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Published monthly by



COLE Publishing Inc. 1720 Maple Lake Dam Rd. PO Box 220 Three Lakes, WI 54562

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Email: info@pumper.com | Website: www.pumper.com

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Office hours 7:30 a.m.-5:00 p.m. Central Time, Monday - Friday

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**CONTROLLED CIRCULATION:** 20,500 per month. This figure includes all circulation regions (nationwide) and international distribution.

**REPRINTS AND BACK ISSUES:** Visit www.pumper.com/order/reprints for options and pricing. To order reprints, call Jeff Lane at 800-257-7222 (715-546-3346) or email jeff.lane@colepublishing.com. To order back issues, call Holly Gensler at 800-257-7222 (715-546-3346) or email holly.gensler@colepublishing.com.



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Josh Chambers is the president and CEO at Thompson Industrial Services. The company, based in Sumter, South Carolina, has about 1,000 employees and services the Gulf Coast and Southeastern U.S. (Photo by Lucas Brown)

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Contact Jim with your comments, questions and opinions at editor@pumper.com.

Jim Kneiszel

# What's the Secret to Hiring and Keeping Good Workers?

Pumping waste is demanding work. Make your pay and benefits package match the effort required and win big on the labor front!

t's a story I'm hearing a lot lately from pumpers. Well, I've been hearing it for years, frankly, but it's becoming all too common.

"I can't find anyone to work for me, so I've sold off the extra truck and I'm doing all the service calls by myself," one of our small-business contractors told me in a recent phone call. "Unfortunately that means I have to work more hours and I rarely get to see the family."

So he's exchanged one labor headache — finding and retaining drivers; for another — 12-hour days and missing out on family time.

For some guys, this is a fair trade. Maybe the kids are grown and out of the house and you might as well be working. Perhaps earlier experiences with employees proved such a nightmare that you'd rather be working nonstop than playing the role of supervisor and manager. Or it could be you are thinking of winding down anyway, so more customers and more money aren't your highest priority. Still others take the term "mom and pop business" literally and really never wanted to expand.

But for most small-business entrepreneurs, the goal and the satisfaction comes from building a company up — to create something from nothing. The end game may be to hand a successful, growing concern on to the next generation, or to build something of value that can be sold to support a retirement.

Either way, these stories about losing workers and jumping back in the truck 60 hours a week probably won't get you any closer to fulfilling your hopes and dreams for starting a pumping business in the first place. Instead of you controlling the business, the business starts controlling you. And honestly, doesn't that seem a little too much like working for someone else, just the outcome you wanted to avoid by starting a business?

### **HELP WANTED**

So that gets us back to the root cause of the issue so many pumpers face — finding and keeping good workers. The first thing to understand is that this problem isn't hitting only the wastewater industry. It seems due to circumstances created by the COVID-19 pandemic, this has been the year of the missing worker.

Employers everywhere have been putting out the "Help Wanted" signs and finding little interest. We can argue about why there appears to be an extreme labor shortage. Some will say extra unemployment benefits have been a disincentive to work. Others will argue that potential workers prefer to take a job where they don't get dirty. Some observers say many blue-collar employers simply aren't paying high enough wages to coax good hires in the front door.

Simply arguing about the current labor situation won't do anything to eliminate the problem. We have to get our heads together and come up with solutions so pumpers can get back on the success track and off of the neverending treadmill of service calls.

The main objective, it seems to me, is to make a job in the wastewater industry look more attractive, which can be a tall order given the material pumpers have to work with on a daily basis.

There are many ways to make the job and your company look attractive to new workers. And there are a good number of people ready and willing to put in the effort if the reward is equal.

As I have worked with pumpers for nearly 20 years now, I would focus on the reliability of this industry. There will always be a consistent and high demand for the services you offer. Think about what folks have been through in the past few years. Tourism, retail and service industry jobs disappeared in the pandemic, leaving millions unemployed. But on the other hand, every pumper I've talked to remains busy, earning a paycheck and providing customers with an essential service. People will never stop creating waste, so pumpers will never be out of work.

Don't underestimate the power of a skill with this type of rock-solid job security. You should be able to easily compete with other blue-collar employers, such as construction contractors and the energy sector, who frequently deal with booms and busts, letdowns and layoffs. The stability of our industry should be the biggest selling tool you have to hiring new workers.

#### **TIP TIME**

That said, many strategies can be employed to make the cab of a vacuum truck look like a great workplace:

### Pay more

You've heard the phrase "money talks," and that's true. Given the obstacle of getting used to working with wastewater every day, pumpers may have to pay a higher wage up front and hope new workers build a passion for helping customers as they get into the job. I'll bet you've had new employees walk out after a few days or a few weeks because they are put off by the odors, the backbreaking work and the jokes from their friends and family for the type of work they do.

In time, I've seen many new pumpers start to appreciate the importance of their work in the daily lives of their customers. They overcome the odors and stop worrying about being back-splashed from the septic tank. They start to tune out the disrespectful jokes they might hear from their friends at the local watering hole. As the paychecks come in, they realize they've chosen a successful career path and start to take on more responsibility.

The bottom-line question is, how many career pumpers have you potentially scared away by not offering a wage commensurate with the challenge and skills of a job in the wastewater industry?

### Foster career development

You don't want your crew looking at pumping as simply a job. You want them to consider the wastewater industry as a worthy pursuit for them for the next 20 to 40 years. So focus on developing your most important assets — the human capital in your company.

Offer tuition reimbursement for all certifications that will make employees more valuable — both in their future career choices and to your company. Pay for all CDL training or safety courses for your drivers. If you see management potential in workers, offer to help them to obtain an associate or bachelor's degree in business, environmental science or any curriculum related to the work your company performs.

In the long run, you may not derive benefit from all of these financial investments in your crew. Someone might take advantage of all of the education benefits you offer and then leave for another job. But hopefully many of the employees you help will show their loyalty over the years and help you build the company. And the act of offering these benefits in the first place will show everyone on your team that you care not just about making money, but helping others grow.

### **Share your profits**

It's nice when an employer gives a year-end bonus or surprises workers with a meal or an after-work party following a particularly challenging week on the job. No employee is going to scoff at a Thanksgiving turkey or an extra day off around the holidays. But real, organized sharing of the business profits is one important way to compete for the best people.

It's far too infrequent that I hear about a pumping company offering a formal retirement package of some kind. And I'm not surprised since many pumpers are still behind other trades employers in offering a good vacation, personal time off or health insurance benefits. With today's technology and investment options, it may be easier than you think to offer and financially support a 401(k) or other retirement vehicle for your workers.

With generous contributions and a program that vests workers in the payout over several years, you may be able to build a more consistent workforce — and you'll certainly be helping families save for a better future.

### Make it a lifestyle choice

Just like you don't want to be chained to your truck day and night, today's workers place a tremendous value on preserving time for their families and leisure pursuits. It may be a foreign concept to many hard-driving pumpers, but lots of folks want to cap their work week at 40 hours and look forward to weekends free. They won't always choose extra pay over free time. Don't confuse this lifestyle priority with laziness.

If you find your team is putting in a lot of overtime, respond by hiring someone to lighten the load. Consider other ways to build an attractive work schedule, for example having drivers work four 10-hour days rather than five eight-hour days to create three-day weekends. Encourage flexible schedules, allowing workers to fashion their time on the job around transporting kids to school, their spouse's employment hours and the like. Be clear that workers can take off for medical appointments or kids' sports events during the day as long as they make up for the missed time. You can allow flexibility as long as the work gets done.

### **FINAL THOUGHTS**

Your drivers pump waste for a living. They get dirty, they work hard, and some folks wouldn't want to do this kind of work under any circumstances. Still, I would argue there are many ways to make the job and your company look attractive to new workers. And there are a good number of people ready and willing to put in the effort if the reward is equal. If you have tips for hiring and retaining great pumpers, send them with me at editor@pumper.com. We'll share your ideas with the *Pumper* community.



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### **Pumper PROFILE**

# SAFETY Matters

Preventing serious injuries is a top priority at this South Carolina-based industrial cleaning company

By Ken Wysocky



# **Thompson Industrial Services LLC**

Sumter, South Carolina

**OWNERS:** Founder Greg Thompson and a

private-equity investment fund

**FOUNDED:** 1986

EMPLOYEES: 1,000

**SERVICE AREA:** Gulf Coast and Southeast United States

**SERVICES:** Industrial cleaning, hydroexcavation/air excavation

**WEBSITE:** www.thompsonindustrialservices.com



n any given day, between 800 and 900 employees at Thompson Industrial Services fan out from 22 strategically located facilities, along with more than 100 wet- and dry-vacuum trucks, more than 80 hydroblasters, hundreds of service vehicles and an array of specialized cleaning equipment.

Their destinations: Oil and gas refineries, petrochemical companies, pulp and paper mills, power plants, steel mills and other industrial facilities located throughout the Gulf Coast and Southeast states.

And as this large group of technicians and equipment heads out to clean evaporators, heat exchangers, storage tanks, reactors, pipelines, pits, vessels and everything in between, not to mention do air excavation and hydroexcavation work, one thing always is top of mind: employee safety.

"Our business model is built on selling the value of our safety programs, plus the training we provide for our employees and the quality of our equipment," says Josh Chambers, CEO of the company, headquartered in Sumter, South Carolina. "All these things combine to create better productivity and significantly less safety risks.

The company concentrates on its safety culture, diverse service offerings and investment in quality equipment. "Plus we've been in our core markets for a long time, so we know our customers' facilities well, which in turn reduces the overall management burden for our clients," Chambers says.



Each of the company's divisions operate as independent business units. About 90% of the company's approximately 1,000 employees work in the field at customers' facilities, traveling to 60 or 70 different job sites each day and visiting roughly 700 plants and complexes annually. The privately held company is primarily owned by founder Greg Thompson and a private-equity investment fund, Chamber says.

Zeno McConnell, crew leader, Theo Wells, operator, Albertus Hampton, superintendent; and Valdez Holmes, crew leader — work with a Guzzler hydroexcavator in the background at an industrial job site.

### **SAFTEY IS NO ACCIDENT**

(Photos by Lucas Brown)

Safety is paramount. At one point in mid-2020, the company had posted no recordable or lost-time injuries — even as total employee hours worked increased. "That's a crazy statistic in our industry," says Dean Kuhlman, director of safety and quality. "It's all a result of the automated technology, policies and training we've put together."

More specifically, the company began to sharpen its emphasis on safety by rolling out a program aimed squarely at preventing serious injuries and fatalities. This multipronged safety strategy at one point last year had reduced the company's total incident rate to .48, compared to 1.0 a year earlier, he says. (A TIR measures the number of recordable work-related injuries per 100 full-time employees over a year.)

Many safety programs focus on preventing small incidents that could lead to more serious accidents. But the company "flip-flopped" that

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**DEAN KUHLMAN** 

approach by focusing more on the factors that lead to serious injuries. "If you prevent those from happening, the smaller things work themselves out," he says.

The program consists of five tiers — or "layers of protection" — that start with personal protective gear, followed by advanced training and safety policies and procedures.

The third layer features a safety observation approach in which frontline employees use an internally developed dashboard app called SafetyNet to audit their jobs ahead of time to make sure all protective measures are in place. Predictive Solutions, an occupational safety software developer, created the platform that helps the company collect the data, he says.

Company employees compile more than 35,000 real-time safety observations annually that help identify the highest risk factors for SIFs. These observations then help safety officials develop a customized safety plan for each job, using as many of the five "layers" as possible, he says.





"We use data from the observation program to develop our current polices and improve policies and training programs," Kuhlman explains. "Ultimately, we empower our frontline employees to take safety personally every day through observations and stop-work procedures."

### **CHECKLIST OF PROTOCOLS**

Before a hydroblasting job, for example, a supervisor uses the app to call up the dashboard, which provides a checklist of the protocols for the task at hand.

After a supervisor goes through the safety checklist and takes a photo of the job setup, that information is sent to a next-level supervisor. Why? "One, it ensures a job is set up safely," Kuhlman says. "Two, it gathers data for what's being cleaned and how we're cleaning it.

"Gathering all this data helps us know what kind of equipment to purchase by division, instead of taking a one-size-fits-all approach across the entire company," he continues. "It enables us to dive deeper into each division and provide them with the specific automated equipment and training for what they need.

"It's the difference between a large university trying to teach everyone everything and smaller institutions with smaller classes that can provide students with exactly the kind of training and knowledge they need," he adds. "That's important because the work in Louisville is much different than what's done in Sumter, for example."

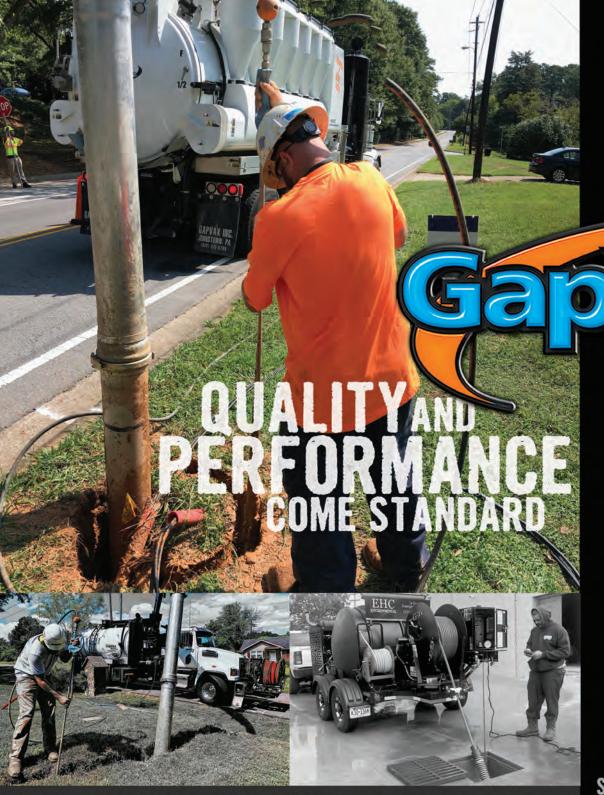
During the last three years, more than 750 employees have entered in excess of 110,000 safety observations into the SafetyNet database. Those observations include more than 2.5 million findings, defined as safety measures that were either met or missing. Out of those, 200,000 unsafe findings were mitigated, Kuhlman says.

### **PUSH FOR AUTOMATION**

The fourth layer focuses on replacing manually operated machines with automated equipment that removes employees from hazardous situations. Automating the company's hydroblasting equipment is a top priority because of the dangers inherent with operating machines that generate anywhere from 10,000 to 40,000 or even 60,000 psi. The company owns hydroblasters made by Jetstream, Gardner Denver, NLB Corp. and Hemmelmann Corp.

"I'm pushing hard to automate 100% of our hydroblasters — get our guys off the guns," Chambers says. "This keeps people out of the water-blast line and you actually can perform work at a faster clip. And the work that's done is more consistent, too.

(continued)



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### **Pumper PROFILE**



# Growth through innovation

Developing innovative solutions that help solve customers' problems has been a key growth factor at Thompson Industrial Services, based in Sumter, South Carolina.

As an example, consider the role the company played three years ago during the construction of a multi-billion-dollar liquified natural gas plant in Texas. The project went sideways when officials discovered that roughly 10 miles of pipe was lined internally with a paint-like coating, rendering all of it unusable, says Josh Chambers, chief executive officer.

Cleaning the pipes was complicated by the fact that many were preassembled in sections with bends and turns, and couldn't be taken apart because of time constraints, he explains. "They tried hydroblasting the pipes, but that didn't work," he says. "So they called us and asked if we could do anything."

Turns out the company could. Engineers developed a unique solution by combining sponge-blasting technology from Sponge-Jet with robotic crawlers. After a successful demonstration, the propane company asked for 100 workers on the job as quickly as possible, he says.

"We developed a plan around how to apply this technology," Chambers says. "We used robots that crawled through the pipes and pulled hoses that sprayed the abrasive sponge media. Then we vacuumed the debris inside the pipes.

"We did a job they were afraid would take a couple of years in just three months," he continues. "We looked at the problem, customized an innovative solution, mobilized the manpower and saved a ton of time and money for the customer. They were dead in the water, but we got them moving again."

Another example centers on combined cycle and co-generation power plants, which use the heated exhaust from natural gas-powered gas turbines to produce steam. That steam then powers more turbines that generate even more electricity.

The only problem? Converting the waste heat into steam requires heatrecovery steam generators that are very difficult to clean because of the way they're configured, Chambers says.

To solve the problem, the company licensed and applied technology from PowerPlus Cleaning Systems to develop an automated system that uses pulsation shockwaves to deep-clean the finned tubes in the boilers, he explains.

The process, which the company calls EPIC, also saves customers money. For example, a recent project at a major Southeast utility resulted in a payback of just 41 days, based on full production, Chambers notes.

"The power plants use far less gas in the units because the heat transfer in the HRSGs is so much more efficient after they're cleaned," he says. "This technology application will keep us in power markets for a very long time and at the end of three years could be a very significant business segment for us."



"We're really pushing the envelope in this area," he adds. "In fact, many customers now require automated equipment. It's an expensive game to get into, but with a footprint like ours, we can leverage that equipment across all our divisions to help pay for it faster."

The last layer is physically removing or replacing on-the-job hazards. For example, the company might be called in to clean "green liquor" (a byproduct of the papermaking process) from a dissolving tank in a paper mill. Instead of doing it manually, workers use an automated cleaning tool, which eliminates hazards such as manual water-blasting, exposure to chemicals, confined-space entry and heat exhaustion, Kuhlman says.

Furthermore, the company takes a bottom-up approach to safety governance. This allows safety committees at each of the 22 divisions to provide constant feedback to regional committees as well as an overarching corporate committee, Kuhlman says.

"The corporate safety committee puts policies, programs and procedures in place," he explains. "But we also need feedback from the frontline leaders — the boots on the ground. Some companies push policy only from the top and expect employees to buy into that.

"But we've found that our frontline leaders know and understand the business better than anybody, so we need their feedback about what works well and what doesn't work well."

### **HUMBLE BEGINNINGS**

The company owns about 120 vacuums trucks made by Guzzler Mfg. (a subsidiary of Federal Signal Corp.), Cusco Fabricators (a brand owned by Wastequip) and Presvac Systems Ltd.

In addition, the company runs about 500 service vehicles, ranging from semi tractors to pickup trucks; roughly 23 trailer-mounted water jetters made by Jetstream; pipeline inspection cameras made by Aries Industries; dry-ice blasting equipment manufactured by Cold Jet; and sponge-media abrasive blasting technology from Sponge-Jet.



Valdez Holmes is in full protective gear as he begins to hydrovac an area at an industrial plant near Sumter, South Carolina.

"We're unique among multisite competitors in that so many of our clients are diversified," he says. "Most of our larger competitors rely on a single industry for their core services, such as refineries or petrochemical plants."

As for life cycle services, Thompson Industrial prides itself on being a single-source provider of everything a customer might need, from the construction and precommissioning phase of an industrial plant to daily onsite services and periodic maintenance shutdowns to decommissioning facilities, he explains.

Looking ahead, Chambers says he expects the company to continue to grow, both by attracting new clients and selling more services to existing customers. "We'll continue to push into refinery and petrochemical markets along the Gulf Coast because we already have a strong foothold in those markets," he says.

In addition, the company will consider acquisitions of or partnerships with companies that either provide similar services in areas in which Thompson Industrial doesn't already serve or that provide services that augment its existing services, he says.

"We will continue to push for growth, but we're also going to be thoughtful about the way we grow," Chambers explains. "We'll also continue to make our company an even safer place to work by automating wherever we can.

"But the most fun I have is getting additional work and putting more people to work," he concludes. "Growth is a blast."

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Both the geographic scope of the company as well as its multi-million-dollar fleet of equipment, vehicles and machinery are a far cry from its humble origins. Thompson started the company in 1986 with just a used power washer and a \$1,000 loan from his mother. His first project was a cleaning and painting job at a stadium in Columbia, South Carolina, Chamber says.

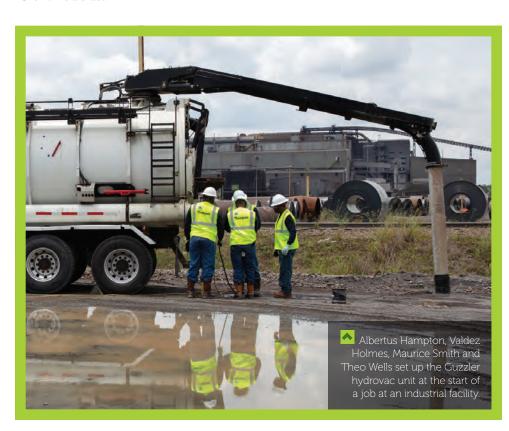
About three years later, Thompson had generated enough business to buy a new hydro blaster and a used vacuum truck. Most of the growth stemmed from word-of-mouth referrals — especially within companies that owned multiple facilities, he says.

"Greg kept investing in the business and eventually opened a second division," Chambers says. "Then he started to hire additional people to help him expand and scale the business."

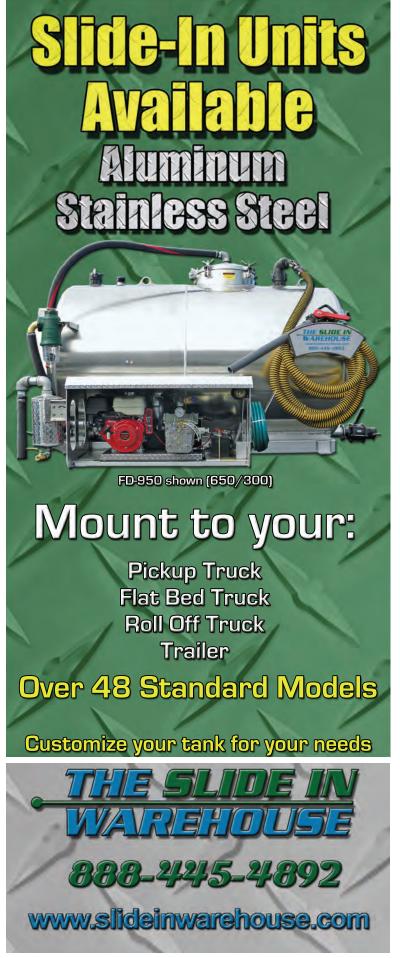
Most of the growth was organic for the first decade or so, but that changed when Thompson began acquiring small complementary businesses in states such as Tennessee, Kentucky and Louisiana. He also expanded into construction; he now serves as the chief executive officer of that arm of the company while Chambers heads up the industrial-cleaning sector.

### **SUCCESS FACTORS**

What are the chief keys to the company's success besides the emphasis on employee safety? Customer diversity; high barriers to market entry by competitors due to major capital costs for industrial cleaning equipment; and service diversity, reflected in the company's focus on so-called life cycle services, Chambers says.









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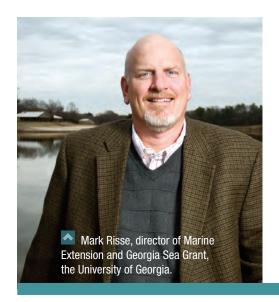
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# There's Nowhere to Hide Failed Systems in Coastal Georgia

New multicounty database makes it easy for concerned citizens and wastewater professionals to access a property's septic system history

By David Steinkraus

he coastal counties of Georgia have high water tables, and information about older onsite systems can be thin at best. For several years a program through the University of Georgia has been trying to end this information shortage, and now the end is in sight. With it comes a way for septic professionals to see where old systems are.

Sometime in 2021, the university should complete work on a database and map of all the septic systems in the 11 coastal counties, meaning either counties with Atlantic Ocean shorelines or counties adjacent to an ocean county. At least, the database will have information on everything that could be found, and that posed its own challenge, says Mark Risse, director of Marine Extension and Georgia Sea Grant at the University of Georgia.

Building the database has been a slow process because it requires someone — sometimes a graduate student, sometimes a retired person or high school student — to visit each county clerk's office and digitize every

Click on ... the online map, and you can see the parcel number, address, owner, date of inspection if available, when a permit was issued and details about the system such as its design, tank capacities and drainfield design and size.

piece of information that can be found. To his knowledge, Risse says, no other place in the country has a database so complete.

This information could be helpful in finding septic systems that were never permitted, not because they're illegal but because the systems were already in the ground and were grandfathered under current codes.

"But if a system has been around that long, and it's never been repaired, or there are no records of repair, it may be something of higher risk to the community or county," Risse says.

### **BETTER FILES**

In most cases, county workers filed paperwork chronologically, he says. Some counties went back through old records and tried to sort them by geography or the name of the property owner.

"We were one of those counties that filed chronologically," says Terry Ferrell, environmental health manager for Camden County, which is in the southeastern corner of Georgia and on the border with Florida. The county used several filing systems over the years until it joined a large database started by the state health department about seven years ago.



Terry Ferrell, environmental health manager, Camden County, Georgia.

"We wanted to simplify that filing process. So now we file by county parcel number," Ferrell says. That was a major improvement because parcel numbers won't change. County workers went back through their records and matched what they found with parcels of land. Also, he adds, using parcel numbers allows onsite professionals preparing a job to call up information about neighboring parcels. That will show, for example, how soil types change across a section of the county.

The university database project has been valuable for finding records in the event of a repair or sale, he says. And because this information reveals what properties and sections of the county have old systems, it has helped the county win grants to repair or replace failing systems for about 40 residents, Ferrell says.

### **SOME SURPRISES**

Digging into the old records produced some surprises. There were a couple of places in particular, on the north end of the county, where no one knew how many septic systems existed, Ferrell says. There were no records, and all the onsite work was done before the current staff joined the county.

"The density was more than we thought. We thought there were one or two houses, but it was a whole small subdivision," he says. He found one home from the 1950s, but it wasn't clear whether the septic system dated from the same time. Another system he found was from the 1980s.

The main advantage to having the map is being able to see system density at a glance, Ferrell says. In turn, that indicates areas that may be more susceptible to pollution. The county staff is talking about doing some outreach to citizens about system maintenance because unless there is a complaint or request for an inspection, he says, county workers don't have reason to enter a property.

### MAN WITH FORESIGHT

Doug Atkinson, a specialist in the university's Marine Extension Service, came up with the idea of creating the database and coupling it with computer mapping so anyone could look up any property and see what was there, Risse says.

"What's really unique about it, and really shows Doug's foresight and thought, is a lot of states have gone to an online permitting system and are entering new septic tanks into some sort of a database," Risse says. But those projects aren't capturing additional historical information.

Atkinson took another step, he says, and worked with tax assessors to include information about what might be on a property. He looked at aerial photos and tried to see what was on a piece of land, whether there was, for example, a house or only a chicken coop. Atkinson died in 2018, and Risse is carrying on the project he began.

The seven-year-old state Health Department database has information about onsite systems and also sections on restaurant inspections, bacterial testing for wells, and other public health information, Risse says. Working with the South Georgia Regional Commission and the Department of Public Health, the team used a database called WelSTROM (Well and Septic Tank Referencing and Online Mapping) to compile its information. With permission, it connects to only the onsite portion of the state database. (Other sections of the state database contain private health information that is off limits.)

### **EASY ACCESS**

Anyone can access the WelSTROM database here: www.welstrom.com/index.html.

Interconnecting the databases allows anyone to call up information from anywhere in the state. For the coastal counties, this means complete information because of the university project to document all onsite history. For example, Risse says, someone can search WelSTROM for all systems within 1,000 feet of a river, or for the number of septic tanks in a particular coastal county. Or you can open a map and zoom in and out, he says.

Click on one of the green dots on the online map, and you can see the parcel number, address, owner, date of inspection if available, when a permit was issued and details about the system such as its design, tank capacities and drainfield design and size.

Risse's group has applied for grants to help teach counties what they can use the database for. One project, recently funded, will look for systems at risk of the sea level rise that is happening because of climate change. Properties with mound systems, for example, are automatically at risk because water tables were already high when the systems were installed, he says.

What surprised him was who is making the most use of the data. He thought it would be county workers, but so far it's private groups that monitor water quality, such as the Riverkeepers. These people know there are water quality problems and want to set up monitoring programs, and the database tells them what areas have concentrations of onsite systems, he says.

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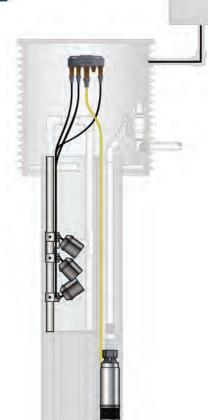
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### RULES & REGS

# Upstate New York Lake-Area Residents Push for Broader Septic Inspections

By David Steinkraus

esidents around Lake George in upstate New York have expressed concerns for several years about algae and pollution of the lake. Some area towns enacted inspection programs for onsite wastewater systems, but now calls are coming for more and broader action.

Officials in Warren County, on the western shore of the lake, are debating a law to require inspection of onsite systems near area lakes and two rivers. System repairs or replacements would be required for failing systems.

A draft law has been in development for about two years by a task force of county officials including Claudia Braymer, a county supervisor and environmental attorney, reported *The Sun* of Elizabethtown, New York. Braymer said having a county law would spur a statewide inspection law. Other local officials said the state is already working on the issue and a county law may discourage the state from acting. One town official said the county is not set up to enforce such a law, which would shift the oversight burden to towns.

A 2018 report about Lake George from the state Department of Environmental Conservation called for a mandatory inspection program to begin within three years. At the end of 2020, a group of public and elected officials and environmental organizations called on then-Gov. Andrew Cuomo to create a statewide inspection law for near-shore onsite systems.

The Adirondack Council, a nonprofit set up to help protect the wild character of Adirondack Park, recently released a position paper urging all local governments to require inspections. To fight water contamination, the council proposes education, regulation and financial help for homeowners who need to repair or replace failing systems.

The Lake George Park Commission created a committee to study the effects of septic systems on the lake's water quality. "With Lake George experiencing its first-ever harmful algae bloom in November of 2020, it is incumbent on the commission and partners to determine root causes of this event, and to implement measures to help prevent such events from occurring in the future," says the committee's mission statement, according to *The Post-Star* of Glens Falls.

The commission is an independent state agency set up to protect the lake and its drainage basin.

A couple of years ago, the nonprofit The FUND for Lake George did its own study of onsite systems. Using records of only one town, it located about 400 systems. Two-thirds of those were at or past the typical life expectancy of a system, or were of an unknown age. About half of the tanks found had not

been pumped recently, or there was no record of pumping, and about 20% of systems were undersized.

### Wyoming

A proposed revision of Teton County's regulations would allow onsite systems to be located closer to rivers. Present rules don't allow wastewater treatment components within 150 feet. Ted Van Holland, of the county's Engineering Department, proposed reducing that to 50 feet, reported the *Jackson Hole News & Guide*.

In four years, he said, only about a dozen applications out of 500 have stalled because of the 150-foot limit. In some cases, he said, the rule has discouraged people from upgrading systems.

Van Holland has been revising the county wastewater rules and said the 50-foot restriction would match the limit for other surface waters. "The dilution that occurs from a septic system into one of these major rivers is, for all practical purposes, infinite," he said.

He also suggested developing broader water protection standards for the county that would include pollution sources such as fertilizer.

Dan Heilig, senior conservation advocate for the Wyoming Outdoor Council, told the newspaper that the proposed rules would be a backward step without a basis in science.

### **Indiana**

The Gibson County Board of Health suggested hiring a building inspector to enforce the county's onsite system rules. Diane Hornby, nurse administrator for the health department, told the county council that her department receives many complaints about onsite systems, reported *The Daily Clarion* of Princeton, Indiana. Twenty years ago there was no subdivision ordinance, but now enforcement is required, and her department doesn't have authority to do that, she said.

### Minnesota

St. Louis County has launched an online permit system that allows contractors and homeowners to file applications, upload related documents and pay necessary fees. In 2020 the county issued 722 permits for onsite system repairs or replacements, and county staff performed 847 inspections for property transfers, land use or short-term rentals, reported the *Duluth News Tribune*. St. Louis County stretches north from Duluth to



the Canadian border. The county's system can be accessed through www. stlouiscountymn.gov/septic.

### **Montana**

People who live near water bodies in Lake and Flathead counties may be reimbursed up to \$200 to help cover the cost of maintaining onsite systems. Money can be used for system pumping and inspections, said the Montana Association of Conservation Districts.

The association received a \$70,000 grant from the state Department of Environmental Quality, reported the *Daily Inter Lake* of Kalispell. Of that total, \$30,000 is for onsite system maintenance, and \$40,000 is for general public education about onsite system issues.

Payments to property owners are for 50% of pumping and inspection costs, up to the \$200 maximum. Eligible systems must have been pumped three or more years ago and must be located with 500 feet of a lake, river or stream.

### Missouri

The James River Basin Partnership expanded its Fresh Flush rebate program this year in some areas, and the overwhelming response led the organization to suspend the expanded program until it can clear the backlog. A note on the organization's website says it will reassess after 90 days.

For several years the partnership has helped property owners with pumping costs by offering \$50 rebates. This year, assistance increased to \$150 for people living in the upper James River watershed, reported KY3 News in Springfield. The river basin covers parts of seven counties in southwestern Missouri.

All residents of the river basin may still receive \$50 rebates. To receive a rebate, a property owner must apply for it before having a tank pumped.



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Fast-Vac 21209 Durand Ave. Union Grove, WI 53182 800-558-2280 • 262-878-0756 f: 262-878-4019 www.Fast-Vac.com sales@Fast-Vac.com See Ad - Page 42	Fast Vac	Hydro	Chassis & Trailer	20 + Gross		50 degrees	1,500	Variable flow 3,000 psi	28" hg 6,600 cfm	80 dry and 8 wet bags
GapVax Inc. 575 Central Ave.	HV33 HydroVax	Нудго	Chassis	6	Full Opening	90 degrees	600	12 gpm 3,000 psi	27" hg 4,000 cfm	Wet/dry single mode
Johnstown, PA 15902 888-442-7829 • 814-535-6766 f: 814-539-3617 www.gapvax.com Inquiry@gapvax.com	HV55 HydroVax	Нудго	Chassis	12 1/2	Full Opening	90 degrees	400 - 1,400	5 - 40 gpm 2,000 - 5,800 psi	28" hg 5,250 cfm	Wet/dry single mode
See Ad - Page 21	HV56 HydroVax	Hydro	Chassis	15	Full Opening	90 degrees	400 - 1,200	5 - 40 gpm 2,000 - 5,800 psi	28" hg 5,250 cfm	Wet/dry single mode
GUZZIER  Guzzler Manufacturing	Guzzler Guzzcavator	Нудго	Chassis	16 or 18	3/4	50 degrees	600	10 gpm 2,500 psi	27" hg 5,200 cfm	Cyclone and baghouse with 60 filter bags
1621 S Illinois St. Streator, IL 61364 800-627-3171 • 815-672-3171 www.guzzler.com sales@guzzler.com	Guzzler GLE w/air excavation package	Air	Chassis	18	3/4	50 degrees			27" hg 5,200 cfm	Cyclone and baghouse with 60 filter bags
IMPERIAL INDUSTRIES INC.  550 W Industrial Park Ave. Rothschild, WI 54474 800-558-2945 • 715-359-0200 f: 715-355-5349 www.imperialind.com info@imperialind.com See Ad - Page 83	Hydro 3600 Hybrid Excavator	Hydro	Chassis	15	72"	42 degrees	Optional	20 gpm jetter 4,000 psi	27" hg 1,600 cfm	Grit ridder

Boom Size (ft.)	Degree of Rotation	Offloading Type	Controls Location	Wireless Y/N	Accessories Available	Vacuum (CFM/PSI)	Power Source	Compressed Air Flow	Compressed Air Pressure	Other
15'+	330	Gravity with optional auger	In cab and outside enclosure and 40' pendant	Yes	Winterization Lighting Tool Boxes Racks Cabinets					
14' - 18' reach 18' 10" up 4' 6" down	270	Decant and fully opening tailgate, Auger and sludge pump options available	Curbside	Yes	Winterization Lighting Tool Boxes Racks Cabinets	4000 cfm / 28" hg	Chassis engine / transfer case driven	200 cfm	200 psi	On-board scales with digital readout, stops loading when set target is reached (optional); 26 Filter bags, inverted tailgate to reduce length 200 cfm air pump, 4,500 cfm, 18" hg blower
17' - 25' reach from center of truck	270	Decant and fully opening tailgate, Auger and sludge pump options available	Driver's side curbside controls vary depending on options	Yes	Winterization Lighting Tool Boxes Racks Cabinets	5300 cfm / 28" hg	Chassis engine / transfer case driven	200 cfm	200 psi	34 Filter bags, 5 cyclones for superior filtration; safe working area on top of truck; various options available
17' - 25' reach from center of truck	270	Decant and fully opening tailgate, Auger and sludge pump options available	Driver's side curbside controls vary depending on options	Yes	Winterization Lighting Tool Boxes Racks Cabinets	5300 cfm / 28" hg	Chassis engine / transfer case driven	200 cfm	200 psi	200 cfm air pump; 6,600 cfm, 28" blower optional
8"	320	Dumping, tilting debris body, optional sludge pump	Curbside	Yes	Winterization Lighting Tool Boxes Racks Cabinets					
		Dumping, tilting debris body, optional sludge pump	Curbside	Yes	Winterization Lighting Tool Boxes Racks Cabinets					
6" 10' - 15'	180	Full rear opening door	Remote/user's pocket	Yes	Lighting Tool Boxes Racks Cabinets					Available in code and non-code

# 2021 VACUUM EXCAVATION DIRECTORY

	Model	Туре	Style	Debris Body Capacity (cu. yards)	Debris Door (dimensions)	Debris Door (dump angle)	Water Tank Capacity (gal)	Standard Water Pump (gpm & psi)	Standard Blower (hg & cfm)	Filtration Type
PRESTAC SYSTEMS  Presvac Systems  4131 Morris Dr.  Burlington, ON L7L 5L5  800-387-7763 • 905-637-2353  f: 905-681-0411	Presvac HydroX Mini	Нудго	Chassis	7	Full Diameter Full Opening		800	18 gpm 3,500 psi Adjustable Flow and Pressure	28" hg 2,650 cfm	Cyclone and inlet filter
www.presvac.com sales@presvac.com See Ad - Page 84	Presvac HydroX	Нудго	Chassis	15	78" Full Opening	90 degrees	1,000	18 gpm 3,500 psi Adjustable Flow and Pressure	28" hg 4,000 - 6,400 cfm	Two large cyclones and inlet filter
RIVAL HYDROVAC Rival Hydrovac Inc. Box 5 Major, SK SOL 2HO 844-467-4825 • 403-550-7997	Rival T7	Нудго	Chassis	8	54" Full Opening Rear Door Two Stage Hoist	70 degrees	800	10 gpm 3,000 psi	27" hg 2,650 cfm	Cyclone and cartridge
www.rivalhydrovac.com tdell@rivalhydrovac.com <b>See Ad - Page 55</b>	Rival T10	Нудго	Chassis	10	54" Full Opening Rear Door Two Stage Hoist	70 degrees	1,200	10 gpm 3,000 psi	27" hg 3,850 cfm	Cyclone and cartridge
Super Products*  Super Products LLC  130 Boxhorn Dr.  Mukwonago, WI 53149	Mud Dog 1600	Hydro & Air	Chassis	16	Full Opening Rear		2,000	18 gpm 3,000 psi	28" hg 5,800 cfm	
800-837-9711 • 262-784-7100 www.superproducts.com info@superproducts.com	Mud Dog 1200	Hydro & Air	Chassis	12	Full Opening Rear		1,500	18 gpm 3,000 psi	28" hg 5,800 cfm	
	Mud Dog 700	Hydro & Air	Chassis	7	Full Opening Rear	50	600	11 gpm 3,000 psi	18" hg 3,100 cfm	

Boom Size (ft.)	Degree of Rotation	Offloading Type	Controls Location	Wireless Y/N	Accessories Available	Vacuum (CFM/PSI)	Power Source	Compressed Air Flow	Compressed Air Pressure	Other
6" x 20'	340	45 degree dump and optional pressure off-load	Passenger side	Yes	Winterization Lighting Tool Boxes Racks Cabinets	185 / 150	Hydraulic	125 – 185	100 – 150	Can be built to DOT/TC Code
8" x 25'	340	45 degree dump and optional pressure off-load	Passenger side	Yes	Winterization Lighting Tool Boxes Racks Cabinets	185 / 150	Hydraulic	125 – 185	100 – 150	Can be built to DOT/TC Code
6" x 20'	342	Tilt and pressure off	Curbside	Yes	Winterization Lighting Tool Boxes Racks Cabinets	2,650 cfm	PTO / Hydraulics			All Accessories are Included, Weights displayed on Wireless Remote
8" x 25'	342	Tilt and pressure off	Curbside	Yes	Winterization Lighting Tool Boxes Racks Cabinets	3,850 cfm	PTO / Hydraulics			All Accessories are Included, Weights displayed on Wireless Remote
8" x 19 - 27'	335	Ejector	Passenger side Inside heater cabinet	Yes	Winterization Lighting Tool Boxes Cabinets			185 cfm	175 psi	Air excavation option
8" x 19 - 27'	335	Ejector	Passenger side Inside heater cabinet	Yes	Winterization Lighting Tool Boxes			185 cfm	175 psi	Air excevation option
8" x 18'	270	Dump Body	Passenger side cabinet	Yes	Winterization Safety Cameras Tool Boxes			185 cfm	175 psi	Air excavation option

# 2021 VACUUM EXCAVATION DIRECTORY

	Model	Туре	Style	Debris Body Capacity (cu. yards)	Debris Door (dimensions)	Debris Door (dump angle)	Water Tank Capacity (gal)	Standard Water Pump (gpm & psi)	Standard Blower (hg & cfm)	Filtration Type
TORNADO GLOBAL HYDROVACS	F3 ECO-LITE	Hydro	Chassis	10	48" x 52" Hydraulic Door with Hydraulic Latch		1,250	20 gpm 4,060 psi	27" hg 3,800 cfm	Three Stage System
Tornado Global Hydrovacs Ltd. 7015 Macleod Trail S, Ste. 510 Calgary, AB T2H 2K6	F4 ECO-LITE	Hydro	Chassis	12	48" x 52" Hydraulic Door with Hydraulic Latch		1,400	20 gpm 4,060 psi	27" hg 3,800 - 6,400 cfm	Three Stage System
877-340-8141 • 403-742-6121 www.tornadotrucks.com media@tghl.ca	F5 ECO-LITE	Hydro	Chassis	12	48" x 52" Hydraulic Door with Hydraulic Latch		2,000	20 gpm 4,060 psi	27" hg 3,800 - 6,400 cfm	Three Stage System
	F2 ECO-LITE	Hydro	Chassis	7	47 3/4" x 46" Hydraulic Door with Hydraulic Latch		800	10.6 gpm 2,800 psi	27" hg 3,800 cfm	Three Stage System
<b>Transway Systems Inc.</b> 314 Lake Ave. N Hamilton, ON L8E 3A2 800-263-4508 • 905-578-1000	Terra-Vex HV50	Hydro & Air	Chassis	12	Hydraulic Full Open Rear Door		1,000	10 gpm 3,000 psi	27" hg 5,000 cfm	Cyclone with washable poly filter
f: 905-561-9176 www.transwaysystems.com sales@transwaysystems.com <b>See Ad - Page 5</b>	Terra-Vex HV64	Hydro & Air	Chassis	12	Hydraulic Full Open Rear Door		1,000	10 gpm 3,600 psi	27" hg 6,400 cfm	Cyclone with washable poly filter
TRUVAC  TRUVAC  1621 S Illinois St.	Paradigm	Air & Hydro	Chassis	3.342	3/4	50 degrees	300 Air only: 100	8 gpm @ 2,500 psi Air only: 4 gpm @ 2,500 psi	15" hg 2,200 cfm	Dual cyclone and 5 micron polyester final filter
Streator, IL 61364 800-627-3171 • 815-672-3171 www.truvac.com	Prodigy	Air & Hydro	Chassis	9	3/4	50 degrees	600	10 gpm 3,000 psi	16" hg 3,200 cfm	Cyclone and polyester final filter
sales@truvac.com	нхх	Air & Hydro	Chassis	12 or 15	3/4	50 degrees	1,200	10 or 20 gpm 3,000 psi	18" or 28" hg 4,970, 5,250 or 6,176 cfm	Single or dual cyclone and polyester final filter
	Coyote	Нудго	Chassis	9	3/4	45 degrees	1,000	10 or 20 gpm 3,000 psi	16" hg 3,200 cfm	Cyclone and polyester final filter
	Wolf	Hydro	Chassis	14	3/4	45 degrees	1,500	20 gpm 3,000 psi	28" hg 5,200 cfm"	Dual cyclone and polyester final filter

Boom Size (ft.)	Degree of Rotation	Offloading Type	Controls Location	Wireless Y/N	Accessories Available	Vacuum (CFM/PSI)	Power Source	Compressed Air Flow	Compressed Air Pressure	Other
8" Topgun x 26'	342	Tornado Concave and Sloped Floor Design	Multifunction Wire- less Remote with Auxiliary Levers	Yes	Winterization Lighting Tool Boxes Racks Cabinets					Water Heater: 690,000 BTU. 12 Volt with full diagnostics
8" Topgun x 26'	342	Tornado Concave and Sloped Floor Design	Multifunction Wire- less Remote with Auxiliary Levers	Yes	Winterization Lighting Tool Boxes Racks Cabinets					Water Heater: 690,000 BTU. 12 Volt with full diagnostics
8" Topgun x 26'	342	Tornado Concave and Sloped Floor Design	Multifunction Wire- less Remote with Auxiliary Levers	Yes	Winterization Lighting Tool Boxes Racks Cabinets					Water Heater: 690,000 BTU. 12 Volt with full diagnostics
8" Topgun x 23'	342	Tornado Concave and Sloped Floor Design	Multifunction Wireless Remote with Passenger Side Controls	Yes	Winterization Lighting Tool Boxes Racks Cabinets					Water Heater: 420,000 BTU. 12 Volt with full diagnostics
8" x 26'	320	Telescopic hoist and optional pressure off	Curbside	Yes	Winterization Lighting Tool Boxes Racks Cabinets Roll Up Doors		Transfer case	180 cfm	150 psi	Fully insulated enclosure for blower and water system, transfer case drive
8" x 26'	320	Telescopic hoist and optional pressure off	Curbside	Yes	Winterization Lighting Tool Boxes Racks Cabinets Roll Up Doors		Transfer case	180 cfm	150 psi	Fully insulated enclosure for blower and water system, transfer case drive
6" diameter 5' extension	225	Dumping, tilting debris body	Curbside	Yes	Winterization Lighting Tool Boxes Racks Cabinets					
6" diameter	320	Dumping, tilting debris body optional sludge pump	Curbside	Yes	Winterization Lighting Tool Boxes Racks Cabinets					
8" diameter 7' extension	320	Dumping, tilting debris body	Curbside	Yes	Winterization Lighting Tool Boxes Racks Cabinets					
6" diameter	300	Dumping, tilting debris body	Curbside	Yes	Winterization Lighting Tool Boxes Racks Cabinets					
8" or 10" diameter	320	Dumping, tilting debris body	Curbside	Yes	Winterization Lighting Tool Boxes Racks Cabinets					

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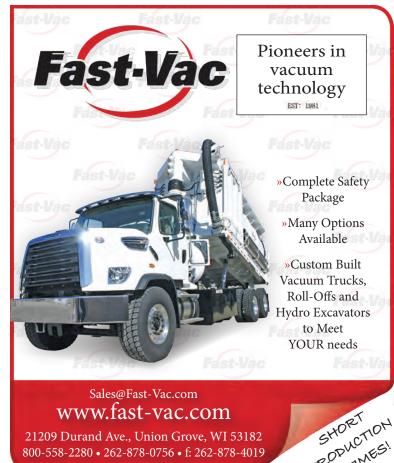
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Kate Zabriskie is president of Business Training Works Inc., a Maryland-based talent development firm. Reach her at www.businesstrainingworks.com.

# They Did What? Coping With Customers Who Behave Badly

Your company will benefit when you carefully steer septic service or portable sanitation clients toward actions that help you provide better service

By Kate Zabriskie

**olite Notice:** When it's your turn, if you are talking on your cellphone, we will help the next customer.

If you make a mess on the kitchen counter, wipe it up. If you use a dish, clean it. If the dishwasher is full of clean dishes, empty it.

If you drink the last cup of coffee, make a new pot. Your mother doesn't live here.

While somewhat funny, each of those notices is a cry for help from service staff exasperated by their customers' impolite behavior.

If you pay attention, you can see breaches in etiquette everywhere you look. For example, anyone who has ever watched people at a hotel's breakfast buffet load up their bags with enough calories to fuel a football team has witnessed a classic guest etiquette fail. While normal customers are enjoying a bowl of cereal or a pancake, those "other" people are squirreling away yogurt, bagels, bananas, sausage and anything else they can get their hands on.

No doubt, the hotel staff shake their heads in disbelief each and every morning they encounter such a scene, but short of a bag search at the buffet's exit, is there anything that can be done to change customer behavior? Fortunately, yes.

As providers trying to deliver a great experience to customers, businesses need to identify what they want and don't want their customers to do, and pinpoint what people and processes they can put in place to realize the desired results.

#### Step One - Audit

Experience your business from your customer's vantage point — and in the case of portable sanitation, the end user's experience. You need to understand what happens to them before you can encourage or discourage behaviors.

#### **Step Two – Encourage What You Do Want**

Next, identify the actions you want your customers and end users to take, and put people and processes in place to encourage those behaviors. For example, if you want dry counters in your bathrooms, look at your sinks. Are they designed well, or do they spray water everywhere?

Experience your business from your customer's vantage point — and in the case of portable sanitation, the end user's experience. You need to understand what happens to them before you can encourage or discourage behaviors.

By providing hand dryers instead of paper towels, have you deprived customers of a way to clean up after themselves? If you provide towel dispensers, does your service staff pack them so tightly that customers will destroy several dozen paper towels before leaving behind a wash basin filled with sodden confetti and hands still damp?

What about your employees? Do you train your staff to wipe down countertops — even if "housekeeper" isn't part of their official title? Do you model good behavior yourself?

#### **Step Three** – Invite Customers to Participate in the Process

Like anyone else, most customers are more willing to help you reach your service goals if you remind them of the mutual benefit of lending a hand. Let folks know what they can do to aid the common cause and make it easy for them to do it. Consider that bathroom with the perpetually wet countertops. Is there a sign of some sort explaining the desired state and what customers should do if they encounter something different?

Something such as, "We make every effort to keep our sink counters dry and free of debris. If they or some other aspect of this restroom is in need of servicing, please tell any of our employees or call us so we can make it right. Many thanks!" could make a big difference.

Such a notice makes clear your commitment to customer service, and it suggests an easy way for customers to take action and help you make good on that commitment.



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#### **Step Four – Discourage What You Don't Want**

Beyond communicating your desired end (for example, tidy restroom counters) and encouraging customers to participate in achieving it, you need to ensure that you and your staff are not working against yourselves by inadvertent enablement. Take, for example, the over-full paper towel dispenser. You want tidy restroom counters? Then have the person whose job it is to replenish paper towels service the dispensers more frequently and restock them with fewer towels. That isn't rocket science, but it will require close management and frequent correction for a couple of weeks until that new practice becomes a matter of routine.

#### **Step Five – Create Alternatives**

Sometimes, no matter how hard you try, customers continue to behave in ways you don't like. While it's not always possible to creatively accommodate these people, often it is.

Consider the problem of abandoned shopping carts in a big box store's parking lot. Those unmanned vehicles tie up spaces that would otherwise be available, they're potentially dangerous, and they make the outside of the store look uncared for. To solve the problem, a business might first liberally place cart return areas throughout its lot and send an associate outside several times an hour to gather any strays. The company might also post signs asking people to bring carts to the store as they arrive for shopping.

If those actions don't have the desired impact, the company might adopt a rental cart system where customers deposit a quarter to access a cart and get their quarter back upon the cart's return. While some people will forgo the quarter for convenience, others will gladly police the lot to retrieve a free 25 cents.

Whatever the solution, it should never berate customers or accuse them. Instead, keep the message positive. Here's an example in a hotel setting — "Due to the popularity of many of our room items, housekeeping now sells alarm clocks, sheets, towels, lamps and other merchandise found in your suite. If you wish to purchase something, please contact the front desk or simply take the item home with you. We'll gladly charge the credit card we have on file. Enjoy your stay, and let us know if we can be of service to you."

The message is clear. The hotel does not intend for guests to own the items they're using, but if they want to do so, they can certainly be accommodated

Left up to chance, you get what you get from customers, but with an understanding of your customers' experience and deliberate choices, you can influence how people behave.

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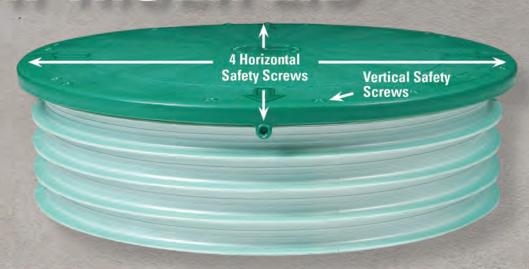


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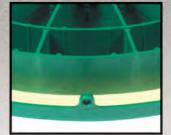
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#### SEPTIC SYSTEM ANSWER MAN





Jim Anderson, Ph.D.

Jim Anderson, Ph.D., is an emeritus professor at the University of Minnesota Department of Soil, Water and Climate. He works with the National Association of Wastewater Technicians and is a recipient of the pumping industry's Ralph Macchio Lifetime Achievement Award. Send Anderson questions about septic system maintenance and operation by email to editor@pumper.com.

# Tips to Using Constructed Wetlands in a Northern Climate

Natural filtering of effluent can be an effective step in the treatment train with proper monitoring and maintenance

By Jim Anderson, Ph.D.

n the past few months, I have had a couple questions about the viability of constructed wetlands to treat septic tank effluent in cold climates. A little review is necessary before I answer the question. Our part of the wastewater industry uses constructed wetlands as an additional pretreatment option. One way to think about this is as a media filter (just like a media, sand or peat filter). In the treatment train, it would follow the septic tank and be ahead of the final soil dispersal and treatment area.

There are three general types of constructed wetlands: open water, hydroponic and subsurface flow. In cold climates, the first two are subject to freezing in winter and reduced treatment rates during cool seasons, so subsurface flow is the type recommended for cold climates. In a subsurface flow wetland, the effluent moves through a media, usually pea rock, in which the wetland plants grow. Since flow is below the surface of the rock, they are less subject to freezing. And by controlling water levels in the media during the winter, a layer of ice can be formed near the surface to provide additional insulation.

Treatment occurs through a variety of physical, chemical and biological processes. Treatment is also impacted by the way the constructed wetland is managed in terms of how and when effluent is introduced to the system, as well as how the plants in the wetland are managed. As effluent moves through the wetland, solids are removed by filtration in the vegetation and media. Organic solids are broken down by bacteria and other organisms, reducing BOD.

#### **NITROGEN REMOVAL**

Nutrients of concern such as phosphorus and nitrogen are reduced. Phosphorus removal is primarily by adsorption to the media and plant roots. There is some plant uptake but most of the removal occurs in the pea gravel. Some studies have shown removal is improved by using ironrich gravel materials instead of the typical pea gravel.

Nitrogen removal is accomplished through nitrification and then corresponding denitrification. Oxygen is introduced through the plant roots from the atmosphere. This converts from the ammonium to nitrate (nitrification) form of nitrogen. Then, since the pea gravel or other rock media is saturated (without oxygen), nitrogen is released to the atmosphere (denitrification). This combination is effective for the removal of bacteria and phosphorus as well if retention time in the system is long enough.

If levels are not maintained, the system can dry out or freeze, killing the plants. Excess flows can reduce the treatment capabilities and cause odor problems.

So as a part of management it is important that the wetland not be hydraulically overloaded.

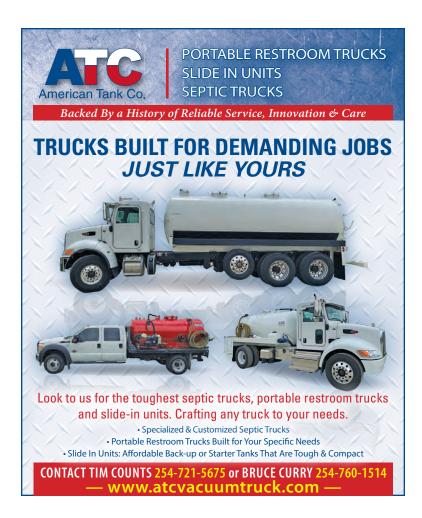
In terms of treatment, the best performance occurs in cold climates such as in Minnesota, Wisconsin and Michigan during the active plant-growing season, basically May through September. Some research we conducted in Minnesota in the early 2000s showed very good reduction in BOD, about 90 to 95%, TSS 90% and fecal coliform bacteria about 99% in the summer with 80% BOD and TSS, and 96 to 99% fecal coliforms in the winter.

For nitrogen and phosphorus, treatment efficiencies were 65-80% in the summer and 25-30% in the winter. These are very good results, especially since the pretreated effluent is delivered for final treatment and dispersal in soil. It demonstrates for these constituents of concern that constructed wetlands are a viable option for use in cold climate areas with proper management and maintenance.

More recent research has been reported on the effectiveness of constructed wetlands to treat other constituents of concern, such as pharmaceuticals. Public wastewater treatment plants have had problems removing these compounds before discharging into surface waters. An example of these compounds is anti-inflammatory drug ibuprofen. When discharged to surface waters, these compounds have been shown to have negative effects on fish and other aquatic organisms. While there are methods for wastewater treatment plants to reduce levels discharged to the environment, they are expensive.

#### LANDSCAPING REQUIRED

Those same compounds are released into our systems, so they are a concern to us too. Research so far has shown that wetlands are effective



in reducing the compounds. How the wetland is managed may have a large impact on how effective the system is for treatment. A management scenario where effluent is introduced as a batch flow instead of the typical continuous flow system is one example. This presents other management problems for the system, such as maintaining good plant growth with the flooding/drying sequence, not to mention the storage problems with periodic flows. Nevertheless, constructed wetlands are an effective treatment solution in cold climates.

In terms of management and maintenance issues, some specific necessary activities are unique to wetland systems. Effluent levels need to be monitored and controlled. If levels are not maintained, the system can dry out or freeze, killing the plants. Excess flows can reduce the treatment capabilities and cause odor problems.

Vegetation must be maintained with dead vegetation removed periodically so the wetland does not release tied-up phosphorus. In addition, animal pests and insects must be controlled. Berms and dikes must be inspected periodically, grass mowed and any damage from burrowing animals repaired. Trees must be removed from the dikes as well as within the wetland itself. Their roots can break through the membrane liner in the system, causing leaks and system failure.

The answer to whether constructed wetlands are viable for use in cold climates is yes. But as with other systems, effective management will determine whether it meets treatment requirements.

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wner Donnie Drayton added a white and blue 2020 Kenworth T880 carrying a 4,000-gallon steel tank and National Vacuum Equipment 4310 blower from Presvac Systems. The truck is powered by a Cummins X15 500 hp engine tied to an Eaton Fuller AutoShift 12-speed transmission. The truck features heated valves, toolboxes, sight glasses, safety rail on the tank, dual top-side manways, chrome accents, air conditioning, stereo and air-ride seats. Graphics are from Cool Touch Graphics. Drivers are Eddy Pagan, John McNair and James Robinson, and the truck is used for industrial services including used oil collection, cleaning sump pits, catch basins, drainage systems, underground tanks, car wash pits and other shop drains.

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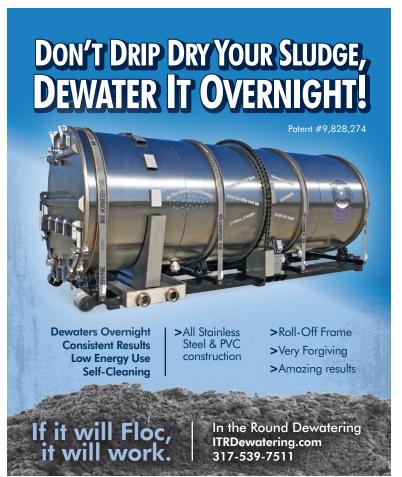
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# Innovation Will Make Decentralized Wastewater Treatment a Top Choice for Homeowners

When septic systems are built right and maintained properly, there should be no need to look to the big pipe, says a Washington On-Site Sewage Association member

In States Snapshot, we talk to a member of a state, provincial or national trade association in the decentralized wastewater industry.

This time we visit a member of Washington On-Site Sewage

Association.

Name and title or job description: Justin Wells, president and co-owner

**Business name and location:** Baker Septic, Ferndale, and Dano's Septic, Bremerton, Washington; Best Septic, Eugene, Oregon.

**Services we offer:** Pumping, installs, inspections, maintenance, repairs and portable sanitation

Age: 35

**Years in the industry:** 35 — well, sort of. My grandfather started a septic company the year I was born. I grew up third generation in the industry. My grandfather sold the company to my now-partners, and I

bought back my portion to keep it in the family. We then started to expand and now have three companies in two states.

**Association involvement:** I have been teaching classes with the Washington On-Site Sewage Association (WOSSA) for three years and have been a member since 2008.

**Benefits of belonging to the association:** I have met some amazing people with some brilliant ideas. This has taught me tricks, made partnerships and allowed me to see things outside my bubble. I have learned many ways to improve my practices while also helping others do the same. Additionally, knowing what is happening and having a voice with legislation and regulations has made a huge impact in my organizations.

**Biggest issue facing our association right now:** Lack of designers below the age of 55. Becoming a designer requires an internship or years in school. Most who spend that time in school do not know about the benefits of specializing in the onsite industry. And most who are in the industry do not have the time or chance to intern for the length of time currently required.

**Our crew includes:** My companies are co-owned by Tom Strain, Julie Strain and Phil Merwin. Our septic managers include Jake Shoemaker, Jon O'Connell and Adam Wahlund. Tony Schnackenburg is our fleet, yard and portable restroom manager. Lisa Hanley is marketing manager. Emma Lindemann, Tarrin Smith, Jeanette Mix and Serena Kelly manage our offices. Jean Bates and Tricia Plymale manage our back end as well as installations. In total we have approximately 70 amazing employees and we could not do it without such a fantastic team.

**Typical day on the job:** I check in on my management team and work with each of them to assist with any issues. I work through the numbers in our books. I travel biweekly to each company and spend time with them. I try to be in on every review and interview personally. I work with my teams one on one as much as possible to continue their training and education on the job. I take calls from employees as they have issues troubleshooting or quoting strange situations.

**The job I'll never forget:** I started running a dye test on an old gravity septic system using green dye. About 10 minutes later the neighbor came over and asked



Justin Wells and a 2021 Peterbilt with a FlowMark Vacuum Trucks 4,200-gallon aluminum tank and National Vacuum Equipment 900 cfm blower.



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me what I was doing. I explained I was inspecting the system. They said they were wondering because the water coming out of their garden hose was bright green. Needless to say, that system was replaced.

**My favorite piece of equipment:** Tablets and phones! They allow me to effectively communicate with my team. They take video and pictures that really do say 1,000 words. They have programs that allow us to use less paper and stay organized.

Most challenging site I've worked on: Many years ago a restaurant called for a leaking pipe cleanup under the restaurant. It was an old building in a downtown area and there was no access to get under the building. I learned that this sink had a leaking pipe 11 years prior and the restaurant owner decided to not fix it. So I was facing 11 years of leaking sink grease under a building with no access. I had to cut holes in the floor to access the different areas under the floor. There was 12 to 18 inches of molding grease covering a dirt floor in about a 4,000-square-foot area. The space was about 28 inches tall and in some places as shallow as 8 inches. To add to it all, the only place to park a truck was on the main road so all work had to happen after midnight and wrap up by 5 a.m. per the city. I spent three nights on my belly in that 11-year-old molding grease. After about 3 hours it became clear that the most effective way to vacuum it up was to lay on my belly and use my arms in a swimming motion to pull it to the end of the vacuum hose and push it in by hand. Three long nights later the area was cleaned and sanitized.

**Oops, I wish I could take this one back:** I took a pumping job for a large system serving a trailer park. They called me because no one else would accept the job. It was a 3.5-hour drive to get to the site. The tank was a massive 25,000 gallons. The only access was 6 feet of riser over one section of the tank. I brought two 4,000-gallon trucks with a game plan to pump and backflush my way through it. When I arrived and put my hose in, it bounced off of the scum layer because it was so hard and full of trash. We stayed at a hotel and spent four days pumping and attempting to break up the solid matter. At day four it was clear we were not going to be able to remove it all from the tank. I was unable to charge the customer and lost all that labor and time. I will not do commercial or large systems sight unseen again. Lesson learned.

**The craziest question I've been asked by a customer:** I had someone ask me if the slow toilet could be because the septic tank had septic rats — "You know, like sewer systems."

If I could change one industry regulation, it would be: I would make it easier for onsite professionals to get a license to install floats and pumps.

**Best piece of small business advice I've heard:** Being right doesn't mean you win.

**If I wasn't working in the wastewater industry, I would:** Be a cook. I love to cook and enjoy the fast-paced restaurant environment.

Crystal ball time — This is my outlook for the wastewater industry: There's a hope I have for the industry, and I sometimes bring this up in my educational classes as a challenge. It breaks my heart when I hear, "I wish I was on sewer," or, "I'm not going to buy this house because it's on septic." I want us to look at the end user more with our innovations. We have innovated our way out of so many issues, but it typically involves regulations. We have made unbuildable sites safe to build on and have an onsite system. But people still are told the do's and don'ts of septic — don't do your laundry all on Saturday, don't flush wipes, don't have a garbage disposal, don't use those products — don't, don't, don't. "Live your life around your toilet," is what they hear. So my hope is that we can start to innovate and regulate in a way that people can live their life the way someone not on a septic system can and not pay the price for doing so. I believe if we try, we can achieve this.

- Compiled by Betty Dageforde



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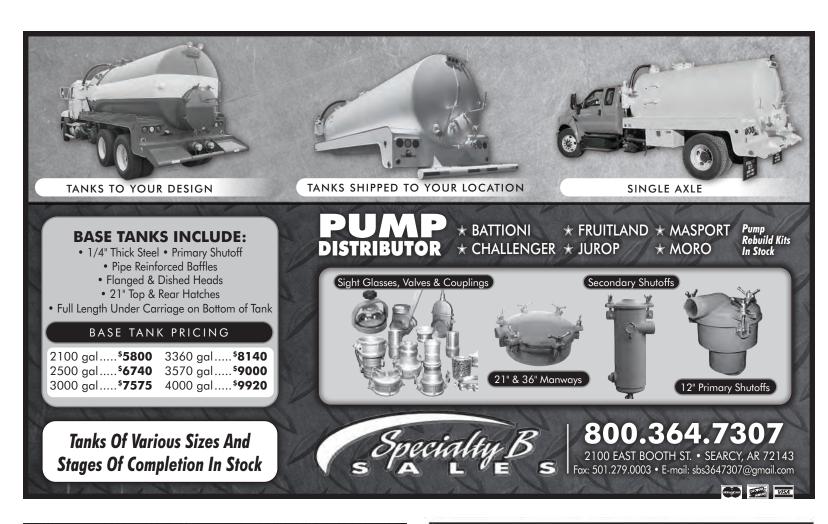
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#### **COXREELS V-100**

With a redesigned fluid path, the **V-100 Series** from **COXREELS** offers improved O-ring sealing for greater vacuum consistency and performance, in addition to a swivel retention system that strengthens the frame and prevents separation of the



swivel under excessive lateral loading. Another improvement is zinc plating of the swivel components for greater corrosion protection. It allows connection of 2-inch hose on the inlet in addition to the 1.5-inch hose. This is done by sizing the inlet to fit 1.5-inch hose on the inside and 2-inch hose on the outside. The outlet remains 1.5 inches for 1.5-inch slip hose cuffs. The reels with hose are offered in 35 and 50 foot hose lengths, but the reel itself remains unchanged. The hose has a flexible crush-proof smooth interior suitable for commercial cleaning applications, and is equipped with standard 1.5-inch threaded hose cuffs. **800-269-7335**; www.coxreels.com



#### Hannay Reels 6000 Series

The **6000 Series** manual- or power-rewind reels from **Hannay Reels** are suitable for applications that require longer lengths of hose like water blasting and sewer cleaning. The heavy-duty reel is available in aluminum or stainless steel construction and designed to handle daily use in the most demanding environments. A gear-driven crank rewind or a chain and sprocket drive powered

rewind are available in a reliable steel hub assembly. These reels handle pressures up to 2,000 psi, with an upgrade available for pressures up to 5,000 psi. 877-467-3357; www.hannay.com

#### **HYDROEXCAVATION TOOLS**

#### Dynablast HV420F-12VRED

The **Dynablast HV420F-12VRED** hydrovac water heater produces 420,000 Btu with an output temperature of 175 F at 5 gpm, making it suitable for colder climates and improved digging in clay-filled areas. All models come with ETL cer-



tification for safety, which also includes certification on the coil for higher efficiency and heat transfer, a stainless steel target plate for increased coil life and a design with serviceability in mind utilizing momentary override control. A 19- by 19-inch footprint makes it suitable for compact installations. 905-867-4642; www.dynablast.ca



#### Easy-Kleen Pressure Systems Wildcat Heaters

Wildcat Heaters high-pressure, oil-fired hotwater/steam heaters and hydraulic pump systems from Easy-Kleen Pressure Systems are designed for reliability and efficiency, and are installation-ready for vacuum trucks

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# PRODUCT FOCUS

and hydroexcavators. A full range of heater options includes dry steam, redundancy packages, schedule 80 and 160 stainless steel or A53 boiler pipe, fine-tuned temperature and flow-control systems. All coils are manufactured in-house, with CRN boiler-approved coils now available. Heaters can be designed for mounting in a cabinet or supplied as a completed cabinet unit. They are CSA and ETL approved. Hydraulic pumping systems are available. **800-315-5533**; www.easykleen.com

## Handle-Tech pipe and hose carrying tool

The **Handle-Tech** tool is designed to ease gripping, lifting and dragging pipes and hoses. It handles up to 400 pounds and holds pipes and hoses from 2 to 12 inches. Using the click-and-grip feature, the lightweight handle goes around an unwieldy hose or pipe, lifting or moving it with less effort and personal contact. It can be used in sewer pumping and cleaning, industrial vacuuming, grease handling, hydro excavation and other situations. **610-385-6091**; www.handle-tech.com



#### Soil Surgeon hydroexcavating tool

The **Soil Surgeon** hydroexcavating tool fits any sewer combination truck equipped with a telescoping 6- or 8-inch boom. The tool has a 1-inch water connection. The operator controls water pressure and power through truck controls. It has a 6-foot Tuff-Tube with handles to guide the unit down for potholing or side to side for trenching. Six jets boring inward cut the soil, while six boring outward bring the tube down. **949-363-1401; www.soilsurgeoninc.com** 

#### HYDROEXCAVATION UNITS

#### Ditch Witch HX30G

The **HX30G** vacuum excavator from **Ditch Witch** promises high-profile power in a low-profile design to ease navigation in congested and height-restricted areas. It is



powered by a 31 hp Vanguard gas engine for optimal suction power and water pressure, according to the maker. To boost efficiency, it comes with a 542 cfm blower, 3,000 psi water pressure and 4.2 gpm water flow. It is offered with the choice of a 500- or 800-gallon tank to match a variety of job requirements. The machine is available in multiple trailer configurations, including the VT9 trailer that, when equipped with the 500-gallon tank, does not require a commercial driver's license to transport. 800-654-6481; www.ditchwitch.com



#### GapVax HV33

Designed to safely transport water and debris in urban areas, the **GapVax HV33** is shorter, smaller and more compact than its predecessor. It

is 30 feet long overall on a medium-duty chassis and includes a 600-gallon water tank, 6-cubic-yard debris body, 6- or 8-inch top-mounted telescoping boom with a 14- to 17.5-foot reach, 4,000 cfm power and an inverted, full-opening tailgate. **888-442-7829**; www.gapvax.com

#### HotJet USA Vac 'n Jet Series

The HotJet USA Vac 'n Jet Series of vacuum trailer jetters are designed to be rugged and compact, engineered to haul equipment and spoils loads, can clean valve boxes and storm drains and hydroexcavate and/or



clean drainlines and sewer lines, according to the maker. They offer hotand/or cold-water operation with a choice of engines ranging from 13 to 66 hp and gas or diesel. They are equipped with premium triplex pumps, a 500-gallon spoils tank, 200-gallon water tank, Gardner Denver vac/blowers, 4-ton hydraulic dump and Centriclean filter system. They can also be designed to meet specifications. **800-624-8186**; www.hotjetusa.com



#### Imperial Industries Hydro 3600 Hybrid Excavator

The **Hydro 3600 Hybrid Excavator** from **Imperial Industries** is short and compact for maneuverability in

tight spaces. It is user friendly and efficient, and can be operated easily by a single person and is designed to minimize time spent on the job site, according to the maker. It includes a 3,600-gallon hauling capacity (customizable sizes available), optional water capacity, code and non-code availability, a three-stage lift hoist with built-in vibrator and full opening rear door for easy dumping, 20 gpm jetter up to 4,000 psi (adjustable), a National Vacuum Equipment 1600 blower and a moisture trap and grit ridder. Options include a 16-function remote control for easy operation of the boom, jetter, blower and vacuum. **800-558-2945**; www.imperialind.com

#### Presvac Systems Hydrovac

The **Presvac Systems Hydrovac** is designed for versatility and cold-weather operation with optional full compliance with U.S. Department



of Transportation specifications for collections or transportation of hazardous materials. The high-vacuum blower allows extraction of all types of soils, gravel, rock, clay, water and silt material, with knockout features in the debris tank to minimize carryover. Modular filtration configured to blower size provides blower protection and minimal maintenance, according to the maker. It comes with a heavy-duty, 8-inch boom that extends up to 25 feet with six-way hydraulic power and wireless controls for all boom functions, a soft-start water pump, vacuum breaker and truck engine speed. **800-387-7763**; www.presvac.com



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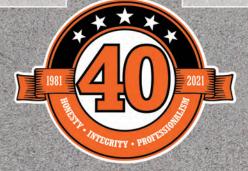
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# PRODUCT FOCUS



#### Rival Hydrovac T7 Tandem

The **T7 Tandem** hydrovac from **Rival Hydrovac** was designed primarily to be loaded with debris and driven within legislated road limits with most types of debris on board. The unit comes standard with a scale that reads

real-time weights both in the cab and on the wireless remote to confirm weights prior to travel. An air option is available on both the T7 and T10 models. These units also have the same hydro system as any other Rival unit. This hydraulically driven compressor runs in both a low- and high-pressure range allowing for 150 psi and 150 cfm for the operating of air tools or 200 psi and 200 cfm for the operating of an air knife. **403-550-7997**; www.rivalhydrovac.com

#### Super Products Mud Dog 700

**Mud Dog 700** vacuum excavators from **Super Products** are designed for operator convenience and consistent performance to meet the challenges of a wide variety of applications from compact, urban projects to large-scale excavation, potholing and trenching projects. Units come standard



as hydroexcavators with an optional air excavation package. The product line comes in a variety of model configurations: 700, 1200 and 1600. The 700 model was designed to be a compact unit for urban environments, with 7-yard debris capacity and 600-gallon water tank. This allows for a shorter turning radius and maximum legal payload. This unit comes standard with a dump unloading system capable of dumping into a 48-inch container. Additionally, the 700 is equipped with a rear mounted, 8-inch diameter boom that reaches 18 feet, has 270-degree rotation and can move in a 10-degree downward pivot, allowing for versatility within dig areas. **800-837-9711; www.superproducts.com** 



#### Tornado Global Hydrovacs F4 ECO-LITE

The **F4 ECO-LITE** from **Tornado Global Hydrovacs** has a 12-cubic-yard mud tank and holds 1,550 gallons of freshwater. The unit is more than 7,000 pounds lighter

than the company's older models and offers more than double the payload. The boom has a 342-degree rotation and 26-foot reach. The smaller F3 ECO-LITE is a 10-cubic-yard, 1,250-gallon tandem-axle unit that more than doubles older payload capacities. It features an 8-inch boom and 3,800 cfm blower. 877-340-8141; www.tornadotrucks.com

#### Transway Systems Terra-Vex HV38

The **Transway Systems Terra-Vex HV38** has a 12-yard debris tank with onboard scales for efficient hauling and off-loading, and a 26-foot-by-8-inch telescoping boom. It has a one-touch-operated hydraulic half-door

with a 3,800 cfm at 27 inches Hg hydraulically driven blower. Water pressure is achieved with a hydraulically driven triplex pump, delivering 10 gpm at 3,600 psi from a 1,000-gallon HDPE baffled water tank. The water is



heated with a 420,000 Btu diesel-fired burner for cold-weather operation. **800-263-4508**; www.transwaysystems.com



#### Vac-Con X-Cavator

The **X-Cavator** hydrovac from **Vac-Con** includes a cold-weather enclosure for the water systems and control panel as well as an interior area for operator seating

and workspace. Unit filtration is based on the Titan combination machine, with a single-cyclone design and final cartridge-style filter. The redesigned boom is lightweight and flexible, rotating 310 degrees around the unit and moving plus 45 degrees and minus 22 degrees vertically. The durable rubber hose material can withstand harsh environments, according to the maker, and has a reach of 26 feet. **904-284-4200**; www.vac-con.com

#### Vacall AllExcavate

**AllExcavate** models from **Vacall** efficiently remove dirt around utility lines, as well as foundations where mass excavation is not practical, according to the maker. Water pumps generate 24.5 to 120 gpm and pressures to 3,000 psi. The water system, wand, control panel, tools and worker apparel are



protected in a heated compartment. Its standard AllSmartFlow CANbus intelligent control system has a programmable LCD display that monitors engine, water flow and vacuum performance, allowing for precise boom and reel adjustments. Aluminum water tanks carry 1,000 to 1,300 gallons. Options include a remote control high-dump system that raises the debris tank 76 inches and then slides it back 21 inches for dumping into roll-off containers. 800-382-8302; www.vacall.com

#### INDUSTRIAL VACUUM TRUCKS



#### Satellite Industries Vacuum Trucks

**Satellite Industries** manufactures a full line of industrial vacuum trucks from 2,000 to 5,000 gallons and constructed for maximum payload capacity and improved productivity, according to the

maker. They are offered in multiple chassis options, and feature vane pump or blower options. Jetter packages are also available. Customers can choose between an engine-driven 5 gpm/3,000 psi, or PTO-driven 10 gpm, 3,000 psi jetter systems. Vacuum pump options include Masport air- cooled or water-cooled models, National Vacuum Equipment air- or water-cooled models, or blowers from National Vacuum Equipment. 800-328-3332; www.satelliteindustries.com

(continued)





# PRODUCT FOCUS

#### JET/VAC COMBO UNIT

#### U.S. Submergent Technologies Combination3

Combination3 trucks from



**U.S. Submergent Technologies** include a GritGone Process for safe and fast debris removal. They include a jetter, combined vacuum and downhole system to allow users to clean while facilities remain in service with no facility shutdown or bypass pumping, remove material in submerged or surcharged conditions, reduce or potentially eliminate the need for confined space entry and paint-filter dry material, ready for disposal, with the GritGone Process. Trucks offer an extended reach with a 49-foot extendable boom. **844-956-1129**; www.ussubmergent.com

#### **VACUUM PUMPS**

#### Fruitland 870 Series

Fruitland's 870 Series pump allows vacuum levels of 28.5 inches Hg and continuous vacuum of 27 inches Hg. Additionally, it is capable of providing 30 psi pressure for off-loading. Oil consumption is 1 gallon for 18 hours of operation to reduce consumption and environmental impact. Locally sourced, non-proprietary oil may be used. The pump delivers 510 cfm (free air) through 4-inch porting. 905-662-6552; www.fruitlandmanufacturing.com

#### **Masport TITAN**

The TITAN vacuum/pressure pump from Masport has a washable stainless steel inlet filter for long filter life, integral mounting bosses for alignment with the gearbox and hydraulic mount, an automatic adjustment-free mechanical oil pump and heat-stabilized Kevlar vanes machined to exacting tolerances. It can achieve a minimum of



407 cfm at 27 inches Hg and is fan-cooled for higher continuous vacuum operations. It has heavy-duty bearings, Viton oil seals, vane-wear inspection ports and durable translucent high-temperature oil lines that allow visible flow of oil to the pump. End thrust protection prevents rotor-to-end-cover contact created by direct PTO drive or misaligned belt-driven systems. It comes with 3-inch NPT bolt-on valve flanges for ease of installation, a 1/4-inch NPT vane flush port, integral vacuum relief valve, an integral valve that allows the pump to operate in vacuum and pressure mode and O-ring end covers that eliminate air or oil leakages. **800-228-4510**; www.masportpump.com

#### Moro USA W Series PM80W

The W Series PM80W liquid-cooled vacuum pump from Moro USA is suitable for a wide variety of applications, including oil and gas, septic, and industrial, according to the maker. It has oiled bearings that don't require additional maintenance, a sealed positive

displacement direct-feed oiling system, Kevlar vanes, an integrated check valve and a changeover valve. A jacketed casing provides liquid cooling, allowing a deeper continuous-duty vacuum. A coolant pump is available for self-contained packages. It includes industrial-duty Viton oil seals and is available in clockwise and counterclockwise rotations. **866-383-6304**; www.morousa.com

#### Wallenstein Vacuum 753 Series

The **753 Series** vacuum pump from **Wallenstein Vacuum** incorporates wide vanes that allow up to an inch of wear, designed for longer service life. It provides 422 cfm airflow at 1,200 rpm and is precision-machined for vacuum levels up to 28 inches Hg. Options include air-, liquid- or dual-



cooling systems where air injection is combined with liquid cooling. A pump-flushing port is included on the top valve for convenient maintenance. The quick-access housing end plate allows for easy internal inspection with no bearings to pull. Oil lubrication is via a mechanical piston pump driven by shaft rotation or available with a sight-feed valve oil regulator system using vacuum/pressure to draw oil with no moving parts. 800-801-6663; www.wallenstein.com

#### Westmoor Conde PowerPaks

**Westmoor Conde PowerPaks** are preassembled, gasoline or diesel-powered vacuum pump units. They are easy to install, according to the maker, and include a heavy-duty steel base with aluminum

diamond plate trim and belt guard. Rigid assembly is designed to ensure minimum vibration and maximum power. They are available with either vacuum only or vacuum/pressure pumps. A wide range of cfm options ensure the PowerPak is matched to the tank size and application. Units are powered with optional Honda GX Commercial Series gasoline engines or Hatz industrial air-cooled diesel engines. Units can be easily transferred to another tank system when needed. 800-367-0972; www.westmoorltd.co







#### PRODUCT **NEWS**



# BEST ENTERPRISES PROMISES LONGEVITY IN ITS LINE OF STAINLESS STEEL TANKS

Choosing a vacuum truck for your business is a big deal. It becomes the image of your company, and more

importantly, it's a substantial investment longevity that ensures the investment pays off. Best Enterprises believes building septic trucks with quality materials is the key to making them last and provide continuous service, according to Britt Freyaldenhoven, the company owner. So Best manufactures every vacuum tank from 304L stainless steel and custom designs them to meet the specific needs of the end user.

**By Tim Dobbins** 

"Stainless steel offers corrosion resistance, aesthetic appearance, strength-to-weight advantages, impact resistance, resale value and longevity," Freyaldenhoven says. He says the stainless tanks will outlast the truck they were installed on. "With a new truck and tank body swap, you are ready for another 10 years," Freyaldenhoven says.

Best's line of custom trucks range from 900 to 5,500 gallons and are designed to service portable restrooms, septic systems and for grease removal. Tanks are stainless steel, but so are primaries, mufflers, oilers, diesel flushes and hydraulic reservoirs, which Best Enterprises manufactures. According to Freyaldenhoven, that allows them to have more control of the overall quality of each product.

Aside from the standard features previously mentioned, Best trucks come with a selection of Masport, National Vacuum Equipment, Condé, Moro or Fruitland vacuum pumps and customizable dump size with a dump sump and dump hose. Customers can also add custom stainless steel or aluminum toolboxes, backup cameras and multiple heating options for collars, dumps, inlets, water compartment and toolboxes.

"Since 2009 we have offered a remote control for the pump and jetter system," Freyaldenhoven says. "This has been a great safety feature and saves the operator extra steps during the day."

Along with focusing on quality materials and components, Freyaldenhoven says they researched and designed each truck to perform. "We make sure to correctly size truck weight hauling capacity to full workload and not over-build the GVWs of the truck," he says. "All tanks produced are engineered to be vacuum safe and center of gravity engineering is used to make sure load capacity is distributed correctly between front and rear axles." **800-288-2378; www.bestenterprises.net** 

#### GENERAL PIPE CLEANERS PD-25 AUTO HANDY

General Pipe Cleaners' new PD-25 Auto Handy with automatic feed offers feeding speed and convenience in a hand-held drain cleaner. The Auto Handy can be used as a hand tool or as a power tool by removing the turning handle



and attaching a drill. Squeezing the feed lever as the container rotates feeds cable; to retract cable, reverse drill rotation and squeeze the lever. Auto Handy can clear clogs from 1 1/4- to 3-inch diameter lines up to 50 feet long, according to the maker. Auto Handy's polyurethane drum has been drop tested from 8 feet, fully loaded, without damage. Auto Handy uses Flexicore cables made of heavy-gauge wire coiled tightly around an aircraft-type wire rope core, then heat treated, offering strength with flexibility. **800-245-6200**; www.drainbrain.com



#### AIRVOTE QR SMILEYS WITH ASSET TRACKING

AirVote recently added asset and geolocation tracking capabilities. In addition to gathering customer feedback, AirVote QR smileys now track field equipment and portable restrooms. Each QR smiley provides a specific asset tag that generates

customer service metrics and alerts. Private customer metrics are provided in real time, giving direct feedback. **425-314-3334**; www.air-vote.com





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#### **Upcoming Training & Events**

#### **Inspector Training**

NAWT Inspector by RETS November 12-13, 2021

Location: Arlington, TX La Quinta Inn & Suites Contact: Lauren Trujillo rets@rets-llc.com

#### **Soils Workshop**

**CPOW Soil & Site Evaluation** September TBD, 2021

Location: Front Slope Contact: Lisa Nicoll cpow@cpow.net

**UA Soil & Site Evaluation for Onsite Wastewater Systems** October 20-22, 2021

Location: Maricopa, AZ Contact: Agron Tevik - 520-621-3691 atevik@arizona.edu

#### **Upcoming Events**

2021 Mega-Conference October 17-20, 2021 San Marcos, Texas

#### **Septic System Design**

**UA Introduction to Design of Onsite Wastewater Systems** October 25, 2021

Location: Maricopa, AZ Contact: Agron Tevik - 520-621-3691 atevik@arizona.edu

**UA Advanced Design of Onsite Wastewater Systems** October 26, 2021

Location: Maricopa, AZ Contact: Aaron Tevik - 520-621-3691 ntevik@nrizona edu

#### **Operation and Maintenance Training**

NAWT O&M 1 by CPOW November 8 & 9, 2021

Location: Virtual Online Course Contact: Lisa Nicoll cpow@cpow.net

NAWT O&M 2 by CPOW December 6 & 7, 2021

Location: Virtual Ónline Course Contact: Lisa Nicoll cpow@cpow.net

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#### Franklin Electric appoints new VP and CFO

Franklin Electric announced that Jeffery Taylor has been appointed vice president and CFO. John Haines has retired as vice president and CFO of the company but will support Taylor through an interim period. Most recently, Taylor was the CFO of Blue Bird, a manufacturer of school buses.

#### Infiltrator Water Technologies partners with Habitat, opens new facility

Infiltrator Water Technologies announced it is donating \$100,000 to Habitat for Humanity, continuing its four-year corporate partnership with the housing nonprofit organization. Infiltrator's most recent contribution includes over 40 donated septic systems to support 30 local Habitat organizations across the U.S. The company has donated over \$260,000 worth of septic systems to Habitat for Humanity since 2017.

Infiltrator also announced it opened a sixth facility to manufacture EZflow, a drainfield product made of geosynthetic aggregate. The new facility sits on Infiltrator's primary manufacturing campus within the Winchester Industrial Park in Winchester, Kentucky. The 36,000-squarefoot building includes five production lines, making it the largest EZflow facility to date.



**Denyse Pontius** 

#### Denyse Pontius named president Century Chemical

Century Chemical announced that longtime employee Denyse Pontius was named president and majority owner of the 95-year-old company. Pontius began her career with Century in 2005 in the production department before moving to office management in 2010. She and her husband, Pat,

purchased the company in April 2021. Century Chemical specializes in the production and distribution of sanitation products and other chemical supplies worldwide.





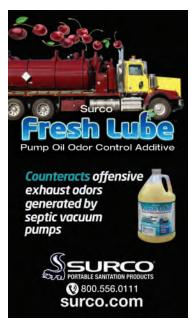


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Septic pumping and installation service for sale in the beautiful North Georgia Mountains. Business consists of the following: 98 International with 2,300-gallon tank and 150-ft. hose, 89 Kenworth with 3,500-gallon tank with 150-ft. hose, L39 kubota with trailer with 2,800 hours, BX 25 kubota with 1,200 hours with trailer also. 99 F-250 7.3 power stoke diesel with 245,000 miles, green in color. Plus more miscellaneous items that go along with the business. For more information please call David @ 706-455-9243 or 706-374-5605. 21 years in business. Asking \$250,000 0BO. GA (P09)

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BASED Septic pumping business for sale.
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misty8124@yahoo.com for more details. MA
(P09)

For Sale: Highly reputable, thriving Septic & Cesspool cleaning company on Long Island, NY in Nassau County. Well established and expanding since 1972. Owner now looking to retire. Willing to train new owners. Significant expansion opportunities and always in high demand. Serious inquiries only please. Email: EastNor14@yahoo.com or call 516-922-1242. NY (P09)

Well-established Booming SW Florida business for sale. From North Port to Marco Island 900+ units on the street, 15 ADA, 30+ sinks, 20+ holding tanks, 7 trucks, 2 trailers. Many long-term construction customers, year-round event customers. Documented yearly growth. Only serious buyers need to inquire. Email office@ronsjons.com FL (P10)

Established portable sanitation company servicing western Washington for sale. Business includes 8 trucks, 2 event trailers, 750 units, 5 route drivers, and 3 back office staff. Revenue between \$1.2 and \$2M. Highly reputable and tremendous opportunity for growth. Serious inquiries only, please. Email dean@fourunionre.com or call 206-632-2912. WA (P09)

Sewer/drain cleaning, plumbing repair, grease trap pumping business for sale in southwest Ohio. Owner for 35 years wants to retire. Sales of \$1.2 million, verifiable cash flow of \$250,000. Asking 4.0 times cash flow. Does not include real estate, but real estate is available if interested. All trucks and equipment needed to continue operations included. If interested contact Cincyplumbing@yahoo.com. OH (P10)

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Contact Adam Howard at 269-830-6325 for more info. MI (P09)

#### **HAZARDOUS WASTE UNITS**



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2009 Peterbilt 340 cab & chassis with a Presvac 3,200 U.S. gallon, C/S, D.O.T. 412, dump type, vacuum tank and a Presvac PV750 pump. (Stock #8412C).

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

2013 Peterbilt 348 cab & chassis with a Presvac 3,200 U.S. gallon, C/S, D.O.T. 412, dump type, vacuum tank and a Presvac PV750 pump. (Stock #9277C).

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648).

2011 Peterbilt 348 cab & chassis with a Presvac 3,200 U.S. gallon, C/S, D.O.T. 412, dump type, vacuum tank and a Presvac PV750 pump. (Stock #0200V).

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Used 2020 Peterbilt 348 cab & chassis with a Presvac 3,000 U.S. gallon c/s D.O.T dump unit. (Stock #055R).

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

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)

2000 International with Cusco High Dump 27", DOT Certified, 412 with vacuum pump, pressure offload as well. Cummins Power with low miles and hours. KLM Companies 617-909-9044. (PBM)

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The HotJetll® is a best-selling hotand cold-water drainline cleaner

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#### **JETTER TRAILERS**

1999 Harben 4016-300 Jet Trailer (Stock #200SC)

(888)VAC-UNIT (822-8648) www.vsirentalsllc.com.

(PBM)

(PBM)

#### **JETTERS - TRUCK**

1999 VOLVO VNL64T D12 464444MI 7,000-hrs, 10-speed w/newer clutch, air ride, axle lock, rear floats. Rear jetter is ran by a PERKINS 6-cyl w/5,000-hrs. Very good starting/running unit water pump is rated 65-gal/min @1,600-PSI (has a few leaks). About 500' 1-in jetter hose. \$12,000. Call/text Justin 608-642-4086 or 608-568-3000. WI



2007 Sterling Pipe Hunter Jeteye Jetter, municipality owned and maintained. Very clean truck with low mileage. Brand new replacement jet and camera line. Must See!! \$50,000. Call 404-732-4603. GA (P10)

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#### **JET VACS**



1995 Ford L 8000 Vactor 2100 8.3L Cummins. 61,409 miles single axle 5-speed manual transmission. Fan unit 3.9L John Deer w/6526 hours. 10-yard debris body with pump off system. 1,300 gallons fresh water, 600-foot hose reel and cold weather recirculator. \$25,000 obo. Any questions call Steve 248-345-5960. (P10)



06 IH 7600 & Vactor 2100. IH SN 6J293064 & Vactor SN 2115-824RCS-18. Pre-Emission Cat C13, SN 0KCB47665 with 11,200 hours on Dealer installed long block & \$8,000 spent on new radiator and front of engine last year. Full opening SS rear door with hydraulic door locks and splash guard. Dual SS float ball shutoffs & SS cyclone air filter system. Roots 824 blower, factory rated @3,500 CFMs. Eight-inch boom hose with hydraulic extension to 20FT. Joystick & wireless remote boom controls. 12-volt cold weather re-circulation and air purge systems. Lakota 760, 750000 BTU boiler & 75 FT. of 1/2" hydroexcavation hose. 1,500-gallon fresh water tanks. Full range articulation hose real with 650 FT. of 1" jetter hose. Multiple aluminum tool boxes & three tube racks. LED work lights on boom & strobe lights on truck. New drive and rear brakes August of 2020 & truck has current DOT. Asking \$69,900. Call 608-790-6635, Randy. MN (P09)



\$59,000 obo. 2002 Sterling LT 8500 (x city owned) 3126 Cat engine. Allison automatic transmission rebuild 2018. 14,100 engine hours, 62,907 miles. Vactor 2115 John Deer 6 cyl. Fan unit w/newer engine, flywheel housing cotta transmission and cyclone. 15-Yard debris body with structural ribbing. Rodder pump 80qpm @2500 w/accumulator. 1,500 gallons of fresh water. Cold weather recirculating, 800foot rotating hose reel, and pump off system. \$59,000 obo Any questions call Steve 248-345-5960. MI (P10)

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Western Equipment Finance, a bank-owned direct lender, is committed to continuing to help you prosper, All Equipment Types, New or Used; we have the best rates and terms you deserve. App-Only Financing and credit decisions within an hour. Call the team you can TRUST, Jim Stekl at Western Equipment Finance 701-665-1647. jim.stekl@ westernequipmentfinance.com (PBM)

#### **PARTS & COMPONENTS**



Clear the Main Line with ease, JnA Main Line Vac. Just hook the line vac to your hose, insert the incoming mainline pipe and watch the line come clean. Works on 3" & 4" pipe. Free shipping in the US. \$139.99. Order at inamainlinevac.com. 919-559-9344. (PBM)

#### **PORTABLE RESTROOMS**



**Great condition used Polyportable** Axxis toilets. \$550 each. Customers must make shipping arrangements from Carbondale, CO. Email or call for more information- sales@ cositeservices.com or 970-963-2482. (P09)

FOR SALE: 100 Two-tone grey PolyPortable integra portable toilets & 100 tan Polyportable integra. All in excellent rentable conditions. \$250 per unit. Will not last! Customer is responsible for transport & delivery. Call CALLAHEAD at 800-634-2085.

Wanted to buy 15-20 good used rentable portable toilets. Looking near Michigan/Ohio. Call 734-216-6833.



**Brand new Satellite Maxim 3000** toilets with handwash. Unassembled, never used. Stoko sanitizer dispensersnew & used. Also available 2017 Ford F550 4x4, diesel WB 169. Call or email for pricing. 970-963-2482, sales@ cositeservices.com. CO (P09)

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### **PORTABLE RESTROOM**



**FOR SALE: Best Enterprises Built** 1050 Stainless Steel Tank with Skirting. ready to bolt onto any Ford or Dodge Chassis. 750-Waste, 300-Water. Tank is in Perfect Condition. Customer is responsible for shipping. \$10,500 Call **CALLAHEAD at 800-634-2085. NY** (P11)

#### **PORTABLE RESTROOM TRAILERS**

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

#### PORTABLE RESTROOM TRUCKS



**2015 Dodge 6.4 Hemi.** Auto, 4x4. 68,000 miles. New aluminum slide-in. 300-waste, 150-water. Masport pump. Call JR @ 720-253-8014. CO (PBM)



2017 Mitsubishi Fuso. Diesel, auto. 43,000 miles. Factory warranty left on truck. Hatmore aluminum tank, 850-waste, 350-water. Call JR @ 720-253-8014. CO (PBM)

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**2011 Ford F550.** V-10, auto, 4x4. Steel vac tank, 500-waste, 250-water. Conde pump. Aux motor driven. **Call JR @ 720-253-8014. C0 (PBM)** 



2011 Ford F450. Diesel, auto, 2-wheel drive. New aluminum vac tank, 300-waste, 150-water. HXL2 Masport pump wash down system. Call JR @ 720-253-8014. CO (PBM)



2003 GMC W4500 diesel. Fmi pump set up. 500 waste, 350 fresh water. Dewalt pressure washer pump works amazing sucks just like you would want it to. 12v water pump the big boy also works great its ready to work. Has lift gate it can transfer up to 4 units no problem. I hate to see it go but California won't let me smog it-hopefully somebody can use it in another state. Asking \$25.000. 916-943-8617. CA (P09)



2015 Ford F450 Super Duty Portable
Toilet Truck. Motor 6.7 Turbo Diesel,
Automatic Transmission, 800-gal
waste/250-gal fresh water tank. New
PN33 Jurop pump, new freshwater
pump. White, cab and body clean. Good
cold A/C, ready to go to work. 240,000
miles. \$25,000. 800-721-2774.
(PBM)

2017 Ford F-550. Power Stroke 4x4 WB
169 with 2016 Flowmark aluminum tank.
300-gallon water, 950-gallon waste. PTO
vacuum operated. Also available Brand
new Satellite Maxim 3000 toilets with
handwash. Unassembled, never used. Stoko
sanitizer dispensers New or Used. Call or
email for pricing. 970-963-2482, sales@
cositeservices.com. CO (P09)



2009 T-270 KW, 242,000 miles, 25,999 GVW, PX6 220hp engine. Allison Auto Trans, 11R/22.5 Tires, Best Stainless Steel Tank 400 fresh & 1,100 waste. Masport pump and pressure washer both hydraulic-driven. \$43,500. Call 207-646-2180. ME (P09)



2009 International 4400 Maxforce
DT truck with Allison Automatic
transmission. Abernethy portable
toilet tank & pump. 152,000 miles
steel tank. 2-toilet rack hauler. Approx
700 sewage/300 fresh water. HXL75
Masport vacuum pressure pump/ or
pressure from truck for tank. New back
brakes. Good tires. \$35,000 Mathena
Septic Service Inc., 410-239-1228
or email sales@mathenaseptic.
com. MD (P10)



2014 Dodge Ram 5500. Auto, 4x4, w/ Satellite steel vac tank. 950-gal tank, 650/300. Hydraulic Conde vac pump. Call JR @ 720-253-8014. CO (PBM)

New 1,600-gallon portable toilet service unit. (Stock # 13762) www.vacuumsalesinc. com (888)VAC-UNIT (822-8648). (PBM) 2016 Dodge Ram 5500 Diesel, auto 2-wheel drive, 106,000 miles, 500-waste/400-fresh tank Toilet rack. Masport pump. Asking \$55,000. Call 336-625-6376. Very good condition. NC (P09)

New Imperial 1,300 U.S. gallon, portable toilet service unit mounted on a 2022 Ford F550 cab and chassis with a Masport HXL4 pump package. (Stock #13990).

(888)VAC-UNIT (822-8648) www.vsirentalsllc.com.

(PBM)

2000 International 4700 cab & chassis with a 500 waste/300 freshwater compartment with a Masport HXL4V vacuum pump. (Stock# 0767C) www.VacuumSalesInc. com (888) VAC-UNIT (822-8648). (PBM)

#### **POSITIONS WANTED**

Portable Toilet Route Driver Viking Rentals-Austin, Houston, DFW Driver wanted. CDL class B Driver wanted with CDL class B license. Full Time (Tanker endorsement). No more than 3 points on your license will be accepted. Job entails cleaning portable restrooms, delivery and pick-ups. Some weekend work is required. Average 50 hours per week. Health Insurance provided. Drug Free workplace! Please respond with Resumes. rmartos@vikingfencedallas.com. TX (P09)

#### **PUMPS**

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**

2022 Polar 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)

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. vsirentalslic.com. (PBM)

#### **SEPTIC TANK FORMS**

Very good used septic tank forms. For equipment List, prices (make "your" best offer), & pictures, email tankco@charter.net or call 931-526-2964. TN (P09)

#### **SEPTIC TRUCKS**



Selling my 2009 5900i International Paystar vacuum truck. C-15 cat, 18-speed, 97,000 miles. Newer tires all around. Heavy front, full lockers, 3,360-gallon tank, high pressure fresh water system, brand new Masport 407 c.f.m. air cooled vac pump. Runs excellent, ready to work. Going out of business after 65 years. Asking \$65,000, call Don 608-558-0870. Thanks for your interest. WI (P09)



2006 8400 International, 4,000-gallon tank heated valves, gallon meter, good tires. Tank and pump are 4 years old, always maintained, new brakes last year, new injector harness and new injector. 622,000 miles. Cummins motor, 8-speed, asking \$52,000. Driven every day. Call 937-926-1482 or email john@johnsreliableseptic.com. OH (P09)



56,000 miles. Cummins engine, Allison Automatic. New 2,500-gallon tank. New Moro pump PM70. Call Alan for price. 786-908-5436. FL (P09)



**221,136 miles. Detroit engine** DD13. Automatic, 450-hp. Original double frame from factory. New 4,000-gal tank, new Masport Hydra plug and play. Call Alan for price. 786-908-5436. FL (P09)



Joe Canzio Countyseptic@aol.com 914-769-2260. Ready and Working clean pump truck! 2004 International DT466 means NO DEF! 2,500 Gallons Vacutrux Built. Newly Installed rebuilt Motor May of 2021, New Springs all around May 2021. Extra Pump included, many additional spare accessories. This truck is in great shape and an Every day Worker! \$50,000.00. NY (P09)

2001 Freightliner C-120 cab & chassis with a 2006 Presvac 3,200 U.S. gallon, C/S, dump type unit with a Presvac PV750 pump. Stock #9595V.

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

New 4,000 U.S. gallon, aluminum, vacuumpressure tank mounted on a 2022 Peterbilt 348 cab & chassis with NVE Challenger 887 fan cooled vacuum pump. (Stock #13987).

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

2001 Freightliner cab & chassis with a Keith Huber, 4,000 gallon c/s full open rear door dump unit. Stock # 7896C.

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

2006 Peterbilt 335, 325 hp, 60k miles, rebuilt Cummins engine by Cummins, diesel, 10-speed rebuilt EF, 60k GVW 20/20/20, 4,000-gal Transway steel tank, 100-gal fresh water tank. 400cfm Masport pump. \$60,000 obo. 203-746-3900. For photos, text Rich at 203-948-8139. (P09)

2001 Freightliner C-120 cab & chassis with a 2006 Presvac 3,200 U.S. gallon, C/S, dump type unit with a Presvac PV750 pump. (Stock #0480C).

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

1997 Peterbilt 378 cab & chassis with a Presvac 3,000 U.S. gallon, C/S, vacuum tank & Masport HXL15WV water cooled pump. (Stock #6625C).

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

Stainless steel 2010 Polar 3,600-gallon tank ready to mount on your chassis or sell outright. 20" rear manway, two 4" inch rear valves with full stainless hose trays. KLM Companies 617-909-9044 (PBM)



2020 Peterbilt Vacuum Truck with Cummins X15, tri-axle, 18-speed and 4,700-gal Curry tank. Priced at \$159,500. Call 216-645-3440. OH (P09)



2010 Freightliner Business Class
M2 series, Under CDL, Cummins engine,
6-spd trans with exhaust brake. 246k
miles, Jurop PN-84 pump, 2,150-gallon
tank, stainless steel hose trays. Pump/
tank/paint all new in 2017. Great reliable
truck, ready to work. \$45,000 or best
offer. Located in Logan, OH. Call or
text 740-603-5966. (P09)



Septic Truck For Sale: 1998 FL70
Freightliner, 2,500-gallon dump, tank is six (6) years old. Fruitland pump 500, 3126 CAT motor. Truck runs good and ready to work. Asking price \$30,000.
For more information, call 315-893-7110 and ask for Ray. NY (P09)



Ford L8000, 7.8L diesel. Only 68k miles, 8LL trans, Hendrickson susp, heavy axles. Cusco 3,600-gal tank with hoist, full open rear door and vibrator, 750 cfm vac-pump. This truck has been used very little, excellent shape. \$19k. Call Hull's Truck Bodies, LLC at 740-820-5338. OH (P09)



2006 GMC C6500 Kodiak 7.8L.

Duramax diesel 220,336 miles. Manual transmission 1,000-gallon debris tank.

Masport hxl75v vacuum pump with great suction. \$17,995 obo. Any questions call Steve 248-345-5960. MI (P10)



2004 Kenworth T300 Cat, 330-hp.
10-spd. 2,300-gal aluminum septic,
500-gal water. Masport Pump, toolbox,
tailgate holds 2 porta pottys, new gaskets
& hitch. Low miles. 781-728-9300
Dhmortland@yahoo.com. \$35,000.
MA (P09)



1996 Ford 9000, 400 h.p Cummins, 335k miles, 9-spd, steerable loft axle, cold AC, 16' dump bed, great running truck, ready to work. \$23k Call Hull's Truck Bodies at 740-820-5338 Financing Options Available. OH (P09)



2002 International DT466, auto trans, a/c, cruise, 1,000/600 stainless steel tank, vacuum pump and pot rack. Well maintained, great running truck. \$22k. Call Hull's Truck Bodies LLC at

740-820-5338. OH (P09)

2007 Freightliner M2 with a newly

2007 Freightliner M2 with a newly painted 4,000-gallon tank. Tank is approximately 5 years old. Mast Port pump/Sea level gage/4" & 6" heated values. Approximately 520,000 miles with a 10-speed transmission. Asking \$45,000. Any questions please call 732-522-0877. NJ (P09)



1999 Mack E7, Eaton Fuller 10-speed transmission, new 3,600-gallon tank never used, 609 Challenger pump, 90% rubber. \$49,900. Call Scott Salonen 763-213-8235. MN (P09)



2013 Freightliner Cascadia, Cummins ISX 450 hp, automatic, 487k miles, NEW 3,500-gallon vacuum tank, interior tank lined and coated, NEW Masport vacuum pump, aluminum hose trays, 36-inch rear manway. \$70,000. Phoenix Truck Center - Atlanta, GA 404-844-8968. (PBM)



2012 Mack GU713 Granite, MP8, 18-spd, 340,578 miles, original heavy spec truck, 82,000lb. gvw, 18,000lb. front axle/44,000lb. camelback rears suspension/third axle, jake brake, 4,650-gallon vacuum tank, Masport pump, excellent mechanically, truck serviced and DOT inspected. \$75,500. 404-844-8968. (PBM)

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Pre-owned 1984 Mack R686ST cab and chassis with a 3,000 U.S. gallon, carbon steel, vacuum tank unit. (Stock # 6115C).

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648) (PBM)

Pre-owned 2000 Mack RD686S cab & chassis with a 4,000 U.S. gallon, carbon steel, vacuum tank unit. (Stock #0514CV)

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648) (PBM)

Vacant manufacturing facility, 51,000 square feet with high capacity well, with or without pretreatment sewage facility. 2000 Freightliner with 4,100-gallon aluminum tank. 1991 GMC with 2,300-gallon tank. 1979 Articulate John Deere tractor (50 series engine) and 3,300-gallon Balzer tank with injectors. Call 920-290-6452. (PBM)

#### **SERVICE AND REPAIR**

Dynamic Repairs - Inspection Camera Repairs: 48-hr. turn-around time. General Wire, Ratech, Ridgid, Electric Eel, Gator Cams, Insight Vision, Vision Intruders. Quality service on all brands. Rental equipment available. For more info. call Jack at 973-478-0893. Lodi, New Jersey. www.dynamicrepairs.biz (PBM)

#### **SLIDE IN UNITS**



550-gallon steel slide in, 100-gallon poly water tank. Masport HXL-3V vacuum pump w/9-HP Honda engine. 30' of 2" waste hose, 50' garden hose on hose reel. Toico water pump, 3" discharge. 7,000-lb GVWR tandem axle trailer. \$16,029. Call Jamie 800-558-2945, salesinfo@ imperialind.com. (PBM)



Imperial 450-gallon slide in. 300/150. 7x14 trailer. 525-gallon holding tank. Everything in good working condition. \$8,800 obo. Slide in only \$5,500. Can provide additional photos. 727-422-5229. FL (P09)



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

Call JR @ 720-253-8014 or Mike @ 303-478-4796, CO. (PBM)

Slide in Vacuum tank for sale. 600-Gallon (400-gallon waste, 200-gallon fresh water). Purchased new in 2018 for pumping RVs, portable toilets and restroom trailers. Since then our business has grown into larger tank trucks. Entire unit forklifts into long bed pickup truck. Perfect for startup portable toilet / restroom trailer business with small- to medium-size route. Completely self contained unit. Electric start honda motor, 70CFM masport pump. Unit is ready to work right now. Nothing is needed. Tank is in great condition, not all rotted out like other used tanks for sale. See photo I attached with comparable unit for sale for over \$14,000. Call or text me for photos. 818-822-7549. TN (P09)

#### **TANKS**



ALUMINUM & STEEL custom tanks and trailers manufactured. (1) 2,800gal. & (1) 5,000-gal. 2 compartment aluminum tank left in stock. Visit our website for specs and pricing.

AMERICANTANKANDTRAILER.COM or call 479-616-7822. AR (P09)



Crown tank CVT-110 vacuum tank, 4,620 gallons, serial CT1461, Fruitland 500 luf pump, excellent shape \$9,500. 952-469-0638, joe@mandersdiesel. com. MN (P09)



One used steel vac tank w/ Satellite 950-gal tank: 650/300. W/ Conde hydraulic vac pump. Call JR @ 720-253-8014. CO (PBM)



One used steel vac tank 1,500/500 w/ Moro hydraulic AC4 vac pump. Call JR @ 720-253-8014. CO (PBM)



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Any size tank can be custom built.
Slide-in tanks in all sizes. Plug and Play
vacuum pumps are also available. Call
Rodney Lane 270-832-3793 for
pricing. (PBM)



**Used VAC Tanks.** 4,200-gallon -\$9,900. Gasco Triplex 3364-AL - **\$750. 269-751-5167. (PBM)** 

#### **TOOLS**

T&T Tools: Probes, Hooks. Probes feature steel shafts with threaded and hardened tips. The insulated Mighty Probe™ tested to 50,000 volts. Top Poppers™ open manhole covers easily. Free catalog. www.TandTtools.com. Phone 800-521-6893. (PBM)

Crust Busters - Portable, lightweight machine guaranteed to mix up septic tanks and grease traps! Save time and money! www. crustbusters.com, 1-888-878-2296. (PBM)

#### **TOYS**

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

#### **TRAILERS**

2007 Dragon 5460 c/s vacuum tank trailer. Stock # 2173C. www.vacuumsalesinc.com (888) VAC-UNIT (822-8648) (PBM)

#### TRAILERS-VACUUM/TANKER



Dominator Dump Tank with a full hydraulic rear door, Witting RFL-100, 430 CFM pump. Very good condition, always garage kept. \$20,000 OBO.

MUST SELL! Call Henry 484-764-6351. PA (P10)



In stock, 6000- and 6300-gallon aluminum single-compartment Imperial vacuum trailers. Call Cory 800-558-2945 Ext. 426 (PBM)

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2020 Wastecorps Honeywagon 300 for sale. Purchased to pump septic at mountain cabin but needed to sell cabin. Pump trailer used once - like new. Purchased for \$12,000 and will provide receipt. Asking \$7,500. 719-395-7704 BobbyLewisBV@gmail. com. CO (P09)

#### TRUCKS (DUMP, SEPTIC, MISC.)



1996 Int'l 4900 DT466 with The
Works Rebuild done at approx. 290,000
mi. Double frame air ride suspension.
Current 318,037mi. Split 9 Trans. 2,300gal. vacuum tank. Massport HXL15-WV
pump. Stainless steel holding tank was
replaced 2/15/2018. A/C works. Truck is
unequipped with hose.

Call 419-522-2084. \$40,000. OH (P09)



#### **2010 International Max Force**

DT Workstar. Eaton Fuller 8-speed transmission. 2009 Presvac code tank with hydro hoist and rear opening door. 3,000 gallon tank. 33,429 actual miles! We bought this truck to use as a temporary truck while a new truck was being built. Do not need the truck any longer. Need the space in our yard! \$58,000 obo. We got a steal of a deal on this truck - passing along to you!!

785-539-9700 or 785-564-2723. Located in Manhattan KS. Must pick up. (P09)



1999 International 4900, 300hp engine, 10-spd Spicer transmission, 60,000 original miles, Presvac hazmat certified tank - 3,150-gal, equipped w/ hazmat certified valves, tank has never been drilled, cut or any welding done to it. Equipped w/ Fruitland vacuum system w/ hydraulic PTO, fully functional dump body w/ hydraulic operated rear door. Runs great, ready to work. \$48,500. Call 773-269-7354. NJ (P09)



**2007 Kenworth T80.** 3,600-gallon tank. **Asking \$45,000. Contact 505-927-0871 call or text. NM (P09)** 



**2004 Kenworth T80,** 4,000-gallon tank. Asking **\$75,000. Contact 505-927-0871 call or text. NM (P09)** 



**2006 Kenworth T300.** Asking \$40,000. **Contact 505-927-0871 Call or Text. NM (P09**)

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Two trucks: 1996 Red Volvo 3,000-gallon vacuum truck. \$24,500. White 2005 HINO, \$28,500. Both diesel and manual. Contact Tim Smith, 503-969-8817. OR (P09)



2013 International, 52,000 GVW, 270 HP, only 77,000 miles, equipped with NEW hydraulic set bed, 12,000 lb capacity. \$64,000. Call Dewayne 256-338-4985. (PBM)

#### **VACUUM LOADERS**

2003 SuperSucker vacuum loader, 27' blower with spare blower for the truck. 400 HP with Fuller 14708LL trans, 44k rears 20k front. Very clean and runs excellent. KLM Companies 617-909-9044. (PBM)

2000 Guzzler Ace International chassis with CAT engine. Great running truck and blower. Tank body was recently replaced brand new from Guzzler. KLM Companies 617-909-9044. (PBM)

VACALL ALLVAC AVRB, 18-yard debris body mounted on a 2014 Freightliner 114SD cab and chassis. (Stock #033R).

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

2015 Freightliner 114SD cab & chassis with a VACALL AVRB-18 industrial vacuum loader. (Available for rent or purchase). (Stock # 039R). www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

#### WANTED

Looking to purchase an existing septic company in CT. Must have legit record of financials and solid customer base. Please contact Ryan to discuss - RohalaSanitation@gmail.com. CT (P09



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Interior View of Deluxe TJ-III





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