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DOWN & DIRTY:

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JD Christensen
Owner
Platinum Plumbing

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Small plumbing company adds directional drilling, excavation to list of services and finds a new path.

By Ken Wysocky

ON THE COVER:

Platinum Plumbing owner JD Christensen operates a Vermeer D23x30 directional drill from the backyard of a residence that is getting a new waterline installed in Pocatello, Idaho. The company has shifted from its start in typical plumbing work to more directional drilling and excavation work since it was founded by JD and his wife, Tana, in 2007. (Photography by William Schaefer)

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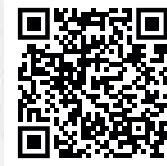
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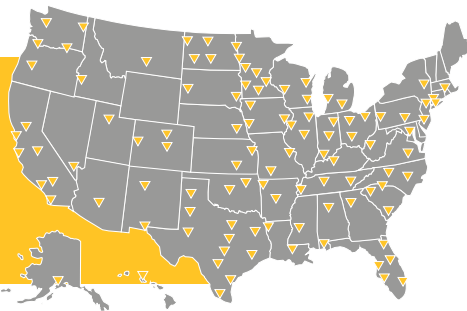


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Spotlight on Safety

INDUSTRY GROUPS TO PUT FOCUS ON SAFETY BY WORKING TOGETHER AND SHARING BEST PRACTICES

BY CORY DELLENBACH, EDITOR

It doesn't take long to find an instance of safety not being followed in this industry. Just open your web browser and search "trench collapse" or "utility accident" and you'll find a plethora of news articles, videos and more related to incidents.

We've featured articles focusing on safety within *Dig Different* numerous times — both in print and online — because it is so important. It's a subject I like to refer back to often throughout this publication.

When industry associations and organizations vow to work together to improve safety awareness, it's a

great day. This happened back in April in Wisconsin when OSHA's Wisconsin-area offices signed an alliance with the Wisconsin Underground Contractors Association and the Wisconsin Safety and Health Consultation Program to promote safety in the trenching and excavation industries.

The alliance will focus on hazards related to trenching, struck-by, underground utilities, confined space entry and roadway work zone safety goals by sharing WUCA's good practices on trenching and excavation safety.

AWARENESS ON RISKS

According to OSHA, 37 workers lost their lives in trenching and excavation work in 2022 and the industry is among the most dangerous in the nation.

"Alliance agreements provide a collaborative framework for using industry and professional resources to ensure workplaces are safe for everyone involved," says Chris Zortman, OSHA area director in Milwaukee.

The organizations involved in the alliance are planning to do several things together, including sharing WUCA's good practices on trenching and excavation safety; collaborating on training programs, workshops, seminars and lectures; and developing and distributing case studies on trenching incidents as learning tools, and more.

YOUR RESPONSIBILITY

With both groups working together to raise awareness on safety, it is hopeful that the fatality and accident rates will go down in 2023, but it's going to take more than two groups doing the work to make that happen. It will take you and your team as well.

The first thing you and your company can do is hold weekly safety meetings or safety evaluations before each job to go over the risks at each job site. Having those meetings will bring awareness and keep it fresh in the minds of those working the jobs.

Talk to your team members and see if they have any suggestions for increasing safety. The crew working in the field might have some fresh ideas with scenarios they see day-to-day. Letting them have a voice will also show their importance to the company.

Getting your team to safety training at conferences will help also. These can be conferences held within your own state or at bigger events such as trade shows. These conferences will allow you and your team to hear from experts in the industry and in the safety field.

HOW DO YOU HANDLE SAFETY?

What does your company do to bring awareness to job hazards and safety? Email me at editor@digdifferent.com and let me know. ▼



THE FIRST THING YOU AND YOUR COMPANY CAN DO IS HOLD WEEKLY SAFETY MEETINGS OR SAFETY EVALUATIONS BEFORE EACH JOB TO GO OVER THE RISKS AT EACH JOB SITE. HAVING THOSE MEETINGS WILL BRING AWARENESS AND KEEP IT FRESH IN THE MINDS OF THOSE WORKING THE JOBS.



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A SPIN ON 'VACUUM EXCAVATION'

Contractor Unearths Vacuum Cleaner

Running a vacuum excavation company has its moments of levity. Tim Brown of Santa Fe Vacuum Excavation has a story or two to prove it. In this online article, read about how Brown once uncovered an antique shop vac for a client.

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Drone view of a trench and pipe installation by Platinum Plumbing in southeast Idaho.

FULL PIVOT

SMALL PLUMBING COMPANY ADDS DIRECTIONAL DRILLING, EXCAVATION TO LIST OF SERVICES AND FINDS A NEW PATH

STORY: KEN WYSOCKY PHOTOS: WILLIAM SCHAEFER

JD and Tana Christensen never intended to do horizontal directional drilling when they founded Platinum Plumbing in Pocatello, Idaho, in 2007.

But the fact that directional drilling now generates the majority of the company's revenue underscores the value of pivoting to new markets when opportunity knocks and diversifying services. It also reflects the importance of taking calculated business risks and being the first to invest in advanced technology — such as directional drilling machines and a pipe bursting system — to enter emerging markets.

"It was a big-gulp moment," says Tana Christensen about the roughly \$40,000 the company, which does business as Platinum Directional Drilling, spent on a Vermeer D7x11 HDD machine from Vermeer Corp., plus another \$45,000 or so for a Vermeer mud-mixing machine and a flatbed trailer.

"We were into it for around \$85,000 all told," she continues. "It took a huge leap of faith. But JD had every confidence that it would work out. And it did."

Today, directional drilling generates about 65% of the company's revenue, excavation and pipe-bursting contribute around 20%, and plumbing service and repair work contributes the rest. The company's primary services are drilling boreholes for new residential water-service lines, pipe bursting to install new residential sewer laterals and small plumbing repairs.

"The only reason we still do small-service plumbing is to stay busy on slower days, especially in winter," Tana Christensen says. "It's nice to keep some cash flow going."

PLUMBING CAME FIRST

Directional drilling was not even a microscopic blip on the Christensens' radar when they established Platinum Plumbing, so-named because platinum — a dense metal with a high melting point — represents something valued, rare and tough, she explains.

JD got into the plumbing field because he had family in the industry and enjoyed the constant variety and the physical aspects of the work. After he graduated from high school, JD worked for a plumbing company in Pocatello, where he completed his apprenticeship.

Looking for a change of scenery after working for that company for six years and earning his journeyman's and contractor's license, JD left the plumbing field altogether to avoid competing with his former employer. Instead, he embraced the home-construction trade and then became a state plumbing inspector — the youngest one in the state at the time, she says.

"But he hated it — didn't like the office work," Tana Christensen says. So JD went back to home construction before eventually founding Platinum Plumbing.

"It was very scary because we didn't know anything about starting, owning or running a business," Tana Christensen says. "We did a lot of reading and talking to other business owners who were willing to share information. The Southeast Idaho Small Business Development Center also was very helpful."

Things started out slow and small, with about 75 jobs the first year, mostly small repairs obtained through word-of-mouth references from family and friends. JD did some rough-in and

trim-out plumbing for new-home builders, but soon stopped doing that because it was so time-consuming he couldn't do the kind of small service and repair jobs needed to build a business, she says.

"We were trying to grow a customer base through service work, so being available to do that kind of work was a big deal," she notes.

HEADING UNDERGROUND

The company pivoted to directional drilling in 2012 when a customer asked if there was a way to replace a leaking water-service line without disrupting his well-manicured front yard. JD then saw a contractor using a directional drill to install a fiber-optic line.

"He asked the contractor if he could hire him to drill a new water-service line," Tana Christensen says. "He agreed to do it and it worked very well. And JD went out and bought a Vermeer directional drill."

Learning how to use the machine required a "huge" learning curve that included lots of reading, watching YouTube videos and trial and error, she says.

"A month or two after buying it, we lost a 16-inch reamer and four rods in sandy soil in an area north of Pocatello," JD Christensen recalls. "The next day we lost a drill head under a garage at a home in Pocatello, about 8 feet underground. Thankfully, we had everything insured and the insurer came through."

NO TURNING BACK

At that point, a discouraged Tana wanted to quit, but JD declined, noting the company had too much money invested to turn back.

"Quit just isn't in JD's vocabulary," she says. "You can't be risk-averse and succeed in this business."

The takeaways from the experience? Success requires a lot of grit, faith and perseverance, Tana Christensen notes.

"And you need good business insurance," she adds.

An invaluable employee — Zach Hall — also contributes greatly to the company's growth and success, Tana Christensen says.

"Zach has been pivotal in our growth," she says. "He is a stellar employee that we are extraordinarily

JD and Tana Christensen opened Platinum Plumbing as a small plumbing business in 2007, but have since expanded to offer directional drilling and excavation services (mini-excavator from Bobcat).



"QUIT JUST ISN'T IN JD'S VOCABULARY. **YOU CAN'T BE RISK-AVERSE AND SUCCEED IN THIS BUSINESS.**"

Tana Christensen

lucky to have. He has grown, changed and emerged with us into the business we are today.

“That wouldn’t be an easy ask for anyone, but he’s done it with the same faith and confidence that we’ve put into the business since the beginning.”

GAINING TRACTION

Slowly but surely, the company established a customer base. One key to success was being the first business in southeast Idaho to own a directional drill as well as the only one to own one for quite a while. Moreover, the high cost deterred competitors from entering the market, Christensen says.

Another boost came from cities that started to replace their mainline water pipes on certain streets — around 20 to 30 houses at a time — and providing affected customers with an allowance to replace their water-services lines at the same time.

“The first job like that came about two years after we bought the drill,” Christensen notes. “Then we bid on one in a town north of Pocatello where the ground was mostly lava rock. We learned so much on that job (see sidebar) that we felt we could build the world after finishing it.

“Those projects were a huge boost for us — they basically jump-started our directional-drilling business,” she continues. “No one else had a directional drill and customers loved the fact that we didn’t have to dig up their front yards.”

By now, Tana Christensen estimates the company has drilled bore-holes for more than a thousand waterlines.

“We get many referrals for jobs that other companies don’t want to

“WE GET MANY REFERRALS FOR JOBS THAT OTHER COMPANIES DON’T WANT TO DO BECAUSE THEY’RE TECHNICAL, MESSY AND HARD. PEOPLE KNOW THAT IF A DIFFICULT JOB HAS TO GET DONE, THEY KNOW WE’RE GOING TO DO IT.”

Tana Christensen

do because they’re technical, messy and hard,” she explains. “People know that if a difficult job has to get done, they know we’re going to do it.”

SUCCESS BEGETS REFERRALS

Performing such work requires a comprehensive array of equipment. The backbone of the business is a Vermeer D23x30 directional drilling machine (30,000 pounds of pullback force and 24,000 pounds of thrust).

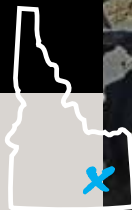
The company also has invested in a Vermeer mud-mixing system to mix drilling mud; a Vac-Tron Equipment-built LP555 industrial vacuum truck used for excavating in smaller, hard-to-access areas; Bobcat E45 and E88 mini-excavators; a Ford F-650 dump truck with a dump bed by Scelzi Enterprises; a Vermeer mini skid-steer; two Norstar Co. 14-foot Iron Bull dump trailers; and two flatbed trailers from Felling Trailers.



JD sets up the Vermeer D23x30 directional drill in the backyard of a residential job site in Pocatello, Idaho.

Platinum Plumbing LLC (dba Platinum Directional Drilling)

LOCATION: Pocatello, Idaho
OWNERS: JD and Tana Christensen
FOUNDED: 2007
EMPLOYEES: 3
SPECIALTIES: Directional drilling, excavation, service-and-repair plumbing
WEBSITE: www.platinumboring.com
SERVICE AREA: Southeast Idaho



The company also relies on a Portaburst pipe bursting system from HammerHead Trenchless (a Toro company); a Vermeer hole hammer piercing tool; pipeline-inspection cameras from Milwaukee Tool and RIDGID; a DigiTrak F5 locator from Digital Control; a Chevrolet cut-away box van with a box body by Supreme Corp.; and two Dodge pickup trucks (3500s).

The company also uses Housecall Pro business management software for invoicing customers.

The Portaburst pipe-bursting system, purchased about three years ago, enabled the company to further diversify its services. It all started when customers started asking if the company could do trenchless sewer lateral replacements.

The Vermeer D23x30 directional drill has 30,000 pounds of pullback force and 24,000 pounds of thrust.



The team at Platinum Plumbing includes, from left, owners JD and Tana Christensen, along with technicians Charli Christensen and Zach Hall. Future plans are to grow their company with employees dedicated to quality work and customer service.

At the time, JD still did conventional opencut line replacements. But then he encountered one customer with an unusually deep sewer line and a lot of trees in the yard.

“So we bought the Portaburst pipe bursting system, which by now has turned into another primary source of revenue,” JD Christensen says. “Pipe bursting jobs really picked up last year. ... There are a lot of aging Orangeburg-pipe laterals that are starting to fail around here.

SUCCESSFUL CONVERSION

Does Tana Christensen ever look back and marvel at how far the company has come since it bought its first HDD machine?

“I sure do,” she says. “It’s astounding. We basically went from nothing to a full-fledged business — it’s crazy.

“Some days it feels like a great success,” she continues. “But on other days, it feels like a huge burden because what we now pay monthly in bills is more than all the money we made in our first year in business.

“So with that level of liabilities, you have to carefully decide what you want for your business — find that balance between growing and standing pat — knowing where to put on the brakes.”

The couple would like to keep growing, but like so many contractors today, it’s difficult to find the employees needed to do that — people with good work ethics and a willingness to adhere to high standards for customer service and quality work, Tana Christensen says.

“We’re in a kind of in-between mode right now,” she says. “We’re trying to decide if we want to grow and hire people, then weed them out as best we can and then add another service truck, or stay where we are, which is working just fine.

“But overall, we’d like to grow the company,” she continues. “In the beginning, JD’s goal was to provide for our family. Now he’d like to help provide for other families.” ▼

Drilling Project Provided Valuable Lesson From School of Hard Knocks

It seems like most contractors encounter an unusually challenging job that either changes the fortunes of their companies or teaches them an important lesson that helps propel the business forward.

For Platinum Directional Drilling, based in Pocatello, Idaho, and which JD and Tana Christensen own, that pivotal project occurred in 2013, around a year after the company morphed from a mostly plumbing-oriented business into a directional drilling firm.

The company won a bid to drill boreholes for 66 residential water-service lines in Idaho Falls. At that point, the Christensens felt they had enough experience to do the job.

“We figured we’d done this enough to handle the project,” says Tana Christensen. “In our bid, we said we could finish the job in 45 days.”

That confidence diminished a bit when it took three days to drill only 10 feet for the first service line, using the company’s second directional drilling machine, a D20x22 unit from Vermeer Corp. The problem? Solid lava rock — a totally unexpected obstacle, she says.

“The contractor who hired us had dug a test hole, but it happened to be right where there wasn’t any rock,” Tana Christensen explains.

A Vermeer rep told the Christensens that they needed to use a roller-cone bit to grind through the rock. The bits cost about \$2,500 apiece and wear out quickly; the company ended up buying six, she says.

At times, the Christensens also had to use a duckbill attachment to steer the drill bit and move it back on course, she says.

Fortunately, after drilling boreholes for roughly half of the homes, the rock diminished and gave way to more sandy conditions. Still, it took about 2 1/2 months of 16-hour days, six days a week, to complete the project, Tana Christensen says.

“To say it was the job from hell would be the understatement of the century,” she says. “It was awful. We didn’t see our kids very much for months. But once you start, there’s no turning back.”

The good news: The primary contractor who hired Platinum agreed to pay more to compensate for the extra time on the job.

“We didn’t make as much money as we thought we would, but it still was a profitable job,” she says.

Furthermore, the couple learned a few valuable lessons: Avoid drilling work in Idaho Falls. Provide two bids on all projects — one for rocky conditions and one for non-rocky conditions. And buy a bigger directional-drilling machine, which the company did when it invested in a Vermeer D23x30 (30,000 pounds of pullback force and 24,000 pounds of thrust).

“Plus we now know how to work better in rocky conditions,” Tana Christensen notes. “In this business, you learn something new every day.”

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Overcoming Iron

CONSTRUCTION CREWS USE PIPE BURSTING TO REMOVE AND REPLACE CAST AND DUCTILE IRON WATER MAINS

BY JIM SCHILL

Across the United States, cities are fighting the battle against deteriorating infrastructure. While the power grid often steals the headlines, the infrastructure carrying one of the most precious resources, potable water, is also in need of serious attention. Municipal water systems around the country are suffering from aging water systems that are failing and in need of repair, replacement or rehabilitation. Often it is the use of trenchless construction applications that comes to the rescue and allows for work on these systems to be completed, underground, with minimal disruption above.

The city of Sioux Falls, South Dakota, experienced firsthand the issues with aging infrastructure when a segment of water transmission line needed replacement. The city contracted with Siteworks Construction in Sioux Falls to provide a solution through trenchless pipe bursting.

“They’ve had a couple of water transmission main failures due to corrosion near a tower. Two corrosion-related breaks over a five-year period. And it led them to believe that there were bigger problems with them,” says Jason Wilson, Siteworks president. “We have pockets of acidic, corrosive soils here. Some parts of town don’t have a problem, but in other parts of town, it’s a big problem. One of the mains was ductile iron, the other cast iron. The cast iron was from the early sixties and very brittle. Some of the issue is purely an age thing with the mains being 60-plus years old.

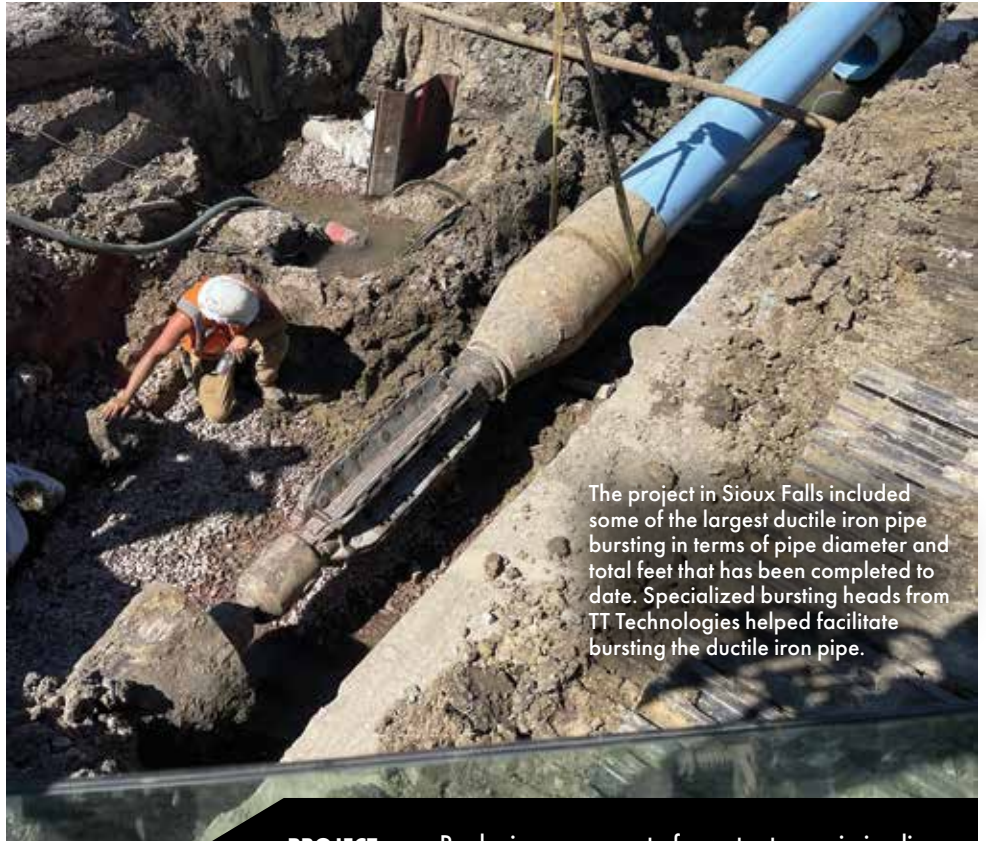
“[THE MAINS] WOULD BE EXTREMELY EXPENSIVE TO DIG UP AND REPLACE. THE CITY HAD NO INTENTION OF REPLACING THAT. AND THAT’S WHY THEY CHOSE A TRENCHLESS METHOD, PIPE BURSTING, FOR THE PROJECT. IT’S A LOW IMPACT APPROACH. AN OPENCUT JOB WOULD HAVE HAD A HIGHER PUBLIC IMPACT.”

Jason Wilson

“The mains ran under 41st Street in southwestern Sioux Falls, which is all concrete pavement, 9-10 inches thick. It would be extremely expensive to dig up and replace. The city had no intention of replacing that. And that’s why they chose a trenchless method, pipe bursting, for the project. It’s a low impact approach. An opencut job would have had a higher public impact.”

The project included bursting 2,000 feet of 16-inch cast iron main and 2,200 feet of 20-inch ductile iron main and replacing them with 16- and 20-inch fusible PVC (from Underground Solutions) respectively. Siteworks used a

PHOTOS COURTESY OF TT TECHNOLOGIES



The project in Sioux Falls included some of the largest ductile iron pipe bursting in terms of pipe diameter and total feet that has been completed to date. Specialized bursting heads from TT Technologies helped facilitate bursting the ductile iron pipe.

PROJECT: Replacing a segment of a water transmission line in Sioux Falls, South Dakota

CONTRACTOR: Siteworks Construction (Sioux Falls, South Dakota)

EQUIPMENT: **Fusible PVC**
Underground Solutions, Warrendale, Pennsylvania
858-679-9551; www.undergroundssolutions.com

1900G Grundoburst static pipe bursting system
TT Technologies, Aurora, Illinois
800-533-2078; www.tttechnologies.com

RESULTS: Success in bursting 2,000 feet of 16-inch cast iron main and 2,200 feet of 20-inch ductile iron main and replacing them with 16- and 20-inch fusible PVC

DOWN & DIRTY

1900G Grundoburst static pipe bursting system from trenchless equipment manufacturer TT Technologies to complete the work.

According to TT Technologies pipe bursting specialist Mark Dorn, the project was significant considering some of the host pipe material.



ABOVE: The Siteworks crew replaced the existing mains with 16- and 20-inch fusible PVC. LEFT: The project included pipe bursting 2,000 feet of 16-inch cast iron main and 2,200 feet of 20-inch ductile iron main. Crews used a 1900G Grundoburst static pipe bursting system.

“Ductile iron is a difficult host pipe to work with. And this was some of the largest ductile iron pipe bursting in terms of pipe diameter and total feet that’s been done,” Dorn says. “It was definitely a challenging project, but Siteworks and specifically Jason had the experience to make it happen.”

Wilson started his career in sewer and water and then started his own company, focusing on directional drilling and plowing, installing fiber and power utilities.

“Eventually, I circled back to the sewer and water industry,” Wilson says. “Altogether, I’ve been in the underground utility business since 1994. Now, even my son is trained-in and he’s running a crew. We’ve seen a bit of everything over the years.”

That level of experience would prove valuable for the pipe bursting project in Sioux Falls.

BURSTING CAST IRON

The Siteworks crew started with the 16-inch cast iron main at the east end of the project and worked west. Before any bursting could begin, temporary water service needed to be established for several businesses and residential areas.

“We had to do temporary water services for a couple of strip malls, restaurants, a gas station and an apartment complex,” Wilson says. “So, there were 6-inch and 2-inch temporary services feeding all those buildings. We came off fire hydrants from a block away with a 6-inch Yellowmine pipe. We crossed one driveway and did a temporary asphalt patch across the driveway at an apartment complex.”

Dividing up the bursting runs and establishing entry and exit pits was, in large part, dictated by side streets or mainline valves and fire hydrants along the length of the 16-inch main.

“The bursting pit locations depended on the street layout and where your major tie-in points were,” Wilson says. “For the machine pit we used two 16-foot trench boxes. You need to make the new pipe entry pit long enough to accommodate the bend of the pipe to reach the depth of the existing pipe. We needed that length, 34 to 36 feet.”

Despite being limited by side streets and tie-in areas, the Siteworks crew completed bursting runs. The city rerouted the flow of water in a few areas allowing for longer runs over 500 feet.

“Crews were very efficient at bursting the cast iron main,” Dorn says.

The Siteworks crew was able to complete the 16-inch portion of the project in the fall. The 20-inch fusible PVC pipe was delivered in winter. However, because temporary water services can’t be laid out in cold climates, bursting

began in late spring after school was out of session.

BURSTING DUCTILE IRON

The entire project, almost a mile in length, took place along a five-lane road. Siteworks blocked off two lanes, creating a narrow work area. The city landfill was located just to the west of bursting operations adding to the already high traffic area.

Bursting the 20-inch ductile iron main required a similar approach, layout and configuration as the 16-inch cast iron main. But in order to reach the depth of the existing ductile water main with the 20-inch diameter fusible PVC pipe, pits needed to be between 50 and 60 feet in length. The

extra pit length was needed to accommodate the bend radius of the fusible PVC product pipe. Once the product pipe was accommodated, bursting the ductile iron host pipe presented its own set of challenges.

According to Dorn, static bursting is one of the few trenchless methods that can handle ductile iron host pipe.

“Static pipe bursting is able to burst ductile iron pipe for several reasons,” Dorn says. “First is flat-out pulling power. The right systems have the hydraulic pulling muscle to tackle these pipes. However, that is just part of the equation. Specialized bursting heads along with wheeled cutting blades that are specifically designed for ductile iron pipe are needed to make bursting this pipe possible. The third component is knowledge. You must understand how the pipe reacts and can react in the bursting environment. Missing any of those pieces, bursting ductile iron pipe can be a frustrating experience, let alone costly.”

Wilson added, “There are so many unknowns and variables, and you don’t really know until you get started. If you’ve ever cut wet cardboard with a slightly dull box knife, the cardboard tears uncontrollably away from the blade versus dry cardboard that cuts cleanly, right where the blade goes. That’s kind of the concern with bursting ductile iron pipe. If the existing pipe has such low integrity, it’s not breaking where the cutter cuts it. It can telescope and fold up inside. And after you telescope two or three sections of pipe together, you can’t pull it anymore. You’ve got to go dig down and spend a day cutting off all these sections of pipe that have stacked up on each other.”

With the bursting runs established and the knowledge of the potential issues they faced, the Siteworks crew took a measured approach to the first few bursts in case crews ran into anything unexpected.

“As it turns out, the pipe was conducive to bursting,” Wilson says. “The first couple runs we did, we were a little nervous with this larger size pipe. I think our first one was only 180 feet, but it went really well. The next one was like 240 feet, and we also did a 380-foot burst. The first 95% of the pullback goes in in about 2 hours, but you still have another 2 hours of technical work to finish it up and get the last 20 feet into the pit. But everything came together.”

The experience of TT Technologies and Underground Solutions with their fusible PVC created a successful project. Additionally, Joe and Alex at Banner & Associates played a key role in designing this first of its kind project in Sioux Falls.

“The final key element is the open minded engineering staff at the city of Sioux Falls,” Wilson says. “Nick Borns is very progressive at new technologies and methods to effectively serve the growing city and its taxpayers.” ▼

Practicing Situational Awareness

WE SHOULD ALL TAKE ON THE RESPONSIBILITY FOR OUR COWORKERS' SAFETY AND WELL-BEING

BY RONNIE FREEMAN

Maybe you have heard of the phrase “situational awareness” recently. It has been used here and there in different settings and maybe you understand what it refers to, but do you know what it means?

Situational awareness can be useful in many areas of our lives. From going out shopping, being on vacation, being at the airport, driving our cars, walking in our neighborhoods, going to the park and answering an unexpected knock at the door. We can get complacent when nothing in our lives ever seems to be out of place. This is where employing situational awareness can be a great benefit in preventing incidents from happening whether at work or in our daily lives.

The definition of situational awareness has three parts: (1) perception of the elements in the environment, (2) comprehension of the situation and (3) projection of future status.

Perception – What information do I need?

Comprehension – What does this information mean to me?

Projection – What do I think could happen next?

Situational awareness has been recognized as a critical, yet often elusive, foundation for successful decision-making across a broad range of situations, many of which involve the protection of life and property. In the workplace, situational awareness is a great tool in injury prevention.

Simply put, situational awareness is knowing what is going on around us. What are the hazards? Understanding the consequences of our actions. Knowing how to respond should a critical situation arise. Knowing how to work safely in the environment we find ourselves in each day, whether it be in the office or in the field excavating a trench.

Simplifying the term situational awareness a little further, the following color codes give us a guideline so we know what state of situational awareness we might be in:

White — The lowest level. You are basically unaware of what is going on around you and you are not ready for anything to happen. Reasons affecting your status could be fatigue, stress, distractions or apathy.

Yellow — You are alert and aware yet relaxed. You are familiar with your surroundings and the employees and visitors who are in your area. You know where the emergency response equipment is located just in case, and you are prepared if needed to respond.

Orange — You are in a state of heightened awareness. You sense something is not right. This is the time to make important decisions in case something must be done. This is also the time to mitigate the situation if needed.

Red — Something has happened! You are taking decisive and immediate action. You recognize a threat is ongoing and you are responding to limit the damage done and promote recovery.

Black — Something is happening and you are now in panic mode because you are unprepared and do not know how to respond. There is a breakdown of mental and physical performance.

Sadly, too many of us live in the “white” status far too often. We have become so comfortable in our everyday lives that we tend to go through the



motions of daily living whether it is at work or at home or in our communities. Therefore, when hazardous situations arise, we are “shocked” and either do not know what to do or panic and do nothing at all.

Situational awareness should be important to all of us, and it is important that we are aware of the potential hazards in our work environment. We all should take on the responsibility for each other’s safety and wellbeing while at work and when we are out in public and at home as well.

WAYS TO IMPROVE SITUATIONAL AWARENESS

1. Do not allow yourself to be distracted. When you allow yourself to become distracted, you take away any chance at a proper response. Any response is then delayed and, in some cases, too late. Keep your phone someplace where it is not a distraction or temptation to constantly look at.
2. Have a plan, just in case. Always ask the “What if?” questions regarding your work situation and tasks at hand. What if the trench collapses? What if another employee passes out in a confined space? Have you been trained in the proper response to these major incidents?
3. Scan your area. Be alert and stay alert to what could potentially be a hazardous situation. Look for things that are out of the ordinary or just not right. An unusual loud noise in your equipment could be an early warning sign that failure is about to occur.
4. Have a designated escape route. If there is the potential for a situation to go bad, always have a plan of escape to minimize the danger and/or damage.
5. Train and practice being situationally aware. Safety training does not do anyone any good if it is ignored or just so routine employees doze off during the training and do not hear important information. Practice helps employees retain the training.

ABOUT THE AUTHOR

Ronnie Freeman is safety director for Mount Pleasant Waterworks and Safety Committee chair for the Water Environmental Association of South Carolina. ▼

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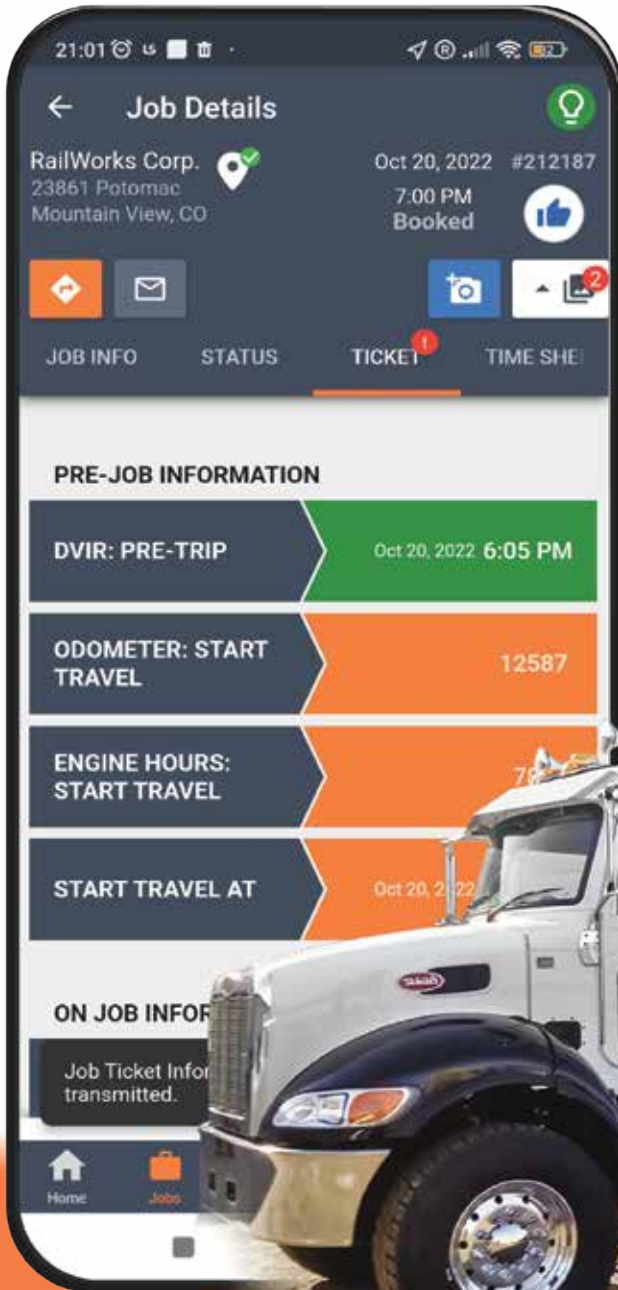
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Business Credit Basics

BUSINESS OWNERS WHO UNDERSTAND THE FIVE C'S OF CREDIT ARE MORE LIKELY TO RECEIVE A POSITIVE RESPONSE TO THEIR LENDING REQUEST

BY JOAN KOEHNE

Do you have your eye on a new directional drill or vacuum excavator to replace an over-the-hill model in your fleet? Are you outgrowing your current shop or office space? Is a friend in the industry ready to retire and offering you a golden opportunity to grow your business through acquisition? When it's time to take your business to the next level, without having to open your wallet or ask family or friends for cash, business loans and credit lines are viable options.

While you're looking at the next opportunity, the bank is looking at your credit worthiness and the risk associated with lending you money. According to Jerimiah Janssen, vice president of commercial banking at First Business Bank in Appleton, Wisconsin, each financial institution has its own way of making credit decisions, but many institutions rely on the five C's of credit: character, capacity, capital, collateral and conditions. The five C's pertain to both personal and business finances, which are closely linked for small businesses.

"If you want to borrow money to grow your business, the bank will look at you and the business together," Janssen says.

CHARACTER

Character refers to the borrower's credit history, which is represented in a credit report. A credit report lists an individual's payment history, current debt, loans and other financial obligations. Janssen says business owners should review their credit report before applying for a commercial loan or line of credit. That way, they can find and address any negative information in the credit report and fix any errors before the lender sees it.

Through www.usa.gov/credit-reports, individuals are entitled to a free annual credit report from three credit reporting agencies: TransUnion, Experian and Equifax. You can request the reports one at a time or all at once. Business owners with excellent credit (740 or above) are considered a better risk by lenders, so Janssen recommends paying mortgages, student loans, car payments and other obligations on time. Watch your credit card spending, also.

"If you have a \$5,000 limit and you're at \$4,900, that's a high utilization of the credit card, and it's going to report negatively compared with paying off the balance every month," Janssen says.

In addition to reviewing personal finances, lenders will review business finances. Lenders determine the character of a business by its "accounts receivable aging" statement.

"What we're looking at is how old is each account? Anything zero to 30 days is considered current. The further out it goes, the less likely you're going to be paid on that. Anything over 90 days is aged," Janssen says. "When you're invoicing, make sure you're following up, especially if things get out there longer than your terms. Just stay on top of that."

Lenders will also review the accounts payable statement to see how well the business pays its vendors.

"Hopefully, you're within 30 days of the agreed-upon terms. Anything other than that, we're going to be asking some questions about why you didn't pay this invoice," Janssen says.



Jerimiah Janssen,
vice president of
commercial banking
at First Business Bank

CAPACITY

Capacity refers to the borrower's ability to pay back the loan. A lender looks at the debt-to-income ratio, comparing how much money a business owes to how much money it earns. A lender also looks at a company's EBITDA — earnings before interest, taxes, depreciation and amortization. EBITDA measures a company's overall financial performance.

To improve their capacity in the eyes of a lender, Janssen says businesses should consider these questions: Have they prepared a business plan? Do they have a budget? Have they prepared a 13-month rolling cash flow?

By understanding their monthly cash flow, they can project the cash flow going forward, showing they have the capacity to repay a loan.

CAPITAL

Capital refers to how much money borrowers have invested in the company and how much they are able to invest in this new opportunity. For example, when buying an asset like a new truck, equipment or garage, a borrower will be asked to foot some of the bill. The more you finance yourself, the less risk the lender takes on, which can result in more favorable finance terms, Janssen says.

"A BORROWER SHOULD UTILIZE A LINE OF CREDIT FOR ANY TYPE OF PURCHASE THAT WILL BE PAID BACK WITHIN A YEAR."

Jerimiah Janssen

The amount of capital you'll be asked to invest depends on many different factors, including the amount of the loan and the payback schedule.

COLLATERAL

Collateral refers to the assets you're willing to pledge against the loan, in case of default. For example, if you take out a loan on a work truck, the lender places a lien on the truck as collateral. In the event of default, the lender may repossess the truck.

"If we are short on collateral, the financial institution may ask for a mortgage on your personal residence or a second residence. It depends on the type of loan program they are using to structure the request," Janssen says.

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Because they have so much to lose, borrowers should carefully assess the collateral they pledge.

CONDITIONS

Conditions refer to the internal and external factors that affect a loan, including the current interest rate and current market conditions.

“One thing we’re always looking at is: What is the purpose of the loan? Have you done any calculations as far as your return on investment?” Janssen says. “How quickly are you going to be paid back based on the investment you’re putting in?”

A lender will also want to see a pipeline of upcoming sales anticipated in the next couple of days or months.

“That can give us an insight into how strong the company is and how strong the market is as well,” Janssen says.

LOAN VS. LINE OF CREDIT

In addition to term loans, businesses can apply for a line of credit. The nice thing about a line of credit is its fluidity, Janssen says. A line of credit has a preset borrowing limit that can be advanced on, repaid and advanced on again. A line of credit should be utilized to finance accounts receivable and inventory.

“Typically, a borrower should utilize a line of credit for any type of purchase that will be paid back within a year,” Janssen says.

On the other hand, a term loan works well for assets that will take longer than a year to repay. Term loans are designed for specific, one-off expenses like purchasing a new building, buying machinery, or acquiring another business. Borrowers receive a lump sum of capital that they need to repay at a specific interest rate over a specific time period.

BUSINESS CREDIT APPLICATION PROCESS

When applying for business credit, a borrower will be asked to provide several documents:

- Last three years of personal tax returns
- A personal financial statement
- Last three years of company tax returns
- Last three years of company’s prepared financial statements
- Accounts receivable and accounts payable aging reports

BUDGET

- Depreciation schedule; equipment, vehicle and machinery list
- Additionally, a startup may be asked for other documents, including a business plan, resume or a list of skills and qualifications.

THE RIGHT LENDER

Funding a business out-of-pocket has limitations, especially for start-ups and organizations ready to leap to the next level. Thus, working with a lender can open the door to opportunity. The right lender serves as a trusted adviser and a valuable resource. Lenders not only connect borrowers with financing but also with the people and other elements they need to move their business forward.

“When choosing a lender, ask some questions of the financial institution and determine if they are a good fit for you and your business. See if they have history and experience in financing businesses in your industry,” Janssen says.

Before approaching the lender for a business loan or line of credit, assess your company’s financial status based on the five C’s of credit. Owners who master them are more likely to secure the loans they desire to grow their business. ▼




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Vacuum Excavation 2023

DIRECTORY



MODEL NAME	TYPE	Style	Debris Body Capacity (cu. yards)	Debris Door (dimensions)	Debris Body (dump angle)	Water Tank Capacity (gallons)	Standard Water Pump (gpm & psi)	Standard Blower (hg & cfm)	Filtration Type	
 Brandt Truck Rigging & Trailers 1806 2 St. Nisku, AB T9E 0W8 tf: 877-955-2770 p: 780-955-2770 www.brandt.ca/trucks See ad on page 31	HX120 Hydrovac	Hydro	Chassis	11.6	Hydraulic Latching System	1,150	16 gpm 3,000 psi	28" hg 4,000 cfm	Dual cyclone & cartridge	
 GapVax, Inc. 575 Central Ave. Johnstown, PA 15902 tf: 888-442-7829 p: 814-535-6766 f: 814-539-3617 www.gapvax.com Inquiry@gapvax.com See ad on page 39	GapVax VHX	Hydro	Chassis	7	Fully opening	50 degree	750	13 gpm 3,000 psi	28" hg 4,000 cfm	Wet/dry single mode
	HV55 Hydrovac	Hydro	Chassis	12 1/2	Fully opening	50 degree	400-1,400	5-40 gpm 2,000-5800 psi	28" hg 5,250 cfm	Wet/dry single mode
	HV56 Hydrovac	Hydro	Chassis	15	Fully opening	50 degree	400-1,200	5-40 gpm 2,000-5800 psi	28" hg 5,250 cfm	Wet/dry single mode
 KAISER PREMIER KAISER PREMIER 2550 East Bijou Ave. Fort Morgan, CO 80701 p: 970-542-1975 http://www.kaiserpremier.com sales@kaiserpremier.com	CV Series	Hydro	Chassis	11-13	96" x 48" half round	19 degree floor	1,800 - 2,250	20 gpm 3,000 psi	28" hg 6,600 cfm	3 stage
	UrbanX	Hydro	Chassis	8	67" diameter	35 degrees	800	10 gpm 3,000 psi	28" hg 2,400 cfm	3 stage
 Ox Equipment Inc. 1343 Sandhill Dr. Ancaster, ON L9G 4V5, Ste. 101 tf: 888-290-4044 www.ox-equipment.com info@ox-equipment.com	MTS Dino 4.5	Air	Chassis	6	Side dumping	138 degrees	Not Needed Slurry Free	Not Needed Slurry Free	Twin Fan Turbines	Automatic Self-Cleaning System Polyester Cartridge
	MTS Dino 8	Air	Chassis	10.5	Side dumping	138 degrees	Not Needed Slurry Free	Not Needed Slurry Free	Twin Fan Turbines	Automatic Self-Cleaning System Polyester Cartridge
	MTS Dino 12	Air	Chassis	15	Side dumping	138 degrees	Not Needed Slurry Free	Not Needed Slurry Free	Twin Fan Turbines	Automatic Self-Cleaning System Polyester Cartridge

Boom Size (ft.)	Degree of Rotation	Offloading Type	Controls Location	Wireless Y/N	Vacuum (cfm/psi)	Power Source	Compressed Air Flow	Compressed Air Pressure	Accessories Available	Other
28 ft.	340	Hoist, pressure offload, full open rear door, hydraulic vibrator	Control system integrated into truck chassis. Heated operator enclosure	Yes	4,000 cfm	Dual PTO			winterization lighting tool boxes racks cabinets	705,000 Btu diesel-fired coil burner, Payload accuracy, 4-point load cell system, Rear-door safety lock out and hoist lift, Abrasion-resistant, steel plate turret, 100' 3/8", high-temp, electric rewind reel, quiet, compact design & low tare weight, Remote Hose Storage Tray, Landspread, Pressure Offload, High-Voltage Proximity Detection, Full-Surround Camera Package, Cyclone Quick Clean Out, Rear Signboard, Wash Wand Package, Diesel Coolant Heater System, High Visibility Fluid Level Indicators, Decant Valve Package, Second Wash Reel, Corded Work Light, Quick Attach Life Line Static Reel, Trailering Package, Blower Diesel Flush
22 ft. reach with 15 degree downward pivot		Decant and fully opening tailgate	Curbside	Yes					winterization lighting tool boxes racks cabinets	21 filter bags; the following options: On-board scales with digital readout stops lading when set target is reached; 200 cfm air compressor; vertical heated cabinet for water system; water heater; glycol injection
17-25 ft. reach from center of truck	270	Decant and fully opening tailgate; auger and sludge pump options available	Curbside and driver's side, location varies depending on options	Yes					winterization lighting tool boxes racks cabinets	34 filter bags; 5 cyclones for superior filtration; safe working area on top of truck; various options available
17-25 ft. reach from center of truck	270	Decant and fully opening tailgate; auger and sludge pump options available	Curbside and driver's side, location varies depending on options	Yes					winterization lighting tool boxes racks cabinets	Optional 200 cfm air compressor; 28" hg blower, 6,000 cfm
8" x 26 ft.	340	Fixed, end dump, mechanical assist	Rear, curbside	Yes			200 cfm	200 psi	winterization lighting tool boxes cabinets	Air Compressor, air purge, ladder and platform, extreme weather package, 700K Btu boiler, trash pump, towing package, steam package, dual digging package, rear steps, custom dump door porting, extended van bodies
6" x 18 ft.	320	Full opening door, tilt and dump	Rear, curbside	Yes			200 cfm	200 psi	winterization lighting tool boxes cabinets	Air compressor, 400K Btu Boiler, air purge, ladder and platform
10" x 23 ft. Power Arm	180	Side Tipping	Driver's side	Yes	24,000 cfm	PTO to OMSI Transfer case	360 cfm	185 psi	lighting tool boxes racks cabinets	Hydrostatic ground drive system; Mega arm, stainless steel bin and lid, design panels, IKE excavation system, boom hose vibrators, container vibrators, high-rail system
10" x 23 ft. Power Arm	180	Side Tipping	Driver's side	Yes	24,000 cfm	PTO to OMSI Transfer case	360 cfm	185 psi	lighting tool boxes racks cabinets	Hydrostatic ground drive system; Mega arm, stainless steel bin and lid, design panels, IKE excavation system, boom hose vibrators, container vibrators, high-rail system
10" x 23 ft. Power Arm	180	Side Tipping	Driver's side	Yes	24,000 cfm	PTO to OMSI Transfer case	360 cfm	185 psi	lighting tool boxes racks cabinets	Hydrostatic ground drive system; Mega arm, stainless steel bin and lid, design panels, IKE excavation system, boom hose vibrators, container vibrators, high-rail system

(continued)

Vacuum Excavation 2023

DIRECTORY

MODEL NAME	TYPE	Style	Debris Body Capacity (cu. yards)	Debris Door (dimensions)	Debris Body (dump angle)	Water Tank Capacity (gallons)	Standard Water Pump (gpm & psi)	Standard Blower (hg & cfm)	Filtration Type	
 Presvac Systems 4131 Morris Drive Burlington, ON L7L 5L5 tf: 800-387-7763 p: 905-637-2353 f: 905-681-0411 www.presvac.com sales@presvac.com	Presvac HydroX Mini	Hydro	Chassis	7	Full diameter Full opening		800	18 gpm 3,500 psi Adjustable flow and pressure	28" hg 2,650 cfm	Cyclone and inlet Filter
	Presvac HydroX	Hydro	Chassis	15	78" Full opening	90 degree	1,000	18 gpm 3,500 psi Adjustable flow and pressure	28" hg 4,000-6,400 cfm	Two large cyclones and inlet filter
 Rival Hydrovac Inc. Box 5 Major, SK S0L 2H0 tf: 844-467-4825 p: 403-550-7997 www.rivalhydrovac.com tdell@rivalhydrovac.com See ad on page 9	Rival T7	Hydro Air Option	Chassis	7	54" Full opening rear door two-stage hoist	40 degree	800	10 gpm 3,000 psi	27" hg 2,650 cfm	Cyclone and cartridge
	Rival T10	Hydro Air Option	Chassis	10	54" Full opening rear door two-stage hoist	40 degree	1,200	10 gpm 3,000 psi	27" hg 3,850 cfm	Cyclone and cartridge
 Super Products LLC 130 W. Boxhorn Dr. Mukwonago, WI 53149 tf: 800-837-9711 www.superproducts.com info@superproducts.com See ad on page 3	Mud Dog 700 Vacuum Excavator	Hydro, Air Option	Chassis	7		50 degree	600	11 gpm 3,000 psi	18" hg 3,100 cfm or 27" hg 3,700 cfm	
	Mud Dog 1200 Vacuum Excavator	Hydro, Air Option	Chassis	12	Full opening rear		1,500	18 gpm 3,000 psi	28" hg 5,800 cfm	
	Mud Dog 1600 Vacuum Excavator	Hydro, Air Option	Chassis	16	Full opening rear		2,000	18 gpm 3,000 psi	28" hg 5,800 cfm	
 Tellus Underground Technology 200 Hester St., PO Box 157 Portland, PA 18351 tf: 866-579-9911 p: 570-234-0325 f: 570-245-0026 www.tellusunderground.com rlyon@tellusunderground.com See ad on page 5	TUT-5500	Air	Chassis	1.5	25" diameter	55 degree	70	3.5 gpm 1,500 psi	15" hg 1,200 cfm	Self cleaning 1.0 micron
	TUT-6500	Air	Chassis	2	25" diameter	55 degree	70	3.5 gpm 1,500 psi	15" hg 1,200 cfm	Self cleaning 1.0 micron
	TUT-2001	Air	Trailer		1			70	3.5 gpm 1,500 psi	15" hg 1,200 cfm
 TRUVAC 1621 S. Illinois St. Streator, IL 61364 p: 815-672-3171 www.truvac.com sales@truvac.com See ad on back cover	APXX	Hydro	Chassis	12 or 14	3/4	50 degree	1,200	10 gpm 3,000 psi	27" hg 5,250 cfm	Dual Cyclone and 5 micron polyester final filter
	HXX	Hydro	Chassis	12 or 15	3/4	50 degree	1,200	10 or 20 gpm 3,000 psi	18" hg, 4,970 cfm 28" hg, 5,200 cfm 28" hg, 6,176 cfm	Single or dual Cyclone and 5 micron polyester final filter
	FLXX	Hydro	Chassis	10	3/4	50 degree	800	10 gpm 3,000 psi	16" hg 3,200 cfm	Dual Cyclone and 5 micron polyester final filter
	Paradigm	Hydro Air	Chassis	3.34	3/4	50 degree	300 Air Only: 100	8 gpm 2,500 psi	15" hg 2,200 cfm	
	TRXX	Hydro	Trailer	2.48 or 3.96	3/4	50 degree	200 or 400	5 gpm 3,000 psi	15" hg 1,000 cfm	5 micron final filter

Boom Size (ft.)	Degree of Rotation	Offloading Type	Controls Location	Wireless Y/N	Vacuum (cfm/psi)	Power Source	Compressed Air Flow	Compressed Air Pressure	Accessories Available	Other
6" x 20 ft.	340	45 degree dump and optional pressure off-load	Passenger	Yes					winterization lighting tool boxes racks cabinets	Can be built to DOT/TC Code
8" x 25 ft.	340	45 degree dump and optional pressure off-load	Passenger	Yes					winterization lighting tool boxes racks cabinets	Can be built to DOT/TC Code
6" x 20 ft.	342	Tilt and pressure off	Curbside	Yes	2,650 cfm	PTO/ Hydraulics	200 cfm optional	200 psi optional	winterization lighting tool boxes racks cabinets	All accessories are included; Weights displayed on wireless remote back-up cameras standard; Retractable railing atop truck
8" x 25 ft.	342	Tilt and pressure off	Curbside	Yes	3,850 cfm	Transfer case or hydraulics	200 cfm optional	200 psi optional	winterization lighting tool boxes racks cabinets	All accessories are included; Weights displayed on wireless remote back-up cameras standard; Retractable railing atop truck
8" diameter with 18 ft. reach	270	Dump unloading	Cabinet	Yes					winterization lighting tool boxes	
8" diameter with 19-27 ft. reach	335	Eject unloading	Dog House	Yes					winterization lighting tool boxes	
8" diameter with 19-27 ft. reach	335	Eject unloading	Dog House	Yes					winterization lighting tool boxes	
4"	270		Rear of Truck	No	1,200 cfm @ 7.5 psi	Diesel Engine	185 cfm	150 psi		Operates both dry and wet, 200 psi compressed air available
4"	270		Rear of Truck	No	1,200 cfm @ 7.5 psi	Diesel Engine	185 cfm	150 psi	winterization lighting tool boxes racks cabinets	
4"			Rear of Truck	No	1,200 cfm @ 7.5 psi	Diesel Engine	185 cfm	150 psi		
8" diameter	320	dumping, tilting debris body	curbside	Yes	185 cfm/ 150 psi or 300 cfm/ 250 psi	Chassis				winterization lighting tool boxes racks cabinets
8" diameter	320	dumping, tilting debris body	curbside	Yes	185 cfm/ 150 psi or 300 cfm/ 250 psi	Chassis				
6" diameter	340	dumping, tilting debris body, optional sludge pump	curbside	Yes	185 cfm/ 150 psi	Chassis				
6" diameter	195	dumping, tilting debris body	curbside	Yes	185 cfm/ 150 psi or 300 cfm/ 250 psi	Chassis				
4" diameter	170	dumping, tilting debris body	curbside	Yes	N/A	Auxilliary				

(continued)

Vacuum Excavation 2023

DIRECTORY


MODEL NAME		TYPE	Style	Debris Body Capacity (cu. yards)	Debris Door (dimensions)	Debris Body (dump angle)	Water Tank Capacity (gallons)	Standard Water Pump (gpm & psi)	Standard Blower (hg & cfm)	Filtration Type
 <p>Vac-Con, Inc. 969 Hall Park Rd. Green Cove Springs, FL 32043 p: 904-284-4200 www.vac-con.com info@vac-con.com See ad on page 11</p>	Mudslinger MS800	Hydro	Trailer	4		55 degree	325	4 gpm 4,000 psi	16" hg 990 cfm or 1,190 cfm	Dry Filter Package
	Mudslinger MST800	Hydro	Chassis	4		55 degree	325	4 gpm 4,000 psi	16" hg 990 cfm or 1,190 cfm	Dry Filter Package
	Mudslinger MXT	Hydro	Chassis	3 to 16		50 degree	800 to 1,300	11 gpm 2,200 psi	200" H2O 8,000 cfm	Single stage separator
	X-Cavator CXT	Hydro	Chassis	9, 11, and 12	Flat style rear door	50 degree	800 to 1,300	20 gpm 4,000 psi	200" H2O 8,000 cfm	Dual cyclone
	X-Cavator EXT	Hydro	Chassis	12		50 degree	1,500	20 gpm 4,000 psi	28" hg 6,176 cfm	Cyclone separator 26" pleated cartridge final filter
 <p>Vacmasters 5879 W 58th Ave. Arvada, CO 80002 tf: 800-466-7825 p: 303-467-3801 f: 303-420-3971 www.vacmasters.com cbell@vacmasters.com</p>	Vacmasters SpoilVac	Hydro	Chassis & Trailer	1, 2.5, 4, 5, 6	25" Posi-Seal full Hydraulic	45 degrees	200 additional water available	4 gpm 3,000 psi	15" hg 860 cfm	Cyclonic/ cartridge
	Vacmasters System 1000	Hydro & Air	Chassis & Trailer	1.5 or 2.5	25" Posi-Seal full hydraulic	45 degrees	85 additional water available	4 gpm 3,000 psi	15" hg 860 cfm	Cyclonic/ cartridge
	Vacmasters System 3000	Hydro & Air	Chassis	1.5	25" Posi-Seal	45 degrees	110 additional water available	4 gpm 3,000 psi	15" hg 1,220 cfm	Automatic purge/ cyclonic/ cartridge
	Vacmasters System 4000	Hydro & Air	Chassis	2.25	25" Posi-Seal	55 degrees	85 additional water available	4 gpm 3,000 psi	15" hg 1,220 cfm	Automatic purge/ cyclonic/ cartridge
	Vacmasters System 5000	Hydro & Air	Chassis	2.75 or 3.5	48" full opening hydraulic	45 degrees	85 additional water available	4 gpm 3,000 psi	15" hg 1,700 cfm	Automatic purge/ cyclonic/ cartridge
	Vacmasters System 6000	Hydro & Air	Chassis	4.75	60" full opening hydraulic	30 degrees	85 additional water available	4 gpm 3,000 psi	16" hg 2,200 cfm	Automatic purge/ cyclonic/ cartridge

Boom Size (ft.)	Degree of Rotation	Offloading Type	Controls Location	Wireless Y/N	Vacuum (cfm/psi)	Power Source	Compressed Air Flow	Compressed Air Pressure	Accessories Available	Other
9 ft. boom with 16 ft. x 4" boom hose	270	Full open hydraulic dump door and hydraulic dump hoist	Passenger side	Yes	990 or 1,190 cfm	49, 74, or 114 hp Kubota diesel engine			winterization lighting tool boxes racks	
9 ft. boom with 16 ft. x 4" boom hose	270	Full open hydraulic dump door and hydraulic dump hoist	Passenger side	Yes	990 or 1,190 cfm	49, 74, or 114 hp Kubota diesel engine			winterization lighting tool boxes racks	
6 ft. boom with 8" vacuum intake hose	270	Full opening rear door	Passenger side	Yes		Hydrostatic drive Vac-Con 3-stage fan PD blowers available			winterization lighting tool boxes racks	
10 ft. boom with 8" vacuum intake hose	270	Hydraulically-driven scissor lift	Centrally-located passenger side	Yes	5,775 cfm	Hydrostatic drive PD blower or 3-stage fan			winterization lighting tool boxes racks cabinets	
7 ft. boom with 26 ft. reach	310 degrees horizontally +45/-22 degrees vertically	Hydraulic scissors lift	Passenger side	Yes	6,176 cfm	Transfer case PD blower			winterization lighting tool boxes racks cabinets	Operator enclosure, heat or AC climate controls
Hose assist arm	360	Hydraulic dump	curbside	No	860 cfm	49 hp Kubota T-4 Final	N/A	N/A	winterization lighting tool boxes racks	Vacmasters SpoilVac full hydraulic door reverse flow
Hose assist arm	360	Hydraulic dump	curbside	No	860 cfm	74 hp John Deere T-4 Final	100 cfm	150 psi	winterization lighting tool boxes racks	For all models: Wheelbarrow Mount Barrel Top Interceptor Core Drill/Generator Pneumatic Jack Hammer Pneumatic Tamber Sand Blaster
		Hydraulic dump	curbside	No	1,220 cfm	99 hp John Deere T-4 Final	165 cfm	185 psi	winterization lighting tool boxes racks	
Hose assist arm	180	Hydraulic dump	curbside	No	1,220 cfm	155 hp John Deere T-4 Final	300 cfm	220 psi	winterization lighting tool boxes racks	For all models: Wheelbarrow Mount Barrel Top Interceptor Core Drill/Generator Pneumatic Jack Hammer Pneumatic Tamber Sand Blaste
Hose assist arm	180	Hydraulic dump	curbside	Yes	1,700 cfm	173 hp John Deere T-4 Final	300 cfm	220 psi	winterization lighting tool boxes racks	
5" hose extends 22 ft.	270	Hydraulic dump	curbside	Yes	2,200 cfm	250 hp John Deere T-4 Final	350 cfm	250 psi	winterization lighting tool boxes racks	

(continued)

Vacuum Excavation 2023

DIRECTORY

MODEL NAME	TYPE	Style	Debris Body Capacity (cu. yards)	Debris Door (dimensions)	Debris Body (dump angle)	Water Tank Capacity (gallons)	Standard Water Pump (gpm & psi)	Standard Blower (hg & cfm)	Filtration Type	
 <p>Vermeer 7835 Augusta Road Piedmont, SC 29673 t: 888-822-8766 www.vermeer.com/na/ vacuum-excavation See ad on page 7</p>	VXT300	Hydro	Chassis	8	Cam-over hydraulic door	50 degree	800	10 gpm @ 3,000 psi	18" hg 3,500 cfm	Dual cyclones, 2 micron washable filter
	HTV 873 PTO	Hydro	Chassis	4	Hydraulic claw door	50 degree	400	4 gpm @ 3,000 psi	16" hg 1,000 cfm	Cyclone, .5 micron washable filter
	LP SDT	Hydro	Trailer	2.5 - 6	Hydraulic claw door	45 degree	200 - 400	4 gpm @ 3,000 psi	16" hg 1,000 cfm	Cyclone, .5 micron washable filter
	CV GT	Hydro	Trailer	2.5 - 6	Hydraulic claw door	45 degree	200 - 400	4 gpm @ 3,000 psi	14" hg 580 cfm	Cyclone



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Boom Size (ft.)	Degree of Rotation	Offloading Type	Controls Location	Wireless Y/N	Vacuum (cfm/psi)	Power Source	Compressed Air Flow	Compressed Air Pressure	Accessories Available	Other
6" with up to 19 ft. reach	335	Full opening Hydraulic door, tilt and dump, reverse pressure, In-tank washout	Curbside control panel, Wireless remote (optional belly pack or handheld)	Yes	3,500 cfm	PTO driven	180 cfm	110 psi	Winterization	Hot box, Reverse pressure, Cold weather option, PTO driven air compressor
4" with optional strong arm or boom	270 with strong arm option 330 with hydraulic boom option	Full opening Hydraulic door, tilt and dump, reverse pressure, In-tank washout	Curbside Wireless remote	Optional	1,000 cfm	PTO driven	N/A	N/A	Winterization	Hot box, Lighting package, Tooling storage, Recirculation kit, Strong arm, 6-way hydraulic boom with wireless remote
4" with optional strong arm or boom	270 with strong arm option, 330 with hydraulic boom option	Full opening Hydraulic door, tilt and dump, In-tank washout, reverse pressure	Curbside Wireless remote	Optional	1,000 cfm	49 hp diesel engine	N/A	N/A	Winterization	Flowmaster, Hot box, Recirculation kit, Strong arm, Hydraulic jack, 6-way hydraulic boom with wireless remote
3" with optional strong arm	270 with strong arm option	Full opening Hydraulic door, tilt and dump, In-tank washout, reverse pressure	Curbside	No	580 cfm	27 hp EFI gas engine	N/A	N/A	Winterization	Recirculation kit, In-tank washout, Strong arm, Hydraulic jack

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THE LATEST: Products



1. Vermeer Verifier G3+ utility locator

Vermeer's new-generation Verifier G3+ utility locator delivers high accuracy, optimized connectivity and intuitive controls. It pairs with smartphones using the G3+ Map mobile app to plot location information, including depth, current index, GPS data, utility type, device name and the operator who performed the work. The GPS-enabled utility locator can determine underground current direction against adjacent signals from other utilities. It can detect ambient noise so the operator can switch to a different frequency for a particular job site. Also, operators can adjust transmitter frequency and power outputs from up to 500 feet away using a wireless connection. Saved data from the locator is transferred using Bluetooth 5.0 to the G3+ Map app. The data can also be uploaded to the Vermeer Projects bore planning tool. The Vermeer Verifier G3+ offers operators three locating modes: peak, peak/null and null. 352-728-2222; www.vermeer.com



2. Cat Pumps hydroexcavating pumps

Over 50 years of high-pressure pump manufacturing experience has earned Cat Pumps a reputation for producing the highest quality, longest lasting pumps in every market it serves. Engineers at Cat Pumps designed Model 2560 with 16 gpm at 3,000 psi and Model 2565 with 20 gpm at 2,500 psi for continuous-duty applications. The 2560 and 2565 pumps are dependable, high-quality products backed by outstanding customer service, training and support. BH versions have a machined-bearing cover to mate with the company's 76SAEC.25FR hydraulic bell housing so the 2560BH and 2565BH can be directly driven by an SAE C hydraulic motor. The compact direct drive allows for a space-saving footprint and is simple to install and maintain. 763-780-5440; www.catpumps.com ▼

This Issue's Feature:

App helps hydrovac companies manage operations

BY TIM DOBBINS

Rapid growth of your hydrovac business is a welcome, yet challenging experience. Managing the expansion takes organization on a level that may be unfamiliar. **Rapid Applications Group** understands the importance of having the tools to optimize workflow and accommodate expansion, and their **Rapid Apps Software** is designed to do just that.

Pam Vanatta, sales engineer for Rapid Applications, says the software provides users with an easy-to-use, efficient and reliable solution for managing operations. "It helps optimize workflow, simplify record keeping and ensure accurate billing," she says. It does so with a custom-tailored backend and mobile app specific for the hydrovac industry.

Rapid Apps offers a number of features designed to help streamline and simplify hydrovac operations, including automated routing and scheduling, electronic ticketing, comprehensive equipment logging for maintenance, and a library of custom-made reports and forms.

Along with those capabilities, office management can use the mobile app to communicate with operators in the field at any given time. The software also manages your safety program, DOT and tracks your permits and licenses.

The app is compatible with both Android and iOS devices, allowing operators in the field to access newly assigned, current and past jobs instantly and all job completion tasks are completed right from their smartphone.



Rapid Apps Software from Rapid Applications Group

According to Vanatta, learning the ropes isn't difficult either. "Setup and installation is quick and easy, and our full-time trainers are available for support every step of the way in person or online," she says. "Rapid Apps user interface is an intuitive easy-to-use design that is customizable, so that operators have very few issues using the preset job tickets and safety checklist."

Pricing for the software is handled based on user licenses, so it only increases as new licenses are added over time. "Rapid Apps Software is Soc 1- and Soc 2-compliant, so your data is safe and secure," Vanatta says. "With Rapid Apps, your company can continue to grow without having to add additional office staff to handle the workload."

Hydrovac operators have been using Rapid Apps for a while now and Vanatta says the company has heard many of them are saving thousands in nonbillable time and time theft. "We have also heard that they love having everything in one system that tracks everything for them," she says. "No more lost job tickets or double-booked jobs and equipment."

303-500-3050; www.rapidappsinc.com

THE LATEST: News

Mike Flynn retires from Felling Trailers

Felling Trailers Northeastern Regional Sales Manager Mike Flynn bids farewell to life as a trailer sales rep after 22 years with the company. In 2000 Flynn signed on with Felling Trailers as an independent trailer sales rep for the Northeast region covering Pennsylvania, New York, Vermont, New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, New Jersey, Maryland, D.C., and Delaware. Throughout his time with Felling Trailers, he grew the company's dealer base and brand awareness, becoming a leader in the trailer manufacturing space with over 50 dealers throughout the northeast region.



Mike Flynn

Lauren Atwell wins NUCA's Ditchdigger of the Year award

The National Utility Contractors Association awarded former chairman Lauren Atwell the Ditchdigger of the Year award, honoring his many years of service to the American underground utility industry and his years of support for NUCA's membership programs. Atwell is the chief operating officer at Petticoat-Schmitt Civil Contractors, located in Jacksonville, Florida. He has been part of the company's executive team since 2014. ▼



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- Optimized 2650 wash pump, 16GPM @ 3000 PSI
- 705,000 BTU diesel fired coil burner
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Air Excavation

Pacific Tek AIR KING

The AIR KING air and hydroexcavation trailer from Pacific Tek is available with a 500- or 800-gallon-capacity debris tank made of carbon steel and sandblasted then powder coated inside and out. It employs a 185 cfm compressor with 100 psi output connected to an air wand allowing the operators to return the spoils collected in the debris tank to the ground. The system also has a pressure washer system (4 gpm at 3,500 psi) in case the operators want to hydroexcavate for faster or deeper digs. A simple three-way valve selector switch is situated on the curbside of the trailer for easy toggling from vac to air to hydroexcavator functions. The trailer itself is made of carbon steel and is sandblasted then powder coated like the debris tank. Options include a telescoping vacuum hose boom, reverse flow feature, LED work lamps, spare tire and mount and a tool storage box.

800-884-5551; www.pacific-tek.com



Booms and Boom Accessories

Vactor dig tube with measuring rule

Vactor offers an easy-to-read dig tube with integrated measuring rule for all 6- or 8-inch-diameter dig tubes. This hi-visibility ruler was developed with input from customers. The extended wear provided by this design can save time and keep the crew digging to maximize productivity. Laser-cut from lightweight aluminum, the dig tube with measuring rule features numbers that will stand out under all conditions, never wear off, and come clean with a quick rinse to remove job mud.

800-508-3381; www.vactor.com



TRUVAC Abrasion Resistant Elbow

The Abrasion Resistant Elbow from TRUVAC is a 70-degree boom elbow developed for the most demanding vacuum excavation jobs. The extended wear provided can add service life and maximize productivity. Embedded with non-corroding carbide steel, the interior of the elbow is engineered to provide maximum wear resistance. It is retrofittable to all full sized TRUVAC HXX vacuum excavator models with an 8-inch telescopic boom.

815-672-3171; www.truvac.com



Hose

Kuriyama of America Alfacomma T704HA Series THE BOOMER

Corrugated Alfacomma T704HA Series THE BOOMER industrial sewer vacuum hose from Kuriyama of America is made with a 1/4-inch-thick red gum rubber tube designed for wet or dry applications where severe abrasion is a factor. The corrugated black conductive styrene-butadiene/natural rubber blend cover provides abrasion and ozone resistance. The rugged hose is suitable for dry or wet abrasive materials and can be grounded. All sizes are rated to full vacuum and a psi safety factor of 3-1 for 2-to-8-inch hose and 2.5-1 for 10-inch hose. The hose remains flexible in temperatures from 40 degrees below zero to 212 degrees F. It is available with soft-cuffed ends for easy installation and clamping.

847-755-0360; www.kuriyama.com



Hot Water Boiler

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

800-315-5533; www.easykleen.com



Hydroexcavation Equipment

FS Solutions TRUVAC Shield

The Shield, manufactured by TRUVAC and distributed by FS Solutions, can help extend the life of equipment with removal protection for tooling connectors. Connector couplings, used to connect nozzles and lances during hydroexcavation, can become inoperable when wet sand, clay, gravel and other debris become lodged in the joint. The Shield is a solution that enables operators to make quick changes without additional wear and tear on nozzles by protecting couplings from abrasive mud and material, keeping connections clear and saving valuable time when swapping nozzles on the job. It is in-field retrofittable and suitable for all connector couplings, including extensions.

800-822-8785; www.fssolutionsgroup.com



Gorman-Rupp Diaphragm Priming System

Gorman-Rupp offers an integrally mounted diaphragm priming assembly as an option on select 4-, 6-, 8-, 10- and 12-inch Prime Aire and Prime Aire Plus pump models. An alternative to the venturi/compressor priming system on priming-assisted pump models, the diaphragm primer delivers up to 60 cfm, a vacuum to 30 feet and is rated for temperatures as low as 15 degrees F. With fewer components, the primer offers reliability and increased efficiency, as well as higher lifts. Reversed air flow and thinner valves help any liquids entering the primer to escape easily compared to similar systems in the marketplace. The primer's single bearing housing has fewer leak paths and alignment issues compared to dual bearing housing alternatives.

419-755-1011; www.grpumps.com



Soil Surgeon hydroexcavating tool

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

949-363-1401; www.soilsurgeoninc.com



Hydroexcavation Trucks and Trailers

Brandt HX120

In response to the increasing need for hydrovacacs that combine full-size capacity with maneuverability in tight urban spaces, Brandt offers the HX120. This high-pressure performer helps contractors work more efficiently with maximized legal load weights, quicker debris loading and unloading time and the capacity to take on larger jobs without load weight concerns. The real-time measurement of water and overall truck weight enables operators to make quick, informed decisions, which reduces the risk of damage or overweight penalties. The unit has a 1,150-gallon water tank capacity and 11.6 cubic yards of debris tank capacity, as well as a 28-foot boom reach with 340-degree rotation. It also operates quietly, which is a benefit in urban settings.

866-427-2638; www.brandt.ca



Ditch Witch W12

Contractors looking to maximize efficiency on the job site can now lean on the PTO-driven W12 vacuum excavator from Ditch Witch. With dual 600-gallon saddle tanks and a 12-cubic-yard debris tank, it brings increased capacity and performance to the job site. Dual hose reels, as well as the ability to both hydro and air excavate with the same truck, add to its versatility. Available with a 5,000 cfm blower, it has the power to complete any vacuum excavation job. The W12 is the first truck vac in the new Warlock series to be released.

580-336-4402; www.ditchwitch.com



GapVax VHX Series

The GapVax VHX Series hydrovac is designed to deliver optimal weight distribution, improved safety features and increased performance. The debris body is 7.5 cubic yards, offering a 15,000-pound payload. The low profile (12 feet, 2 inches) makes it suitable for all-around hydroexcavation projects. The vacuum system with single mode wet/dry filtration is quiet, reliable and simple, according to the maker. It includes a 4,000 cfm positive displacement blower, 600 hp transfer case with air-shift engagement and ultra-quiet air injection, and discharge silencers. This filtration design includes a top-loading debris tank, 14-inch stainless steel float-ball shut-off, efficient centrifugal cyclone separators and long-lasting filter bags. It is equipped with a 12 gpm, 3,000 psi water system with optional 200 cfm air compressor system. A full-tilting debris body, over 45-degree dump angle and full-opening tailgate allow for fast unloading and easy clean out. The 8-inch telescoping VHX boom offers a 22-foot reach with 15-degree downward pivot.

888-442-7829; www.gapvax.com



Hi-Vac X-13

The Hi-Vac X-13 hydroexcavator was created to maximize productivity and return on investment and minimize downtime by eliminating high-maintenance components. A modular design provides clean and intuitive controls and simple, planned maintenance accessibility for all critical systems. It is ideal when on-site dumping is required and for off-highway applications that require the maximum legal payload. A 13-cubic yard debris tank, up to 24,500-pound payload capacity and 1,140-gallon freshwater capacity result in fewer costly job site trips. Power is provided by a 5,800 cfm 27-inch Hg high-performance blower and a run-dry water pump that delivers 20 gpm at 2,500 psi. The top-mounted, 360-degree boom ensures accessibility in all directions and a heavy-duty, hydraulic vibrator facilitates fast and efficient unloading of the debris body. A severe-duty boiler safely heats water for frozen ground applications.

800-752-2400; www.hi-vac.com



HotJet USA Vac 'n Jet Series

The HotJet USA Vac 'n Jet Series of vacuum trailer jettors are rugged, compact, engineered to haul equipment and spoils loads, able to clean valve boxes and storm drains, and able to hydro-excavate and/or clean drainlines and sewer lines. They offer hot- and/or cold-water operation with a choice of engines ranging from 13 to 66 hp and gas or diesel. They are equipped with premium triplex pumps, a 500-gallon spoils tank, 200-gallon water tank, Gardner Denver vac/blowers, 4-ton hydraulic dump and CentriClean filter system. They can also be designed to meet specifications.

800-624-8186; www.hotjetusa.com



KAISER PREMIER Urban X

The Urban X vacuum excavator from KAISER PREMIER has been precision engineered for weight distribution, while maximizing debris and water capacities to stay within bridge law guidelines. It is fully customizable based on customer requirements, offering several options for cold weather protection or adding an on-board air compressor for dry digging. It comes standard with a Robuschi DV105 blower, can create a positive pressure in the tank to efficiently offload liquids, and comes standard with a cyclone cleanout system. The dig-ready, 20-foot extendable boom delivers superior reach and mobility for a mid-size unit.

970-542-1975; www.kaiserpremier.com



Presvac Systems Hydrovac

The Presvac Systems Hydrovac is designed for versatility and cold-weather operation with optional full compliance with U.S. Department of Transportation specifications for 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 to minimize carryover. Modular filtration configured to blower size provides blower protection and minimal maintenance. It comes with a heavy-duty, 8-inch boom that extends up to 25 feet with six-way hydraulic power and wireless controls for all boom functions, a soft-start water pump, vacuum breaker and truck engine speed.

800-387-7763; www.presvac.com



RAMVAC by Sewer Equipment HX-12

The HX-12 hydroexcavator from RAMVAC by Sewer Equipment has a 12-yard debris tank and a heated, secured equipment locker that contains the entire water system, including water tanks, for cold-weather application and tool security. This machine touts a directional discharge system with the ability to offload debris back into the excavation site when done, without the mess of dumping the tank. This system also allows operators to blow any obstructions out of the dig hose and get back to work. It includes a long-range wireless remote, NEMA 4 electrical system, an 800,000 Btu water heater and a three-stage cyclonic filtration system. The standard 4,400 cfm blower will match the performance of larger blower machines while delivering fuel economy with the ability to go up to 5,400 cfm. The series offers debris capacities from 3 to 15 cubic yards while maintaining a short overall footprint.

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



Rival Hydrovac T7 Tandem and T10

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

Product Focus: VACUUM EXCAVATION

real-time weights both in the cab and on the wireless remote to confirm weight prior to travel. The T10 is built with the same features and operating system, but with larger capacities and components. It is popular with clients who do both utility and industrial work. It is available in three chassis layouts to meet weight restrictions in a given area. An air compressor option allows for excavating with air when required, while a truck-mounted coring system allows for removal of hard surfaces prior to nondestructive excavating.

403-550-7997; www.rivalhydrovac.com



Super Products Mud Dog 700

Mud Dog 700 vacuum excavators from Super Products are designed for operator convenience and consistent performance to meet the challenges of compact, urban projects to large-scale excavation. Regardless of the task, the vacuum excavators offer versatility as well as safety and productivity on the job site, according to the maker. They offer a compact footprint for excavation in urban environments while maximizing payload and are designed to maintain the power and precision of larger units. The unit features a 7-yard debris body and 600-gallon water tank. This model comes standard as a dump body with an electric vibrator offering a 50-degree dump angle with the capability of dumping into a 48-inch container. It is equipped with a rear-mounted, extendable, 8-inch-diameter boom that reaches 18 feet, has 270-degree rotation and pivots 10 degrees downward to minimize job site restoration and traffic congestion near roads.

800-837-9711; www.superproducts.com



Tornado Global Hydrovacs F3 ECO-LITE

Tornado Global Hydrovacs engineered the F3 ECO-LITE to have big functionality in a mid-sized platform. It was made specifically to legally haul large payloads in urban environments with a debris capacity of 10 cubic yards and a water capacity of 1,250 gallons. A float-style indicator is positioned on the outside of the debris tank for easy monitoring of volume. It comes with a boom capable of reaching to 26 feet with 342 degrees of rotation and an 8-inch boom hose. The truck uses a 3,800 cfm Robuschi 125 blower, a Pratisoli KT28 water pump and a Dynablast 740,000 Btu burner. A hydraulic dump door measuring 48 by 52 inches is mounted on the back of the tank and sits 42 inches high for easy use over bins.

877-340-8141; www.tornadotrucks.com



Vac-Con Mudslinger MS800

The Mudslinger MS800 trailer-mounted hydrovac from Vac-Con is designed to provide the same power, suction and capacity of a truck hydroexcavator on a portable, pull-behind trailer. It includes the choice of Tier 4 diesel or gas engine options providing up to 1,190 cfm and 16 inches Hg with a PD blower and 325 gallons of water. It has an 845-gallon debris tank and a 9-foot boom with 24 inches of hydraulic extension provides a full range of motion. It is designed to be a standalone unit, but can also provide support to construction, HDD and public utility fleets. A variety of applications includes daylighting, potholing, culvert and manhole cleaning and utility locating.

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



Vacall AllExcavate and AllExcavate2

Standard intelligent controls, easy startup and operation set Vacall AllExcavate and AllExcavate2 machines apart. Both models efficiently remove dirt around utility lines and foundations. Water pumps generate 24.5 to 120 gpm and pressures to 3,000 psi. The AE2 model adds air excavation at 185 cfm and dual psi of 110 and 150. Water system, wand, control panel, tools and worker apparel are protected in a heated compartment. An AllSmartFlow CAN bus intelligent control system features a programmable LCD display that monitors engine, water flow, air pressure and vacuum performance for precise boom and reel adjustments. Aluminum water tanks with lifetime warranty carry 1,000 to 1,300 gallons. Galvanized debris tanks have a supreme finish, and are available with 8-, 10- and 13-cubic-yard capacities. They use one engine to power the chassis and excavation functions, reducing service and operation costs.

800-382-8302; www.vacall.com



Nozzles

Hydra-Flex Machete

The Machete from Hydra-Flex is built for taking on tough hydroexcavation challenges in compact soils. Its power is built to reach greater depths in bell holing, sloping, trenching and finishing applications. It blasts a 0-degree stream of water that oscillates at an optimal speed to create a 15-degree wedge of powerful flow. This wedge is created by the water flowing through the stator, which forces the rotor to spin. The rotor then moves the rocker assembly back and forth creating the oscillation. The powerful impingement force allows the user to get by with a smaller nozzle with the same impact as nozzles with higher gpm. The oscillating stream also means less movement, better ergonomics, and less wear and tear on the operator.

952-808-3640; www.hydrflexinc.com



Vermeer QuickDig

The Vermeer QuickDig nozzle helps vacuum excavation crews maximize their efficiency while potholing and daylighting utilities, hydro/slot trenching and digging pile holes. The nozzle is efficient because of its 18-degree cone rotation and laminar flow design. All water molecules flow in the same direction at the same speed to slice through the ground minimizing water use and delivering a high aperture of coverage. The nozzle is also durable, with a stainless-steel body and tungsten carbide nozzle tip. It can also be rebuilt in the field quickly using a repair kit. Six sizes are available for contractors to choose from. Each comes with a 0.5-inch inlet connection (common on truck vacs) and a 0.25-inch adapter (common for trailer vacs).

352-728-2222; www.vermeer.com



Vacuum Pumps

Fruitland 870 Series

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

905-662-6552; www.fruitlandmanufacturing.com



National Vacuum Equipment Challenger 1600

The Challenger 1600 from National Vacuum Equipment is a 1,600 cfm tri-lobe blower designed for continuous duty at maximum vacuum. Rotors are designed to improve vacuum efficiency and reduce mechanical noise. The blower has a ballast air-cooling design and typical maximum vacuum of 27 inches Hg.

800-253-5500; www.natvac.com



Water Pumps

Cat Pumps Models 2560 and 2565

Cat Pumps Models 2560 (16 gpm at 3,000 psi) and 2565 (20 gpm at 2,500 psi) hydroexcavating pumps are constructed for continuous-duty applications. BH versions have a machined-bearing cover to mate with Cat Pumps' 76SAEC.25FR hydraulic bell housing, allowing the 2560BH and 2565BH to be directly driven by an SAE C hydraulic motor. The compact direct drive allows for a space-saving footprint, and is simple to install and maintain, according to the maker.

763-780-5440; www.catpumps.com



Comet Pumps ET 55 Series

From small trailers to large truck-mounted units, Comet Pumps' ET 55 Series pump was designed for hydroexcavating and industrial jet/vac services in mind. Its high-performance features, compact design, and symmetrical crankcase allows for easy right to left shaft conversion — making installation simple and easy to accomplish. It contains high-reliability high-pressure seals with low-pressure lubrication and recirculation chambers proven to withstand corrosion. It can withstand extreme temperatures with its stainless-steel suction valves and guiding pistons, nickel-plated brass and an aluminum alloy pump body. It can operate at 1,450 rpm and 3,626 psi. Its shaft support system and tapered roller bearings will enable this pump to run for extended periods of time.

800-864-1649; www.cometpump.com



Dynablast Pratissoli HY-PACK KTX24A

Pratissoli HY-PACK KTX24A direct-drive water pump packages, distributed by Dynablast, are compact and lightweight. They offer 13.5 gpm at 3,625 psi at 1,450 rpm, or are available in the KTX28A that offers 18.4 gpm at 2,900 psi at 1,450 rpm. They have a direct drive T13 female spline shaft input and SAE B 2/4 bolt flange, and come mounted from the factory with an IPH FOX Interpump 47 or 64CC hydraulic motor. Their 420 stainless steel nickel-coated manifolds make them harder for cavitation protection. They come with a Kevlar/graphite rope run dry seal for longer life and can handle higher temperatures. They are self-lubricating so no oiler kit or weekly oiling is required. Internal fins on the aluminum crank case provide cooling to lower oil temperature. Two-bore ceramic plungers have thicker ceramic on the water end to prevent from thermal shock.

905-867-4642; www.dynablast.ca



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VACUUM EXCAVATION

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Trailer-mounted vacuum fits needs of small community

PROBLEM

Hydroexcavation in tight spaces is a challenge for large trucks. The city of Carmi, Illinois, water department needed a unit that could fit in tight areas to locate waterlines in a small neighborhood. The city knew the waterline location based on maps and electronic sensors, but were unable to hit the pipe when using a probe. A vacuum truck couldn't turn into the neighborhood, and heavy equipment would cause too much damage to private property.

SOLUTION

They chose the **Elastec PACS 2000 trailer-mounted vacuum system**. Workers were able to cut a small hole into the ground, clear roots and expose the waterline in mere minutes. It was discovered that a root as big as the line itself was running parallel to and directly on top of the waterline. This is why it could not be located by probing, and it also meant that using heavy equipment would have been very dangerous to the integrity of the utility.

RESULT The system immediately saved the team many work-hours on site, heavy-equipment hours and logistics, thousands of dollars in cleanup and remediation, and potentially tens of thousands in utility repair. "We would have spent a minimum of four hours on this site," says Curt Hale of the city of Carmi Water Department. "With the help of this PACS 2000, we were only there for about an hour. And that's only because there were a lot of roots around the pipe, which is another issue on a job like this. If you were to use a backhoe to grab the roots and start ripping, it would pull that cast iron pipe out of the ground." 618-382-2525; www.elastec.com ▼

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Happenings

CALENDAR

Sept. 11-13
Breakthroughs in Tunneling Short Course, University of Denver
 – Joy Burns Center, Denver. Visit www.tunnelingshortcourse.com.

Sept. 14
Underground Contractors Association of Illinois Annual Business Meeting, Venuti's Italian Restaurant & Banquet Hall, Addison, Illinois. Visit www.uca.org.

Sept. 24-26
Tunneling Association of Canada Toronto Conference, Westin Harbour Castle, Toronto. Visit www.tunnelcanada.ca.

Sept. 26-28
The Utility Expo, Kentucky Exposition Center, Louisville, Kentucky. Visit www.theutilityexpo.com.

Sept. 30 - Oct. 4
96th Annual Technical Exhibition and Conference, McCormick Place, Chicago. Visit www.weftec.org.

Oct. 12-14
National Utility Contractors Association Annual Convention & Exhibit, Hyatt Regency Resort & Spa at Gainey Ranch, Scottsdale, Arizona. Visit www.nuca.com/convention.

Oct. 25-28
NUCA Annual Convention and Exhibit, Naples Grande Beach Resort, Naples, Florida. Visit www.nuca.com.

Jan. 21-26, 2024
Underground Contractors Association of Illinois Annual Convention, Casa de Campo Resort, Dominican Republic. Visit www.uca.org.

Jan. 24-27
Water & Wastewater Equipment, Treatment & Transport (WWETT) Show, Indiana Convention Center, Indianapolis. Visit www.wwetshow.com.

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