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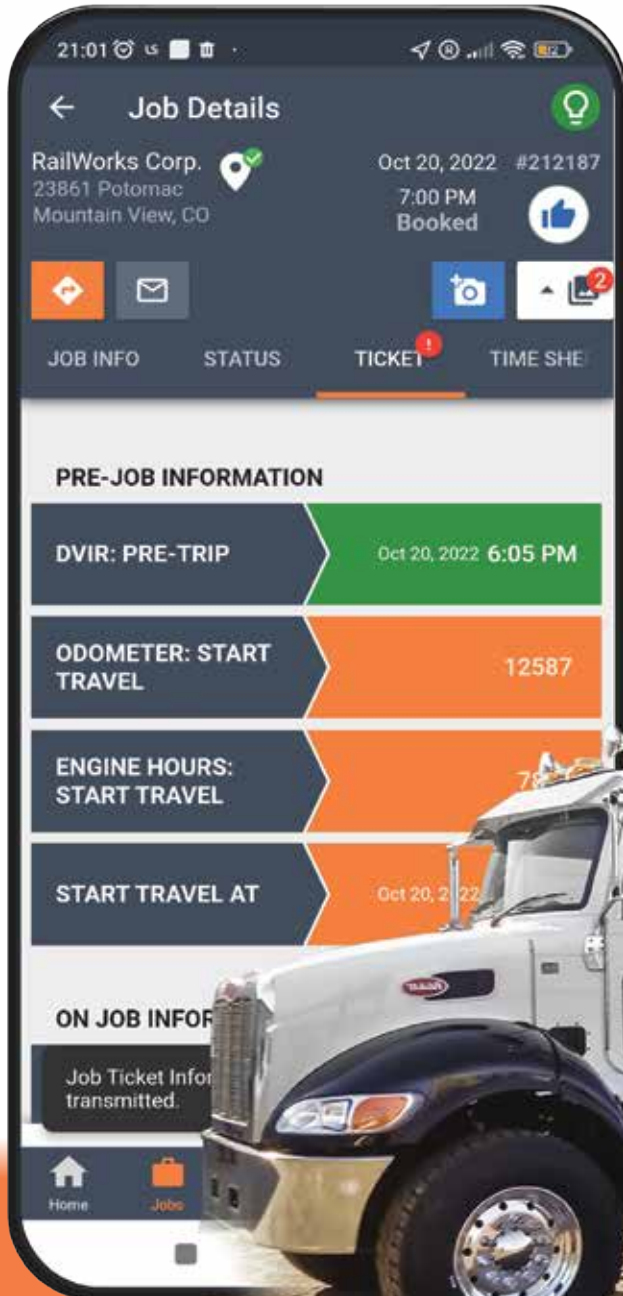
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Time to Network

TRADE SHOW SEASON IS UPON US AND IT'S A GREAT TIME TO SEE WHAT IS NEW IN EQUIPMENT AND LEARN NEW TRICKS

BY CORY DELLENBACH, EDITOR



NO MATTER WHICH TRADE SHOW YOU DECIDE TO ATTEND, USE EACH ONE TO YOUR ADVANTAGE. **CHECK OUT AS MUCH EQUIPMENT AS YOU POSSIBLY CAN,** LEARNING ABOUT HOW IT CAN BENEFIT YOUR TEAM OR YOUR COMPANY.

As we roll into February, now is about the time you probably start shifting your focus from last year to work coming up in the prime summer months.

Now is the perfect time to do an equipment inventory and see what needs to be replaced, now and in the future. It's the perfect time to start looking at new equipment and tools because of all the industry trade shows coming up.

There are three big trade shows coming up in the next few months and they all offer great opportunities for checking out equipment, education of your team and more.

OFF TO INDY

The very first show coming up on the calendar is the Water & Wastewater Equipment, Treatment and Transport (WWETT) Show in Indianapolis from February 20-23.

I've seen an exciting shift in this trade show over my few years of attending it. While it still remains a great show for the portable restroom and sanitation contractors, it's evolved into so much more.

Over the last several years we've seen an increase in vacuum excavation tools and trucks at the WWETT Show, along with pipe bursting and directional drilling and utility locating equipment. It's exciting seeing how this show has evolved over the years. I think it's a reflection of those in the industry wanting to diversify their businesses and be a one-stop-shop for their customers.

The WWETT Show, held at the Indiana Convention Center in Indianapolis, also provides a lot of opportunities for educational credits for you and your team from sanitation to vacuum excavation, and more.

VIVA LAS VEGAS

Up next after the WWETT Show in February is the huge CONEXPO-CON/AGG 2023 show from March 14-18 in Las Vegas.

This show, which is the largest construction trade show in North America, primarily focuses on the traditional excavation tools and equipment, but you can find a spattering of vacuum excavators, drills and that stuff too. You'll see the latest products hitting the market from manufacturers like CASE Construction, Caterpillar, John Deere, and more. You'll see the normal excavation equipment you see working near you and you'll see massive mining equipment. All of it is impressive.

If you're attending this show, which is held every three years, I would recommend blocking off a few days for it. You can't make it through everything in just one, or even two days.

A LITTLE LEARNING

The final big show that is a hit in our industry is the NASTT No-Dig Show, coming up April 30-May 4 in Portland, Oregon.

This show has a trade show element to it, but its bread-and-butter is the educational opportunities. You can sit through case study sessions learning how contractors and municipalities worked through difficult jobs, what tools they used, and what they learned from it.

TAKE IT ALL IN

No matter which trade show you decide to attend, use each one to your advantage. Check out as much equipment as you possibly can, learning about how it can benefit your team or your company. Sit through those educational sessions and use what you learn to better your team. That's what these events are all about.

I'll be at the WWETT Show later this month. If you're there and want to connect, call me at 715-350-8436 or email me at editor@digdifferent.com.

Enjoy this issue! ▼

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THE STATE OF CONSTRUCTION

8 Positive Signs for 2023

It's undeniable that construction is going through a challenging period, with GDP growth weakening, supply chain challenges and rising costs, but there are plenty of reasons to be optimistic about the future of construction. From the return of in-person events to investment in zero-emission technology, this article offers some positive observations about construction in 2023.

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OPPORTUNITY SEEKERS

**EAST COAST UTILITY LOCATING COMPANY
NOT AFRAID TO BEING AGGRESSIVE WHEN
IT COMES TO TAKING ON WORK FOR CUSTOMERS**

STORY: **BY GILES LAMBERTSON** PHOTOS: **HANNAH BEIER**

TTrinity Subsurface LLC is a risk-taking and problem-solving company that is proving as adroit in finding new markets as it is in locating underground anomalies. The Delaware-based firm is four years old and already operating in nine states, and the District of Columbia.

The company is accurately described as opportunistic, says Jami Roblejo, the company's MBA-holding executive who oversees marketing and sales. "Absolutely we are opportunistic. We always are looking for opportunities. As fast as we have grown in four years, I definitely would say we're willing to take risks."

The firm was founded in 2018 by Greg Finkle, a professional engineer who at that point was a 10-year veteran in the private utility locating industry. From its Wilmington, Delaware, headquarters, Trinity first reached out to contractors and municipalities in Delaware, Maryland and Pennsylvania. The reception was good enough for Finkle to expand two years later into New Jersey, New York, Virginia and Washington, D.C.

Those contiguous entities were a natural expansion path for the young company, which at that point mostly

was offering locating and subterranean mapping services using electromagnetic and ground penetrating radar technologies.

"When we started with just locating we realized our clients had more and more needs, so we added services," says Roblejo, who joined the company two and a half years ago.

VARIETY IN CUSTOMER BASE

Today, Trinity Subsurface also offers concrete scanning, hydro- and air-excavation services, jetting, camera inspection of pipelines, pipeline spot repairs, and inflow and infiltration analysis. According to Jeff Finkle, the founder's brother and operations director, "All of our services are growing very rapidly, but the largest division of services — location and scanning — is our bread and butter. It's our fastest-growing division."

He says the customer base breaks down approximately into 50% locating work, 20% vacuum excavation jobs and 30% remedying pipeline problems (inspecting, jetting, repairing). In each category, projects can run from half a day to several months.





Who is calling for these services? Most clients are on the private side — as opposed to government agencies or municipalities — but the mix of services produces intersecting clients. Locating and mapping utilities for one client can lead to air excavating a trench for another one, for example.

“There are so many different segments of the market,” Roblejo says. “Because we are a full-service company, we are very, very busy.”

The busyness was ramped up a little over a year ago when the company leapfrogged from the Northeast all the way to Dallas, where it set up a branch location to service Texas and Oklahoma clients. A few months later, it dropped down to Florida to open a branch office. “We saw opportunities and decided to take advantage of them,” says Roblejo.

NOT SHYING AWAY

The company’s aggressive approach to finding customers seems matched by its willingness to take on tasks other companies might decline. Founder Greg Finkle is

described on the company website as having a “passion for solving complex problems.”

Last summer, Trinity had one such problem dropped in its lap. A Wilmington company was required by county officials to repair or replace a 30-foot sewer line lateral. While that sounds like a simple undertaking, the line had limited access (one manhole and a four-inch cleanout) and ran under a water main, a primary natural gas line and other utility infrastructure. Furthermore, the eight-inch pipe transitioned to 10 inches in mid-run and was located 20 feet underground.

Daunting, to say the least. Two other trenchless pipe repair companies told the property owner that repairing the pipe was impossible. Replacing it was an option — an expensive option: To do so would cost in the neighborhood of half a million dollars. A second opinion seemed like a good idea and Trinity was called.

“My brother and I and our pipe crew team leader, Tyler Smith, came back to the office and considered different ideas to come up with something we thought would work,” says Jeff Finkle. The team decided to perform six different patches on the line, overlapping them a foot. “The tricky part was how we were going to perform the repair where the pipe transitioned to eight-inch. We couldn’t get our repair packer through that area.”

The solution: Building a moldable plastic sled to transport the packer and epoxy repair material through the

“WE DO GET STUCK WITH SOME PRETTY TOUGH JOBS. BUT WE FEEL IF WE CAN’T DO SOMETHING, NO ONE CAN, AND WE GET SATISFACTION FROM SUCCEEDING WHERE OTHERS COULDN’T.”

Jeff Finkle



"IT'S IMPORTANT FOR ALL OF OUR TEAM MEMBERS TO BE EDUCATED ABOUT ALL THE SERVICES. WE ENCOURAGE EVERYONE TO BE CROSS-TRAINED."

Jeff Finkle

Randy Diaz, utility locating specialist, uses a RD7200 cable and pipe detector from Radiodetection to locate utilities in Wilmington, Delaware.

Trinity Subsurface LLC Wilmington, Delaware

OWNER: Gregory Finkle

YEARS IN BUSINESS: 4

SERVICES: Hydrojetting, air- and hydroexcavation, utility locating, concrete scanning, video camera inspection of pipe, subsurface mapping

SERVICE AREA: 9 states (New Jersey, New York, Pennsylvania, Maryland, Delaware, Virginia, Florida, Texas, Oklahoma) and the District of Columbia

EMPLOYEES: 61

WEBSITE: www.trinitysubsurface.com

Building Out the Fleet

There is digging and then there is digging. Hydraulic excavators dig very nicely. But the teeth on their buckets can bite their operators, inadvertently ripping into a utility line or some other buried object.

That's why vacuum excavation came into being. The precision of vac digging, combined with the relatively harmless impact of air and water on encountered objects, makes it the choice of contractors working in riskier job sites.

A Delaware company, Trinity Subsurface, relies on air excavation in digging through problematic soils. It mostly digs with a Vactor air vacuum excavator, according to operations director Jeff Finkle.

"Our clients prefer for us to use air for several reasons," Finkle says. "For one, it's a cleaner operation. Water excavation creates a slurry that has to be disposed of. With air, the excavated soil can be used as backfill and tamped down."

The good news for Trinity Subsurface customers is that the company is building out its vac capacity in 2023 by adding hydro trucks to its fleet of equipment. This might especially be of interest to its Texas and Oklahoma customers, which are served from Trinity's Dallas office.

Unlike in Florida, where Trinity also has an office, soil in the south-central United States generally is not primarily sand. The cutting force of a hydrovac unit can get to the bottom of things more quickly in such conditions. And getting there is what digging is all about.

reduction joint, pulling back the sled when the repair system was in place and completing the repair. "When we proposed this to the company and to the county, we were asked, 'Have you ever done this before?' We had to say, 'No, but we're confident it'll work,'" says Finkle.

It did work. A team headed by Smith pulled it off and completed the project within two weeks. Finkle looks back on the job with pride. "This was a stressful project, but also very rewarding," he says.

The company tries to form meaningful relationships with clients that go beyond a particular contracted job. In this sewer repair project, Finkle says the working relationship that Trinity established with the client was instrumental. The client trusted the underground company despite its misgivings about the unorthodox approach.

Is the company's can-do reputation in any way burdensome? After all, being handed difficult tasks all the time could be wearying. "We do get stuck with some pretty tough jobs," Finkle says. "But we feel if we can't do something, no one can, and we get satisfaction from succeeding where others couldn't."

It seems to be a winning formula. The company keeps growing: It has 61 employees to date, which is expected to increase to 70-75 by the end of the year. Most are in the Northeast, naturally, where business activity is concentrated, with a handful in Texas and Florida.

TRAINING FOR ALL

Sean Warner joined Trinity at the company's inception. A veteran of the utility locating industry, he is focused on training and developing the company's growing workforce. He oversees a three-week-long classroom program for new hires, followed by several months of training in the field. Interspersed are morning and weekly safety and product training sessions.

"Safety is a key for us," Finkle says. "We want to make sure our employees are safe and that the work is accomplished for our clients."



Jami Roblejo, left, director of sales and marketing, and Jeff Finkle, director of operations. Management is pleased with employee growth patterns, and make sure to regulate it to a sustainable pace.

While company crews generally are divided into specialty teams — pipe inspection, excavation, locating and so on — familiarity with each of the provided services is part of the program. “It’s important for all of our team members to be educated about all the services,” Finkle says. “We encourage everyone to be cross-trained. An example is a lot of our guys can run a jetter truck, but also can operate a pipeline inspection camera.”

The variety of offered services requires a variety of specialized equipment. The equipment is up to date because Trinity values technology. Its technical work — that is, locating and documenting the presence of underground objects — is accomplished using a wheeled GSSI UtilityScan ground penetrating radar unit that can detect metallic and non-metallic objects 35 feet underground and map a scanned area.



Utility locating specialist Daelvi Garcia uses a UtilityScan (Geophysical Survey Systems) to identify utilities and other objects under concrete and asphalt.

Crew members pull out Radio-detection handheld scanners for locating utility lines and a Proceq (Screening Eagle USA) concrete scanner unit to find rebar, conduit, voids and anything else hiding within a cured concrete slab, wall or ceiling.

The locating and scanning work is all about finding the hidden. Sometimes underground objects are located precisely, sometimes more generally.

“A lot of factors go into location accuracy,” Finkle says. “We utilize three different pieces of technology to search and we bring lots of experience to a job. Generally, our clients are happy.”

Roblejo adds this perspective: “There are limitations on locating something we can’t see. If we can’t locate something, we are honest and tell the customer we can’t.” Trinity offers a final solution in such cases, which is to vacuum excavate a site and visually expose what’s down there.

Trinity relies on Envirosight camera systems for its pipeline inspection

work. Crawler and push cameras navigate sewer, water and storm pipes and operators print out inspection reports produced by the system. When cracked or failing sections of pipe are found, Trinity can repair them using its Perma-Liner point repair equipment. The Perma-Liner patch solution is growing in popularity with Trinity Subsurface customers, according to Finkle.

Still to come is a cured-in-place curing system the company will introduce to its customers in 2023. The SpeedyLight+ system manufactured by Pipe Renewal Technologies uses LED light to cure CIPP lining, doing so several times faster than other methods. The system can cure liner more than 300 feet from the point of entry in a pipe up to 12 inches in diameter. “It’s a new technology and we are really excited to offer it,” says Finkle.

Larger machines in the Trinity equipment yard include a Vactor 2100 hydrojetter and a Vactor Paradigm air vacuum excavator. These larger pieces of equipment increasingly are maintained by the company itself.

“We are doing more and more work on our vac trucks,” Finkle says. A 6,000-square-foot maintenance shop is part of the Delaware headquarters complex and two smaller shops are being added at Pennsylvania and New Jersey locations.



Jordan Cohen reaches down with the digging lance into the hole being dug to look for utilities along the roadway. The company uses a Vactor Paradigm and a Vactor 2100 for vacuum excavation work.

FUTURE PLANNING

Four-year-old Trinity Subsurface is a young company in more ways than one: The average age of its employees is 35, according to Roblejo. While the company is immersed in the market in the Northeast, it still is establishing itself in Florida and Texas. Growing the business in those two southern states is management’s immediate focus.

Company executives are not expanding pell-mell. They are open to growing the company footprint, but at a sustainable pace. The firm has survived the always-perilous startup for years and worked through the parts and materials disruptions of the last year or so. Currently being managed are inflated fuel prices — the company has a fleet of 35 Ford F-150 pickups.

In short, Trinity Subsurface seems in control of its future. ▼

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Out to Sea

FLORIDA'S EARTH VIEW TAKES ON A DIRECTIONAL DRILLING JOB WITH A WET EXIT TO INSTALL SEAWATER INTAKE LINES FOR A NATURE CENTER'S SEA TURTLE HABITAT

BY KYLE ROGERS

Earth View is accustomed to challenging directional drilling jobs. But no matter the obstacles a given job may present, typically the company has a bore with entry and exit pits on land.

So the circumstances were unique when Earth View took on a job for the Gumbo Limbo Nature Center in Boca Raton, Florida, installing new seawater intake lines for the center's sea turtle habitat. The bores began on land, but traveled 1,300 feet exiting offshore in the ocean.

"Most drilling jobs, even if you're doing a water crossing, you still exit on land," says Allison Murrell, Earth View's president. "Your entry and exit pits are both on land versus having your exit be at the ocean floor. It's definitely different from a typical job. A lot of the processes are the same, but there are also challenges to overcome."

"The concept of completing the drill itself was pretty comparable to everything else we do," adds Joe Townsend, Earth View's drilling superintendent. "It was mostly the location of the project and the challenges of the terrain and surrounding environment we had to deal with."

GETTING THE JOB

Earth View was founded in 2004 in Naples, Florida, and started out focusing on private utility locates. By 2016, recognizing the need for underground infrastructure solutions different from standard opencut methods, the company branched out into trenchless technologies. Directional drilling and other trenchless services now make up about 60% of Earth View's workload. It does a majority of its work in Florida but also takes on jobs throughout the Southeast United States.

For the Gumbo Limbo Nature Center job, Earth View served as a subcontractor on the drilling work for its sister company Quality Enterprises, a large civil construction company that was awarded the job through a bidding process. That was in 2021, but work was put off until spring the following year to avoid hurricane season.

Toward the end of February 2022, Earth View began mobilizing and most of the work occurred in March.

Two Caterpillar excavators, a Cat 323 and a 336, operated by Earth View sit on a jack-up barge off the ocean coast near Boca Raton, Florida.



PHOTOS COURTESY OF EARTH VIEW

COMPANY: Earth View
LOCATION: Boca Raton, Florida
PROJECT: Directional drilling two parallel 1,300-foot-long seawater intake lines for the Gumbo Limbo Nature Center's sea turtle habitat.
EQUIPMENT: American Augers 440 drilling rig, Cat 323 and Cat 336 excavators

DOWN & DIRTY

"The thought process was to do the drills before hurricane season started because we would have a barge and a lot of equipment out in the ocean," Murrell says.

"We were working right in the wave break so it was always weather permitting," adds Townsend.

TIGHT QUARTERS

The job called for two parallel 1,300-foot bores from the Gumbo Limbo Nature Center under a roadway and beach area, and out into the ocean where a jack-up barge was set up to house necessary equipment and serve as the exit pit.

"IT WAS CHALLENGING ON BOTH BORES, BUT THE FIRST ONE ESPECIALLY WAS CHALLENGING BECAUSE WE REALLY WEREN'T PREPARED. WE HAD ALL THE EQUIPMENT WE NEEDED. WE JUST DIDN'T ANTICIPATE THE PIPE WANTING TO FLOAT OUT AS FAR AS IT DID."

Joe Townsend

For the new seawater intake lines 16-inch HDPE was installed. The challenges began immediately.

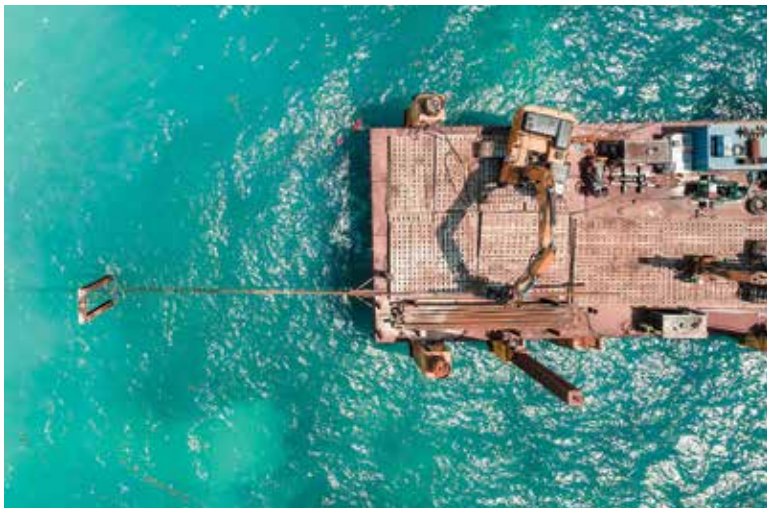
"From the beginning it was a difficult project just getting mobilized into the site," Townsend says. "They had us rig up behind the nature center, and it was tight. It was a challenge moving our equipment into the area to get rigged up to begin drilling our pilot hole."

Being right in the middle of a nature preserve, Earth View also had to always be conscious of the site's environmental sensitivity.

"We definitely had a limited laydown area to work with," Townsend says. "It takes a lot of support equipment for something like this, so looking at the site, we had to determine how small of an area we could fit our equipment into."

UTMOST PRECISION

Using an American Augers 440 drilling rig, each bore took about two weeks from start to finish — completing the pilot bore and pulling in the HDPE pipe. There was little margin for error. The two lines ran parallel, about 20 feet



One excavator was used to break the drill pipe joints loose and unscrew them from the drill string, while the other was used to pull on the drill pipe to maintain tension.

apart out in the ocean to just 10 feet apart where they connected to the new pump station at Gumbo Limbo.

"That was a concern, how close they had to be together with the tight location," Murrell says.

"That was one of the most challenging parts about the project," Townsend says. "We had to be very precise with our elevations and our horizontal distances in order to be able to fit the lines into this precast pump station. We have an in-house engineer that helped to design and profile these drills to fit the needs of the project. There was no room for error. The numbers had to be hit pretty much dead on, otherwise we would've missed the elevation at the pump station. There were tight combination radiuses as soon as the drill started.

Earth View also had to account for varying formations along the drill path. Crews started the bores with a jetting assembly, but due to a hard layer of coral at the deepest points of the drill — about 48 feet — they had to switch the tooling mid-bore to a mud motor.

"We didn't have a lot of information to work with," Townsend says. "It was challenging for the driller to change it up as he was drilling in order to hit the numbers he had to hit. But we had good steering equipment and the right tooling when the decision was made to switch from the jetting assembly to the mud motor, and we were able to complete the bores in a timely manner."

OCEAN WORK

The job required a lot of work offshore in the ocean itself, presenting unique challenges. A jack-up barge was installed to aid the ocean-side portion of the job site.

"We had to plan the length of the studs themselves for the jack-up barge, determining what the tide would be like," Townsend says.

On the barge were two excavators, a Cat 323 and a Cat 336. One excavator had an attachment used to break the joints of drill pipe loose and unscrew them from the drill string.

"As we were push-reaming and opening the hole up, the drill pipe on the back end of the reamer needed to be broken loose in sections and layed off on a rack we built on the barge," Townsend says. "That was so that as we were drilling, all the drilling fluids would go back to the entry pit and not out into the ocean."

The other excavator was used to pull on the drill pipe and maintain tension.

"During push reamer processes, you can't do it all with the drill rig itself, so our crews screwed a swivel onto the back of every joint of drill pipe, and the excavator would keep tension on the pipe and help keep that drill pipe in line to help keep the hole where it needed to be," Townsend says.

In addition to the 14 Earth View employees working on the project, there was a team of three divers to provide some assistance on certain aspects of the job. The divers retrieved the steering tooling on the pilot bores. They also helped on the pullback of the HDPE pipe.

"There was a 100-foot-long screen our crews bolted to the back of the HDPE product and the screen was drug underneath the seafloor. That's what filters the seawater throughout," Townsend says. "The divers dove down to tell us when the back end of the screen was going into the seafloor and that's where we would start our count. We had to drag the screen underneath the seafloor about 90 feet to reach the required elevation."

"THAT WAS ONE OF THE MOST CHALLENGING PARTS ABOUT THE PROJECT. WE HAD TO BE VERY PRECISE WITH OUR ELEVATIONS AND OUR HORIZONTAL DISTANCES IN ORDER TO BE ABLE TO FIT THE LINES INTO THIS PRECAST PUMP STATION."

Joe Townsend

MID-JOB ADJUSTMENT

Although challenging, the Earth View crews didn't encounter any problems during the job that required a major audible. They did underestimate one aspect on the first bore though that had them make a change for the second bore.

"We didn't anticipate how difficult it would be to have 1,300 feet of pipe lined up with the barge and keeping it lined up while the drill was pulling the product into the ground," Murrell says. "The first time it was difficult having all the pipe floating out in the water. We realized that we had to bring in more support equipment for the second one to make the process a little easier."

"It was challenging on both bores, but the first one especially was challenging because we really weren't prepared," Townsend adds. "We had all the equipment we needed. We just didn't anticipate the pipe wanting to float out as far as it did, so we had some difficulty there but we were able to keep it under control. For the second bore, we hooked up a couple more boats to the pipe and kept it in line. It really worked out well." ▼

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ELECTRIC-POWERED CONSTRUCTION EQUIPMENT IS ON THE WAY. IT COULD BE A BENEFIT TO YOUR COMPANY TO LOOK AT THE OPTIONS.

BY CONEXPO-CON/AGG

Sustainability in the construction industry is being advanced by the public and private sectors. Governments are adopting more clean-air regulations at local and regional levels and companies are adopting sustainability policies and asking partners to help them meet their targets.

Consequently, many manufacturers have already developed — or are in the process of developing — electric-powered construction equipment to meet increasing emissions regulations, provide efficiency improvements and lower operating costs. All electric, electric/hydraulic and battery-operated versions rival their diesel and gas counterparts in performance, says Joel Honeyman, vice president of global innovation at Bobcat.

THE CHANGING INDUSTRY

“People say electric machines are not going to perform as well as a diesel machine,” Honeyman says. “That is simply not true. In many cases they can outperform them.”

“Many people are so used to what they have and are afraid of new technology. Some companies have been running diesel- and gas-powered equipment for 40, 50 years. Hydraulics have been on equipment for 80 years. Adjusting to an electric-powered machine is quite a paradigm shift.”

THE FUTURE

“We see electric-powered technologies and their applications spilling into our industry,” says Honeyman. “Look at what is happening in the auto industry. Tesla has really driven the battery electric concept and an entire industry is shifting.”

“PEOPLE SAY ELECTRIC MACHINES ARE NOT GOING TO PERFORM AS WELL AS A DIESEL MACHINE. THAT IS SIMPLY NOT TRUE. IN MANY CASES THEY CAN OUTPERFORM THEM.”

Joel Honeyman

Green construction technology is only getting better and smarter with new machine and equipment applications and opportunities, he adds.

Among the many advantages of electrification, says Honeyman, are “noise and vibration reduction, instantaneous power and software features that are otherwise unavailable with a diesel engine and hydraulics.”

Sagaser adds that “the software features allow us to advance and accelerate the technology. We are doing it in a way that is more efficient and cost-effective, and beyond expectations from a power perspective. Overall, our electric innovations allow us to offer customers an experience they may not have previously imagined.

“We could have very easily removed the diesel engine and replaced it with a battery. Instead, our innovation team, which leads this project, wanted to see what other advantages we could achieve if we made it all electric and removed the hydraulics as well. That opened up a lot of possibilities.” ▼



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Making Acquisitions Work

GROWTH THROUGH ACQUISITION CAN BE A SMART WAY TO BUILD YOUR COMPANY IF YOU'RE WILLING TO DO THE RESEARCH AND CAREFULLY NAVIGATE NECESSARY STEPS

BY JOAN KOEHNE

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

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

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

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

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

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

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

TAKING ON LIABILITIES

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

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

Liens are only one of the details to check during a due diligence period in which the buyer gets access to the seller's business operations, facilities, equipment and financial records. Buyers shouldn't only rely on what the seller is telling them. Instead, they should validate the details themselves or through a third party like an accountant (for financial statements) and a title company (for real estate).

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

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

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

Also determine if the company is as profitable as advertised.

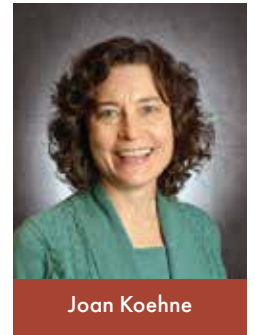
"Make sure you're buying a good business, a business that's making good money," Kelly says. "It's very hard to turn around a business that's not making any money unless, perhaps, you are an expert in that industry."

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

EMPLOYEE CONSIDERATIONS

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

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



Joan Koehne

"IF THE KEY EMPLOYEES DON'T LIKE THE BUYER, THEY MIGHT LEAVE AND COMPETE AGAINST THE BUSINESS, AND THAT CAN BECOME A SERIOUS CONCERN FOR THE BUYER."

Mike Demerath

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

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

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

"TRUST IS WHAT GETS A TRANSACTION THROUGH THE FINISH LINE."

IF YOU FEEL LIKE TRUST IS BUILDING, YOU ARE LIKELY TO GET ACROSS THE FINISH LINE."

John Kelly

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

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

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

OTHER FACTORS

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

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

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

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

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

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

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

Although every transaction looks different, the goal of a successful acquisition is to purchase a company with a strong foundation, fluent operations, the right employees, a loyal customer base and steady revenue. Entrepreneurs and business owners have an advantage when they purchase a company instead of opening a startup. They take ownership of a company that is already well-established and making a profit, whereas it takes months or years to establish a business

from scratch that performs at the level of the business they are acquiring. But before buying an existing business, it pays to do research to make certain the transaction will work for all parties involved. ▼

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BY CRAIG MANDLI



Drilling company enlists dual-rod utility drills to install 5G fiber

PROBLEM

In March 2018, Mike McCall, and his two sons (Landon and Logan) were contracted for a job in Austin, Texas, to help install fiber for AT&T. The biggest lesson the McCalls learned was there is a different way to drill in rock. "We saw a few other contractors in the area using dual-rod machines designed for boring in rocky grounds," says Logan McCall. "It was time to upgrade our operations."

SOLUTION

The family demoed a few machines and eventually determined the **Vermeer D23x30DR S3**, the dual-rod version of one of the most widely used **utility drills** in the industry, was right for their needs. "In this part of Texas, you have to fight for every foot," says Logan McCall. "We did a lot of fighting with Texas sandstone that first year. We worked a small dirt drill in rock and got the most out of that machine. We also learned a lot along the way." The drilling package and process McCall Drilling finds works best for them starts with their dual-rod drills, a mud mix of bentonite and bore gel, a Vermeer TCI tricone bit and a Vermeer pulling eye. On most shots, the drill operator will empty the 300-foot drill rod basket of the D23x30DR S3, pop out and swap out tooling, and then pull back a bundle of two 2-inch-diameter fiber conduit.

RESULT "Pound for pound, the D23x30DR S3 runs circles around other machines we demoed," says Logan McCall. 352-728-2222; www.vermeer.com ▼

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515-505-0960; www.umaghdd.com



Hydroexcavation Equipment

Ditch Witch Warlock W12

The Warlock W12 PTO-driven vacuum excavator from Ditch Witch has dual 600-gallon saddle tanks and a 12-cubic-yard debris tank. Dual hose reels, as well as the ability to both hydro and air excavate with the same truck, add to its versatility. It is available with a 5,000 cfm blower, and the large tank has the capacity to keep you on the job site longer.

580-336-4402; www.ditchwitch.com



Dynablast HV590FLS-12V

The Dynablast HV590FLS-12V hydrovac water heater produces 590,000 Btus with an output temperature of 175 degrees F at 8 gpm, making it ideal for colder climates and improved digging in clay-filled areas. All models come with ETL certification for safety, which also includes certification on the coil for higher efficiency and heat transfer, and a stainless steel target plate for increased coil life, and is designed with serviceability in mind with momentary override control. It includes an Interpump T2040 water pump package offering 10.5 gpm at 2,900 psi and 1,750 rpm. The unit is suitable for compact trailer hydrovac packages.

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 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



GapVax VHX Series

The GapVax VHX Series hydrovac is designed to deliver optimum weight distribution, improved safety features and increased performance. The debris

body is 7.5 cubic yard, 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 cleanout. 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 by minimizing downtime and eliminating high-maintenance componentry. A modular design provides clean and intuitive controls and simple, planned maintenance accessibility for critical system controls. 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 1,100-gallon freshwater capacity result in fewer costly dumpsite 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, while 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.x-vac.com



Pressure Lift HydraBore

The HydraBore from Pressure Lift can blast down and physically remove built up tallow, soap residue and tank waste. Best used with a jetter, it will only add roughly 16 gallons of high-pressure water in a 10-minute period. Total time on a job, with a unit pumping approximately 2,000 gallons of waste, is less than 20 minutes at depths of 5 to 500 feet. It also minimizes the amount of cleanup simply because the water jets are directed towards the area to be excavated. It only requires one person to operate the boom, as the unit automatically directs the water where it's needed for the project because it is connected to the pump boom.

866-504-6596; www.pressurelift.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 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 exca-



vating 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

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



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



TRUVAC FLXX

The TRUVAC FLXX is a vacuum excavator built to perform for utilities and contractors installing, replacing and repairing underground infrastructure, utilizing both air and hydroexcavation options for all conditions. This machine offers more power and maneuverability to work in tight urban settings where street excavation jobs can include supporting, repairing and installing a city's water, sewer, power and telecommunications infrastructure. It has the highest legal payload capacity in a mid-size truck with a 10-cubic-yard debris body. In addition, it offers Park-n-Dig, an always-connected water source; safe and precise digging with the DigRight one-touch flow control technology; a water heater to dig in all types of weather/material conditions; a 22-foot boom reach with 340-degree rotation; and a DigFast option to maintain peak vacuuming performance and a clear airstream in the vacuum tube.

800-627-3171; www.truvac.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



Inspection Equipment

Envirosight ROVER X

The ROVER X from Envirosight is the pipe inspection system that lets an operator do everything, including run inspections, view and record video, log observations, generate reports, and link directly to asset management software. The Flexspec sewer video capture platform adds even more capabilities to this versatile system. Three video resolution options (SD and HD) allow operators to change file size and resolution depending on the needs of each inspection. Twelve wheel options enable ROVER X to inspect lines from 4 to 96 inches. Its six-wheel drive with proportional steering navigates past obstacles, and overlapping wheels climb offsets with ease. Powerful motors and a geared drivetrain maximize travel range. Not only can you add side-scanning, laser profiling and lateral launch, you can view data from onboard sensors and assess defects on-screen. The system's firmware updates automatically to the latest features.

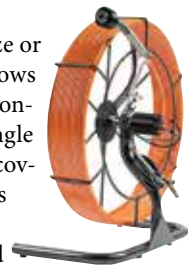
866-838-3763; www.envirosight.com



Subsite Electronics Push Camera System

When a transporter isn't an option because of pipe size or limited access, the Subsite Electronics Push Camera allows operators to complete inspections in the most challenging conditions. Ideal for pipes from 1.5 to 12 inches, it features single conductor technology with a rigid 1/4-inch fiber pushrod covered with a durable Hytrel jacketing that allows operators to inspect up to 500 feet down the line. Additionally, the 1/4-inch-diameter single conductor cable provides added strength without weight concerns, allowing operators to complete significantly longer inspections without the cable getting twisted or warped. The 1545 camera with an in-line 512 Hz beacon allows the operator to easily locate damage and blockage in the pipe. The camera is controlled by a 1575 controller, which features a rugged, durable and reliable enclosure.

800-846-2713; www.subsite.com



Pipe Bursting

Pow-R Mole Trenchless Solutions PD-33M

The PD-33M pipe bursting machine from Pow-R Mole Trenchless Solutions is designed to replace existing underground pipes 2 to 6 inches in diameter. Its nonslip, cylinder-activated jaws prevent cable damage while providing 60,000 pounds of pulling force. It offers a cost-effective alternative to open cut excavation, reducing customer disruption and increasing company profits. The process replaces the existing pipe with a fused HDPE pipe, which eliminates all joints and allows the operator to pull through bends such as 45-degree fittings. This system is modular and can be easily disassembled and reassembled for manhole and basement applications. With a compact design and very small footprint of only 20 by 20 inches, this unit can be used in tight locations.

800-344-6653; www.powrmole.com



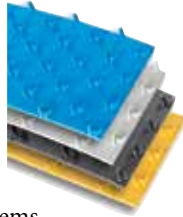
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Pipeline Rehabilitation/Lining

AGRU America Sure-Grip

Sure-Grip liners from AGRU America are made of HDPE, HDPE-el, PP, PVDF or ECTFE, and serve as a long-term alternative to spray-applied concrete protection products. The liners prevent concrete corrosion and degradation, can substantially extend the lifetime of a structure, and by preventing exfiltration and infiltration, provide direct protection for the environment. The liners have anchoring systems that enable construction in areas of significant backpressure. Unlike spray-applied liners, which have to be reapplied regularly due to cracking or delamination, these liners are long-lasting, and are designed to avoid the residuals cost often associated with concrete spray-on liners, which require tank emptying and cleaning every few years for reapplication.

843-546-0600; www.agruamerica.com



Applied Felts EnviroCure

EnviroCure CIPP liner from Applied Felts is a styrene impermeable polymer coating that eliminates styrene emissions and odor. It is coated with a styrene barrier, vastly reducing if not eliminating styrene odors and emissions on the job site before, during and after installations, taking away the significant cost and unpredictability of styrene-free resin systems. It is proven to reduce on-site styrene emissions to less than 1 ppm. The polyester felt liner has a multi-layer, polyamide coating conforming to ASTM F1216 and ASTM F1743. To accommodate the requirement for liners of varying thicknesses, multiple layers of needle-punched felt are employed.

276-656-1904; www.appliedfelts.com



Cherne Jet-Ball Cleaning Balls

Cherne Jet-Ball Cleaning Balls are an inexpensive tool for cleaning new lines prior to line acceptance testing. They have eye bolts at each end for tethering and spiral grooves to create high-power spraying action for cleaning pipelines. They are available in three variations.

800-843-7584; www.cherneind.com



CUES Easy Grout

The CUES Easy Grout system offers a computerized graphical user interface that intuitively leads the user through the grouting process. The software includes help files, tool tip descriptions and recommended settings to assist operators throughout the grouting process. The space-saving system is designed to consolidate all the valves and electrical controls into a single instrumentation cabinet that can be mounted in any location.

800-327-7791; www.cuesinc.com



FORMADRAIN Durapox 501

FORMADRAIN's Durapox 501 is a two-part CIPP steam-cured resin with a 60-day open time. Ideal for remote jobs, the resin comes in two parts so it can be controlled when it's mixed. Because the resin remains "fresh," it maintains optimal wet-out properties, but drips less once applied. Durapox 50 has the high-per-



formance mechanical properties and cure times of the standard Durapox line plus the advantages of the company's Formapox resins.

888-337-6764; www.formadrain.com

HammerHead Trenchless HydraSlitter

HammerHead Trenchless HydraSlitter kits are designed to help industry professionals meet the 10-year U.S. goal of replacing all lead pipe service laterals. The system provides a minimally invasive, low-cost, effective alternative to open-cut replacement of lead potable water pipe 1/2 to 1 inch in diameter. Select from two full-system kits now available online. Kits once ordered arrive within a few days containing all tooling and accessories the contractor needs for that specific job. Contents include the appropriate slitter, blades, expanders, cable, duct-rod and cable grip for the excavator, as well as a tooling assembly selection chart and instructions.

800-331-6653; www.hammerheadtrenchless.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 tested, safe and environmentally friendly. The new pipe is damp-proof, corrosion-resistant and wear-resistant. It is ASTM and NSF certified (NSF/ANSI 61-5). It is a 100% 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



Source One Environmental Quadex Structure Guard Epoxy

Quadex Structure Guard, distributed by Source One Environmental, is a high-build epoxy coating formulated to provide long-term corrosion protection and structural enhancement for manholes, pump stations, treatment plants or any wastewater infrastructure subject to high levels of corrosion and/or abrasion in both municipal and industrial applications. It is also suitable for invert repairs. It can be trowel- and/or spray-applied, and is a 100% solids material with no VOCs and a fast set time.

877-450-3701; www.s1eonline.com



Trenchless Pipe Replacement

Emagineered Solutions THE SHOOTER 12

THE SHOOTER 12 from Emagineered Solutions is a continuous air-inverter for CIPP. It has a range of 4 to 12 inches (up to 15 inches with a conversion kit), a knife gate for after the liner tail passes, and comes with either a self-lubricating hand truck or a basic non-oiler cart. THE SHOOTER 24 is for 15 to 24 inches, is trailer-mounted and comes with a knife gate and remote operating station on the fender. An optional conversion kit expands its range from 6 to 24 inches. Additional equipment offered



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541-504-0416; www.theshootercipp.com

Pipeline Renewal Technologies SpeedyLight+

SpeedyLight+ from Pipeline Renewal Technologies is the LED-based solution for CIPP that expertly cures liners at speeds from 0.66 up to 3.3 feet per minute. Compatible with felt and invertible glass fiber, it can cure transitions, verticals and even 90-degree bends in lines from 4 to 12 inches in diameter. The integrated camera lets operators monitor the curing process in real time, allowing for ultimate precision. Liners can be wet out remotely or on site, and a portable design makes for easy deployment. Free of styrene and amines (and the associated odor), light-based cure technologies are minimally disruptive to the community.

866-936-8476; www.pipelinert.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 dimen-



sions. 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

Waterline Renewal Technologies LightRay LRI System

The LightRay LRI System from Waterline Renewal Technologies allows complete operator control and closely resembles traditional ambient-cure inversion methods. It can accomplish throughput up to 6.3 feet per minute of casting with the light train, which incorporates cold LED lights that require no heat to cast the liner. The light train comes in a standard casting length of 50 feet, operates on a low-voltage DC platform and is internally protected to accommodate bends in pipes up to 90 degrees. Liners arrive ready to install without any need for refrigeration, which dramatically reduces the variability from mixing and preparing liners and eliminates the requirement for extra equipment in the field. The system uses nonthermal UV casting resin that is temperature-stable and only activated by UV light coupled with high-strength flexible fiberglass-coated liners.

866-336-2568; www.lightrayinversion.com



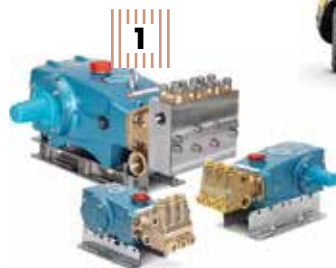
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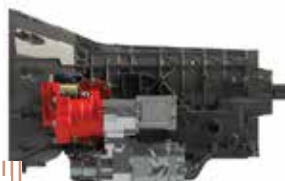
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1. Cat Pumps hydroexcavating pumps

Over 50 years of high-pressure pump manufacturing experience has earned Cat Pumps a reputation of producing the highest quality, longest lasting pumps for every market it serves. With its dedication to zero-defect manufacturing, ease of service and availability from stock, Cat Pumps designs and builds high-pressure pumps and systems to suit the demanding environments of the hydroexcavation industry. Popular models include Model 56 with 5.5 gpm at 3,500 psi; Model 56HS with 8.0 gpm at 3,000 psi; Model 660 with 10.0 gpm at 3,000 psi; and Model 3560 with 20.0 gpm at 4,000 psi, or 25.0 gpm at 3,000 psi. **763-780-5440; www.catpumps.com**

2. Mecalac swing loader models

Mecalac has three swing loader models new to the North American market. The AS750, AS850 and AS1000 models join the previously released swing loaders, the AS600, AS900tele, AS1600 and AS210. The loaders feature a rigid chassis and three steering modes, two-wheel, four-wheel and four-wheel crab, that allow for tighter turns than a standard articulated loader. The machine is designed to maintain 100% stability regardless of how it is positioned. With an integrated counterbalance paired with an automatic rear axle locking system, the bucket and its contents can be lifted and turned up to 90 degrees on either side without any loss of stability. **508-921-3076; www.mecalac.com**

3. KAISER PREMIER Urban X vacuum excavator

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. The Urban X is fully customizable based on customer requirement, offering several options for cold weather protection or adding an onboard air compressor for dry digging. The Urban X 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 clean-out system. The dig-ready, 20-foot extendable boom delivers superior reach and mobility for a mid-size unit. **970-542-1975; www.kaiserpremier.com**

4. GSSI PaveScan RDM 2.0 assessment tool

GSSI's PaveScan RDM 2.0 is a second-generation asphalt density assessment tool ideal for nondestructive asphalt compaction testing, quality assurance/quality control of new pavements and determining pavement non-conformity. By uncovering inconsistencies that occur during the paving process, including poor uniformity and significant variations in density, PaveScan RDM 2.0 helps to avoid premature failures like road raveling, cracking and deterioration along joints. With seamless GPS inte-

gration, real-time onscreen data output, and export options, the system is ideal for government transportation agencies and paving contractors alike. The pavement density measurement technology is an accepted American Association of State and Highway Transportation Officials specification, PP 98-19. The complete PaveScan RDM 2.0 system includes a rugged deployment cart and an integrated concentrator box that accommodates up to three sensors and includes housing for cable management and hot-swappable, dual batteries. **800-524-3011; www.geophysical.com**

5. VMAc's DTM70-H PTO-driven air compressor

VMAc's DTM70-H multi-power system is a direct-transmission mounted PTO-driven air compressor with a hydraulic pump. The air compressor system allows mechanics to operate air tools simultaneously with a hydraulic crane or other hydraulic equipment. Engineered specifically for 2020 and newer Ford F-250 to F-600 Super Duty 6.7L Power Stroke Diesel trucks, the DTM70-H produces variable air power and steady hydraulic power at the same time, up to 65 cfm and 8 gpm. The actual cfm and gpm output of the DTM70-H varies based on truck model year, engine rpm, hydraulic pump size, and operating mode. **888-514-6656; www.vmacair.com**

6. Kondex laser-clad splined-sonde housings

Kondex's exclusive Drill Defender sonde housings feature precision-applied laser cladding protection. This latest addition to the company's Drill Defender HDD product line includes the same high-density tungsten carbide laser cladding used on all its HDD components, is long lasting and outperforms hard-face welding. The Kondex splined-sonde housings are available in two sizes: 3-inch outside diameter by 2 1/4-inch spline and 3 1/2-inch outside diameter by 2 1/2-inch spline. **800-447-1850; www.kondexparts.com**

7. AirSpade 5000 Arbor and 5000 Utility series

The latest product line from AirSpade Division of Guardair Corp., is the AirSpade 5000 Arbor and 5000 Utility series. Both are designed for air excavation applications where gripping the tool in the vertical position is preferred. Both harness the power of compressed air to incorporate the high-performance AirSpade Supersonic Nozzle, which generates a laser-like air jet moving at twice the speed of sound for faster, more effective digging. The 5000 Arbor series tools feature interchangeable, lightweight fiberglass barrels with an adjustable dirt shield to deflect soil and debris. The 5000 Utility series tools feature interchangeable, lightweight electrically insulated fiberglass barrels. The Utility series also has nonsparking bronze and brass components that excel at safely uncovering underground utilities. **800-482-7324; www.guardaircorp.com** ▼

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This Issue's Feature:

Trench shield system helps make small underground repairs safe and easy

BY CRAIG MANDLI

Large excavations are sometimes required for fixing small underground utility repairs. Those excavations can be messy, though, not to mention dangerous to work crews.

A solution is the **EasyDig Trench Cage** from **EasyTech Infrastructure Group**. These small, circular shield systems are designed to have a low impact and provide a safe work area. The modular trench shield system comes in lightweight 2-by-4-foot half-circle pieces that are easy to transport and carry by hand. They come with a built-in ladder and are engineered to conform with national regulations. They also include a locking lid as an accessory to secure the excavation. According to Carmelle Isaac, CEO of EasyTech Infrastructure Group, EasyDig not only helps provide a safe work environment, its use can save time and money.

"EasyDig is small and hand moveable, so it can be carried in the back of a pickup truck," says Isaac. "That means minimal ground disturbance, and a neat and clean excavation area, for example on a front lawn waterline repair. There is really no other circular, modular shoring on the market designed to work with hydrovacs."

The latest design of the EasyDig is engineered to a 28-foot depth, pending soil conditions. Created specifically for utility repairs such as sewer and water repairs, it also fits across multiple other applications, including utility pole

EasyDig Trench Cage
from EasyTech
Infrastructure Group



installation, curb-stop repairs, sewer/water repairs, directional drill bore pits, cable splicing/repair

and wellhead repair/installation. According to Isaac, the research and development of the product spanned roughly 10 years.

"The developer team included long time hydrovac operators with a history in product manufacturing. It was used by the inventors out in the field for about five years and rented to various local contractors," says Isaac. "Feedback was used to create a new prototype and brought to engineers for the required pressure testing. This evolved into the lightweight product we have today."

Basically, what previously involved a backhoe and a large messy excavation can be completed in the same amount of time or less with the EasyDig Trench Cage and a hydrovac, says Isaac.

"Workers love it because they can work in a clean space instead of a mucky hole, and hydrovac companies receive more work, especially from cities," says Isaac. "Honestly we have had no negative feedback to date, and EasyDig has been utilized from northern Alberta to southern Mississippi."

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THE LATEST:

News

Mattracks introduces employee energy relief program

As part of Mattracks' yearly employee bonus package, the Mattracks Excessive Energy Expense Relief Package was launched to help combat this year's high fuel prices. E3RP payments were made to each employee that had to drive to work, and were scaled based on how far their daily drive was throughout the year. It worked out to be approximately \$0.05 per mile driven, or \$1 per gallon purchased for a 20 mpg vehicle.

Felling Trailers appoints quality assurance manager

Felling Trailers appointed Dan Klimek to the role of quality assurance manager over both of its production facilities in Sauk Centre and Litchfield, Minnesota.

Along with quality management, he will oversee weld production for the Litchfield manufacturing facility as the production manager. Felling Trail-



Dan Klimek

ers originally obtained its ISO 9001 Certification for Quality Management in 2017 and continues to maintain certification. Klimek and his team of quality assurance inspectors will ensure that all stages of the build process meet company quality standards. In the role of Litchfield production manager, Klimek will work with the production team to implement new processes and technologies to reduce lead time and increase team productivity.

A.J. Johns awarded gold level of NUCA program

The National Utility Contractors Association announced that A.J. Johns finished the NUCA STAR safety program. NUCA's Safety, Training, Awareness and Recognition program provides a venue for every company in the utility construction industry to measure the effectiveness of its safety programs and recognize how these important company programs can be improved. Jacksonville, Florida-based A.J. Johns achieved the STAR program's gold level status. The company is both a NUCA National and a NUCA of North Florida member. ▼



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Richard Hart, Harts Services, Tacoma, Washington

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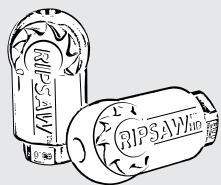
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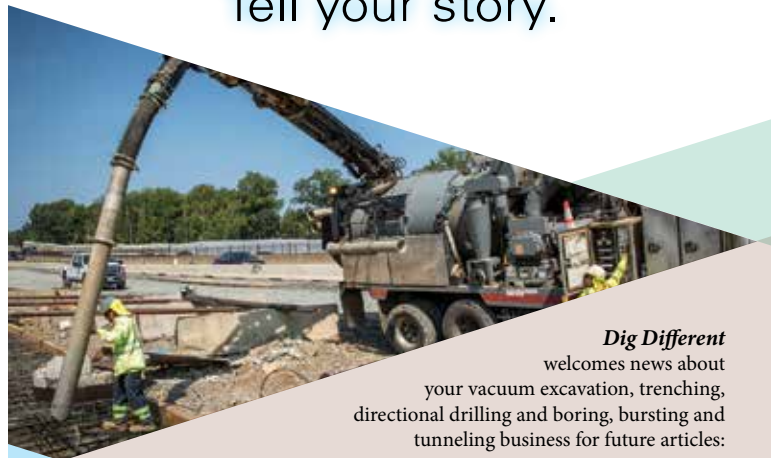
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solid Hydrovac B2B company contact base. Responsibilities: • Establish Sales objectives by forecasting and developing annual sales goals. • Report weekly on Sales and Marketing efforts, including new customers and target accounts. • Communicate with Company Executives. • Arrange Business meetings with prospective clients • Promote the Companies product addressing and predicting client's objectives. • Build Long Lasting relationships with new and existing customers. • 50-75% Travel Required. Benefits: • Health, Vision and Dental Insurance • PTO • 401K Match Program • Bonus Incentive Program Please email resume to Todd.Bullis@rapidappsinc.com (D02)

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Happenings

CALENDAR

Feb. 3

National Utility Contractors Association of Iowa Annual Banquet, Downtown Marriott, Des Moines, Iowa. Visit www.nucaofiowa.com

Feb. 7-9

Underground Construction Technology International Conference & Exhibition, Orange County Convention Center, Orlando, Florida. Visit www.uctonline.com

Feb. 9

National Utility Contractors Association of Nebraska Annual Conference, Embassy Suites La Vista, La Vista, Nebraska. Visit www.nucanbraska.com/annual-conference

Feb. 14-16

Global Excavation Safety Conference, The Tampa Convention Center, Tampa, Florida. Visit <https://globalexavationsafetyconference.com>

Feb. 16-17

Horizontal Directional Drilling Academy: Underground Utility Infrastructure, Arizona State University SkySong Center, Scottsdale, Arizona. Visit www.hddacademy.com

Feb. 20-23

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

March 14-18

CONEXPO-CON/AGG, Las Vegas Convention Center, Las Vegas. Visit www.conexpoconagg.com

March 15-23

Ohio Contractors Association Annual Convention, The Hotel ARTS, Barcelona, Spain. Visit www.ohiocontractors.org

March 30 – April 1

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

April 17-21

Common Ground Alliance Conference & Expo, Caribe Royale, Orlando, Florida. Visit www.cgaconference.com

April 30 – May 4

NASTT's No-Dig Show, Oregon Convention Center, Portland, Oregon. Visit www.nodigshow.com

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. ▼

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Do you have a question about maintenance on a piece of equipment? Dig Different can track down the answer for you in our **Machine Shop** feature. Send your question to editor@digdifferent.com or call 715-350-8436.



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