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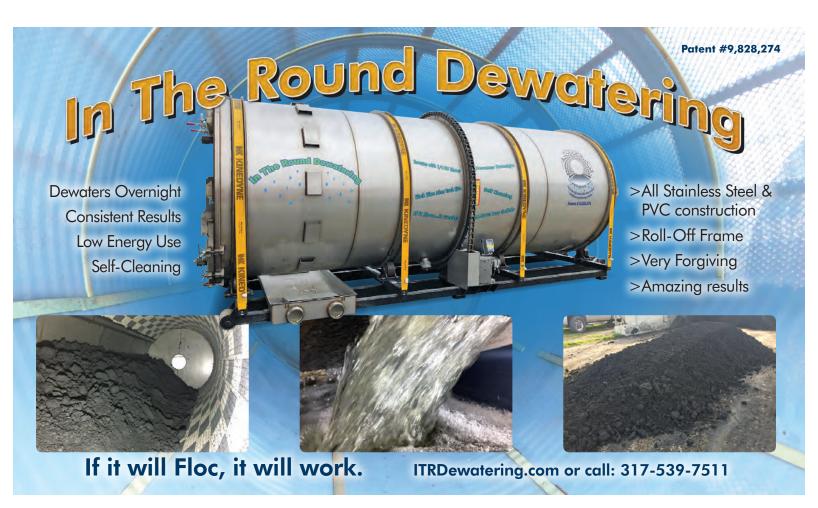
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Go Your Own Way

- Ken Wysocky

Marching to the beat of his own drummer, Raymond Harris builds his one-man Sunshine Septic business by employing strategies others may never consider.

ON THE COVER: Raymond Harris started his one-man pumping operation in Springfield, Tennessee, three years ago. The business has grown every year, thanks to hard work, customer care, and his rolling billboard — a 1995 Peterbilt 378 with a 3,300-gallon steel tank and National Vacuum Equipment pump. (Photo by Martin Cherry)

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Coming in JUNE 2018

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

What's the Secret to Fighting Fly-by-Night Operators?

More regulations and technician certification may ensure higher profits and discourage low-ball contractors from competing in your marketplace By Jim Kneiszel, Editor

n interesting analysis of wages in construction-related industries has just been released by BuildZoom, one of a number of popular websites that match contractors and customers to help keep the building trades chugging along. Slicing and dicing information about the U.S. workforce from the 2016 American Community Survey (U.S. Census data), the analysis showed, among other things, a wage scale for workers in a variety of trades in various population centers.

Learning the average pay for workers most closely matching the septic service or excavation trades should be sufficient to draw the attention of pumping company owners. However, analysis author Sasha David hit on one trend that I believe is critically important for everyone in the wastewater industry to pay attention to. A key to better higher wages for frontline workers — and consequently prices more reflective of the value of a quality pumping service — lies in training, skills and proven expertise in the field.

"There appears to be ... a relationship between an occupation's pay grade and the level of skill or technical expertise it requires," David writes. "The highest-paying occupations often require specialized training, licenses or certification to demonstrate an understanding of the trade and command a premium in the market."

Further, David makes the point that hurdles created by licensing and certification naturally reduce the number of qualified tradespeople — or qualified pumping companies — thus increasing their value in the market-place. She explains that some of the lowest-paid jobs in construction, according to the U.S. Bureau of Labor Statistics — floor installers, roofers and construction laborers — require no formal education. Once you move up to the jobs with average pay — pipelayers, glaziers, and carpenters, for example — a high school diploma is expected.

BY THE NUMBERS

The analysis correctly reckons that the construction-related industry is populated largely by small- to medium-sized local companies.

First, let's look at some numbers. The national median income for the construction trades in 2016 was reported at \$40,150. Depending on the region, the jobs most closely associated with septic service and installing fell slightly above or somewhat below that number. Here are four regional snapshots of note:

New York City — Miscellaneous including solar, septic, and sewer, \$40,000; construction laborers, \$33,000.

Miami — Pipelayers, plumbers, and steamfitters, \$35,000; construction

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laborers, \$24,000.

Minneapolis — Pipelayers, plumbers, and steamfitters, \$68,000; construction laborers, \$40,000.

Seattle - Pipelayers, plumbers, and steamfitters, \$60,000; construction laborers, \$36,000.

If you want to check out the numbers and job classifications closer to home, see a handy chart here: www.buildzoom.com/blog/?p=11028&drafts forfriends=NlN9o8aTkF7FB0IJxEHpEhS9OJnA3WAh.

REGULATIONS: GOOD

My conclusion — and I know some pumpers will and have disagreed with me about this — is that more regulation of the decentralized wastewater industry is generally a good thing for pumping companies and their crews who clean tanks, install onsite systems and service portable restrooms. And tighter restrictions and more required training of workers are also good for public health and our environment.

I recall a conversation with several pumpers from Ohio at the Water & Wastewater Equipment, Treatment & Transport (WWETT) Show several years ago. The Buckeye State had just passed new code for the first time specifying mandatory periodic septic tank pumpouts. I thought this was good news for pumpers, creating a more reliable revenue stream as homeowners would be required to pump their tanks.

Heaven knows I've heard the horror stories from pumpers tired of showing up to service tanks that had been neglected for 20 years or more. While the homeowner reported they've never had a problem with their septic system all these years, the pumper would open the tank to find it packed full of thick sludge and scum. As likely as not, they were also going to find a failing drainfield because proper maintenance was ignored.

(continued)

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To my surprise, the Ohio pumpers were unhappy about the new regulations. They worried that customers would blame them for being forced to service their tanks. They didn't want to have to charge homeowners more for the pumping and disposal. They feared "big government" was trampling property owners' rights.

I have heard the same criticism of continuing education credits among some people in the industry. I understand the frustration: Every hour your crew is in a classroom is an hour they can't be serving customers and generating revenue to keep the business going strong. And if revenue isn't coming in, you are unable to give your employees raises or increase their benefits. And if you can't offer good pay and benefits, how will you retain your best workers?

ANOTHER VIEW

But I'll ask you to flip these arguments around and look not so much at how regulations hurt your company, but at how they can help. Consider these points:

Raising the bar to entry.

If you find it's a challenge to keep up with rising professional qualifications, think of how the fly-by-night operators will meet those standards. Low-ball contractors who jump into the business with a rusty old truck and a Craigslist ad are one of the biggest threats to the viability of well-established pumpers. They seek to drive prices down, while at the same time, they are hurting the reputation of the industry by providing incompetent service. Tougher licensing that requires experience and skills testing will discourage would-be contractors and favor those who have provided quality service with top-notch equipment for many years.

Building profitability.

When you can point to your certified crew and explain how well they've been trained, you can command fees for your work that give you a fair profit for the job performed. Better certification programs in your state or county show that you can protect your customers' property and family. You work safely and know how to diagnose problems that potentially threaten the health of homeowners and their neighbors. You are not just pumping a septic tank. You're protecting the environment. That provides greater value for the customer and commands higher rates for your work.

Gaining respect for your industry.

There is often a perception that having a septic system is somehow inferior to hooking up to a municipal wastewater treatment system. You've no doubt heard some people complain about their onsite system and believe connecting to a sewer would be the answer to all of their problems. It's just not true.

The key to satisfied septic system ownership is proper maintenance, and industry regulations and certifications are the great equalizer. If your customers' systems are running efficiently and properly, they will be rewarded with a lower cost of waste treatment over the municipal sewer. With effective maintenance, the general public will start to see septic systems as a viable, permanent solution for handling wastewater.

WHAT'S YOUR VIEW?

Do you agree that a thriving wastewater industry depends on stronger regulations and certifications? Or do you see another answer to bolstering profits and ensuring growing wages for your crews? Drop me a line with your thoughts and ideas, and we'll share them with the *Pumper* community.

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COLD-WEATHER PUMPERS

deserving of respect

As the winter of 2017-2018 comes to an end, let's bow our heads out of respect for the men and women who pump out septic tanks in some of the more inhospitable parts of the world, and congratulate them for surviving until spring. Sharing stories and advice from the frozen tundra, pumpers we've spoken to from faraway lands like Minnesota, Alaska, Alberta and the Upper Peninsula of Michigan talk about what it takes to survive a harshly cold and snowy winter as a septic service professional.



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— 5 Strategies to Grow Your Pumping Business pumper.com/featured



CAT WASTE

is it flushable?

Environmental advice columnist Mr. Green with Sierra magazine recently tackled a question some of you pumpers may recognize: Can I flush cat poop? A reader with five cats says she uses sawdust nuggets as litter and scoops out the poop before flushing it into her septic. She then empties all the urine-soaked sawdust along a fence in her yard. The reader — Sally from South Miami, Florida — wanted to know if she was causing harm to the environment.

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Marching to the beat of his own drummer, Raymond Harris builds his one-man Sunshine Septic business by employing strategies others may never consider

By Ken Wysocky

aymond Harris believes he must think outside the box to prosper as a solo septic service operator. Pumping is a difficult business, and Harris makes some — let's call them unconventional choices — to succeed: Among them, he refuses to excavate septic tank lids, hand-paints his vacuum trucks, directly asks customers to post online reviews of his work, and sometimes makes an unheard of 250-mile round trip to dispose of septage.

All these moves are made to put more money in his wallet at day's end. And they all bear some explanation from the unorthodox owner of Sunshine Septic in Springfield, Tennessee. Harris, 47, says an intense work ethic learned from his father, Bill Harris, has helped him increase annual revenue by 200 percent since he started pumping three years ago.

(continued)







Left: The graphics are simple and bold on the Sunshine Septic trucks. Motorists don't miss the name and phone number when they pass Raymond Harris on his daily routes.

Below: Harris pulls hose at one of the stops on his daily septic service route in the Springfield, Tennessee, area.

"My pumping hours are what I call 'triple sevens' — 7 a.m. to 7 p.m., seven days a week. Thanksgiving, Christmas Day — you name it, and I run," Harris says. "I work too much, but I love it, too. My dad instilled quite a work ethic in us boys. But he also taught us to figure out how to do things ourselves."

Harris' policy on excavating for tank lids provides a good example of his thought process. To Harris, the equation is simple: Given the rock-hard soil in his service area (which sometimes requires a pickax to dig), he figures he can go pump two tanks in the time it would take to excavate a lid.

"You can't really get a shovel in the ground around here in summer," he says. "I considered buying a mini backhoe, but I didn't want to incur that kind of expense. So I decided to change the game a bit by asking customers to dig out their own lids.

"People generally are OK with that," he adds. "And if they don't want to do it, I refer them to a plumber I know who will run an inspection camera with a sonde out to the tank, figure out where the lid is and dig it out. When it's ready to rock 'n' roll, I just back in the truck and I'm gone in 30 minutes."

RAY OF SUNSHINE

Harris comes from a long line of pumpers, starting with his grandfather, the late Harold Harris, who established Harris Septic in Cohoctah, Michigan, (between Lansing and Detroit) in 1952. Bill Harris bought the company around 1972 and renamed it Harris & Son.

The business was a part-time operation until Raymond Harris' brother, Charles, took over. Charles still owns the company, which is managed by his son, Austin — the fourth generation of family involvement.

Raymond Harris moved to Tennessee to start a trucking company called Sunshine Truck Line. But he eventually returned to the pumping business by establishing what effectively was a southern arm of the family business, also called Harris & Son. Later he changed the name to Sunshine Septic when he and his brother kept getting calls for each other's business, illustrating the internet's extensive marketing reach.

After three years, Raymond Harris remains the company's sole employee, and he doesn't expect that to change any time soon. He fears employees wouldn't share an owner's commitment and enthusiasm. "All it takes is one bad review on Google and they've got you," he notes. "Plus, employees tend to tear up trucks."



My pumping hours are what I call 'triple sevens' — 7 a.m. to 7 p.m., seven days a week. Thanksgiving, Christmas Day — you name it, and I run. I work too much, but I love it, too. My dad instilled quite a work ethic in us boys.

RAYMOND HARRIS

Harris is proud of Sunshine Septic's customer reviews. Including more than two dozen five-star reviews online. "Google reviews are the most important thing to customers these days," he asserts. As an incentive, Harris offers customers a \$10 to \$20 discount if they write a review while he's still on the job site.

DISPOSAL ISSUES

There was a time when waste disposal was a vexing issue for Sunshine Septic. The reason: Most of the 11 or so counties the company used to operate in would allow pumpers to dump only waste collected within their boundaries. "It was a paperwork disaster," Harris says. "Each November, I'd spend about two weeks running from county to county, paying fees and filing paperwork."

(continued)

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Then Harris heard that the city of Columbia would accept waste from any county. The only problem was Columbia was a two-hour drive away — about a 250-mile round trip. And the city charged \$350 a load. But when Harris compared the costs and considered the time-consuming hassle of annual permit renewals, he figured he would actually come out ahead, as counterintuitive as that might seem on the surface.

Raymond Harris runs two older trucks, both 1995 models. Out front is his bigger truck, a Peterbilt 378 with a 3,300-gallon steel tank and National Vacuum Equipment pump. At the rear is a Chevrolet Kodiak with a 2,000-gallon tank and Jurop/ Chandler pump.

"It was just a matter of eliminating all that running around," he says. "It sounded like a lot of money, but when you do the math and look at all the time and fuel you burn ..."

Eventually, Harris simplified things even more by shifting his business base primarily to customers living in Robertson County (Springfield is the county seat). The Springfield municipal waste treatment plant accepts waste from customers in Robertson County; Harris takes waste collected from all other customers to Columbia.

"On Sundays, there's no line at the plant (in Columbia), so I get up, put on my boots, and go for a ride," he explains. "I actually enjoy it because I know I'm avoiding a lot of headaches and paperwork."

AN OLDER FLEET

The heart of Sunshine Septic is a distinctive, bright-yellow 1995 Peterbilt 378 truck that Harris had outfitted with a 3,300-gallon steel tank that came off a former Texas oilfield truck and a vacuum pump made by National Vacuum Equipment. He also owns a 1995 Chevrolet Kodiak that carries a 2,000-gallon steel tank and equipped with a Jurop/Chandler pump. Both





Raymond Harris may not have a fancy marketing degree, yet he knows full well the value of differentiating his company, Sunshine Septic, from competitors. And he does that in an extremely visible way with his hand-painted, lemon-yellow-with-purple-trim 1995 Peterbilt truck, which he affectionately calls Bumblebee.

"When I was painting it outside, the yellow color attracted bees," he explains. "So all these bumblebees kept landing on the wet paint."

Harris is no stranger to painting trucks. When he was a youngster, he used to help his dad, Bill Harris, hand-paint his pumping company's trucks to save money. "I learned how to make a truck look like it came out of a showroom," he says.

When Raymond Harris established Sunshine Septic in 2015, he wanted a truck color that would accurately reflect the company's name. "With a name like Sunshine, it had to be bright," he says. So he opted for a glossy, safety-yellow oil-based paint made by Rust-Oleum, applied with foam rollers.

Harris estimates it took about 450 hours spread out over six months to prep and paint the truck; he did the work before he started formally serving customers. Overall, he says it took about 20 gallons of safety yellow, about five gallons of purple and roughly six gallons of bright-aluminum paint — all made by Rust-Oleum — to complete the job.

The key to its gleaming finish? An initial coat of white Rust-Oleum paint, followed by a coat of the bright-aluminum paint topped by 12 coats of the safety yellow — 14 coats of paint in all (plus wet-sanding by hand in between each coat with 220-grit sandpaper and scuff pads). "That bright aluminum base makes each subsequent yellow top coat shinier," he says. "That's why the yellow is so bright."

Harris concedes that compared to the expense of the paint and all the hours he put into the job, he probably could've had the truck painted professionally much faster and at less cost. But he says he never considered even getting an estimate. "It's not about the money — it's about memories," he explains. "Doing it by hand takes me back to being a kid. I've got to do it the old-school way, family-style. Plus, it won't look as bright if I have someone else paint it."

Customers' reactions to the truck makes all the long hours of painting and sanding worthwhile; they typically are impressed when Harris pulls up on a job. "They say, 'My God, that's a beautiful truck — I can't believe how bright it is,'" he says. "I do a professional job, so I want a professional-looking truck. It tells my customers a lot about me and my business."

The truck likely will need to be repainted every three years or so, which will require Harris to mask off all the vinyl lettering before he repaints. "It's a lot of work," he notes. "But the results are well worth it."

trucks are bright yellow, hand-painted by Harris.

The pump on the Peterbilt truck is more powerful than a typical vacuum pump, which makes it great for blowing back water from the truck's tank into a septic tank to agitate thick sludge.

"When you're a one-man show, you have to think out of the box," Harris explains. "I was thinking about how to keep labor costs down and save time, so I did some research on powerful oilrig pumps, which gave me the idea (about using water pressure to agitate sludge). It actually can get pretty exciting. ... You've got to be ready or you'll be wearing it (the sludge)."

Harris had to make do without the Peterbilt last early September through mid-December, courtesy of extreme flooding in the aftermath of Hurricane Irma. Sunshine Septic is located in a row of five side-by-side shop buildings along the Sulphur Fork Creek, which overflowed and filled the facilities with 6 feet of water.

The only silver lining for Harris: He had flood-insurance policy, which he took out after he heard the creek had flooded in 2010. The Peterbilt was undrivable, with a waterlogged computer, clutch, pump and transmission. The Kodiak was in a little better shape — drivable, even though the clutch was shot.

By the time I'm 55 or 57, I'm hoping things will be pretty well set. In the meantime, my plan is to keep growing a very strong, reputable and clean business — keep things simple and efficient.

RAYMOND HARRIS

"I'm telling you, it got pretty interesting," Harris says about driving the Kodiak until the clutch could be repaired. "I had to chock the wheels (while pumping) to make sure it wouldn't roll away. ... The emergency brake was shot, too. I paid someone to come on jobs with me."

KEEP ER' MOVIN'

Harris says he anticipates Sunshine Septic will continue to grow, noting the advantage of passing the three-year mark. It means customers for whom he cleaned septic tanks during his first year in business will be due for pumping, which should boost revenue going forward.

Moreover, by keeping overhead low — aided by having no employees — and minimizing debt, Harris says he can maximize his profit margins. "I was taught at an early age that it's not how much money you make, but how much you keep that counts," he explains.

The main motivation to keep pushing hard? Early retirement. "I don't want to be still working at 75 and wishing I would've thought things out better," Harris says. "By the time I'm 55 or 57, I'm hoping things will be pretty well set. In the meantime, my plan is to keep growing a very strong, reputable and clean business — keep things simple and efficient.

"And keep thinking outside the box."

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6 Simple Steps to Develop Loyal Employees

You want workers who will give their all every day? Get back to the basics of treating people with respect and recognize it when they do something to help the company. By Brigette Hyacinth

esterday, I was speaking to Jill (not her real name) who had been on extended sick leave. She was diagnosed with cancer in 2016. She returned to work but was hurt that not one of the managers called to see how she was doing. Her immediate supervisor would call but quickly cut to the chase, asking her when she was coming back out to work. The cancer is in remission now, but Jill says, "I am not going the extra mile like before; they don't care about me, and I don't care about them!"

If you want loyal employees, here are six things you should be doing:

1. Show you care.

If we treat people only as the means to an end, we will never have their loyalty. Don't just consider them as robots on your coglike production line. Treat your people right. It doesn't mean being overly attentive or soft, but demonstrate that you value people.

It doesn't take much effort to show you care. If you have an employee on extended sick leave or who loses a family member, pick up the phone and call them. Be genuinely sympathetic. It will mean the world to them. Sending a card or flowers is good, but take the time to call them. This is something they will never forget. You don't have to pry, but just a simple "How are you doing today?" will let them know that you care. Some employees require time off for family commitments or educational or professional development programs. Where possible, be flexible. If employees have to go through red tape or interrogation to get time off, they may decide to call in sick.

2. R-E-S-P-E-C-T.

Wanting employees to come in early and leave late on a daily basis shows a lack of respect for their personal lives. Additionally, contacting them after work hours or while they are on vacation should be avoided. Yes, there are situations where you will need to, but this should not be the norm. When employees realize you don't care about them by infringing on their personal time, everything you do regarding relationship-building activities will seem superficial. And a good manager doesn't talk down to staff or make them feel inferior. Team members should not feel any pressure or be afraid to come directly to you. Show respect for all those you come in contact with.

3. Connect with your team.

Be visible and make your presence felt. Don't lock yourself in your office and only communicate with staff when you want something done. How can you motivate the troops when you are out of sight? Come down from the mountaintop and mix and mingle with your crew. Sit at lunch with them. Get to know your team. Build relationships.

Give people responsibility and challenges that will help them to grow. Let them come up with ideas. When you empower your employees, it shows that you trust them and they will not want to let you down.

4. Grant autonomy.

Micromanaging and breathing down someone's neck all the time can be very disheartening. Sometimes knowing when to step back and let your employees do their work is what they need. Give people responsibility and challenges that will help them to grow. Let them come up with ideas. When you empower your employees, it shows that you trust them and they will not want to let you down.

5. Be fair and neutral.

We know too well about office politics and favoritism. It's really sad when employees can tell who will be getting the next promotion based on a manager's relationship with some employees. Unfair practices relate to how vacancies are filled, disciplining inconsistently and even in how a leader allows leeway in work schedules. This fosters low engagement. Give constructive feedback rather than criticism. Don't give preferential treatment to some employees and ignore others. Everyone is watching and noticing more than you think.

6. Share and give credit.

Don't brush over your crew's successes with a bland acknowledgement while automatically working toward the next goal. Be generous with rewards, recognition and thank-yous. Recognize publicly. Rather than just recognizing top performers, include those who are improving or doing their best. Furthermore, celebrate victories. Don't be a taskmaster. Yes, employees already know they come to the office to do a job, but you should not stop them from having fun as well. People want to work with great people and have fun at work.

THE BOTTOM LINE

Leadership is both a give and take relationship. If you want employees to go the extra mile, you have to go the extra mile too. If you want loyal employees — treat your people well. ■



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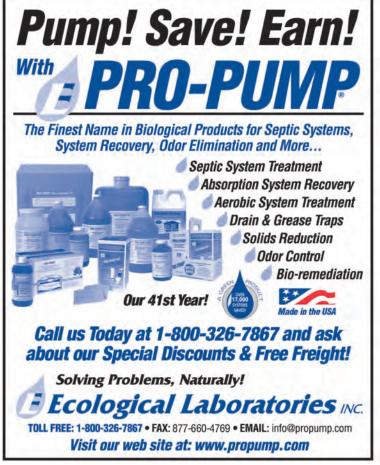
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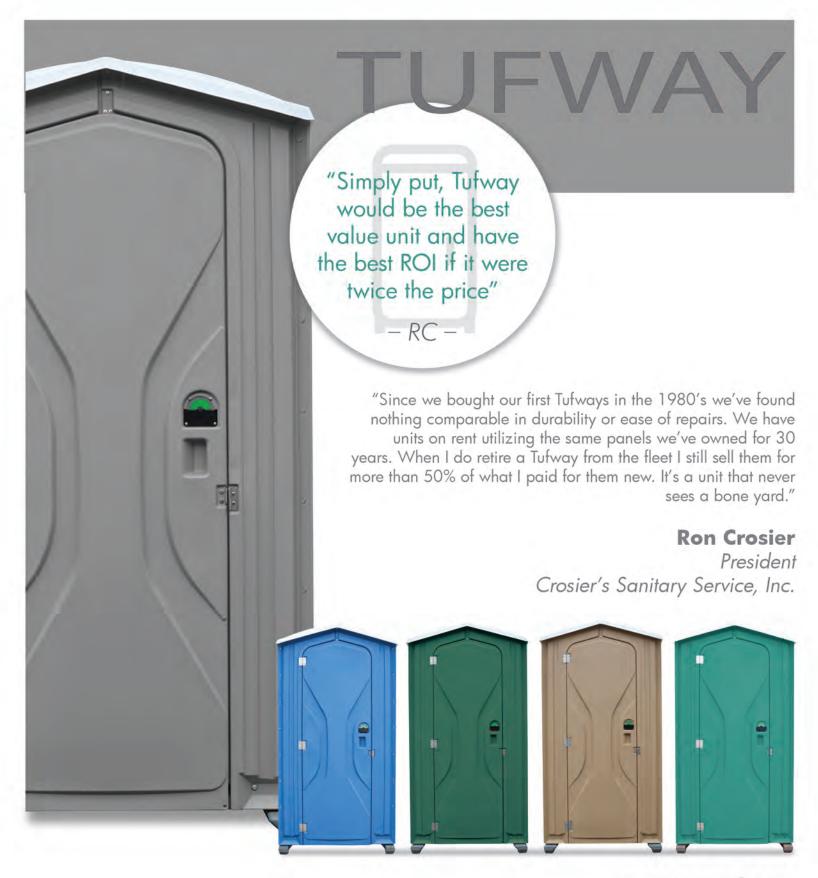
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Based in Racine, Wisconsin, Erik Gunn writes for magazines on business and other topics.

Take These Steps When the IRS Comes Calling With a Tax Lien

The government doesn't mess around when you owe it money. Do what you can to get out in front of your tax debt. By Erik Gunn

t's right up there on the list of questions no business owner wants to have to deal with: What happens if my business gets slapped with a tax lien?

A tax lien is just what it sounds like — a claim upon your assets as a consequence of unpaid taxes. At the federal level, the IRS filed just over 470,000 tax liens in 2016. (You can learn a lot more about the IRS' practices and policies on liens and levies at www.irs.gov/businesses/small-businesses-self-employed/understanding-a-federal-tax-lien.)

But the power to file a tax lien doesn't stop there. "You can assume that any taxing authority has a right to place a lien on your property if you have any unpaid taxes," says Patricia Hintz, a tax lawyer for the business law firm Quarles & Brady in Milwaukee.

Taxing bodies also can levy or seize property, giving them access to, among other things, your bank account and business assets (both real and personal property). Most use liens and levies in a two-pronged strategy.

In the case of cash property, the taxing body sends a levy notice to the bank where the taxpayer in arrears has an account. The typical levy is only good for a designated day, Hintz explains, so bank officials "have to turn over all the funds they are holding for that person on a particular day." Taxing bodies employing the levy mechanism typically watch closely and submit the levy when they have good reason to believe there's cash on hand.

An exception to the "one day at a time" practice is when the levy is attached to a person's wages. That enables the government to pull what it's owed out of your paycheck in regular installments until the outstanding debt, including interest and penalties, is satisfied.

Taxing authorities can also seize other types of property, but the procedures vary depending upon the type of property involved, Hintz says.

HIRE A LAWYER

If you wind up with a tax lien on your business, you're pretty close to stuck. "It's going to be a huge deal that any tax lawyer is going to have to go through a lot of trouble to get you out of," Hintz says.

At that point, you have no right to appeal on the substance of the issue — for example, that the tax was wrongly calculated. You can only appeal on procedure — for instance, that your due process rights were ignored.

A lien on property you plan to sell will have to be satisfied and lifted before you can sell it, or else the lien holder gets the first cut of the sales proceeds. If you think a lien is coming, you'll need to move quickly to sell before it's actually filed.

Hintz's advice on what to do if you actually get hit with a lien is short and not so sweet:

First: Get a good lawyer. "You need to find a lawyer who deals with this stuff routinely," she says. That attorney will have contacts with the taxing entity and the practical insight to know what kind of deal is actually possible. By then, an accountant alone won't likely be able to help you out of the jam you're in.

Second: Make sure you're current on all other tax years. "If you're going to work out a deal with any taxing authority, you'd better be clean as a choir-

They charge very high interest rates and high penalties for failure to pay. It might take over a year after the tax is due before the lien or levy pops up. 37

Patricia Hintz

boy with your current liabilities," Hintz says. Pay any other outstanding tax debt as fast as you possibly can.

WORKING YOUR WAY OUT

Some of what happens next depends on your long-term business prospects: Are you about to go out of business? Or are you fighting to remain a going concern?

"If your business has just gone down the tubes, most taxing authorities may have offers in compromise," she says. That's the formal name for an agreement to settle your tax debt for some percent-

age on the dollar.

If you plan to keep operating, you can still set up an installment plan to pay off the debt plus interest, plus penalties. But don't expect to get a discount then. And do figure you'll get either a two-year or four-year window to get it paid off.

Your creditor will look at your financial records to see how much you're generating in receipts, then set your installments accordingly. And by the way, as part of the procedure, you can expect to be told what your permitted living expenses budget will be during that period.

PREVENTIVE MEASURES

It's always best to level with yourself and ensure a major problem like a tax lien doesn't happen in the first place. "Most of the time liens and levies do not pop up by surprise," Hintz says. "You generally know when you haven't been paying your taxes."

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Also, keep in mind there's a big difference between taxing authorities and most private-sector creditors.

An unpaid credit card company or vendor will nag you repeatedly. They're likely at some point to turn your outstanding bill over to a collection agency. Not to mention your workforce: "If you're short of cash and don't pay your employees, they're going to quit," she observes.

Taxing authorities might seem mild mannered by comparison. They won't be breathing down your neck as the interest and penalties add up. "They're quiet creditors for a fairly long time," Hintz says. "But they are very draconian creditors on the back end because they charge very high interest rates and high penalties for failure to pay. It might take over a year after the tax is due before the lien or levy pops up."

Failing to file a federal return carries a 25 percent penalty. Some state and local taxing bodies follow that benchmark, while rates vary widely elsewhere.

Yet if you pay attention, there really shouldn't be any surprise. "Liens and levies are pretty extreme measures," Hintz points out. "They are considered a taking of property, so they can't be done without due process."

So right there, you should get warning signs about what's coming — and each of those is an opportunity to prevent the worst possible outcome.

PAYING ATTENTION

That points to the real long-term prevention strategy: If you're strapped for cash, don't just pay attention to the squeakiest wheels who will nag you incessantly. Just because the IRS or your county treasurer isn't bugging you about that unpaid tax bill doesn't mean you can simply put them off without consequence. And don't fool yourself into thinking you'll simply quietly catch up on those old tax bills later. "You might have the best of intentions, but that doesn't help with tax authorities," Hintz says.

Call your accountant, "and face a reality check," she says. You'll get more options for an installment plan that you initiate before you're hit with a lien or a levy.

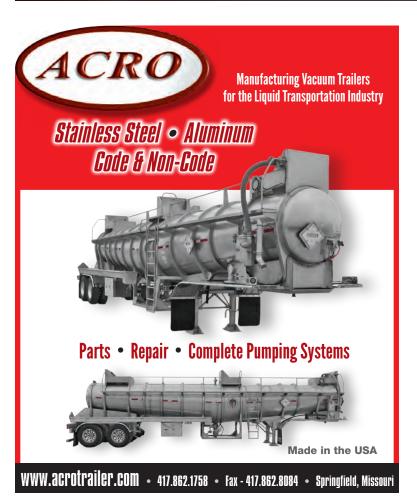
Sometimes a business on the verge of being hit with that lien may file an offer in compromise. That will typically suspend the collection process, although the business filing will generally have to make a down payment on the debt.

In short, like so many other challenges in business, the best way to stop a bad outcome is to head it off at the earliest sign of trouble.

After all, foresight in tough times may be uncomfortable. But isn't it a lot better than hindsight full of regret? \blacksquare









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HUMBLE BEGINNING

Renting and servicing portable restrooms is only one branch of O'Fallon Sewer Service, which now has 15 employees and lots of different types of equipment. In the beginning — 1962 — it was just Earnest and one machine. "It was a combination of a sewer machine and a sink machine, and you had to switch

Above: Joe Smith and Steve Soltyslak install a new pump from Liberty Pumps.

Right: Soltyslak is shown with a pump from Liberty Pumps.

the drum part from one to the other, depending on the job," Earnest recalls.

Even so, Earnest says he felt like he was ahead of the competition in St.
Charles, Warren, and Lincoln counties because he had a cabling machine.
"In our three-county area, I was the first one to have a machine like a Spartan. Up until that time, everybody was just poking sewers open with a tape," Earnest says.

He would haul his machine around with a vacuum truck he put together himself. "It started out I had just the pump truck that hauled the machine on the side of the truck, and I'd even have to haul the drum in the cab and put it together on the job. That didn't last very long. It just wasn't handy. To go in town to clean somebody's sink, you had to take the pump truck.

"It wasn't a good plan, but it got me started. After about a month, I got

The O'Fallon Sewer Service team includes (from left) Steve Soltyslak, Troy Muse Jr., Mark Schutte, Calvin Roam, Kevin Brown, Ron Fulmer, Jeff Earnest, Leonard Earnest, Marilyn Earnest, Chris Taylor, Joe Smith, Don Drake, Kory Drake, Rhonda Bruner, Dave Menne and Rick Earnest.

a pickup with (a cap) for the machine," he says. Before long, Earnest got in touch with Ken-Way for a sink machine and Spartan Tool for a sewer machine, "And away we went. We were some of their earlier customers."

When he started O'Fallon Sewer Service, Earnest was working in electronics for McDonnell Douglas, the St. Louis-based aircraft manufacturer. He continued working there for another five years, operating his company on the side, before making the leap into full-time self-employment. His career at McDonnell Douglas was going well, he says, but he preferred working for himself.

ADDING PORTABLES

In the beginning, Earnest cleared sink and sewer clogs

and did light plumbing work, plus pump maintenance and repairs, but his business grew and diversified. In the late 1970s, he started renting and servicing portable restrooms. He says he'd been thinking about it for a while, and his wife finally said that he should either do it or stop talking about it.

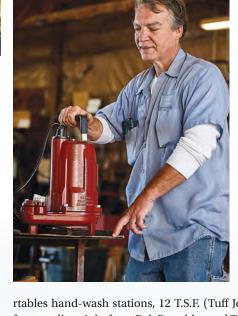
Renting and servicing portable restrooms has grown to be a significant part of the business.

The company now has about 500 PolyPortables restrooms and 32 handicapaccessible units from PolyPortables and PolyJohn Enterprises. It also has 12 PolyPo-

rtables hand-wash stations, 12 T.S.F. (Tuff Jon) hand-wash stations and 30 freestanding sinks from PolyPortables and T.S.F.

This inventory is serviced by three Ford F-550 Super Duty trucks with steel tanks. One is a 2016 outfitted by Satellite Industries with a 600-gallon waste and 300-gallon freshwater tank and a Conde pump (Westmoor). Another is a 2012 outfitted by Specialty B Sales with a 400-gallon waste and 200-gallon freshwater tank and a Masport pump. The other one is a 2007 outfitted by Keith Huber with a 650-gallon waste and 250-gallon freshwater

(continued)









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tank and a Masport pump. Chemicals are supplied by Satellite Industries.

For septic pumping, O'Fallon Sewer Service has a 1985 International outfitted by Specialty B Sales with a 2,000-gallon steel tank and a Masport pump, and a 1999 Chevy C6500 also outfitted by Specialty B Sales with a 2,000-gallon steel tank and a Masport pump. Both trucks have 250-gallon water tanks.

In 1993, Earnest's son, Jeff Earnest, took O'Fallon Sewer Service into excavation service, installing septic systems and doing sewer line and waterline repairs. Today the company has two International trucks to haul excavating equipment, including a Kubota KX121 excavator and a Case 1841 skid-steer loader.

The rest of the truck fleet includes three Ford vans, plus two 1-ton utility trucks, one of them a Ford, the other a Chevy, used for service calls.

A DYNAMIC TERRITORY

Jeff Earnest estimates about 25 percent of the company's portable restroom business comes from construction projects, the rest comes from special events. O'Fallon Sewer Service is the exclusive provider of portable restrooms to two of the area's big events, the St. Charles County Fair and the Festival of the Little Hills, an annual exhibition for crafts people and artisans that lasts three days.

The company also had another big event in 2017 since O'Fallon was in the path of totality for the solar eclipse. "People came from everywhere," Leonard Earnest says. "We nearly rented everything we had."

Earnest attributes the company's growth to O'Fallon's growth. "The area is growing," he says. "It has really kept us busy." O'Fallon, about 40 miles west of St. Louis, has a population of about 87,000, which has more than quadrupled since 1990. The city has been named one of America's best places to live by *Money* magazine numerous times.

More important for O'Fallon Sewer Service's septic system installations, the area around the city is also growing. The city of O'Fallon is in St. Charles County, which was the fastest-growing county in Missouri in the 2016 U.S. Census Bureau estimate. In fact,

Below, left: Technician Calvin Roam pumps a septic tank.

Below, right: Technicians Kory Drake and Don Drake prepare to clear a line using a Spartan Tool sewer machine.

Retirement in his sights

Leonard Earnest has two sons and a granddaughter working in the business, but he's had to look beyond the immediate family to staff his growing company. Finding good people has not been difficult, he says. Sometimes recommendations come from people who are already on the staff.

"We haven't hired anybody that we haven't known," he says. Employees of O'Fallon Sewer Service usually stay for a long time.

"Our employees have been here forever and ever. It takes something real stressful for us to let anybody go." Earnest says. "We pay well, and we pay for health insurance for them and their families.

"We've had people retire from here, and we're still working," he says. Working, but cutting back after more than 50 years.

"It's a family business. Right now, my wife, Marilyn Earnest, and I catch the loose ends. We'll answer the phones, even in the evenings and anytime else, but we do take our vacations. We do love to fish," he says. "We've got the boys; we've got the employees. We just keep getting everybody more in shape, more trained, where we can totally get out. We will before too long."

Our employees have been here forever and ever. It takes something real stressful for us to let anybody go. We pay well, and we pay for health insurance for them and their families.

LEONARD EARNEST

since Earnest founded his company in the 1960s, St. Charles County has been one of the fastest-growing counties in the country.

"It's been growth since the giddyap," Earnest says. "We work in the three

outlying counties. The migration to the country helps us. We don't do the city work; we do the outlying county work. People like the life in the country. They like living where they can have 3 acres or so. It's beautiful out here."

The company serves a 50-mile radius around O'Fallon.



O'Fallon Sewer Service has its own wastewater disposal facility, a 1-acre, 15-feet-deep lagoon on a farm the company owns. According to Earnest, O'Fallon Sewer Service was the first septic pumping company in Missouri to build its own wastewater disposal lagoon.

"We had to go through the expense of building it," Earnest says, "but it does save us a lot of time."

Earnest says the lagoon is large enough to take care of all the company's septic pumping and portable







restroom pumping. Evaporation, he says, disposes of a lot of the water. The company can land-apply the sludge to the farm under the right weather

conditions. A local farmer takes care of planting and harvesting of corn, soybeans and hay the farm produces.

In the early days, Earnest's marketing plan consisted of advertising in the phone book and local newspaper. The newspaper ads, he says, were mainly targeted to potential competitors. "I didn't want people driving through to think that there wasn't somebody already here doing (wastewater work)," he says. "It was like an old dog marking his territory."

The company still uses the phone book, but it also has a website and uses social media. It also has a customer base built up over I didn't want people driving through to think that there wasn't somebody already here doing (wastewater work). (Newspaper advertising) was like an old dog marking his territory.

LEONARD EARNEST

more than 50 years. "We have customers that have been with us almost since the beginning," Earnest says.

PROBLEM-SOLVERS

At 79, Earnest has cut back on the hours he works and is making plans to retire, but he still enjoys the challenges of his business. "Being able to solve problems for people is great. When we've got employees out here doing something and they're not sure, they get ahold of Jeff or me. We have the satisfaction from that."

As he looks to the future, Jeff Earnest does not expect major changes for the company. He likes the way the different parts of the company are balanced, with each of the five functions — septic pumping, portable restrooms, plumbing, pump servicing and replacement, and excavating — accounting for about 20 percent of the business.

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(See ad page 87)

Satellite Industries 800-328-3332 www.satelliteindustries.com (See ad page 31)

Spartan Tool 800-435-3866 www.spartantool.com **Specialty B Sales** 800-364-7307 *(See ad page 60)*

T.S.F. Company, Inc. 800-843-9286 www.tuff-jon.com (See ad page 43)

Westmoor Ltd. 800-367-0972 www.westmoorltd.com (See ad page 45)

Leonard Earnest says his company has become the go-to place for answers about problem installations.

"Many of the builders and plumbing contractors, when they put something in and it doesn't work, we're the ones that go out there and tell them what's wrong. That's kind of gratifying." ■









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RULES & REGS

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

California Pushes for More Wastewater Reuse Options

By David Steinkraus

n 2017, California Gov. Jerry Brown signed a bill to set up a framework for direct potable reuse of wastewater. Now California is at the beginning of another push on water use, as state Sen. Scott Wiener, D-San Francisco, introduced Senate Bill 966 to change state rules about the nonpotable reuse of wastewater.

An analysis of the bill by legislative staff says the State Water Resources Control Board is now required to establish standards where the protection of public health is involved. The bill would order the board to adopt risk-based regulations for onsite treatment and nonpotable reuse by 2022. Those uses could be in commercial buildings or multifamily housing.

And the regulations would have to be adopted by local units of government if they establish nonpotable reuse programs. Graywater systems used only for subsurface irrigation would be exempt because they are regulated by a different part of California law.

Because of a lack of state permit standards, local governments are often hindered in their ability to create programs for the reuse of graywater, black water, rainwater, and stormwater, Wiener says in a press release.

"California is so far behind on water recycling, and we must take aggressive steps to catch up. Yet, due to a lack of state standards on how to permit onsite water reuse systems, most cities don't even have an onsite recycling program. SB 966 gives cities the tools they need to put water recycling programs in place, and the bill gives innovative water reuse businesses clear standards for designing new technologies. Climate change is already impacting our state, and we need action today to prepare for tomorrow's drought," Wiener says in the release.

Meantime there is action on large-scale reuse. Earlier this year, the city of San Francisco was scheduled to break ground on a water recycling plant that will treat about 1.6 million gpd of wastewater and send it to irrigate the 1,000-acre Golden Gate Park and two city golf courses.

Steven Ritchie, assistant general manager for the city water division, tells the *San Francisco Chronicle*: "What we're really trying to focus on is getting the right water for the right uses. This is the first serious use of wastewater by San Franciscans for irrigation in decades."

In an extreme example of onsite reuse, Salesforce, a maker of customer relations software, is building a 1,070-foot-high headquarters building in downtown San Francisco that will include a water system to reuse rooftop rainwater, cooling tower water, graywater and black water. Recycled water will be used for cooling the building, flushing toilets and drip irrigation. According to the company, the system will cut potable water consumption by 76 percent, saving up to 30,000 gpd.

Hawaii

Cesspools are common across the Hawaiian Islands, and when a report found that the community of Makawao is one of the high-priority areas for system upgrades, 250 residents turned out at a state meeting to vent their outrage about a new state law that bans all cesspools by 2050.

Makawao is in the Upcountry region of Maui, and untreated wastewater is beginning to affect drinking water wells. State Health Department investigators found significantly elevated nitrate levels in groundwater downhill from cesspools, reports *The Maui News*. The Health Department report, expected to be published in about a month, says Upcountry has 7,400 cesspools that are potential threats to drinking water.

Almost all of the Upcountry residents who attended the meeting of the state Health Department rejected the idea of updating their wastewater systems. They say they do not have money for upgrades, and they questioned the validity of the state report. Will Spence, the county Planning Department director who spoke as a citizen, says he estimates it will cost residents about \$300 million to eliminate cesspools.

Resident Rod Taylor designs septic systems and says properties in the area do not have enough space for a standard system. "If we can design it on paper, the equipment operators can't put it in," Taylor says. "We actually were able to design one in Makawao on paper and got it permitted, and the equipment operators did a heck of a job. But it cost \$70,000."

New York

Cesspools will be completely banned in Suffolk County on Long Island under a new law. Although new cesspools have been prohibited since 1973, the county has allowed the replacement of an existing cesspool with another. That will end in July 2019.

Beginning this summer, contractors must notify the county Department of Health Services of all pumping and replacements or retrofits of septic tanks, alternative onsite systems, cesspools, and grease traps, reports *The East Hampton Star.* Starting next July, a department permit will be required to replace or retrofit a cesspool or onsite wastewater system. More than 360,000 residences in the county have outdated cesspools or systems that do not properly treat wastewater and remove nitrogen.

Businesses are required to install nitrogen-reducing systems if they have a grandfathered wastewater system and make significant changes to the use of the property.

A county press release says the law is the first step in an anticipated series of changes over the next several years as officials consider policies to reduce water pollution.

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New Jersey

The state Legislature had been edging toward repealing a rule allowing for a greater septic tank density, and thus more development, in the northern part of the state. In January, lawmakers voted to repeal the rule.

Adopted in 2017, the rule would have allowed 1,100 more septic systems on 69,000 acres of protected land in the Highlands. This 880,000-acre region of northern New Jersey was created with the Highlands Act that said the land was an essential source of drinking water for half of the state's population and said protection of the area was necessary for the economic viability of the region's communities.

The repeal narrowly passed the state Senate and Assembly. Although the state constitution gives the Legislature power to block new rules, that authority has been used only once in recent years.

Montana

Ravalli County must pay \$13,380 in legal fees that a couple spent fighting county allegations of sanitation rule violations.

The case began in 2015 when the local Board of Health said Tim and Elaine Burt had too many connections on their onsite wastewater system, and it overflowed. At the time, the Burts had four rental units on their property: two structures and two trailers, reports the Ravalli Republic. In August 2016, the couple negotiated an agreement to resolve the allegations, but the Burts refused to sign because the agreement had a clause requiring them to admit to violating wastewater regulations.

That led Ravalli County to file thousands of criminal counts against them based on the number of days they were allegedly in violation, although the county also admitted in court filings that the couple had corrected all problems. The Burts sued, claiming "prosecutorial vindictiveness." Two judges sided with them.

The first judge, in Justice Court, said trying the cases would be a waste of time and tax money. When the county appealed to District Court, the judge there wrote in his opinion that while there wasn't enough evidence to prove vindictiveness, there was a settlement in place and it should have been followed. He dismissed the criminal counts "with prejudice," meaning the county cannot refile them.

The Burts said they spent more than \$20,000 defending themselves against the county. The District Court judge ordered the county to pay legal costs minus \$8,400 that the couple had previously agreed to pay the county.

The county said it would appeal to the state Supreme Court.

Oklahoma

A man from rural Tahlequah was accused of operating a septic business without a license.

Percy Sellers was charged in Cherokee County District Court with five counts of pumping without a license, one count of engaging in a pattern of criminal offenses, and one count of engaging in transactions involving unlawful proceeds, reports the Tulsa World. Pumping without a license is a misdemeanor, and the other two charges are felonies.

The Oklahoma Department of Environmental Quality said Sellers operated his business for several months in 2017 without having a proper license and received repeated warnings to stop. If convicted, Sellers faces up to six months in jail and a \$10,000 fine for each of the misdemeanors and up to two years in prison and a \$25,000 fine for each felony.

Maryland

Some residents who upgrade their onsite systems may get a break on state fees under legislation proposed by Gov. Larry Hogan.

If people upgrade their onsite systems with more advanced technology to reduce the amounts of nitrogen, phosphorus and other pollutants seeping into groundwater, they would be exempt from the annual \$60 fee that funds cleanup efforts for Chesapeake Bay, reports The Baltimore Sun. Hogan's proposed law would exempt any resident from the fee, called the "flush tax," as long as they did not receive any state or federal assistance to upgrade their wastewater systems.

It was not clear how many people would benefit from Hogan's proposal. In 2016, Hogan repealed a requirement of former Gov. Martin O'Malley that would have required advanced technology onsite systems everywhere in Maryland. Instead, Hogan allowed counties to decide what systems to use on properties outside environmentally critical areas.

Elaine Lutz, a staff attorney for the Chesapeake Bay Foundation, which handles the money from the flush tax, questioned why fees should be waived even for people in environmentally sensitive areas where upgrades

"We typically don't subsidize people for doing what they're required to do," Lutz says. "It's not really a time or a place to be reducing the amount of money and effort going into septic pollution reduction."

The most recent numbers available, for 2014, show the foundation paid out about \$80 million in flush tax money for septic upgrades. Hogan's bill would also reduce the amount of money devoted to septic projects. About 60 percent of receipts were used on system upgrades. The other 40 percent, about \$58 million in 2014, paid for farmers to plant cover crops that reduce offseason fertilizer runoff. Hogan would split the tax money evenly between the two uses.

California

Santa Rosa police arrested a man on suspicion of illegally dumping waste from septic tanks.

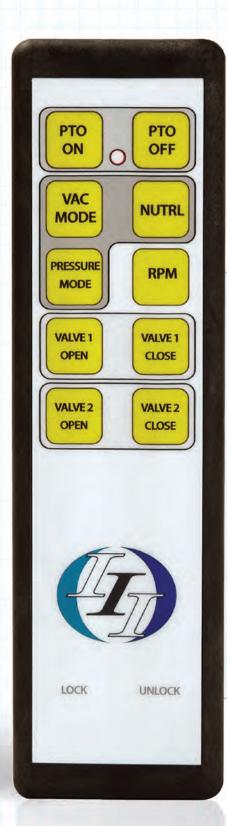
Carlos Chavez, 63, of Petaluma is suspected of pumping out tanks and dumping the septage into sewers throughout the county, reports the news website www.patch.com. He was arrested on suspicion of theft or diversion of utilities, malicious dumping into a sewer, and prohibited septic waste disposal. Chavez owned Petaluma Septic Service.

Police Sgt. Marcus Sprague says evidence indicates Chavez dumped illegally for years, including on 300 occasions in 2017. Sprague says Chavez has a previous conviction in Sonoma County (where Santa Rosa is located) for illegal dumping.

Proposed rules for onsite wastewater systems have raised some opposition over the cost for residents in Monterey County. The county Environmental Health Bureau has released the regulations it is proposing to meet state requirements.

The county's draft regulations would not affect existing systems that function properly. But anyone seeking to install, expand, or replace an onsite system would be required to conduct a more thorough site evaluation including groundwater monitor borings, a soil profile analysis, and a percolation test. An alternative technology or supplemental septic system would be required for shallow or slowly percolating soils, for properties of less than 1 acre, or for systems within 100 feet of a waterway, reports the Monterey Herald. The depth of dispersal systems would be limited, and pumpers would have to report when they pump a tank.

Jain Farnsworth, president of the Quail homeowners association, says she has warned other association members about the potential costs involved. Most of the association homes have septic systems on lots of less than 1 acre. She says she replaced her own system in 2017 to avoid the potential additional cost of the new regulations. The \$20,000 she paid would have been more than double under the draft regulations, Farnsworth says.



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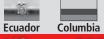
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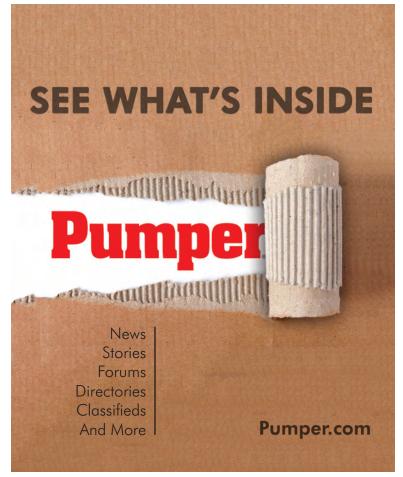


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Jim Anderson, Ph.D., is an emeritus professor at the University of Minnesota Department of Soil, Water and Climate and recipient of the pumping industry's Ralph Macchio Lifetime Achievement Award. Email Jim questions about septic system maintenance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

Dangerous Gases Threaten Pumpers, Cause System Maintenance Woes

Methane and hydrogen sulfide are silent, sometimes odorless killers that should be top of mind every time you approach a septic tank inspection By Jim Anderson, Ph.D.

ecently a colleague shared research he and others have been doing, looking for causes of and a solution to corrosion in concrete sewage tanks. As I have indicated in past columns, the common answer has been corrosion — particularly at the outlet baffle in septic tanks — is due to the lack of adequate venting.

Over the years, this has resulted in a lot of discussion about where gases that cause the deterioration come from, where they are generated and what can be done to prevent the problems. This is a topic I will address in an additional column.

When I looked at some of the data presented, I was struck by some of the measured levels of hydrogen sulfide gas (H2S) during these studies and the implication for safety of workers and others who may come into contact with sewage tanks.

The two main gases released during anaerobic digestion processes in the septic tank are methane and hydrogen sulfide.

FLAMABLE AND ODORLESS

Methane is an odorless, colorless, flammable gas. It is used primarily as fuel to make heat and light. It is also used to manufacture organic chemicals. Methane is lighter than air. Methane can be formed by the decay of natural materials and is common in landfills, marshes, septic systems and sewers.

Methane can form an explosive mixture in air at levels as low as 5 percent. You can smell leaking methane only when commercial gas utility companies add a chemical scent to it or when it mixes naturally with hydrogen sulfide, causing a "rotten egg" odor. This combination of gases leads to the odor we would call sewer gas. If you can smell it, the level may be too high to be safe. In a well-ventilated situation, methane is dissipated into the atmosphere rapidly. However, in a confined space such as a sewage tank, gases can accumulate and be breathed in by the service provider or others who open the tank.

Exposure to high levels of methane gas depletes the oxygen level in the body, causing difficulty breathing and suffocation. If the oxygen level in the body depletes to anything less than 12 percent, the person can become unconscious, which can be fatal. As the levels of oxygen in the body deplete, the body tries to make it up by using the oxygen contained in the bodily fluids. This leads to dehydration. Nausea and vomiting are also methane gas poisoning symptoms. Another symptom is heart palpitations. It causes an uncomfortable sensation of the heart beating rapidly, abnormally and out of sequence. Due to the depletion of oxygen in the

At concentrations (of hydrogen sulfide) above 700 ppm, loss of consciousness can happen immediately with death in a few minutes, even if those exposed are removed to fresh air at once.

body, it gives rise to cognitive problems. The person is inattentive, has memory loss and poor judgment. These symptoms aggravate when the exposure to this gas is higher.

The person will collapse soon after exposure. I hear or read about service providers who die because they "fell" into the septic tank; it is likely they stopped breathing, passed out, and fell into the tank. Sometimes in these situations, rescuers are likely to pass out as well and suffer the same fate.

DEPRESSES NERVOUS SYSTEM

Hydrogen sulfide is also an extremely toxic and irritating gas. It is heavier than air, so it will collect in low areas such as at the outlet baffle of a septic tank. Free hydrogen sulfide in the blood reduces its oxygen-carrying capacity, thereby depressing the nervous system. Hydrogen sulfide is oxidized quite rapidly to sulfates in the body, therefore no permanent effects occur in cases of recovery from acute exposures unless oxygen deprivation of the nervous system is prolonged.

There is no evidence that repeated exposures to hydrogen sulfide result in accumulative or systemic poisoning. Effects such as eye irritation, respiratory tract irritation, slow pulse rate, lassitude, digestive disturbances, and cold sweats may occur, but these symptoms disappear in a relatively short time after removal from the exposure.

Response to exposure to hydrogen sulfide as taken from information provided by the American Standards Institute follows:

Odors become detectable in concentrations as low as 0.008 ppm, but the sense of smell is lost after 2-15 minutes at 100 ppm. At 100 ppm, eye and throat irritation, coughing, and drowsiness can occur after 15-30 minutes of exposure. After several hours of exposure without treatment, death may occur within 48 hours. At concentrations of 500-700 ppm, loss of consciousness may occur after 30 to 60 minutes. At concentrations above 700 ppm, loss of consciousness can happen immediately with death in a few minutes, even if those exposed are removed to fresh air at once.



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From a safety perspective, tanks should never be entered without proper respiratory equipment and ventilation. Measurements of H2S taken in a pump station with corrosion problems was measured at 100 ppm. In a vented septic tank, studies showed concentrations as high as 700 ppm, which demonstrates concentrations in those tanks were high enough to be a significant safety concern to any service providers or others who might think about entering the tanks. If you as a service provider have tanks that show corrosion problems, this should be a red flag to you that the likely cause is hydrogen sulfide gas.

The focus of the study was the impact on venting on the microbially induced corrosion in concrete tanks; but it serves as a good safety reminder. Next month I will take a look at the impact of venting and tank construction on the corrosion problems.





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Students Build Septic System Models, Learn Important Wastewater Lessons

A Connecticut teacher stresses practical science lessons that may encourage a new generation of pumpers and installers, or at least future homeowners who will take better care of their onsite systems

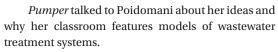
By David Steinkraus

t's trendy to talk about the need to have more students study what are called STEM subjects. That means science, technology, engineering and math. It's to talk about the need to connect what students learn in classrooms to what happens in the world.

It turns out those pipes in your hands and that soil under your feet will do both of those educational jobs. Connecticut teacher Laura Poidomani saw this, too, as she worked to meet science instruction guidelines set out by the state of Connecticut.

Her use of wastewater systems for teaching sixth-graders earned a Presidential Innovation Award for Environmental Educators from the Environ-

mental Protection Agency in 2017. She was the award recipient for the EPA's Region 1 that covers Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut. The awards recognize teachers who use hands-on approaches to educate students about the environment.





Laura Poidomani

Pumper: How did you decide to use septic systems as a tool for teaching?

Poidomani: Many years ago, the state of Connecticut adopted a rule requiring a common framework so students would have similar experiences no matter where they attended school, and one of those common experiences was experimenting with a variety of different soils. What kids did over the years seemed very random. Under the new guidelines, science is no longer a step-by-step process. Everything has to have a context, and that gave me the ability to link the state standard to septics. Now the kids have a purpose for what they learn because they have to design and construct a leaching field. They also have to study how septic tanks are designed so scum and sludge don't clog their fields. This meets all the criteria for teaching STEM because they're first using those skills to plan out the system on paper, and then they have to build the model they draw.

It sounds really easy to them, but when they start putting it together, they start respecting the process.

Pumper: And the use of wastewater also illustrates human impacts on the planet?

Poidomani: Right. The new standards also require us to look at human

impacts on the environment. And septic systems have an impact on our local watershed and the greater watershed.

Pumper: How much experience have your students had with septic systems?

Poidomani: Every time I teach this course — and it's only a three-month course — at least one or two kids have had experience with their parents letting their septic system overflow because they didn't realize it was something they had to maintain.

Pumper: What do your students use to build the model systems?

Poidomani: We use plastic tubing, three sizes of deli cups, funnels, screens and wood blocks to give structure. But we make sure they're not using the screens to hold back sludge. The kids have to figure out what materi-

I think it gives more respect to the profession.
When we first start talking, the kids say, 'Ew, who'd want to do that?' They learn there's more to it — the chemistry involved and the planning.

- Laura Poidomani

als they can use to slow down the energy of the water. We use lots of water bottles. Unfortunately we also use a lot of duct tape and electrical tape because of the leaks. We talk about the difference between their models and the real world.

Pumper: What do you use to test the systems?

Poidomani: I make simulated wastewater out of whatever I can find that's safe for the kids. That can mean some pencil shavings and minced toilet paper. I also use green food dye so it's easy to see what goes through the leaching field.

The kids test six different soils. They have potting soil, topsoil from outside, clay, gravel, fine sand, and beach sand. Most kids realize quickly they want to use the clay and topsoil for slow drainage.

Pumper: What success do they have in cleaning the water?

Poidomani: It really depends on the kids. Last year I was running about 50 percent. Some years are better; some years are not. Part of it is the constraints we have to put on kids. A big one is that we can't give them enough soil compared to what's in a real septic system. Usually on the second try,





kids are more successful. They're really good at trapping the solids in the tank. It's getting the green dye out of the water that is the challenge.

Poidomani's classroom test how well their scale model septic systems separate solids and produce cleaner effluent. (Photo courtesy of Laura Poidomani)

Pumper: What student insight has surprised you most?

Poidomani: I think their flexible thinking and willingness to take risks and try new ideas. Also their level of perseverance — the number of groups that will stay at it until their water comes out clean. Even the kids who don't finish with clean water still walk away with a sense that they were able to do some of the work correctly. This takes away a lot of the academic barriers that kids have. Because it's not content-focused but instead about building and collaboration, it seems all kids can be involved and engaged.

The other thing, too, I think it gives more respect to the profession. When we first start talking, the kids say, "Ew, who'd want to do that?" They learn there's more to it — the chemistry involved and the planning.

Pumper: What is your community like?

Poidomani: We have many people who commute to New York City. It's a pretty affluent area and a high-performing school district, but we also have children from all areas of life. We set the bar high for them, and kids generally reach that.

Pumper: Has this idea caught on with other teachers?

Poidomani: After I piloted the idea four to five years ago, now all sixth-grade teachers here use it for their STEM programs. It also helps kids to see that STEM doesn't always have to involve a computer. I think kids better understand that technology is used to make life easier in different ways.





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| | | | | | | | | | | RTX |
|-----|------|------|-----|------|------|-------|----|-------|----|---------|
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| RT | X | Max GPM. | Max. LMP | Max. PSI | Max. Bar | Max. RPM | Req. HP | Bore Dia. in. | Bore Dia. mm | Stroke in. | Stroke mm |
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| DU | | 13.2 | 50.0 | 4350 | 300 | 1450 | 27.2 | 0.984 | 25 | 0.906 | 23 |

| Max GPM. | Max. LMP | Max. PSI | Max. Bar | Max. RPM | Req. HP | Bore Dia. in. | Bore Dia. mm | Stroke in. | Stroke mm | R | |
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| | U | 18.5 | 70.0 | 3000 | 206 | 1450 | 25.4 | 1.181 | 30 | 0.906 | 23 |

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| RTX | Max GPM. | Max. LMP | Max. PSI | Max. Bar | Max. RPM | Req. HP | Bore Dia. in. | Bore Dia. mm | Stroke in. | Stroke mm |
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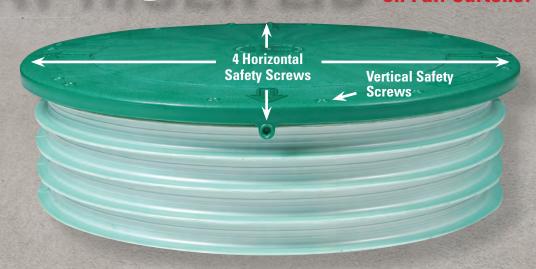
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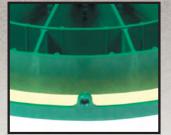
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Retrieving False Teeth: Every Day Presents a New Wastewater Challenge

The president of the Michigan Septic Tank Association reflects on strange workplace stories and the great networking opportunities he gets from being involved in a professional group

In States Snapshot, we visit with a member of a state, provincial or national trade association in the decentralized wastewater industry. This time, we learn about a member of the Michigan Septic Tank Association.

Name and title or job description: Dave W. Snyder, vice president

Business name and location: West Michigan Septic Sewer & Drain Service and Heckman's Contracting, Muskegon, Michigan

Age: 60

Years in the industry: 20

Association involvement: I'm currently president of the Michigan Septic Tank Association. I've been involved for 20 years and have been a director that long. I have also held the vice president position.

Benefits of belonging to the association: The benefits of being involved in this 66-year-old association have been plentiful. Some that stand out are the legislative involvement to help our industry, the professionalism it has brought to our work, and some insurance benefits that have helped our member businesses. But an important one is the friendships I have had over the years with different business owners like us throughout our state and beyond. You can get some valuable ideas from folks who do the same things you do, and you can also give your information to them. It's a win-win.

Biggest issue facing your association right now: Some of our biggest issues involve legislation within our state. In 2004, when the state was trying to cut costs, they were talking about doing away with the septage program, which had regulations for disposal and other things. We didn't want to see that happen. We're trying to make the industry a little bit more professional and make everyone legal. Otherwise everybody and their brother can go buy a truck and pump tanks for next to nothing. So we offered to pay more in costs for licensing, and that kept the program going. Currently the state of Michigan is trying to create a sanitary code and has asked our association to help. We have a great relationship with the Department of Environmental Quality, and it has been good for all.

Our crew includes: Our business of 30 years includes my business partner and president, Terry B. Kiel. Jonathan Stephens is our septic truck



Michigan Septic Tank Association and vice president of West Michigan Septic Sewer & Drain Service and Heckman's Contracting in Muskegon, Michigan. (Photo courtesy of Dave W. Snyder)

leader and has done it all here for 23 years. T.J. Stariha and Jacob Kiel have been here for numerous years and are our top guys for sewer and drain work.

Ron Williams and Joe Magner are our newest employees and are becoming valuable to our companies. We have had many others over the years to help us move to the position we are at now.

Typical day on the job: My daily role is running the office, dispatching, scheduling, invoicing and running some service calls. Terry Kiel does most of the excavating duties with the guys, so it's usually just me in the office.

The job I'll never forget: In 1998, a storm in our area carried straight winds up to 120 mph. We were called to the city of Grand Haven to help pump lift stations that were down due to power loss. The city was a twisted mess of broken trees, power poles, siding, roofing, etc. We worked around the clock to keep things from backing up in the hospital that was taking in elderly and hurt folks. When I was ready to be relieved by one of the guys, my wife picked me up and we drove through the area and couldn't believe the destruction.

On a funnier note, I was on call one Easter weekend and got a call from an elderly woman who was out for Easter dinner and got sick. She had thrown up her false teeth and flushed the toilet in a panic. I retrieved the stuck false teeth from the toilet. She snatched them from me, washed them quickly and put them back in her mouth. I had a hard time eating my ham dinner after I got home.



Most challenging site I've worked on: We had one situation where the house was way down the hill, and we couldn't get down there with a piece of equipment to move stones. We ended up using chutes. We had the stone brought in by a cement truck. They rolled it out onto the chute and then we were down there at the bottom to catch it and build the drainfield by hand. We are on the shore of Lake Michigan and have had to put systems in where there isn't much room. On a lake, the homes all get built right next to each other. So, as installers, we have had to come up with different ideas.

The craziest question I've been asked by a customer: "Do you need to clean a septic tank?" My partner and I still use the same answer and explanation — "Nope, and you don't ever have to change the oil in your car either. Just replace the engine!" They seem to understand after that.

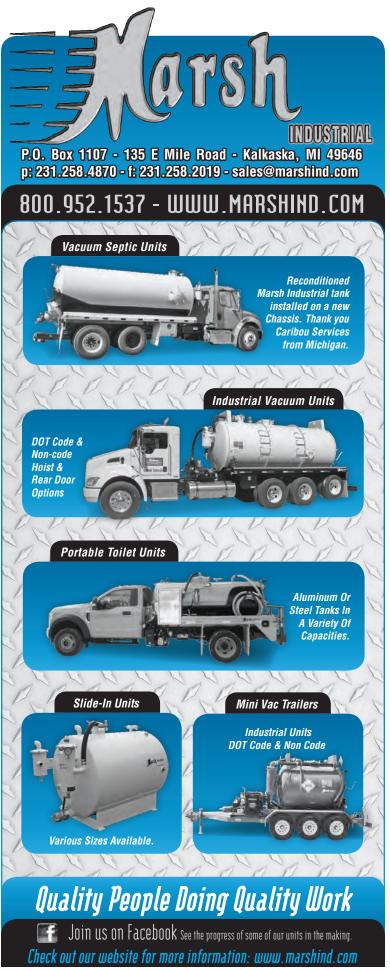
If I could change one industry regulation, it would be: I'd like to see a statewide sanitary code in place with mandatory system inspections and cleaning. I believe we need to be accountable for taking care of our environment and should start at our little piece of the world called home.

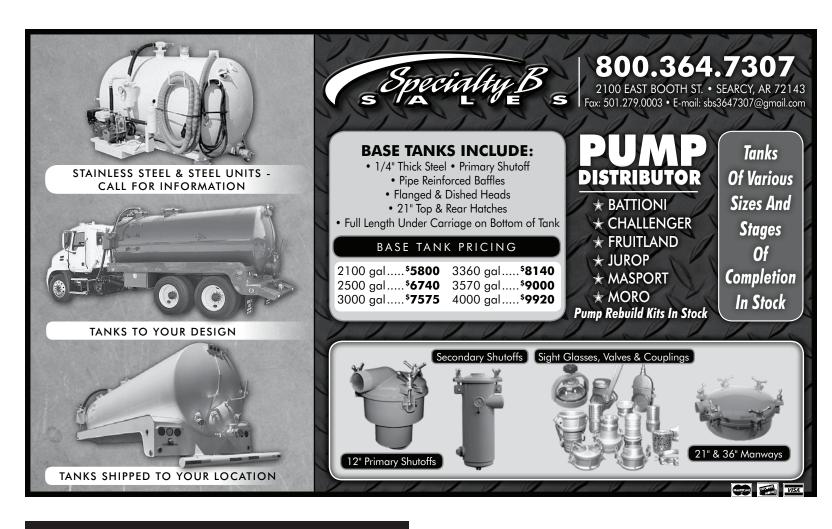
Best piece of small-business advice I've heard: After 30 years in the industry and being 60 years old, I can't remember all of the advice I've heard, but one would be "Honesty is still our policy." We use that in our business, and I believe it came from my partner Kiel. The odds of having a partnership survive in business are not good, but we have made it work. We take it for granted because it wasn't that difficult for us. We still enjoy it but know our goal now is retirement and hope someone taking over will carry our company to the future with our standards.

If I wasn't working in the wastewater industry, I would: I left a good job in the vending industry to go into partnership with Kiel. Just before I decided to leave, they were promoting me to management. So who knows?

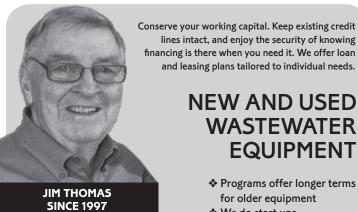
Crystal ball time - This is my outlook for the wastewater industry: I believe the industry has shown great professional growth over the years but still can move forward. Hopefully we'll see a sanitary code for the state of Michigan and more education with certification for installers of septic systems. ■

- Compiled by Betty Dageforde









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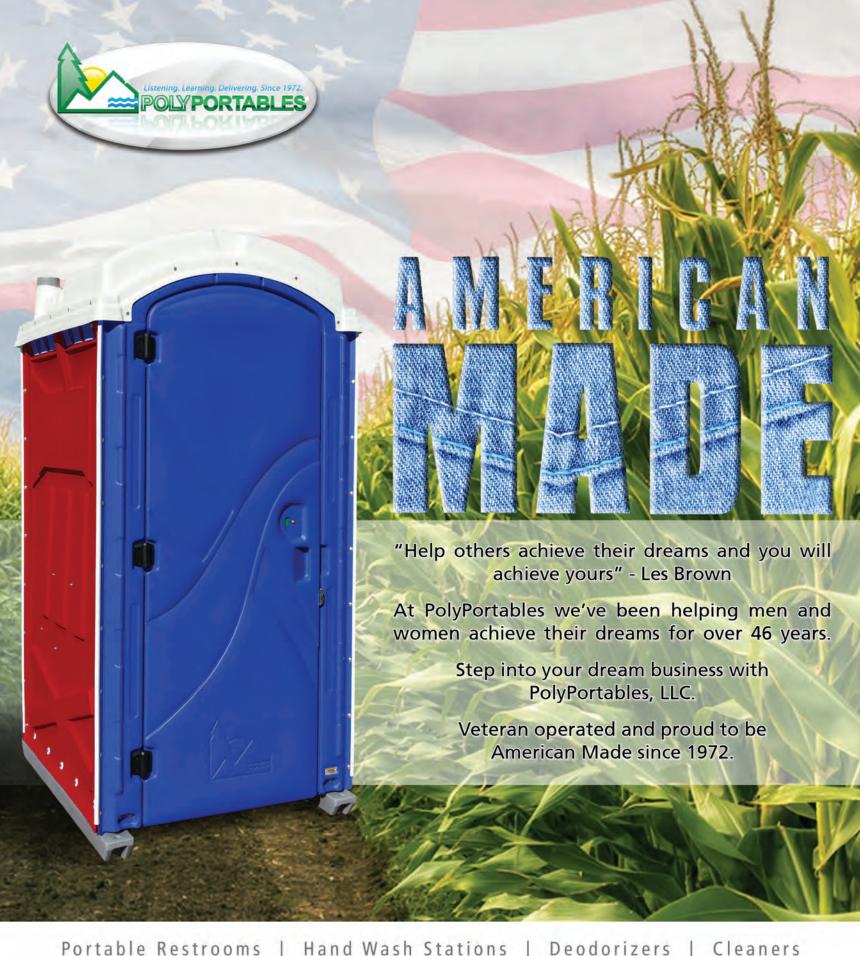
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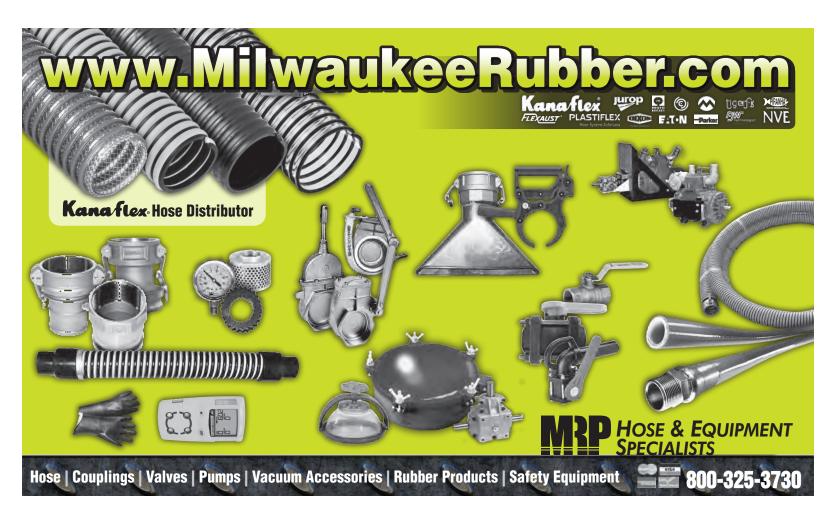
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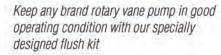


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RATECH ELECTRONICS ELITE USB WITH WI-FI

The Elite USB with Wi-Fi from Ratech Electronics lets users record pipe inspections directly to a USB flash drive and wirelessly via an app to an iOS or Android device while taking live video and digital still photos, which can be immediately uploaded to YouTube. The Wi-Fi interface is available on any current or existing Ratech Electronics systems in the field. It's available with a sun-readable, 10-inch LCD monitor and a self-leveling camera, ultramicro camera or pan-and-tilt push camera. Systems come in cable lengths of 100 to 400 feet. 800-461-9200;

www.ratech-electronics.com.

RIDGID SEESNAKE

RIDGID SeeSnake digital recording monitors come equipped with Wi-Fi connectivity for easy capture and sharing of images and video for faster review by clients and project teams.



Stream inspections to any iOS or Android phone or tablet, or record them for later playback with the free HQx Live companion app. Four different models provide options for specific needs and integrate seamlessly with camera reels. The SeeSnake CS6x and CS6xPak offer clear in-pipe images on a 5.7-inch color LCD display. Water-resistant keyboards provide direct control of camera and monitor functions. The CS65x has a fast processer, solid-state hard drive and a water-resistant keyboard where you can add screen title or annotate reports. Send multiple copies of reports using dual USB ports. The SeeSnake CS12x has a 12.1-inch screen with high contrast and a crisp display. **800-769-7743**; www.ridgid.com.

(continued)

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DRAINLINE INSPECTION CAMERAS

VIVAX-METROTECH TYPE-CP

The **Type-CP** inspection system from **Vivax-Metrotech** has a reel available in 200-, 300- or 400-foot lengths of stiff pushrod that's flexible enough for easy entry and turns. The 1.6-inch D34-CP



self-leveling camera provides 700 pixels of resolution to inspect up to 6-inch pipes. It includes the vCam-5 control module with an 8-inch color LCD; transmitting sonde; full-function keyboard; internal microphone; AC/DC power; rechargeable batteries; distance counter; camera LED brightness control; and digital recording to USB thumb drives, SD cards or internal hard drive. The control module ships ready to use with LACP software such as POSM, WinCan or MuniXS. **800-446-3392**; www.vivax-metrotech.com.

DYES

BRIGHT DYES -DIVISION OF KINGSCOTE CHEMICALS INSPECTION DYES

Concentrated leak inspection dyes from **BRIGHT DYES - Division of Kingscote**

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ELECTRONIC LINE/LEAK LOCATORS

SUBSITE ELECTRONICS UTILIGUARD

The **UtiliGuard** utility locating system from **Subsite Electronics** uses ambient interference measurement to automati-



cally scan the surrounding area for noise and recommend the best frequency among 70 options. To help users make more accurate locates of obstructed utilities, it measures distances (depth) both horizontally and vertically to the utility. To ease use, the system has an intuitive, six-button, multilanguage operator interface and a high-contrast LCD to ensure visibility in all conditions, including direct sunlight. A dual-output feature allows users to connect the transmitter to two utilities at once, and the system is Bluetooth-enabled to simplify data transfers. Its rugged housing with an IP65 rating protects against dusty, dirty, and wet conditions, and it has 100-hour transmitter and 30-hour receiver battery life. **800-846-2713**; www.subsite.com.

SUBSURFACE LOCATORS LD-18

The LD-18 digital water leak detector from Sub-Surface Locators reduces ambient, intermittent noises from dogs barking, cars passing by, footsteps, and people talking. Its digital electronics sample the sounds every few thousandths of a second, and if it detects an intermittent sound, it suppresses it instantly. Water leak sounds are almost always continuous noises, and the unit can identify continuous leak sounds, even in difficult conditions like busy streets. 775-298-2701; www.subsurfaceleak.com.



PORTABLE JETTERS

MYTANA MFG. M30 MAXBLAST

The M30 MaxBlast from MyTana Mfg. is a portable gas jetter designed for mainlines, sewer laterals, and rejuvenating aging or clogged drainfields. The Honda engine has electric start and delivers 4.5 gpm at 3,000 psi. The removable hose and reel, combined with the 50-foot jumper hose and reel stand, allow clean operation indoors while the gas engine remains outside. The unit comes with 200 feet of 3/8-inch jetter hose and 75 feet of 1/8-inch hose for sink lines or drainfield lines, with a set of three nozzles for each size hose.

All components are mounted on a maneuverable cart. **800-328-8170**; www.mytana.com.

(continued)

CASE STUDY

LEAK DETECTION SYSTEM SAVES MONEY FOR TEXAS SCHOOL

Problem: A leak beneath Anna Middle School in Anna, Texas, caused water to surface in the parking lot. The problem presented potentially costly demolition and repairs.

Solution: The school called Spencer Plumbing, and a technician used a **Gen-Ear LE** water leak detection system from **General Pipe Cleaners.** Compact and lightweight, the unit uses an advanced acoustical leak detection system to quickly and accurately locate leaks in cast-iron, copper, steel and PVC lines. The equipment quickly found two distinct problems. "We fixed the small inside leak without major disruption," says Bryan Spencer, owner of Spencer Plumbing. He then showed how the serious outside leak actually channeled water down a ditch to where it was surfacing in the parking lot.

Result: Spencer says, "We pinpointed problems so clearly and quickly that the customer saved thousands in unnecessary demolition and repair work." Spencer says that the new equipment's learning curve proved

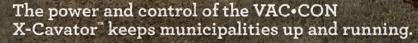
surprisingly short. "Once we learned to identify different types of leak sounds, we began using the system immediately." **800-245-6200; www.drainbrain.com.**



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The **TruCore** from **Sim/Tech Filter** is a large-diameter, accurate, user-friendly sludge sampler that's designed for use in the thicker sludge common to septic tanks. It allows samples to be taken quickly without creating excessive turbulence, as there are no restrictions caused by valves, stoppers or flaps. With a 1 3/8-inch I.D., the capacity per foot is almost 10 ounces. The straight-through design allows the sample to be effortlessly returned to the tank. The unit is made of a polycarbonate sampling tube (marked every foot) and PVC fittings. It comes as a single-piece, 8-foot unit or as two 4-foot units that slip together. Custom sizes and configurations are also available. A simple and customizable extension kit is available for deeply buried tanks. **888-999-3290; www.simtechfilter.com.**

SMOKE LOCATORS

SUPERIOR SIGNAL 5E ELECTRIC SMOKER

The **5E Electric Smoker** from **Su- perior Signal** is designed to con-

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



TURBO FOG DIVISION OF KINGSCOTE CHEMICALS M-45

The TURBO FOG Division of Kingscote Chemicals M-45 is a versatile, lightweight, portable, self-contained smoke generator capable of producing dense white smoke using leakproof liquid smoke cartridges. Each cartridge can be replaced in seconds,

even while the unit is operating, for uninterrupted smoke production. No additional smoke bombs or pump garden sprayers are needed for additional test time. The Briggs & Stratton-powered, turbine-type blower weighs 45 pounds and creates a discharge velocity of over 75 mph and 2,000 cfm. It continues to work under pressure in up to 5.75 inches of water. It is available with a plumbing conversion kit. **800-394-0678**; www.turbo-fog.com.

TRUCK/TRAILER JETTERS



AMAZING MACHINERY BOSSJET PRO BOX JETTER

The BossJet Pro Box Jetter from Amazing Machinery can be mounted in many configurations. It comes with a Honda or Kohler engine, a triplex plunger pump and a Hannay Reels electric hose reel. All units are encased in a high-density aluminum box frame with an access panel on the side for exhaust release and ease of service. It comes with 200 feet of 1/4-inch I.D. jetter hose and laser and spin jet nozzles. It is designed to clean and clear 2-to 6-inch pipes. Options include a foot pedal, trap kit, remote reel and portapotty head attachment for the smaller lines. All units include a washdown gun and wand, four pressure washer tips, and a chemical injector for easy cleanup. 800-504-7435; www.amazingmachinery.com.

AMERICAN JETTER 51 SERIES HOT JETTER

The **51 Series Hot Jetter** from **American Jetter** offers increased cleaning power for grease cutting and de-icing by heating the water up to 190 degrees F. Consistent power is provided by Kohler gasoline en-



gines up to 74 hp, with flows of 8.5 to more than 20 gpm and pressure to 4,000 psi. The rear reel provides precise cleaning speeds and easy access to the jet hose with the included hose guide. Low-water shut-off prevents pump damage if the 330- to 600-gallon tank runs low. The optional 1-mile open-range wireless remote option allows for water on/off, engine shutdown and hose reel control. The heavy-duty square tubing trailer offers a $2\,5/16$ -inch ball coupler and standard electric brakes. **866-944-3569**; www.americanjetter.com.

CAM SPRAY TT4025HZ-350

The model **TT4025HZ-350** trailer jetter from **Cam Spray** produces 25 gpm at 4,000 psi using an Environmental Protection Agency Tier 4 Final

Hatz Diesel 74 hp turbo intercooled, liquid-cooled engine. It comes with an over-center clutch, control panel with hour meter, low-fuel gauge, low-fuel shutdown, over-pressure shutdown and digital pressure readout. The reel is hydraulic powered with variable speed and comes mounted on a slide-out with angle adjustment fitted with 500 feet of 5/8-inch hose, manual shut-off valve and analog pressure gauge. RCM wireless remote control modes include valve open, valve close, engine idle down with a 15-second time delay shutdown, emergency shut-off, two-speed engine revolutions per minute control and auxiliary 10-amp circuit with on/off control. 800-648-5011; www.camspray.com.

TRUCK/TRAILER JETTERS

EASY KLEEN PRESSURE SYSTEMS GROUNDHOG JETTER

The **Groundhog Jetter** from **Easy Kleen Pressure Systems** is designed to blast through

clogged pipes. It is compact and easily transported

in a pickup truck or van, with trailer options available. It includes a fully welded, powder-coated 2-inch steel tube frame, drilled and tapped, which houses the 200-gallon water tank constructed with 1/2-inch poly complete with level sights and 16-inch cover. It has a gasoline-driven engine with accessible breather and 10-gallon fuel tank, General Pump with gearbox drive, 12-volt hose reel complete with hose guides, and swivel and foot-pedal control. It comes with a 300-foot 3/8-inch jetter hose, an emergency shut-off valve and hour meter. An optional remote includes hose reel-in, motor off/speed control and pressure on/off. **800-315-5533**; www.easykleen.com.



HOT JET USA HOTJET II

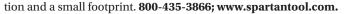
The **HotJet II** sewer and drainline jetter from **Hot Jet USA** cleans drains and serves as a high-powered, hotwater pressure washer. It can be used to clean drains up to 300 feet long and

12 inches in diameter. It has a 35 hp Vanguard engine by Toyota, delivering 10 gpm at 4,000 psi using hot or cold water, mounted on a diamond plate tandem-axle trailer and powder-coated for durability.

800-624-8186; www.hotjetusa.com.

SPARTAN TOOL URBAN SOLDIER

The **Urban Soldier** skid-mounted jetter from **Spartan Tool** is the most compact in the company's jetter lineup. It fits in most compact work vans while delivering 3,000 psi at 10 gpm. The high-pressure hose reel holds a 200-foot hose to help clear sewers and drains up to 13 inches in diameter. It offers high power, with low fuel consump-





VACTOR RAMJET 850 SERIES

The RamJet 850 Series truck jetter from Vactor has a choice of front or rear hose-reel locations and productivity-enhancing options such as an aluminum rear shroud and Jet Rodder water pump-heated cabinet. An

integral aluminum rear shroud with heavy-duty, see-through Lexan windows is available. Large service access doors on both sides of the shroud enable easy greasing, maintenance and service. The rear shroud keeps the hose and components warm and protected for quick setup and cleaning in extremely cold conditions. It comes standard with a certified flow of 0 to 80 gpm at a variable pressure up to 2,500 psi at the hose reel to clean any size of line. The Jet Rodder water pump-heated cabinet keeps the pump and plumbing covered and protected. 815-672-3171; www.vactor.com.

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Frenchville, Maine



ave Pelletier added a metallic-blue 2017 Peterbilt 330 with a 2,500-gallon steel tank and Jurop/Chandler 260 pump built out by Transway Systems. The truck is powered by a 300 hp Cummins engine tied to a six-speed Fuller transmission (Eaton Vehicle Group). Features include top and rear manways, four rear sight glasses, aluminum wheels, 4-inch inlet and 6-inch dump, aluminum diamond plate-lined hose trays, chrome accents including visor and horns, rear work lights, and a locking rear differential. The interior features air-ride cab, leather seats, AC, power windows and locks, and stereo. Graphics were provided by Brian Cullins. Pelletier is the driver, and the truck is used mainly for residential septic and grease trap service.

SHOW US YOURS!

Got a truck with real WOW appeal? Show it off to *Pumper* readers! Send photos of your truck after it has been lettered with your

company name. Any industry-related truck is acceptable. Please limit your submission to one truck only.

Your Classy Truck submission must include your name, company name, mailing address, phone number, and details about the truck, including tank size, cab/chassis information, pump information, the company that built the truck, and any other details you consider important. In particular, tell us what features of the truck help make your work life more efficient and more profitable. Email your materials to editor@pumper.com or mail to Editor, *Pumper*, P.O. Box 220, Three Lakes, WI 54562. We look forward to hearing from you!



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Cold temperatures tend to leave many vacuum hoses stiff and brittle, meaning operators are required to spend more time uncoiling and moving the hose to guard against cracks and splits. Kanaflex KanaBoom and KanaBoom Lite don't have that problem.

The new hoses, distributed by Milwaukee Rubber Products, are mediumduty wet and dry material handling vacuum hoses with a static dissipative polyurethane liner. According to the maker, they are usable in temperatures ranging from 40 degrees below zero to 140 degrees F, and they are ideal for general construction hydroexcavation use, such as rock, gravel, sand, and crushed concrete, along with industrial vacuum equipment, roof vacuuming, dry fertilizer, and petcoke.

"That polyurethane liner is great because it is not only durable, it maintains flexibility, even in frigid cold temperatures," says Dennis Noble, sales manager of Milwaukee Rubber Products. "The feedback we've gotten from the operators already using this in the field has indicated that it will last up to three times longer than our previous hoses."

The flexible polyurethane liner is abrasion-resistant, while the hose has a rigid PVC helix, and a smooth bore with a PVC corrugated outside diameter with static dissipating materials, while the external helix provides for easy dragging. In addition, its abrasive-resistant polyurethane tube prevents material buildup and helps provide quiet operation.

"You wouldn't normally think of a hose making noise, but when you are moving a high amount of material, that friction on the inside of the hose can actually get pretty loud with some hose types," Noble says. "That smooth polyurethane liner helps that material pass quietly, which makes this hose a great choice for urban areas and neighborhood work. You'll just be less disruptive."

Kanaflex KanaBoom and KanaBoom Lite hoses are available in inside diameters as small as 1 1/2 inches for grease traps and other small inlets and up to a large, industrial-size 8-inch variety for large construction jobs.

"When our hose customers are looking for a new hose, the biggest things they care about are its longevity and its flexibility," he says. "We are happy to sell one that offers both."

800-325-3730; www.milwaukeerubber.com

VAC-CON TITAN CLASS COMBINATION MACHINE



The Titan Class truck-mount-

ed, dual-engine combination machine from Vac-Con features enhanced twin cyclonic separators, one located on each side of the truck, for optimal efficiency and filtration. The Aeroboost three-stage fan balances airflow, resulting in less turbulence and more power. The water system features 1 1/4-inch plumbing and ball valves. Upgraded hydrostatic and auxiliary drive systems that operate the vacuum and water functions lower noise emissions and reduce overall fuel consumption without sacrificing power. 904-284-4200; www.vac-con.com.



FRANKLIN ELECTRIC FPS POWERSEWER SYSTEM

The FPS PowerSewer System from Franklin Electric is a low-pressure system available in 60-, 72-, 84-, and 96-inch basin sizes, and it pumps wastewater to a collection or treatment area, as an alternative to gravity sewer systems and septic tanks. The basin's internal C-channel assembly releases from the top of the unit, designed to simplify accessibility and maintenance. The float tree is spring-loaded

and easily removable, with a lift handle to simplify pump removal. The system features an isolated pump support that can accommodate heavier pumps for expanded applications. Inclusion of the FPS high-head grinder allows the system to produce a maximum shut-off head of 200 feet, with a maximum flow of 35 gpm. **260-824-2900**; www.franklinwater.com.

HAMMERHEAD TRENCHLESS XPR PNEUMATIC HAMMERS

HammerHead Trenchless' XPR series of high-performance pneumatic hammers for pipe ramming and



pipe bursting applications features a high-flow valve system that produces a more powerful impact. The XPR technology allows for the reverse function to be controlled above ground, simplifying tool removal from pushing collets and burst heads. The 26XPR is capable of installing casing 24 to 84 inches in diameter and is suitable for use in drainage culverts, pipeline work, and horizontal directional drilling assist methods such as washover casing installations, pipe assist or pipe extraction, and guided pilot bore ramming. It is also effective in pneumatic pipe bursting applications of pipes ranging from 15 to 36 inches in diameter. **800-331-6653**; www.hammerheadtrenchless.com.



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- MWBE feature a recirculation module that cools the water while the trigger gun is

closed. The triplex ceramic plunger pump is designed for commercial and professional daily use. To protect wear parts, it includes an overheat safety valve that will open and close automatically to allow the recalculating higher-temperature water to be released, allowing cool water to replace it. **800-333-9274**; www.watercannon.com.

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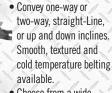
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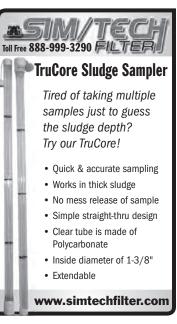
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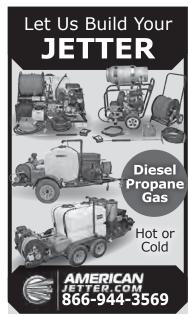
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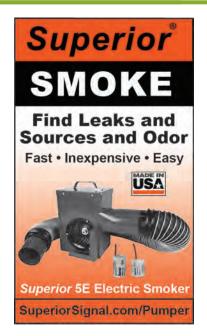




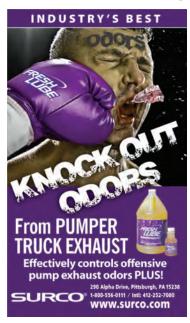










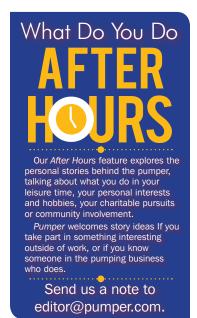
















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classifieds

see photos in color at www.pumper.com

BLOWERS

New Roots Blowers - Best price & in stock. Reconditioned exchange program. Volume discounts. Call Pat's Pump & Blower 800-359-7867 or email PatsPump@aol.com (P07)

BUSINESSES

Septic Tank Service Business for Sale: Owner wishes to retire. Located in Callahan, FL (Nassau County) north of Jacksonville - fastest growing county in Florida. 33 years in operation with loyal customer base. Includes: 1996 International 4900 w/DT466E, 5-speed transmission, 2-speed axle. 2,500-gallon capacity truck. 302k miles, fresh in-frame, new transmission, excellent condition. 2000 Freightliner FL70 w/8.3 Cummins diesel, 6-speed transmission. 2,400-gallon capacity truck. 198k miles, excellent condition. Also included: Complete DEP-approved lime stabilization site and facility for land application. Owner will train and assist with licensing. For more information contact K.A. "Kenny" Farmer at 904-879-4701 or 904-545-0357: farmer613259@aol.com

Owners ready to retire: Septic tank and portable toilet business for sale. Highly-reputable family business. Grease tank pumping contracts. 23 years of service with the same phone number included. We have a loyal customer base. (1) 4,200-gallon vac truck (1) 2,500-gallon vac truck (1) septic tank set truck (1) portable toilet truck (1) Excavator with trailer (160) portable toilets (2) Handwashing stations (5) handicap portable toilets. Panhandle of Florida. Endless potential. Serious inquiries only. Can be sold without portable toilets business. Call/text 850-516-9573 or email carterandsonseptic@gmail.com. (P07)

Portable restroom business for sale, Tunbridge, VT. Approximately 200+ units, two (2) 100-gallon, 1/2-ton trucks, two (2) 300-gallon, 3/4-ton trucks, two (2) hauling trailers. Many repeat customers. Owner looking to retire. Email jnvblakeney@yahoo.com or call 802-889-5541.

Business for sale in beautiful Central Montana. We install and maintain septic systems, and inspect and clean drain lines. Great father, son or brother business. Will train qualified buyers. We are looking towards retirement and want to ensure our customers are well cared for in the future. Serious inquiries only. Contact Suzan at 406-538-8736. (P05)

Septic Company for Sale. Highly-reputable brand for two generations. Long contracts, servicing wealthy neighborhoods. Long Island, NY. Contact sfer1024@gmail.com; 516-567-2603 (P06)

For Sale: Septic & Drain Business in southcentral Minnesota, established 1951, All equipment shed kept and in perfect condition • 2007 Kenworth w/3,500-gallon stainless tank, blower and hoist • 2003 Kenworth w/3,500-gallon stainless tank, blower and hoist • 2007 Sterling jet-vac, 1" x 600 ft. • 1996 Ford jet-vac, new blower, 1" x 600 ft. • 2006 International jetter truck, 80gpm, like new • 1984 International jetter truck - a workhorse • 2002 Transit bus - a rolling shop with many cable machines, 2 jetters, locators and cameras . Steamer trailer for frozen pipes • 14-acre PCA-approved spread site • 3-stall heated shop with everything • 40 x 80 building, new in 2014 • 40,000-gallon temporary storage. A great turnkey business -\$850,000. Call Tom 320-269-2920. (P06)

Cooking oil processing plant. Includes 3 tanks and low-pressure boiler. 2,000-gallon screened tank, 6,000-gallon cook tank with heating coils, 7,500-gallon finished product tank. \$22,000. 443-235-5979 (P05)

Portable toilet business for sale — Ontario, Canada. Company has been in business for 30+ years. Long-term customers, many contracts and large events. 1,000+ units, lots of equipment, service/septic trucks. This is a turnkey operation. Serious inquires only. Call 289-274-5501 or email primeontime@ yahoo.com. (P05)

I have 18 years experience in the portable toilet industry and am looking to purchase an existing business opportunity in the South Carolina area. Please email Tim at timmontoya056@gmail.com. (P05)

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

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

National Grease Recycling Inc. Let us teach you how to recycle restaurant's waste, fryer grease and oil (yellow grease) only. Big \$. Over 30 years experience, will guide you through complete process from collection to processing to marketing to end users. Don't lose your trap business to competitors that offer both services. We also buy cooking oil, unprocessed, anywhere in the country. Call for information. References available - many success stories. Dewey Walker, 813-704-6599 or 813-758-2552. (PBM)

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

COMPUTER SOFTWARE



FreeServiceReminderSoftware.com, FreeServiceDispatchSoftware.com, FreeRouteManagementSoftware.com. (P05)

DEWATERING

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

FOR SALE: Two (2) Andritz 2.2-meter belt presses, unused after complete refurbishing to Andritz factory specifications throughout. Dyer Equipment Co. 970-454-3784, Ault, CO or dyerequipment@aol.com (P05)

Surplus Equipment for Sale: Item 1: Mobile rotary sludge thickener package \$29,000. Item 2: SludgeMate 30 cu. yd. dewatering box \$19,000. Item 3: Clement roll-off trailer \$9,000. Item 4: Thickened sludge SS land-application tanker trailer \$17,000. Contact Mark Scott for full details mark@delta-pioneer.com (P06)

DRAIN/SEWER CLEANING EQUIPMENT

CIPP lining truck, 2007 GMC, NPR. Excellent condition. Set up with brand-new equipment, air compressor, generators, vacuum, liner rollers. Lots of liner, cal-tube & resin. Job site ready. Pictures upon request. \$40,000. 949-689-9224 (P05)

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DRAINFIELD RESTORATION

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

Terralifts - New and Used. Financing available for qualified buyers. For more information call Dick Crane 800-223-2256 or aalco@tds.net for electronic brochure. www.youtube.com/watch?v=t8ApRUOasnY (PBM)

HAZARDOUS WASTE UNITS



2007 International Presvac. DOT-certified MC 412 carbon-steel, 3,500-gallon dumping door tank with a Hibon 1,400cfm blower and Presvac Peavy 750 vacuum pump. 72,000 miles. In excellent condition with Cummins 435 horsepower engine, pre-emission.

KLM Companies 617-909-9044

PRM

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

JET VACS



2007 Aquatech B10/1500: CAT 335hp (EPA 04) with Allison automatic transmission. 88,000 miles. 1,400 hours. New Roots 624 blower, 8" x 19' extendable boom, pump-off option, internal tank flush, 6-function joystick. Excellent condition. \$99,500

KLM Companies 617-909-9044

PBM

2005 Sterling Vactor 2100, Caterpillar C-7, automatic, single rear axle combination cleaning truck. Municipal unit. 1,000-gallon water tanks, extendable boom, PD blower, 4,700 hours, 65,000 miles. \$80,000. 906 337-0591 (P05)

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2007 Sterling LT7501/Vactor 2115 combination sewer cleaner. Hydroexcavation capable. \$60,000 OBO. Call or text 317-710-7542 for pictures and details. (P05)

Jack Doheny Supplies Inc. offers a full range of late model combo units and DOT industrial vacuum loaders. Call us @1-800-3DOHENY.

JETTERS-TRAILER



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

800-213-3272, www.hotjetusa.com



2012 Spartan Warrior 4018, with remote. Kubota diesel, 975 hours, Giant pump, 500' 1/2" hose, 1/2" Warthog, 300 gallons water. Delivery available. Good condition, completely refurb'd in 2015.\$28,500 0B0

330-231-5943, OH POG



501-941-1785, AR

NEW Mongoose trailer jetter (41 hrs. of use). Make: Mongoose; Model: 184; Series: 3520; Year: 2016. Caterpillar engine, 500 ft. 1/2" hose, assorted jetter heads. Price \$46,000 FIRM. Original price \$53,500 (invoice available). 949-689-9224 (P05)

JETTERS-TRUCK



1984 Vactor 810 Diesel/Diesel aux. engine. Rebuilt water pump and tanks, jets great. Great spare machine. \$15,000

Call 1-800-464-7001, MA P05

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Quick and easy financing for new or used equipment — without all the headaches. **Credit is not an issue.** We have working capital available for commercial equipment purchases \$10,000 to \$2,000,000. **BSG Services** - Call 866-259-5370 or email bsgfin@earthlink.net (PBM)

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PORTABLE RESTROOMS

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

250 Two-tone grey PolyPortables Integras. All in excellent, rentable condition. WILL NOT LAST! \$200 per unit. 800-634-2085 NY (P07)

50 Armal Wave portable toilets. Half are all-grey, half are orange and grey. We recently sold 200 of these! They're in GREAT CONDITION at a LOW PRICE! \$150 per unit! 800-634-2085 NY (P07)

Polyjohn/blue \$150 each. Olympic white/ fiberglass \$120 each. All good condition/ have sanitizer/dispensers. NY/CT line. 203-748-6906 (P05)

Twenty (20) one-and-a-half units. Very clean, lightly used condition. All one color, blue on the outside, grey inside. \$700 a piece, price discounted when buying multiple units. Contact Lauren at 814-435-6374. (P05)

59 Hampel Global & Deluxe models. 2 ADA handicap. 1 enhanced Polyportable. All units are event-ready. \$350/\$400/\$600/\$350. Call or text 207-841-4267. (P05)

PORTABLE RESTROOM TRAILERS

Existing PRO looking to purchase used Wells Cargo Comfort Elite restroom trailers. Interested in the newer Ultra Lav models as well. Also interested in Ameri-Can models potentially. Call to discuss anytime. Jamie Hunter 317-439-9383. (P10)

2008 JAG 18 ft. Fantastic Trailer. \$22,500. See pics here: http://portabowlrestroom.blogspot. com/. Mens: 3 urinals, 1 stall, 1 sink. Womens: 3 stalls, 1 sink. Air conditioning, heat, stereo. Contact Cory@Portabowlinc.com or call 215-766-8164 ext. 1 (P06)

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

PORTABLE RESTROOM TRUCKS



Complete Portable Toilet service truck mount units (turn-key), mounted on your truck or ours. Tool boxes, dual work stations, dc10 washdown pump, reversible vacuum pump, hose reel, set up complete, toilet racks available. 1100 waste/400 fresh: \$21,000, 1700 waste/600 fresh: \$23,500. Any custom options or sizes available!

TexLa Services
936-641-3938
Check us out on Facebook! PO5



2011 Ford F550 diesel, auto., 2WD, new aluminum 650w/300f vacuum tank, Conde SDS6 pump.

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



Call/text 330-416-6212, OH PO5



Kyle 906-290-0701, MI

P05



863-581-5680

2005 GMC 5500, 900w/300f vacuum tank. 2006 Isuzu NQR, 500w/250f vacuum tank. 2004 Isuzu NQR, 900w/300f vacuum tank. Call Jake @ 570-656-8483. PA (P05)

In progress: 2009 Kenworth, non-CDL/ no DEF fluid, 190k miles. Good rubber, automatic transmission, a/c, clean interior. New 1,800-gallon (1,400 waste/400 fresh) portable toilet service rig with Jurop vacuum pressure pump system and Shurflo washdown system. 2-unit carrier. \$38,250. 337-315-0692 (P05)

PORTABLE RESTROOM TRUCKS



2008 GMC 5500, 1,200-gallon tank (900 waste/300 fresh). 202k miles, automatic transmission, a/c. \$18,500

Josh 901-452-7040, TN



2012 Dodge 5500: 6.7L Cummins, 2WD, 166k miles. Abernathy 1,100-gallon dual service carbon-steel tank, 750 waste/350 fresh. Equipped with Masport HXL4 powered by Honda GX270. \$29,900

423-552-6231, TN PC



2017 Ram 4x4 Imperial Industries portable restroom service unit with sidewinder, 700-gallon, 2-compartment aluminum tank, Masport HXL4 pump and 8' aluminum flatbed with liftgate. \$96,407

800-558-2945 PO

2000 Ford F650 portable toilet truck, 3126 Cat engine, 1,200 waste, 300 fresh. Asking \$12,000 OBO. Call Al at 302-420-7237 or email arrowsanitary@juno.com. (P06)

2017 Ford F450 6.7L diesel septic truck with 400-gallon waste tank and 200-gallon clean water; total 600 gallons. Good for porta-potty business or for septic services. 7,000 miles. \$65,000. Call Jacob 424-394-9453. (P05)

Portable toilet trucks for sale: 2005 International 4300 portable toilet service truck, 25,999 GWWR. Asking \$13,250. See pics & info @ http://portabowlrestroom.blogspot.com/. 2004 Ford F750 portable toilet service truck, 25,999 GWWR. Asking \$13,750. See pics & info @ http://portabowlrestroom.blogspot.com/. Contact Cory@Portabowlinc.com or call 215-766-8164 ext. 1 (P06)

2005 GMC 5500, 4x4, 800-gallon Crescent tank. Carries 8 units (6 on bed, 2 on liftgate). 300-gallon plastic freshwater. Duramax diesel, auto., 142k miles (bought it w/135k), Liftgate, Masport PTO pump. Truck was from Nevada - clean, I barely used it - prefer my own setups. \$23,500 to include what it needs for serious buyer: new Masport vacuum pump (old works, but smart to put new one on), new sight eyes, new wash pump and hose reel, new dump valve, weld down bed in two spots and paint tank black. 2-4 weeks needed to complete this work. Or offer as is. Definitely consider selling service unit separately and keeping truck. Truck is white - can text pics. Contact Allyn at 207-643-2068.

2001 Chevy 3500 HD, 89,000 miles, 6.5 diesel, auto., air, newer paint. Truck is in excellent condition, no leaks. 600-gallon waste, 195-gallon freshwater. Wallenstein pump with Honda motor mounted on flatbed. Garage kept. \$11,000. Call Brian 815-370-6032. (P06)

2012 Ford F550 Best Enterprise built 800-gallon waste tank/300-gallon water tank. 2-unit carrier. 30 ft. Tiger Tail hose. 119,647 miles. Runs great. \$42,000 0B0. 608-835-3459; sales@buckyspt.com (P06)

2007 Isuzu with Progress slide-in 400/200, 143,594 miles. All service records from purchase date included. \$25,000. Please contact Jason for more information: 208-467-0089; jason@portapros.com (P05)

Two (2) Portable Restroom Trucks for Sale: 2015 Dodge 5500, 4x4, diesel, Crescent tank 750 waste/100 fresh/300 fresh. 93,000 miles. \$60,000. 2016 International Terrastar, 4x4, Bruder aluminum tank, 3 cells, 1,000 waste/300 fresh/200 fresh. 56,000 miles. \$70,000. Updating fleet. Please text or call for pictures 785-477-2254. (P06)

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

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

PORTABLE SHOWER TRAILERS

Attention large outdoor events promoters and seasonal campgrounds requiring showers, sinks and hot water availability: **FOR SALE**: Two (2) 40-ft. shower containers. 14 shower heads per container, handicap accessible. Trailer and accessories included. For pictures go to www.candsshowers.com. 712-428-6143 or cell 712-880-1250. (PBM)

POSITIONS AVAILABLE

Sansom Industries hiring sales personnel, preferably with sales experience & skills for a new line of portable restrooms. Southwest region. Call Clyde @ 314-277-2873. (PBM)

We're looking to fill a full-time position (32-40 hrs. a week; occasional weekends) in beautiful Southern San Diego! We prefer a Class A license, but it is not required. A tanker endorsement is required as well as knowledge on an Eaton 10-speed transmission, Responsibilities include but are not limited to: Excellent customer service. Locating septic tank lids with a water probe. Light hand excavating. Keeping the truck and equipment clean. If you're interested, please feel free to give us a call at 760-751-2293 Mon.-Fri. 8 am -4:30 pm or email your resume to our office staff for review at Info@callmckenna.com. Website: www.callmckenna.com (P05)

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

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.Vacuum Salesinc.com, (888) VAC-UNIT (822-8648)

RENTAL EQUIPMENT

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

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

ROLL-OFF TRAILERS

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

SEPTIC TRUCKS



1999 Mack: Eaton/Fuller transmission, brand-new 3,600-gallon tank - never used. Fruitland vacuum pump. Brandnew paint, tires 95%. \$45,000

Scott 763-213-8235, MN P05



Turn-Key Vacuum Tank Units: 3,600-gallon, unit mounted on your truck or ours; \$23,500. 2,500-gallon truck units; \$20,000. 1,500-gallon truck units; \$17,000. Self-contained vacuum skids, 1,000-gallon; \$11,000. 2,500-gallon painted tanks ready to mount; \$13,000. PortaPotty trucks and any custom options or sizes available!

TexLa Services
936-641-3938
Check us out on Facebook! PO5



Call Shon 209-329-3679 or email csteele1322@yahoo.com, CA P05

2007 International 4300 vacuum truck. 206,000 original miles new 2,250-gallon tank, new NVE vac pump and new tires. Truck is in showroom condition. \$54,000. Kevin 303-882-1986 (P06)

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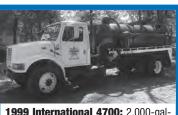
440-236-6202, OH



518-225-2262, NY



706-252-4743, GA



1999 International 4700: 2,000-gallon tank, Jurop R260 pump. DT466 automatic. \$13,500

Call 501-316-3846, AR



803-754-5768, SC

P05



918-413-3187, 0K P05



2002 Mack, 400 horsepower, 282k miles, 8LL transmission, 8-front, 46-rears. Hendrickson suspension, double-frame. 4,600-gallon tank, 520cfm Challenger vacuum pump. Clean, low-mile truck ready to work. Only \$22,500

Call/text 740-961-7431. OH P05



2014 Mack GU-713, 5,000-gallon tank, 425hp Mack engine, Fuller 10-speed manual transmission, pusher axle. Less than 90k miles.

818-373-9282, CA alphapumping@yahoo.com P05



2006 Freightliner Columbia, C-13 Cat; no miles on Cat—it was overhauled and has a warranty. 10-speed transmission, a/c, cruise. New: 3,500-gallon tank with stainless steel hose trays and Jurop J260 vacuum pump. Also new: paint, tires and aluminum wheels. Absolutely beautiful truck! \$65,000

Call/text 740-961-7431, OH P05



2007 International 7400 DT466 pump truck for sale. Jetter and 400-gallon freshwater tank. 4,000-gallon waste tank. 370,636 miles. Just replaced PT0, transmission and clutch. \$87,000

561-302-7195, FL



2006 Freightliner Columbia, C-13 CAT with 451k miles, 10-speed, a/c and cruise. New: Tank (2,100 waste, 200 fresh) with stainless steel hose trays and manways, Jurop R260 vacuum pump, hose reel, paint, tires and aluminum wheels. Very nice, beautiful truck!

Call/text 406-679-5200, MT P05

Freightliner M2106: Up for sale is a CNG-powered Freightliner with less than 85,000 miles! Runs good with a 8.1 liter John Deere engine - torque like a diesel with none of the starting problems in the winter. Allison 3000 transmission. It has been used the last two years as a yellow grease truck. Equipped with a 2,400-gallon tank, 13hp Honda, 225cfm pump. 33,000 GVW vacuum truck. \$38,000 OBO. 262-716-6645; scott@ wifluidsvstem.com



270-828-3496, KY

P05

P05



1999 Sterling tri-axle, CAT C12, 40,000 on major, 18-speed. 20K front, 46K Hendrickson air-ride rears, dual nonsteerable 20K tag axle (3 years old). 2003 Jays 5,500-gallon all-aluminum tank, Wittig 150. 3 heated jackets, stainless 100-gallon heated freshwater tank. 2 big tool boxes. Must see!

608-626-3371, WI

1991 International septic truck, 2,300-gallon, Moro pump, heated valves. Includes 125' hose, fittings, and spreader. Runs and drives great. \$11,000. Call or text 218-296-1091. (P05)

2000 Peterbilt Model 377 tri-axle, C-12 motor, jake brake, 10-speed, air ride. 4,500-gallon steel tank, Jurop LC-420. New brakes, tires. \$55,000 OBO. Call 715-546-2070. WI (P05)

1996 International, DT466, 2,500 gallons, 100-gallon freshwater. 6 + 1 trans., runs but needs engine work. I have an extra engine, that goes with the truck, Water-cooled Masport pump. \$6,500. Call 513-260-7211 or email Bobbutler.1976@gmail.com (P05)

1998 Ford septic truck with 3,500-gallon carbon-steel vacuum tank. CAT 350hp with Fuller 8-speed transmission. Rebuilt Presvac PV750 vacuum pump. Ready for work. \$36,000. KLM Rentals Inc. 617-909-9044 (PBM)

2003 Freightliner Model FLD112 pump truck with 4,000-gallon tank. Purchased in 2010 and have used since. Upgrading fleet. Frank 781-389-6997 (P05)

SEPTIC TRUCKS



P2012 International 4300 MFDT466. 129k miles, Allison automatic transmission, air-ride suspension. New 2,100-gallon tank, new Jurop pump, under CDL (26k GVWR). 2yr/100k mile warranty, shipping and financing available. \$48,750. Central Arkansas

Caleb 281-914-1192 P05



Jim 330-272-7579, PA



2011 International 4400: DT466, 230hp, auto., 124,000 miles. New 2,500-gallon steel vacuum tank, new Jurop PN43 317cfm vacuum pump.

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

2011 International 4300: DT466, Allison automatic, under CDL. NEW 1,800-gallon steel vacumm tank and Masport HXL75V vac pump. www.pumpertrucksales.com. Call JR. @ 720-253-8014. CO. (PBM)

1995 Freightliner, Detroit diesel, 13-speed, 3,365-gallon vacuum tank, Masport W75 pump. www.pumpertrucksales.com. Call JR @ 720-253-8014, CO. (PBM)

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2006 International 7300: Pre-emissions DT466, 245hp, Allison automatic. 88,000 miles. NEW 2,500-gallon steel vacuum tank, Masport pump. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO. (PBM)

2004 Western Star 4900 with a 3,500 U.S. gallon, carbon-steel vacuum tank and a Masport HXL20WV water-cooled pump. (Stock# 7361C) www.VacuumSalesInc. com (888) VAC-UNIT (822-8648) (PBM)

2004 Freightliner FL70: 1,200-gallon unit, low-entry cab with a van body and liftgate. (Stock#4101V) www.VacuumSalesInc.com (888) VAC-UNIT (822-8648) (PBM)

SERVICE/REPAIR

Dynamic Repairs - Inspection Camera Repairs: 48 hour 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, NJ. www.dynamicrepairs.biz (PBM)

SLIDE-IN UNITS



Call/text 509-940-7057, WA PO5

NEW 500- to 850-gallon slide-in units. Honda/Jurop powered with Shurflo wash-down system. Prices range from \$7,250 to \$8,950. Call 337-315-0692. (P05)

TANKS



Cheap, Used Vacuum Tanks - Late model, lined, steel tank sale! 4,650-gallon: \$9,500 and lower; 3,500-gallon: \$12,500. Also: Low-price, plug-and-play pumps -- Masport, Fruitland, Jurop, NVE.

Call 269-751-5167, MI



Frac Tanks from Geneva Equipment. Financing available! Delivered to your door! Perfect for: Portable sanitation storage; Dewatering; Wastewater storage and treatment; Hydroexcavation; Stormwater runoff. Geneva Equipment has 1,000+ frac tanks available, epoxy lined and EPA compliant.

Call 855-202-7872 or sales@genevaequipment.com www.genevaequipment.com P04

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

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