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AUGUST 2020

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ON THE COVER

Audrey Monell grew up in the plumbing industry and is now the third-generation owner and president of Forrest Anderson Plumbing and Air Conditioning. Monell took the helm in 2008 and led her company through a recession, and this year has faced a new challenge with the spread of COVID-19. She says being open and honest with her employees is the key to getting through a crisis. (Photography by Mark Henle)

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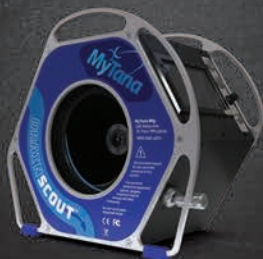


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Profile

NuFlow Certified Contractor

Randy Behle has been a NuFlow Certified Contractor since 1997. He investigated NuFlow when he was on a nursing home project with a pipe that was almost impossible to dig up and repair.

"I was recommended by another Roto-Rooter Franchise. I tried sample products from other companies, but I wasn't impressed."

"We have got to know the NuFlow Team well over the years. We can talk to them about upcoming jobs and walk through all of the steps. They give us regular support over the phone, through classes and from time to time on specific jobs."

"As soon as I got the first lining job done, the same nursing home called with another location that was bigger and we more than doubled our initial investment! It took just two jobs to turn a profit."



Randy Behle - Behle Inc.

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An Open Book

Working through a crisis is an opportunity to show people what you're really about

During the last six months, we've been forced to adapt to a new way of doing things. Our staff all transitioned to working from home, and despite some small difficulties, I've been so grateful to be able to continue working.

I've been lucky. For many people, this spring was challenging to say the least.

But those challenges have in some ways been an opportunity. Drain cleaning and plumbing services are of course deemed essential, and from what I've heard, many of you are busier than ever. I hope that also means you haven't had to consider laying off employees.



Kim Peterson

As soon as the pandemic began impacting daily life in the U.S., keeping people employed was a top priority for Audrey Monell, owner of Forrest Anderson Plumbing and Air Conditioning. Monell took over as a third-generation owner of Forrest Anderson in 2008 and was immediately tested by the recession. Staff was reduced as some employees voluntarily left for other opportunities, but layoffs are not an option for Monell, then or now.

"We're keeping everybody on. Our guys know if they need anything, we're here for them. They know that they still will have a job no matter what," she says. "I was thinking earlier today about the true character of a company, which shows itself when people are scared but everyone pulls together."

In one of this month's profiles, Monell adds that it's not always easy for smaller businesses during times like these. Some cannot afford sick leave out of pocket. Maybe they don't have established relationships with vendors or lenders that they can rely on for extra help when they need it.

Since she's been through a recession before, Monell knows the way she leads her company is incredibly important right now. Her advice to others is to focus on transparency. Be honest with your employees — about labor laws, where you see the workflow heading in the future and any struggles the company is having.

"I've seen other companies where employees were unclear about what was going on and they bailed. Our guys know we will get through a bad time because we all are in this for the long haul," she says.

That advice holds true in this crisis and out of it. You depend on your employees now as much as you ever did, and you want them to be around when we see the other side of this crisis and the economy is recovering.

As Monell says, "You get to see everybody in the worst possible situation and see how they deal with it."

When your employees look to you to see how you're dealing, make sure they see an honest, open book. They will be secure in the knowledge that they work for a company that's trying to do right by them, and they will continue working hard for you.

Have their back and they'll have yours.

I hope you enjoy this month's issue. **c**

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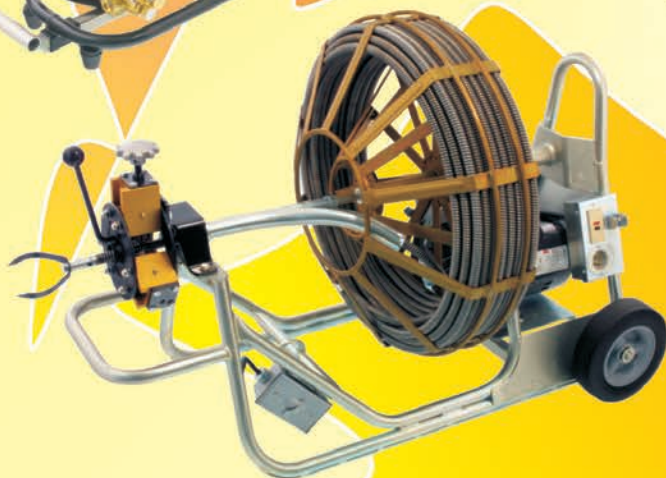
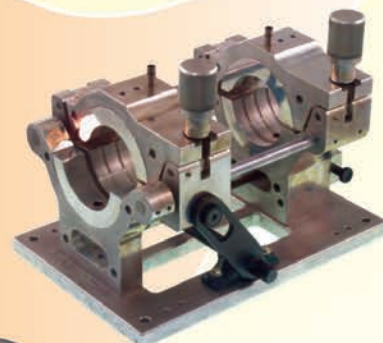
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— How to Effectively Influence Customers When Logic Fails

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Three equipment management experts share tips about all the things that factor into their purchasing decisions.

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A NEW LINE OF SERVICE

The right pipe lining technology provides a fourth-generation plumber unexpected growth and opportunity

By Suzan Chin-Taylor //

Photography by Denny Medley



» Fourth-generation plumber Christopher McNulty decided to add pipe lining to his services in 2012. Now everything else is a supporting service and the company focuses on pipe lining, offering proprietary services under the name Nu Flow St. Louis.

St. Louis-based Dippel Plumbing and Heating, now known as Nu Flow St. Louis, celebrated its 75th year in business on April 8. Throughout its history, it's been serving the St. Louis metropolitan area with a full array of typical plumbing and remodeling services.

But in 2012, Christopher McNulty, owner of Nu Flow St. Louis, made the decision to add pipe lining without knowing if adding this service was going to be profitable. The addition of trenchless technology services created an upsurge in business that was so rapid that by 2014 the company split into two divisions. Two years later, the company focused all its resources on pipe lining under the name Nu Flow St. Louis.

McNulty is a fourth-generation plumber. "We had a thriving business, and we really didn't know how pipe lining was going to go. We thought it would just be another nice tool or service in our toolbox to offer; but it took off and we found ourselves excelling in our service area and being asked to come in on some unique projects in residential, commercial and industrial markets."

Nu Flow St. Louis continues to offer many traditional drain cleaning and related services, such as high-pressure jetting, pipeline inspection, root removal and emergency services, but these are typically supporting services. The trenchless sewer repair services include epoxy pull-in-place pipe lining, traditional inversion CIPP lining and traditional pipe replacement when trenchless technology is





➤ Nu Flow St. Louis technician Benjamin Norton removes the internal rubber bladder from a liner.

not a viable option. The firm has a fleet of 12 service vehicles that include cable and camera vans, large box trucks for lining, smaller trucks and trailers for lining and proprietary NuFlow Technologies equipment. They also use jetters from Spartan Tool and General Pipe Cleaners, cable equipment from Electric Eel, and CCTV inspection cameras from RIDGID and Pearpoint/SPX.

LASER FOCUS

Nu Flow St. Louis' primary focus is a specialized epoxy pull-in-place method for pipe lining. They are capable of rehabilitating lines from 1 1/4 to 24 inches in diameter and can renew interior vertical sanitary pipelines, as well as exterior laterals to the municipal mains.

This broad range has opened many opportunities, so Nu Flow St. Louis likes to keep small-diameter lining materials through 12-inch in stock and has the capacity of creating and installing custom orders for any size. It can also perform relining in tee and wye connections. The ability to customize to fit customers' needs has allowed the company to take on unique projects for which lining may not have been considered a viable solution in years past.

Although the technologies in the company's repertoire allow it to perform rehabilitation in potable and sanitary sewer lines, the predominance of their work is in collections system lines with a specialization



Nu Flow St. Louis
LOCATION: St. Louis
OWNER: Christopher McNulty
EMPLOYEES: 12
SERVICES: Residential, commercial and industrial pipe lining services
SERVICE AREA: St. Louis metropolitan area
WEBSITE: www.nuflowstlouis.com

» Owner Christopher McNulty helps jet a line to prepare it for rehabilitation.

» Technician Kevin Sutton uses a RIDGID SeeSnake to inspect a cast iron drain below a cement basement slab.



“House laterals are easy, but we like the unusual - we take those projects that others say can’t be done as a challenge and won’t give up until we figure out a solution to the problem.”

Christopher McNulty

in interior building lines. But taking the technology beyond its normal specified use is what McNulty really enjoys. “House laterals are easy, but we like the unusual — we take those projects that others say can’t be done as a challenge and won’t give up until we figure out a solution to the problem.”

SEEKING THE UNUSUAL

Nu Flow St. Louis boasts an impressive client roster that includes the St. Louis MetroLink public transit system, St. Louis federal building, University of Missouri, Southern Illinois University, various St. Louis County incarceration centers and well-known food and beverage processing plants.

One of their high-profile food manufacturing customers, which produces hams and other pork products, called McNulty in to resolve issues with process drainlines that run underneath ovens. Once the ham products are prepared and ready for cooking, they are pushed into large ovens that are the size of semitruck trailers and arranged in a row. Each of the large ovens has two drains in the flooring with a cast iron plumbing system that runs through the center of the oven. The cooking grease and byproducts that flow into the drainage system were deteriorating the cast iron pipes.

Traditional replacement of the pipes would require taking the factory offline, so relining was a very attractive solution to the factory





▲ The crew at Nu Flow St. Louis includes (from left) Benjamin Norton, Kevin Sutton, owner Christopher McNulty, David Bruns and Eric Turner.

owner. Nu Flow St. Louis recommended using an epoxy to line these oven drainlines, but a normal epoxy and lining material would not work, as the ground temperature underneath the ovens could reach 185 degrees F and the ovens themselves reach 600-plus degrees F. Manufacturer NuFlow Technologies developed a special epoxy that could withstand the heat tolerances, so Nu Flow St. Louis was able to successfully rehabilitate 4-inch branch arms and 6-inch trunk lines using a heat-assisting unit. Cure times were reduced to an hour and 10 minutes and the project was performed over four weekends, limiting the plant shutdown time significantly.

UNIQUE SOLUTIONS

Although the food processing plant project had some unique challenges, McNulty says one of the craziest things they were ever tasked with was finding a solution for turbines at a hydroelectric plant. Turbines located at the plant each had an overflow system where the majority of the water would come down and go through but, in the process, some water would splash up. When it did this, it would pass through a small 4-inch opening in the side of the turbine. It then entered a three-dimensional triangle box that was connected at its end to a 6-inch drainline that drained out of the turbine and into the rest of the plumbing system. The turbines were experiencing leaks on these overflow drains, and after testing the overflow systems, it was determined that the leaks were coming from the small triangle catch boxes.

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Technicians Eric Turner and Benjamin Norton wet-out a liner.

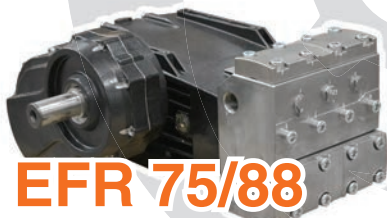
McNulty needed to figure out a way to get into the triangle boxes and seal them. The solution was to epoxy-coat the boxes and line the 6-inch drainlines coming out of them. The access to the boxes was very small and did not allow the crews to deploy equipment or extend their hands into the opening so a spray-and-brush method to coat the inside of the boxes was used.

“This was one of those projects where we weren’t sure if our methods would work and everyone had their fingers crossed,” McNulty says. “But we’re glad we decided to stretch the technology and our skills to create this most unique, successful solution for a not-so-typical application.”

Another atypical job for McNulty and his team was helping the St. Clair County animal shelter when it was experiencing issues with the sanitary drainage lines for its kennels. The system consisted of clay laterals that extended from the foundation to the municipal sewer lines, and the cast iron for all of the interior drains was badly deteriorated. Although the drainage was adequate for each of the kennel stalls, when the staff would wash down the kennels, an insufficient amount of water was being used to carry the waste from the drain through the sanitary lines. Because of this, the system lines were not being flushed sufficiently. Sometimes other items such as toys, dog collars, blanket scraps and the like had also gotten washed down into the drainage line with the daily hosedowns.



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Talent in unexpected places

As many small-business owners in the trades know, finding employees can be challenging in today's market. Christopher McNulty, owner of Nu Flow St. Louis, has found tapping a market segment that is typical for the industry has paid great dividends. "Pipe lining or trenchless technology is a new industry, so it's very hard to get people to understand what we do and have an interest in entering this industry," McNulty says. "When speaking with trade school students, they want to stay in their chosen field and find it difficult understanding that pipe lining is now an integral portion of plumbing — and a very lucrative part of it, at that."

As a fourth-generation plumber and with his company's beginnings as a plumbing contractor, it seemed logical and natural to tap the skilled plumbers on his crew to work on relining projects. However, this thinking created more challenges than advantages. Longtime plumbers, used to using traditional methods, were sometimes reluctant to grasp the advantages of lining over the traditional dig-and-replace method.

So, McNulty went in search of those with skills in a trade that had common threads to lining. What he discovered was that some of his best new recruits and employees started their careers as auto mechanics. Their natural mechanical inclination made them perfect fits for learning pipe lining techniques. Many of these mechanics enjoyed their work but didn't necessarily enjoy being inside of the service station all day long. They had the skills and wanted to work doing something mechanical, and so being out in the field on a lining rig would offer them the opportunity to use their natural skills but in a work environment that could change on a daily basis.

"Bringing on people from a completely different field is a great opportunity for both them and me as the business owner," McNulty says. "I get to train them my habits and the way that we do business in addition to lining skills, and this creates a winning work combination for everyone."

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“When you choose vendors, no matter what it’s for, being sure they can and are willing to go above and beyond to assist their customers is critical.”

Christopher McNulty

The shelter experienced odor issues, and there was significant deterioration and corrosion buildup on the inside walls of the pipes. Before the lines could be rehabilitated, the crews needed to sufficiently clean the system and retrieve all the items that didn’t belong in the sewer. Once that was done, they were able to flush the system thoroughly to push all the fecal matter down into the mainline. Afterward, they descaled the piping system and flushed it again to remove any scale debris that was still settled on the bottom of the pipe.

After confirming with CCTV inspection that the lines were thoroughly prepared and ready for relining, they performed the rehabilitation using the NuFlow Technologies epoxy pull-in-place liner. Logistics were a little challenging since the dogs could not be removed from the facility and needed to be moved back and forth to other areas of the building as the work was being performed. After the rehabilitation, the epoxy lining helped to improve the flow and extended the asset life of the kennels’ infrastructure by decades. Pipe lining was well suited for this application because it was minimally disruptive for the residents.



Technician Eric Turner cleans out a lateral line with a Spartan Tool jetter.

succeed and exceed your own expectations when getting into a new line of service.”

McNulty’s goal for Nu Flow St. Louis is simple: “Keep lining pipes and doing the work we love.” **c**

LOOKING FORWARD

McNulty has established strong networking relationships with some of the region’s prime trenchless rehabilitation contractors, like SAK Construction and Insituform. Because of this, he always is keen to stay on top of new technology and is an early adopter if a better and faster tool or method for lining presents itself.

When deciding to enter the trenchless market with lining, McNulty performed his due diligence before settling on NuFlow Technologies. “The best decision I made for my business as we expanded into lining was to become an installer with NuFlow Technologies. Being new, it was critical for me to have training and support for myself, as well as my crew members who would be doing the work; our vendors need to be partners in our business,” McNulty says.

“When you choose vendors, no matter what it’s for, being sure they can and are willing to go above and beyond to assist their customers is critical. If you’re willing to learn everything you can and use whatever tools they provide, you have the best chance to

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Joan Koehne

Rules of Overtime

One small violation can quickly snowball into a litigation nightmare if you're not following overtime pay guidelines

By Joan Koehne

Employers may not like to pay overtime, but not abiding by state and federal rules can land them in hot water. It takes just one or two disgruntled employees who realize they have not been paid properly to file a claim in court. An overtime violation that starts small can quickly grow into an expensive legal nightmare.

For example, a portable restroom company in New York will pay more than \$7 million to almost 1,300 technicians to settle a suit over unpaid wages and overtime. The pump, flatbed and water truck drivers argued that they worked through lunch hours, although that time was deducted from their pay. They also contended that they were only paid their regular rate of pay instead of the overtime rate due to them. Additionally, they worked after their shifts' ended without being paid.

“What happens when employers don't classify employees correctly?”

That's when problems start.”

Michelle Higgins

class action suit, especially when one can go back two to three years to collect unpaid wages. Then you add in the penalty that allows for the wages to be doubled, and attorneys' fees,” she says.

Once a suit has been filed, state and federal investigators often start looking for other violations, says Michelle Higgins, associate editor at J. J. Keller. These violations may have nothing to do with the original infraction. Investigators may check a company's labor law posters, child labor practices, meal/rest breaks for employees, etc.

“Once the wage and hour investigators start pulling a figurative piece of yarn, everything can unravel,” Higgins says. Besides paying

Attorney Jodi Arndt Labs of the Law Firm of Conway, Olejniczak & Jerry, says employers need to be aware of the consequences of not following overtime rules.

“A small amount due and owed to each employee can add up significantly in a

back pay, other consequences may include mandated training for supervisors and years of agency follow-up. There's also the negative publicity to consider.

KNOW THE LAWS

Higgins encourages companies to do self-audits, review policies and employee handbooks, and watch for (and avoid) infractions experienced by other companies in their industry.

“Be as compliant as possible,” Higgins says.

A good starting point is to know the three fundamental rules of overtime:

- Employers must pay overtime to employees who work more than 40 hours in a workweek.
- Employers must pay an overtime rate of no less than time and a half of an employee's regular rate of pay.
- Employers do not need to pay overtime to exempt employees (more about that later).

Under federal law, an employer has a fair amount of freedom in deciding when employees (age 16 and older) will work. There's no limit to the number of hours an employee works in a day or week or the number of days in a row. Working overtime can be a condition of employment, and employees can be fired for refusing to work overtime. In addition, employers aren't required to give advance notice of overtime work and can call in employees on scheduled days off.

While employers have the freedom to require longer hours, they are smart to consider the impact of overtime hours on employee morale. Will the extra workload or last-minute requests cause employees to quit, bad-mouth the company or be less productive or safety-focused while on the job? The flip side is also true, when employees welcome the opportunity to work overtime.

“Often, employees are happy to earn extra money with overtime pay,” Higgins says. They count on it — or may even fight for the opportunity to work extra.

For less-enthused employees, incentives can help. Even small treats like coffee and donuts or pizza can contribute to management-employee camaraderie, strengthen morale and contribute to a positive company culture. Appreciation, empathy and good communication are also important.

If possible, employers should provide a time frame when overtime will be required. Employees who aren't happy with their hours should talk with their supervisors, Higgins says.

“Their leader would really need to step in and say, ‘What are you unhappy about, and what can we do to figure out a solution?’”

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EXEMPT EMPLOYEES

While all employees can be required to work overtime, not every employee is eligible for overtime compensation. It all depends on whether an employee is classified as exempt or nonexempt. Employers do not need to compensate exempt employees for overtime hours.

Exempt employees are certain individuals with executive, management or supervisory responsibilities, administrative duties that require independent decision-making, plus outside sales and computer employees.

“Some examples of employees who may be exempt from overtime would be a CEO, human resource director or vice president of sales,” Higgins says.

One of the biggest misconceptions about overtime is that companies can simply classify salaried employees as exempt when they’re not.

“What happens when employers don’t classify employees correctly? That’s when problems start,” Higgins says.

Arndt Labs says a well-written job description helps to classify employees accurately.

“I advise clients that they need to have a good job description that clearly outlines what the employee’s job duties and responsibilities are and that such job descriptions include the criteria needed to qualify as an exempt employee.”

Additionally, employers should talk with employees about what they do day to day to further categorize them correctly.

“We recommend employers have a policy that defines exempt versus nonexempt and clearly spells out the workweek,” Arndt Labs says. The policy also should set the compensation amount for overtime and state that vacation and holiday hours don’t count toward overtime compensation.

“Employers may think they can avoid overtime obligations (for salaried workers). If the employee does not qualify as an exempt employee, then the employer will still need to pay overtime for those hours worked above and beyond 40 hours in a workweek.”

“Overtime pay due to an employee is based on the employee’s regular rate of pay and the number of hours worked in a workweek regardless of whether the employee is paid on a piece rate, day rate, commission or salary basis,” Higgins says.

CALCULATING OVERTIME HOURS

Aside from compensating employees properly for overtime, employers must also track and report a nonexempt employee’s regular and overtime hours separately.

The Fair Labor Standards Act does not require a particular form for records, but it does require certain identifying information about the employee and data about the hours worked and wages earned. Companies can use various human resource systems to maintain these records. The U.S. Department of Labor wage fact sheet provides more information about recordkeeping: www.dol.gov/sites/dolgov/files/WHd/legacy/files/whdfs21.pdf.

At the federal level, the U.S. Department of Labor administers the overtime policies as outlined in the FLSA. These are the minimum requirements; some states and municipalities have their own policies. Employers need to comply with all of these, applying the requirements that benefit the employee most, which can be tricky for companies with locations in multiple states. Higgins recommends starting with an overall employee policy and including addendums for what’s required in various municipalities and states where the company has workers.

When calculating overtime, employers need to factor in all of the hours worked, including travel time.

“Generally, all hours traveling from the company shop location to a customer site and all travel throughout the regular day are compensable as hours worked,” Arndt Labs says. Employers may establish various rates of pay for employees, like travel time versus an hourly wage. On-call time, nondiscretionary bonuses, shift premiums and other work arrangements also need to be considered when determining overtime pay.

Overtime laws can be confusing, complicated and costly if they’re violated. Arndt Labs advises clients to call her before problems arise.

“If a business owner is in doubt about what their obligations are to their employees, it is best to call an employment or labor attorney, as it will typically be more cost-effective than facing a wage audit or otherwise litigating a wage and hour claim,” she says.

Business consultants, human resource professionals/systems or online resources can also be helpful when it comes to knowing and abiding by the rules of overtime.

“It is better to be proactive than reactive.” **c**



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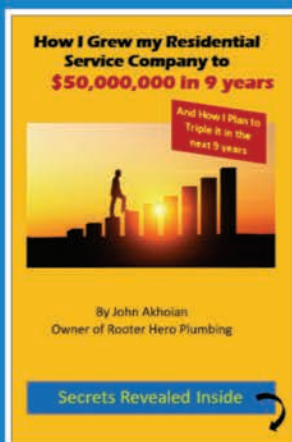
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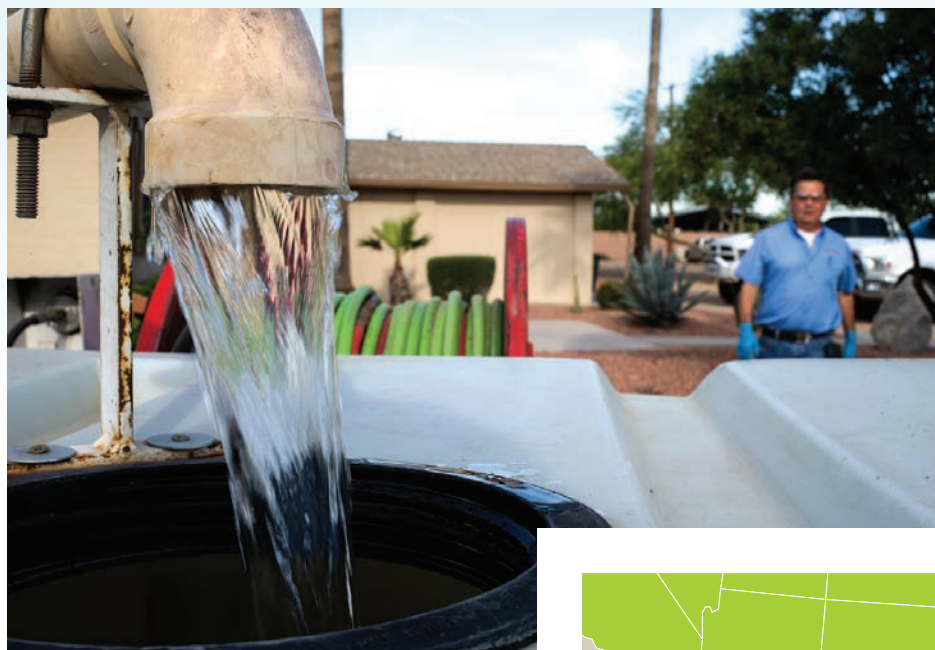
A third-generation owner has led her company through crises with straightforward management and solid customer service

By Giles Lambertson

Photography by Mark Henle



There was a time when plumbing services were considered important, but not given much thought by the average person. Then the coronavirus came along and the plumbing trade rose higher in public esteem and was designated an essential business.



▲ Stevens fills a water tank on a US Jetting trailer jetter.

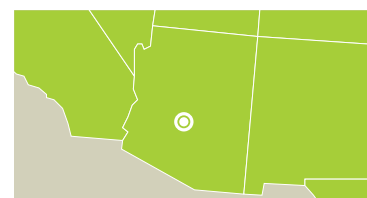
The new status didn't surprise Audrey Monell, owner and president of Forrest Anderson Plumbing and Air Conditioning in the Phoenix metropolitan area. After all, Monell grew up in the industry: first sweeping floors and then, as a teenager, helping keep the books and going out on service calls. By the time she graduated from Arizona State University with a degree in economics, Monell was persuaded that leading a third-generation plumbing company was a good career choice, and she began doing just that in 2008.

As April 2020 got underway and the U.S. settled into a second month of pandemic disruption, workdays at Forrest Anderson were pretty much business as usual, according to Monell.

"Until Monday of this week, people were still calling with routine maintenance requests. They were stuck at home with nothing else to do. But in the last few days, all the service calls are about emergency situations." She added that the shop at that point was experiencing "a little bit of a pullback in commercial work, mostly because some of our commercial customers have shut their doors or reduced their hours."

Spring usually is a time for the company to beef up service crews as temperatures begin to routinely climb into the mid-80s and homeowners and businesspeople start turning on their air conditioners. That didn't happen this spring.

"Just like any other normal year, before the virus hit hard, we were getting more people on staff. Then all of a sudden we didn't have work for them so we stopped hiring," she says. Though new people were not being brought aboard in April, Monell had no intentions of letting employees go. Layoffs are not in the Forrest Anderson playbook.



Forrest Anderson Plumbing and Air Conditioning

LOCATION: Glendale, Arizona

OWNER: Audrey Monell

FOUNDED: 1948

EMPLOYEES: 27

SERVICE AREA:
Phoenix metropolitan area

SERVICES: Commercial and residential HVAC services, drain cleaning, plumbing fixture installation and repair, and commercial backflow device maintenance

WEBSITE: www.forrestanderson.net



◀ Field supervisor Mark Stevens uses a US Jetting trailer jetter to clear a blocked pipe.



Stevens uses a Hurco Power Smoker II to test a system for leaks.

“We’re keeping everybody on. Our guys know if they need anything, we’re here for them. They know that they still will have a job no matter what,” she says. “I was thinking earlier today about the true character of a company, which shows itself when people are scared but everyone pulls together.”

STEADY WORK

Air conditioning work may have dropped off this spring, but cleaning drains is not temperature dependent. Clogs occur year-round, and the company’s drain cleaning work remained steady. It constitutes about 15% of Forrest Anderson’s service calls, which Monell calls “a decent amount, especially considering we compete with companies whose primary service is drain cleaning.”

An “uptick” in such work occurred a couple of years ago after the company invested in a CCTV camera system for inspecting the lines, having previously subbed out such work. Employing the RIDGID SeeSnake M200 camera system with a CS10 monitor obviously gave Forrest Anderson new in-house diagnostic capacity. As important, Monell says, was that the visual system cemented relationships with customers. Seeing is believing, after all.

In most cases, obstructions are cleared away using a General Pipe Cleaners Super-Vee drain cleaner, which worms its way through

a clog to collapse and clear it. If the barrier resists that approach, one of two Spartan Tool jetters is rolled out to blast it apart. Each plumber at Forrest Anderson is trained to eliminate blockages from drains discovered on routine calls, with a Super-Vee on each truck and a Spartan jetter available in the shop.

Procrastination being a fundamental human condition, most people call for drain cleaning services only after allowing grease or some other coagulant to reach a critical mass and begin to slow or back up flow in a pipe, Monell says. “Most of our customers ignore the situation until it is fully clogged, but we do get people who are looking into buying a house and want an inspection. They pay for their own camera work. Checking drainpipes is a very, very important thing for a potential homeowner to do.”

HIGH DEMAND

Everyone who cleans out a drain has a favorite story of what was found wedged inside the pipe. Monell’s involves tree roots. “It was a commercial stoppage, and the entire pipe was filled with a root of a big tree. Surprisingly, the pipe still was functioning, more or less.”

Trees planted along the path of a drainline is a pet peeve for Monell. She runs into it too often. “When people plant trees in the



« E.J. Knowls feeds a jetter hose into the backyard clean-out of a residential lateral line.

“Our guys know if they need anything, we’re here for them.
They know that they still will have a job no matter what.”

Audrey Monell

front yard, they plant them right over where the pipe is buried.” Roots then find their way into the pipe and problems begin.

More often, it’s human behavior that contributes to the recurring problem. “I definitely believe the drain cleaning part of our business will only grow. People will keep on putting the wrong things down the toilet. That never will stop.”

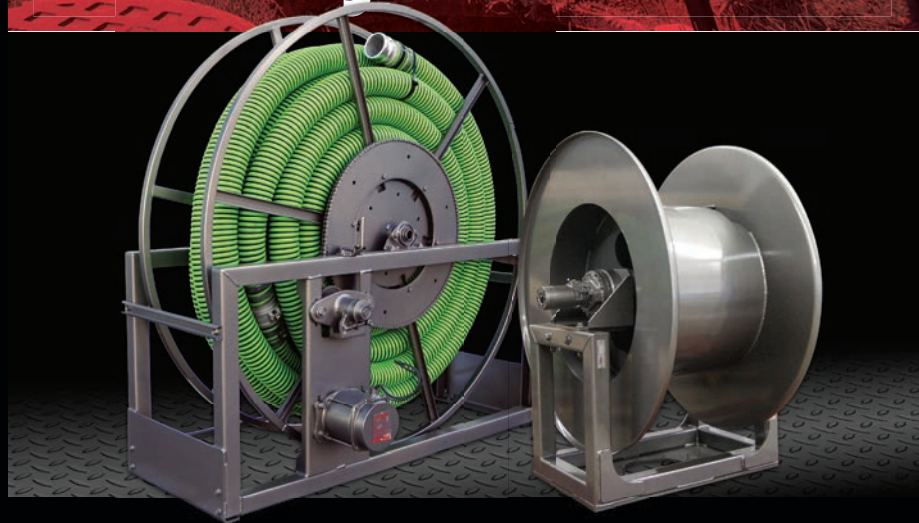
As COVID-19 spread across the country, some predicted that the toilet-paper craze would bring new business to plumbers, with toilet-paperless people using and flushing unsuitable paper products down the toilet. “Oh, yes, that was a problem before and it has worsened,” Monell says. “We have had to explain that paper towels are not a good replacement for toilet paper because they don’t dissolve as well. Baby wipes also don’t belong in a toilet.”

People’s actions in the kitchen during the pandemic are to blame as well, Monell says. “It’s kind of funny. A lot of people are home and working from home. They’re bored and spending a lot more time in the kitchen. There’s a lot more stuff than before going down the disposal. Stoppages of all kinds have increased.”

Monell is also expecting to see more customer demand for a product called an air



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“Most of our customers ignore the situation until it is fully clogged, but we do get people who are looking into buying a house and want an inspection.”

Audrey Monell



«E.J. Knowls uses a Speedrooter drain machine from General Pipe Cleaners to clear a blockage.

Customer education is key

A toilet is a receptacle. What too many people fail to understand is that a toilet is not a trash can. Anything flushed that was not designed to be is problematic.

Despite the fact that Forrest Anderson Plumbing and Air Conditioning benefits from service calls in the Phoenix metropolitan area when toilets become plugged, the company quietly campaigns on its website against disposing of inappropriate stuff in toilets: “Waste and toilet paper, people. Waste and toilet paper.”

The company’s public service campaign against toilet trashing has been extended to public TV. Mark Stevens, Forrest Anderson employee, or Audrey Monell, company president, have appeared on a live morning show on Phoenix television station AZTV to talk about it. Using a dolly-mounted porcelain toilet and tank, they demonstrate where to turn off the water if a plugged toilet is overflowing and how to properly use a plunger to clear away a blockage.

The portable toilet appearances are timed for Super Bowl weekends or in advance of Thanksgiving, annual events that trigger lots of partying, eating and attendant stuff. The message to 1.9 million AZTV holiday viewers: Don’t take it out on your toilet.

Besides covering the subject in the website’s blog and other content spaces, Monell says company techs regularly talk to customers in the course of unstopping their toilets. The counsel to customers includes having a wastebasket next to a toilet in the bathroom so that nonflushables have a receptacle of their own.

scrubber. It is affixed to cooling and heating units and attaches germ- and virus-fighting molecules to infused air entering a home or office. Suddenly, such disinfecting devices seem like a good idea.

ENDURING HARD TIMES

Monell’s grandfather started the plumbing company in Indiana, eventually moving the business bearing his name to Arizona, where Monell’s father, Don Hensley, became the second-generation owner of the family firm. As disruptive to the normal business routine as the COVID-19 epidemic has been, it is not the first leadership challenge Monell has faced since taking over in 2008. That was the year a deep national recession took hold, one that especially challenged the construction trades, including plumbing.

During the recession, the staff of Forrest Anderson was halved through attrition as employees voluntarily left for other states and jobs. No one was laid off then either, and the company subsequently returned to its full staff level of 27 people. It operates today with an annual revenue of \$5 million. That earlier harrowing economic experience undoubtedly helped shape both the company and its president. Monell has been named one of the Most Influential Women in Arizona Business and is president of the Phoenix Chapter of Executive Women International.

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In April, as the wrenching economic impact of COVID-19 spread, Monell expressed concern for other firms in the plumbing industry. “I know some smaller businesses are shutting their doors just to avoid having to pay things like sick leave. They just cannot afford that out of pocket. Small companies that are not prepared and don’t have good relationships with vendors and financial people are at risk of being put out of business.”

Monell believes openness is the answer for small businesses having to endure such financial trials. “During hard times, it’s a good idea for owners to be transparent — about labor laws, about how they see the workflow going in the near future. To be completely honest with everyone is

vital. I’ve seen other companies where employees were unclear about what was going on and they bailed. Our guys know we will get through a bad time because we all are in this for the long haul.”

The 36-year-old executive looks back at her dozen years at the helm of Forrest Anderson and is heartened by what she’s learned about crises and the response of her colleagues during such episodes. “Basically, the hardest times can sometimes be the most rewarding. In times like these, you get to see everybody in the worst possible situation and see how they deal with it, how they sort it out. It’s so nice to know that we all have each other’s backs.” **c**

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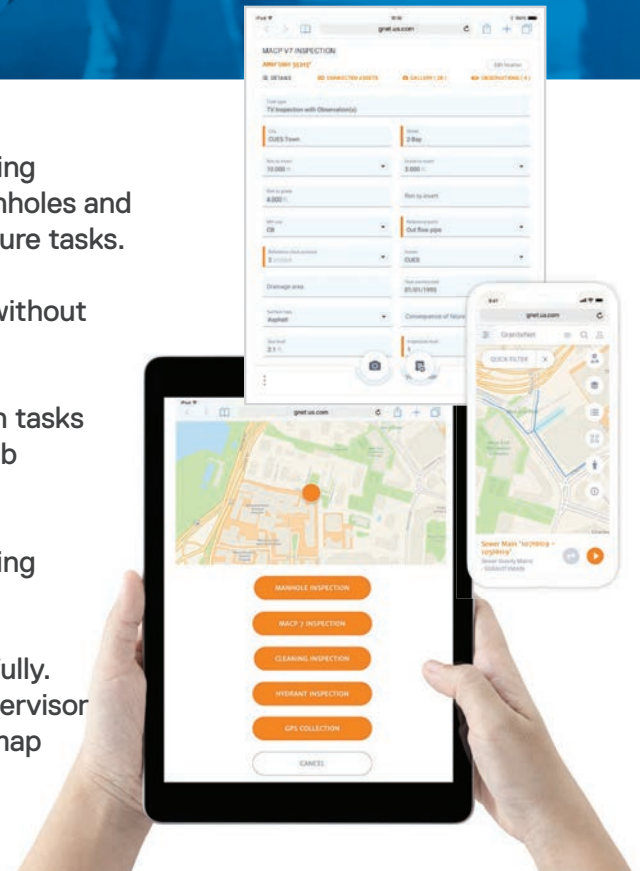
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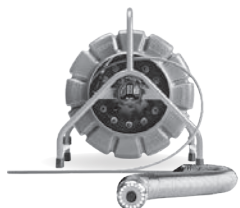


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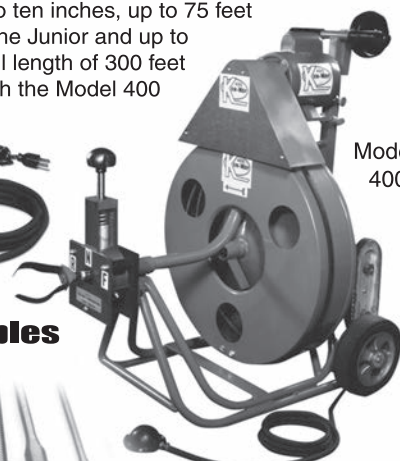
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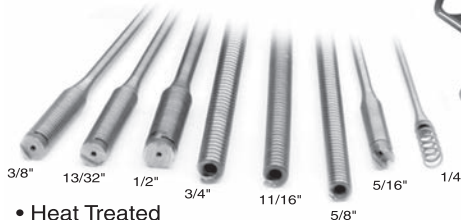


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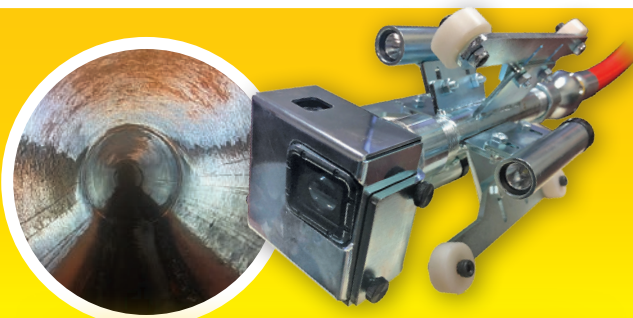
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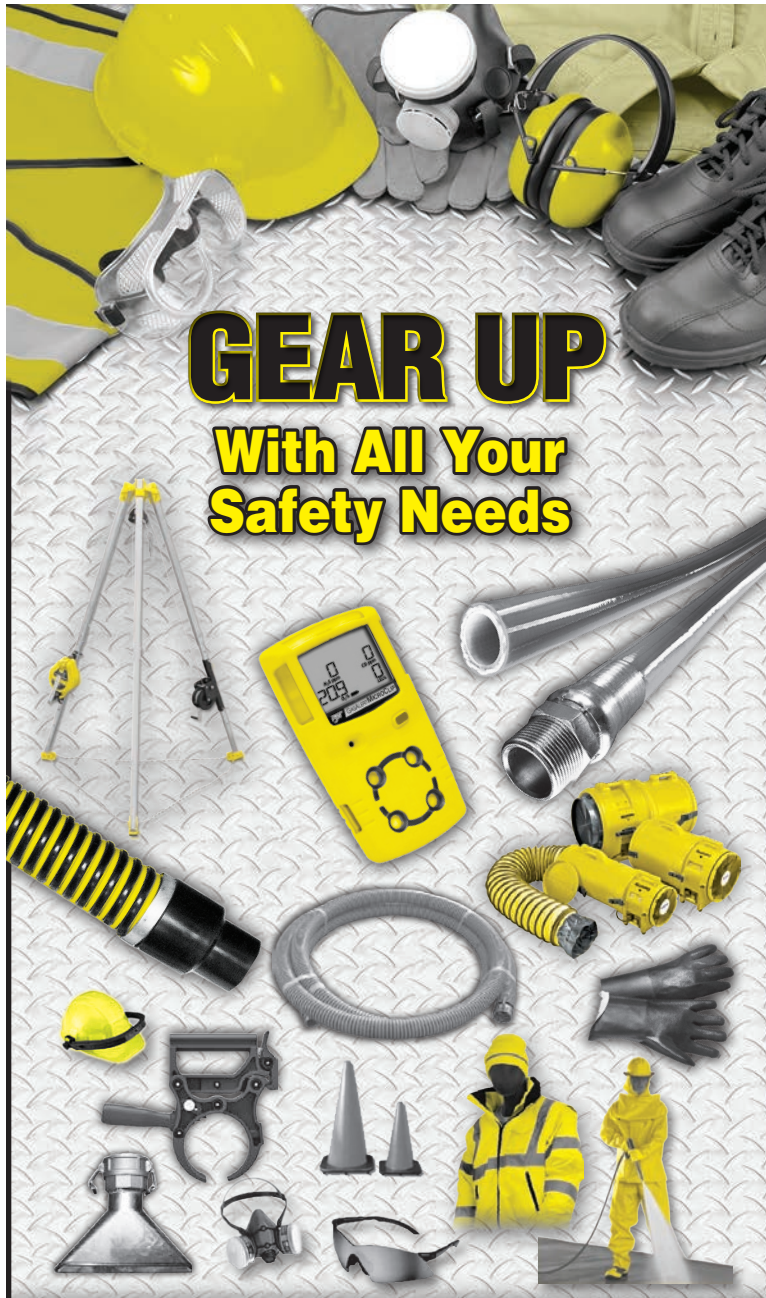
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Stemming the Tide

TerraFirma Earth Technologies clears hurdles while dewatering the Sabine River pipeline project

By David Giles

Before the Sabine River Authority of Texas could launch its \$75 million pipeline project in early 2016, they had to do a lot of dewatering.

The project was managed by Garney Construction, which contracted Houston-based TerraFirma Earth Technologies for the challenging job of dewatering tunnels under an open highway, active railroad and set of gas pipelines.

Garney used the construction manager at risk project delivery method, which allowed them to select the best dewatering subcontractor based on a combination of qualifications, expertise and cost.

Garney was impressed with the experience and efficiency of the TerraFirma crews. "Once on site, crews performed the work quickly to install dewatering equipment [to stay] ahead of Garney's pipe crews and tunneling operations to maintain the project schedule," says David Burkhart, Garney's director of central pipe operations.

The Sabine River provides a border between Louisiana and far southeast Texas, flowing roughly 100 miles from U.S. Route 190 to the Gulf of Mexico. The area is desolate, with only two highways crossing the river: state Highway 12 and U.S. Route 190. Flowing through Newton and Orange counties, the river provides water for local industry and municipal customers. The infrastructure and location of the existing pump station, constructed in 1934, as well as changes within the river, have occasionally limited Sabine River Authority's ability to withdraw water from the river.

During natural low flow and drought conditions, the authority has released water from the upstream Toledo Bend Reservoir to raise the level of the river at the existing pump station's intake canal so water can be pumped. The authority received a \$75 million loan from the State Water Implementation Fund for Texas program in 2016 to improve the water system by constructing an 85 mgd raw water pump station along the river, along with several miles of water conveyance pipeline to serve its customers. The new pump station and pipeline will eliminate the need to release water from the Toledo Bend Reservoir during periods when the river has low flow.

The TerraFirma crews prepared the way for the 7-mile pipeline



project by dewatering the bore and jack pits at three locations using closely spaced deep well dewatering wells. The 66-inch-diameter pipeline had to be tunneled underneath the active Kansas City Southern railroad (143 feet in length), a set of active gas pipelines (110 feet in length) and Highway 12 (161 feet in length). Due to a period of very heavy rains just before construction began, as well as some rain during construction, the river rose 10 feet. That caused a subsequent rise in the water table and made the already difficult access to the various low-lying, swampy sites even more difficult. Creative solutions were in order.

The company encountered some hurdles that required special equipment and changes to the original dewatering plan. TerraFirma had to dewater the 161 linear feet from entry shaft to exit shaft beneath Highway 12 while it was in use. The authority didn't want to disrupt traffic.

Access to the low-lying, swampy areas was the biggest challenge. It was necessary to rent special equipment to get to the site.



« TerraFirma's track-mounted bucket-auger drilling rig, multiple layers of massive mats, and bulk specialty well filter gravel in 3,000-pound super sacks were utilized to contend with the swampy conditions and elevated water table. (Photos courtesy of TerraFirma Earth Technologies)

« TerraFirma utilized the Marooka MST3000VD to move 3,000-pound super sacks of specialty filter gravel and other materials from the staging area to the drill pad.

« TerraFirma Earth Technologies conducts dewatering at the TX/LA border Hwy 12 road Crossing, directly adjacent to the Sabine River.



“Their equipment, performance and installation exceeded our expectations, providing dry trench conditions in very difficult soils surrounded by swamp.”

David Burkhart

Crews installed well groupings on each side of the crossing to surround the access shafts. The shafts had to be large enough to facilitate the massive boring machine and extended down to 20 feet deep, well below the groundwater level. First they had to dewater the shafts. Then came the job of dewatering the 66-inch-diameter water pipeline between the two shafts, which required lowering the water table from both sides of the road even farther. The traffic was unaffected, however, and drivers didn't even know there was work being done.

Burkhart explains that Tropical Storm Imelda landed during TerraFirma's already challenging dewatering conditions. “Their equipment, performance and installation exceeded our expectations, providing dry trench conditions in very difficult soils surrounded by swamp.”

CMAR - A COLLABORATIVE DELIVERY MODEL

With construction manager at risk delivery, constant collaboration throughout the entire project is key. The construction manager/general contractor serves as the construction manager, collaborating with the owner and all contractors throughout the entire project. This delivery model is increasingly preferred because the contractors are brought on at the earliest stages of the project. The construction manager suggests updates to the design that can positively impact project costs, scheduling, materials and efficiency based on collaborative discussions with subcontractors and owners.

In addition to the swamplike conditions, recent rains posed another set of challenges. Because the river's water level was 10 feet above normal, there was a subsequent rise in the water table in the adjacent areas where crews were working. In addition to the need for mats to access the site, multiple layers of mats were required to raise the rig to an elevation that allowed the crew to drill and set the dewatering wells.

The timber mats were cabled together to form a temporary platform that workers could walk on. The machinery had to work from the mats as well due to the extremely soft ground. Additionally, larger-horsepower pumps were required to deal with the increased flow rates due to the higher than anticipated groundwater level.

TerraFirma used the bucket-auger method to install the wells, which allowed crews to drill the 30-inch-diameter boreholes to a depth of 60 feet or more. The oversized boreholes maximize the flow of groundwater to the dewatering well, ensuring the dewatering system achieved the desired results.

Still, another complication interrupted the progress of the dewatering.

“Access to the river in such a rural location with no drainage structure in place and with the rapid fluctuation of the river, presented unique circumstances,” says Chad Sharbono, project manager for Garney. “There were tight conditions TerraFirma had to get through to have access to the railroad and other tunnels. They were dewatering only about 100 feet from the rising river. Flows were changing constantly. The collaboration we achieved due to the CMAR delivery model gave everyone reason to come to agreement. We were able to see unusual risks and budget for those, avoiding possible contention. In the end, both parties were able to manage a solution.”

As of February 2020, the tunnels have been successfully installed and the dewatering wells remain in place until the water conveyance pipeline tie-ins can be made. **c**

ABOUT THE AUTHOR

David Giles, president of TerraFirma Earth Technologies, has 33 years of experience in groundwater control, with 20 years as a geologist for both the construction and remediation sectors.

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General Pipe Cleaners' Typhoon Trailer Jet Storms Through Blockages to Help Ohio Pro Boost Business

For the biggest, meanest drain cleaning jobs in Columbus, Ohio, locals trust Ron Zimmerman, owner of R&B Sewer & Drain.

R&B subcontracts drain cleaning services for nearly 30 plumbing companies within 100 miles of Ohio's capital. And those professionals routinely tap R&B for their most challenging drain cleaning emergencies.

"Our phone is answered 24 hours a day, seven days a week," Zimmerman notes. "And our four crews have earned a reputation for honestly doing jobs right — the first time."

STORMING THROUGH BIG JOBS

Zimmerman counts on durable, reliable drain cleaning and inspection solutions from General Pipe Cleaners. And his main weapon on tough, big-line jobs is the Typhoon trailer jet. The brawny, gas-powered water jet blasts grease, sediment, ice and other blockages from large lines or in remote locations — all with more operating features than competitive designs offer.

With a 2,500 psi, 12 gpm pump for high water flow, the Typhoon pulverizes clogs with wall-to-wall cleaning action from its hefty, 200-gallon holding tank. And its powerful 24 hp Honda engine ensures extended performance on stubborn stoppages. A 2-1 V-belt reducer extends pump life.

On-demand Vibra-pulse also helps slide the nozzle around tight bends and down long lines. Two hose reels — one carrying 400 feet of 1/2-inch jet hose with a variable-speed electric rewind and the other carrying 150 feet of 3/4-inch supply hose — mount next to the pressure gauge, guide arm and output valve on the trailer rear. Secure access to engine controls comes through a handy, lockable toolbox below both reels.

"It drinks lots of water — and always works!" Zimmerman says. "In one month alone, we used our Typhoon on at least 30 jobs."

TYPHOON SAVES THE DAY

One of those jobs concerned an 87-year-old woman. An unscrupulous competitor claimed she'd need a new clean-out for \$5,000. Shady drain cleaning outfits that scam unwary customers bother Zimmerman.



"We see lots of folks billed for thousands of dollars of unnecessary work," he laments. "And all they get is a taillight warranty! Luckily she got a second opinion — ours." R&B's Gen-Eye sewer camera — also from General Pipe Cleaners — spotted the real problem: roots. The company's Typhoon with a Chain Saw Nozzle then "handled the job at a small fraction of the first company's estimate."

General Pipe Cleaners' Chain Saw Nozzle rips through roots and scrapes scale off pipe walls in 4-, 6-, 8- and 10-inch lines.

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For bigger jobs, General Pipe Cleaners' muscular, gas-powered machines punch through stubborn stoppages in longer, outside 4- to 8-inch lines. All sport 3,000 psi pumps, reliable engines, punctureproof tires and robust frames.

REPUTATION AND RELIABILITY COUNT

Rugged, reliable General Pipe Cleaners water jets are excellent for clearing sludge, sand, sediment, ice, grease and other sticky stoppages from restaurants, hotels, hospitals, factories, schools, sports arenas, care facilities, shopping centers and more.

"I can't do the job right if I don't have the right tools," Zimmerman says about his arsenal of General Pipe Cleaners drain cleaners. "General Pipe Cleaners enhances our professional image!"

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Simplicity and reliability are the hallmark of GapVax products, and the GJET is no exception. Their time-tested, front-mounted hose reel provides strength, simplicity and a user-focused design that gets the job done and just keeps running.

Safety starts with the frame. The hose reel is mounted on dual frame rails that extend far beyond the engine to improve the strength of the reel, keep the operator away from the cab and extend the life of the bearing. The baffles help guard against tipping when driving with a full load. The safety interlocks help prevent operator error. And the front-mounted location guards against traffic.

GapVax salesmen and dealers work with the customer to figure out the perfect blend of storage versus water capacity while taking axle weights into account. Models range from 500 to 3,000 gallons, with most customers choosing a 1,600-gallon, single-axle configuration.

The GapVax jetter offers 40 to 100 gpm water pump options, Giant Industries GP7600 hydraulics or a PTO-driven water pump. The GapVax MC front hose reel comes standard, and this unit has a 6-inch subframe, with the rear deck bolted down to the subframe. Toolboxes come in a variety of shapes and materials to best fit each customer's need. An optional vice or small crane on the rear of the deck, along with 10-foot stainless steel tube trays, are also available.

At GapVax, we pride ourselves on the design, ease of use and low maintenance of our units. Coming from a service company background, we've incorporated all things learned from that company into the truck's design. "By the operator, for the operator" is a slogan we will stand behind.



Gary A. Poborsky created GAP Pollution & Environmental Control Inc. after the Johnstown Flood of 1977 in Pennsylvania. Poborsky set out to help with flood cleanup around the city, which eventually lead to more and more work, allowing him to grow his business. From this, Poborsky began trying all of the equipment available on the market. When his company's suggestions for improvements were ignored by manufacturers, Poborsky ended up manufacturing his own trucks and equipment for his service company. Various customers began wanting to buy Poborsky's equipment, and essentially, **GapVax Inc.** was born in 1989. The goal of GapVax Inc. was to provide the best possible equipment inspired by the operator, for the operator using the best quality components and keeping the design easy to operate and maintain. That still holds true today, more than 30 years later.

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Never Jet Blind: See Inside Your Sewers With Jetscan

The first-generation Jetscan video nozzle from EnviroSight transformed jetting and cleaning work, providing operators with a simple method to assess pipe condition and verify proper cleaning without calling in a CCTV truck. With today's Jetscan HD video nozzle, your cleaning crew can capture footage of pipe condition and stream it wirelessly to any tablet device.

Simply thread Jetscan onto your jetter hose to record valuable footage from inside sewers. Video that's collected can help document the effectiveness of sewer cleaning while finding offsets, collapses, infiltration and other problems without needing a CCTV crew. In addition, it can be used to check for gravel, grease, roots or sludge buildup in a pipe and to identify cross bores, collapses, protruding taps, root balls and other operational risks. With full knowledge of what's going on inside a line, it's easy to then pick the best nozzle for the job.

Without visual feedback, operators are forced to clean blindly, relying on experience, instinct and observation of downstream effluent flow to determine whether a line is clean. Jetscan provides an inexpensive solution to assess pipe condition and cleaning success. And it eliminates the hassle of repeated callouts and the diversion of costly CCTV resources to support cleaning crews.

USER-FRIENDLY DESIGN

The latest Jetscan was built for greater efficiency and ease of use. The system includes onboard storage for hours of HD footage and uses shadowless, high-intensity LEDs to illuminate the pipe for maximum visibility. When the job is done, just slide Jetscan's charger pad into position overnight for a full day's charge — it has wireless charging, with no plugs or removable batteries required.

Quick-change sleds and tool-free camera removal mean you can swap skids in seconds to handle pipes ranging from 6 to 24 inches. With the Jetscan 2.0 app-based interface (SewerLink app included) for viewing and annotating footage, cleaning crews can easily import high-resolution video footage from the video nozzle wirelessly or via USB connection. Annotate footage with details like manhole numbers, survey direction, distance and operator; and combine data, video and still images into complete surveys. Then, easily upload your video to WinCan Web for secure, effortless sharing, analysis and storage in the cloud.



TOUGH BUT VERSATILE

Designed for a range of applications, Jetscan can be custom-configured with a self-leveling skid to maintain proper view orientation on all videos. The system's welded stainless construction is built to withstand abuse inside dirty and damaged lines, and a sealed, pressurized design protects the video components from the elements.

Jetscan received New Product of the Year awards in 2019 from *Environmental Protection* in both the new technology/industry and wastewater product categories. It also earned the highest score of all entries in the competition, which recognizes innovative organizations and products that actively work to make the jobs of environmental professionals easier.

Affordable enough to put on every cleaning truck, Jetscan quickly and easily captures valuable footage of pipe condition for review just moments later on your tablet so you can make smarter and more productive decisions. With Jetscan, your jetter truck is now a camera truck.



Randolph, New Jersey-based **EnviroSight** provides sewer cameras and other pipeline inspection solutions to municipalities, contractors, departments of transportation and civil/environmental engineers. EnviroSight is a full-service manufacturer of robotic sewer inspection crawlers, zoom cameras, push cameras, inspection reporting and asset management software, and inspection vehicles. EnviroSight is committed to ongoing innovation, delivering products that enhance user productivity and inspection detail. EnviroSight serves customers through a trained network of regional sales partners who deliver localized support and expertise with rapid turnaround. All EnviroSight technical employees hold NASSCO Pipeline Assessment and Certification Program certification.

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Model 800 Series IV - The Next-Generation Truck Jet

Sewer Equipment introduces its newest truck jet model — the Model 800 Series IV. The 800 Series is the gold standard in the sewer cleaning industry, with a history dating back to its introduction in the mid-1980s. The Series IV offers the same great features operators have come to expect in the current 800-HPR ECO. However, a host of new features make this truck unparalleled in the market. It meets the growing needs of the market, incorporating many features and options offered across many truck jet brands, and brings them together in one truck. The all-weather truck jet is designed with the best fit and finish to maximize operator efficiency and place emphasis on operator safety.



The Model 800 Series IV offers several features that lend themselves specifically to cold-weather applications. The rear door can close completely with the hose reel fully extended. This provides maximum heat retention inside the environmental enclosure where vital water components are stored. A new hot-water feature gives the operator up to 20 gpm of hot water to feed the washdown reel, lateral reel and jetter circuits during cold-weather operations. In order to prevent waterline freezing, an operator must either purge the water from the waterlines and pump or have the ability to recirculate water through the system while driving between jobs. A lack of PTO engagement allows for wintertime recirculation of the water system at highway speeds,

saving the time otherwise needed to blow down the entire water system between job sites. At the end of the workday, the addition of a centralized water drain makes winterization easy, as there is only one drain to blow down. A retractable canopy protects operators from inclement weather, such as snow and rain, and even sun exposure.

As with all Sewer Equipment products, simplicity comes standard. This truck offers a 12-volt wiring system with no computers or CANbus, making it easy to operate and maintain. Both triplex and single-piston water pump options are available. Duraprolene water tanks come standard and are fully baffled to eliminate a surge of water when making a quick turn or sudden stop.

Water tank capacities range from 1,000 to 4,500 gallons. Engineers at Sewer Equipment removed roller bearings on the hose reel slide frame, completely eliminating those wear items from any future maintenance.

The dual-reel configuration offers two hose reels in one location with the secondary reel, allowing for the addition of a televising jet pod camera or small-line sewer hose. This allows operators to perform multiple applications using only one truck. The Model 800 Series IV also offers multiple operator stations: One station is located between the dual hose reels with all operation functions, and a second is at midship for all water functions. This more optimized interface provides a more efficient and safer working environment for operators. While you may find some of these features across other truck jet brands, the Model 800 Series IV is the only truck jet that can deliver them all in a single truck. The Model 800 Series IV raised the bar again.



With more than 75 years of experience, **Sewer Equipment** brands represent the industry's highest-quality sewer cleaning and vacuum excavation equipment, serving markets all over the world.

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A Nozzle That Delivers Lightweight Efficiency

Typical high-end surface cleaning nozzles are large and heavy. While they are effective, they are also cumbersome and their weight can lead to operator fatigue. The lightweight, compact RD Masterjet nozzle from Hammelmann solves those problems.

The RD Masterjet is lightweight at 2.2 pounds, with a compact ergonomic design 2.2 inches in diameter and 6.5 inches in length. Its small size doesn't sacrifice performance, though, as it can be used at operating pressures up to 46,500 psi, with its optimum internal flow allowing the pump's total performance to be used for surface preparation and high-end cleaning.

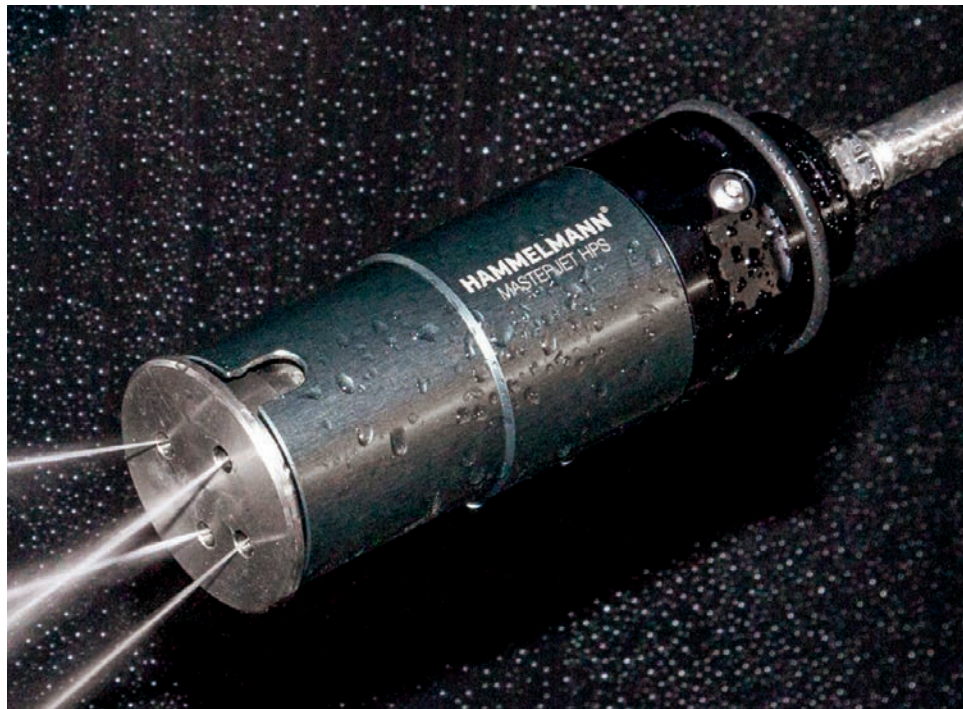
"Industrial cleaners are the target market, but it certainly has a place in the drain cleaning industry," says Denny Mesarvey, sales manager for Hammelmann. "Older nozzles with this capability were roughly 4 pounds. We've cut that in half."

The RD Masterjet has HPS sealing technology and adjustable speed rotation. It is designed for use with shotguns, robotic lance systems or replacement of any rotating tool. It has a versatile universal nozzle hub for working with two- or four-nozzle inserts. Nozzle inserts are counter-sunk in the nozzle carrier with blast-back shields. Its rotation speed is controlled by an infinitely variable magnetic brake.

"With adjustment down to 5,000 psi, it is terrific for many cleaning jobs," says Mesarvey. "We think contractors are going to love the unit's pressure and rotation versatility."

The nozzle can be used for cleaning and washing, expansion joint removal, coating and paint removal from surfaces, blasting pipe externals, paint booth grid and skid cleanup, superstructure surface preparation, heavy machinery cleanup, and surface preparation. Mesarvey says that with many drain cleaners venturing into surface preparation work, it makes sense to have a versatile nozzle like the RD Masterjet in the toolbox.

"A lot of guys who used to focus on pipe cleaning are starting to take more industrial jobs because they have the equipment powerful enough to do it," he says. "The feedback we've gotten from contractors who are already using this in the field indicates that the biggest positives are the small size, light weight and versatility with its high-pressure rating."



Mesarvey says anytime a contractor can use one product to perform multiple jobs, it means big value.

"These contractors are always looking for ways to become more efficient," he says. "This nozzle helps them do it."

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CrossJet Technology by Enz USA

The Enz USA UC Line with CrossJet Technology offers a complete line of high-pressure solutions for the toughest industrial cleaning projects.

The UC Line specializes in cleaning tubes such as heat exchangers in nuclear power plants, sugar mills and paper mills, and it is suitable for automated bundle cleaning systems. They feature strong cross jets for unplugging and radial jets for polishing. The cross jet causes a reaction force that, in many cases, makes it necessary to mount the nozzle on a lance.

Furthermore, the UC Line has the option of being used with or without an automation system, regardless of whether it is combined with thrust jets. This CrossJet Technology offers huge cleaning performance with lower leakage and long durability.

This line of nozzles has a special surface treatment for longer life and has become a tool for universal use. The UC nozzles are now available up to 22,000 psi. They are available in 9, 13, 18, 22 and 28 mm sizes in a variety of connections.



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Cam Spray Offers Diesel-Powered, Trailer-Mounted Jetting System

Since 1971, Cam Spray has responded to customers' need for pressure washers and sewer and drain jetters that work as hard as they do. The company produces handcrafted equipment made from carefully selected components and engineered to meet intense demands. The equipment is built by the hands of people who take great pride in knowing customers will find years of satisfaction in the work they've done.

In line with that philosophy is the TT4018HZ4-375 — a deluxe trailer-mounted, diesel-powered, 18 gpm, 4,000 psi, cold water sewer and drain jetter.

PRODUCT FEATURES

The TT4018HZ4-375 jetter offers a Hatz 4H50 four-cylinder 74 hp intercooled turbo diesel engine with engine enclosure, an over-center clutch, and a four-belt drive system powering a three-plunger



industrial pump with stainless steel valves and ceramic plungers producing 18 gpm flow at 4,000 psi.

The heavily constructed trailer has a 2-by-4-inch steel tube box frame, full diamond plate deck, electric brakes, Department of Transportation-rated 7,000-pound-capacity axles, road-ready lights and wiring, an industrial coated finish, pintel hitch or 2 5/16-inch ball hitch, hand-crank jack stand, and 16-inch 10-ply tires with eight-bolt hubs. A 26-gallon fuel tank provides several hours of run-time on a single fill.



Cam Spray is a small, family-owned company based out of Iowa Falls, Iowa, specializing in pressure washers, drain and sewer jetters, and accessories. The company started in 1963 when John and Jim Campbell purchased a local supply business known as The Manning Howell Co.

that specialized in farm and industrial supplies.

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Hannay Reels Designed for Longer Vacuum Runs

Hheavy-duty Hannay Reels VAC-5000 series hose reels are designed for longer lengths and large-diameter hose. These reels are ideal for live vacuum and suction applications on septic trucks or trailers.

The VAC-5000 series is designed to provide quick, safe and effortless rewinding of hoses either by hand or with a power rewind option. This prevents operators from hand-coiling hoses around a small bracket, hand-wrapping hoses around the tank of a septic truck or coiling them onto a small spool.

The series offers a variety of mounting configurations (depending on tank or truck size constraints and length of hose) and are designed to conveniently provide easy access to the hose from both sides. They are constructed with a heavy-duty channel frame for

durability and spoked discs to allow dirt and debris to fall through the reel, preventing buildup. This series offers easy access to the internal portion of the live reel, which allows operators to effectively remove any clogs that may occur.

The VAC-5000 series saves time on the job, protects the life of the hose and makes a difficult job cleaner and faster. These reels feature a standard 90-degree ball bearing swivel joint with female NPT threads and can handle 2- through 4-inch I.D. hose.



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Want to work smarter, not harder? Clear pipe obstructions more quickly, efficiently and thoroughly with the Cnt-r-KUT CDMAXe from Arthur Products. The CDMAXe system is configured so that it can attach to nozzles with 1/4-, 3/8- or 1/2-inch NPT threads. This system lifts the nozzle off the pipe bottom to help clear obstructions more efficiently. Seeing is believing. Take a minute to check out the video at www.arthurproducts.com/products/cd-max-jet-nozzle. The CDMAXe kit offers three flexible guide vanes in graduated diameters of 3, 4 and 6 inches and includes the tools to trim a guide vane to size in the field, replacement attachment fasteners, a carry bag and personal protective equipment.



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TOUGHJACKET high-pressure hoses feature ColorGard technology with contrasting colors. The primary hose jacket is a different color than the abrasion-resistant, WJTA-compliant outer jacket. Parker Hannifin is the only manufacturer with ColorGard to provide easy visual identification of abrasion issues, allowing for efficient inspections and reduced downtime. If there is abrasion issues, the operator can visually see the contrasting underlying primary hose color from that of the outer jacket.



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EDITOR'S NOTE: This month's Best of the Decade first appeared in the December 2016 issue of *Cleaner* and has since been one of the most read Money Machines articles on Cleaner.com.



money MACHINES

Portable Pumping Power

ProVac units' mobility provides foundation for California company's grease trap service

By Ken Wysocky

Any contractor who cleans restaurant grease traps and interceptors knows there's rarely a convenient time for customers. While municipalities typically require regular grease trap cleanings, restaurant owners don't want to deal with the disruptions — a hose snaking through a kitchen, the odor, the noise and so forth.

But SRC Pumping in Sacramento, California, takes the pain away with a small fleet of Conde ProVac portable pumpout units made by Westmoor. The company's six ProVac units are essentially miniature vacuum trucks that can easily maneuver through cramped kitchen areas and work quickly and quietly, with minimal business disruption.

"Before we invested in the ProVacs, we used a lot of hoses and accessibility could be a problem, especially in high-rise office buildings with cafeterias on upper floors," says Jim Walsh, general manager. "But with the ProVacs, we roll them right in. They're

small enough to fit through a standard doorway. Then we pump out the trap and roll them back outside.

"Then we use the pump on one of our vac trucks to evacuate the ProVacs. We can do multiple jobs in one day. ProVacs are the best."

SRC Pumping bought its first ProVac about 20 years ago after seeing the machine at a Pumper & Cleaner Environmental Expo (now called the Water & Wastewater Equipment, Treatment and Transport Show). Management was so impressed they kept on adding ProVacs as the company built up its customer base. The

CONTINUED >>



➤ Ray Castro, a technician with California-based SRC Pumping, wheels a Conde ProVac portable pumpout unit into a job. The company uses the machines for pumping grease traps in cramped kitchen areas.

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BEST OF THE DECADE

business — which was founded in 1913 and has been family-owned for four generations — is part of the SRC Cos. Other services include restaurant grease collection, rendering and recycling of animal byproducts, and production of animal protein meal. It serves more than 4,000 customers in Northern California, central California and northern Nevada.

To provide these services, the company also owns about 15 nearly 5,500-gallon vacuum trailer tankers made by Dragon Products and Galyean, outfitted with vacuum pumps made by Fruitland and National Vacuum Equipment. It also owns four Isuzu trucks equipped with 500- and 750-gallon WorkMate vacuum tanks (FMI Truck Sales & Service) and Conde pumps.

Made from lightweight aluminum, the 52-gallon-capacity ProVac is 24 inches wide, a little more than 4 feet long and 45 inches tall. It weighs about 250 pounds. It's powered by a 1 1/2 hp, 115-volt/13.4-amp electric motor and a Conde pump produces vacuum power of 35 cfm. It can pump up to 124 gpm at 5 psi of pressure, and it switches from vacuum to pressure mode for offloading with the flip of a switch. Other features include a built-in charcoal exhaust deodorizer that minimizes odors, an automatic lubrication system, 20-foot retractable electric cord, electronic automatic float shut-off, and 2-inch-diameter, 10-foot-long Plastiflex suction hose.

"You can plug it into a normal 110-volt electric outlet," Walsh explains, noting that the motor isn't so overpowered that it flips circuit breakers at restaurants. "And it's very quick and quiet. We also like the reverse-pressure feature. A lot of times the material we're vacuuming up is coagulated. So if we can reverse [the pump], it breaks the material up a bit."

One of the ProVac's biggest assets is its mobility, which allows the company to perform more service calls in a year and, in turn, post more billable hours. For instance, some of the grocery stores SRC Pumping serves might have several grease traps per store. So instead of inefficiently hauling hoses around and potentially repositioning a vacuum truck for each trap, an employee can clean two or three traps with the ProVac, depending on the traps' capacities.

"We also clean out grease traps at about 30 concession stands at Raley Field," he adds. (The sta-

dium is home to the Sacramento River Cats, a Pacific Coast League

baseball team that's a Triple-A affiliate of the San Francisco Giants.) "It's next to impossible to clean them with a vacuum truck because of limited accessibility, so we have to use some kind of portable device. And the ProVacs are a perfect solution to the problem."

Walsh also praises the units' satin-aluminum finish, which he says enhances his company's professional image. "When we arrive in the back of a kitchen, it's a professional-looking machine, not like a cheap shop vac or some homemade machine. That's important because (restaurant) operators don't like this kind of work — there's never an ideal time to clean at restaurants. So it helps if we look like a professional outfit while doing it."

The ProVacs' ability to pump out grease traps quickly and quietly has also enabled SRC Pumping to establish a profitable market niche. In addition, because the company also cleans grease interceptors, the ProVacs enable one-stop shopping for customers that require both interceptor and grease trap service, Walsh says.

"If we do 1,200 services a month, about a third of them rely on the ProVacs. Is it a good revenue generator? Absolutely. It allows us to do work we otherwise couldn't do. Without a doubt, using a ProVac is the only way to do this kind of work. If you're in a business like ours, you need to have one." **c**

"Without a doubt, using a ProVac is the only way to do this kind of work."

If you're in a business like ours, you need to have one."

Jim Walsh

STILL GOING STRONG

2020

In 2016, SRC Pumping operated six Conde ProVac portable pumpout units (Westmoor) and used them frequently for grease trap cleaning.

Jim Walsh, general manager, says all six are still in operation and working well. "They are carried on all of our small pumper trucks and used daily."

SRC Pumping still primarily uses the ProVacs for small kitchen grease trap cleaning. "The ProVac unit is well engineered and professional in appearance. It's the perfect size for servicing customers with multiple grease traps and in high-rise buildings," Walsh says.

Though the company also operates much bigger trucks and tractor-trailers, the smaller Isuzu-type pump trucks that carry the ProVac units are also workhorses because of their ability to maneuver the machines into those harder-to-reach jobs. "When we have to go inside, we can just wheel (the ProVac unit) inside. Then the vacuum tank on the truck evacuates the unit and we move along. We use them daily, and they're very reliable."

Manufacturer Westmoor continues to provide excellent service after the sale as well, Walsh says. "I can say, too, that the company that makes them follows up on parts and service and they're very good. It's well distributed."

The ProVac units are still moneymaking machines for SRC Pumping. "Over the years, we've gone from making our own to using others, and these are just perfect. They're the best."

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Audit Thyself

Taking a proactive approach with in-house safety audits is good for business

By Giles Lambertson

Ed Koch was the amiable mayor of New York City for 12 years. During his tenure, he was known for greeting his constituents on the street and asking them, “How’m I doing?”

Companies should develop a similar habit and openly solicit feedback from employees about whether safety programs are actually keeping them safe.

One mechanism for doing this is a safety audit. In an audit, a qualified person systematically examines a company’s declared safety rules and regulations along with its day-to-day practices and determines if the two are in sync.

For example, if employees are required to wear hard hats in certain areas of a plant or work site but the examiner discovers the hats generally are not worn, the discrepancy between theory and practice is red-flagged. Red flags signal changes need to be made.

START INSIDE

Safety audits occur in three forms: internal, external and OSHA (sometimes jokingly referred to as eternal). The OSHA audit isn’t necessarily the most important. The earliest identification and elimination of a safety hazard is always the key one. But OSHA is where the buck stops. Failure to be compliant with OSHA’s preventive safety regulations leads to a citation or fine.

“The attitude of the safety manager should not be ‘I am here and I’m going to change things.’
It should be ‘I am here and we’re going to learn things together.’”

Kyle Irwin

OSHA principally enforces regulations by conducting workplace audits or inspections. The inspectors look for violations of safe practices or the absence of safety equipment. The inspections can be conducted without giving a company prior notice, which seems furtive but keeps less ethical company leaders from playing games with employee safety.

Ethical leadership, on the other hand, is not into games. “I like to tell people that a safety management plan should be part of your overall company management system. If management is committed to doing the right thing, employees are going to do things the right way. It becomes a common culture,” says Kyle Irwin, founder of Irwin’s Safety. The Calgary, Alberta, firm teaches safety to company executives in western Canada and occasionally in the U.S.

While “doing the right thing” works the same on either side of the border, Irwin says the consequences of ignoring workplace safety often are more severe in the states. “We’re more regulated in Canada. We have more government agencies looking into it. The day-to-day standards are higher. However, the risk of litigation is much higher in the U.S. If you are a company in the U.S. and make some bad decision in respect to safety, you’re more likely to be litigated by the people affected by that decision.”

Neither of these two scenarios — more rigorous day-to-day regulation or greater legal risk — is welcomed by company owners. The happy alternative is for a company to self-regulate at a responsible level and thereby create a culture of safety as a first line of defense against unsafe behavior and work conditions. Internal audits are the way to develop that culture.

Usually conducted by a company’s safety manager, ongoing internal audits sometimes are informal, undertaken on the spur of the moment while passing through a workplace or visiting a job site. Or they are formal, with an inspection occurring on a day purposely set aside for it with a checklist as the inspection tool.

The list can be as long and detailed as your company wishes. Small companies that are just developing a health and safety program sometimes get by with a one-page checklist with a comments section at the bottom. The completed listing is filed for follow-up and future reference.

More rigorous internal inspections are longer and more nuanced. An informal short-form inspection might ask, “Is there a standby employee positioned outside the confined space to provide emergency assistance?” Whereas a more thorough inspection checklist might ask an additional question: “Is the standby employee trained and equipped to render assistance in case of an emergency?”

These internal audits sometimes catch dangerous situations and correct them. However, the hope is that they will discover few serious defects in safety and instead find areas where reasonably safe behavior can be made safer. The frequency of the internal audits and the fact that they are being conducted without coercion from outside entities makes them nonthreatening to a

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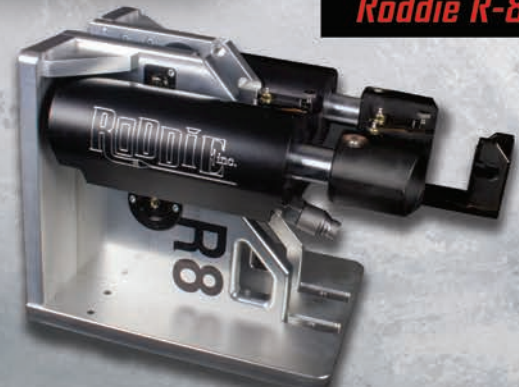
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company and its employees. Therefore, they are less likely to cover up something unsafe.

EFFECTIVE MANAGEMENT

Irwin notes that the attitude of the person doing an audit goes a long way in determining how effective it will be. “I really think the No. 1 requirement for being an effective safety manager is to know your workplace and understand the different roles in the company and the hazards of each role.”

He gives the example of an engineer leaving his office two or three times a year to walk around a work site. “You wouldn’t go up to him during his walk-around and talk to him about the need to wear a hard hat.” Such a “gotcha” move would be officious. Rather, a safety manager should prioritize his time to deal with bigger workplace hazards.

Irwin recommends that safety leaders engage with employees rather than confront them. To effectively communicate the need for safety, a safety manager must first have a relationship. Failure to connect with people means the chance of influencing them is slim, he says.

“The attitude of the safety manager should not be ‘I am here and I’m going to change things.’ It should be ‘I am here and we’re going to learn things together.’ It’s the difference between being a safety cop and a safety advisor. If you’re a cop, you ask, ‘Where is your hat?’ An advisor asks, ‘Is there a reason you’re not wearing your hat?’ The attitude should be that the advisor is learning from the employees.”

Seasoned employees might be expected to be most responsive to safety counsel, having been around long enough to witness the consequences of unsafe behavior. Unfortunately, longtime employees can be the least coachable. “With a lot of people in the older generation, when you say, ‘Hey, we need to do this and this,’ they become defensive. They feel like you’re suggesting they weren’t doing something right.”

Once again, Irwin counsels engaging with the old hands so they understand their experience is respected. “You might say, ‘We know what you’re doing is working really well and you’re not injuring yourself. But someone newer on the job might not be as capable and could get hurt. We’d like to try a more systematic approach to doing this.’”

A safety manager needs to be something of a diplomat, in other words. However, diplomacy won’t always work. Irwin laughs about the time he confronted a longtime employee of a company working a railway project. “He was in a machine, and I walked up and said, ‘You need to wear that safety belt because some government inspector is going to come along and see you not wearing it and throw you off the work site.’ He looked at me, said, ‘Back off!’ and closed the door.”

You can’t win them all, even when you’re president of a safety management company. The larger lesson, though, is that rules apply to everyone. Irwin adds that the most frequent violators of company workplace safety rules are not hidebound employees, but younger

generation workers who seem disinclined to follow safety regimens created for their own good.

INSURANCE TEAMWORK

Insurance companies can play a role in auditing a company’s safety. At Koberlein Environmental in northeast Pennsylvania, insurance agents have become real partners in policing and encouraging safety. Company owner Chris Ravenscroft says a Penn National Insurance representative, Jerry Kozich, is particularly involved.

Kozich attends half the company’s safety meetings. He also periodically performs impromptu external audits of work sites. “I get a call several times a year from Jerry who says he’s in the area and would like to see a job. That’s been very helpful. Some jobs he visits are being perfectly managed. Other jobs we need to do something a little different, things he’s identified. We get on top of it immediately.”

This working relationship between insurer and insured has persisted for 15 years. Ravenscroft believes it to be a valuable add-on feature of his insurance policy. “I’ve asked him if this kind of relationship is commonplace, and he says it isn’t, mostly because businesses are uncomfortable working with an insurance company at that level. Some insurance companies simply don’t offer the service. We feel it really adds value.”

Ravenscroft is his own safety manager, though he obviously has other responsibilities. He also has various team managers who spontaneously walk around jobs, looking for safety issues. That commitment from the top down establishes a strong safety culture.

SAFETY PAYS

Safety is its own reward, but other benefits flow to companies that do safety audits. Irwin notes that, in Canada, annual internal audits are required to document compliance and an external audit is conducted every two years by a certifying agency. It leads to public certification as a safe place to work, which tends to attract employees and business partners. The financial reward for certification is shaving of insurance premiums, typically by 10% to 20%.

Ravenscroft says a couple other benefits accrue to his wastewater management services company besides a lower insurance premium. One is a discounted rate on workers’ compensation when the Pennsylvania Department of Labor certifies the company’s safety committee. And because Koberlein has a documented lower-than-standard rate of lost-time injuries per hours worked, business partners are pleased.

“Some of our larger clients — energy companies and utility customers — feel good about working with a company that’s exceeding the safety standard. This is another way we receive the benefits of having a safe company.” **c**



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2 DISCOVERY SERIES HYDRAULIC EXCAVATOR MODELS

Gradall Industries has introduced two new Discovery Series hydraulic excavator models, the D172 and D174, that are bigger, more muscular and more productive than the previous D152 and D154 models. The new models benefit from a 36% increase in horsepower, as well as greater torque to increase travel speed, hill-climbing capability and overall productivity. Both new models have Freightliner undercarriages. The D172 has two-wheel drive, while the D174 is a four-wheel-drive machine. Both feature a Gradall upperstructure and a telescoping, full-tilting boom, able to rotate attachments 220 degrees. The low-profile boom design also allows the Discovery Series models to work productively under bridges and in tunnels. 330-339-2211; www.gradall.com. **c**

SPOTLIGHT

A flexible drain cleaner designed for longer runs

By Craig Mandli

When RIDGID released the first versions of the FlexShaft drain cleaning machines in spring 2019, they were met with an overwhelmingly positive response from drain cleaners and plumbers. But while those units were effective, they were limited to smaller lines and shorter runs. With contractors



wanting a similar product to clear wider and longer lines, RIDGID introduced the K9-306 FlexShaft drain cleaning machine.

RIDGID is giving drain cleaners even more cleaning power and diagnostic capabilities in large-scale commercial or residential jobs with the addition of the K9-306. Designed to clean 3- to 6-inch drainlines up to 125 feet, the K9-306 clears blockages with speed while the ability to inspect with a camera simultaneously maximizes efficiency and lets the technician complete both jobs at once.

"As municipalities deal with older pipelines and the tough roots of established vegetation, the K9-306's ability to power through 3- to 6-inch-diameter pipes is a must-have for contractors today," says Wyatt Kilmartin, vice president and general manager, Global Underground Technologies, RIDGID. "Alongside the proven performance of our K9-102 and K9-204 models, it's a great addition to our FlexShaft machine line."

The K9-306 is designed to quickly clear grease buildup, roots and heavy scale in larger pipes. It includes a 1.5 hp internal universal motor for maximum power and longevity; a fully enclosed drum to minimize setup and cleanup time; and a retractable handle with multiple wheels and grab points to make loading, unloading, transporting and storage easy.

"Our customers loved our first rendition of the FlexShaft last year, but a common theme we kept hearing from contractors who handle bigger jobs was the need for a machine that reached 125 feet," Kilmartin says. "The K9-306 clears up to 125 feet, making it ideal for those large-scale commercial and residential jobs."

The K9-306 has the highest capacity of the RIDGID FlexShaft machine models; each uses various chain knockers that are spun at high speeds and expand to quickly clear the entire circumference of a pipe for a more thorough and longer-lasting wall-to-wall clean. The flexible, fully enclosed, nylon-sheathed cable can be easily wiped clean as it is pulled from the line. It also eliminates splatter, cutting down on job site cross contamination. Machines also allow for simultaneous pipe inspection for maximum efficiency, pairing with SeeSnake systems. 800-474-3443; www.ridgid.com.

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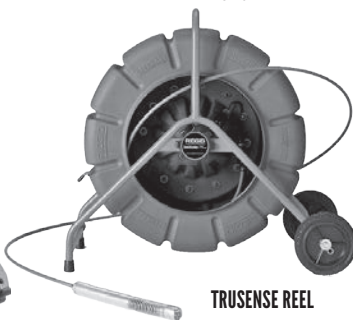


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Boss Industries names new director of engineering

Todd Hudson, president of Boss Industries, announced Richard Miltenberger as the company's new director of engineering. Miltenberger's resume has an extensive list of rotary screw manufacturers, and he worked at Boss Industries in its early years.



Richard Miltenberger

WJTA launches hands-on hydro blaster training

In response to the need for standardized hydroblasting training and credentials, the WaterJet Technology Association has launched a Hydroblaster Operator Certification Program. The program is based on the association's Industry Best Practices for the Use of High Pressure Waterjetting Equipment, which has been the industry's primary reference for safe and effective hydroblasting operations in North America and beyond since the mid-1980s. To ensure consistency of training delivery, the WJTA will approve master trainers to oversee the program. Master trainer responsibilities include instructing and evaluating the verified trainers, conducting audits of Field Verification training sessions, approving Verified Training Sites and providing ongoing training program development in alignment with the WJTA's industry best practices.

Hino Trucks presents scholarship to class of 2020 recipient

Hino Trucks announced the recipient of the 2020 Hino Motors Novi Educational Foundation scholarship. This is the second year of a 10-year, \$25,000 program. The winner, Vinaayak Puliyadi, was chosen based on his submission essay about what leadership means to him, as well as extracurricular activities and being admitted to a college or university in the fall. Puliyadi plans to attend Penn State University to study mechanical engineering. **c**

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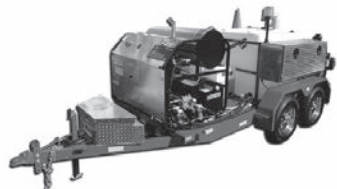
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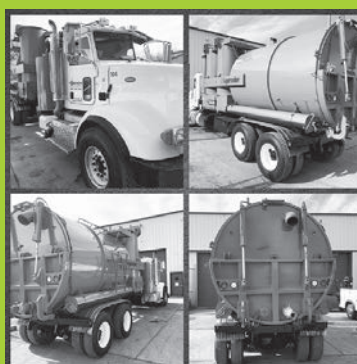
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