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STILL GOING

Charlie Kristman has owned his installing and pumping company for more than 40 years. He succeeds with a strong work ethic and a love of his profession.

Page 18

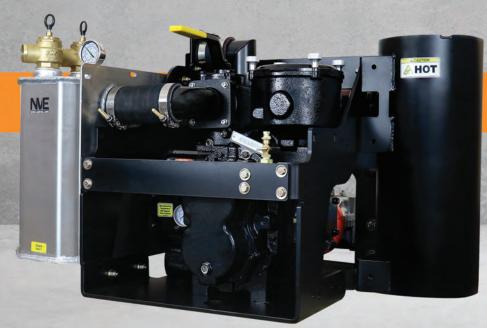
PRODUCT FOCUS
SEPTIC SYSTEMS
AND MAINTENANCE

Page 52





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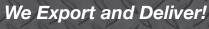


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Still Going Strong - Ted J. Rulseh

Charlie Kristman has owned his installing and pumping company for more than 40 years. He succeeds with a strong work ethic and a love of his profession.

10 Between the Lines: **Our 2022 Classy Trucks Are** Handsome and Hardworking

A great septic service truck combines good looks with the functionality of rugged components and capacity to get the job done.

- Jim Kneiszel

14 @pumper.com

Check out the latest online-only content at the Pumper website.

28 2022 Classy Trucks: **Best of the Bunch**

Don't forget to vote for your favorite Classy Truck! - Jim Kneiszel

32 Building the Business: Speak Up If You See Racism in the Workplace

If you want your business to thrive, It's important to push through and address unacceptable behavior that impacts diverse team members and customers. - Ken Wysocky

36 Money Manager: Buying an **Existing Business? Avoid Taking On**

Growth through acquisition can be a smart way

Someone Else's Problems.

to build your company if you're willing to do the research and carefully navigate necessary steps. - Joan Koehne

40 Septic System Answer Man: **Constructed Wetlands Call for Persistent Service Providers**

Keeping a treatment cell operating properly requires a watchful eye for invasives and a solid maintenance program.

- Jim Anderson

44 Snapshot: Trade Association **Work Slows as Colorado Contractors** Are Overwhelmed

Unfortunately, there's little time to advocate for wastewater industry advances as installers and pumpers are stretched to their limits.

46 Rules & Regs:

Cape Cod looking at nitrogen treatment upgrades - David Steinkraus

48 Associations List

50 Classy Truck of the Month

Chesapeake Septic Service, Stevensville, Maryland

52 Product Focus/Case Studies

Septic Systems and Maintenance

- Craig Mandli

64 Product News/Spotlight

Air-filled pump motor designed to create premium efficiency

- Tim Dobbins

65 Industry News

ON THE COVER:



He loves the work, so cards for 72-year-old Charlie newest vacuum truck, a 2022 Systems. (Photo by Kirk Zutell)

COMING IN JANUARY:

> PROFILE: A great business plan in Oregon

> SNAPSHOT Visiting the Jayhawk state



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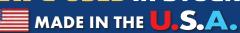
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A.R. North America, Inc......34 ABBOTT RUBBER

Abbott Rubber Co., Inc......53 American Tank Company 37



AQUA-Zyme Disposal Sys. .42

arcan

Arcan Enterprises, Inc.......65 Bright Technologies53



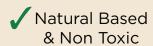
Comforts of Home Services... 57

CRO Software Solutions 30
Crust Busters
DAVIDSON TANK Davidson Tank50





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Deal Assoc61 Eljen Corporation12	NUCONCEPTS
Wallenstein	NuConcepts Park Process
Elmira Machine Industries/ Wallenstein Vacuum 15	pikrite Pik Rite, Inc
Engine & Accessory, Inc 41	POLYJO PolyJohn
FLOWMARK =	Portal ogix
FlowMark Vacuum Trucks 16 FMC Advisors53	PortaLogix
CEDVER	Presvac Syste
GapVax, Inc21	ProcessWerx
House of Imports7	Summit Ritam Techno
IMPERIAL INDUSTRIES INC	[2]¥
Imperial Industries, Inc75	Robinson Vac ROEDA
In the Round Dewatering55	Roth North An
INTEGRITY TANK	Satellite
Integrity Tank Sales & Svc39	Satellite Indus
	ScreencO Systems
ITI Trailers & Truck Bodies 25	ScreencO Sys
Jet, Inc26	Sim/Tech Filte
KeeVac	T&T TOOLS
KeeVac Industries, Inc55 Key Commercial Corp34	T&T Tools, Inc
Lane's Vacuum Tank, Inc. Lane's Vacuum Tank, Inc33	
Marsh	T.S.F. Compar Tank Track LL
Marsh Industrial11	TANKWO
McKee Technologies -	Tank World Co
Explorer Trailers15	TankTeC Tank Technologies a Supply Ca. LLC
Mid-State Truck Service, Inc.34	TankTec
MRP	Tropoport True
Milwaukee Rubber Products.16	Transport True
N.A.W.T61	Transway Sys
NationalTruckCenter	TSI
National Truck Center9	TSI Tank Serv
National Vacuum Equipment .3	TUF-TITE, Inc
Transital vacuum Equipment.5	1,

Norweco, Inc17	
NuConcepts	-
pikrite Pik Rite, Inc43	V
POLYJOHN 2	V
Porta Logix	٧
Presvac Systems76	V
ProcessWerx59 Summit_ argy_	V
Ritam Technologies LLC59	V
Robinson Vacuum Tanks 47 ROEDA57	N
Roth North America59	
Satellite Satellite Industries31	
Screenco Systems, LLC 39	1
Sim/Tech Filter Inc57	A
TAT TOOLS	L
F&T Tools, Inc30	N
T.S.F. Company, Inc27 Fank Track LLC42	
TANK WORLD Fank World Corp45	1
TankTec TankTec TankTec TankTec26)]
Transport Truck Sales, Inc49	
Transway	N
Fransway Systems, Inc5	1
TSI Tank Services, Inc12	'

17	US TANKS US Tanks Industry4
49 49	Vacutrux Limited15
43	Vacuum Sales, Inc47
2	VARCO VARCO23
43	WALEX
76 59	Walex Products Company35
59	Westmoor Ltd4 WWETT Show38, 63, 74
47 57	Classifieds68-73 Marketplace66-67
59	REGIONAL ADVERTISERS
31	Midwest Supplement
31	(after page 50) Advance Pump & Equipment 3
	(after page 50) Advance Advance Pump & Equipment 3 LINCOLN CENTER LINCOLN CENTER Lincoln Center Manufacturing/
39	(after page 50) I dvance Advance Pump & Equipment 3 LINCOLN CENTER
395730	(after page 50) Advance Advance Pump & Equipment 3 LINCOLN CENTER Lincoln Center Manufacturing/ Marengo Fabricated Steel . 1 Navitas Credit Corp
39 57	(after page 50) Advance Advance Pump & Equipment 3 LINCOLN CENTER Lincoln Center Manufacturing/ Marengo Fabricated Steel . 1 Navitas Credit Corp
39 57 30	(after page 50) Advance Advance Pump & Equipment 3 LINCOLN CENTER Lincoln Center Manufacturing/ Marengo Fabricated Steel . 1 Navitas Credit Corp 3 Eastern Supplement (after page 50) Advance Advance Pump & Equipment 3 LINCOLN CENTER Lincoln Center Manufacturing/
39 30 27 42	(after page 50) Advance Advance Pump & Equipment 3 LINCOLN CENTER Lincoln Center Manufacturing/ Marengo Fabricated Steel . 1 Navitas Credit Corp 3 Eastern Supplement (after page 50) Advance Advance Pump & Equipment 3 LINCOLN CENTER
39 30 27 42 45	(after page 50) Advance Advance Pump & Equipment 3 LINCOLN CENTER Lincoln Center Manufacturing/ Marengo Fabricated Steel . 1 Navitas Credit Corp 3 Eastern Supplement (after page 50) Advance Advance Pump & Equipment 3 LINCOLN CENTER Lincoln Center Manufacturing/



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2015 Freightliner Cascadia

Detroit DD13 (450 HP), 10 Speed Manual, 379K Miles, New 5000 Gallon Tank, New Jurop LC-420 Vacuum Pump (425 CFM) \$142,000















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

Jim Kneiszel Editor

Our 2022 Classy Trucks Are Handsome and Hardworking

A great septic service truck combines good looks with the functionality of rugged components and capacity to get the job done

By Jim Kneiszel

f you've built out a new septic service truck in the past few years, you know what kind of challenge it's been. Finding the right chassis, lining up a builder, sourcing all the parts and timing the builds has been a hurdle for wastewater professionals during the era of COVID.

Even with all the supply chain woes, pumpers still need their trucks, and with so many folks working from home, these past few years have been some of the busiest for service providers. Septic tanks are pushed to their limits and weaknesses in onsite systems are shown during these heavy-use times. At the same time, labor shortages have hurt both pumping companies and manufacturers who assemble vacuum trucks.

But that hasn't stopped our popular Classy Truck feature. As a group, pumpers just keep on keepin' on! If you need a rig, you're going to make it happen. And we're thankful that so many of you want to share your builds with the *Pumper* community. As a token of our appreciation, each owner of our featured monthly Classy Truck receives a Classy Truck vinyl to display on their work truck. The Classy Truck of the Year receives a special vinyl graphic to let the public know about the award.

We've had so many great Classy Truck contributors over the years, and 2022 was no exception. The entries came from across the U.S., with Pennsylvania providing the most with three service trucks. Others came from New York, Texas, Wisconsin, Indiana, Michigan, Arizona, North Carolina, Ohio and Maryland.



CAST YOUR BALLOT

You can see trucks from the past year inside this issue, along with information on how to go online and vote for your favorite. We tally the votes and add the input from COLE Publishing editors to choose the Classy Truck of the Year. Then, that truck owner is featured in the February 2023 issue of the magazine to celebrate the accomplishment.

A special shoutout goes to the 2022 pumpers who handled the fabrication, welding and wrenching to build the trucks themselves. They include the following:

• Dewey Northrup Sr. and Dewey Northrup Jr. of Northrup Septic Service in Tully, New York, with their 2000 Peterbilt 357.

- Jon and Cody Housekneckt of Sunset Septic & Excavating in La Porte, Indiana, with their 2012 Kenworth T660.
- Ricky and Mark Hall of Casa Grande Septic Services, Eloy, Arizona, with their 2017 Peterbilt 389.
- Mark and Dustin Rousseau, of Chesapeake Septic Service, Stevensville, Maryland, with their 2007 Kenworth T800.

Looking at the Classy contenders for this year, we can point out a few continuing trends in truck building:

Peterbilt continues to dominate. Like last year, five of our trucks are carried on Peterbilt chassis. Kenworth represented with four, International had two and Freightliner had one. Western Star and Mack were bounced out of the top 12 this year.

As a token of our appreciation, each owner of our featured monthly Classy Truck receives a Classy Truck vinyl to display on their work truck. The Classy Truck of the Year receives a special vinyl graphic to let the public know about the award.

Steel rules. Eight of our trucks carry painted steel tanks. Three are aluminum and one is stainless. Aluminum and stainless had trended toward a greater percentage of Classy Truck entries in prior years.

More rebuilds. Whether it's because new chassis are hard to come by or more pumpers are being conservative or value-oriented, a good number of this year's trucks are rebuilds of pumping rigs or repurposed from other industries. Nine of the 12 rigs are late model used, and a few go back more than a decade. The oldest is from 2007.

Seeing red. Four of our trucks were either all-red or carry a patriotic red, white and blue motif. While simple, clean white has sometimes dominated in the past, this year shows some outliers, including an all-yellow truck, metallic green, brown, black and purple. Design elements trended toward the basic graphics and were not as showy with the vinyl wraps.

Bigger tank capacities. The tanks average 3,916 gallons, inching ever closer to topping 4,000 gallons. Despite seesawing and dramatically higher diesel prices of late, pumpers continue to prioritize emptying more septic tanks between trips to the disposal site over better fuel economy maneuverability. The biggest is 5,400 gallons and the smallest is 2,300 gallons.

Favoring auto transmission. There appears to be no turning back on this one. Even with all the used trucks, five of the 12 run auto transmissions. Pumpers are more often opting for the convenience of an auto transmission for drivers who either no longer want to jam gears or have never learned to drive a manual. The new generation of CDL drivers simply doesn't want to learn the old ways and owners are bending to their will.

Blowers are in the minority. This one is surprising. For all the good things I hear about today's powerful blowers, traditional vane pumps are added to 10 of our 12 Classy Trucks. Sticking to a tried-and-true technology to create suction?

PARK YOUR TRUCK OVER HERE

For all this talk about the 2022 trucks, how about sending a photo and write-up of your new truck for a future issue of *Pumper?* We always welcome your submissions. Just send me the basic information, your contact information and a few photos, and we might be right here next year talking about your new truck. Just reach out at editor@pumper.com. Let me know if you have any questions about the process and I'll walk you through it.

The great trousers debate

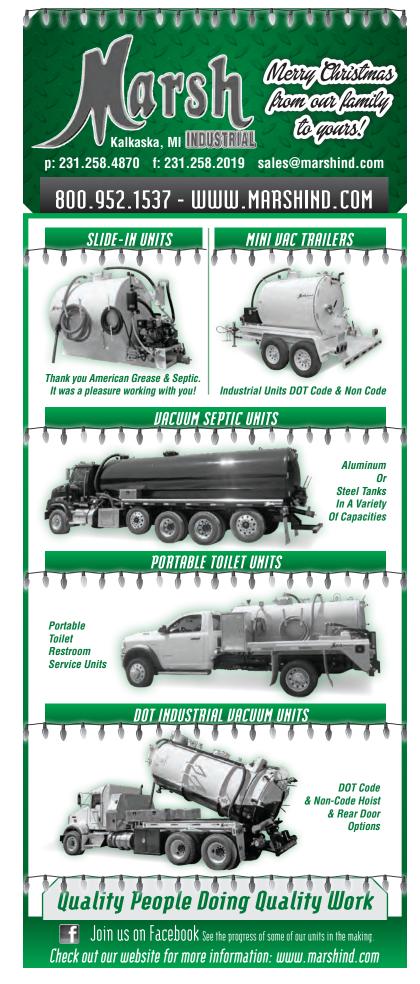
A few months back, a *Pumper* reader asked if technicians working in hot climates should be allowed to wear shorts when pumping tanks. I asked the question in my editor's column and received an interesting response from John Buelow, of Buelow Excavating in Stillwater, Minnesota. And he's a good guy to ask about working attire in extreme conditions. He doesn't wear shorts, but developed a system for rotating work pants for comfort in all climates:

"I always wore jeans all year around working outside from 100-plus above to -75 wind chill. I would buy three pair of jeans in the fall and wear until the end of spring," he said. "They were then much lighter and cooler in the summer. By the time the weather got cooler they could be very thin with holes in them.

"The jeans I have now for next year weigh between 819 to 1058 grams (1.8 to 2.3 pounds)," he continued. "I found something much cooler, white painters pants. My lightest pair weighs 351 grams (0.77 pounds) and feel so cool, like wearing a screen door compared to those heavy jeans."

I'm still waiting to hear from a technician who wears shorts on the job. As I reported earlier, OSHA, the Occupational Safety and Health Administration, does not specifically weigh in on the safety of wearing shorts on the job. OSHA leaves the issue up to individual businesses. It recommends companies consider hazards like exposure to chemicals or pathogens and worker comfort in extreme conditions when setting dress code and safety policies.

What do you think? Let me know at editor@pumper.com.









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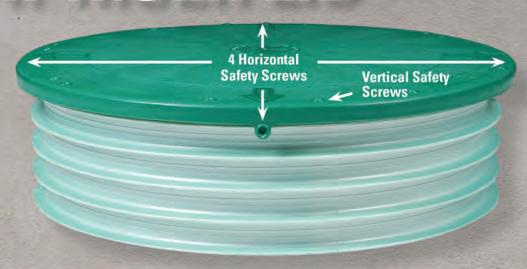


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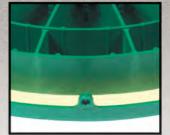
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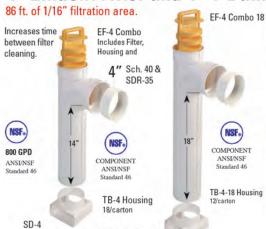


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winterization basics

In cold climates, many residences are seasonal. Shutting down a septic system for the winter is a vital task for seasonal homeowners to prolong the life of the system and to keep it operating at peak performance. Precautions taken in the fall can help prevent a frozen system. This online article includes tips to help your seasonal customers close up their septic system.

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A CLOSER LOOK

onsite system control boxes

Outdoor equipment used in residential wiring must be weatherproof. The

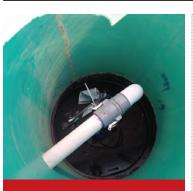


two most common types of weatherproof equipment are driptight and watertight. Learn more about onsite system control boxes in this online exclusive article by Sara Heger of the Water Resources Center at the University of Minnesota.

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Soil survey information can be used to inform and direct the in-field part of a site evaluation and can be used to establish design parameters when the knowledge is applied in the field.

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keys to doing

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keeping things

Kurt Cortese loves things clean and he loves cleaning them. So, whether attending to his own home or servicing the grease trap at a client's business, he's in his element. He's co-owner of Cortese Pump Services in Wayne, New Jersey. The company strictly focuses on grease work — pumping traps and interceptors and providing regulatory inspections.

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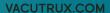






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harlie Kristman has a simple belief about work: "You've got to like what you do. If you like your job, you're going to do it well. It comes to you very easy, and the money rolls right in."

Kristman has lived out that belief as owner of C.M. Kristman Septic Services in Coatesville, Pennsylvania. At age 72, Kristman still shows up early for work, leading a team of eight employees in a business that installs some 150 septic systems per year.

Simply stated, he loves working with machinery, whether that's digging a hole for a septic tank or moving earth to complete all the site work for a new home.

"I don't want to play golf every day," says Kristman, who founded the business in 1979. "I would get bored with that. Playing two or three days a week is fine, and I can still come into the office, work on the equipment and maybe take on a digging job. I like to get up at the crack of dawn, get it done and then ease off in the afternoon. That's the way I've always been."

A NATURAL OPERATOR

Born in Birdsboro, Pennsylvania, Kristman grew up in nearby West Chester. After high school he worked in logging for a few years and then joined a company that installed fencing. As a side job to feed his wife and two children, he cut and



split firewood. For that endeavor the owner of a housing development company allowed him to use one of his bulldozers.

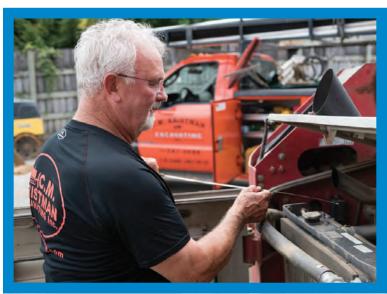
"He saw me running it and noticed I could run them really good. He offered me a job at \$4 an hour, which was a lot of money back then (late 1960s). I worked with him for about a year and got the taste of operating heavy equipment.

His next job was with a different company operating a backhoe for several years. "I got real good at it," he recalls. "A lot of people wanted me to do work for them because I could get work done quick." In 1979, after his employer declined to add health insurance to his compensation, he left to go into business for himself. "I vowed that I would always give my employees insurance," he says. "I still do it to this day."

Kristman bought his first backhoe with help from an \$11,200 bank loan. As his reputation and the company grew he began adding people and bought a loader, a dozer and a trackhoe. "At one time I had 16 employees," he says. "Then we dropped back down to 11, and now we have nine, which is more manageable.

He credits his office staff of Sherry Robinson and Kelly Sepela for helping to grow and sustain the business. "When customers call here, somebody answers the phone," he says. "People love that. Nothing is worse than having a robot answer the phone. People want to hear a live person.

The C. M. Kristman Septic Services team includes, from left, Kelly Sepela, Sherry Robinson, Charlie Kristman, Joe Mowday, Scott Mason, Alexis Romero, Jeramy Good, Ferdinand Williams, Jesus Romero. (Photos by Kirk Zutell)



Equipment maintenance is important to Kristman, shown working on a machine in the company yard.

"Sherry and Kelly are so experienced that they know exactly what to say to the people. They make them feel comfortable, and they don't want to go anywhere else. They know everything. They have all the answers, or if they don't know, they find someone who does. Many customers come up and tell me how wonderful they are, just a pleasure to talk to."

FOCUS ON INSTALLS

Taking care of business in the field are Ferdinand Williams, project manager, and Joe Mowday, Scott Mason, Jeramy Good and Jesus Romero, installer/operators.

From its beginnings the company focused on installations and kept pumping at arm's length.

The installation is strong. The company's office lies about 35 miles west of Philadelphia, and the surrounding Chester County is seeing strong residential growth with homes that typically range from 2,500 to 10,000 square feet.

The terrain is hilly; the soils are largely well drained sand and schist. "We're putting a lot of alternate systems in because a lot of the good ground is used up already," Kristman says. Most of the alternatives are at-grade systems: the surface soil scarified, 10 inches of crushed stone rock laid down, covered by geotextile, and backfilled with soil. These systems use pressure distribution via 2-inch pipe; Kristman favors Goulds pumps.

WE STILL ONLY HAVE ONE TRUCK, AND THAT'S ALL WE WANT. IF I WANTED TO GO AFTER IT I COULD PROBABLY HAVE FIVE OR SIX TRUCKS, BUT I DON'T WANT TO GO THERE.

CHARLIE KRISTMAN



I LIKE TO GET UP AT THE CRACK OF DAWN, GET IT DONE, AND THEN EASE OFF IN THE AFTERNOON. THAT'S THE WAY I'VE ALWAYS BEEN.

CHARLIE KRISTMAN

In poorly drained soils the company often opts for drip irrigation (tubing and componentry from American Manufacturing) and aerobic treatment units from Norweco. For conventional system drainfields Kristman favors crushed stone with 4-inch perforated pipe.

The company's go-to machines are a 2019 Takeuchi TB280 trackhoe, a 2014 Takeuchi TL230C skid loader, and a 2014 Caterpillar CAT 305 ECR mini-excavator. Helping to move equipment and materials are three dump trucks, a 1988 Peterbilt with a Galion dumpbody, a 2005 International with a Heil dumpbody and a 2011 GMC Sierra with a Reading dumpbody, as well as a 20-ton Trail King trailer, and a 1-ton Kauffman trailer.

BRISK BUSINESS

Last summer, the company had a three-month backlog of installation jobs, even while investing next to nothing in advertising. "We're one of the oldest installers in this area," Kristman says. "My name has been around

here for a long time. It's all word of mouth."

That and excellent workmanship, according to Kristman: "We treat each site like it's our own place. We want to leave it the way it was when we got there. We're not landscapers, but we have the machines to do it, and we've been doing it for 15 years. We do the raking and seeding. People want the whole job done. They don't want to have to hire somebody else for the landscaping. So we do it all."

System repairs and replacements are a substantial part of the business. Pennsylvania requires septic system inspections at the time of property sale, following a state-prescribed protocol. "The inspections find all kinds of things wrong, and when that happens the system has to be repaired or replaced. We get a lot of that work."

C.M. Kristman performs inspections and is careful to avoid conflict of interest in taking on repairs that may result. "Many people say they want us to do the work," Kristman says. "We don't want them to feel they have to

(continued)



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hire us. We tell them they're free to get other prices and go someplace else. But most of the time they want us to do it."

GROW INTO PUMPING

The pumping side of the business grew naturally from installations. Kristman recalls, "I just enjoyed digging; I didn't want to pump." So he subcontracted that work until customers began saying they wanted him to do it. "So I bought a pump truck."

He started with a small single-axle truck and used that to fill a 9,000-gallon tanker, which then hauled the septage to a local wastewater treatment plant. In 2007 Kristman bought a new Peterbilt with a 4,000-gallon steel tank and Fruitland pump from Transway Systems.

"We still only have one truck, and that's all we want. If I wanted to go after it I could probably have five or six trucks, but I don't want to go there. I'm happy just doing what we do." His son, Charles, does well in the pumping business with his own company, Quantum Environmental; grandsons Cole and Tyler work for their dad.

LOVES THE JOB

Even after more than 40 years owning the company, Kristman enjoys the work and leading a team. Most of his team members are relatively young, have worked with the company since the 2008 recession, and have a strong work ethic: "We start work at 7, but they're in here 6:15 or 6:30, having coffee and talking."



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WE TREAT EACH SITE LIKE IT'S OUR OWN PLACE. WE WANT TO LEAVE IT THE WAY IT WAS WHEN WE GOT THERE.

CHARLIE KRISTMAN

Kristman still enjoys jumping on a machine and tackling an excavating or grading job. In his spare time, besides golf, he enjoys fly fishing for trout on the streams near State College, Pennsylvania, and on the West Branch of the Delaware River in New York.

For younger people starting in business he advises, "Go slow and easy. Don't grow too rapidly. Don't keep borrowing money until you've got more going out than coming in. You want to get some capital built up. When I buy equipment now, I write a check and pay for it.

"Try not to get in over your head. Don't live above your means. When your credit card bill comes in, if you can't afford to pay it off every month, you shouldn't have one."

He recognizes that younger people, like his son and grandsons, have different ways of approaching work: "My grandkids can't believe I still get up early in the morning and roll past their house while they're still jumping out of bed." But at the same time, "It warms my heart when I see younger people in the business working hard and really trying." **P**

Romero hits grease fittings on a Takeuchi skid loader during a maintenance check.



Salvaging an imploded tank

C.M. Kristman Septic operates just one vacuum truck, a 2007 Peterbilt with a 4,000-gallon steel tank, a Fruitland pump and 350,000 miles on the odometer.

Late last year the old tank imploded. Without a second truck as backup, "We had to do something to keep running, or else we were dead in the water," says Charlie Kristman, owner of the business. "The pumps on the truck have so much suction that they just pulled it in. We tried to jack it out from the inside. We probably could have done it if we had spent more time at it, but I wasn't too interested in that, I just wanted to keep it from pulling in any more."

Working with grandsons Cole and Tyler Kristman, he managed to brace the tank and get the truck back on the road while waiting for a new vacuum truck being built by Transway Systems.

The job was carried out safely, following OSHA confined-space procedures.

With the top manway open and a blower infusing fresh air through the rear gate, they pressure-washed the tank interior and then let it sit for a couple of weeks. Tyler helped cut the steel for the bracing. Cole worked inside the tank, wearing a harness connected to a tripod mounted on the tank. He welded supports in place to keep the tank stable.

"I would have gone in and welded it myself but I'm too claustrophobic," Charlie says. "I had a light set up in there. We had air blowing in the whole time. It didn't even smell like sewage inside. The thing we were concerned about was smoke from the welding."

Once the job was done, the truck was serviceable until delivery of the new truck, a 2022 International from Transway Systems with a 4,000-gallon steel tank and a positive-displacement blower.

MORE INFO

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2022 CLASSY TRUCK ROUNDUP

BEST of the BUNCH

Don't forget to vote for your favorite Classy Truck!



s a busy 2022 comes to a close, we throw open the virtual garage doors and give you a peek at entries for the Classy Truck of the Year contest. Come on in, look them over from tip to tail. Compare the eye-candy features and paint work. Then help the staff of Pumper magazine choose the winning rig.

With your input, we'll pick the Classy Truck of the Year and feature the hard-working vehicle in February 2023. That's the WWETT Show issue of *Pumper*, which is distributed at the biggest event in wastewater Feb. 21-23 at the Indiana Convention Center in Indianapolis.

Here's another look at the rigs featured in the past 12 issues of the magazine. Follow the instructions to cast a vote for your favorite at www.pumper.com. **P**

CAST YOUR BALLOT TODAY!

Step 1. Look over the 12 Classy Trucks for 2022.

Step 2. Choose your favorite.

Step 3. Go online at www.pumper.com/classy and vote. (One vote per IP address allowed.)

ACT NOW!

The deadline for voting is Thursday, December 22.

JANUARY



Northrup Septic Service Tully, New York

Dewey Northrup Sr. and Dewey Northrup Jr. built a red and chrome 2000 Peterbilt 357 with a restored 2002 3,500-gallon Karymore aluminum tank and a Wallenstein pump. The repurposed road tractor is powered by a Cat C-10 400 hp engine tied to an Eaton Super 10 transmission. The truck features rear-mounted toolboxes, LED strobe lighting and a rear-mounted camera.

FEBRUARY



Godinez Septics Austin, Texas

Orlando Godinez added a white 2020 Peterbilt 337 built out with a 2,300-gallon stainless steel tank and Masport Hydra pump from Best Enterprises. A PACCAR PX-9 300 hp engine tied to an Allison automatic engine power the rig. Features include a SeeLevel Annihilator gauge, LED work lights, 12-volt heat exchanger transfer tank and Alcoa aluminum wheels

> MARCH



Rural Septic Service Boyd, Wisconsin

Jerry and Chris Jakubowicz added a red 2020 Peterbilt 567 built out by Imperial Industries with a 5,000-gallon steel tank and National Vacuum Equipment 4310 blower. It is powered by a Cummins 450 hp engine tied to an Allison RDS 4500 auto transmission. Features include a freshwater tank with Hannay hose reel, Garnet in-cab Seel evel, and front and rear LFD strobes.

> APRIL



Sunset Septic & Excavating La Porte, Indiana

Jon and Cody Housekneckt added a 2012 Kenworth T660 carrying a 3,500-gallon Dumar Welding steel tank and Jurop pump. The truck is powered by a PACCAR 455 hp engine tied to a 10-speed Eaton Fuller transmission. Pik Rite provided aluminum side trays and a backsplash plate stamped with the company name. It was assembled and graphics were created in-house.

> MAY



Wray's Septic Tank & Development

Allegan, Michigar

Brian Carroll added a red, white and blue veteran-themed 2014 Freightliner 114SD built out by Imperial Industries with a 3,600-gallon steel tank and National Vacuum Equipment 887 pump. The rig is powered by a Detroit D013 450 hp engine tied to an Eaton Fuller 10-speed transmission. The truck features stainless steel toolbox and wheels, and dual air-ride seats.

JUNE



Hainan Sanitation

Blairsville, Pennsylvania

John Myers and Lori (Myers) Dudzinsky added this blue 2016 International 4300 built out by Amthor International with a 2,500-gallon aluminum tank and National Vacuum Equipment 607 pump. A Cummins ISB 325 engine and auto transmission provide power. Features include aluminum hose trays, heated valves, LED work lights, stainless steel visor and custom toolbox.

JULY



Litzenberger's Septic Service

Merlin Litzenberger added this Firemist brown 2021 Kenworth W900B built out by Nolt's Services and carrying a 5,400-gallon aluminum Martin's Truck Bodies tank and National Vacuum Equipment 4310 blower. A 450 hp Cummins engine tied to an Eaton 18-speed transmission power the truck. Features include aluminum fenders and a Garnet SeeLevel gauge.

> AUGUST



Casa Grande Septic Services Eloy, Arizona

Rick Hall added an all-white 2017 Peterbilt 389 with a 5,000-gallon steel waste tank, a 300-gallon repurposed propane tank for freshwater and a Thompson 454 vacuum pump. The truck is powered by a 525 hp Cummins ISX engine tied to an Allison automatic transmission. Most work was done by Ricky and Mark Hall, including a rack to carry a Kubota K008 compact excavator.

SEPTEMBER



Bullard Septic ServiceSanford North Carolina

Boyd Bullard added a white 2013 International 4300 with red and blue accents built out in 2020 by National Truck Center with a 2,500-gallon steel tank and Jurop RV360 pump. The truck is powered by a 245 hp Navistar MaxxForce engine wed to an Allison automatic transmission. A nearly vertical lifting tank and 36-inch rear manway allows for quicker dumping.

OCTOBER



T.E. Price Septic & Excavating Wayne, Ohio

Kevin and Nancy Aurand added this purple 2012 Kenworth W900 built out by Morocco Welding with a 4,600-gallon steel tank and Masport HXL 400 pump. The truck is powered by a Cummins ISX 550 hp engine tied to an Eaton Fuller 18-speed transmission. Features include heated collars, a Garnet SeeLevel gauge, LED side and rear work lights and strobe safety lights all around.

NOVEMBER



McGuire's Septic Service

Bishop Brothers Construction subsidiary McGuire's Septic Service added a black 2014 Peterbilt 388 truck built out by Pik Rite with a 4,500-gallon steel tank and Fruitland pump. The truck is powered by a Cummins 600 ISX engine and Eaton Fuller 18-speed transmission combo. The truck features a Garnet SeeLevel gauge, heated valves and upgraded interior wood accents.

DECEMBER



Chesapeake Septic Service Stevensville, Maryland

Mark Rousseau added a 2007 Kenworth T800 and rebuilt the rig in-house with his son, Dustin Rousseau. The metallic green and black truck carries a 4,620-gallon steel tank from Crown Tank and a Masport Hydra pump. A 600 hp Cat C15 ACERT engine uses an Eaton 18-speed transmission to bring power to the wheels. Nevius Truck Repair overhauled the engine.

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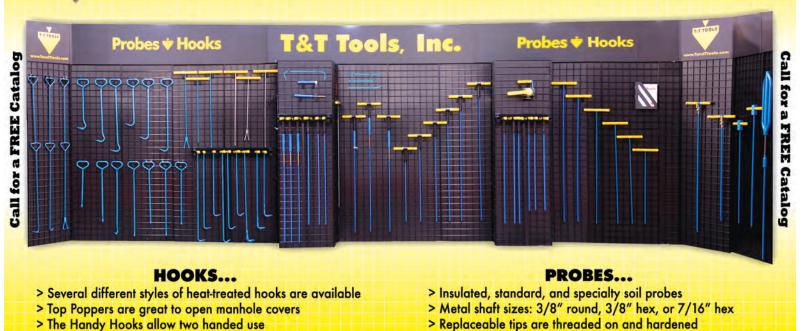
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FROM THE SATELLITE FAMILY!



BUILDING THE BUSINESS





Ken Wysocky is a freelance writer and editor who resides in suburban Milwaukee, Wisconsin

Speak Up If You See Racism in the Workplace

If you want your business to thrive, it's important to push through and address unacceptable behavior that impacts diverse team members and customers

By Ken Wysocky

peaking up against racism in the workplace is fraught with risk. Yet saying nothing at all only ensures that problems will continue unabated.

Like so many hard conversations, it's important to broach this potentially uncomfortable topic with a well-planned, intentional approach that takes into account a variety of factors, says Dana Brownlee, the founder and owner of Professionalism Matters, a corporate training and consulting company.

"It's hard to talk about racism," she says. "We have a difficult history here, ... and people often feel defensive or guilty. Or they're afraid they might say the wrong thing and be judged for it. There's any number of reasons why these conversations can be difficult."

A more thoughtful approach can help minimize the chances of creating a defensive reaction that ultimately results in people mentally shutting down. That, in turn, renders them unwilling to truly listen to what you have to say and impedes any kind of progress, says Brownlee, who has developed a course for LinkedIn Learning called How to Speak Up Against Racism at Work.

But approaches aside, doing nothing is not the answer, notes Brownlee, the author of *The Unwritten Rules of Managing Up: Project Management Techniques from the Trenches*.

"It's like standing on a moving walkway," she explains. "If we just stand still and don't actively turn around and walk in the other direction, you'll still get racist outcomes even though you didn't intend to.

"You can either be non-racist [a passive stance] or be anti-racist, which means you're actively trying to change things by pushing back against biased or potentially offensive comments, policies and so forth."

Honor different views

So what advice does Brownlee have for people who see racism in the workplace? For starters, you're doomed to disappointment and failure if your main goal is to get everyone in a discussion to view things the way you see them.

"Everyone is shaped by their own life experiences," she says. "We all come from different backgrounds and upbringings, so it's a bit much to think that everyone will see things exactly like you see them. So it's important to give them the space to have their own perspectives. People can shift their opinions, but will only do so over time."

Labeling also is not a good idea. For example, if there are no people of color on a company's board of directors, telling a senior executive that the organization is racist probably isn't an effective approach.

"Unfortunately, the term 'racist' often is perceived as a scarlet letter," Brownlee observes. "Labeling generally is not a productive use of time and energy. It's similar to giving feedback to a less-productive employee; instead of saying they're lazy, it's more constructive to point out that everyone on the employee's team averages 20 sales a month while that employee averages 10 a month.

"So it's important to go to the facts, as in we don't have any Black people on the board of directors, for example, instead of using labels

It's hard to talk about racism ...
We have a difficult history here
and people often feel defensive or guilty.
Or they're afraid they might say the wrong
thing and be judged for it. There's
any number of reasons why these
conversations can be difficult.

- Dana Brownlee

Firm but diplomatic

In addition, stating things as a question "lands softer" than a statement. It also provides an opportunity to find support by bringing others into the discussion who might have similar views.

For example, instead of stating that the speaker panel for a conference isn't diverse enough, an employee could note that the panel isn't very diverse and ask how others feel about this, given the company's commitment to diversity and inclusion.

While using effective wording is a good strategy, it's also important to make your point firmly, even though it might feel uncomfortable, so it's not easily dismissed.

"I do believe there's a tension point in these conversations between remaining comfortable and making progress," Brownlee says. "If you only push the group to the extent that everyone remains comfortable, you'll only progress

(continued)



as far as the least progressive person, so there's little or no movement.

"So like anything else in life, if you want to gain any benefit, you have to be able to withstand some level of discomfort. And interestingly enough, we do this in other areas of our lives, such as with personal trainers or therapists. Pushing past discomfort is how we make progress."

Consider your role

Another thing to consider: While it's so important for everyone to speak up against racism — particularly white people — it's also important for them to thoughtfully consider how their position and perspective might differ from their counterparts of color.

"If I'm part of a marginalized community, I can speak from a certain perspective," she notes. "But if you're a white guy and you notice that Black colleagues don't get promoted, get talked over or always get assigned to more menial tasks, it's important for you to speak up about that.

"But I'd recommend that you first consider talking to some colleagues of color to learn more, gain additional perspectives or even garner support before you step in."

But Brownlee stresses that while it's ideal to check off these boxes to make your argument more palatable, it can't be a prerequisite. The truth is that uncomfortable conversations sometimes are a necessary part of true progress.

Brownlee also says it's critical to strategically consider stakeholder interests when you want to push forward a potentially controversial viewpoint or objective. For example, which people or parties will be most impacted by your proposal? Who are the most influential people? Who might be for or against whatever you're proposing? What motivates key people in the decision-making process?

"You can't just blurt something out in a group meeting," she advises. "You may want to consider what motivates people at a meeting. Maybe it's a legal issue — avoiding a lawsuit — or a return-on-investment issue for them. Knowing what motivates them will help you align your pitch with their interests and build a good business case.

"After that, you can collect data that supports and appeals to their motivations."

Other considerations

Moreover, it's also important to think about the best setting for approaching this sensitive topic. Maybe a one-on-one convo in an office is best. Or a group setting. Or an offsite lunch. Maybe a third party should be present to mediate a bit, she suggests.

"You have to think about the logistics around it. It can make a big difference, so be sure to think it through."

The bottom line: Don't be daunted. And silence is not an option.

"It's always risky to speak truth to power, especially if you work in an environment that's not open to new ideas or that's autocratic," Brownlee says. "You could be ostracized — not be invited to sit at the cool kids' table at lunch anymore — or suffer other repercussions.

"But the real key to truly building an anti-racist workplace is to get out of the mindset that it's only the responsibility of the people who run the diversity, equity and inclusion programs or the responsibility of the board of directors. It's everyone's responsibility."

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RTD130-160	32.0	121.1	2300	160	50.5	36	42	3	128
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RTX30	8.0	30.3	4350	300	23.9	20	23	3	72
RTX50	12.0	45.4	4350	300	35.8	25	23	3	72
RTX60	14.0	53.0	4350	300	41.8	25	28	1	72
RTX70	17.0	64.4	3000	200	33.8	30	23	3	72
RTX85	21.0	85.0	2200	200	31.7	30	28	1	72
RTX-HW85.150N*	21.0	85.0	2200	200	31.7	36	23	1	72
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Buying an Existing Business? Avoid Taking On Someone Else's Problems.

Growth through acquisition can be a smart way to build your company if you're willing to do the research and carefully navigate necessary steps

By Joan Koehne

rowing your company through acquisition isn't a sudden process. Rather, business acquisition requires a highly structured and detailed series of actions.

Acquisition typically takes six months to a year from the date of going to market to closing. Before all parties sign on the dotted line, the buyer and seller must agree on all aspects of the transaction, which may require lengthy negotiations.

"The new and the old business owner need to get along to make this work. They need to be compatible," says Mike Demerath, an attorney at Hager, Dewick & Zuengler, S.C. in Green Bay, Wisconsin. "Otherwise, a smooth transition may be difficult to achieve. If there's a lot of back-and-forth and digging in heels as a part of the initial negotiation of the contract, that is a concern on the buyer's side. If things get adversarial, it's not a good sign. It may be best for both sides to move on."

Some sellers have a hard time stepping aside, and it's easier to sell when they like the buyer who's taking over, Demerath says.

"It needs to be a good relationship, not just in negotiating to reach a resolution but in the day-to-day after closing," he says.

Trust and transparency are keys to a smooth transaction, says John Kelly, principal mergers and acquisitions adviser at Kelly Business Advisors.

"Trust is what gets a transaction through the finish line," he says. "If you feel like trust is building, you are likely to get across the finish line. If trust is eroding, call it what it is and walk away. Without trust, it gets ugly."

Taking on liabilities

Most businesses sold today are asset sales versus entity sales. Buyers prefer an asset sale because they don't take on the seller's liabilities. In the purchasing agreement, buyers should establish what liabilities they're taking over, if any. Buyers can accept only the liabilities they want, such as customer contracts, vendor agreements, orders, current jobs and leases.

"Make sure titles to assets are free and clear," Demerath says. "Check if there are any liens, and make sure they're paid at the time of closing."

Liens are only one of the details to check during a due diligence period in which the buyer gets access to the seller's business operations, facilities, equipment and financial records. Buyers shouldn't only rely on what the seller is telling them. Instead, they should validate the details themselves or

If the key employees don't like the buyer, they might leave and compete against the business, and that can become a serious concern for the buyer.

Mike Demerath

through a third party like an accountant (for financial statements) and a title company (for real estate).

"Make sure what you think you're purchasing is what you do purchase," Demerath says.

Dig into the business to determine if any issues are pending like litigation or environmental hazards.

"You don't want to buy a business that is having issues that hurt its reputation," he says.

Also determine if the company is as profitable as advertised.

"Make sure you're buying a good business, a business that's making good money," Kelly says. "It's very hard to turn around a business that's not making any money unless, perhaps, you are an expert in that industry."

Equipment is another important component of a transaction. Buyers should inspect the equipment to determine its age and condition, so they know what investment might be necessary to repair or replace equipment and still sustain and grow the business.

Employee considerations

Employees are a huge element to consider in a business acquisition. Due to today's labor shortage, companies are buying businesses for the employees as much as anything else. Buyers should determine if key employees plan to remain with the company. To do so, they should structure a purchase contract with a condition allowing them to talk with key employees before closing and potentially reach an agreement with them to stay with the organization.

"The seller may have stay agreements in place with key employees, giving buyers confidence that the key employees will remain with the company," says Kelly.

"Part of a meeting with the key employees is to get a sense if you're going to mesh with them," Demerath says. "If the key employees don't like the buyer, they might leave and compete against the business, and that can become a serious concern for the buyer."

To prevent this scenario, buyers should draft a noncompete agreement for employees. A noncompete is especially important if the owner isn't involved in the business much and the key employees are running operations and meeting with customers. Buyers will also want to draft a noncompete agreement for the outgoing business owner and negotiate terms for them to assist with the transition to new ownership. They may become a consultant for a period of time or stay on as an employee. Kelly recommends a tapered schedule for the transition.

"If you need the seller around, for the first 30 to 60 days, it's all hands on deck," he says.

However, after the first 30 days, the seller should work on transitional items and not everyday operational tasks. After the first 30 to 60 days, assuming the seller wants to transition out of the business, the seller should work up to 20 hours a week. After 90 days, the seller should work up to 10 hours a week.

"Have the seller take off one out of every four weeks to allow for the transition of roles, duties and responsibilities," Kelly says. "Make sure the seller doesn't feel trapped in the business after closing."

The purchase agreement should include the seller's compensation and work schedule — and maybe health insurance coverage, too. If the seller is staying long term, having a salary and bonus plan makes sense. If the seller is only staying for the transition, paying the seller hourly allows both the buyer and seller to avoid an awkward conversation down the road about compensation. The truth of the matter is that a seller and the seller's family members working in a business typically do not stick around as long as they plan to.

Other factors

When analyzing a business to purchase, buyers should look closely at the owner's role.

"Ideally the owner isn't doing much," Kelly says.

If the seller is working a lot of hours, the buyer may need to step in to run the business or hire a manager to replace the owner. These scenarios need to be considered prior to acquisition. Facilities matter, also. Depending on the circumstances, buyers may or may not want the seller's facility. The status of real estate and property leases are important to research during the due diligence period.

Buyers should also review contracts and permits the seller has in place with government agencies, vendors and customers. Whether these are formal agreements or handshake promises, Demerath recommends asking two questions:

- 1. Can the buyer take over these contracts?
- 2. How long post-closing are the contracts locked in?

Lastly, buyers should consult with a lender to secure financing that fits their needs and minimizes risk. They might consider seller financing, in which the buyer pays the seller monthly, or an earn-out, in which the seller receives a percentage of new business generated or based on another performance metric. These are just two of the many ways to finance a business acquisition.

"There's a million ways to structure these deals. If you get to a million, there's a million more," Kelly says.

Although every transaction looks different, the goal of a successful acquisition is to purchase a company with a strong foundation, fluent operations, the right employees, a loyal customer base and steady revenue. Entrepreneurs and business owners have an advantage when they purchase a company instead of opening a startup. They take ownership of a company that is already well-established and making a profit, whereas it takes months or years to establish a business from scratch that performs at the level of the business they are acquiring. But before buying an existing business, it pays to do research to make certain the transaction will work for all parties involved. **P**

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Jim Anderson, Ph.D. Contributor

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

Constructed Wetlands Call for Persistent Service Providers

Keeping a treatment cell operating properly requires a watchful eye for invasives and a solid maintenance program

By Jim Anderson, Ph.D.

s noted in a previous column, I have had questions about design, installation and maintenance of constructed wetland systems. The kind of system I am most familiar with is the subsurface flow constructed wetland. In this system, septic tank effluent is delivered to the head of the wetland into normal drainfield rock material. The best treatment results are obtained when flow is equalized to the wetland cell (bed). Effluent is delivered in timed dosing through a pressure distribution network in the rock.

Both the wetland vegetation and the pea gravel substrate are involved in the treatment processes. In cold climates, treatment varies by the season, with best treatment during the growing season and reduced treatment in the winter. BOD removal averages 90-95% in the summer versus 80% in the winter. Fecal coliform bacteria are reduced by 96-99% in the winter and greater than 99% in summer. If the purpose of the wetland is to remove nutrients in lakeshore or other sensitive areas, nitrogen and phosphorus removal are 25-30% in the winter and 65 to 80% in the summer. Constructed wetlands can provide good treatment before discharge to a soil treatment unit (trenches, mounds, atgrades) or if permitted to an unlined wetland cell.

Obtaining these levels of treatment requires that all parts of the system be properly operated and maintained. The septic tank and the pump tank, pump and timer all need to be periodically (every year at a minimum) checked to make sure they are functioning properly. While this is the same for any type of system with these components, it is more important in wetland systems. The plants need a consistent flow of water to survive, flourish and provide the highest and most consistent levels of treatment.

Similarly, if effluent from the wetland is delivered to a series of pressure-dosed sewage treatment trenches, mound or at-grade, the pump tank and pump need to be checked. The final treatment area inspection ports should be opened and any liquid levels should be observed and reported. Beyond these typical maintenance activities, there are several unique issues or situations to address in wetland systems.

REGULATE FLOW

There will be a need to periodically regulate the control structure at the outlet. First, wetland vegetation needs water to survive, so flow out of the wetland may need to be reduced during periods of high evapotranspiration by the plants. Flow should also be monitored going into the wetland for the same

The bed must be weeded to get rid of any unwanted invasive species or noxious weeds, small trees and shrubs to ensure wetland plants survive and thrive. Without weeding, the proper wetland plants will not become well established.

reason; to maintain adequate water or to identify the presence of excessive flow that may hydraulically overwhelm the system. Excessive flows could occur due to changes in household water use, leaky fixtures, heavy rains or rapid snowmelt.

An additional reason to regulate the flow is to prevent freezing during the winter. This is done by lowering the water level in the pea gravel substrate after initial freeze-up in the fall. This creates an insulating pocket of air above the water level in the wetland cell. The air pocket combined with adding mulch or cover to the surface prevents the system from totally freezing.

Vegetation in the wetland must be managed to provide the highest levels of treatment. In my area, it takes about three years for wetland vegetation to become fully established in the cell to provide maximum treatment. The bed must be weeded to get rid of any unwanted invasive species or noxious weeds, small trees and shrubs to ensure wetland plants survive and thrive. Without weeding, the proper wetland plants will not become well established. Roots from trees and shrubs can damage the liner, causing leaks.

Dead vegetation at the surface should be removed when it gets thicker than two inches in depth. Maintaining nitrogen and phosphorus removal by the wetland requires that vegetation be harvested every five years, removed from the site and either land-applied or disposed of in a landfill.

FIGHT INVASIVES

Just as in more conventional treatment systems, toxic chemicals can harm the wetland plants. The homeowner needs to understand that excessive use of cleaning products may damage their system. Where the wetland is serving



a restaurant or bar, excessive solids can plug the media. Another type of pretreatment may be necessary.

Take precautions to control wetland cell access to keep out small children or pets. This may entail some type of fencing that may need periodic maintenance. Also, any unwanted burrowing animals will need to be controlled. These animals may find the wetland cell a desirable place to set up housekeeping. This can cause damage to the vegetation and the liner. The vegetation should be inspected annually for other pests such as insects that can damage the vegetation and appropriate control actions initiated.

Around the perimeter of the wetland cell, berms or dikes should be inspected and any erosion or damage repaired. Grass should be mowed

periodically to discourage burrowing rodents. Trees or shrubs that start to grow around the perimeter should be removed.

As with any other type of onsite system, constructed wetlands will provide treatment indefinitely into the future if they are properly operated and maintained. ${\bf P}$

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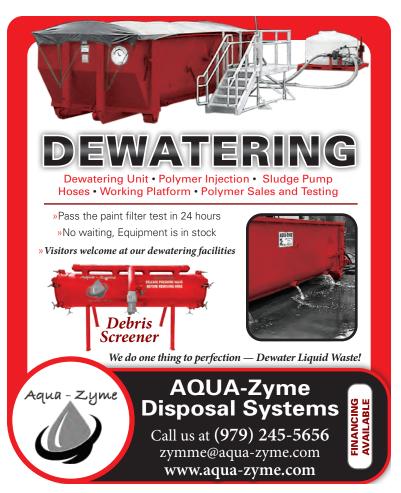
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Trade Association Work Slows as Colorado Contractors Are Overwhelmed

Unfortunately, there's little time to advocate for wastewater industry advances as installers and pumpers are stretched to their limits

In Snapshot, we talk to a member of a state, provincial or national trade association in the decentralized wastewater industry. This time we visit a member of the Colorado Professionals in Onsite Wastewater.

Name and title or job description: Clint Britt, owner/operator Business name and location: The Britt Company, doing business as TBC Septic, Elizabeth, Colorado

Services we offer: We are licensed in seven counties to do septic design, installation, inspection and repair, as well as soils testing.

Age: 46

Years in the industry: For my own company, six years. I also worked for my dad's engineering firm as a soils engineering tech for eight or nine summers from middle school through college.

Association involvement: I've been a member of the Colorado Professionals in Onsite Wastewater for six years. I served on the strategic planning committee for two years and am now serving on the board of directors as the director of membership/marketing.

Benefits of belonging to the association: For the county regulators, the CPOW membership, classes and certificate ensure that installers are being taught installation standards from the same organization and have a vested interest in quality installations. And I personally like to hear what new materials and supplies are coming down the pipeline.

Biggest issue facing your association right now: It's simply just time. Every member of our board of directors is slammed. We all realize plenty of work is a good problem to have but we're all so busy that projects and initiatives get pushed off. The Colorado Front Range has seen double-digit growth in new home starts. Repairs are on the rise as COVID-19 increased at-home employment, and this continues to stress onsite wastewater treatment systems. This all leads to increased designs, permits, installations and inspections. We are all feeling the increased workload demand and our time becomes scarce.

Our crew includes: Matt Walters, field supervisor and backfill operator; Noah Gregg, field technician; Debbie Britt, office manager; Paul Sorensen, P.E., design engineer (contracted); Travis Britt, materials delivery and field technician.

Typical day on the job: Every day is hectic and controlled chaos. From 5:30 to 7:30 a.m. I'm usually working in AutoCAD on designs and as-builts. My brain works best in the morning with coffee and quiet. Around 7:30 a.m.



Clint Britt is shown with a 2004 Freightliner pulling a John Deere 310SJ backhoe loader.

I'm text-communicating to staff on the goals for the day, or communicating with suppliers on delivery of needed materials. I'm also working on emails to prospective clients, our engineer or county regulators, and completing proposals. From 8 a.m. to 3:30 p.m., I'm typically at job sites, excavating and setting tanks. Since we are not big enough to have a full-time estimator, I do all estimating and bidding from 4 p.m. to 6 p.m. No two days are the same.

The job I'll never forget: We were awarded a contract to install (expand) a system for a large dog kennel in a rural area in Watkins, Colorado. The system was designed to be installed next to the outside play yard which was about one acre and fenced. The OWTS was a large timed-dose, dual pump, pressure system with 12 125-foot trenches with an additional 2,500-gallon tank and a new automatic distribution valve. When I bid the job, there were no dogs in sight. I could hear dogs barking in the large kennel building, but it was a muffled bark. Upon arrival on the first day, there were still no dogs in the yard. But the second my backhoe teeth touched the soil, she released the hounds and now there were 75-plus dogs barking, jumping and snarling at us. We couldn't even hear each other. We had to use sign language (which we don't know). Our heads started throbbing on day two.

By day three, all we heard was dogs barking in our heads on the drive home. And by day five, it was 24 hours of barking — in our sleep, eating, in the shower. I don't know how kennel owners do it.

My favorite piece of equipment: This is not real exciting but operators will understand. After years of hauling just a single piece of equipment to jobs (often having to make two or three trips), we finally invested in a Landoll 950 50-foot drop-deck trailer. No more manually lifting heavy ramps or being worried about weight. This thing has two automatic ramps and can haul two-plus pieces of heavy equipment. It saves tons of time — and my back.

Most challenging site I've worked on: This was for a repair. I should have planned this one better — so, my fault. The homeowner was in a hurry. In the week leading up to Christmas we had to install a high-level treatment system in a small corner lot. It was engineer-designed to be one foot off the old failed soil treatment area (that was full), exactly 20 feet off the house (per regulations), exactly one foot from a live gas line on the street that fed the entire neighborhood, 16 inches from the power line that supplied power to the house, and 18 inches from a fiber optic line on the adjacent street. We didn't have the time or budget for a hydroexcavator. This led to plenty of hand digging in the cold with frosty soil. Tons of stress. We miraculously fit it in and didn't hit anything. I aged 10 years that week.

Oops, I wish I could take this one back: We had to install a system for a repair in Black Forest, Colorado. And, yes, it was in a forest. The owner was emphatic he didn't want any of the pine trees removed. I was young and hungry so I agreed and thought I could do it. Big mistake. We managed to install the system; however, I banged into several pine trees, damaged all my tractors (broken lights/mirrors/doors), aggravated my staff — and the delivery truck got stuck. To make matters worse, the owner had no sympathy and thought we did a poor job.

The craziest question I've been asked by a customer: Here are some of ours. "How does this tank then connect to the sewer?" "Why is my tank always full?" "Can't I just share a system with my neighbor?" "Can I bury our connection box and use it as a tank?" "Why can't you just connect me to the sewer?" (city was 45 miles away). "Can't I just pump the tank into that old creek?" "My dad dropped his diamond wedding band into the sink. Can you please find it in the tank?"

If I could change one industry regulation, it would be: Regarding double-casing mainlines. Due to the installation procedure, we believe it can cause more problems than the good it does.

Best piece of small business advice I've heard: "Don't try to be all things to all people" — said to me by my dad. I try to offer helpful solutions to every client — which generally gets me into trouble, even today. I'm practicing remaining focused on what I'm good at and can control and staying away from challenges that are out of our wheelhouse.

If I wasn't working in the wastewater industry, I would: Hopefully be a pro baseball player. But aside from that, it would be something in the athletics arena, whether as a scout, sports agent, general manager, coach — heck, even a grounds crew foreman. I always enjoyed sports at the highest levels.

Crystal ball time — This is my outlook for the wastewater industry: I think the industry will continue to evolve with advances in technology for advanced treatment units, dosing requirements, graywater recycling. Costs will come down. I believe counties will continue to push for advanced technologies as well as professional certifications and education. I think it's a good time to get into onsite wastewater treatment. **P**

- Compiled by Betty Dageforde





RULES & REGS

Cape Cod looking at nitrogen treatment upgrades

By David Steinkraus

tate regulations expected in early 2023 will apparently impose new nitrogen restrictions on some parts of Cape Cod.

The primary water quality problem on Cape Cod is nitrogen, said Martin Suuberg, commissioner of the state Department of Environmental Protection, according to the *Cape Cod Times*. And most nitrogen comes from onsite systems, which account for about 85% of wastewater flows into bays along the cape, he wrote in a letter to the town of Dennis.

To help fix this, the state proposes creating nitrogen-sensitive areas. These would cover watersheds draining into estuaries with a total maximum daily load for nitrogen. About 30 watersheds on the cape meet that criterion.

Towns in those areas would have to upgrade onsite systems to nitrogenreducing systems within five years after the regulation is finalized. Towns would have to use the best available technology, but that could include nontraditional technologies such as permeable reactive barriers filled with wood chips to remove nitrogen as water flows through. Towns may also be able to apply for watershed permits, which would extend the deadline for upgrades to 20 years.

South Carolina

The state is short of onsite inspectors, so it held rapid-hire meetings in the fall.

More than 20 positions are open, said a press release from the state Department of Health and Environmental Control. The jobs are natural resources technician III, which pays a salary of \$29,061 to \$53,769, and environmental health manager II, which pays a salary of \$43,030 to \$79,616. Because these are state jobs, they also qualify for other state benefits.

"The maintenance and upkeep of a septic system is the responsibility of the owner, but DHEC has an essential role in assuring these systems are properly permitted to begin with and that the permittees or owners have the information and resources they need to keep them functioning for years to come," David Vaughan, director of DHEC's Division of Onsite Wastewater, Rabies Prevention and Enforcement, said in the press release.

Jobs require a high school degree and relevant work experience, but an associate's degree or bachelor's degree in a related field is preferred.

Michigan

Homeowners in Leelanau County will now be required to have their onsite systems inspected when their home is sold or transferred. County commissioners voted to create the ordinance.

The Benzie-Leelanau District Health Department will write the ordinance and will use the Benzie County ordinance as a model, reported the *Traverse City Record-Eagle*. The Benzie County ordinance has been in effect since 1992.

For about 30 years, county commissioners have been trying to pass such an ordinance, but it was regularly defeated by Republicans who held a majority on the commission. In May, the commission flipped to a Democratic majority.

Commissioner Rick Robbins, also a Republican, voted in favor of the ordinance. He said he had talked to many people and all township supervisors in the county. "We're surrounded by water and in the middle [of the county] is a big lake," Robbins said. "It only made sense. We've got to take care of our water resources."

Leelanau County is part of the tourism and recreational area around Grand Traverse Bay in the northwest Lower Peninsula.

Georgia

Grants are available to people in Northwest Georgia to repair or replace failing onsite systems. Eligible systems are in the watersheds of South Chickamauga Creek, Salacoa Creek, Holly Creek and Lookout Creek.

Money is being distributed by the Limestone Valley Resource Conservation & Development Council. It received \$243,000 from the federal government for the work. Another \$166,597 is coming from landowners and other local sources.

Homeowners will pay contractors for work and will be reimbursed once the state Department of Public Health verifies that work was done according to state standards.

For more information, see the council's website about the project: www. limestonevalley.org/septic. ${\bf P}$







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National Onsite Wastewater Recycling Association www.nowra.org; 978-496-1800

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

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

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

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

New Brunswick

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

Nova Scotia

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

Ontario

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

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2011 Freightliner M2, Cummins 220 HP, AUTO, non CDL, NEW 2000 gallon alum.Tank, NEW MasportViper pump. Call For Pricing!

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2010 Hino 268, 220 HP,Allison Auto, NON CDL, NEW 1800 gallon steel vac tank,

NEW Masport Viper fan cooled pump.

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2009 Kenworth T370, PX8-300HP, AUTO, 109K miles, 33 # GVW, NEW 2500 gallon steel tank, NEW Masport Viper pump.

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2012 Mack GU713, Mack MP8 500 HP, jake, ONLY 155K miles, 13 spd, 18# fronts, NEW 3500 gallon steel vac tank, NEW Masport Hydra plug and play vac pump. Call for Pricing!

6-MONTH NATIONWIDE DRIVE TRAIN AND EMISSIONS WARRANTY



2014 Kenworth T370, PX7-240HP, AUTO,

33# GVW, **NEW** 2500 gallon alum.Tank,

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6-MONTH NATIONWIDE DRIVE TRAIN AND EMISSIONS WARRANTY

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2005 Peterbilt 335, Cummins 315 HP, 10 spd, 33# GVW, Low miles, **NEW** 2500 gallon steel vac tank,

NEW Masport Viper fan cooled pump. **Call For Pricing!**

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Stevensville, Maryland



ark Rousseau added this 2007 Kenworth T800 tri-axle and rebuilt the rig in-house with his son, Dustin Rousseau. The metallic green and black truck carries a 4,620-gallon steel tank from Crown Tank and a Masport Hydra pump. A 600 hp Cat C15 ACERT engine uses an Eaton 18-speed transmission to bring power to the wheels. Nevius Truck Repair overhauled the engine deleting and tuning the truck for better fuel efficiency and more power. Features include LED work lights all around, green LED strobe lights, 36-inch rear manway and additional top manway, heated 4-inch suction and dump valves, and polished aluminum wheels by Blizzard Pulling Aluminum Wheel Polishing. Plans are to add a Crust Buster, box jetter and National Vacuum Equipment blower. Shore Sign provided graphics. Dustin Rousseau is the driver and the truck is used for residential septic service.

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Septic Systems and Maintenance

By Craig Mandli

ADVANCED TREATMENT UNITS



Anua PuraACE

The **PuraACE** from **Anua** is a drop-in-tank reactor pod for treating high-strength waste from restaurants, convenience stores or other facilities. The pods can be added to overloaded residential or commercial treatment systems. Treatment occurs by a submerged aerated filter process to reduce BOD, COD and ammonia. Passive alkalinity control regulates pH without adding chemicals. The pod housing isolates aeration to keep heavy solids from mixing. Open channel media prevents clogging while the airlift recirculation enhances retention time. Multiple pods can be utilized for larger flows and loads. **336-547-9338**; **www.anuainternational.com**

Eljen Geotextile Sand Filter

The **GSF**, or **Geotextile Sand Filter**, advanced wastewater treatment and dispersal system from **Eljen** is designed to provide treatment and dispersal in the same footprint, easy installations and minimal maintenance. It is used for commercial and residential



applications. Utilizing a two-stage pretreatment process, the geotextile modules apply filtered septic tank effluent to the soil and increase the long-term acceptance rate. Open-air channels within the module support aerobic bacterial growth on the module's geotextile fabric, surpassing the surface area required for traditional absorption systems. The system is tested and certified by NSF to NSF/ANSI Standard 40. **800-444-1359**; www.eljen.com



MicroSepTec EnviroServer ES

The **MicroSepTec EnviroServer ES** series utilizes five chambers to achieve primary settling, treatment and clarification in one tank. The units use a moving-bed biological reactor made for the residential market. The

first compartment of the system is the primary clarifier for settling sludge and solids. The second section houses the first of two aeration chambers and contains biomedia providing surface area to promote a healthy population of microorganisms. The third compartment is used for further aeration to amplify the growth of nitrifying bacteria and the process of nitrification.

The fourth chamber is the final clarifier where suspended solids settle out. Wastewater is then recirculated back to the primary clarifier in the first compartment, which contains enough carbon to promote denitrification removing high levels of nitrate. Clarified water then moves through an effluent filter before entering the fifth compartment, an effluent chamber for storage. 877-473-7842; www.microseptec.com

Norweco Singulair HK Green

The **Singulair HK Green** wastewater treatment system from **Norweco** is designed for areas that require significant and consistent reduction of total nitrogen. The hybrid system combines suspended



and attached growth biological processes, and consists of pretreatment, anoxic, aeration and clarification chambers, followed by the Bio-Film Reactor. It uses an extended aeration process to treat wastewater and features technology to enhance or optimize denitrification. Wastewater in the system undergoes a 70-hour retention to ensure adequate exposure to all treatment processes. 800-667-9326; www.norweco.com



Waterloo Biofilter Communal Package Plant

The Waterloo Biofilter Communal Package Plant is an efficient, low-maintenance absorbent trickle filter, according to the maker. The synthetic filter

medium is designed to optimize physical properties for low energy, long-term operation and no aerobic sludge production. Self-contained modules for communal sizes are available as 5,283 and 10,567 gpd ISO shipping container units — ready to plug in on-site. These SC-20 and SC-40 units are sized for 12 and 25 three-bedroom houses respectively. They include remote monitoring, small space requirements, and are shipped to locations around the world. They are customizable, modular, and come pre-assembled to reduce installation time and complexity. Their nonbiodegradable permanent filter media is designed to last at least 20 years. **519-856-0757**; www.waterloo-biofilter.com

AERATION SYSTEMS

Gorman-Rupp EchoStorm

The **EchoStorm** static venturi aeration device from **Gorman-Rupp** is designed to add dissolved oxygen into liquids as they are being pumped. It adds oxygen to wastewater, reduces the size of organic solids and de-gases organic solids. It is available in 2-, 3-, 4- and 6-inch sizes. Depending on the pump it is paired with, it can provide flows from 50 to 1,300 gpm with up to 857 pounds of dissolved oxygen per day. It is suitable for aeration in a variety of municipal, industrial and agricultural applications, including wet well influent, aerobic sludge digestion, lagoons, oxidation ditches, fat, oil and grease digestion, landfill leachate and mine



water treatment, according to the maker. The device can be combined with Super T Series, Ultra V Series, Super U Series, 80 Series, 10 Series and 6500 Series pumps. **419-755-1011**; www.grpumps.com

(continued)



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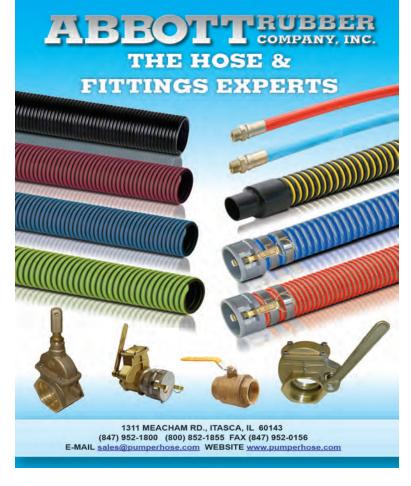


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PRODUCT FOCUS

ALARM SYSTEMS/COMPONENTS



Liberty Pumps NightEye

The **NightEye** app and cloud-based system from **Liberty Pumps** allows internet connection of a pump via the home's wireless router and provides alarm and other performance information to a mobile device. The system sends information via text, email and push notifications, to up to four different address/

phone numbers. Connected products include the ALM-EYE series indoor pump alarm, 442 battery backup pump systems and the SumpJet water powered backup pump. The system is easy to use and set up through a portable device, according to the maker. Download the free app, register the device and connect to the equipment using BlinkUp technology. The app is compatible with iOS and Android devices. There are no subscription or service fees. **800-543-2550**; www.libertypumps.com

EXCAVATING EQUIPMENT

Pressure Lift HydraBore

The **HydraBore** from **Pressure Lift** can blast down and physically remove built up tallow, soap residue and tank waste. Best used with a jetter, it will only add roughly 16 gallons of high-pressure water in a 10 minute period. Total time on a job, with a unit pumping approximately 2,000 gallons of waste, is less than 20 minutes at depths of 5 to 500 feet. Units are available in 3- and 4-inch sizes, with special orders of 6- and 8-inch units. The unit offers one-person operation, faster loading times, and it keeps



pumps cooler, decreasing pump wear and tear, according to the maker. It also reduces back injuries from full hoses. It works with industrial-size pressure washers and jetters, resuspending materials while pumping. **866-504-6596**; www.pressurelift.com

EFFLUENT/SEWAGE/SUMP/AERATION/GRINDER PUMPS



Ashland Pump effluent pumps

Heavy-duty effluent pumps from Ashland Pump are available in multiple horsepower sizes for various performance requirements and have efficient, permanent split-

capacitor motors, according to the maker. The oil-filled pumps have an upper and lower ball bearing design and handle solids up to 3/4 inch. They are made of cast iron, with cast iron impellers and equipped with a piggyback switch (20-foot standard cord) or in manual configurations. They are offered in 3/10, 4/10, 1/2, 3/4, 1 and 1 1/2 hp models. **855-281-6830; www.ashlandpump.com**

Crane Pumps & Systems Barnes RAZOR

The 2 hp Barnes RAZOR grinder pump from Crane Pumps & Systems is suitable for light commercial and residential solids-handling applications. It is designed with axial cutting technology to reduce solids like flushable wipes, diapers and other nonbiodegradable items. Maintenance is convenient with only a single tool needed for disassembly. The plug-and-play cord also provides easy servicing without requiring removal of epoxy in the conduit. Its 1.25-inch discharge is suitable for preconfigured packaged systems and turnkey solutions. It is available in the Barnes EcoTRAN



Pressure Sewer System for grinding in tough terrain. It provides a practical and environmentally safe alternative to traditional gravity systems, according to the maker. Numerous configuration options are available. 937-778-8947; www.cranepumps.com



Franklin Electric Little Giant Pit+Plus

The **Little Giant Pit+Plus** package from **Franklin Electric** provides an all-in-one solution for light duty wastewater management. Each package includes a roto-molded polyethylene basin — the pit — combined with the user's choice of Little Giant pump. The addition of the 1 hp grinder pump option joins the already available 4/10 and 1/2

hp sewage pump choices. The basin is available in two sizes: the 24x24 JR or 20x30 SR. The Little Giant 16G Series 1 hp grinder pump has a cutting mechanism modeled after the unique design used in larger Franklin Electric models. The heavy-duty 1 hp class F motor provides optimal power to prevent flushables and other debris from clogging and causing downtime. **844-250-4982**; www.littlegiant.com

Polylok PL-CPE4A

The **Polylok PL-CPE4A** is a submersible, 4/10 hp, 115-volt, single-phase effluent pump with a 2-inch NPT vertical discharge. It has a maximum head of 38 feet and a maximum flow of 56 gpm. The pump is designed with a 3,450-rpm oil-filled permanent split-capacitor motor and has an amp rating of 6.6 for 115 volts, a rugged cast iron housing and volute equipped with a cast iron vortex impeller capable of passing 3/4-inch-diameter solids. The stainless steel shaft is



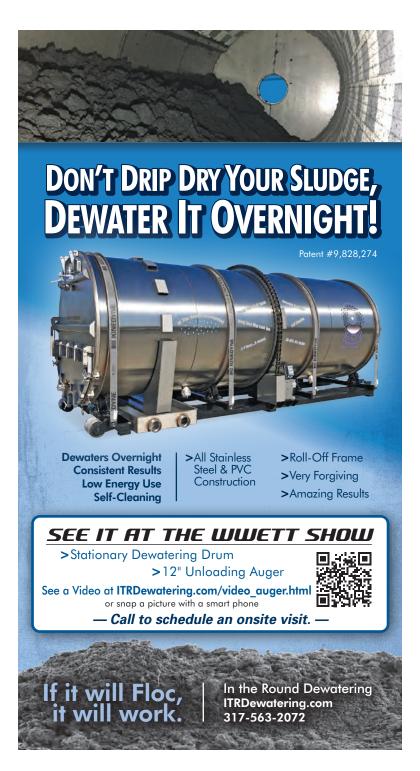
supported by two single-row, oil-lubricated ball bearings. The shaft seal is an inboard design with a secondary Exclusion V seal. It has a 20-foot UL/CSA-listed power cable suitable for submersible service and fitted with a three-prong plug. The unit is supplied with an integrated clip for the included piggyback mechanical float switch and used for automatic operation. 888-765-9565; www.polylok.com



Zoeller Pump 24x24

Preassembled **24x24** sewage and grinder package systems from **Zoeller Pump** include a 2-inch solids sewage ejector, a 24-by-24-inch poly-molded basin, a poly-structural foam cover with 2-inch vent and an internal 2-inch PVC discharge pipe. Various

(continued)







PRODUCT FOCUS

pumps are available in horsepower options from 4/10 to 1/2 hp. They are manufactured from cast iron or thermoplastic, depending on the model, and automatic or piggyback configuration is offered. Pumps also come equipped with thermal overload protection and utilize a nonclogging, plastic or bronze vortex impeller. The basin features molded torque stops for added pump support. At only 24 inches deep, systems be used in shallow-burial applications or troublesome areas. The basin can hold 41 gallons with 25-gallon capacity below a 4-inch inlet. **800-928-7867**; www.zoellerpumps.com

FILTERS

Sim/Tech Filter No-Vault

The **No-Vault** pump filter from **Sim/Tech Filter** protects turbine pump intake screens. Filtration is achieved through a 6-inch-diameter PVC or 316L stainless steel screen with 1/16-inch-diameter perforations. The shorter model has 139 square inches of open area, while the tallest model has 325 square inches. Typically the intake of a turbine pump is less than 4 square inches of open area. With 35 to 80 times the open area of the intake screen, the filter reduces the frequency of screen and pump cleaning. The interior sealing sleeve allows it to adjust to different pipe heights. The smallest unit handles pumps up to 26 inches tall, while the largest unit handles numps up to 50 inches tall. The unit is easily installed in ne



pumps up to 50 inches tall. The unit is easily installed in new systems or retrofit onto existing systems. **888-999-3290**; www.simtechfilter.com

HAND AND POWER TOOLS



Milwaukee Tool M12 Stick Transfer Pump

Milwaukee Tool's M12 Stick Transfer Pump transfers water without interruption, and the water transfer pump delivers superior filtration and eliminates the hassles of manual pumping. Featuring a 36-inch submersible aluminum barrel, the pump has the reach and

inlet control to get to water in difficult-to-access areas such as trenches, storm drains and water meter boxes. Milwaukee's new HydroPass filter technology maximizes water flow in heavy debris to pump up to 9 gpm. The 360-degree filter minimizes downtime caused by clogging. With a 15-foot maximum head height and an outlet compatible with a 3/4-inch garden hose, the water transfer pump delivers the power to push water out of pits, basins and over walls. 800-729-3878; www.milwaukeetool.com

T&T Tools Mighty Probe

The **Mighty Probe** from **T&T Tools** has a 3/8-inch hex rod (approximately 20% stiffer than a round rod) or a 7/16-inch hex rod (approximately twice as stiff as the standard round rod). Stiffer hex rods bend less to make the probe easier to push into the ground, especially when probing at deeper depths.



Lengths are available from 36 to 78 inches in 6-inch increments. When the probe is combined with a slide adapter, an integrated mini slide-hammer probe is created, allowing technicians to pound through difficult spots. **800-521-6893**; www.mightyprobe.com

PUMP CONTROL PANELS



Jet Inc. Model 197

The **Model 197** control panel from **Jet Inc.** monitors the operation of the Jet Inc. treatment system aerator and additional components. It can monitor single- or dual-aeration systems with selectable high- and low-amperage monitor settings. The panels have dedicated alarm and control circuits with separate power circuits for aeration devices. In addition to the aerator control circuits, the panel contains three auxiliary 120-volt output circuits for external device control

relays. They include three low-voltage auxiliary input circuits selectable for N/O or N/C alarm inputs. An integrated pump power control relay is automatically disabled in an auxiliary device alarm condition. A signal array includes a power indicator LED and four equipment alarm indicator LEDs. **800-321-6960**; www.jetincorp.com

Orenco Systems 4-in-1 Controller

The **4-in-1 Controller** from **Orenco Systems** supports numerous electrical configurations and dosing schedules within a single panel. Both simplex and



duplex models are available and can be configured in the field for timed or demand dosing. While the control circuit operates on 120-volt power, the pump circuit is dual-rated for 120- or 240-volt power, meaning installers and service providers can reduce their panel inventories for new installations and repairs. It includes a programmable logic unit with multiple timing intervals for changing flow conditions and has a built-in elapsed-time meter and counter. It also displays float position and has a float error indicator. Each panel includes a reference chart to assist with troubleshooting during installation and testing as well as wiring diagrams. It is completely touch-safe. 877-257-8712; www.orenco.com



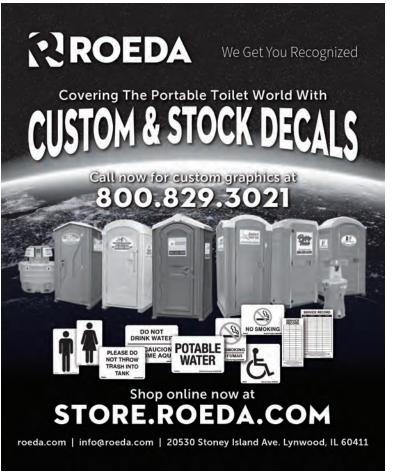
SJE Rhombus Model 112

The **Model 112** control panel from **SJE Rhombus** features a user-friendly simplex controller. It controls one 120, 208 or 240 VAC single phase pump in water and sewage installations. The simplex controller has a touch-safe housing

clearly labeled and elevated in the enclosure. It has LED status indicators for pump run, power on and float status; float push-to-test buttons; an HOA switch that allows you to easily switch between Hand, Off, and Auto; and form C auxiliary alarm contacts. There's also an optional adjustable seal failure circuit and red LED indicator. It has built-in pump failure and float out-of-sequence detection. In addition, there are three user-selectable field-programmable options: alarm steady state or flashing; alarm auto reset or manual reset; and optional seal failure alarm beacon plus horn activation. It is also UL listed. 888-342-5753; www.sjerhombus.com

(continued)







NO VAULT PUMP FILTER

- » 41% open area (139 square inches of open area on the 6" x 18" screen model)
- » Fits most turbine pumps (also known as deep well pumps)
- » Adds only 1/4" of height to pump making it easy to retrofit to existing systems
- » Has 3" sludge shield at the bottom of the filter
- » Disassembles for thorough cleaning if needed

- » Easy to clean surface
- » Made of PVC plastic so will not corrode
- » Self adjusting seal
- » Very light in weight so it does not make pump insertion or removal difficult
- » Screen available from 18" to 42" long
- » Also available with 316L stainless steel screen





THE STF-100 SERIES PRESSURE FILTER WILL:

- » Lower total suspended » Pass up to 83.8 gallons solids (TSS)
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PRODUCT FOCUS

SPI 50B019-120-240DD

The **50B019-120-240DD** control panel from **SPI** is a duplex timed-dosing panel for residential or commercial applications. It can be used with 120-or 240-volt power, and it accommodates two dosing pumps controlled by a repeat-cycle timer. It has a durable, weather-resistant, NEMA 4X polycarbonate enclosure with SST latches; large, easy-to-access



terminal block; circuit breakers for the pumps and control circuits; a rugged, externally mounted, UV-resistant alarm light; audible alarm and run-mute-test switch with UV-resistant sealing boot; definite purpose motor contactors; alternating relay; and pump hand-off-auto switches. Compressor hookups are available. Wiring schematic and detailed connection diagrams are provided, as well as mounting feet for the enclosure. It is UL listed. **419-282-5933; www.septicproducts.com**

RISERS/LIDS



Aero-Stream Integral Safety Barrier

The **Integral Safety Barrier** from **Aero-Stream** provides added protection from an incidental security breach of the primary septic tank cover. It is included on all Aero-Stream risers and available in heights from 7 to 50 inches in 3-inch increments, with custom heights available up to 96 inches. Its modular design minimizes freight cost and allows

33 unique configurations with 10 SKUs. The tank can be pumped without removal, but the unit can be removed for servicing baffles. It fits 24-inch I.D. double-wall corrugated, ribbed and smooth-wall pipe. The adapter flange is 29 1/2 by 29 1/2 inches, with a 23 1/2-inch I.D. **877-254-7093**;

www.aero-stream.com

BrenLin Seal-R

Seal-R septic tank lids from BrenLin create a strong seal between the septic tank and the riser, eliminating water infiltration between the tank and riser. They are made of durable materials, range from 12 to 42 inches and can be personalized with a service provider's company information. The 42-inch lid meets growing demand for bigger risers to accommodate new technology. 888-606-1998;



www.seal-r.com



TUF-TITE tank risers

Tank risers from **TUF-TITE** have internal supports or ledges to reinforce internal plastic safety lids. The ledges will strengthen the company's plastic internal safety lids or a variety of internal safety devices made by others, such as concrete, fiberglass or rope netting. The riser lids come with necessary mounting

hardware, including safety screws. 800-382-7009; www.tuf-tite.com

SEPTIC SYSTEM BACTERIA

Cape Cod Biochemical AfterShock

Aftershock from **Cape Cod Biochemical** is a blend of laboratory-enhanced naturally occurring primarily aerobic organisms that are type-specific to the various substances that typically clog residential and commercial drainfields and leaching structures. It also contains a bacteria-friendly, time-



released oxidizing agent to accelerate bacterial action of the organisms in the product to restore drain in most soil-absorption areas. Its consortium of bacteria and oxidizer can be applied at the same time. According to the maker, the oxygen-accelerated bacterial action will quickly digest the organic solid material that reduce the drainfield's capacity to absorb water, effectively restoring drainage through a natural process. **800-343-8007**; www.capecodbiochemical.com

Century Chemical Bio-Tab

Bio-Tab from **Century Chemical** is a tablet that sinks to the bottom of septic tanks where build-up problems begin. There, self-reproducing bacteria and enzymes gradually dissolve to create a growing area of activity, according to the maker, digesting and liquefying organic waste — treating the entire system, including the drainfield. It is able to establish itself by working from the inside out, and regular usage — combined

with routine pumping — can aid and support the natural digestion of waste, helping septic systems to maintain good working condition, the manufacturer contends. **800-348-3505**; www.bio-tab.com

Ecological Laboratories PRO-PUMP/HC

PRO-PUMP/HC liquid live bacteria from **Ecological Laboratories** is a blend of microorganisms selected for broad-spectrum application in industrial and wastewater treatment. It contains more than 30 strains of bacteria designed to resolve problems that occur in septic systems. It is designed to provide rapid



breakdown and removal of fats, oils and greases that build up in septic tanks and absorption fields. It is a consortium of vegetative non-spore-forming bacteria formulated to perform in low-oxygen facultative anaerobic environments. Regular treatment can help reduce surface solids, bottom solids and odor, the maker contends. 800-326-7867; www.propump.com



J&J Portable Sanitation Products NuTank

NuTank septic system treatment from **J&J Portable Sanitation Products** is scientifically designed to replenish the enzymes in the septic tank. With highest concentrations of billions of specific bacteria, the manufacturer

contends it will break down solids, scum and sludge for a healthier septic system. Using it monthly can help reduce the potential for backups and costly repairs such as drainfield damage, according to the maker. It is designed to boost the progression of the decomposition process, even battling harsh

(continued)



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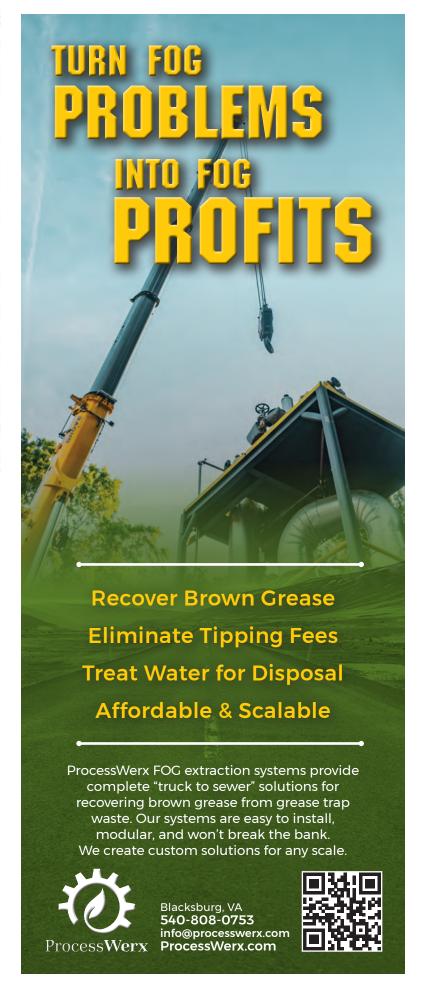
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PRODUCT FOCUS

detergents and antibacterial products. Users toss one self-dissolving packet into a drain or toilet and wash or flush down. It is safe for all plumbing and environmentally friendly. It is packaged to be resold by septic pumpers in 12 packets per jar and 12 jars per case. The septic company's contact information can be added to each jar. **800-345-3303**; www.jjchem.com

Lenzyme

Lenzyme is an enzyme-bacteria product used as a septic biological maintainer, drain cleaner and sewage treating agent in the home and in industrial, commercial and municipal installations. It can be packaged in the brand name or private labeled. It may also be used in formulations specifically designed for a given condition or application. Various formulae have been developed for use in drains, septic tanks and cesspools, and for



industrial and commercial application. It is approved by the USDA for use in sewage and/or drainlines of establishments operating under the federal meat, poultry and egg products inspection program and is only sold to licensed contractors. 800-223-3083, www.lenzyme.com



Oatey Hercules Septic-Flow

Oatey's Hercules Septic-Flow is a concentrated liquid designed to improve the overall efficiency of all types of septic and wastewater systems. Containing billions of active organisms in each ounce, it has the capability to rapidly degrade waste, according to the maker. Used in a wide variety of conditions, the product will not be affected by temperature, pH variations, and the presence of household cleaners or disinfectants. It is designed to be used on a regular basis to eliminate backups, odors

and corrosion. Available in 2-quart containers, it can be used in septic tanks, cesspools, dry wells, leach tanks and drainfields. Regular use allows for growth of sulfide-producing bacteria that slows the bacterial digestive process, according to the maker. 800-321-9532; www.oatey.com

Surco Portable Sanitation Products Enz-O-Matic

The **Enz-O-Matic** biological organic waste degrader and odor eliminator from **Surco Portable Sanitation Products** includes a high concentration of non-pathogenic, live bacteria cultures designed to rapidly degrade organic wastes with a blend of surfactants and odor counteractant fragrance. It is nonpolluting, contains no acids or toxins, and is certified *Salmonella*-free. It



contains over 200 billion live bacteria cultures per gallon. The bacteria count doubles every 20 to 30 minutes to provide continuous enzyme production. Enzymes digest and liquefy grease, blood, urine, vomit, feces, sewage and other organic substances, neutralizing odors on contact, according to the maker. It can be used for drainlines, septic tanks, grease traps and septic spills. **412-789-8683**; www.surco.com

Walex Bio-Active Septic Tank Treatment

Bio-Active Septic Tank Treatment from **Walex** is a drop-in packet designed to keep septic systems functioning properly. A powerful formula is contained in a rapid-dissolving liner that disintegrates when dropped in the toilet. It includes solid-reducing enzymes and beneficial bacteria, which are often



depleted in septic systems by the use of anti-bacterial household cleaning products. Monthly use can help prevent back-ups, overflows and bad odors, according to the maker. Technicians can leave customers with a yearly supply of septic treatment to keep the system healthy between routine pumping service. **800-338-3155**; www.walex.com

SEPTIC TANKS - POLY, FIBERGLASS, CONCRETE



Roth North America MultiTank

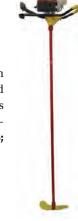
The **MultiTank** from **Roth North America** can be used for water cistern, pump, holding, rainwater or septic tank applications. This is possible due to its inner layer of FDA-approved virgin HDPE, two inside layers of polyethylene for improved stability, plus

one outer layer of black and UV-stabilized polyethylene. Features include CSA, NSF and IAPMO certification, a COEX-4 multilayer co-extrusion process, a low-profile design for less digging and avoiding high water tables, lightweight construction, a multiport inlet/outlet convenient for field piping, the ability to enter and exit the tank on the ends or sides, two 24-inch manways to provide easy access for maintenance and service, a cylindrical shape that requires no water for backfill, a threaded riser system and watertight, seamless construction. **866-943-7256**; www.rothmultitank.com

SEPTIC TANK AGITATORS

Crust Busters agitator

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



VENT PIPE FILTERS



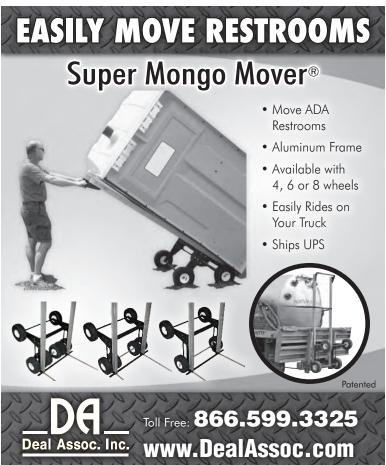
Pagoda Vent

Decorative **Pagoda Vents** come in 16-, 24- and 36-inch sizes. The original vents are bark (brown) or moss (green) color to blend into the landscape. The newest copper offering will add patina over time or can be maintained as a pristine copper landscape feature. All versions support the long life of system components by providing septic field microbes the oxygen they need to thrive, concrete tank gas release

to mitigate microbial induced corrosion, and pressure relief for pumps. An optional odor filter cartridge uses concentrated media for years of odor control, according to the maker. 888-864-1468; www.pagodavent.com

(continued)







Upcoming Training & Events

Septic System Design

Installer by CPOW

January 19th, 2023 Location: Virtual

Contact: Lisa Nicoll cpow@cpow.net

NAWT Design Course by CPOW

February 28-March 1, 2023

Location: Virtual Online Course Register: www.cpow.net

Inspector Training

NAWT Inspection Certification Course by CPOW

February 7-8th, 2023

Location: Virtual Online Course Register: www.cpow.net

Online NAWT DOT CDL Pre and Post Trip Inspection Course

Please visit
NAWT.ORG/TRAINING.HTML
to register.

NAWT Inspector by RETS

December 9-10, 2022

Location: San Marcos, TX Contact: Lauren Trujillo rets@rets-llc.com

Operation and Maintenance Training

NAWT O&M 1 by CPOW

March 8-9, 2023

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

NAWT O&M 2 by CPOW

April 5-6, 2023

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

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WWW.NAWT.ORG

PRODUCT FOCUS



Simple Solutions Distributing WVI Inline

The **WVIInline** activated carbon filter from **Simple Solutions Distributing** is installed in an attic or crawl space inline of the current vent to remove septic odor. The filter comes in 4- and 6-inch sizes, with the smaller able to be bushed down to 1.5-, 2-

and 3-inch sizes. It comes with 2 pounds of Sulfursorb Plus activated carbon, which is poured into the 2-inch fill port. The unit accepts an optional screwin saturation indicator that changes color to indicate when carbon needs to be changed. It is suitable for extreme, cold climates, as it is enclosed in an attic or crawl space. It can be installed in any climate where septic or sewer vent odor exists and the roof vent filter needs to be hidden. 973-846-7817; www.industrialodorcontrol.com

CASE STUDY

Chamber system enables expansion of state park treatment system

Problem: A remote location, the need for minimal site impact, and restricted funding challenged wastewater system designers for the Raven Rock State Park in Harnett County, North Carolina. Adding nine new campsites, six RV hookups and a bathhouse required



the installation of a 2,655 gpd system and the contractor, Creech's Plumbing, recommended **Quick4 Plus Standard Chambers** from **Infiltrator Water Technologies** to alleviate transportation and storage issues and expedite installation. Chambers were delivered on one truck and hand-carried to the installation site.

Solution: A 3% slope allowed use of a gravity flow system to handle the additional wastewater flows. The wastewater from the camper hookups flows to the 6,000-gallon dual compartment septic tank via a 6-inch, 693-foot-long Schedule 40 PVC pipe. Bathhouse wastewater gravity flows 799 feet to the septic tank and then to an 8,000-gallon field dose tank. Duplicative alternating on-demand 110 gpm pumps in the dose tank send effluent through a valve vault to a 14-tap manifold, ensuring flow to both drainfields even if one pump fails. When the campground is at full capacity, the two drainfields, utilizing a total of 840 chambers, are dosed twice daily.

Result: To accommodate the potential for volatile weather, work was done in stages, inspected and covered. Utilizing advanced GPS technology enabled completion of the installation of both drainfields in one day. A licensed operator monitors the system remotely and also performs routine maintenance. **800-221-4436**; www.infiltratorwater.com

CASE STUDIES

CASE STUDY

Receiving station helps ready plant for increased influent load

Problem: Legislation for septic tanks in Florida may lead to increased septage volume at Indian River County's residuals dewatering (biosolids) facility. Inspection and pumping of septic tanks every three to five years may be mandated.



Solution: The county chose a fully automated **Raptor Septage Complete Plant** from **Lakeside**. The compact, self-contained unit dewaters screenings to 40% solids. An overnight self-cleaning cycle stops the buildup of grit in the bottom of the unit. The system is preengineered, and all-stainless steel construction resists corrosion.

Result: Far more grit and rags are captured than anticipated. A 4-cubic-yard container is filled daily. There have been no equipment issues, and only basic daily maintenance is required. **630-837-5640**; www.lakeside-equipment.com

CASE STUDY

Solar septic alarm makes residence compliant for sale

Problem: Legislation for septic tanks in Florida may lead to increased septage volume at Indian River County's residuals dewatering (biosolids) facility. Inspection and pumping of septic tanks every three to five years may be mandated.



Solution: The inspector recommended a **Nomad Solar Alarm** from **Minnesota Geotechnical Services.** The order called for the fiberglass lid configuration. The other options available are 6-inch port, 4-inch port, through the riser and mount your own. The lithium 9-volt batteries were installed in the conduit body. The solar panels were oriented to the south for maximum solar energy. After the float was set, evaluation of the device proved it operational. Due to the need for pilot holes in the riser, installation took only 20 minutes.

Result: The alarm performed as advertised, making the property compliant for sale. 320-980-6218; www.water-tech-5667. myshopify.com



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PRODUCT **NEWS**



AIR-FILLED PUMP MOTOR DESIGNED TO CREATE PREMIUM EFFICIENCY

The fear of dry-running a submersible pump is not an issue with Crane Pumps & Systems Envie3 air-filled pump motors.

Elizabeth Weiler, senior multimedia graphic designer for Crane, says the company saw a rising demand for an efficient submersible pump that could attain IE3 motor ratings, which is an international standard indicating the product meets premium efficiency.

"Envie3 pumps took Barnes' and Deming's proven nonclog and chopper wet ends and outfitted it with a premium efficient, IE3 motor," Weiler says.

The new series provide lower energy cost in a platform that can be run in wet applications and in dry pits. "These pumps can be used in collections systems, treatment plants, stormwater systems, agricultural waste streams, among others," Weiler says. "Because these pumps can operate both submerged and unsubmerged, horizontal or vertical, and are available in nonclog and chopper configurations, the applications for them are almost endless."

Designing the product started with customer contact and listening to what they like and dislike, what works well for them, and what they look for in a submersible pump. After that, it went to the drawing board, followed by prototype building and testing before eventually launching the final product.

"We do performance testing on-site," Weiler says. "This consists of laboratory testing and field prototype testing to introduce the pumps into real applications to find failures before launch."

The product of that research and testing is a flood-proof design and integrated cooling system to run the motor cooler, resulting in longer motor life. It is built with a stainless steel outer shell, carrying handle and hardware. The rest of the pump body is finished with Resicoat R4 powder coating and each unit comes standard with a plug-and-play quick-connect cord.

Envie3 pumps are explosion-proof, use a tapered, keyed shaft and commercially available high-capacity sealed bearings and mechanical seals for easy maintenance.

"The design of Envie3 pumps enables lower continuous minimum submergence where the water can be pumped down to the top of the volute that helps prevent debris build-up and keeps the lift station cleaner reducing vacuum truck visits," Weiler says. "So far, our feedback has been positive. Customers like the easy installation and the chopper option that solves tough clogging problems."

937-778-8947; www.cranepumps.com **P**

Superior 5-E Electric Smoke Blower Finds Faults, Odors, Leaks and Inflow

Superior Signal Company's Superior 5-E Electric Smoke Blower connects to any clean-out, port or vent to quickly smoke-



test the entire septic system. The Superior 5-E Electric smoker gently pushes smoke throughout a system to find cracks or leaks and quickly identify problems. Made in the U.S., the durable Superior 5-E Electric smoker comes with 8 feet of industrial grade hose. Used with Superior Smoke Candles, this solution is ideal for hard-to-find odors, leaks and other faults in commercial, residential and municipal facilities. 732-251-0800; www.superiorsignal.com/PU5



OnTerra RouteSavvy route planning software

OnTerra Systems, the developers of RouteSavvy automated route planning software, introduce enhanced versions of RouteSavvy

routing software and the RouteSavvy mobile app. RouteSavvy is cloud-based route planning software that generates more efficient routes for deliveries, pickups service and sales calls. More efficient routes can be generated based on shortest drive time, shortest distance, routes that avoid highways and routes that avoid toll roads. RouteSavvy benefits include reduced fuel consumption and reduced fleet fuel costs, lower fleet maintenance expenses tied to mileage, minimized overtime labor costs and the opportunity to grow revenue with more deliveries, pickups or service calls added to the work week. **720-836-7201**; www.onterrasystems.com



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INDUSTRY **NEWS**



Chad Thompson

Thompson Joins SJE as regional sales manager

Chad Thompson joined SJE as regional sales manager. He will be responsible for the Southeast region, including North Carolina, South Carolina, Tennessee, Virginia, Georgia, Florida and Alabama, after Tim Callander's retirement at the end of the year. Thompson has over 15 years' experience in the water industry, seven of which have been in sales.



Rob Grav

Curry Supply welcomes new director of marketing

Rob Gray was named director of marketing for Curry Supply. He will plan, produce, and execute corporate events and major trade shows. Gray will lead the marketing team and work with developers, advertisers and production managers to market products and services to drive sales and grow brand awareness. He

will also generate qualified leads and ROI targets to achieve marketing objectives. Gray graduated from Pennsylvania College of Technology with

a bachelor of science degree in graphic design and has more than 10 years of experience in sales, marketing and business operations.

Curry Supply announced the appointment of Sara Herron as marketing coordinator. She will assist Gray and will help manage digital and traditional advertising, web properties, social channels, content creation and will build brand awareness while also focusing on events and community involvement.



Sara Herron

Pat's Pump & Blower announces retirements of founder and CFO

Pat's Pump & Blower announced the retirement of its founder Patrick Fender as well as its CFO Man Le. Fender and his brother, Richard, started Pat's Pump & Blower in 1985. Le and Kevin Fender joined the company a year later. Going forward, Le and Patrick Fender will serve as consultants for the company. Kevin Fender, a 35-year industry expert, is now the sole owner and president of Pat's Pump & Blower.

Kenworth releases medium duty Driver Academy video series

Kenworth has released a Driver Academy video series for customers operating Kenworth's line of new medium-duty trucks. The videos include a thorough walkaround of exterior features and their functions, a detailed examination of interior features, and the proper procedures for pretrip inspection. The video series is available on the Kenworth Truck YouTube channel, www.youtube.com/user/kenworthtruckco. The videos are also available on the Kenworth Essentials app, which can be downloaded to smartphones and tablets from the Apple Store or Google Play Store.





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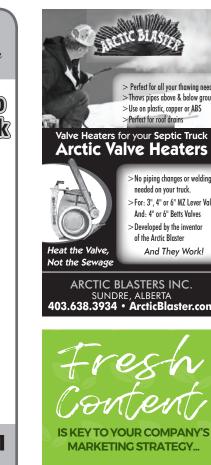
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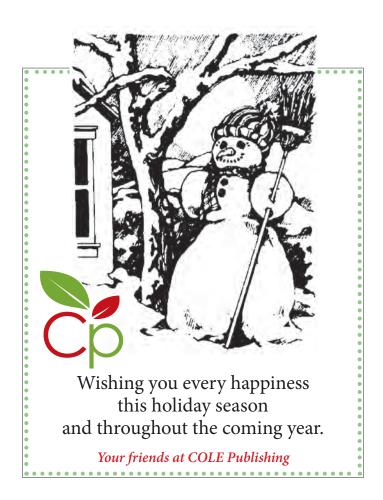






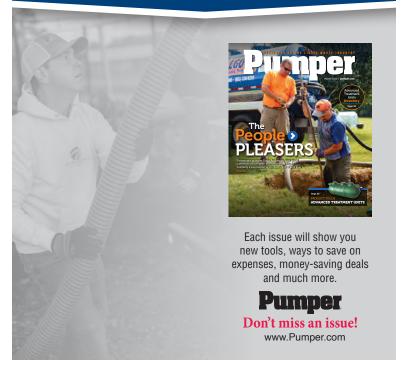






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BUSINESSES

Septic Tank Cleaning Company For Sale in Northeast New Jersey. This two truck operation was established in 1971. There is one 1986 Autocar with a 5,000 gallon stainless steel vacuum tank and one 2007 Kenworth T 300 with a 4,000 gallon vacuum tank. Both tanks are newer than the trucks. Two stainless steel storage tanks are included. The trailers are good for yard use only. Since we have been in business since 1971 we have a large customer base and we have a great reputation with same name and logo. Trucks include hoses and tools. Included are electric eel snakes and tank locating equipment, Selling trade name. phone numbers and equipment. Will sell without equipment. This is a tremendous oppertunity for the right buyer. All customers are in Bergen County New Jersey. Contact: madblue@optonline.net

FMC Advisors is currently representing and offering the following businesses for sale: Southeast portable sanitation company, \$10mm revenue, Southeast portable sanitation, roll off and residential waste, \$5.0mm revenue. Southeast portable sanitation and roll off company, \$5.0mm revenue, Southeast portable sanitation and roll off company, \$4.5mm revenue, Southeast portable sanitation company, \$1.5mm revenue, Southeast portable sanitation company, \$1.5mm revenue Northeast portable sanitation company, \$2.5mm revenue, Northeast portable sanitation company, \$600k revenue Southcentral roll off company, \$2.0mm revenue, Southcentral portable sanitation company, \$1.0mm revenue, Many more coming soon, www.fmcadvisors.com Please call Damon Powell at 407-765-9440 or email damon@fmcadvisors for more information. (P12)

BUSINESS FOR SALE CENTRAL NJ NJDEP-A901/CPCN Septic/Sewer-pumping-repair-construction. Tandem Dump, Mason Dump, Utility, and Pumper Trucks- Backhoes, Loader, Jet Machines, Power snakes, Shop tools. Easy transition to solid waste.\$500K. Owner retiring. Glenn 732-672-5797 covertactionz@optonline.net (P12)

Thriving, small, full service, septic company in Northeastern Maryland for sale. 19 years of top notch service. Huge active customer list. Fully stocked with all the equipment you need to continue to prosper. Completely Turn Key, start making money on day one! \$250,000 410-937-5042. (P12)

Selling after 23 years due to health reasons. Profitable business which includes: 2019 Dodge 5500; Approx 500 toilets in good condition and 100 that need touch up; 15 double hand sinks; 15 300-gallon holding tanks; Portable toilet trailer; Chemicals and paper included. Location available. Asking \$780,000. Call Mary 618-681-1580 or Steve 618-922-2338for more information.

Septic tank cleaning company for sale in northeast New Jersey. This is a two truck operation since 1971. One 1986 Autocar with a stainless steel vacuum 5,000 gallon tank and one 2007 Kenworth T300 with an aluminum 4,000 gallon vacuum tank. Two stainless steel storage trailers are included. The trailers are good for yard use only. We have a large customer base and we have a great reputation with same name and logo since 1971. Trucks include hoses and tools. Selling trade name and phone numbers and equipment. Will sell without equipment. This is a tremendous opportunity. All customers are in Bergen county New Jersey. Please send your letter of interest to: 48 Bi-State Plaza # 106 Old Tappan New Jersey 07675-

For Sale. Septic pumping business in Phoenix and surrounding areas. Well established and very reputable family owned and operated for nearly 70 years Large customer base with 5 star approval rating. Includes fully stocked 3400 gallon vacuum truck, mini excavator with trailer, and miscellaneous equipment and supplies. Owner retiring. Reply to aaaawestwood@hotmail.com (P12)

Seeking family-owned pumping business in the Midwest. We are a family-owned and operated pumping business seeking to expand our service area and offering throughout the Midwest. Please reach out if you are seeking a succession or retirement plan and looking for a partner who is not backed by private equity or a large corporation. We have experience acquiring a pumping business discretely and efficiently, and would love to speak with you about your business. Please contact us at 248-640-9882 to start a conversation. (P01)

Very diversified Environmental Services Company for sale. Owner is retiring. Septic and grease trap cleaning. Drain cleaning, Portable restrooms, video camera services , lift station services , trenchless pipe point repair, confined space services, hydro excavation, tank cleaning, excavation, frac tanks, distributor for several home aeration systems, authorized service center for E-One pumps, Residential, Commercial, Industrial, Municipal Services. Located in Northwest Ohio for 47 years. Very profitable, Late model equipment in good condition. Turn key operation. Business is run remotely. Serious inquiries to MrSeptic6@ gmail.com (P12)

Highly reputable & thriving septic tank & cesspool cleaning company for sale in Nassau County, NY. Our excellent reputation promises tremendous opportunities for growth & expansion. Servicing prominent areas of Nassau & Suffolk Counties since 1972. Owner is now looking to retire. Owner is willing to stay on & train new owners temporarily. If interested, please contact us for more information: 516-922-1242 / EastNor14@yahoo.com (P12)

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DEWATERING

Septic Receiving Plant for Sale (Equipment Only) It is located in Michigan. Pick up only, no shipping available. The plant is 10 years old with some parts as new as 1 year old. Plant is in excellent condition. It works great, aluminum and stainless construction, plastic and fiberglass tanks. Includes, large press, large screen, control panels, 4 pumps, 6 tanks, 2 - 20,000 gallon slurry store tanks, flow meter with start and stop controls (card activated) gives receipts for gallons received. \$325,000. Call or text Ross at 989-620-6312 to inquire. (P12)

DRAINFIELD RESTORATION

1996 Terralift Machine w/4' & 6' probes. Under 120 Hours Always kept indoors. \$1500.00 203-623-0444. Leave Message (P12

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2000 Kenworth/Cusco Stainless Mastervac Wet/Dry High Dump 3,800 27' CFM Blower with Demag offloading pump with rear mounted boom.DOT 412 Haz Cert. Cat 3406 425 HP with Fuller 8 spd 44k rears 20 K pusher on alum budds. Recent engine rebuild and rebuilt blower \$240k KLM Companies 617-909-9044 (PBM)

2006 IH 9200i with sleeper and Progress 2,850 U.S. gallon,Aluminum, D.O.T. 412 certified, vacuum tank with Wittig RFL100 vacuum pump and 3" transfer pump. Stock# 2897C www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

1997 Ford with Cusco 3,200-gallon DOT certified dump and door liquid vacuum truck. Cat engine with Moro M9 vacuum pump. Runs and pumps excellent. \$37,500. KLM Companies 617-909-9044 (PBM)

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

HYDRO EXCAVATION EQUIPMENT



2016 International, Cummins ISB, Allison Transmission, 18,000 miles. Tuthill 6015 Blower, 1200 gallon hoisted tank, Engine Driven UDOR, 7GPM, 3000 PSI 501-388-9464 (P12)

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800-624-8186; sales@hotjetusa.com; www.hotjetusa.com (PBM)

2001 Harben DTH-300 jet trailer with a Harben radial piston diaphragm pump 16 GPM @ 4,000 PSI driven by a Hatz diesel engine. Stock #1386V www.vacuumsalesinc.com (888)VAC-UNIT (822-8648) (PBM)

1999 Harben 4016-300 Jet Trailer (Stock #200SC) (888)VAC-UNIT (822-8648) www.vsirentalslic.com. (PBM)



2013 US Jetter with 300 gallon storage tank. 400' of hose and 100' of 3/8 hose that mounts to the trailer. Also comes with 50' of 1/4" hose. Wireless remote and 3 jetter nozzles. 1,672 hrs. Very well maintained and works great. Contact Skyler with any questions.

\$35,000 OBO Skyler@expressplumbingidaho.com 208-919-3226 (P12)



Meyers RamJet Sewer Jetter Trailer, Meyers water pump 65GPM, 4cyl Ford gas engine, Hand clutch, 600GAL water capacity, Rear Controls, 500' hose reel, 1" hose, 579hrs, 920-905-9632, \$14,500.00 (P12)

JETTERS - TRUCK



2006 Vactor 2100 single engine PD,
Mounted on a Steerling chassis, manual
trans. 12 yard debris body, 1500 gallons
water,80 GPM 2500 PSI water pump,
hydro excavation pkg, remote control,
retarctable hose reel, new rear tires,
new jetter hose, all new ball vaves,
truck compleatly serviced contact
David Bruder at Brown Equipment for
pricing 1-260-433-0893 dbruder@
brownequipment.net (P12)



2017 Freightliner Vactor 2100 Plus, 47652 miles, 1943 blower hours, Chassis hours 7559. single engine two stage fan, auto trans. 15 yard debris body, 1500 Gallon 2500 PSI 80 GPM water pump. Hydro Excavation, Hydraulic tool Pkg, Wireless remote Pkg, air purge, auto leval wind. new jetter hose and tubes. Truck fully serviced. Contact David Bruder 1-260-433-0893 dbruder@brownequipment.net (Contact for Pricing) (P12)



2000 Freightliner FL80 Jetter Truck, Cummins ISC, Allison, 49,001 miles, 14,600# front axle, 23,000# rear axle, 1500 GAL Water, Dean Pump L1118SC 65GPM 2000PSI, 1" hose.

920-905-9632, \$18,500.00 (P12)

JET VACS

Pre-owned Vactor 2100 combination jet/vac unit with PD blower And 10 cubic yard debris tank. Mounted on a 2002 International 7400 cab & chassis. Stock # 1138C (888)VAC-UNIT (822-8648) www.vsirentalslic.com. (PBM)



Your Environment's Solution-2002 Aquatech Jet Vac 289,000 Miles-Good solid working truck asking \$37,500.00 (0B0) Dalton Seagraves 407-426-8803 (P01)

LEASE/FINANCING

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PARTS & COMPONENTS



Clear the Main Line with ease, JnA Main Line Vac. Just hook the line vac to your hose, insert the incoming mainline pipe and watch the line come clean. Works on 3" & 4" pipe. Free shipping in the US. \$149.99. Order at jnamainlinevac.com. 919-559-9344. (PBM)

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16ft Cues TV/Cutting tandem axle trailer. Also have Cues TV/Cutter truck with 18 ft box. Vanair undercarriage compressor. Also selling lots of miscellaneous equipment. Safety equipment, Cherne plugs, 42" to 60"specialty down the hole tools, Cementitious man hole lining trailer, TV Trucks, Jetters and lots of parts pneumatic piercing tools & accessories 14' tandem axle TV/Trailer (Envirosight) minus equipment. Too much equipment to list. For photos or more information Call Kelly (608)835-7767. (PBM)

PORTABLE RESTROOM



We have (100) five peak special event grade units for sale. Unit price: \$350/each + tax. These unit have been meticulously maintained, and ready for your next event. Call 608-835-3459 with any questions. (P02)

Used Five peaks and Poly Portable Restrooms for Sale. All serviceable units. Need to make room for new units. 615-867-1512 (P01)



150 Satellite Hi Tech toilets Orange & Grey, All in Rentable Condition. We sold 500 of these in the last few months to many happy customers all over the US. Purchaser is responsible for shipping from New York. Aggressive price of \$250.00 per unit. **These units will sell fast. Call 1-800-634-2085 (P01)**



200 Tan Poly Portable Integra units for Sale. All units in good rentable condition. \$250.00 each.

Call 1-800-634-2085. (P01)

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200 Grev Poly Portable Integra Units for Sale. All in Rentable Condition. Aggressively priced for immediate sale. \$250.00 per unit 1-800-634-2085 (P01)

PORTABLE RESTROOM TRAILERS

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

PORTABLE RESTROOM TRUCKS



2010-4300 International with 250,000 miles. Max Force Engine. 1100 Waste and 400 Water Best Stainless Steel Tank. Masport HXL4 Pump. \$49,000.00. 606-793-1915. youncesseptic@yahoo.com (P12)



2011 Dodge 5500, Automatic. Runs great. We still use this truck on a weekly basis. It has 335,000 miles. Aluminum tank with 300 waste and 900 fresh water. Everything works. Updating fleet, this is why we are selling. Asking \$39,000 or OBO. Call Patrick with Quality Waste 423-736-3999. **Located in East Tennessee. (P12)**

New Imperial 1300 U.S. gallon, portable toilet service unit mounted on a 2022 Ford F550 cab and chassis with a Masport HXL4 pump package, Stock # 14029.

www.VacuumSalesInc.com (888) VAC-UNIT (822-8648). (PBM) 2017 F550 XI Awd 6 7 Diesel 146000 Miles 7584 Engine Hours, Imperial Aluminum Inside Coated tank 900waste/400fresh Dual Service. New Water Pump and hose reel in 2021, Masport HXL4, Drop down gate hauls 2 toilets. \$55,000 Email for Pics or information, Motivated Seller. Daily Driver until new unit arrives no2septic@gmail.com 715-682-2222

Pre Owned 1993 Mack RD688S cab and chassis with a 3,200 U.S. Gallon, carbon steel, dump type, vacuum tank unit, Stock# 4296C www.VacuumSalesinc.com. (888) VAC-UNIT (822-8648). (PBM)

PUMPS

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

RENTAL EQUIPMENT

2023 Polar Vacuum Trailer: Stainless steel 6.000 gallon, DOT certified double conical with air-ride suspension. Aluminum wheels all positions, full hose trays, OSHA walkways and railings. Vacuum pump option either hydraulic or self-contained. KLM Rentals Inc. 617-909-9044. (PBM)

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

www.vsirentalsllc.com. (PBM)

SEPTIC TANKS

Pre-owned 1,500 U.S. gallon (500 water-1,000 waste) carbon steel, portable toilet service unit tank with rear toilet carrier. Stock# 1500V www.VacuumSalesInc. com, (888) VAC-UNIT (822-8648). (PBM)

SEPTIC TRUCKS

2012 3250 gal. Eagle Tank mounted on a 1989 International 4900 DT 466,13 speed RoadRanger, 52,000 GVW,155,000 original miles. Always kept indoors, this truck is registered and making money for original owner. \$12,000 call 203-623-0444 leave message (P01)

1994 Mack DMM 690 (6x6), 275 HP,6 speed, 3600 gallon Lely-Steel Tank, Masport 400 Pump-Hydrolic Driven, Air Operated Dump Valve-Rear 6". A/B. P/S. 20000 Front. 44000 Rear, Floatation front tires, 12R x 22.5 Rear. \$29,500 Call Bob @ 352-796-4540 (P01)

1989 Mack "R" 690T, 2500 Gal "Lely" steel tank. Moro Pump, 300 HP 4 Valve Engine, 5 Spd Trans, P/S, A/B, S/A, A/C, Tinted glass, 12000 front, 21000 Rear, Tool boxes, Dual Fuel Tanks, Side Vacuum 4" left side, Air Operated Rear Pump Valve, \$24,500. Call Bob @ 352-796-4540 (P01)

Pre Owned 2006 Peterbilt 335 cab and chassis with a 4,000 U.S. Gallon aluminum vacuum tank. Complete with a Masport HXL400WV vacuum pump package. Stock# 1111V www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (PBM)



2023 Peterbilt 548, chrome package, air ride, 20 fronts 46 rears (360 HP, 3000 AUTO) 4200 Gallon steel or aluminum tank, NVE 4310 OR JUROP DL180 blowers available. Call Ray today 501-388-9565. (P12)



2004 Dt-466,auto. Needs engine. Dumps 2500 gal tank. 4.500.00 912-222-9709 (P12)



2007 Freightliner with a 4,000 gallon steel tank and hydraulic dump bed. 4" Jurop pump. This truck will pump 1,000 gallon tanks in no time. Manual 8 speed. Truck has 290,783 miles and 5056 engine hours. Its been well maintained and ready to be put to work. All tires are in good shape. Contact Skyler with any questions. \$60,000 OBO Skyler@expressplumbingidaho. com (P12)

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2023 Peterbilt 389X, MX13 engine, 4000 Allison OR 8LL trans available, 66K GVWR 4200-5500-gal steel or polished aluminum tank. Call Ray today @ 501-388-9565 (P12)



2007 Freightliner M2106, CAT C7 engine with 333,XXX miles. Eaton Fuller 9 Speed Manual Transmission Tank Size - 3200 gallons (steel) This is a very reliable unit that is currently in use. It has newer tires (less than a year), new carrier bearing, PTO drive shaft and has the Jurop 420LC, which was rebuilt last year. She's a worker and is overall a solid 7 out of 10. Two 4 inches heated valves with a heated 6 inch discharge. We're selling it to reinvest for another unit's upgrade. Contact: josh@rapidflush.com or call 616-368-1894 Overall condition: GOOD If it was mint condition it could easily go for upwards of \$75,000. Asking \$45,000 or best offer. (P12)



1995 International Eagle. 3500 gallon tank, truck and tank in good condition. In frame rebuilt engine in 2014 Detroit 430 engine. Air ride. 10 speed Fuller transmission (water cooled Masport pump) Truck runs and pumps great! Very dependable pump truck. \$31,000. **Located in California Call Paul** 909-721-2608 OR text Jeff at 949-254-0270. (P12)

New 4,000 U.S. gallon, aluminum, vacuumpressure tank mounted on a 2023 Peterbilt 548 cab & chassis with NVE Challenger 887 fan cooled vacuum pump Stock #14056 www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (PBM)

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Sterling 2005, 2.5 year old 4200 gallon steel tank,see level gauge,500 CFM Fruitland Pump,C-13 Cat 425 HP, Allison 4500, 20k Front,46k Rear, 13k pusher, Tires average 80% \$79,000.
816-988-6650 (P12)



2019 F-750 Vacuum Truck. 2500
gallon capacity, very low miles (30,000).
300 ft of vacuum hose, dump hose,
leader hose, 2 large jockey boxes. Power
steering, power brakes, power mirrors,
power door locks, tilt wheel. Only driven
by the owner and truck is in pristine
condition. Original owner. Ready to go
to work. \$125,000.00 Call John 661802-9656 (P12)



2007 Peterbilt 379 septic 4000 gallons, tandem rear, aluminum rims, virgin tires, cat engine. Brand new tank and system. Truck will be ready soon.. Financing available with good credit and same day approvals.For more info please call 786-302-4989. (P12)



2007 Freightliner 4x4, only 76k,
Mercedes diesel, 300hp, 6spd, exhaust
brake, AC, cruise, New 2500 gal tank,
stainless hose trays, Jurop R260 vac
pump, paint and alum wheels. Extremely
clean low mile truck. Delivery and
financing available, \$75,000.00 Hulls
Truck Bodies LLC 740-820-5338.
(P12)



2012 Kenworth, ISX Cummins 450 h.p, 405k, 13spd, 18 front, 46 rears, double frame, 4000 gal alum tank and new NVE 887 vac pump, very clean rust free truck. Delivery and financing available, \$89,000.00 Hulls Truck Bodies LLC 740-820-5338 (P12)



Buy it today and use it tomorrow!!!
It's in great condition. 2012 Freightliner
Cascade with 395,XXX and Galyean
5,460 gallon tanker with a fruitland
pump. 18 speed manual transmission. See pictures for details. Asking
\$87,134.49 or best offer. Call Josh
at 616-368-1894 or email josh@
rapidflush.com (P12)



2009 Freightliner M2 Business Class vacuum truck, chassis has a Cummings diesel engine, Allison automatic transmission and only 52,000 miles. Vacuum tank is a newer stainless steel 2,100 gallon, pump is a brand new air cooled R260 Jurop. New heated collars, tires like new, this is a great unit.. asking \$62,000 dollars. Call Don.

\$62,000 dollars. Call Don. 608-897-8000. (P12)



2008 Peterbilt truck, Cummings 335, 10 Speed Transmission, 3600 Gallon Tank, Masport pump, Non Compliant in California. Truck works well. Asking \$70,000 or best offer. Please call 530-934-7883 (P01)



2005 Sterling LT9500 DDC-60 engine, 10-speed transmission, 532,549 miles, 64,000 GVW, A/C, all new tires @ 508K miles, new transmission, new clutch, new flywheel @ 524K miles, Pik-Rite vacuum tank 4,300-gallon waste tank & 200-gal fresh water tank. Juror R-260 vac/pressure pump, jetter system, excellent shape, only 1 owner. Pre-emissions truck. Price \$45,000.00. For more info, call Marvin at (772) 201-2086. (P12)



2011 Peterbilt 365 10 wheeler septic truck-4,000 gallon tank. NVE Challenger model 866 pump. Tank and pump was installed in 2015. Low miles 85,788. New tires with 90% rubber left. Amazing truck. Contact Skyler at Skyler@expressplumbingidaho.com for more details. \$110,000 0B0 (P12)



2012 Ford F550 6.7 Diesel. Portable
Toilet Service Truck. 650 gallon waste/
300 gallon fresh tank. 275k miles. Over
all the truck is in great condition inside
and out. Interior is in great condition, A/C
blows cold. The pto driven pump work
great, the truck needs nothing. Ready to
work. Asking \$42,000. Call
559-301-6978 (P12)

Pre-owned 3,600 U.S. gallon, Aluminum vacuum tank; with a Presvac PV750 vacuum-pressure pump installed on a 2004 Peterbilt 330 cab and chassis. Stock# 1693 www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (PBM)

New 4,000 U.S. gallon, aluminum, vacuum tank. Mounted on a 2023 Freightliner M2-106 cab and chassis w/ a NVE Challenger 887 vacuum pressure pump package.

Stock# 14056 (888)VAC-UNIT (822-8648) www.vsirentalslic.com. (PBM)



2004 Peterbilt Septic tank, 2500
Gallons, brand new system, automatic transmission, 33,000 GVW, pre emission, CAT Engine C-7. Like new in great condition. Financing available with low down.
For more info please call 786-302-4989 (P12)



2015 Kenworth T440 4200 gallon aluminum tank with 866 NVE vac pump 275,000 miles approx. **\$95,000 Call 832-777-7540 (P12)**



1992 International dt 466 pump truck. Call 631-662-9910 Please leave a message. (P12)

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

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



2023 Freightliner 108 SD with 4000 gallon all waste steel tank GVW 58,000 40,000 Rear axle 18,000 Front axle 20,000 lb axle 3rd Air Cooled Fruitland 500 Vacuum Pump 6" dump 2 - 4" suction pipe \$202,000.00 Plus 12% FET Tax Rodney Lane 270-832-3793 (PBM)

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

(PBM)



2011 Ram 5500. Aluminum tank 400 fresh/1,000 waste. Masport pump. Cummins engine. **720-436-3910.** (**PBM**)

2014 Freightliner Cascadia Vacuum Tank truck (white). 3,300-gallon New Tank (red). New NVE 360 cfm pump. Clean Interior. Good Cold A/C. Air Ride/ Air Brakes (jake brake). DD15 Engine. 60% Rubber on tires. Mileage: 457,286. Price: \$70,000. 1-800-721-2774 (PBM)

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

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

1997 Peterbilt 378 cab & chassis with a Presvac 3,000 U.S. gallon, C/S, vacuum tank & Masport HXL15WV water cooled pump. (Stock #6625C). www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

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at 973-478-0893. Lodi, New Jersey. www.
dynamicrepairs.biz (PBM)

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(P11)

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550-gallon steel slide in, 100-gallon poly water tank. Masport HXL-3V vacuum pump w/9-HP Honda engine. 30' of 2" waste hose, 50' garden hose on hose reel. Toico water pump, 3" discharge. 7,000-lb GVWR tandem axle

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2006 Mack Tractor & 2019 Trailer 638,932 Miles, 460,18 Speed, Air Ride, Full lockers,14F/46R, New King Pins, Suspension Parts, Good Tires, NO TLC Required. 2019 9000 Gallon STE Stainless Trailer, Insulated, 4" Trash pump, sight tube good, 6" Pump, 4" inlet, 95% Tires/Brakes, Air Ride, Pump valve.

\$163,000. Call 978-386-5616. (P01)

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2022 - 6 Station Shower Trailer with Sinks | Classic Series - Full heat 3 Season Forced Air \$90,000 to payoff current loan not looking to make money on this sale - Rented only twice this season Call 928-856-0474 Flagstaff, AZ (P12)

TRAILERS-VACUUM/TANKER



1992 Presvac Tanker (\$40,000) 5000 gallon DOT tanker with Liston Motor Vac Pump. **740-681-9902** (**P12**)

TRUCKS (DUMP, SEPTIC, MISC.)



2002 Mack CH 600, 3,400 gal Erickson double baffle tank with massport 400 vein pump. 10 spd eaton fuller auto with clutch. 521,000 miles on truck, air ride and full lock in rears, aluminum alcoa wheels, tires are good. Tank was freshly sand blasted and paint, 6in discharge/4 and 3in inlet. Clean truck runs great just serviced, no issues. \$40,000 obo call if any questions 916-300-8886 or 916-624-8500 (P12)



2011 international, 2500 gallon vacuum truck, new jurop pump, and eagle tank, only 51,000 original miles, 466 with a 10 speed transmission, aluminum wheels, fresh build, available now, \$72,500. Ernie- 619-454-9748 (P12)

Wanting to buy 3500-3800 gallon stainless steel vacuum tank in GOOD+ condition. 724-496-3377 (P12)



1988 \$2300 International; L10
Cummins 8 speed transmission. Set up
for installing and hauling pipes, risers,
fittings, and tools for septic systems.
Runs good, needs some TLC. Mileage:
320,000 approx. (636) 583-5564.
(PBM)



2004 International 7600, Cummins engine, Allison 4500, heavy spec, 20k front, 46k rear, lift axle, 4,200 gallon steel tank built in 2015, Jurop LC420 pump for sale in southern Indiana.

Asking \$55,000. 613,981 miles but the engine was overhauled by Cummins at 308,587 miles with documentation. New vane kit for the Jurop included. Truck runs and pumps good and was used regularly. Contact:

812-332-7663 (P12)



2002 Mack RD E7-400 Engine, 8 Speed Fuller transmission, 4800 gal. Progress aluminum tank, Digital tank gauge, wittig vacuum pump. 240,000 miles on engine. Located in Freehold, NJ Call Nick 732-904-3097 (P12)



2004 Peterbilt Cummings ISX, 427,000 miles. For sale in Osceola, WI. \$75,000. Contact Keith at 715-417-0189 (P12)

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2006 Peterbilt CAT C15 475HP, 18-speed, 450,000 miles, 4,000-gallon aluminum tank , NVE 367 pump package, ready to work. Call for pricing. (866) 720-4999. (PBM)



Two Pump Trucks For Sale. Both are International 550 HP Paystar Model 5600i with 5,000-gal capacity, Wittig RFL100 Pumps, 18-Speed Eaton Transmission, Axles: 20,000 Steerable, 22,000 Front, 46,000 Rear, Rearend ratio 4.3, Pre-emissions. -2003-328,887 miles \$52,500 -2004-149,552 miles

\$62,500. Contact Frank King 978 452-7750 (PBM)

VACUUM EQUIPMENT



2015 Kenworth T800 (\$280,000) ISX15 Cummins w/ 10 Speed trans, 61k miles, 4.3k hours, 3500 Gal DOT Tank, 700 Series Dresser Blower - 3627 CFM, PM80 Wet Pump. Call 740-681-9901 for inquiries (P11)

1995 International, Keith Huber Dominator(1995),Hydraulic back door,3200 gallon ASME Tank, Fruitland Vac pump, A/C work, Annual Inspection OK, Phone 904-613-9559, e-mail jason@iccllc.net, Will send pictures upon inquiry.\$80,000 (P01)

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VACUUM LOADERS

POWERVAC 3800, 3,500 U.S. gallon, carbon steel Vacuum tanker with a Robuschi PD blower 3800 SCFM with vacuum to 28" mercury. 2006 Freightliner FLD120SD tri axle cab and chassis. Stock# 8225V

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

Pre Owned 2005 Kenworth T800 cab and chassis with a Super Products Supersucker, industrial vacuum loader. Stock# 5064C

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

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