as they come up. Sometimes it takes time. Right now I couldn't come up with a regulation I'd want to change.

**Best piece of small-business advice I've heard:** Two things: Know what not to do, and it's the journey and not the destination.

**If I wasn't working in the wastewater industry, I would:** I don't know. I straight up love this industry.

**Crystal ball time – This is my outlook for the wastewater industry:** Through education and regulations, we will continue to strengthen the profession, public health and the ability for the consumer to experience the best possible return on their system. I'm looking forward to better dewatering/treatment of septage as our technology continues to evolve. ■

- Compiled by Betty Dageforde

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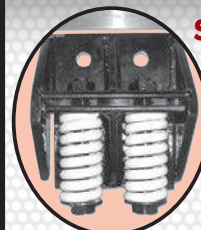


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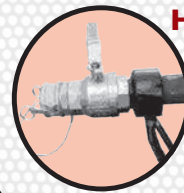
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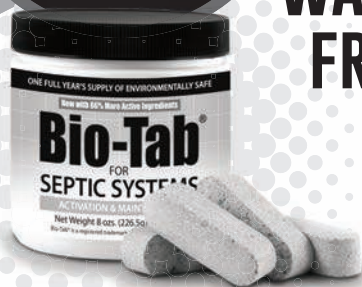
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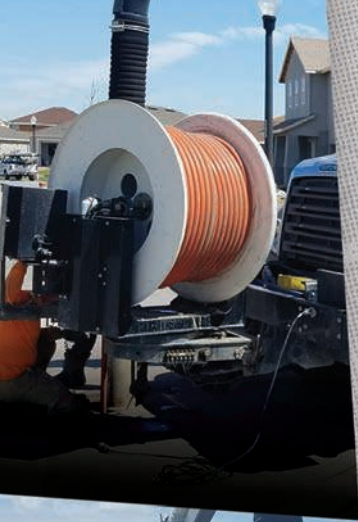


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Based in Racine, Wisconsin, Erik Gunn writes for magazines on business and other topics.

# Do Desperate Times Call for Desperate Measures in Providing Health Insurance?

Pumpers may be able to adapt concepts from the self-insurance model used by many larger companies to offer employees much-needed coverage **By Erik Gunn**

**A**s small and midsize employers continue to struggle to manage ever-increasing health insurance costs, business owners are well advised to reevaluate their plan designs. Since 2005, the average family's premium has increased over 60%, and the upward trend will likely continue. Employers' options are shifting more costs to workers, bearing the increasing costs themselves, or a mix of the two.

Faced with this challenge, midsize and smaller companies are increasingly looking to implement a partially or fully self-funded health plan. In a traditional medical plan insurance contract, the employer pays predetermined rates (premiums) to the insurance carrier, and in exchange, the insurance carrier takes on all claims risk for one year. In a self-insured arrangement, the employer, as plan sponsor, hires a company to administer the plan, but the administrator draws on the employer's general assets to pay the doctors and hospitals.

"Under a self-funded arrangement, there is more risk to the employer of a member having a large claim," says Karen Regini, vice president at Gorman Insurance Agency, a Connecticut-based brokerage firm. To mitigate this risk, the employer typically purchases stop-loss insurance, she explains. "It's essential to be protected in the event a policy holder has a serious, long-term health issue."

## STOP-LOSS PROTECTIONS

There are two major types of stop-loss insurance: specific (or individual) and aggregate. Under the former, once a single member's claims reach a predetermined annual amount (for example, \$50,000 or \$100,000), the stop-loss carrier reimburses the employer for the rest of the member's claims costs. Under aggregate stop-loss policies, the employer is reimbursed for the amount of claims (excluding any that are reimbursed under the specific policy) that exceed a predetermined amount for the year.

Determining which type of stop-loss coverage and what that amount should be is best left to the professionals, Regini says. "There are a lot of considerations that must be looked at including overall health of the policy holders, claims history, cost of the stop-loss policies and appetite for risk of the business."

Self-funding is not a new idea. In fact, 94% of employers with 5,000 or more workers do it, according to 2017 research by the Kaiser Family Foundation. Among those with 200 to 999 workers, 56% self-fund. It's far less common where there are fewer than 200 workers, with 17% of such employers self-funding, but that's up from 12% in 2008, and it continues to rise.

Why are more employers choosing to self-fund? According to Joe Nico-

letti, senior manager at New York-based Meridian Benefits Consulting, more small businesses are drawn to the concept of designing and controlling their own health plans. "When you design the plan," Nicoletti says, "it enables the business to do things like charging smokers considerably more than non-smokers, implementing wellness programs with incentives for healthy lifestyle decisions and providing strong incentives for plan members to utilize walk-in health clinics instead of ERs for nonemergency matters."

## GREATER TRANSPARENCY

Another benefit of self-funding, Nicoletti points out, are reduced taxes and fees. States typically tax insurance premiums, he says, but when you self-insure, the majority of those premiums are removed. Moreover, the Affordable Care Act introduced new taxes on insurance carriers, who pass along increased expense to employers. While self-funded plans are subject to some ACA taxes, the tab is less than with an insured plan. Finally, self-insuring removes some carrier risk charges.

“While self-funding is not necessarily a good fit for every company, it's smart to consider it and evaluate the risks versus the rewards in implementing a health plan that works well for both employer and employee.”

**Joe Nicoletti**

insurance, self-insurance is just too risky," Regini says.

Even with the protection of stop-loss insurance, claims still fluctuate, and the fluctuations are more pronounced with smaller groups. A small handful of hospitalizations, or even just one, can impact claims totals, and for some small businesses, the risk is simply too much to stomach.

Lack of claims data can be a challenge. "It's difficult to assess the viabil-





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ity of self-funding if you cannot access historical claims from your insurance carrier or if the data set is too small to make credible predictions,” Regini says. “Those are common challenges for smaller employers.”

When a company self-insures, it must become much more involved in the health plan, particularly regarding banking arrangements, compliance requirements and managing plan design, and thus the administrative burden becomes greater.

## REVIEW CLAIMS HISTORY

If a business determines it wants to explore self-funding, the usual starting point is to evaluate the claims history. In reviewing claims for the last few years, attention needs to be on whether there have been large claims (say, more than \$50,000 or \$100,000). “You need to model it out and see what your costs would have been if you had hired a third-party administrator and paid for stop-loss during those years,” Regini advises. She notes that a rule of thumb is that companies can expect to have a high claims year every five years, but it’s advisable to track savings over time.

Every organization’s appetite for risk is different, and this needs to be assessed as well. Health benefits professionals note that if a business lacks strong cash flow or sometimes struggles to make payroll or pay vendors on time, self-funding is probably not a wise option. Regini tells her clients that if they envision being worried about an impending large claim throughout the year, then it’s probably not worth the angst.

As small or midsize companies continue to grapple with health care costs and regulatory requirements, best practices used by larger companies are worth considering. “While self-funding is not necessarily a good fit for every company,” Nicoletti says, “it’s smart to consider it and evaluate the risks versus the rewards in implementing a health plan that works well for both employer and employee.” ■

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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](mailto:editor@pumper.com).

# Defending Septic Waste as a Soil Amendment

**Land application of septage sometimes gets a bad rap from neighboring property owners, but soil science proves it's a beneficial disposal method** By Jim Anderson, Ph.D.

I continually get questions from homeowners about what happens to the contents of their tank after it has been pumped. As we in the pumping industry are aware, there are several ways to handle septage depending on where the residence is located. If it is located near or in a large metropolitan area, chances are septage is transferred to a publicly operated wastewater treatment plant, a private septage management facility, landfill after dewatering or land application.

Where I reside, the most common methods of septage handling are land application and discharge to a metropolitan wastewater treatment plant. When discharged to a treatment plant, septage is treated and managed as biosolids along with the municipal wastewater and sludge treatment.

Land application occurs in rural areas far away from a municipal treatment plant or areas where the small community wastewater treatment plant manager is concerned that introducing septage will overload or upset the system. The reason for this concern is well placed because septage has a very high BOD (or biological oxygen demand), on average 6,400 milligrams per liter. If it is simply dumped into the waste stream, this can overwhelm the biology in the treatment process, and it takes a long time to fix. There are ways this can be mitigated by controlling when and where septage is introduced to the plant's waste stream.

If you have an underutilized nearby treatment plant, it may be possible to strike a deal for you and the operator through dumping fees to the plant. Where there is no nearby treatment plant or when the local plant is at or above capacity, land application is a great option.

## GOOD FOR SOIL HEALTH

Land application usually is connected to crop production, either through an agreement with farmers to accept the product or often applied to land the pumper owns and manages for crop production. When septage and other biosolids are applied correctly to land, they are very good for crop yields and soil health.

Land application is subject to the federal 40 CFR Part 503 requirements and applicable state requirements. If you are land-applying, it is your responsibility to know and follow these rules. From the federal rules perspective, there are recordkeeping requirements in terms of the location and amount of septage applied, how pathogens were reduced, and how vectors (insects, birds, etc.) and odors are managed. In terms of total amounts applied to a specific property for crop production, it should be done in the context of meeting the crops' nutrient (specifically nitrogen) requirements as

The takeaway message for us is that land application is a legitimate crop-production practice that, when done right, can have large benefits to the public, the farmer and the environment.

part of an overall nutrient management plan. Septage typically also has low levels of trace nutrients, such as cadmium, that can pose problems.

Since I am a soil scientist by training, I pay attention to research done on land application of biosolids for crop production. Recently I reviewed a long-term study (eight years) of applying biosolids to wheat land in the state of Washington. The study compared land application of biosolids to commercial fertilizer, with positive results. Here are a few points from the study and about biosolids and septage in general.

As I mentioned above, septage should be applied at agronomic best practice rates of nitrogen for the crop being grown. Since the primary nutrients such as nitrogen in septage are in their organic forms, the nitrogen is not immediately available for plant uptake. It must be biologically converted (mineralized) first. A certain amount is released during the first year, with decreasing amounts in succeeding years. This is where having a nutrient management plan is important because it accounts for residual nitrogen in succeeding years and adjusts application rates to keep the amount of nutrients supplied within the best agronomic practice.

Residual and slow release means biosolids and septage can provide nutrients over a longer time period, which allows the crop to use them more efficiently, resulting in less nutrient loss. This is good for the producer from a cost of fertilizer input perspective and good for the environment because the nutrients are not lost to groundwater or surface waters, where they can cause environmental and human health problems.

## CONSERVATION TILLAGE

Another major plus for land application of biosolids is that they provide stable soil organic matter. Organic matter is one of the primary soil constituents that hold soil particles together, helping to maintain soil infiltration and permeability capacity. And holding particles together makes the soil less susceptible to water and wind erosion. Keeping soil in place ensures a good





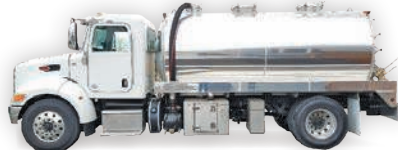
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media for plant growth and sustained yields into the future. Organic matter additions improve the overall soil quality, increasing water-holding capacity, and the exchange capacity to supply essential micronutrients.

The study looked at conservation tillage in addition to the fertilizer comparison. Conservation tillage was used to help reduce erosion potential and maintain organic matter levels. Over the eight years of the study, there were no differences in yield between the commercial fertilizer and biosolids and no difference between conservation tillage and more conventional methods. The biosolids areas did produce more wheat straw, which can help protect the soil surface under conservation tillage, and some eventually is incorporated as organic matter into the soil.

The conclusion of the study was: "Use of biosolids combined with low-disturbance conservation tillage is an environmentally sound practice for dryland wheat production." The takeaway message for us is that land application is a legitimate crop-production practice that, when done right, can have large benefits to the public, the farmer and the environment.

These types of studies are important to us because they provide background information that can be used in discussions with the public, government officials and others who question why we use land application. In my view, this is another in a long list of studies that demonstrate what we do is very important to the soil, environment and public. ■

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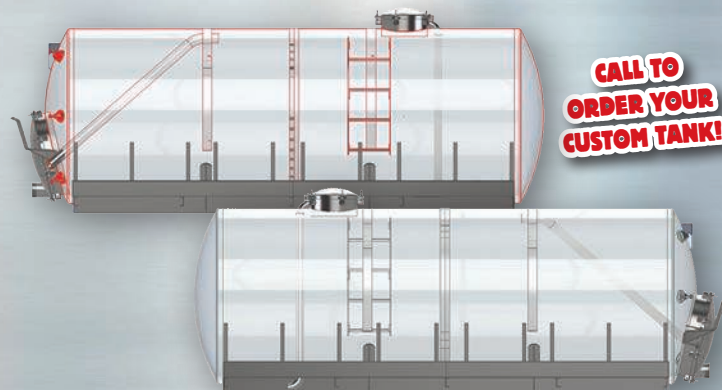
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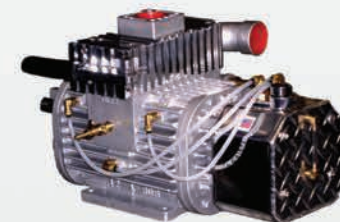
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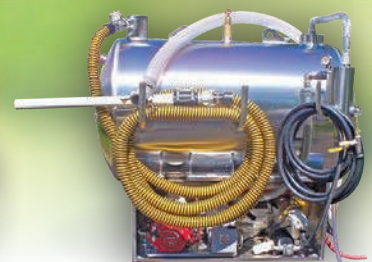
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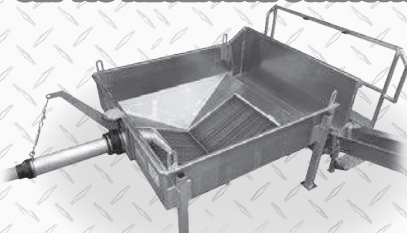
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### MEGA SCREEN 600 PORTABLE RECEIVING STATION



- No Other System Can Match Our GPM Capacity
- 40.5 Sq. Ft. Of Screen
- Off-Loads At Up To 1000 GPM
- 6" Offload Through Dual Fan Spreaders
- Optional Two 4" Hoses - Offload 2 Trucks Simultaneously

### MAXI SCREEN 400 PORTABLE SEPTIC RECEIVING STATIONS



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- Screens That Really Work
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Patented Dual Screen Design

### TRUCK TOW BEHIND PORTASCREEN SPREADER



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- Doubles As Screener Spreader & Mobile Septic Receiving Station
- Clean Up Your Land Application Site
- Never Hand Pick Trash Again

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500 GPM  
Patented Dual Screen Design

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# Septage Disposal Management

By Craig Mandli

## CENTRIFUGES/SEPARATORS

### Centrisys/CNP centrifuge

Centrifuges from **Centrisys/CNP** apply 3,000 g (G-force) to dewater solids while accelerating the liquid end sedimentation of fine particles, resulting in drier solids and cleaner discharge water, which may reduce disposal costs. With a hydraulic back drive system, a centrifuge delivers high torque and low horsepower to reduce moisture in an energy-efficient manner. The three-phase centrifuge divides feed into solids, water and FOG from the grease-trap or other bio-diesel production sources. Inside the centrifuge, lighter oil separates from the water and discharges through an adjustable nozzle, while the heavier solids dewater and discharge from the opposite end. Centrifuges are available with flow rates of 5 to 700 gpm and can be a stationary skid-mounted unit or a mobile trailer. **262-654-6006; [www.centrisys.com](http://www.centrisys.com).**



## DEWATERING EQUIPMENT

### Bright Technologies, Division of Sebright Products, 0.6-meter skid-mounted belt filter press

The compact, 0.6-meter skid-mounted belt filter press from **Bright Technologies, Division of Sebright Products**, has stainless steel frame and roller construction, as well as radius wedge zone and wing roller for sludge dewatering. Components include a sludge pump, polymer system and wash-water booster pump. Options include a sludge flowmeter, air compressor and discharge conveyors. The compact walkaround skid design can be utilized in as little as a 20-by-10-foot floor area. The Boerger rotary lobe sludge pump has a maintain-in-place design. A Gould's belt wash booster pump can handle small solids and operate with recycled water from the process. Allen-Bradley controls and touch screen integrate the components to make an operator-friendly design that is intuitive to operate, according to the maker. Cake solids of up to 35% can be achieved. Rates of 25 to 50 gpm (depending on biosolids type) help in small applications or when a processor has outgrown dewatering containers. **800-253-0532; [www.brightbeltpress.com](http://www.brightbeltpress.com).**



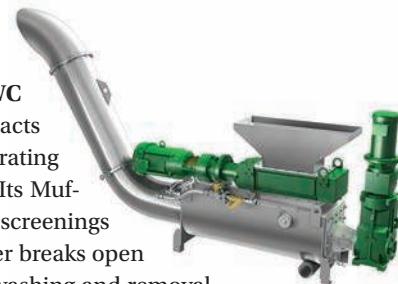
### In The Round Dewatering horizontal drum

The horizontal biosolids dewatering system from **In The Round Dewatering** has a stainless steel drum with perforated plastic tile lining. The drum is mounted on a roll-off frame for easy transport and unloading. Water trays allow containment of discharge water. An 18,000- to 25,000-gallon batch is mixed with polymer before being filtered in the rotating drum, driven by a 1/2 hp variable-speed electric motor with a heavy-duty chain and sprocket. The turning eliminates crusting and wet pockets to produce uniform, consistent results. The dewatered material dumps easily, and the drum is self-cleaning. **317-539-7304; [www.itrdewatering.com](http://www.itrdewatering.com).**



### JWC Environmental Monster Wash Press

The **Monster Wash Press** from **JWC Environmental** cleans and compacts the discharge from screens, separating water and organics from the solids. Its Muf-fin Monster grinder preconditions screenings before entering the press. The grinder breaks open rags, plastics and trash to promote washing and removal of soft organics. The rotor paddle in the wash zone agitates the material to enhance water penetration throughout the debris for better removal of organics from the solids. Organics are washed back into the wastewater treatment process, while the solids are compacted into a dry, less-odorous solid plug. The press is designed for easy maintenance. The rotor and field-replaceable screen can be removed from the top of the unit, minimizing the clearance space needed around the unit during maintenance. A grinderless version is available. **800-331-2277; [www.jwce.com](http://www.jwce.com).**



## DEWATERING/BYPASS PUMPS

### Boerger BLUEline Rotary Lobe Pump

The **BLUEline Rotary Lobe Pump** from **Boerger** is a self-priming, valveless, positive displacement pump used to convey viscous and abrasive materials. There are 21 pump models in six series with pulsation-free operation, fully reversible rotation, dry-run capabilities and flow rates up to 7,500 gpm. The pumps are stable and wear-resistant with a maintenance-in-place design that allows for all wetted parts to be easily replaced through the front cover without the removal of pipe or drive systems. **612-435-7300; [www.boerger.com](http://www.boerger.com).**

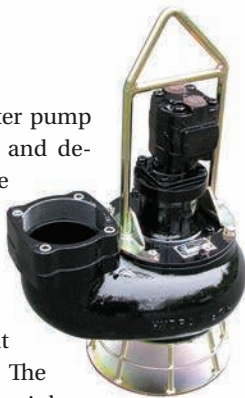




## DEWATERING/BYPASS PUMPS

### Hydra-Tech Pumps S6VAL

The **S6VAL** 6-inch hydraulic submersible wastewater pump from **Hydra-Tech Pumps** is lightweight, compact and designed to pass large solids and stringy materials. The top-discharge pump is designed to fit through a 21-inch manhole to be convenient to use for sewer bypass jobs. It handles hydraulic inputs up to 30 gpm at pressures to 3,000 psi and will continue to move water at heads up to 70 feet. Beyond water, it can handle semisolids measuring up to 5 inches. The pump volute is cast aluminum, and the impeller is stainless steel. The lighter aluminum aids in preventing lifting problems and injuries. Combined with HT50 to HT75 power units, it is capable of flows up to 1,600 gpm. **570-645-3779; www.hydra-tech.com.**



### E-Pak Round Bottom Tarp Style Unit

The 25-cubic-yard **Round Bottom Tarp Style Unit** from **E-Pak** effectively handles all types of sludge with its clean dump round bottom design. A sealed door on this water-tested unit seals contaminants in, complete with an easy-to-use roll-top tarp, placards and easy-to-use door design. **800-235-1632; www.epakmanufacturing.com.**



### Park Process Sludge King

The **Sludge King** dewatering container from **Park Process** 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 that fill the void in the container bottom where water could collect. A nonstick surface promotes easier dumping of cake from the container. Two center-wall filter panels offer additional filter area, translating into drier cakes and faster dewatering times. The inlet manifold has individually controlled ports for distributing the incoming flow equally to each side of the center-wall filters. Units are offered in five capacities. **855-511-7275; www.parkprocess.com.**



## DIGESTERS

### Bionetix International BCP12

**BCP12** anaerobic digester from **Bionetix International** contains facultative anaerobic bacteria with a total count of 5 billion CFU/g that can digest sludge aerobically and anaerobically. They can be used for reduction of mass and volume of sludge in aerobic, anaerobic and facultative lagoons. Bioaugmentation with BCP12 can increase the efficiency of overloaded treatment systems by breaking down proteins, carbohydrates and lipids mostly through hydrolysis and further through acidogenesis. In addition, bioaugmentation reduces unpleasant odors. It also increases the production of biogas, increasing wastewater treatment plant productivity. It is applied to the primary digester, and application rate is based on digester volume. **514-457-2914; www.bionetix-international.com.**



## ROLL-OFF CONTAINERS

### AQUA-Zyme Disposal Systems ADS

The **ADS** 30-yard open-top roll-off dewatering unit from **AQUA-Zyme Disposal Systems** can be filled with 22,000 to 25,000 gallons of biosolids at 1% to 2% solids in about two hours. After draining for 24 hours, the unit can be picked up using a standard-capacity roll-off truck and transported for solids disposal. Sludge volume can be reduced by 80% with reductions to 98% in BOD, COD, FOG and TSS. Effluent is clear, the unit has few moving parts, and the size of filter media can be selected according to job requirements. Standard equipment includes a roll-over tarp system; side, floor and center screens; 1/4-inch floor plate; 7-gauge side plates; four door binder ratchets; eight drain ports; two inlet ports; and a long-handle scraper. Units are also available in a 15-yard size. **979-245-5656; www.aqua-zyme.com.**



### Pik Rite self-contained roll-off unit

**Pik Rite** self-contained roll-off units are fully operational at the pumping site without a chassis. The heavy-duty front platform holds the user's choice of pump and a Kohler 25 hp electric-start engine. The tank is set up with a level indicator, rear sight eyes, 36-inch top manway, 20-inch rear manway, 3-inch intake with an internal 3-inch standpipe, and a 4-inch discharge. The low-profile, 12-inch primary shut-off is paired with a 10-gallon secondary shut-off. Spray-on protective liner under the hoses protects from scratches and promotes durability. Work lights and a safety beacon are mounted on the rear tank head, and a ladder is mounted on the side. Polished aluminum hose trays and custom paint finish are standard. Other customizable options are available. **800-326-9763; www.pikrite.com. ■**







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Contact: Lisa Nicoll

Email: [cpow@cpow.net](mailto:cpow@cpow.net)

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Email: [atevik@cals.arizona.edu](mailto:atevik@cals.arizona.edu)

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## CASE STUDIES

# Septage Disposal Management

By Craig Mandli

### CASE STUDY

## Press unit helps streamline FOG receiving

**Problem:** Napa Sanitation District in California struggled with a bucket-type screening system for its FOG receiving and injection system. Debris was captured by the strainer, which clogged it frequently causing a halt in the process. Manual unclogging was nasty, hazardous work.

**Solution:** The **Strainpress** from **HUBER Technology** was used to streamline operations by removing debris from the waste stream in an efficient, automated manner. It operates by pressing unscreened liquid through a screening zone where the coarse material is retained on a cylindrical screen. The debris is then stripped off by a coaxial screw and pushed through to the press zone where the material is extensively compacted and dewatered. The screw operates automatically when the pressure sensors detect a differential pressure caused by screen surface blinding. The compacted material is then pressed through a gap around a hydraulically operated pressure cone, which closes part of the pipe end and builds up counter pressure. The counter pressure of the cone is automatically regulated inversely proportional to the screw motor load.

**Result:** The Strainpress helped the district maximize its investment in the FOG receiving and injection system by improving operations, ensuring the protection of downstream components and enhancing the production of a valuable, revenue-generating asset. **704-990-2053; [www.huber-technology.com](http://www.huber-technology.com).**



### CASE STUDY

## Screening system helps district get on top of septage waste

**Problem:** The West Montrose (Colorado) Sanitation District required septage-receiving equipment that needed the least amount of maintenance and could be operated with minimal staff time involved. The top complaint with automatic screening equipment was the amount of downtime and costs associated with maintenance issues.

**Solution:** The district chose **ScreencO Systems** equipment, a system built and designed by operators who struggled with automatic screening equipment. It has few moving parts and requires minimal maintenance. The dual screen size allows for rapid dumping without compromising screening ability.

**Result:** Since operation began Oct. 1, 2017, the district has received 1,283 loads and processed 1,476,135 gallons of septage through the system. The added Grit Eliminator has helped remove roughly 8.175 tons of grit. "By eliminating the grit from the septic waste, we are seeing less wear and tear on our facility pumps and less maintenance costs from cleaning out basins, pits and pipes," says Andres Garcia, district manager. "We first intended our receiving station to be an alternative to land application, but we quickly found that most haulers prefer to dump at our facility. Their justification being that with the ScreencO System, they can haul approximately two to four additional loads per day due to the ease and practicality of the facility." **208-790-8770; [www.screencosystems.com](http://www.screencosystems.com).** ■







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## LOADMAXX ONBOARD SCALE REDUCES RISK OF RUNNING OVERWEIGHT

Overload fines can mean the difference between turning a profit and taking a loss on a given day for a pumper. That is especially true in Northern climates, when load limits fluctuate season to season. That's why it's important for haulers to closely monitor the weight of their fully loaded rig. The **LoadMaxx** weighing system from **Air-Weigh Scales** can help do that.

LoadMaxx allows drivers to view all weights on an in-cab display, or with the LoadMaxx app, weights can be viewed on any smart device. In addition, the scale can integrate with many third-party onboard software solutions. Its precision pressure sensors for weight accuracy can be installed on air-ride or mechanical suspensions. The driver can view individual group axle weights, net payload and gross vehicle weight in real time. It is an easy install, as the unit's deflection sensors are less invasive than load cell technology.

"You can complete the install in a matter of hours, allowing more manageable installation of scales on your entire fleet," says Jack Ewing, Air-Weigh Scales' East Region refuse sales manager. "With this, the operator has the information necessary to load to full capacity every time. That means more time is spent loading and working, and transportation time is optimized."

The LoadMaxx Trailer scale offers an icon-based touch-screen display; built-in LED alarm lights; dual-point calibration and high precision pressure sensor for weight accuracy; compensation for temperature and altitude change; PIN protected calibration; and English, Spanish and French language options. A ComLink option enables drivers to view steer, drive, trailer, gross vehicle weight and net payload on an in-cab display. Information can also be sent to the fleet's management software via the data communication interface. When used with the Bluetooth-compatible unit, weight data is also available on any smartphone or tablet through Air-Weigh Scales' LoadMaxx app.

"In addition to eliminating overload fines, vehicle maintenance is minimized and liability is reduced by not running overloaded," Ewing says. "Vehicles are less likely to be involved in an accident when they are properly loaded because the vehicle's components — including brakes, suspensions and engines — will be better equipped to perform to spec."

A ComLink cable is also available as a plug-and-play upgrade even after installation of the LoadMaxx tractor and trailer base model. The scale provides the option to store up to four manual calibrations for multiple axle configurations.

**888-459-3444; [www.air-weigh.com](http://www.air-weigh.com).**

*in the*  
**SPOTLIGHT**  
By Craig Mandli

## SCREENCO SYSTEMS MEGA SCREEN 800

The Mega Screen 800 septic receiving station from Screenco Systems includes 51 square feet of screening area, fed by a 6- or 8-inch inlet with dual-fan spreaders that deflect waste down onto the screen, making the front screen almost self-cleaning. It processes up to 1,000 gpm of wet well or septic waste with an 8-inch cam outlet fitting. The Dual Screen Design is nonmechanical and uses gravity to separate trash from the waste stream. The standard unit features all-aluminum construction with stainless steel, 3/8-inch-gapped bar screens on opposing angles and meets the Ecology 503 Regulations for septic screening. **208-790-8770; [www.screencosystems.com](http://www.screencosystems.com).**



## RIDGID FLEXSHAFT DRAIN CLEANING MACHINE



The FlexShaft drain cleaning machine from RIDGID cleans 1 1/4- to 4-inch residential and commercial pipes up to 70 feet. The lightweight and fully contained machine is used in conjunction with specialized accessories designed for clearing grease, sludge, small tree roots and soft blockages with less mess and enhanced speed. The FlexShaft utilizes powerhouse chain knockers that expand to the size of the pipe to quickly

clear the entire circumference. The chain knockers are connected to a flexible, nylon-sheathed cable housed in a fully enclosed drum and powered by a cordless drill attached to the drive shaft. **800-769-7743; [www.ridgid.com](http://www.ridgid.com).**

## ISUZU COMMERCIAL TRUCK OF AMERICA ROAD-READY KNAPHEIDE TRUCK BODIES

Isuzu Commercial Truck of America announced the availability of new road-ready truck bodies for select N-Series trucks. The Knapheide bodies include the KUVcc, dump and landscaper models. The 11-foot KUVcc utility body is available for 109-inch wheelbase NPR and NPR-HD gasoline-powered trucks and is made from 20-gauge galvanized steel. The 11-foot dump body is available for 109-inch wheelbase N-Series standard cab trucks with gross vehicle weight ratings of 14,500 pounds and higher. It has an electric hoist powered by a 12-volt pump with power up and down. The landscaper body is available for N-Series standard cab models with 109- and 132.5-inch wheelbases with GVWRs of 14,500 pounds and higher. It will also be available for 150- and 176-inch wheelbase N-Series crew cab models with 14,500 GVWRs and higher. **866-441-9638; [www.isuzucv.com](http://www.isuzucv.com).**



## COXREELS SWIVEL OPTIONS FOR THE 1125 SERIES



COXREELS offers two upgraded swivel options for the 1125 Series. The medium pressure (up to 4,000 psi) and high pressure (up to 5,000 psi) can both be factory installed on the standard 1125 Series.

The medium-pressure swivel is precision machined from solid brass and features upgraded wall thickness, as well as upgraded seals and backup rings. The high-pressure swivel is machined from high-strength steel and nickel plated for corrosion resistance. This ball bearing swivel features maximum flow and enhanced load-bearing capabilities. **800-269-7335; [www.coxreels.com](http://www.coxreels.com).** ■




## Isuzu celebrates 35 years in the US

Isuzu Commercial Truck of America is celebrating its 35th anniversary of Isuzu trucks in the U.S. The company was founded on March 21, 1984, and the first Isuzu truck arrived in the U.S. in November of that year. The KS22 model had no tilt cab and was powered by an 87 hp engine. The current Isuzu lineup includes class 3 through class 5 N-Series trucks and the class 6 FTR. Available power plants include diesel and gasoline choices, as well as the first CNG- and LPG-capable engine offered in an LCF truck.

## Custom Truck One Source forms partnership with EZ Trac

Custom Truck One Source has entered into a strategic partnership with EZ Trac. The partnership positions Custom Truck One Source as an exclusive authorized dealer and installer in the U.S. Through the relationship, customers will have access to EZ Trac at all Custom Truck One Source locations in the U.S., as well as Custom Truck One Source's service network. ■



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**Start your own septic service business in Florida!** For more information call 931-248-1284. (PBM)

Septic business for sale, New York watershed. Includes trucks and equipment. 20+ years with same phone number. \$250,000. hacksaw12481@gmail.com (PBM)

Well-established Southern California plumbing, drain and septic business. Over 35 years in business. Included in the sale: 2019 vacuum truck, 3 late-model cutaways and a F-350 construction body set up for septic installs and repairs. All of these vehicles have exceptionally low miles and never travel more than 20 miles from our shop. Also included is a trailer mounted US Jetter with 330 original hours, new Anderson backhoe trailer with a 2007 John Deere backhoe with low hours, new dump trailer and a septic tank install trailer. All work trucks are fully stocked and need nothing. All inventory and other equipment included to make life easier. Willing to sell corporation with contractors license. Very profitable company with no debt. For more information call 661-722-8844. (P07)

If you're interested in selling your grease trap service, used cooking oil or other non-haz wastewater disposal business, we'd like to hear from you! Liquid Environmental Solutions is the nation's largest liquid waste management company - providing service across the USA. Sell your business and enjoy retirement or join us - we can always use great team members. Contact Brian Bidelsbach: brian.bidelsbach@liquidenviro.com or call 602-206-3636. (PBM)

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2016 Dodge 5500 4x4, 950-gallon waste/300-gallon freshwater. 2 large trailers. One trailer holds 15 toilets the other holds 14. One small trailer that holds 4 toilets. 2016 John Deere tractor with bush hog and front-end bucket. 200 portable toilets. Business grossed \$140,000 in 2018. Asking \$260,000 negotiable. For more information, e-mail Jerandan.porta.john@gmail.com (P06)

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**www.RooterMan.com.** Franchises available with low flat fee. New concept. Visit website or call **1-800-700-8062.** (PBM)

## COMPUTER SOFTWARE

FreeServiceReminderSoftware.com, FreeServiceDispatchSoftware.com, FreeRouteManagementSoftware.com. (P06)

## DEWATERING

Portable septic and grease receiving stations, dual-screen design. Screens that really work - simple, non-mechanical. Set it up anywhere. 208-790-8770 screencosystems.com sales@screencosystems.com (PBM)

## DRAINFIELD RESTORATION

Terralift, 1995, Kohler engine, Atlas Copco compressor. Unit runs. Located in Idaho. \$4,500 OBO. 208-955-8514. (P06)

New and used terralifts for sale starting at \$20,000 used and \$38,000 new. Financing available. Call John at AerraTech 413-298-4272. (PBM)

Terralifts - New and Used. Financing available for qualified buyers. For more information call Dick Crane 800-223-2256 or aalco@tds.net for electronic brochure. www.youtube.com/watch?v=t8ApRU0asnY (PBM)

## HAZARDOUS WASTE UNITS



**1997 Ford** with Cusco 3,200-gallon DOT certified dump and door liquid vacuum truck. Cat engine with Moro M9 vacuum pump. Runs and pumps excellent. .... \$37,500

**KLM Companies**  
**617-909-9044** PBM

2009 Peterbilt/Keith Huber Dominator 3,000-gallon carbon-steel DOT 412 hazardous waste dump and door with Fruitland 500 vacuum pump. 300 hp. Air-ride rears. In very good condition. \$82,500 KLM Companies 617-909-9044 (PBM)

1984 Mack R686ST with a 1999 Keith Huber Dominator 3,000-gallon carbon-steel, dump type, DOT, vacuum tank unit. (Stock# 1165C) **www.VacuumSalesInc.com (888) VAC-UNIT (822-8648)** (PBM)

1997 Ford cab and chassis with a 3,500 U.S. gallon, carbon steel, DOT-certified vacuum tank. Dump type with full-open rear door and a Masport HXL400WV vacuum-pressure pump. (Stock# 1829V) **www.VacuumSalesInc.com (888) VAC-UNIT (822-8648)** (PBM)

## HYDROEXCAVATING



**2008 Vactor 2100** combo truck with 2006 Aries mainline sewer inspection system in 1995 GMC 3500 van. Truck has 15-yard debris tank. 143,000 miles. Call for more information and pricing.

**Ron Roach 309-286-7216**  
**or 309-854-3399, IL** P06



**2012 Ditch Witch FX60**, 425 hrs., 800-gallon spoil tank, 200 fresh. 928cfm 3,000psi 5.5gpm power washer, 7.2gpm 2,500psi hydraulic tool pack. 60hp 3.3 Cummins. .... \$48,500

**John 740-357-1208, OH** P06

## JET VACS



**2001 Mack Vactor 2115:** 100gpm rod-der, 800' hose reel, 1024 Roots blower, hydro kit. Only 3 years on rebuilt Cummins ISX600 engine. 318k miles, 16k hours on this well-maintained, work-ready truck! .... \$55,000

**Call 248-345-3993, MI** P06

2016 Vac-Con used combo, hydro & industrial vacuum trucks for sale! 2007 Vac-Con combo also available. Call Russell at Southern Vac for pictures & great pricing! 803-465-1351 (P08)

1999 Vactor Sterling L9501, 19,800 miles. Roots 824 PD blower 16". 10-yard debris body (tank partially cavitated). 80gpm jetter pump with 1,200-gallon freshwater tank. Automatic Allison transmission. \$10,000. 706-798-8080 (P06)

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**The Industry's Most Versatile Trailer Jetter!** Model# HJ2TA1030HW, tandem axle trailer, 35 hp Vanguard 10 gpm @ 3,850 psi, 325-gallon water tank, 300' hose, General pump. **Fully loaded!** List \$36,995. On sale for \$32,995.

**800-213-3272,  
www.hotjetusa.com**

PBM

## JETTERS-TRUCK



**International 4900** jetter truck. Very low miles, pre-emissions truck with automatic transmission. Well taken care of. Truck will be fully serviced. Shipping and financing available. Central Arkansas.

**Caleb 281-914-1192**

P06



**2015 Ford F450 Super-Duty** jet truck, 6.7L diesel-automatic, 116,097 miles, American Jetter-skid 1740, 600-gallon water capacity, 4,000psi, 65hp, 17gpm, twin engines. .... \$40,900

**Frank 978-758-6265, MA**

PBM

## LEASE/FINANCING

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## PORTABLE RESTROOMS

100 two-tone grey/silver PolyPortables Integras. All excellent, rentable condition. Will not last! \$250 per unit. 800-634-2085 (P08)

4,000 used portable restrooms for sale. Updating our fleet to the new Zenith portable restrooms from Sansom Industries. Prices range from \$125 - \$325. Call Jim Reisinger @ 314-776-4000. (PBM)

## PORTABLE RESTROOM HAULERS

Two (2) portable restroom haulers for sale. One trailer is an Explorer 10-unit hauler and the other is a 12-unit flatbed trailer — great for hauling regular or ADA units. Call/text Jordan 402-689-9496 for pics and prices. (P06)

## PORTABLE RESTROOM TRAILERS

2-toilet trailers, 4x8 (11 metal & 6 PolyJohn galvanized, 2010) \$200 each! Great for pulling around on jobs! For more information please call 573-473-4093 and ask for Don. (P07)

2017 Satellite ADA Plus 2, 300 waste, 105 fresh. Hot water, stereo, a/c, heat. \$39,500. <https://satelliterestroomtrailers.com/models/6x19-ada-plus-2/> For more information, email [bo@thelovelyloo.com](mailto:bo@thelovelyloo.com) (P06)

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

## PORTABLE RESTROOM TRUCKS

**ONE MORE LEFT!** 2014 Hino 195 tank truck. Best Enterprises stainless steel vacuum tank - 750 waste/300 water. Truck is in perfect condition and ready to work. Has Conde PTO-driven pumps and 200,000 miles. \$44,900. 718-634-2780 (P06)



**2013 International 4300 M7**, 4x2, only 83,643 miles. Pacmac engine, auto. transmission. 1,700-gallon waste, 300-gallon freshwater, Masport HXL4 vacuum pump. Dual service with single drop, aluminum toilet bumper. \$68,500

**Contact Larry Moore 903-593-0400 or 903-930-3542, TX**

P06



**2014 International 4300 SBA:** This white 4x2 mid-sized portapotty service truck has 188,591 miles and is in ready-to-work condition. GVWR 25,999. Maxx-Force DT diesel engine, Allison 2500RDS P automatic transmission. Meritor 10K front & Meritor 19k rear end, 11r22.5 tires around (dual on rear). ABS air brakes. 70-gallon fuel tank, conventional cab with deluxe interior trim. Air-ride driver seat, heat & a/c, tilt steering column, backup alarm, hand control throttle, HVAC fresh air filter. Working bed manufactured by KeeVac Industries, Model VTA60, 1,100-gallon tank (400 water/700 waste). Driver's side mounted control panel. Fruitland ELIM 250-PT features a RCF250 vacuum pump with an integral heavy-duty secondary shutoff and oil catch muffler (reversible - will vacuum and blow-off). Vacu-Fresh pump exhaust deodorizer system, Pentair Shurflo freshwater pump rated at over 5gpm. 2 waste load options (driver side and passenger side) - over-sized offload located on rear. Freshwater hose and reel located on rear driver side, top-load freshwater port. 2 freshwater offload options (driver side and passenger side). 2 toolboxes, 2 hose trays, & 2 hose racks (1 each on driver and passenger sides). 4 working lights (all around). Carrier rack located on rear can haul 2 portable toilets safe and secure. Carrier rack can fold up when not in use. 2 fish-eye sight glasses located on rear of tank. .... \$56,500

**Contact Zach Drennan  
zdrennan@gmail.com  
or 214-918-0049, TX**

P06



**2008 Freightliner GH 1500.** Mercedes diesel with automatic transmission. Best stainless steel tank 100/400. 108k miles. Nice truck. Ready to work. .... \$50,000

**276-620-0533, VA**

P06



**2017 Dodge Ram 5500** with steel tank, 950 waste/300 fresh. Approximately 61,000 miles. .... \$62,000

**Call Rodney Lane  
270-832-3793**

P06



**Texla Services Portable Toilet Service Truck Bodies** — Standard turnkey package mounted on your chassis includes: painted body, lighting, right angle Jurup, DC10, water hose, valves & plumbing and PTO. 1,100/400 - \$22,500; 700/300 - \$19,500; 1,700/600 - \$24,500.

**936-641-3938**

**Check us out on Facebook!** PBM



**2016 Ford F550** 4x4 with aluminum tank, 950 waste/300 fresh. Approximately 67,000 miles. .... \$67,500

**Call Rodney Lane  
270-832-3793**

P06

2006 GMC C5500 Duramax, 1,000-gallon tank (200 fresh, 800 waste). Truck has 154,000 miles, new motor put in 24,000 miles ago. Ssking \$38,000 OBO. Call 575-921-1028 for more info and pictures. (P07)



## PORTABLE RESTROOM TRUCKS



**T46SS 2011 Ford F550** diesel with Theiman liftgate - \$25,000. 160k miles, 8 hauler. Has 400/100 slide-in tank. Price w/tank - \$30,000; T49SS 2011 Ford F550 diesel with Theiman liftgate - \$25,000. 160k miles, 8 hauler. Has 400/100 slide-in tank. Price w/tank - \$30,000.

**Steve 234-600-9330, OH** P06



**2000 International 4700I**, 7.3-liter diesel, 51,332 miles. 3-compartment stainless steel tank 100/300/500. NVE pump, hydraulic liftgate. .... \$48,000

**Brad 724-222-6080, PA** P06



**2011 Ford F350**, 6.7 diesel, automatic, 4x4. NEW aluminum 300 waste/150 water vacuum tank, HXL2 Masport pump, washdown system.

**Call JR @ 720-253-8014, CO** PBM

2008 Mitsubishi FE180 diesel with flatbed Crescent tank and Thieman liftgate. 650-gallon sewage tank and 225-gallon freshwater tank. Dual side service. Can transport 8 standard portable toilets with the gate down. \$40,000. For additional information, contact Parker's Portables 413-323-7793; parkers.portables@comcast.net (P06)

2014 International pump truck, Flow-Mark aluminum 1,850-gallon tank, 62,000 miles, \$85,000; 2007 International 4300 1,350-gallon, 265,000 miles, \$37,500. 256-757-9900 or www.pbsos.com (PBM)

2012 Ford F550 equipped with a 2008 Satellite MD-950 tank. Conde pump driven by hydraulic PTO pump. Call/text Jordan @ 402-689-9496 for pics and more info. (P06)



**2012 Ford F550 4x4** pumper with 300/600 Satellite tank, 6.7 diesel w/DEF delete & EGR delete, automatic transmission. Cold a/c. Truck has less than 100k miles. .... \$39,900

**606-439-4887, KY** P06

2012 Ford F550, V10 gas, engine needs work. Lifter/rocker broke on cylinders 3 and 5. 1,000 gallons waste, 200 gallons fresh, Masport HXL4. 12v water pump. Lane Vac setup. First \$11,000 gets her. Great truck except for lifter problem. Call 419-656-1825 Ohio (P06)

2018 Hino 268A cab & chassis, 25,950 GVW with new 1,600-gallon portable toilet service unit. (Stock# 13762) **www.VacuumSalesInc.com (888) VAC-UNIT (822-8648)** (PBM)

## PORTABLE SHOWER TRAILERS



**2008 JAG Mobile Restrooms** shower trailer. 32-foot, 8-stall. Trailer split evenly: four stalls, two sinks on each side. Onboard water and winter package. .... Asking \$45,000

**Bruce 631-767-9404, NY** P06

2018 Comforts of Home ADA Plus 2 and ADA Shower. Includes app that gives status of waste and fresh tank, temp and power status. 450 waste, 200 fresh. \$46,000. [bo@thelovelyloo.com](mailto:bo@thelovelyloo.com) (P06)

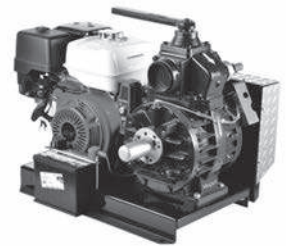
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## POSITIONS AVAILABLE

GapVax, Inc., a nationally recognized manufacturing business, is seeking a talented, highly motivated individual to fill a full-time Sales Position in the Midwest (Iowa based preferred) region. GapVax is the leading manufacturer of industrial and municipal vacuum units and hydroexcavation units in the United States. We provide the most reliable, comprehensive, and efficient mobile vacuum units in the industrial and municipal markets. Specifications of the position are listed on our website, [www.gapvax.com](http://www.gapvax.com), click on the Now Hiring link in the left hand column. Send resumes to or [betty@gapvax.com](mailto:betty@gapvax.com) or 575 Central Avenue, Johnstown, PA 15902. (PBM)

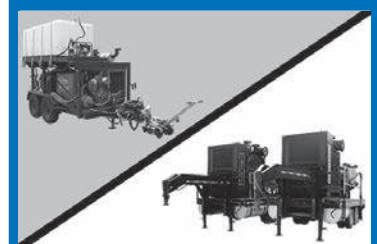
**Field Service/Sales** | Job Type: Full-time. Job Description: The Field Service Representative is responsible for a providing field support for distributors, dealers and contractors, as well as expand sales in the Atlantic region of the United States. In this role you must be confident, resourceful, flexible, possess exceptional attention to detail, friendly and comfortable in a small business environment. Essential Job Functions: • Support current dealers and their installation customers with service and troubleshooting. • Cold call health departments and engineers regularly to educate them on Fuji Clean products. • Handle customer service functions, including traveling and helping with trade shows. • Submit weekly CMR reports and track customer forecasts • Maintain current distributor/dealer relationships as well as prospect and advance new relationships. The successful candidate will require the following: • Minimum of three (3) years related experience required in wastewater sales, service and/or design OR relevant biology, engineering, or other experience. • Ability to lift up to 50 lbs. • Valid driver's license. • Residence in Virginia, Maryland, Rhode Island, New Jersey or New York. • Ability to travel extensively throughout the Eastern United States. • Vast knowledge of the onsite treatment market and a network of industry contacts. • Strong computer and internet skills, including all MS Office suite • Strong interpersonal and communication skills and the ability to work effectively with a small team • Able to work effectively with US customers and interface with owners of an international company • Must be a self-starter with excellent interpersonal and communication skills with a talent for customer service • Must be efficient with strong attention to detail • Must have strong customer support orientation (for internal/external customers), demonstrated professional demeanor • Demonstrated ability to work independently and exercise sound judgment and problem solving • Excellent communication, interpersonal, and presentation skills. Fuji Clean USA offers competitive base salary plus generous commission, flexible scheduling, a relaxed office environment and a HSA health benefit plan and is proud to be an Equal Opportunity Employer. Please submit resume and cover letter for consideration to: [cynthia@fujicleanusa.com](mailto:cynthia@fujicleanusa.com) (P06)

## PUMPS



**2018 Masport Pro Pack 2500** 230cfm pump. 13hp Honda engine, less than 20 hours run time. Purchased in Oct. 2018 as a temporary replacement. .... \$3,600

**Rick 319-560-9061, IA** P06



Two (2) pre-owned, certified **Hammel-mann HDP 500** high-pressure pumps for sale. 20,000psi and 50gpm for hydro demolition.

**772-214-1714, FL**  
**sales@hogtechnologies.com** P07

Buy & Sell all makes and models, new & used vacuum pumps, blowers, high-pressure water pumps, new and good used replacement parts. Buy discounted pumps online 24/7. Call us for a current inventory list. **www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648)** (PBM)

## RENTAL EQUIPMENT

Liquid vacs, wet/dry industrial vacs, combination jetter/vacs, vacuum street sweeper & catch basin cleaner, truck & trailer mounted jetters. All available for daily, weekly, monthly, and yearly rentals. **VSI Rentals, LLC, (888) VAC-UNIT (822-8648)** **www.vsi rentalsllc.com** (PBM)

2016 Acro Vacuum Trailer: Stainless steel 6,000 gallon, DOT certified double conical with air-ride suspension. Aluminum wheels all positions, full hose trays, OSHA walkways and railings. Vacuum pump option either hydraulic or self-contained. KLM Rentals, Inc. 617-909-9044 (PBM)

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## ROLL-OFF TRAILERS

2001 ESP Roll-off trailer: Two (2) container roll-off trailer good brakes, tires, frame, etc. KLM Companies 617-909-9044 (PBM)

## SEPTIC TRUCKS



**Texla Services Vacuum Truck Bodies** – Turnkey package mounted on your chassis includes: painted body, lighting, valves, PTO and pump. 3,600-gallon - \$25,000; 2,500-gallon - \$22,000; 1,500-gallon - \$18,500. Many custom options are available. Bodies out of paint: 2,500-gallon - \$13,500. Self-contained skids available.

**936-641-3938**

**Check us out on Facebook!** PBM



**2014 International 4300**, under CDL. DT466 diesel, auto., NEW 1,800-gallon tank and Masport pump.

**Call JR @ 720-253-8014, CO** PBM



1987 Mack, 220hp, 5+2 transmission. 2,100-gallon tank, Moro vac pump. 205k miles, good tires and new brakes, clean. .... \$13,000

**Pat 719-569-6297, CO** P06

2003 Freightliner FL70: Cat 3126 with 250hp, 430k miles. New motor 150k miles ago. Manual transmission with a new clutch, pressure plate, and throwout bearing. New rear end 3 months ago. Tires and brakes less than a year old. 11-year-old 2,500-gallon vacuum body with a Masport HXL400 vacuum pump. Truck is mechanically sound just needs some TLC. \$28,000. Call or text for more information. 734-777-0390 (P06)



**2004 Sterling LT9500**, 5,000-gallon steel tank (2011), triaxle, C15 Cat pre-emission, Fuller 10 speed. Full lockers, 20k front, 46k rear, air ride. NVE Challenger water-cooled pump, 6" discharge valve air-actuated, (2) 4" valves, heated collars. 498,000 miles. \$64,500

**Gary 414-217-2404, WI** P06



**1996 International** diesel, 530hp w/10-speed. Motor replaced 2018. Masport needs vanes. 2,100-gallon tank needs work. Tires 90%. No exhaust filter for California work. .... \$16,000 firm

**Contact Nick/Matt**  
**310-832-4800, CA** P07  
**peninsulaseptic@sbcglobal.net**



**2007 International 4300** with 52,000 actual miles on a pre-emission DT466. New 2,500-gallon tank, New Jurop R260 pump, new PTO, valves, lights, tires, etc. 6-speed manual transmission. Turnkey and ready to work! Shipping and financing available. Central Arkansas.

**Caleb 281-914-1192** P06



**2009 International 8600**, Cummins M11, automatic, 180k miles. New 4,000-gallon carbon-steel tank, new pump. New tires all around. ... \$75,000

**Call Alan 786-908-5436** P06



**2012 Freightliner Cascadia**, DD13, 10-speed, 425hp, 170,000 miles. New 4,000-gallon carbon-steel tank, new Jurop LC420 pump, new PTO-driven jetter system. .... \$89,900

**Call Alan 786-908-5436** P06



**2012 Mack Granite**, only 130,000 miles. 460 Mack motor, 8LL transmission. 110-barrel Imperial vac tank with Jurop pump. One-owner truck – ready to work. .... \$110,000

**570-806-1482, PA** P06



**1994 International**, 60 Series Detroit reman. engine, 9-speed. 3,000-gallon tank, Jurop pump. A/C. Pumps and runs great. .... \$18,500

**828-361-3390, NC** P06



**2007 Peterbilt:** Pre-emissions Cummins, brand-new 3,600-gallon custom aluminum tank. Brand-new FL500 pump, brand-new PTO. Truck has only 179,000 miles. Allison automatic transmission. Chrome all over. Ready to work! Financing and delivery available. Central Arkansas.

**Caleb 281-914-1192** P06



**2004 International**, DT530 300hp vacuum truck. 245,774 miles, 10-speed Eaton-Fuller transmission. Masport pump, 2,500-gallon steel tank. 36" manway, 6" dump, rear and passenger side inlet ports, heated collars. Heavy-duty bumper w/pintle hookup, 7-way elect. plug. New turbo, freshly painted, new toolbox. Rear work lights, airbag suspension, cruise control, power windows & locks, heated mirrors, air-ride seat, radio. .... \$36,000

**518-842-1540, NY** P06



**1995 Mack RD** 3,800-gallon septic truck, 300hp, 335,721 miles, great condition. NVE liquid-cooled pump. Carbon-steel tank installed 2005. Located in Akron, Ohio. \$48,000. Call for more info.

**330-351-4353** P07



**2011 Peterbilt 335**, automatic, 250hp. New tires all around, polished aluminum rims. New 2,500-gallon carbon-steel tank, new Jurop PM84 pump. In production! .... \$59,900

**Call Alan 786-908-5436** P06

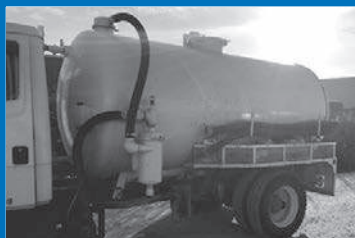
Two (2) 1998 Mack CH613 septic trucks (identical). Double framed with 4,000-gallon steel tank and Masport 400XL vac pump. Fuller super 10-speed transmission. These trucks were actively being used until replaced with new trucks. \$22,500 each OBO. Trucks located in Florida. Pictures upon request. 352-796-9930 (P06)

2001 Sterling, 4,200-gallon tank 3 years old. Cat C12 completely rebuilt June 2018, has two years warranty through Caterpillar. Tri-axle. 720cfm pump, heated valves. Repainted 3 years ago. Good shape, ready for work. \$49,000. Call 715-208-0626 (P06)

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## SEPTIC TRUCKS



**1995 Freightliner FL70** septic truck with 89k miles, 2,500-gallon tank, 6-speed manual with Cummins 5.9 diesel, 2015 Masport pump. \$29,000 OBO.

**Jeff 217-224-1932, IL** P07  
midwestservicecenter@gmail.com



**1990 GMC, 3116 Cat**, 6-speed, 150k miles. New 2,000-gallon tank, never had anything in it. Battioni 6500 pump. .... \$22,000

**Paul 616-218-3155, MI** P06



**1996 IHC 4700** pump truck with a DT466 engine. It has a 2,500-gallon tank on it and everything works like new. It has 96,000 miles and 6,300 hours on it. Asking \$29,000 for it. Terry VanAlstine, Bellaire, MI.

**231-676-0563**  
vanbell@charter.net P06



**1997 Ford LN9000** with Presvac 2,300-gallon, either DOT Code or septic use. Tank in great shape. Cummins with Fuller transmission. Just inspected, runs excellent. .... \$25,500

**KLM Companies**  
617-909-9044 PBM



**2019 Peterbilt 337**, Paccar 330hp, Allison automatic transmission, 5,800 miles. 2,500-gallon tank, NVE 4307 blower. Rear heated valves, see-level gauge. No FET. .... \$119,000 OBO

**Call 717-587-1006, PA** P06



**2005 International 7400**, DT400, 4,000-gallon waste tank which tilts up and opens from the rear. 300-gallon freshwater tank with jetter. Tires are good. Truck runs great with new turbo. 385,000 miles. .... Asking \$39,500

**Andrew 561-302-7195, FL** P07

**2012 International 4300**, 33,000 GVW, DT466, 245hp, Ultrashift automatic. NEW 2,500-gallon steel or aluminum vac tank - your choice. New Fruitland vac pump. Call JR @ 720-253-8014, CO. (PBM)

New 4,000 U.S. gallon, aluminum, vacuum-pressure tank mounted on a 2019 Peterbilt 348 cab & chassis with NVE Challenger 866 fan-cooled vacuum pump. (Stock# 13789) **www.VacuumSalesInc.com (888) VAC-UNIT (822-8648)** (PBM)

New 5,000 U.S. gallon, aluminum vacuum-pressure tank mounted on a 2019 Volvo VHD tri-axle cab & chassis with NVE 4310 PD blower package. (Stock# 13796) **www.VacuumSalesInc.com (888) VAC-UNIT (822-8648)** (PBM)

1999 Sterling L9000 tri-axle cab & chassis with a 4,000 U.S. gallon Keith Huber Dominator, two compartment (500 water - 3,500 waste) C/S. Full-opening rear door, dump-type unit with a Becker 440 vacuum pump and jetting system. (Stock# 3408C) **www.VacuumSalesInc.com (888) VAC-UNIT (822-8648)** (PBM)

1997 Mack RD688S tri-axle cab & chassis with a 4,500-gallon aluminum vacuum tank and Wittig RFL100 pump package - coming in September. (Stock# 3130V) **www.VacuumSalesInc.com (888) VAC-UNIT (822-8648)** (PBM)



**2006 International 4300**, DT466, 2,800-gallon Progress aluminum tank, NVE 607 Challenger pump. .... \$47,500

**614-206-0095, OH** P06



**2006 Freightliner** septic pumping truck for sale in Minnesota. Freightliner Model CC/ Body type FM2. \$60,000. For more information, call Scott:

**612-366-1892** P07



**1994 Volvo WG64** with Presvac 3,300-gallon tank. Cat 3406, 400hp with Fruitland 1200 vacuum pump. \$27,500

**KLM Companies**  
617-909-9044 PBM

## SERVICE/REPAIR

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## SLIDE-IN UNITS



**NEW aluminum slide-in tanks.** 2 available. 450-gallon (300 waste/150 fresh), Honda motors, Masport pumps.

**Call JR @ 720-253-8014, CO**  
or Mike @ 303-478-4796 PBM

## TANKS



New 2,000- to 2,500-gallon aluminum tanks with lights; New 1,800- to 2,500-gallon steel tanks with lights. New 450-gallon (300-gallon waste/150-gallon fresh) aluminum slide-ins. In stock, ready to ship. New and used CDL and non-CDL trucks available.

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**Eric 619-674-3587, CA** P06



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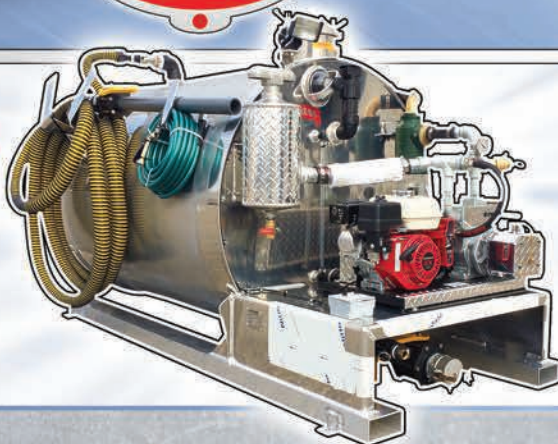
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