

digDIFFERENT

Think outside the bucket



SHOP TALK:

A DIGITAL WAY TO PROVIDE TRAINING NOW AVAILABLE
35

ROLLING WITH THE PUNCHES

California contractor takes rough route in growing his company

12

Scott Sanchez
Owner
S&S Directional Drilling

PRODUCT FOCUS:



36



VISIT US AT
BOOTH
#1213

TRY TELLING HIM
THEY DON'T
BUILD THINGS
LIKE THEY USED TO.

WE WOULDN'T LISTEN, EITHER.

GORMAN-RUPP BUILT ITS LEGACY ON THE
INDUSTRY'S MOST DURABLE PUMPS.
SO YOU CAN FOCUS ON BUILDING YOURS.

His work will be around long after he is. That's a point of pride. And a big responsibility. And it's why only Gorman-Rupp construction pumps make it onto his job sites. Like him, Gorman-Rupp knows how to stand the test of time. Each pump is 100% manufactured in our state-of-the-art facilities to ensure optimum quality, exceptional dependability, and easy maintenance. Gorman-Rupp pumps handle the pumping challenge he faces today. So he can focus on building tomorrow.



GR
GORMAN-RUPP
PUMPS

The Pump People®

GORMAN-RUPP PUMPS | P.O. BOX 1217 | MANSFIELD, OHIO 44901-1217 | USA | 419.755.1011 | GRSALSALES@GORMANRUPP.COM | GRPUMPS.COM

TORNADO GLOBAL HYDROVACS

INSPIRED BY NATURE. ENGINEERED TO PERFORM.



F3 ECO-LITE



F4 ECO-LITE



F5 ECO-LITE



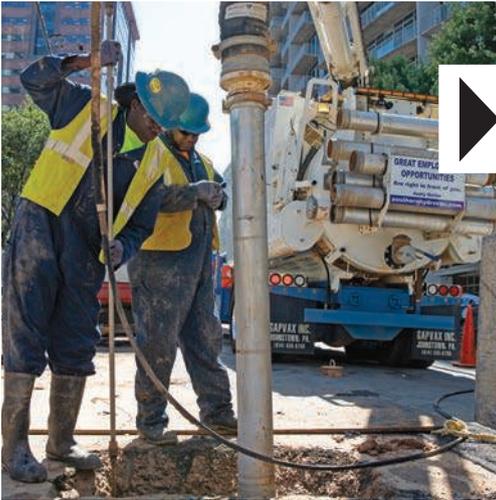
Contents

FEBRUARY 2019

Think outside the bucket

digDIFFERENT

FOCUS: WWETT Show Issue; Pipe Installation, Repair, Inspection and Rehabilitation



FEATURES

- 18 PROFILE: VACUUM EXCAVATION Trained for Productivity**
Georgia contractor gives employees a path to success that feeds its own growth in the hydroexcavation market.
By Ken Wysocky
- 30 SUCCESS STORIES: Pipe Installation, Repair, Inspection and Rehabilitation**
By Craig Mandli
- 36 PRODUCT FOCUS: Pipe Installation, Repair, Inspection and Rehabilitation**
By Craig Mandli

- 28 TECH PERSPECTIVE: Reaching New Heights**
Ever-changing drone technology leads contractors to develop new ways to use them to boost productivity and safety on job sites.
By Jared Raney
- 35 SHOP TALK: College for Contractors**
The National Utility Contractors Association is working to provide easy access to training resources.
By Jared Raney

IN EVERY ISSUE

- 10 @digdifferent.com**
Visit daily for new and exclusive content.
- 34 Happenings**
- 42 The Latest: Products**
This Issue's Feature: Perfecting the hydrovac
By Craig Mandli

COLUMNS

- 9 BELOW THE SURFACE: Taking in the Experience**
Three simple ways you can make attending the WWETT Show a better experience for you and your crews.
By Cory Dellenbach, Editor
- 24 SAFETY FIRST: A Closer Look at PPE**
Reminders should be given to workers when it comes to safety gear that needs to be worn at job sites.
By Jared Raney
- 26 SMART BUSINESS: Rally the Troops to Boost Production, Raise Morale**
Follow these simple ways to get your crew invested in the success of your utility construction company.
By Walt Grassl

44 The Latest: News

NEXT ISSUE: March 2019

FOCUS: No-Dig Show Issue, Piercing, Bursting, Tunneling and HDD

- Profile: GreenWay Environmental (Karlstad, Minnesota)
- Safety First: Emergency action plans
- Down & Dirty: Navigating a tough directional drill job in Norfolk, Virginia

COVER STORY

- 12 PROFILE: DIRECTIONAL DRILLING Rolling With the Punches**
Despite a history fraught with close calls, S&S Directional Drilling persevered, with a bounty of lessons learned along the way.
By Jared Raney

ON THE COVER:

Scott Sanchez, owner of S&S Directional Drilling, founded his company in 2000, specializing in directional drilling. Sanchez prides himself in starting a company where every employee is expected to pitch in to get the job done as a team, regardless of their title. He says truck drivers are frequently down in the trenches helping to dig or clean. (Photography by Collin Chappelle)



Water Excavation or Air Excavation?

Why Choose?

Now you don't have to choose. Whether you're getting a new Mud Dog 1200 or 1600 hydro excavator or retrofitting your existing Mud Dog, adding the new air excavating package to Super Products Mud Dog hydro excavators gives you the best of both worlds.

Contact Super Products today to learn more about the air excavation package.



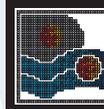
Super Products
TRUCK MOUNTED VACUUM EQUIPMENT

800.837.9711 • www.superproductsllc.com

Dynablast

A DIVISION OF JOHN BROOKS COMPANY LIMITED

Exclusive Canadian Distributor for over 30 Years

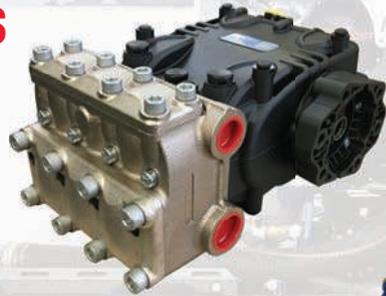


Pratissoli
A BRAND OF INTERPUMP GROUP S.p.A.



WATER PUMPS

- Female Spline
- Bell Housing
- 5 - 20 GPM
- up to 5800 PSI
- PA Accessories



HOT WATER HEATERS

- 420,000 to 900,000 BTU
- Steam & Non-Steam
- 12v & 120v
- Schedule 80 Coil
- High Pressure Schedule 160 Coil



UNLOADER VALVES & SAFETY VALVES



HYDROVAC

1-905-867-4642 | www.dynablast.ca



Advertiser Index February 2019

Boss Industries, LLC	27	Sonetics CORPORATION	Sonetics	7
Easy Kleen Pressure Systems	45	Super Products TRUCK MOUNTED VACUUM EQUIPMENT	Super Products LLC	5
Fast-Vac/Multi-Vac	44	TORNADO GLOBAL HYDROVACS	Tornado Global Hydrovacs Ltd. ...	3
FOREMOST		Transway Systems Inc.	17	
Foremost	41	ultraSHORE PRODUCTS	UltraShore	45
Formadrain Inc.	35	Vac-Con, Inc.	25	
GapVax, Inc.	47	Vector Manufacturing	8	
gear		VANAIR MFG	33	
Gear Equipment Inc.	39	Vermeer Corporation	23	
GR GORMAN-RUPP PUMPS		Vivax-Metrotech Corp.	43	
Gorman-Rupp Company	2	WATER CANNON	Water Cannon, Inc. – MWBE	43
John Brooks Company Limited (Dynablast)	6	RIVAL HYDROVAC	Rival Hydrovac Inc.	back cover
Kuriyama of America, Inc.	33			
Lee Supply Company, Inc.	21			
Milwaukee Rubber Products, Inc.	34			
OX Equipment	11			
		Marketplace	46	

digDIFFERENT

Think outside the bucket

Published nine times yearly by COLE Publishing, Inc.
1720 Maple Lake Dam Rd., P.O. Box 220, Three Lakes, WI 54562

Call toll free 800-257-7222
Outside of U.S. or Canada call 715-546-3346
Mon.-Fri., 7:30 a.m.-5 p.m. CST

Website: digdifferent.com / Email: info@digdifferent.com / Fax: 715-546-3786

SUBSCRIPTION INFORMATION: A one year (9 issues) subscription to Dig Different™ in the United States, Canada and Mexico is FREE to qualified subscribers. A qualified subscriber is any individual or company in the United States or Canada that partakes in excavation, tunneling, boring, trenching, pipeline rehabilitation, relining or bursting — including manufacturers, dealers, and service companies. Non-qualified subscriptions are available at a cost of \$60 per year in the United States and Canada/Mexico and \$80 per year/\$150 for two years to all other foreign countries. To subscribe, visit digdifferent.com or call 800-257-7222.

ADDRESS CHANGES: Submit to Dig Different, P.O. Box 220, Three Lakes, WI 54562; call 800-257-7222 (715-546-3346); fax to 715-546-3786; or email nicole.labeau@colepublishing.com. Include both old and new addresses.

Our subscriber list is occasionally made available to carefully selected companies whose products or services may be of interest to you. Your privacy is important to us. If you prefer not to be a part of these lists, please contact nicole.labeau@colepublishing.com.

ADVERTISING RATES: Call Tim Krueger at 715-550-4402 or email tim.krueger@colepublishing.com. Publisher reserves the right to reject advertising which it considers misleading, unfair or incompatible with the character of the publication.



Tim Krueger

EDITORIAL CORRESPONDENCE: Address to Editor, Dig Different, P.O. Box 220, Three Lakes, WI 54562 or email editor@digdifferent.com.

REPRINTS AND BACK ISSUES: Visit digdifferent.com for options and pricing. To order reprints, call Jeff Lane at 800-257-7222 (715-546-3346) or email jeff.lane@colepublishing.com. To order back issues, call Nicole at 800-257-7222 (715-546-3346) or email nicole.labeau@colepublishing.com.

CIRCULATION: 26,000 copies, nine times yearly.

© 2019 COLE PUBLISHING INC.
No part may be reproduced without permission of publisher.

NOW THERE'S A BETTER WAY TO COMMUNICATE

If you're shouting to be heard, pushing buttons to talk, or relying on hand-signals to interpret actions— it's time to put on a Sonetics wireless headset and **EXPERIENCE THE BIG DIFFERENCE.**

Sonetics®

Hear what's important.

soneticscorp.com/public-works
877.959.9189



TM

by Vactor Mfg., Inc.

**VACUUM EXCAVATORS
BUILT TO HELP YOU
DO YOUR JOB-**

**BETTER,
FASTER,
EASIER.**

INTRODUCING TRUVAC.

Brought to you by Vactor[®] Manufacturing Incorporated, TRUVAC[™] vacuum excavators are purpose-built to meet even the most demanding safe-digging needs. They are more precise. Easier to use. Perform better. And they come with a wide range of sizes, and customizable parts and features to help you get the job done right.

Learn more at **TRUVAC.COM**
or at WWETT '19 in Booth **#5044**

Taking in the Experience

THREE SIMPLE WAYS YOU CAN MAKE ATTENDING THE WWETT SHOW A BETTER EXPERIENCE FOR YOU AND YOUR CREWS

BY CORY DELLENBACH

It's February and that means it's once again time for the Water & Wastewater Equipment, Treatment & Transport (WWETT) Show in Indianapolis.

While most of this show is geared toward septic pumps, portable restroom operators and drain cleaners, there is a ton of equipment and sessions to attend even for those in this industry.

Throughout a show floor of over 600 exhibitors, you'll find hydroexcavators and vacuum excavation tools from many different manufacturers. You'll also find equipment related to pipe bursting and directional drilling.

If you've already made plans to attend the WWETT Show with its education seminars and marketplace Feb. 20-23 at the Indiana Convention Center, we'll see you there. And while you're there, be sure to take full advantage and reap these benefits:

1. FIND THE TREASURES

If you're a contractor looking for that new piece of equipment, this show won't fail you.

Many exhibitors debut some exciting new equipment at the show. Some of those include never-before-seen trucks that are large but still maintain road-legal weight limits. That new equipment could be different wands and nozzles for those vacuum excavation trucks, or it could be pipe bursting or directional drilling tools.

Look for those innovations. Don't just walk past that shiny truck; ask the salesperson about any new features that will benefit your crew and customers. Look at all the trucks and equipment and think about how adding it could give you an edge over the competition.

2. TALK TO VENDORS

Piggybacking off the first item, it's likely that all the companies that you buy products from are in Indianapolis for the WWETT Show. When you arrive and start looking over the program, map out how you are going to include visits to each of your vendors. Appointments are the best way, but if you didn't have time to set any up, don't worry: Many are still available if you just walk up to them.

Make visiting your suppliers a major priority. See their new products, ask about industry trends and find out what they see for the upcoming busy season. Tell them how your business did this past summer and what you plan

for the future. They could be full of ideas to help you grow your business.

3. LEARN SOMETHING NEW

The WWETT Show features more than 100 educational seminars over three days to help you improve business practices. On Wednesday, Feb. 20 alone, there will be nearly 50 sessions to choose from. Here are a few that might interest you:

Cross Bore Prevention Detection Guidelines — With the number of public agencies using directional drilling, it is of great importance that utilities and municipalities have a set of guidelines to protect both the organizations and their customers. The guidelines include the steps to follow both prior to and after drilling, communication with the customer and documentation.

The Power of Personalization: Building a Brand Experience — Nicole Arnett, vice president of operations at Superior Industrial Services, will talk about building brand identity with topics ranging from choosing the strongest social media platforms to building a sales funnel.

How to Attract, Hire and Retain Rockstar Employees — Carter Harkins and Taylor Hill, co-hosts of the *Blue Collar Proud Show* podcast, will help contractors analyze leadership failures and successes, engage employees in the work they're best suited for and look at what companies offer job seekers.

Veteran Hiring, Transition and Thriving in the Workplace – From “We Will” to “At Will” — Andrew Morton, director of social engagement at the Society of Human Resource Management, and Justin Constantine, leadership expert at The Constantine Group, will discuss the best ways to incorporate military veterans into a contracting business through a veterans employment program. Learn how to cultivate a military-friendly work environment and attract more veteran candidates.

ENJOY THE SHOW

Those are only a few simple suggestions of ways you can make the WWETT Show work for you during the three days you are in Indianapolis. If you're going to the show, don't be afraid to reach out, I'll be there as well. Email me at editor@digdifferent.com to set up a meeting.

Enjoy this issue! ▼



LOOK AT ALL THE TRUCKS AND EQUIPMENT AND THINK ABOUT HOW ADDING IT COULD GIVE YOU AN EDGE OVER THE COMPETITION.



OVERHEARD ONLINE

“THE BEST WAY TO DEAL WITH BAD REVIEWS IS TO **MAKE SURE THEY’RE CROWDED OUT BY POSITIVE ONES.**”

Bring a Positive Outcome to Negative Online Reviews
digdifferent.com/featured



HYDROVAC DESIGN

Complying With Weight Restrictions

Fairway Electrical Services of Ancaster, Ontario, was featured in the January issue. In this online-only article, read more about the company’s most-recent truck investment to deal with a common problem for hydroexcavation contractors — complying with road weight restrictions.
digdifferent.com/featured



Connect with us!



facebook.com/digdifferent



twitter.com/digdifferent



linkedin.com/company/dig-different-magazine

SAVING MONEY

Maximize Your Equipment’s Fuel Efficiency

Fuel is one of the largest operating costs for any contractor who owns heavy equipment. Check out this online exclusive for tips on how to get the most out of your fuel use.
digdifferent.com/featured

GIVING BACK

Safety Equipment Company Supports Special Needs Orphanage

Maximizing profits is oftentimes a focus in articles published in this magazine, but how much of those profits are truly needed to reinvest into your company or provide a good living for yourself and your family? Many of you also support charitable causes with some of your company’s profits. In this online exclusive, read about how a construction safety equipment company has been donating a percentage of product sales to help build an orphanage in Panama.
digdifferent.com/featured



Come visit us at
booth #6458



See our MTS Dino
Series truck and
meet our newest
strategic partner



DRY. WORKS.



The innovative MTS Dino Series dry suction excavator powerfully and safely excavates without the use of water.

No leaving to refill. No slurry disposal charges. No overweight loads. Just pure performance, productivity, and bottom line results.

Finally, a dry vac that works as hard as you do.

It's time to talk.

**MTS DINO
SERIES**

**DIG SAFE. DIG DRY.
DUMP ON SITE. STAY ON SITE.**



1.888.290.4044
WWW.OX-EQUIPMENT.COM



ROLLING WITH THE PUNCHES

DESPITE A HISTORY FRAUGHT WITH CLOSE CALLS, S&S DIRECTIONAL DRILLING PERSEVERED, WITH A BOUNTY OF LESSONS LEARNED ALONG THE WAY

STORY: JARED RANEY PHOTOS: COLLIN CHAPPELLE

“Roller coaster” is a fitting term for the tortuous route Scott Sanchez has taken to find entrepreneurial success.

In an industry where market fluctuation is simply the name of the game, S&S Directional Drilling in Norco, California, has flirted with disaster more than almost any company out there. Despite that, Sanchez has managed to weather two recessions and come out relatively unscathed, now building his company back up to its peak form.

“I had to learn everything the hard way. You can’t go crazy when the money comes in; you’ve got to save your money for a rainy day,” Sanchez says. “We took a bunch of steps backward, but I’m an eternal optimist. I think most entrepreneurs are, and they have to be.”

Borrowing money from family and taking on debt to get off the ground, he has had to contemplate bankruptcy and fight back from the brink of collapse more than once, in part due to the nature of the industry, but also because of youthful mistakes. Along the way, he has learned his fair share of lessons about staying profitable in the complex field of directional drilling.

MISADVENTURES OF A BUDDING COMPANY

Sanchez received an introduction to the volatile world of directional drilling within the first few months of running his own business.

“I remember I wrote a check, like the first month after we got started, I wrote my dad a check for 80 grand, to pay him back, and that



S&S Directional Drilling operator Juan Arce pulls back conduit after boring a line using a Ditch Witch JT20 along a busy divided highway in Southern California.



Juan Arce hoses down his work site after successfully pulling the conduit through.



Locator Steve Ramirez guides the bore using a Subsite Electronics TKD utility locator as part of a large multiyear fiber project.

“IT’S A ROLLER-COASTER INDUSTRY. ... IT HAS ITS UPS AND DOWNS, AND LUCKILY WE’RE ON OUR WAY UP RIGHT NOW.”

Scott Sanchez

Adelphia Communications was the sixth-largest cable company in the U.S., before one of the biggest corporate scandals of the era sent it into the ground. Cooked books and theft from shareholders found the company — and every contractor working for them down the line — in shambles.

“We were making some good money, kind of getting back on our feet, and then all the sudden, our general contractor just called us one day and said, ‘Hey, stop.’ We were

like, ‘What do you mean stop?’” Sanchez says. “They were my only customer at the time.”

That might have been the end for Sanchez and his supporters, but for a stroke of luck. Owed about \$250,000 in receivables, as he was literally sitting in a bankruptcy attorney’s office, he got some news that gave his still-forming company new life.

“I got a phone call from the general contractor, who said, ‘I can pay you 70 cents on the dollar for your receivables.’ I said, ‘Done. Done! Pay it!’” Sanchez says. “We took that deal. I got out of the bankruptcy office and was able to pay off a lot of my vendors that I owed money to. They took the same deal I took, and we moved on our way.”

Staying small for a while after that, the company eventually began working on the Verizon Fios fiber optic network in Huntington Beach. What followed was the most profitable period of the company’s history.

PROBLEMS COLLIDE

That wasn’t the end of turbulence for S&S. As with many in the industry, the 2008 recession was a crushing blow. Though Sanchez says they weren’t

S&S Directional Drilling Norco, California

OWNER: Scott Sanchez
FOUNDED: 2000
EMPLOYEES: 28
SERVICE AREA: Southern California
SERVICES: Full-service directional drilling, including surface restoration
WEBSITE: www.ssdirectional.com



was after one month of being in the business,” Sanchez says. “We thought, ‘Oh man, we’re going to be rich.’ And then fast-forward another six months and we’re figuring out how to not go bankrupt.”

After business went downhill, Sanchez and his drill operator brother-in-law had to take their rig all the way to Georgia to keep working and stay in business. That lasted only a few months, and then came a big job that was both a blessing and a curse.



"I HAD TO LEARN EVERYTHING THE HARD WAY. YOU CAN'T GO CRAZY WHEN THE MONEY COMES IN; YOU'VE GOT TO SAVE YOUR MONEY FOR A RAINY DAY."

Scott Sanchez

The leadership team at S&S Directional Drilling includes, from left, project managers Matt Fensler and Joker Barber, and owner/CEO Scott Sanchez.

really affected until 2009, it was another period of hanging on for dear life. Their low point came after losing \$300,000 in a single year.

Challenges due to the recession were compounded by a personal crisis in the Sanchez family. "I kind of took my eye off the ball when my mom passed away in 2010," he says. "The company took a really hard hit, and that's when we had that huge loss. We had to cut way back."

Unfortunately, bouncing back a second time wasn't as easy as finding a single big job to spur growth.

"There were a few years where there was literally no work in California, so we worked in over eight states during that year," Sanchez says. "We were just following the work. Anywhere we could go we'd follow the work. That really wasn't working out, so I downsized to two rigs. I've been crawling out of that hole ever since."

Today, the company is three rigs strong — as well as a smaller fourth drill machine that doesn't run full time — with 28 employees, on a growth trajectory. But they still haven't regained their peak five rigs and 40 employees, which is where they were during the Fios boom. Part of that is intentional.

"Right now it's just really starting to kick into high gear with some of the projects that are going on, and we're actually looking to get bigger," Sanchez says. "But I don't want to go crazy. That's my biggest lesson that I've learned is just to not dive in too deep."

FOLLIES OF YOUTH

Sanchez was only 26 years old when he started the business, and he admits now that he made some mistakes early on.

"Now I'm 44, and it's kind of like when you're investing, right, you're conservative," he says. "I'm a heck of a lot more conservative than I was when I was 26."

Part of that, in addition to experience and growth, is perspective. With a son about to turn 18, Sanchez has to look toward the future.

Finding his American dream

Scott Sanchez began his career the same way most find their way into the industry — working as a laborer for a large directional drilling company. Quickly seeing the earning potential in the line of work, he pushed to advance, until he was running the subcontracting arm of a large operation.

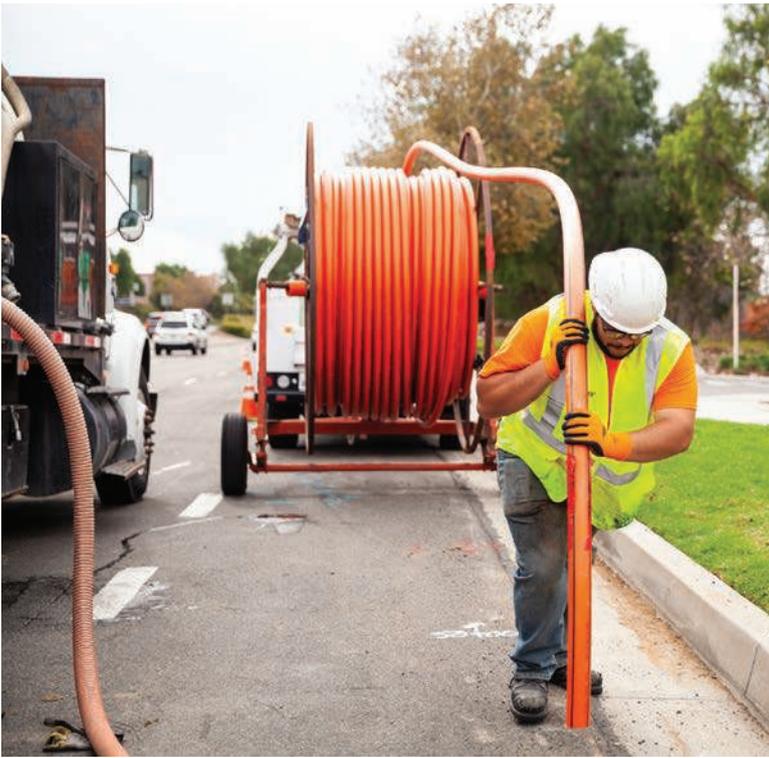
It was 1996 when he got his first drilling job, and by late 2000, he had bought his own rig. As the person in charge of subcontracting for the company where he worked full time, he was able to actually assign jobs to his own rig, with the owner's permission, of course.

"I'm watching the money come in, and I'm watching the money go out," Sanchez says. "So of course, it's the American dream. We wanted a little piece of that, right?"

At the time, California was experiencing a directional drilling boom, and there was so much work coming into his employer's office, Sanchez saw an opportunity. He asked his boss, if he bought his own rig, could he sub work out to himself? He got an affirmative, and S&S Directional Drilling was born.

"Basically, the work was right there at my disposal, and I could give it to myself. Which seems like a conflict of interest, but when there's that much work, it really just is what it is," Sanchez says. "So it just kind of worked out, but it didn't work out for very long because the bottom fell out of the whole thing."

As work began to dry up, his employer encouraged him to focus on his own company, and he broke off from full-time employment to pursue his American dream.



A laborer for S&S Directional Drilling pulls the conduit from the reel in preparation for the directional drill to pull it back during a utilities job.

“RIGHT NOW IT’S JUST REALLY STARTING TO KICK INTO HIGH GEAR WITH SOME OF THE PROJECTS THAT ARE GOING ON, AND WE’RE ACTUALLY LOOKING TO GET BIGGER. BUT ... THE BIGGEST LESSON THAT I’VE LEARNED IS JUST TO NOT DIVE IN TOO DEEP.”

Scott Sanchez

“Now we’re starting to look at this thing and go: Are we looking at a second-generation company, a two-generation company? Is this something that they’re going to want to do?” he says. “That’s where my head’s at now. We are currently engaged in these conversations right now; we’re trying to figure that out.

“By no means do I want to dump this on my son if it’s not something he’s interested in,” Sanchez says. “But if he comes to me and says, ‘Hey, I’m ready to get started with my career and this is what I want to do,’ then I’m also going to say, ‘All right, where do we go from here?’”

With that possibility in the air, the focus is on stable, controlled growth. With age, Sanchez has also realized the importance of an establishing a reliable safety program, and has enlisted the help of Safety Compliance Co., which has a safety app and online training platform that simplify training while making sure it remains at the forefront of company practices.

All this leaves Sanchez and his team ready to take advantage of a thriving market.

“I think the industry itself seems to be doing really well. It seems that there is more work out there now than there has been in a while, so I’m just hoping that it continues along this path,” Sanchez says. “I think one of the biggest lessons I’ve learned is to not have all my eggs in one basket.”

SURVIVING ON FRIENDS AND FAMILY

Keeping the company in the family would certainly play into the history of getting S&S off the ground. When they incorporated in 2000, the four founding members were Sanchez and his wife, Michelle; father, Steve; and mother, Christine.

As the official secretarial officer of the company, Michelle quit her full-time job to run the books for the company. Sanchez says she was integral to getting the company off the ground.

His father also invested heavily in the company over the years. Both he

and his father took out home equity loans to fund the initial equipment investments, and his father has remained a safety net for the business.

“My dad wasn’t rich. He just believed in me and believed in my dream,” Sanchez says. “I’ve been very fortunate to have my father as my partner, and my friend.”

Another family member who has been heavily involved throughout the trials and tribulations is Sanchez’s brother-in-law, Matt Fensler. He ran the first S&S drill machine, was one of the first crew leaders and is still the most trusted project manager today.

“You want to be looked after, and you don’t want somebody who’s going to come take advantage of you, and my brother-in-law has always been that guy,” Sanchez says. “He just takes care of us. He’s an important part of this company.”

Maintaining relationships with his vendors has also been essential to success. Without assistance from some of his biggest vendors, such as Ditch Witch, the company probably would have collapsed long ago.

The four rigs S&S runs today are all Ditch Witch — a JT2020, JT20, JT25, and JT922 — as are many of the company’s support machines. Sanchez says Ditch Witch earned that loyalty by supporting and helping him through the rough patches.

“When I was going through a lot of my hard times, I had some vendors — and Ditch Witch is one of my biggest vendors — that really helped me through a lot,” Sanchez says. “Maybe I couldn’t get a rig fixed. I would go in there and we would talk, and we’d figure out a way that I could make it through to the next year.”

He considers Mike Anderson, the local Ditch Witch dealer, an asset to the company — not a term often bestowed on a salesman. But the fact that they have gone the extra mile was lifesaving for S&S.

Beyond the bore machines, S&S also utilizes Ditch Witch and Vermeer mixing systems, Big Tex dump trailers, a Slabach Enterprises pipe trailer, Ring-O-Matic vac systems and a plethora of other support equipment.

RIDING THE HIGH

In a high-stakes world, numbers can often be deceiving, and though his revenue isn’t the highest it has ever been, Sanchez believes his company is in good shape moving forward. “It’s not always about how much you make; it’s about what you do with it,” he says.

There have been times when the company was losing money despite \$2 million in revenue. Today, the company has found a balance, and though he’s not the most profitable he’s ever been, at \$3.5 million in revenue and earning steady gains, he is poised for success.

“It’s a roller-coaster industry,” Sanchez says. “There’s a lot of good things going on, but I definitely had some peaks and valleys. It has its ups and downs, and luckily we’re on our way up right now.” ▼

Featured products from:

Big Tex Trailers
903-575-0300
www.bigtextrailers.com

Slabach Enterprises
319-656-3434
www.slabach.com

Ditch Witch
800-654-6481
www.ditchwitch.com

Subsite Electronics
800-846-2713
www.subsite.com

Ring-O-Matic, Inc.
800-544-2518
www.ring-o-matic.com

Vermeer Corporation
800-837-6337
www.vermeer.com
(See ad page 23)

THE BIGGEST, BADDEST, TRUCK ON THE BLOCK



Durable, Dependable & Rugged.
When it comes to reliability, you can't beat **Transway**.



CUSTOM BUILT. DRIVEN BY YOU.



TRAINED FOR PRODUCTIVITY

GEORGIA CONTRACTOR GIVES EMPLOYEES A PATH TO SUCCESS THAT FEEDS ITS OWN GROWTH IN THE HYDROEXCAVATION MARKET

STORY: KEN WYSOCKY PHOTOS: KAYLINN GILSTRAP

TTo deliver better value to customers, Southern Hydro Vac relies on a two-pronged strategy aimed at maximizing productivity and equipment uptime: investments in technologically advanced equipment and comprehensive training that helps employees fully utilize the equipment's capabilities.

That approach has helped the hydroexcavating and industrial cleaning company, based in the city of Powder Springs on the outskirts of Atlanta, record double-digit annual revenue growth since it was founded in 2003. Moreover, it allowed the company to dramatically expand its geographic service area during that time from just Georgia into Alabama, Florida, South Carolina and Tennessee. Its primary customers are energy and telecommunications companies, developers and general contractors, and manufacturing facilities, says Guy Rimoldi, president of the company.

The growing acceptance of hydroexcavating as a safer alternative to mechanically exposing underground utility lines certainly didn't hurt the company's growth. But its expansion — reflected in a jump from two hydrovac trucks in

2003 to 13 today and from four employees to about 40 now — wasn't just a case of lucky timing.

"Our success stems from much more than being at the right place at the right time," Rimoldi says. "We developed a training and mentoring program that produces employees who can utilize our equipment, innovations and technology in ways that deliver superior value to customers.

"IT'S ONE THING TO HAVE THE TECHNOLOGY IN PLACE, BUT IT'S A WHOLE DIFFERENT MATTER TO TRAIN EMPLOYEES SO THAT THEY KNOW HOW TO MAXIMIZE THAT TECHNOLOGY."

Guy Rimoldi

"We evaluated the industry and recognized a need for better production and employees with superior training. Our training includes learning how to identify soil types, which affects what kind of wand operators use. It's one



The Southern Hydro Vac team with the fleet of GapVax units and a Cat 259D compact track loader.

“WE ABSOLUTELY LOVE THIS STUFF. IT’S ALL WE THINK ABOUT — IT’S WHAT WE DO.”

Guy Rimoldi

thing to have the technology in place, but it’s a whole different matter to train employees so that they know how to maximize that technology.”

GROWING DEMAND

The seeds of the company were planted back in 1986 when Rimoldi and Ed Morgan, now the firm’s chief financial officer, established a site-development business called Earth Development.

The company did site grading and underground utility work. As hydroexcavation became more popular, the company increasingly relied on subcontractors because it didn’t own trucks with that capability. So when businessman Tim Coleman approached the duo about creating a hydroexcavating company, they seized the opportunity and jumped right in. (Coleman passed away in 2013, leaving Rimoldi and Morgan now the sole owners of the company.)

“We started with only two trucks (made by GapVax) and the business grew from there,” Morgan says. “Tim already had a list of clients because he had run a hydroexcavating company before. And a lot of local municipalities were putting hydrovacuuming into their project specs.

“We’ve had a steady annual increase in gross sales of 12 to 14 percent, even during the recession. Energy, communication and construction companies kept finding practical applications for the hydrovac industry. All that came into play and fell into place.”

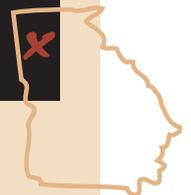
CLIMBING THE LADDER

A central component of the company’s business model is a comprehensive employee training program. Thorough training enables truck operators to maximize the productivity of the machines they work with on a daily basis, as well as work safely, Rimoldi says.

“Superior equipment and well-trained employees are basically our whole business model,” he notes.

During the company’s early years, training took as long as two years. Now it’s down to about 13 months and covers all phases of hydroexcavating, includ-

Southern Hydro Vac Powder Springs, Georgia



OWNER:	Ed Morgan and Guy Rimoldi
FOUNDED:	2003
EMPLOYEES:	40
SERVICES:	Hydroexcavation, plant/detention-pond maintenance, soil removal
SERVICE AREA:	Alabama, Florida, Georgia, South Carolina and Tennessee
WEBSITE:	www.southernhydrovac.com

ing how to drive and operate a truck, OSHA excavation and confined-space training, learning about different soil types and the best hydroexcavating techniques to handle them, power-safe training provided by local utilities (which covers how to work safely near structures such as electrical substations), how to flag and manage traffic, and CPR.

The training is provided by in-house experts and outside groups such as OSHA and utilities. Each level of in-house training also requires employees to spend a certain number of hours at various tasks out in the field before they achieve certification, Rimoldi says.

“After a trainer says an employee has put in the required hours and mastered the skills, then another trainer comes in and gives the employee the test,” he says. “It’s a good checks-and-balances system. ... We want a different person than the trainer to do the testing. They come in with a different set of eyes. Our goal is to make sure our employees are the most productive hydrovac operators possible and that they also understand the possible dangers and follow safety protocols.”



William Dubose, front, senior crew leader, uses the wand while apprentice Cedric Watson operates the boom.

Aside from minimizing the risk of injuries and keeping insurance costs in check, the training provides another benefit that's critical to employee retention: a clear, well-defined path to career advancement and higher pay. Employees can aim for nearly 20 different levels of certification and get corresponding pay raises every time they take another step up the certification ladder.

"It offers a transparent path for employees to move up in the company," Rimoldi explains. "They're tested every step of the way. We have four dedicated trainers who go out on the trucks and train guys as they come through the ranks. Their titles change and pay increases every time they get a different certification."

EARNING EMPLOYEE LOYALTY

The training program helps employees more easily adopt the company's operating and business philosophies. It also boosts company loyalty because employees appreciate that the company is investing in their future. "As employees move ahead and make more money, they buy into the program," Rimoldi says. "They become experts in their field, which makes them more valuable. And at some point, if they're aggressive enough and stay with the company, they can become trainers."

Employee turnover in the hydroexcavation industry is common enough, given the rigors of the work.

Unique 'soil' conditions complicate hydrovac project

While Powder Springs, Georgia-based Southern Hydro Vac routinely takes on difficult projects, Guy Rimoldi, company president, can easily point to one that was particularly challenging: a 1,500-foot-long fiber optic line upgrade in downtown Charleston, South Carolina, performed for a major national telecommunications company in 2012.

"It was a pretty interesting job," Rimoldi says. The path of the fiber optic line was so congested with other underground utility lines that the city wouldn't allow a mechanical excavator to expose them.

The job required considerable resources, including three hydrovac trucks and 20 employees working 18 to 20 hours a day for about six weeks. Work started June 20 and finished Aug. 8, one week ahead of schedule. The path for the upgraded line ran right down St. Philip Street, directly through the middle of the College of Charleston campus, a busy area, he points out. Moreover, the job had to be finished before the next semester of school started.

The job became even more challenging due to the unique "soil" crews

had to contend with. "As we excavated down the street, we found the remnants of an old canal that once was used for marketing merchandise before there were streets," Rimoldi says. "When it was abandoned, people filled it in with everything they could find: rocks, bricks, anything and everything. That's what we were digging through, plus all of the college's steam lines, other fiber optic lines, and water, gas and sewer lines. But we never broke an existing utility during the project.

"We wove our way through all of them, up and down and over and around. On a job like that, you have to sort of feel your way through it to find the correct the path."

Intense planning was critical to the project's success. Plans included job safety analysis, developing waste-disposal cycles and figuring out how to route trucks depending on traffic patterns at different times of days. "You don't want guys standing there, waiting for a truck to come back from a landfill," Rimoldi says. "Logistics are paramount to the service value you give to the customers."

“It’s very labor-intensive,” he says. “And when you’re in Georgia, with 90-degree F heat and humidity, it’s really hard work. So you have to do something to make employees feel good about the team they work with and money they make.”

Furthermore, it’s expensive to keep recruiting, hiring and training employees who eventually leave. As such, higher pay and a structured career path offers workers a big incentive to stick around, Morgan says. “They take a look around and decide to stay because they know they can make more and more money as they move up each level.”

In addition, Rimoldi points out that employees benefit from a sense of accomplishment and earn the respect of fellow workers as they advance.

Advancement isn’t limited to fieldwork, either. Sometimes fieldworkers move into administrative positions if they show leadership potential. As examples, Rimoldi cites two fieldworkers, one who became a service coordinator and another who stepped into a marketing role. “In the old Wild West days, lack of transparency (regarding career advancement) may have worked,” he says. “But times have changed. Millennials think differently.”

As another retention effort, employees receive health insurance, including company-paid premiums (for just the employee, not family members), a 401(k) retirement program and profit sharing, Morgan says.



William Dubose uses a GapVax hydroexcavator to locate buried utility lines.

A benefits package like this sets Southern Hydro Vac apart from competitors and helps the company attract quality employees. “That’s another reason our business is growing,” Rimoldi says.

EFFECTIVE EQUIPMENT

Southern Hydro Vac regularly reinvests in newer equipment in order to minimize on-the-job downtime. When a truck hits about 20,000 hours, it gets traded in for newer technology.

“We have to give customers the confidence that our trucks will be productive while on the job,” Rimoldi says. “A lot of times, our trucks are support pieces that work in conjunction with other companies, so if our machine goes down, it stops the entire production. We don’t want to be ‘that’ contractor.”

The company owns 12 GapVax HX-56 hydrovac units built out on Peterbilt chassis, plus one Kenworth. Each truck features a 15-cubic-yard debris tank, a 1,000-gallon water tank, an air-injection Hibon Inc. (a division of

LEE is HDPE PROVEN

**When you think of Lee Supply –
you think HDPE!**

We have been stocking and fabricating HDPE pipe for thirty years. It’s interesting looking back to when we had to educate our customers on the benefits of just **TRYING** something new to the current days of expanded expectations on what **HDPE CAN DO**. We believe that it is the creative skills of our highly trained, experienced, and certified technicians, that assure quality results and customer satisfaction.

What Lee Supply delivers:

- ✓ • Certified McElroy Fusion Service/Sale/Rental Center
- ✓ • Engineered HDPE Pipe & Pumping Systems
- ✓ • HDPE Fittings – Molded & Fabricated
- ✓ • Specialty Fabrications: Valve Boxes; Manifolds; Dual Containment; Manholes; Perforations, and more...

Lee’s proven HDPE experience provides you with a quality piping system that will stand the test of time.








1-800-353-3747 • leesupply.com



President Guy Rimoldi (left) and Ed Morgan, chief financial officer, started out together with a site-development business before launching Southern Hydro Vac.

ROOM TO GROW

Morgan and Rimoldi expect continued growth for Southern Hydro Vac. That could include opening up facilities in strategic locations in other states to reduce travel-related expenses. “We see great potential in the hydrovac business and would like to duplicate our business model in locations in the Southeast,” Rimoldi says. “Once you get to a certain volume, it only makes sense to duplicate it in another location to reduce travel costs. Savannah, Georgia, or Montgomery, Alabama, is a long way to go for work. Companies are willing to pay (for the travel), but it would be better for customers if we could be closer.”

The company also plans to keep diversifying its customer base by exploring creative new ways to use hydroexcavation technology. For example, during construction of a new concrete runway at Hartsfield-Jackson Atlanta International Airport in 2015, workers had already installed a significant amount of rebar when heavy rains rolled in. Crews couldn’t pour concrete into the rebar framework because of the underlying mud, so Southern Hydro Vac workers figured out how to run their vacuum hoses through the rebar to remove the mud.

“That saved them a tremendous amount of money,” Rimoldi says. “We’re always looking for new and different businesses that can use our trucks and services. We’re always exploring different ways to work our trucks and utilize our team.

“We absolutely love this stuff. It’s all we think about — it’s what we do.”

Featured products from:

GapVax, Inc.
888-442-7829
www.gapvax.com
(See ad page 47)

Giant Industries
800-633-4565
www.giantpumps.com

Hibon Inc. (a division of Ingersoll Rand)
888-704-4266
www.hibon.com

“IT’S ALL ABOUT HOW MANY UP HOURS YOU GET OUT OF YOUR TRUCK ANNUALLY AND THE AMOUNT OF BILLABLE HOURS, VERSUS THE OWNERSHIP COSTS.”

Guy Rimoldi

Ingersoll Rand) positive displacement blower, a Giant Industries water pump (19 gpm at 2,900 psi), and a 25-foot telescoping boom. Southern Hydro Vac also owns a GapVax MC 1510 combination sewer truck equipped with a hydrovac package; it features a 10-cubic-yard debris tank, a 1,500-gallon water tank, a Hibon positive displacement blower and a Giant Industries water pump (80 gpm at 2,000 psi). “It’s primarily a flushing (jetting) truck, so it has a larger water tank and a smaller debris tank,” Rimoldi says.

To keep equipment working, the company operates an in-house maintenance and repair department with three full-time employees and four service bays. The technicians typically work second shift to ensure the hydrovac trucks are ready to roll out around 5 a.m. daily, Rimoldi says.

The company also carries a full inventory of repair parts, and sticking with one hydrovac truck manufacturer helps the department run more efficiently and cost-effectively. “When the trucks are all the same, you can buy parts in bulk,” Morgan points out.

While there’s definitely a cost to carrying parts inventory, the ability to utilize the fleet to its fullest capability outweighs the expense. “It’s all about how many up hours you get out of your truck annually and the amount of billable hours, versus the ownership costs,” Rimoldi explains. Moreover, in-house repairs also help employee-retention efforts because no one likes to come to work and find his or her rig isn’t working. “Our trucks don’t limp in and limp out,” he says.



Cedric Watson (left) and William Dubose use a GapVax hydroexcavator in downtown Atlanta on a job locating existing utilities for an electric company.

IS YOUR COMPANY TALKING A LOT ABOUT MUD THESE DAYS? YOU SHOULD BE.

With increasing regulations targeting the disposal of horizontal directional drilling (HDD) fluids and rising disposal costs, mud is becoming a major concern for the industry. Failure to plan can lead to unexpected expenses, missed opportunities or be the reason why your company isn't awarded a particular project contract in the first place.



HOW MUCH FLUID DO YOU NEED

Your estimating process should include evaluating ground conditions at the jobsite, type of drilling additives you will need and the volume of fluid required for the project.

Ground conditions dictate the drilling additives you'll need and the amount of fluid required. Calculating the costs and the amount of additives and water you'll need ahead of time will not only help ensure you're tracking your expenses on the project, but will also help you determine what equipment you need on the job.

ADDING IN DISPOSAL COSTS

To begin, you must research all local regulations about disposing of drilling fluids. Today, many projects require HDD fluids to be disposed of at licensed facilities, and the costs associated with dumping can vary greatly. You will want to look into where these sites are located and estimate how much you'll pay to use them.

But don't forget, the disposal costs aren't your only expense. You also have to estimate the distance between the jobsite and disposal facility, as well as the fuel and labor costs involved in making the round-trip. These expenses are easy to overlook.

WEIGHING YOUR OPTIONS

After adding up your fluid and disposal costs, it's time to evaluate equipment options that may be able to reduce your out-of-pocket expenditures. For projects that require large volumes of fluid, bringing in a reclaimer like the Vermeer R250C can help reduce the amount of fluid and additives used by removing solids and recycling fluids.

Solidification systems like the Vermeer MUD Hub is another option to consider for projects that have high disposal fees. Solidifying used drilling fluids can give you more disposal options. Many drilling spoils will now be able to be disposed of at a regular landfill, used for ground cover or added to composting mixes. Also, since the waste is now a solid, it can be hauled in a dumpster or dump truck, which helps keep your vics off the road and on the job.

Visit Vermeer.com for more information.

The MUD Hub can be operated by one person from multiple control station locations for jobsite flexibility, and feed and dosage rates are made from the STS FL-243 solidification mixer's control center. The ST2000 slat tank has a self-cleaning tank design with integrated lift points and a convenient setup design, the MUD Hub is convenient to transport with minimal preparation to begin running on a jobsite.



"At Vermeer, we are committed to producing cost-effective solutions for fluid management. In addition to the Vermeer line of reclaimers for larger-diameter pipeline work, we now have the MUD Hub for contractors doing utility work."

— Adam Bates, product manager, Vermeer Corporation

The FL-243 is a product designed and produced by Surface to Surface Inc., and is exclusively available from Vermeer dealers. The ST2000 is a product designed and produced by Vermeer Corporation, and is exclusively available from Vermeer dealers. Vermeer Corporation reserves the right to make changes in engineering, design and specifications; add improvements; or discontinue manufacturing at any time without notice or obligation. Equipment shown is for illustrative purposes only and may display optional accessories or components specific to their global region. Please contact your local Vermeer dealer for more information on machine specifications.

Vermeer and the Vermeer logo are trademarks of Vermeer Manufacturing Company in the U.S. and/or other countries. © 2019 Vermeer Corporation. All Rights Reserved.



A Closer Look at PPE

REMINDERS SHOULD BE GIVEN TO WORKERS WHEN IT COMES TO SAFETY GEAR THAT NEEDS TO BE WORN AT JOB SITES

BY JARED RANEY

It's easy to make a list of PPE for your workers — less simple is determining where and when that PPE is required.

When people think of hard hats, it often conjures images of city high-rises and overhead dangers like crane work. In reality, just about every piece of equipment with moving parts has the potential for concussive trauma, and hard hats should be worn whenever and wherever that equipment is used.

Educating workers is important in this respect because people will always be more likely to don appropriate gear when they understand the danger.

"When we talk PPE, most people think: It's a hat I put on or it's something I put in my ear," says Dan Vroom, customer training lead for Vermeer. "Somebody can tell me that I need to wear a hard hat in this area, but if I don't understand that a drill rod could come out or this thing can swing down and hit somebody, then it's like 'Oh, that's why I should wear it. OK, now I will,' so it's more awareness that will cause things to change."

Vroom tells of a specialist who was conducting a training demo when an improperly latched strong-arm swiveled out.

"That arm came down and hit the specialist on the hard hat and just laid him out cold in front of 12 people," Vroom says. "If he hadn't had the hard hat on, the story would have been completely different. Just because there's not stuff up high like a crane, doesn't mean there's not a lot of moving parts that can cause issues."

BETTER SAFE THAN SORRY

The same goes for many other forms of PPE — the best way to ensure their use is by educating workers on the potential hazards. Safety glasses, or goggles, are another PPE item frequently overlooked. Even around the shop, during maintenance operations, eye protection isn't something to forget.

"Every joint gets sprayed with grease, and if those aren't adjusted right, grease can shoot back at the operator," Vroom says.

Especially in drilling operations, small things can have damaging effects.

"Anytime you're on a drill site, you should have ear plugs," Vroom says. "Being on the rig without ear protection means long-term damage to your hearing."

And even when equipment isn't in use, it's important that workers don't let their guards down.

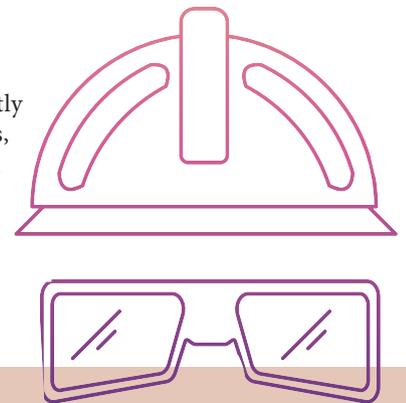
"If you're picking drill rods up, or any tooling on the ground, with carbide welded to it, those carbide pieces can rip your hands open," Vroom says. "It's all little stuff like that, where you think there's no sharp edges, and it's just everywhere."

Vroom admits that gloves is a delicate one, because when a contractor is running the functions of the drill on joysticks, it's nice to not have gloves.

There is a balance all workers must find between being comfortable enough

in the job duties to perform efficiently while staying safe. In the case of gloves, instead of abandoning them completely, a thinner type of glove could do both.

At a minimum, when dealing with waste and hazardous materials, including while mixing drilling fluids, latex gloves should be utilized.



"IF HE HADN'T HAD THE HARD HAT ON, THE STORY WOULD HAVE BEEN COMPLETELY DIFFERENT. JUST BECAUSE THERE'S NOT STUFF UP HIGH LIKE A CRANE, DOESN'T MEAN THERE'S NOT A LOT OF MOVING PARTS THAT CAN CAUSE ISSUES."

Dan Vroom

HOW TO BE SURE

The most difficult aspect of PPE, especially in the excavation industry, is that work sites can vary widely from day to day, meaning requirements vary as well.

Beyond the obvious PPE items like hard hats, ear plugs and gloves, there are also air quality considerations — using air testers and wearing respirators or face masks when necessary. Asbestos and silica are increasing concerns as aging infrastructure fails and replacements become more common.

The most common OSHA violations over the past several years have fallen under respiratory protection standards. Having a trained employee or employees who can analyze each job site is really the only way to ensure your workers' safety.

Developing an internal safety program is also a must for contractors in today's world, even those with only a few employees. Some companies consider safety violations by employees to be a fireable offense, and though that isn't always necessary, it is important for employees to feel comfortable and indeed encouraged in calling out potential safety issues.

"I do see companies taking more ownership of the safety side," Vroom says. "Anytime it's their fault, there's liability and costs to fix the damage, workers' compensation and time off work. Employers don't like that, so I feel they are doing more diligence to the safety side, but a lot of them don't have the programs in place to enforce it yet." ▼

Demand **POWER**

wwett19

Booth #1061

Command **PRECISION**



Vac•Con® and **Vector Technologies** offers the products you've been looking for in both truck and trailer-mounted options. Discover the power, portability, and precision firsthand at the 2019 WWETT Marketplace Expo.

Visit us in Booth #1061
February 21-23 at the
Indiana Convention Center



VAC•CON
MORE **POWER** TO YOU

WWW.VAC-CON.COM
904.284-4200



Rally the Troops to Boost Production, Raise Morale

FOLLOW THESE SIMPLE WAYS TO GET YOUR CREW INVESTED IN THE SUCCESS OF YOUR UTILITY CONTRACTING COMPANY

BY WALT GRASSL

Mike worked for a medium-sized business and went to work every day happy to have a job. But he wasn't too enthused about his work environment. Employee morale was so-so because most longtime employees were merely going through the motions.

Greg was a friend of Mike's from school, and they ended up working in different industries. They stayed in touch on social media and decided to get together for lunch.

Mike picked Greg up at his workplace. He felt inspired when he entered Greg's building. There was an energy that was hard to describe. It was definitely not the same as at his company. He was warmly greeted by the receptionist and waited in the pristine lobby for Greg.

At lunch, Mike asked Greg about his job and what he liked about working there. Greg mentioned that the company has a management philosophy that every employee is important, like the links in a chain. They believe in sharing information that reinforces that message.

WE ALL HAVE A PURPOSE

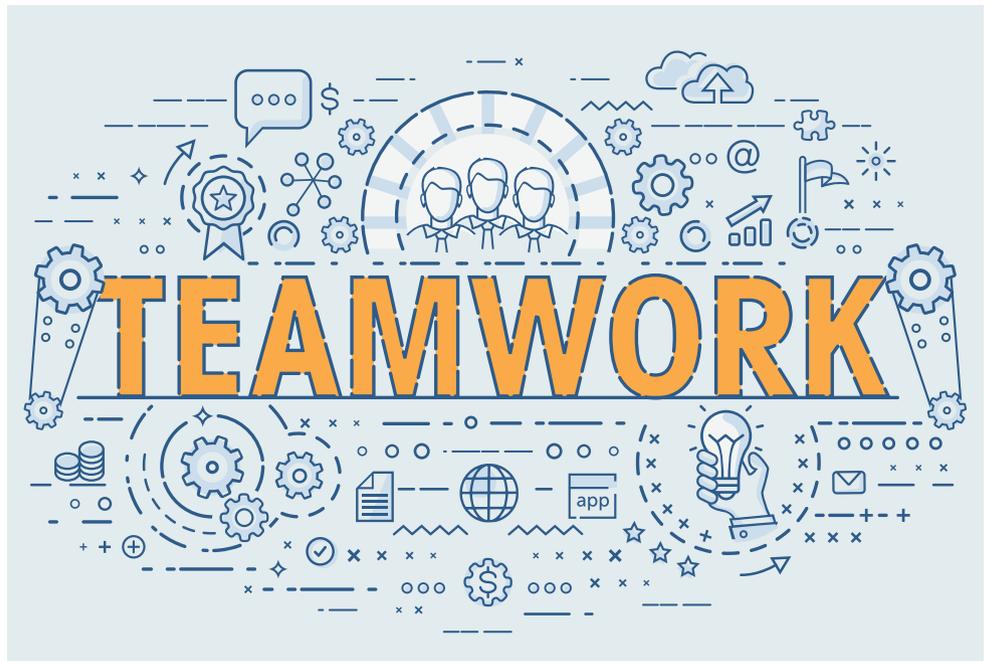
Every employee plays a role in the company's performance. It is important that they know their role. This gives them a sense of purpose. It answers the question: "Why does it matter?"

Some people always take great pride in their work. They know it reflects on them. Some people only push themselves when others are relying on them to do their part. Sharing the big picture helps to get the most out of these people. Getting the small things right leads to bigger success.

Here are five different strategies you as a small-business owner or manager can use to foster a workplace where every employee feels valued and can contribute to the overall vision of the company:

1. INCLUDE ALL EMPLOYEES IN STRATEGY MEETINGS

To the extent possible, involve employees in strategy meetings. When you are contemplating a change in your company, modifying one or more processes, or seeking new methods to improve service, involve the people who perform the tasks before decisions are finalized. They are liable to push back.



When they do, use your wisdom and judgment to determine if the pushback is valid.

If it is valid, figure out a better path forward. This will prevent mistakes, save time and reduce waste. If the natural reaction is to resist change, deal with it now. You will avoid passive-aggressive behavior that will sabotage the path forward. Done right, you will earn the respect and buy-in of your workers. However, things like impending job actions (layoffs, promotions, transfers) must never be shared until it is time. When you are otherwise open, the need for discretion will be respected.

2. STRESS THE IMPORTANCE OF EVERY POSITION

A good manager knows how every employee contributes to the performance of the company. Some employees interact with customers. Others work in the office. Drivers and technicians are your front-line service work-

ALL THE EMPLOYEES PLAY A PART IN THE SUCCESS OF THE COMPANY. **GOOD LEADERS PRAISE THE INDIVIDUALS AND THE TEAMS**, BOTH IN PUBLIC AND IN PRIVATE, FOR THEIR SIGNIFICANT CONTRIBUTION.

ers. All the employees play a part in the success of the company. Good leaders praise the individuals and the teams, both in public and in private, for their significant contribution. This is important. Over time, those who are not key service providers in the field may forget the significance of their role. They need to be reminded.

3. SEE THE BIG PICTURE

There is a common fallacy in the workplace that one job contributes more than others to the success of the project or company. It is a great thing when employees realize that what they do is important. It is not so good, however, when the needs of others in the workforce are discounted. Managers should step up and explain the big picture and recognize the important role played by everyone from the receptionist in the office to the equipment operator on the job location.

4. YOUR BUSINESS STORY

The most powerful story for any business is the story of why the company exists. Who founded the company? What problem did the company originally solve? How did the company evolve into its current state? This works for businesses of all sizes. This is effective in external sales presentations. It is also effective in keeping employees motivated. When that story is known and repeated, employees will realize that they are part of growing or preserving a legacy.

5. MAINTAIN AN OPEN-DOOR POLICY

When you involve employees in strategy sessions, communicate the importance of the roles of each employee and talk about where they fit in the company's success. The staff will see you as someone who not only talks communication, but also communicates. You can further enhance that relationship by having an open-door policy. Set boundaries and let people know, but invite people to approach you with their concerns or questions. Maybe they come to you. Maybe you walk around and catch them doing things right.

A FINAL WORD

When you share the big picture, every employee feels valued. They know they play a role in the success of the company. Job satisfaction increases. It costs little to do this and brings back big returns.

Driving back to work, Mike realized that this aspect of work culture was missing from his company. He thought about his role and how it fit into the bigger picture. He felt better about his job. He vowed to look for ways to help his fellow employees understand their roles in the bigger picture as well.

ABOUT THE AUTHOR

Walt Grassl is a speaker, author, and performer who hosts the radio show, "Stand Up and Speak Up," on the RockStar Worldwide network. For more information, visit www.waltgrassl.com. ▼

MORE AIR MORE COMPRESSORS MORE CHOICES

Air Compressors • Generators • Welders • Tool Lifts • OEM Packages • Vapor Recovery • Gas Boosters



More Profits for you!

We have you covered from our above deck rotary screws, reciprocating air compressors, or multi-function packages, to our revolutionary P.T.O. under deck complete power packages.

The BOTTOM LINE is, BOSS is the TOP CHOICE for your complete air power requirements!

Visit us at The WWETT Show - Booth 5542 and learn why YOUR next air compressor should be a BOSS!



BOSS
30th
Anniversary
three decades strong



BOSSair.com | 800/635-6587



PHOTO COURTESY OF KOMATSU

Commercial drones and accompanying tech have only been on the market for a matter of years, but costs are already decreasing significantly and will most likely continue to do so, alongside an increasing catalog of software options and value.

Reaching New Heights

EVER-CHANGING DRONE TECHNOLOGY LEADS CONTRACTORS TO DEVELOP NEW WAYS TO USE THEM TO BOOST PRODUCTIVITY AND SAFETY ON JOB SITES

BY JARED RANEY

Drones aren't just for taking pretty pictures anymore. Sophisticated analytics, tools to improve safety and compliance, simplification of survey work — drones are on their way to becoming contractors' new best friends.

Today's construction industry is on the leading edge of advanced drone technology, with next-generation technology that increases efficiency.

"Years ago, the expectations were really high, but the capabilities weren't quite there," says John Frost, vice president of business development for Propeller Aero. "People expected drones to revolutionize the industry, but the capabilities were more like you're going to get a pretty map, a nice-looking aerial view of your site."

Propeller Aero is a drone data analytics platform that specializes in work site applications.

"Now, there is the ability to interact with these sites, importing design surfaces — what that site is supposed to look like in the end when it's built — and comparing that to the drone surface, with sub-inch accuracy," he says. "The capabilities of the analytics and the tools that are accessible now are matching the expectations. It's definitely caught up."

WHAT DRONES CAN DO FOR YOU

When drones first hit the commercial market and became accessible to small and midlevel operations, people weren't really sure what to do with them. As a result, like Frost says, many ended up with nothing more than nice photos and video of the job site.

Aerial views aren't without merit on their own, as some companies have demonstrated through creative use in marketing. RiverView Construction uses images of completed job sites for promotions and has even presented framed copies for customers as a gift, earning goodwill and building reputation. Murphy Pipelines has done promotional videos with its drone footage.

But the potential of drones has largely gone unfulfilled.

"WE'RE STILL IN THAT EDUCATIONAL PHASE, GETTING PEOPLE MORE COMFORTABLE WITH THE LEVEL OF DETAIL THAT CAN BE PROVIDED HERE, GETTING THEM COMFORTABLE WITH OVERCOMING ANY KIND OF TECHNOLOGY BARRIER."

John Frost

"We're pretty much in the infancy of this thing, just getting off the ground," says Dave Marzio, Spearhead Locating Services owner. The company partners with VTA Drones to map out their pre-construction surveys and markings.

Often, Marzio's crew will mark up a site well in advance of actual construction, with the result that those markings can fade or be destroyed in site prep. When this happens, contractors have to call surveyors back out to the job site — a costly repetition.

Surveying is one of the most common uses of advanced drone technology.

"With drones and the analytical tools we supply, they're just spending less time in collecting the actual data and processing it," says Justin Van Fleet,

owner of VTA Drones. “They’re able to generate these reports quickly and get on to the next thing.”

When hiring someone to do mapping, traditionally it takes a lot of man-hours. They have to collect GPS point, references to existing structures and then put that into a CAD program.

“With the drone, it significantly reduces labor overhead and allows you to generate a map very quickly that’s very accurate,” Van Fleet says. “There’s a lot of interest out there, mainly because of the cost savings.”

As for locating crews like Spearhead Locating Services, though they miss out on a billing opportunity for that follow-up work, they make up for it with repeat business. “It gives the customer incentive to use me again because it’s an added benefit to them,” Marzio says. “They’re getting more products for their money, added value.”

MORE THAN JUST A FLYING CAMERA

In essence, these developing technologies combine drones and advanced sensors to take measurements from the sky, which are then imported to software platforms that can analyze data for specific metrics and goals.

“There are a number of different people across a work site who it benefits,” Frost says. “Typically, it is the site foreman or the construction supervisor who gets the most bang for buck, right upfront, and then that trickles around to others.”

As the cost of drones becomes more affordable and the benefits more recognized, some contractors are opting for more frequent flyovers.

“Because of the dramatically lower cost, it allows the end user to have me come out more than once during a construction project, to make a continuous log of the work that’s being done,” Van Fleet says. “Maybe we come out first to do locating work, then they go out and do some grading and have us come back out to make record of that. It’s a great way to keep a very thorough record of the site and has a much lower cost.”

Drone operators already have the capabilities to perform a variety of functions, and right now it’s just a matter of making those options known to contractors.

“Quickly calculating an overall site volume, doing weekly or monthly site volumes, and comparing the latest drone survey to the previous — if you’re working on haul roads, for example, and you have to survey it, we have a way to do that, including road grades, cross slopes, road widths and so on,” Frost says. “They can compare that to design or any kind of topographic survey.”

“We’re still in that educational phase, getting people more comfortable with the level of detail that can be provided here, getting them comfortable with overcoming any kind of technology barrier,” he says. “We do make everything super simple to use, because we have both ends of the spectrum in mind: those that have no technical background and those who want to get really technical and go down the road of customization.”

Though it’s the early days for the technologies, and contractors are just beginning to scratch the surface on potential uses and benefits, all these drone users say demand is increasing.

“I would definitely say that drones are becoming much more common, both for keeping record of the construction progress, with still images or video, and much more so on the mapping side,” Van Fleet says. “I think that is the main application for construction, where the end user can see some tangible benefits of the drone technology.”

VTA Drones also has a remote viewing service, where Van Fleet can inspect structures like bridges or towers — anything that might be difficult to access manually — and transmit those images back to workers on the ground or even in an office, so they can inspect remotely in real time.

Another service they offer is setting up servers and digital infrastructure to manage the extensive data collected by the drones.

“I would say the layering of that information is what’s really important,” Frost says. “We’ve built our platform with the ability to take in multiple types of data — giving that complete picture of a work site. That’s where we see the industry going.”

WHAT’S NEXT

So far, response to these technologies has been favorable, with most contractors jumping on board quickly once they are exposed. But even while most of the industry is playing catch-up, drone analytics companies like VTA Drones and Propeller Aero are already looking ahead.

“Where we see the most movement forward is being able to tie in, for example, the machine surface data,” Frost says. “The use of intelligent construction equipment is just taking off itself, and we feel that we’re very complementary to that. Drones are just a method of collecting that kind of information, and we definitely see other ways of collecting it.”

Dave Marzio, owner of Spearhead Locating Services and Justin Van Fleet, owner of VTA Drones, set up the drone for aerial mapping. Spearhead Locating Services partners with VTA Drones to map out their pre-construction surveys and markings.



PHOTOGRAPHY BY ARON EISENBERG



PHOTO COURTESY OF KOMATSU

As the cost of drones becomes more affordable and the benefits more recognized, some contractors are opting for more frequent flyovers. Drone operators already have the capabilities to perform a variety of functions, and right now it’s just a matter of making those options known to contractors.

Commercial drones and accompanying tech have only been on the market for a matter of years, but costs are already decreasing significantly and will most likely continue to do so, alongside an increasing catalog of software options and value.

“We’re just beyond that early adopters curve. Now the wider market is certainly starting to open up, but there’s still always an educational component: What can you do, what kind of investment — time, effort and so on,” Frost says.

As for contractors, with the increasing challenge of finding qualified help across the industry, technologies like this may help close the gap for those struggling to keep up with demand.

“It’s just a very new idea right now, and people are just starting to open their eyes to what’s out there,” Marzio says. ▼

BY CRAIG MANDLI



Bit is a fit for rocky soil conditions

PROBLEM

Josh Rishel with C & R Directional Boring in Clearfield, Pennsylvania, had been working alongside his crew in rocky ground conditions for several months. They have all-terrain rigs set up to handle rocky ground conditions, but switching out takes time and is costly.

SOLUTION

Made for situations such as this, the **Eagle Claw SD bit** from **Melfred Borzall** has integrated dome carbide blocks into the body to give greater wear protection and cutting power. Added conical carbides on the upper cutting face add more aggression to the bit's cutting power. The dome carbide blocks on the opposite side of the body also help transfer more power to the cutting surface as they push against the wall pack during rotation downhole.

RESULT The Eagle Claw SD bit not only held up to the unforgiving Pennsylvania soil, but with twice as many carbides as previous generations, it ran longer than anyone expected. "We have three AT drills, and this has saved us a lot of rock drilling," Rishel says. He continued to explain how they have put a good 30,000 to 40,000 feet on their Eagle Claw SDs, and "I don't think we've had to replace the teeth on one yet." His crew was able to increase their production speed without fear of breaking or excessive premature wearing on the tooling. The balanced cutting design ensured there was no vibration up the rod and to the rig, so that wear protection extended to the rest of his setup as well.

800-558-7500; www.melfredborzall.com



Company saves time and manpower with vacuum excavator

PROBLEM

Rock Underground, located in the city of Greenfield, Minnesota, needed a solution to pothole and locate underground utilities safely and efficiently.

SOLUTION

The company chose **Vac-Tron Equipment's LP 873 SDT vacuum excavator**, and Adam Rock, company founder, determined that vacuum excavation is the best method of identifying the location and accurate depth of a utility. "Being in the utility business we have to pothole utilities all the time," Rock says. "Whether it's a gas line, fiber optic or telephone cable, we use a Vac-Tron vacuum excavator 90 percent of the time to verify utilities so we don't hit them." The unit includes a Yanmar 49 hp Tier 4 Final diesel engine with 1,000 cfm vacuum blower for both wet/dry applications. "I chose high cfm obviously for the capability of what it can do sucking up the dirt," Rock says. "Everybody can buy the water pressure. Everybody can buy the blower. But the technology of the unit itself, the trailer setup, and the power it has, is why we choose Vac-Tron."

RESULT The units have met the company's expectations. "With a Vac-Tron, you can find it in 2 minutes and there you go. You don't need five guys on one job; you can take three guys and a Vac-Tron and run a whole job site out in an hour versus a 4-hour day, so it's more efficient," Rock says.

888-822-8766; www.vactron.com



Military reservation rehabilitates four large road-supporting parallel pipes

PROBLEM

Fort Drum, New York, a 25.4-square-mile U.S. military reservation and census-designated place, includes several towns and villages. Its aging infrastructure supporting military and residential activities requires ongoing maintenance and rehabilitation programs and projects. One such project focused on four large parallel 142-by-91-inch arched corrugated metal pipes, supporting a roadway over a trout stream, with a separation of 3 feet between each barrel for a total span of 56.3 feet. Meeting the existing structure's military loading classification for wheeled and tracked vehicle traffic was a project requirement. Two other complications applied: The buried bridge is set in the Black River, a recognized trout stream, and the military roadway needed to stay open. The structure couldn't be torn out and replaced, and river diversions had to be limited and carefully managed.

SOLUTION

CentriPipe, a centrifugally cast concrete pipe solution from **AP/M Permaform**, was selected and designed for the key arc elements. The design intricacies and the material properties ensured a structurally sound, watertight, rehabilitated buried bridge structure that meets the military load classification. Following dewatering and pipe preparation, the spincaster was pulled through each pipe a total of nine passes to spray thin layers of Perma-cast PL-8000, a fine aggregate composite concrete. The total thickness applied to each pipe was a little more than 2 inches over the corrugations, resulting in smoothly finished rehabilitated concrete arch pipes that look brand new.

RESULT

Rehabilitation of all four pipes, plus the installation of a specified fish ladder was completed in a month and a half.

800-662-6465; www.permaform.net



Airport stormwater drainage improved and expanded

PROBLEM

The original reinforced concrete pipe at Jackson-Medgar Wiley Evers International Airport in Jackson, Mississippi, had been in the ground for more than 60 years. Joint failures caused sinkholes, which were safety risks for the maintenance crew, and could cause damage to an aircraft if it left the runway. Additionally, if drainage could not be maintained, it would allow water to pond, attracting birds and increasing the potential for bird strikes to planes.

SOLUTION

For the drainage system, the designer wanted to use pipe with as few joints as possible. The key to that requirement and for maximum installation efficiency was 13,000 feet of thermoplastic **HP pipe** from **Advanced Drainage Systems** in diameters up to 60 inches. The Federal Aviation Administration-approved pipe was used to replace the failing reinforced concrete pipe and also for new runs.

RESULT

The pipe in 20-foot lengths had fewer joints than other pipe and was easy to move and install. The project met the airport's budget and needs to immediately address the worst areas. In addition to meeting long-life and other performance criteria, the polypropylene pipe provided an efficient means of installation. Speed was a critical factor because the airport could not shut down one of its two runways for an extended period of time to install the pipe.

800-821-6710; www.ads-pipe.com

(continued)



Traffic on major highway continues unimpeded during culvert replacements

PROBLEM

Two culverts on Highway 125 near Sainte-Julienne, 45 miles north of Montreal, Quebec, had failed almost entirely. Dirt and sediment accumulations had obstructed more than three-quarters of their flow capacity. Water seepage and pooling was jeopardizing the highway substructure's integrity. Open-cut replacement was out of the question since digging up the pipes would require blocking off well over half a mile of roadway. Quebec's Ministry of Transportation contracted Loiselle Excavation to replace the culverts using the pipe bursting method.

SOLUTION

For this project, Loiselle rented **HammerHead Trenchless pipe bursting tools** through HDDPlus of Les Cedres. The first culvert required upsizing the existing 98-foot-long, 24-inch-diameter concrete pipe with 28-inch IPS HDPE pipe. The second culvert, a 140-foot-long, 28-inch-diameter concrete pipe was to be upsized to 32-inch IPS HDPE pipe. For this bursting operation, Loiselle Excavation used a 24-inch pipe bursting tool and 20-ton winch. Full power from the pneumatic hammer was never required during either culvert's bursting operation. Loiselle Excavation used a 20-ton HydroGuide HG20 winch from to provide a constant forward tension on the pneumatic hammer. This maximized forward progress of the bursting head, hammer and product pipe by preventing swim.

RESULT Although time at each bursting site was two to three days, the pipe bursting operations took less than two hours each from start to finish. 800-331-6653; www.hammerheadtrenchless.com



Closing off a 60-inch penstock with an inflatable plug

PROBLEM

Grace-Titan DVBE was asked to remove a 5-foot section of the penstock that supplies Pacific Gas & Electric's Potter Valley hydroelectric plant in California. But it was a 100-year-old, 5-foot-diameter penstock, and Grace-Titan was told to expect flow leakage as high as 1,200 gpm and to account for this in the preparation and design of the repair solution. Instead, a physical block was needed and an existing 18-inch manway presented the best opportunity.

SOLUTION

With pipeline diversion ruled out due to its danger to workers and high cost, **Petersen Products** went to work fabricating a **plug** specifically to fit through the 18-inch manway. The plug was made to be folded for insertion through the manway, then inflated with water to fill and block the penstock.

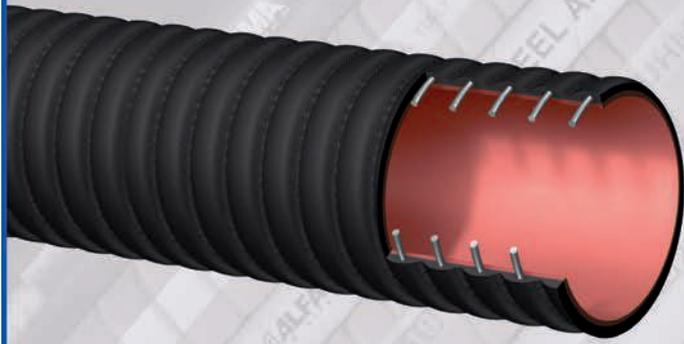
RESULT The plug was successfully inserted and blocked the water flow for the entire seven weeks of the project. 800-926-1926; www.petersenproducts.com ▼

Beyond buckets and blades.

digDIFFERENT

GET YOUR OWN COPY.
FREE subscription at digdifferent.com





THE BOOMER™

T704HA Series **CORRUGATED** Industrial Sewer Vacuum Hose

- **Abrasion Resistant Tube** – ¼" gum rubber tube designed for wet or dry applications where severe abrasion is a factor. Provides for long hose service life.
- **Heavy Duty Construction** – Thick tube and cover, high tensile strength fabric and durable steel helix wire designed for high pressure and vacuum application. All sizes rated to full vacuum, and PSI safety factor 3:1 (2"-8") and 2.5:1 (10").
- **Grounding Wire** – Steel wire helps prevent the build-up of static electricity and to help keep material flowing smoothly.†
- **Corrugated Outer Cover** – Provides increased hose flexibility.
- **"Cold-Flex" Materials** – Hose remains flexible in sub-zero temperatures. Has a service temperature range of -40°F (-40°C) to +212°F (+100°C).
- **Cuffed Ends Available** – Available with soft cuffed ends for easy installation and clamping.



Kuriyama of America, Inc.

www.kuriyama.com

sales@kuriyama.com



847.755.0360



Power To Go™ For Your Cab & Chassis



Vanair's PTO underdeck systems provide the power combination you need for applications such as: air excavation, CIPP, grouters, pipeline relining, cutters, and sewer inspection equipment



AIR COMPRESSOR
Up to 210 CFM



GENERATOR
Up to 12 kW



HYDRAULIC PUMP PAD
Torque output up to 77 Ft. Lbs.



ALL THREE
In any Combination

Why PTO?

Half the price of a tow-behind | Extra bed space
Increased maneuverability | Tier 4F Compliant
Less maintenance | Freed up hitch | Reduced weight



VANAIR
MOBILE POWER SOLUTIONS™

Vanair's There



Visit us at booth #3467



Visit us at booth #2369

[Youtube.com/VanairManufacturing](https://www.youtube.com/VanairManufacturing)

Put Vanair's Mobile Power Solutions™ To Work For You: 800.526.8817 vanair.com



MRP
MILWAUKEE RUBBER PRODUCTS

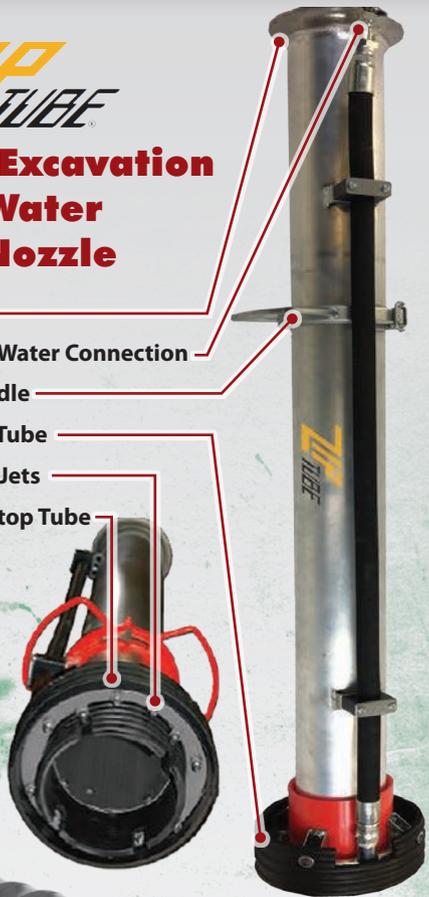
1.800.325.3730

www.MilwaukeeRubber.com

**ZIP
TUBE**

A Hydro Excavation Suction/Water Erosion Nozzle

- 6" or 8" Flange
- 1" F.P.T. Female Water Connection
- Adjustable Handle
- Splatter Safety Tube
- 12 Replaceable Jets
- Rubber Bump Stop Tube



Mention
this ad for
an exclusive
discount!

Kanaflex

KanaBoom

- Polyurethane Lined
Abrasion Resistant
Suction Hose
- Sizes: 1½" - 8"
- Available in bulk rolls
or custom cut lengths

TEXCEL

Tex-Comm

- (THE GREEN MONSTER)
- Heavy Duty Abrasion
Resistant Suction Hose
- Sizes: 2" - 12"
- Available in bulk rolls
or custom cut lengths

Kanaflex

180AR

- Heavy Duty
Abrasion Resistant
Suction Hose
- Sizes: 2" - 12"
- Available in bulk rolls
or custom cut lengths

Happenings

CALENDAR

Feb. 20-23

Water & Wastewater Equipment, Treatment & Transport (WWETT) Show, Indianapolis Convention Center, Indianapolis. Visit www.wwettshow.com

March 14-16

National Utility Contractors Association (NUCA) Annual Convention, Naples Grande Beach Resort, Naples, Florida. Visit www.nuca.com/convention

March 17-21

North American Society for Trenchless Technology's No-Dig Show, Donald E. Stephens Convention Center, Chicago. Visit www.nodigshow.com

March 19

Association of Equipment Management Professionals (AEMP) 37th Management Conference & Annual Meeting, Rosen Plaza Hotel, Orlando, Florida. Visit www.aemp.org

March 26-28

Common Ground Alliance (CGA) Excavation Safety Conference & Expo, Tampa Convention Center, Tampa, Florida. Visit www.cgaconference.com

March 28-30

Mid-America Trucking Show, Kentucky Exposition Center, Louisville, Kentucky. Visit www.truckingshow.com

April 6-7

National Heavy Equipment Show, International Centre, Mississauga, Ontario. Visit www.nhes.ca

May 3-9

4th ITA-AITES General Assembly and World Tunnel Congress (WTC), Mostra d'Oltremare, Naples, Italy. Visit www.wtc2019.com

May 21-23

NUCA Washington Summit, Holiday Inn Capitol, Washington, D.C. Visit www.nuca.com/summit

Dig Different welcomes your contributions to our Happenings column. To recognize members of your team, please send notices of new hires, promotions, service milestones, certifications or achievements. We also invite your national, state or local associations and organizations to post notices, news items and learning opportunities. Send contributions to editor@digdifferent.com. ▼

Does your work involve residential or commercial drain and sewer maintenance, cleaning and repair?

Cleaner
Then don't miss out on this important read.

FREE SUBSCRIPTION

CLEANER.COM

College for Contractors

THE NATIONAL UTILITY CONTRACTORS ASSOCIATION IS WORKING TO PROVIDE EASY ACCESS TO TRAINING RESOURCES

BY JARED RANEY

A new resource is brewing for utility contractors of all stripes at the National Utility Contractors Association. They're calling it NUCA University, a comprehensive digital education platform covering anything and everything related to utility work.

Step one, going on now, is combining and organizing the 50 years' material that NUCA has accrued.



"Our goal is to disseminate this information in a timely manner, with a minimum amount of effort from our members," says Jim Stepahin, director of education and training.

A big part of the process is bringing all their knowledge into the digital age and finding a way to incorporate

it into their website. They are also interested in working new media into the university, such as animation and video.

This isn't NUCA's first foray into digital education, as they have hosted webinars in the past and are in the process of developing that feature further.

The NUCA University began rolling out the platform in late September 2018.

As far as topics, NUCA is open to suggestions, but it will certainly encompass their current educational offerings, such as confined-space training, competent person training and pipe layer classes. "We're just in the throes of beginning to develop those kinds of things but would welcome any industry input," Stepahin says.

Right now, the organization's current training portfolio is focused on safety. The NUCA Competent Person Class is their most popular, with over 400,000 individuals completing the course since its beginning. Their confined-space training is also popular, with 250,000 trainees to date.

"Our classes are taught by our authorized instructors, many of whom are listed on our website under the safety training link," says George Kennedy, vice president of safety. "We developed the program; we train the instructors; and we created all of the materials."

The trainers go through their own separate education program through NUCA to become authorized. "They have to apply, and they have to be selected based on their background and experience, their knowledge of OSHA and their ability to be a trainer," Kennedy says.

The base cost for each of those trainings, which are offered as stand-alone opportunities, are \$150 for members and \$175 for nonmembers. Trainers may charge more depending on travel or other factors.

"In addition to offering live training, we also have courses on discs that we can actually send to people; they can actually conduct their own classes if they want," Stepahin says. Pipelayer Training consists of three modules,

The 7 Rules of Lateral Lining & Spot Repair

- 1 **Must be proven:** FORMADRAIN has been in constant use since 1994 and is the most proven system in the industry
- 2 **Must be a push-pull system:** It's the best way to position a repair exactly where you need it; inversion systems are just not the same
- 3 **Must use fiberglass & epoxy:** Felt or similar materials just can't do the job and require stitching different sizes together, creating weak spots, etc.
- 4 **Must be steam cured:** This way you can cure every pipe in the same time and with predictable results (we invented steam curing)
- 5 **Must be 100% green:** Formadrain has no VOCs (Volatile Organic Compounds) and doesn't even have a smell, making it friendly to family and households
- 6 **Must have total support:** We offer 360 Support, with on-site training, virtually live full access by phone (we have 5 engineers) and online refresher training
- 7 **Must have an extreme open time:** Our Durapox™ liner can be prepped and ready to go for up to 60 days before use, another industry breakthrough

Get the 2019 Report: www.Laterals.work
(888) 783-7415 or bruce@formadrain.com



Lateral Lining Perfected™
Visit WWETT booth 1461

or chapters, that can be bought individually for \$495 each or as a package for \$1,335.

"The pipe installation training program covers the fundamentals of water and sewer pipe installation using modern equipment and technologies. These programs can help your crews to work together safely and productively," according to the NUCA website.

Chapter 1 covers job layout; Chapter 2 is excavations, trenching, manholes and backfilling; and lastly, working with pipe is Chapter 3.

In addition to these programs, there are a number of resources available across the site for members only, such as "Toolbox Talks" and "NUCA Pit Stop."

"We're in the process of a new strategic plan," Stepahin says. "We're really excited about our NUCA University, and we have a definite road map forward. ... That's where we're headed with the information that we have currently at hand. But we're always looking for new avenues of communicating." ▼

BY CRAIG MANDLI

Air Excavation

Ramvac by Sewer Equipment AX-4000

The AX-4000 air excavator from Ramvac by Sewer Equipment offers a simple, single engine design with 12-volt electrical controls and manual hand valves for ease of use, while also providing operators the ability to excavate with both air and water effectively using only one truck. This series offers payload capacities from 5,000 to 12,000 pounds, while the hydraulic rear door allows operators to dump spoils quickly and easily. It allows you to customize your blower to achieve the results you need in any applications, with capacities of 18 or 27 inches Hg, 1,400 or 3,000 cfm and hose diameter of 4 or 6 inches. All water systems are contained within a single heated enclosure for cold weather applications, while also offering a large amount of standard tool storage.

888-477-7638; www.ram-vac.com



Casing/Piping/Tubing

RELINER/Duran Inside Drop Bowls

Eliminate troublesome outside drops and clean up failed inside drops. RELINER/Duran Inside Drop Bowls and stainless steel pipe support brackets simply bolt to the manhole wall and can be cleaned and inspected from above. The compact, low-profile bowls are available in dozens of sizes to fit any application. Modular Manhole Invert Channels improve manhole hydraulics, reducing maintenance, turbulence and odor.

800-508-6001; www.reliner.com



Excavator

John Deere 345G LC

The John Deere 345G LC reduced tail swing excavator adds another option to the manufacturer's 33-40 metric ton size class, providing customers with a larger machine with increased lift capacity, more reach, deeper dig depth and greater breakout forces compared to the 245G LC. It is suitable for work in road building, underground, building, landscaping and site development applications. It offers a 249 hp Final Tier 4 diesel engine with no diesel particulate filter aftertreatment and a three-pump hydraulic system that provides generous hydraulic flow for fast cycle times, greater flow for attachments and larger efficiency for improved fuel economy. An optional factory-installed auxiliary hydraulic package enables extra hydraulic flow to power larger attachments, like couplers and hammers. It has side-by-side cooling cores for maximum cooling efficiency and easy cleaning, meaning less downtime to clean debris and less overheating.

800-503-3373; www.johndeere.com



Hydroexcavation Equipment

Dynablast HV420FLS-12VRED

The Dynablast HV420FLS-12VRED hydrovac water heater produces 420,000 Btus with an output temperature of 175 degrees F at 5 gpm, making it suitable for colder climates and improved digging in clay-filled areas. The most



compact model leaves a 19-by-19-inch footprint. It is ETL-certified, resulting in consistent components used in the build and a limit on the stack output temperature, resulting in improved heat transfer between the Schedule 80 pipe and water. All models are factory tested for a plug-and-play install and come with two momentary override controls, which increase the serviceability, resulting in less downtime.

905-867-4642; www.dynablast.ca

Easy Kleen Pressure Systems Wildcat Heaters

Wildcat Heaters high-pressure, oil-fired hot-water/steam heaters and hydraulic pump systems from Easy Kleen Pressure Systems are designed for reliability and efficiency and are install-ready for vacuum trucks and hydroexcavators, according to the maker. A full range of heater options includes dry steam, redundancy packages, Schedule 80 and 160 stainless steel or A53 boiler pipe, fine-tuned temperature and flow-control systems. All coils are manufactured in-house, with CRN boiler-approved coils now available. Heaters can be designed for mounting in a cabinet or supplied as a completed cabinet unit. They are CSA- and ETL-approved.

800-315-5533; www.easykleen.com



Enz USA cutting ball

The water-driven cutting ball nozzle from Enz USA is available in 3- and 4-inch sizes; and it can move easily around curves in 3- to 6-inch polyethylene, steel or concrete pipes while safely removing roots and mineral deposits, resulting in no damage to the pipe. It works without impact but has the ability to switch to a vibrating nozzle. It comes with a hard metal front blade for pipes that are more than 50 percent clogged. The side blades are self-sharpening and maintain their sharpness over their entire service life. The cutting ball operates with controlled rotation speed and is capable of running on recycled water. It is leak-free.

877-369-8721; www.enzusainc.com



GapVax HV33

Designed to safely transport water and debris in urban areas, the GapVax HV33 is shorter, smaller and more compact than its predecessor. It is 30 feet long overall on a medium-duty chassis and includes a 600-gallon water tank, 6-cubic-yard debris body, a 14- to 17-foot 6-inch boom in 8 or 6 inches, 4,000 cfm power, and an inverted, full-opening tailgate.

888-442-7829; www.gapvax.com



Hurco Technologies hydroexcavation vacuums

The 250- and 550-gallon hydroexcavation vacuums from Hurco Technologies use quality components to provide maximum performance in a compact trailer or skid. They are ideal for smaller jobs to avoid needing to pull large vacuum units from other projects and for accessing delicate terrains or tight areas, such as golf courses and parks. The fully opening hydraulically powered door allows for easy cleaning, and the fixed-angle tank eliminates numerous maintenance and wear issues that arise with hydraulic-lift tanks.

800-888-1436; www.hurcotech.com



Hydra-Flex Ripsaw

The Ripsaw rotating turbo nozzle from Hydra-Flex provides a 0-degree water stream at up to 3,200 psi while rotating at a high speed for an 18-degree

cone of coverage. Its flow pattern is designed for potholing applications. The heavy-duty, high-impact nozzles are constructed with stainless steel housings and tungsten carbide wear surfaces to withstand harsh environments and provide long life, according to the maker. Repair kits are available. Select from traditional coating (blue) or upgrade to the heavy-duty coating (green), a formulation designed for use in extreme environments. Greater impingement allows users to complete jobs faster or use a smaller nozzle size while getting the same impact as nozzles with higher flow rates.



952-808-3640; www.hydralflexinc.com

Imperial Industries Hydro 3600 Hybrid Excavator

The Hydro 3600 Hybrid Excavator from Imperial Industries offers compact power and versatility, with capabilities that include digging trenches to locating fiber optic cables and clearing debris. It provides direct applications for septic hauling, utilities maintenance and emergency response situations. It can be operated by one person. Units are available in code and noncode.



800-558-2945; www.imperialind.com

Kaiser Premier AquaStar

The AquaStar fully featured recycler from Kaiser Premier includes a Kaiser KDU single-piston jetting pump that delivers up to 132 gpm of water with pressure up to 2,900 psi for large-diameter pipe applications. The combination rear-mounted jetting hose/suction boom allow optimal positioning at manholes for quick, efficient and safe cleaning operations requiring only one operator. The boom hose reaches 35 feet deep without any extension tubes, saving both setup/tear-down time. Intelligent controls optimize operational speeds, resulting in lower fuel consumption and maximized fuel cost savings. The ROTOMAX system is mounted inside a 12.8-cubic-yard stainless steel debris tank that holds spoils and serves as a settling tank. No exterior cyclones or microcyclones on the exterior make this self-cleaning system easy to maintain. The full-feature radio remote control allows free movement around the vehicle while a full-color LCD delivers real-time performance parameters. KAISERteleservice allows for remote diagnostics and support from trained technicians.



970-542-1975; www.kaiserpremier.com

LMT SMART-DIG HX-2100

The SMART-DIG HX-2100 hydroexcavator from LMT is powered by a 59 hp Kubota VT2403 diesel engine driving a 1,300 cfm Tuthill blower and 2,200 psi UDOR U.S.A. water blaster. The compact design includes a 700-gallon debris tank and 300 gallons of freshwater. The trailer has a fully automatic rear-open door with wireless remote control. Filtration is provided by the SMART-DIG drop-box and washable PTFE filters. An antifreeze winterization system is standard, and an optional diesel-powered water heater is available for colder climates and improved digging performance.



309-932-3311; www.vaxteel.com

NozzTeq MONRO-JET

The MONRO-JET hydroexcavation nozzle from NozzTeq combines the power of a solid-stream pencil jet with the large coverage of a fan jet, according to the maker. An orbital design increases performance at a lower



gallons-per-minute rate and pressures as high as 36,250 psi, allowing the operator to move faster when hydroexcavating, surface cleaning or cleaning sewer lines. It can be used for other types of surface cleaning such as concrete, steel, castings and large surface areas including line removal from runways. It can be modified for internal cleaning of sewers and pipes of all types.

866-620-5915; www.nozzteq.com

Presvac Systems Hydrovac

The Presvac Systems Hydrovac is designed for versatility and cold-weather operation with optional full compliance with DOT specifications for collection or transportation of hazardous materials. The high-vacuum blower allows extraction of all types of soils, gravel, rock, clay, water and silt material, with knockout features in the debris tank minimizing carryover. Modular filtration configured to blower size provides blower protection and minimal maintenance, according to the maker. It comes with a heavy-duty, 8-inch boom that extends up to 25 feet, with six-way hydraulic power and wireless controls for all boom functions, soft-start water pump, vacuum breaker and truck engine speed.



800-387-7763; www.presvac.com

Rival Hydrovac T10

The T10 from Rival Hydrovac is a larger version of the initial Rival T7 unit, which has become a suitable choice for many urban contractors who are aware of the trending weight restrictions on these types of trucks and realize the need to bring these trucks into compliance when driving on roads to disposal. It operates in the same manner as the T7, as it is fully hydraulic, eliminating the need for a transfer case, and aside from engaging one PTO, the entire truck is operated from the remote and rear panel. This unit features the same "pressure off" feature as the smaller units and has essentially the same controls.



403-550-7997; www.rivalhydrovac.com

Soil Surgeon hydroexcavating tool

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



949-363-1401; www.soilurgeoninc.com

Super Products Mud Dog 1200

The Mud Dog 1200 12-yard-debris-capacity hydroexcavator from Super Products has a rear-mounted boom capable of a 19- to 27-foot reach, 335-degree rotation, 45-degree upward and 25-degree downward pivot. This range of boom motion allows crews to achieve greater work area access and deeper digging without halting production to reposition the trunk. Easy-to-use ejector plate unloading technology provides fast, thorough and safe debris removal, according to the maker. A tilt-unloading feature ensures liquids in the debris tank are cleared efficiently, even when unloading in an up-slope/nose-down position. Options include the Acculevel load-sensor system for precise debris tank level measurement.



800-837-9711; www.superproductsllc.com

(continued)

Supervac Atlas

At 33 feet, the Atlas hydroexcavation trailer from Supervac is designed to combine the compact versatility of a regular vacuum truck with a payload capacity of 45,000 pounds. It is easy to maneuver with a tight turning radius and solves road weight limit issues, according to the maker. It comes with a flashing arrow and LED working lights, full-opening rear door, protection arm and LED light, a hydraulic door lock, 3,600-gallon carbon-steel debris tank and baffle, and a catwalk access ladder and handrail. Its six side-mounted and evenly distributed plastic water tanks (three on each side) have a total capacity of 1,500 gallons. It runs off the chassis engine of the tractor being used to haul the trailer. The unit's top-loading boom offers 320-degree rotation, extension of 25 feet, an 8-inch flex hose, top access door and protection elbow. A winterization package is available.

866-839-5702; www.supervac.co



Tornado Global Hydrovacs F4 ECOLITE

The F4 ECOLITE from Tornado Global Hydrovacs has a 12-cubic-yard mud tank and holds 1,550 gallons of freshwater. The unit is more than 7,000 pounds lighter than the company's older models and offers more than double the payload. The boom has a 342-degree rotation and a 26-foot reach. The smaller F3 ECOLITE is a 10-cubic-yard, 1,250-gallon tandem-axle unit that also more than doubles older payload capacities. It features an 8-inch boom and a 3,800 cfm blower.

715-441-7157; www.tornadotrucks.com



Transway Systems Terra-Vex HV38

The Transway Systems Terra-Vex HV38 has a 12-yard debris tank with onboard scales for worry-free loading. It features a 26-foot-by-8-inch telescopic boom, a one-touch-operated hydraulic half-door and a hydraulically driven blower providing 3,800 cfm at 27 inches Hg. Water pressure is achieved with a hydraulically driven triplex pump delivering 10 gpm at 3,600 psi from a 1,000-gallon HDPE baffled water tank. The water is heated with a 420,000 Btu diesel-fired burner for cold-weather operation.

800-263-4508; www.transwaysystems.com



Vac-Con X-Cavator

The X-Cavator from Vac-Con is designed to be powerful, durable and easy to operate. It features a hydrostatic drive using the chassis engine for vacuum, creating a more efficient system that eliminates the need for power takeoff, clutch and gearbox operation. It is available with water systems up to 4,000 psi and a mobile, wireless remote-control system controlling chassis engine revolutions per minute, boom, automatic vacuum breaker, dump controls and hydraulic door locks from up to a half-mile away. The boom rotates 270 degrees.

904-284-4200; www.vac-con.com



Vacall AllExcavate cold weather package

Vacall offers a step-in compartment on its AllExcavate hydroexcavators to protect operators from inclement weather. The standard heated compart-

ment has enough space for an operator to change out of wet and muddy boots and clothing. The compartment has floor drainage, racks to hang dry clothing and another rack to store the high-pressure handgun and extensions. Larger compartments with extra room are available. Along with new LED lighting, the cold weather package includes extra insulation, heated cabinets for the hose reel and water pumps, and boilers that can heat water for more effective hydroexcavation in frozen ground.

330-339-2211; www.vacall.com



Vector HXX QX

The Vector HXX QX vacuum excavator offers improvements in payload capacity, weight distribution, operation and performance. The placement of the debris body and water tank on the chassis ensures equal distribution of the payload on the axles, regardless of how much water is in the tanks. Each component of the truck is placed to ensure the entire chassis gross vehicle weight rating is used. A PrecisionFlow water pump system offers a single-piston design, which is capable of higher flow and pressures than a triplex water pump system for increased production and reliability. The truck is equipped with a QuietPak sound-damping system with a Robuschi USA positive displacement blower rated for 6,176 cfm and 28 inches Hg. The system delivers high airflow and quiet operation, with a decibel rating of less than 90 dBA throughout the revolutions per minute range.

800-627-3171; www.vector.com



Vector Technologies Mudslinger

The Mudslinger line of compact trailer-mounted hydroexcavation vacuums from Vac-Con, in cooperation with Vector Technologies, uses a 66.8 hp Kubota diesel engine with a 1,200 cfm at 16 inches Hg positive displacement blower and comes with a 535- or 845-gallon debris tank with 55-degree hydraulic dump hoist and a hydraulic door. The water system is 4 gpm at 4,000 psi with 50 inches of 3/8-inch hose and comes with a 225- or 325-gallon HDPE water tank. A 9-foot boom with 24 inches of hydraulic extension, hydraulic up/down and 270 degrees of manual rotation is also available. It is mounted on a heavy-duty welded tube steel trailer.

800-832-4010; www.vector-vacuums.com



Westech Vac Systems Wolf

The Westech Vac Systems Wolf noncode certified hydrovac truck is suitable for oil and gas customers working in extreme conditions. The debris body is positioned on the optimal spot of the chassis to ensure the payload is proportionately distributed across all axles simultaneously, maximizing legal payload for customers and improving operational efficiency. The side-mounted water tanks reduce the weight by more than 40 percent, lowering the overall cost of the truck. The 1,500-gallon capacity ensures ample water storage capacity for large or remote jobs. A top-mounted no-touch water fill system is easily accessible from the passenger side of the vehicle. The debris body is lifted using a telescoping, dual-acting hydraulic cylinder capable of 36,000 pounds of force. When fully extended, the debris body exceeds a 45-degree dump angle for fast and efficient off-loading. To help the off-loading process, a heavy-duty, hydraulically powered tank vibrator is mounted to the belly of the debris body. A standard splash shield has been fitted to the rear of the unit to direct the off-loading debris.

780-955-3030; www.westechvac.com





GEAREQUIP.COM



DRY SUCTION EXCAVATION TECHNOLOGY

THE NEW ENVIRONMENTAL SOLUTION WITH SUPERIOR HIGH SUCTION PERFORMANCE

- ③ DUMP ON SITE
- ③ NO WATER REQUIRED
- ③ UP TO 4X PRODUCTIVITY



GEAR EQUIPMENT INC. | 71 STEINWAY BOULEVARD | TORONTO, ONTARIO M9W 6H6 | 416.644.3076 | GEAREQUIP.COM

Pipe Bursting

Spartan Tool UnderTaker

With 30 tons of lateral pulling force, the UnderTaker pipe bursting system from Spartan Tool employs a hydraulically powered cylinder that pulls a bursting head through the existing line while simultaneously replacing it with seamless, high-flow, code-approved high-density polyethylene pipe. With a small hole at each end of the run, the user can pull pipe from the building to the main, accommodate bends in the pipe, increase diameter and lay new line at a rate of up to 5 feet per minute. The system allows replacement of 2- to 6-inch pipe with up to three 45-degree bends in the pipe. It can also upsize from 4- to 6-inch pipes. When assembled, the unit weighs 210 pounds, but it disassembles into four separate components for easy transport, with no part weighing more than 70 pounds.

800-435-3866; www.spartantool.com



Pipe Fusion

McElroy Hornet

The McElroy Hornet is an all-in-one outlet fusion tool for polypropylene pipe that provides an alternative to manual outlet fusion. Its design allows it to self-align on the center of the pipe, while a guided carriage facilitates the drilling of the outlet hole and fusion of the fitting for perfect alignment without repositioning the machine. A quick-change drill and fitting adapters keep the outlet hole and fitting aligned throughout the entire process for a more accurate fusion. With a small footprint and weighing just 11 pounds, it performs outlet fusions in any orientation, making it suitable for overhead and vertical fusions in tight spaces. It works with all McElroy socket heaters and fusion outlet adapters. An integrated ratchet



strap allows it to attach to a wide range of main sizes from 40 to 630 mm while installing outlets for 20 to 63 mm branches.

918-831-9236; www.mcelroy.com

Reed True Peel PE Prep Tool

The True Peel PE Prep Tool from Reed removes dirt and oxidation from the outside diameter of the pipe in preparation for electrofusion. Its spring-loaded blade does not skip and keeps consistent pressure on the pipe to yield a smooth, finished surface. The blade completely peels even out-of-round pipe with the help of the close-fitting mandrel, which rerounds oval pipe. The blade may be rotated to provide a second cutting edge, giving twice the blade life. An observation window allows the operator to view peel completion. These tools can be used on the ends of pipe or on tapping tee outlets. Each model is size-specific for both pipe size and wall thickness. Its low profile allows it to be used on tapping tee outlets with limited clearance.

800-666-3691; www.reedmfgco.com



Pipe Inspection

Envirosight ROVER X

The ROVER X from Envirosight lets an operator control inspections, view and record digital video, log observations, generate reports and link directly to asset management software. All these capabilities are packed into a simple three-piece layout, with no CCU or other components to clutter the workspace. Twelve wheel options — plus camera lift, carriage and illumination accessories — mean it transforms in seconds to inspect any size line. Its six-wheel drive with proportional



steering navigates past obstacles, and overlapping wheels climb offsets suitably. Powerful motors and a geared six-wheel drivetrain maximize travel range. It is built on an expandable digital backbone. Not only can you add side-scanning and laser profiling, you can view data from onboard sensors, automate tasks with macros and measure defects onscreen. Its firmware updates automatically to the latest features.

866-936-8476; www.envirosight.com

Forbest Products FB215

The FB215 crawler inspection camera from Forbest Products is suitable for 6- to 16-inch pipe and comes with a waterproof crawler with three types of wheels on the six-wheel-drive system and double motors that can turn left or right with the creeping speed of 20 to 66 feet per minute. The waterproof, pan-and-tilt, high-resolution color camera head's focus can be adjusted with the high-brightness LED lights. It carries 500 feet of cable and includes a meter counter and universal wheels with braking function. The heavy-duty, waterproof control box includes a 10-inch LCD color screen with USB and built-in SD card to record photos and videos. Typing and editing is available.

877-369-1199; www.forbestusa.net



Pipeline Rehabilitation/Lining

CUES CCTV inspection vehicles

CUES offers custom truck, van, ATV or trailer-mounted systems for TV inspection, condition assessment and rehabilitation needs. Made to withstand the most severe conditions and ergonomically designed for comfort and efficiency, vehicle-mounted systems can include TV inspection equipment for sanitary and stormwater lines, laser and sonar pipe profiling systems, mainline joint and lateral sealing, and lateral reinstatement cutters for the relining industry. Equipment can be ergonomically mounted to inspect 6-through 200-inch mainlines and 3- through 8-inch lateral services.



The truck interior can be customized, with cabinets, equipment and mounting configuration to fit unique requirements. Truck- and trailer-mounted grout rehabilitation systems are available for mainline, manhole and lateral joint sealing, and can be equipped with the latest CCTV equipment and decision support software for television inspection with documented condition assessment.

800-327-7791; www.cuesinc.com

Picote Solutions Dual-Color Epoxy Brush Coating System

The Dual-Color Epoxy Brush Coating System from Picote Solutions allows technicians to rehabilitate pipes from 1.25 to 12 inches for drains, sewers, water pipes, electrical conduits, and heat and air-conditioning ducts by brush casting a coating. The coating resin forms a pipe inside the original pipe that is a tested, safe and environmentally friendly product. The new pipe is dampproof, corrosion-resistant, wear-resistant and noncorrosive. It is ASTM and NSF certified (NSF/ANSI 61-5). It is a 100 percent solids epoxy, and the method allows for clear visual verification during the application process. Apply to small areas or all drains in multistory buildings. The system is practical and easily fits in tight places.

219-440-1404; www.picotesolutions.com



Pipeline Renewal Technologies VeriCure

VeriCure from Pipeline Renewal Technologies monitors cure temperature continuously along a CIPP liner during installation to ensure a complete cure every time. Designed to distinguish localized thermal variations, it takes readings every inch and averages into 18-inch measurement zones — a spatial resolution at least seven times that of other technologies. The accompanying software is tailored to CIPP professionals, delivering real-time data to help control cure for maximum quality and efficiency and summarizing the completed process, making it easy to document successful installation for the asset owner and consulting engineer. With its unobtrusive 3 mm probe, this technology preserves a liner's flow characteristics while providing necessary temperature data to ensure a complete, long-lasting cure. It makes it affordable to prevent lifts, delamination, overtensioning, and environmental contamination and leaves users confident that the host pipe is rehabilitated to specification and performs as intended.

866-936-8476; www.pipelinert.com



Vortex Quadex Lining System

The Quadex Lining System, featuring GeoKrete Geopolymer, from Vortex restores large-diameter pipes, culverts and tunnels of all types, including corrugated metal, concrete, brick and stone. The chemical composition of GeoKrete makes it inherently resistant to microbial-induced corrosion prevalent in sewer environments. GeoKrete has also received Reduced Carbon Footprint certification by SCS Global Services. Featuring a combination of advanced application technology and GeoKrete, the system ensures a fully structural renewal. GeoKrete can also be applied in layers and under multiple mobilizations — an advantage when inclement conditions call for a pause in the installation. Since it can be centrifugally cast, spray or trowel applied, it is able to line round and non-round shapes, as well as navigate bends and obstructions.

855-949-3441; www.vortexcompanies.com



Warrior Trenchless Solutions Thermoform

Thermoform from Warrior Trenchless Solutions is a PVC-alloy structural pipe lining system designed for the trenchless rehabilitation of failing sewer and culvert pipes. It is an environmentally friendly, styrene-free thermoplastic. There are no harmful emissions, and it does not rely on any chemical reaction during installation. Factory-controlled production with rigorous material testing ensures a consistent quality product that conforms to and exceeds the expected standards. The material is highly flexible, allowing it to expand and fit tightly to the host pipe, including changes in shape and dimensions. It is produced in sizes ranging from 4 to 36 inches in diameter, and the wall thickness can be varied according to the application. All installers must be accredited and audited to ensure the highest quality work possible.

716-601-7760; www.thermoformliner.com



Pipeline Surveying and Mapping

Vivax-Metrotech Spar 300

The Spar 300 from Vivax-Metrotech is a precise utility surveying system that collects positions to site coordinates. It continuously logs the utility depth and offset, along with statistical confidence and automatic offset calculations. It outputs the 3D positions to a Trimble TSC3 for real-time display on the Trimble Access map. During complex locating scenarios, it applies automatic tolerance masks to the position data, flagging these areas on the map. By only keeping casual contact to the underground utility line,



COMPETITIVELY PRICED, BUILT FOR ANYTHING.

Foremost designs and manufactures high quality and competitively priced Vehicle Mounted Vacuum Equipment for use in the Oil & Gas, Municipal, Industrial and Utility market segments across North America. With manufacturing capacity in our Alberta-based production facility and US distribution through our relationship with Transwest Trucks in Denver, Foremost is well positioned to meet the needs of this growing industry across North America.



foremost.ca/vac trucks
1-800-661-9190



transwest.com/hydrovac
855-243-5444

the system logs geospatial positions and expected error of the utility regardless of the perspective of the spar relative to the line. FieldSens Technology is based on the joint optimization of data from sensors against a physical model of the magnetic field expected from a utility line. The method minimizes the need to bring the measurement equipment to specific points related to the utility line in order to validate position.

800-446-3392; www.vivax-metrotech.com

Trenchless Pipe Replacement

Emagineered Solutions THE SHOOTER

THE SHOOTER from Emagineered Solutions is a continuous air-inversion machine for CIPP. Two fast and reliable models are available: the mobile SHOOTER 12 with built-in lubrication system and knife gate for after the tail passes for 6- to 12-inch pipe, and the trailer-mounted SHOOTER 24 for 15- to 24-inch lines. An optional conversion kit for the SHOOTER 12 inverts 15-inch liners and one for the SHOOTER 24 inverts 6- to 12-inch liners using the larger machine. A water-cure flange is also available. The new lubrication system includes an oil overspray guard that keeps operators dry. The fully adjustable, structurally reinforced LIPs are robust and are available in 4 through 24 inches.

541-504-0416; www.theshootercipp.com



Perma-Liner Industries Vinyl Ester

Vinyl Ester high-performance epoxy resin from Perma-Liner Industries provides corrosion resistance, durability and toughness for CIPP applications. It is well-suited for specific applications where fluid temperature is relatively higher and also for high-pres-



sure and corrosive environments. The molecular architecture delivers a number of benefits, including superior mechanical properties and catalyzed pot life. 866-336-2568; www.perma-liner.com

Pow-R Mole Sales Model P1-6RT

The P1-6RT mechanical rod turner from Pow-R Mole Sales integrates with the PD-6 Thrust Boring Machine and P1 Pusher Box to help install sewer pipes on grade and more accurately steer the bore to the target. It eliminates the need for pipe wrenches to turn the rods, making steering safer and more productive.



It creates 4,500 ft-lbs of torque, allowing the operator to steer the boring machine up to 200 feet. Quick disconnect hoses allow for fast and easy removal of the unit.

800-344-6653; www.powrmole.com

Connect with us!



facebook.com/DigDifferent

twitter.com/DigDifferent

linkedin.com/company/dig-different-magazine

THE LATEST: Products



1



2

1. Water Cannon 19K02 portable skid pressure washer

The 19K02 portable skid pressure washer unit from Water Cannon Inc. - MWBE is a totally self-contained system designed to fit into the 6-by-6-foot box of a pickup truck. Forklift slots and a lifting eye make loading easy and efficient. There is also a built-in winterization system, making year-round cleaning and transportation possible. It features 4 gpm at 3,500 psi and has a 14 hp Kohler gas engine with key start. The unit has a powder-coated frame, 225-gallon poly water tank, 10-gallon winterization system, stainless steel unitized valves and a Thermo Pump Protector that engages at 140 degrees F. It also comes with a manual hose reel and five spray nozzles. **800-333-9274; www.watercannon.com**

2. Load King Voyager Series mechanics body

Load King's new Voyager Series is a vocational collection of high-performance mechanics bodies designed to serve an array of heavy equipment industries. Three models are offered, which include the under-CDL Voyager I, the mechanics body Voyager II and the propane-service body Voyager P. Both the Voyager I and II offer modular control systems with a push-button control panel and an LCD diagnostic monitor, CTECH drawer sets, a custom-designed cab guard, compartment and bed storage and chrome-plated handles. Both models are available with optional rail gear. **888-264-5522; www.loadingtrailers.com** ▼

This Issue's Feature:

Perfecting the hydrovac

BY CRAIG MANDLI

In business, it often takes time to get it right. **Kaiser Premier** has taken that idea to heart with its **CV Series line of hydrovacs**, as the company has taken years to develop and perfect the line as, according to the company, every aspect of the hydrovac process was analyzed to ensure that the CV "pulls the most dirt in the least amount of time with the safest and most efficient operation possible."

"Since we acquired the patents to the original design, we have been tuning the machine largely to the voice of our customer base," says Dan Weber, president and CEO of Kaiser Premier. "Taking that feedback, we figure out the best way to implement and give it back to the customer to see how we did."

All critical components are centralized and housed in an insulated, heat-treated aluminum van body. According to Weber, operators especially appreciate the functional space located on both sides of the machine. The Robuschi DV-145 series of rotary three lobe positive displacement blowers can operate at high vacuum levels thanks to a device that injects atmospheric air. This device allows the blower to operate at maximum vacuum capacity without overheating. DV-145 series blowers can reach vacuum levels of up to 93 percent on a deadhead and 27 inches Hg without the need to inject water or use an upstream heat exchanger.



CV Series from Kaiser Premier

"The CV Series is both powerful and simple to operate," Weber says. "We utilize a dig-ready boom that comes off the truck ready to dig without extensions, saving setup, tear-down and cleaning time. All critical components are centralized in a protected, heated and insulated van body complete with plenty of lockable storage."

Its hydraulically assisted off-load method eliminates overhead conflict concerns when off-loading by avoiding the need to raise the tank. Rather than using gravity alone, it applies its mechanical advantage to quickly off-load compacted tank debris. To release hot high-pressure water, the vehicle can be equipped with a 700,000 Btu boiler. The transfer case is specifically designed for vacuum excavation trucks requiring a highly configurable and easily serviceable gearbox.

"Customers love the simplicity, power and ease of clean-out at the end of the day," Weber says. "The design is also extreme duty in nature, which is very popular for customers who spend a great deal of time off road and don't have time for their excavator to rattle itself apart. These take the abuse that some of the most demanding jobs can throw at them."

970-542-1975; www.kaiserpremier.com



Delivered Price – Quantity Discounts

WaterCannon.com

1.800.333.9274 (WASH)

en Espanol: 1.800.917.9274

<p>Hydraulic Driven 20 GPM up to 5000 PSI</p>	<p>Portable Electric - Low RPM 3.5 GPM 3500 PSI 7.5 HP</p>	<p>Portable Gas 4000 PSI Honda Kohler Lifan</p>	<p>Car And Truck Detailer Auto-Stop/Start - Complete with Reel 100' Hose</p>	<p>Hot Water Portable 420 cc Gas 4 GPM 4000 PSI 120 Volt</p>
<p>Hot Water Portable 440 cc Gas 4 GPM 4000 PSI 120 Volt</p>	<p>Hot Water Portable Honda 389 cc 4 GPM 4000 PSI 120 Volt</p>	<p>Hot Water Portable 440 cc 4 GPM 4000 PSI 12 Volt</p>	<p>Hot Water Portable Honda 389 cc 4 GPM 4000 PSI 12 Volt</p>	<p>Indoor Electric 5 to 50 HP 208/ 440/ 575 Volt Up to 15000 PSI</p>
<p>Hot Water Portable - Electric 3.5 GPM 3500 PSI 7.5 HP</p>	<p>Hot Water Electric Powered - Oil Fired Up to 50 HP Up to 8000 PSI</p>	<p>Electric Heated - Electric Motor High Capacity 10 GPM Up to 5000 PSI</p>	<p>7000 PSI Gas or Diesel Powered Industrial Package Hose Reel</p>	<p>Hot Water 150° F - 6'x6" 225 Gallon Gas and Diesel</p>
<p>Portable Auto/Truck Detailer Yard duty Trailer - 100 Gallon</p>	<p>Diesel Engine - Diesel Burner Up to 10 GPM 11,500 PSI</p>	<p>Hot Water LP Natural Gas Oil Fired Up to 2,000,000 BTU's 20 GPM</p>	<p>Cabinet Hot Water Heaters 12 or 120 Volt - Up to 2,000,000 BTU's 20 GPM</p>	<p>Customizable Jetter Packages 12 GPM - 3500 PSI</p>

Orlando | Phoenix | Minneapolis | Hattiesburg | Melbourne | Toronto | Bogota Int'l: 1-321-800-5763

Industry Trained Staff available from 8:30 a.m. to 6:00 p.m. weekdays E.S.T.

Water Cannon is proud to be a MWBE

VIVAX METROTECH

The vLoc3 Series Utility Locators, The Solution for Damage Prevention



vLoc3-Pro

- Color-coded EM distortion warnings
- Offset-vector locate mode
- Optional receiver/transmitter link
- Cloud-based data warehousing
- Internal data logging
- Optional Bluetooth connectivity



vLoc3-5000

- With internal GPS and BlueTooth
- Color-coded EM distortion warnings
- Offset-vector locate mode
- Optional receiver/transmitter link
- Cloud-based data warehousing
- Internal data logging



10-Watt

Transmitters



5-Watt

- Built-in AVΩ meter
- Overload protection
- Fault find frequencies
- SD (Signal Direction) mode
- External connection protection to 240VAC
- Transmit multiple frequencies onto a single line

Call us for your no obligation on-site demonstration!

800-446-3392



MyLocator3

MyLocator3 App - Manage a single or fleet of vLoc3 series utility locators with the free MyLocator3 app.

- **Data transfer** - download data collected from the locator including GPS coordinates
- **Software updates** - checks for locator updates whenever connected to internet
- **Lock Feature** - the locator's configurations and settings can be locked
- **Personalize** - Add owner/user information, picture or logo to the startup screen
- **Self-test and calibration verification** - assuring that calibration is good



Vivax-Metrotech Corporation

3251 Olcott Street,
Santa Clara, CA 95054, USA

Toll Free: 800-446-3392
Phone: +1-408-734-1400

Email: sales@vxmt.com
www.vivax-metrotech.com

Fast-Vac

Pioneers in
vacuum
technology

EST: 1981



- » Complete Safety Package
- » Many Options Available
- » Custom Built Vacuum Trucks, Roll-Offs and Hydro Excavators to Meet YOUR needs

Sales@Fast-Vac.com

www.fast-vac.com

21209 Durand Ave., Union Grove, WI 53182
800-558-2280 • 262-878-0756 • f: 262-878-4019

SHORT
PRODUCTION
TIMES!

THE LATEST: News

WJTA announces new editions of recommended practices, orange book

WJTA announced the availability of the new third edition of the Recommended Practices for the Use of Industrial Vacuum Equipment and the new Hydroblaster Orange Book. The vacuum recommended practices covers liquid vacuum trucks, liquid

ring trucks, sewer cleaner combo machines, hydro or pneumatic excavators, and air movers. The Hydroblaster Orange Book is a pocket-sized version of the *Industry Best Practices for the Use of High Pressure Water-jetting Equipment* and includes the same information and illustrations that appear in the original full-sized manual. ▼

Pumper

The liquid waste industry's **MUST READ** publication.

Since 1979, *Pumper* has been the definitive guide to the latest products, technologies and methods.

Subscribe for **FREE** at pumper.com

AS DEPENDABLE AS YOUR BEST HUNTING PARTNER



EASY-KLEEN

PRESSURE SYSTEMS LTD.
MANUFACTURER OF HIGH PRESSURE CLEANING EQUIPMENT



Visit Us At
Booth #5328



Your Complete Source for High Pressure Jetting and Cleaning Equipment

Vac Truck Heaters
up to 10,000 PSI
2,000,000 BTU



EZO440VCB

Dry Steam Generators
up to 50 BHP

Install Ready



EZO50ST-V

Van Pack Jetters
35 HP Vanguard



EZJ3512G-R
12 GPM @ up to 3500 PSI
with Optional Remote

CRN Boiler Approved Coils Available

**Fully Customizable
Hot & Cold Water
Jetter Trailers**



60 HP Kubota Diesel Engine
20 GPM @ 4000 PSI

WATCH NOW



www.youtube.com/easyklean



www.easyklean.com

1-800-315-5533

sales@easyklean.com

Proudly Made in North America

Durable Gear for Extreme Conditions



20 QT - \$149.99



45 QT - \$199.99



60 QT - \$239.99



75 QT - \$299.99



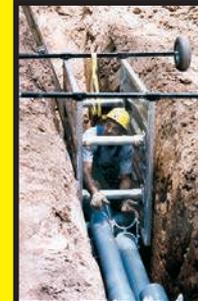
833-777-8443
RUGIDGear.com

ultra ultra ultra
LIGHT - VERSATILE - SAFE

ultraSHORE
PRODUCTS



Quick to Install.
As light as 130lbs.



Roll Your Own.
Optional wheel kit.



Stacks easily with
2' & 4' high panels.

This is What Aluminum Shoring Was Meant to be!



SAFETY CORPORATION OF AMERICA

1-800-683-8837

1-800-SH-ORING

CALL TOLL-FREE NATIONWIDE • 1-800-746-7464

www.shoring.com

EASY-KLEEN 
 PRESSURE SYSTEMS LTD.
 MANUFACTURER OF HIGH PRESSURE CLEANING EQUIPMENT
**GROUNDHOG
 JETTER** 


 Visit us at our Booth # 5328
OPEN JETTER TRAILERS



20 GPM @ 4000 PSI

ENCLOSED JETTER TRAILERS

(Hot Water)



VAN PACK JETTERS

35 HP Vanguard
 12 GPM @ 3500 PSI



Heater Package Available



 YouTube
www.youtube.com/easykleen

1-800-315-5533

www.easykleen.com sales@easykleen.com



= Thank You!

Hand-selected Wisconsin
 sausage and jerky
 delivered in a 20-qt.
RUGID cooler.

\$199.99 Delivered

Meaty-Delivery™

meaty-delivery.com

833-777-8443

EASY-KLEEN 
 PRESSURE SYSTEMS LTD.
 MANUFACTURER OF HIGH PRESSURE CLEANING EQUIPMENT


WOLVERINE
 DRY STEAM GENERATORS

DRY STEAM GENERATORS



20/30/40/50 BHP
 Up To 2,000,000 BTU

Curing
 Thawing
 Degreasing
 Degassing
 Melting
 Cleaning & Restoring
 Prepping Surfaces for Paint
 Purifying
 Weed Control



 YouTube
www.youtube.com/easykleen

1-800-315-5533

www.easykleen.com sales@easykleen.com

EASY-KLEEN 
 PRESSURE SYSTEMS LTD.
 MANUFACTURER OF HIGH PRESSURE CLEANING EQUIPMENT
 **BOOTH 5328** 
VAC TRUCK HEATERS



Install ready heaters for vacuum and hydro vac trucks. Rugged heavy gauge cabinets and frames for durability even in severe road conditions.

Up To 10,000 PSI

Up To 2,000,000 BTU

120 or 12 Volt Available



  YouTube 

1-800-315-5533

www.easykleen.com sales@easykleen.com



cleaner.com 

- > Classifieds
- > E-zines
- > Product Categories

GET EMAIL
 NEWS ALERTS FOR
digDIFFERENT
 Go to
digdifferent.com/alerts
 and get started today!

This is what it would look like if we printed DigDifferent.com
**- THOUSANDS OF STORIES,
 PRODUCTS AND IDEAS.**



Get access
 to everything
 we can't fit
 in the magazine.

Additional stories, videos,
 news briefs and other great
 information that lets you get
 the most out of Dig Different.

digDIFFERENT

www.DigDifferent.com

See you soon! Stop by Booth 6024 to see what's NEW! PLUS Demo in the Stadium

CONFERENCE
FEBRUARY 20-23
ORLANDO, FL
FEBRUARY 21-23
DALLAS, TX

wwett 19
Water & Wastewater Equipment, Treatment & Transport Show



GapVax®

#BestTrucksintheBusiness



30
YEARS
1989-2019

Combo JetVacs • Recycle JetVacs
Hydro Excavators • Air Movers
Jetters • Skid Mounted Vac Units
Parts & Accessories



We've got your
Vacuum Pumps & Blowers
and all the other parts and
accessories you need to succeed!

888-442-7829 Johnstown, PA 281-884-8658 La Porte, TX

www.gapvax.com

NEW RIVAL T10



RIVALTM
HYDROVAC



COST EFFECTIVE • EFFICIENT • LIGHTWEIGHT



LEARN MORE ABOUT THE RIVAL HYDROVAC TODAY!

UNITED STATES

855-243-5444 • WWW.DIGVAC.COM

CANADA

844-GO-RIVAL • WWW.RIVALHYDROVAC.COM