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A close-up photograph of a male plumber working on a piece of equipment, likely a water heater or boiler. He is wearing a dark blue and white mesh-back baseball cap, a blue and orange face mask covering his nose and mouth, and black nitrile gloves. He is holding a blue and black power drill, which is positioned against a metal component of the unit. The unit has various pipes, wires, and electrical components visible. The background is slightly blurred, showing more of the equipment and a white wall.

RADIATING SUCCESS

Dramatic changes position Texas plumbing company to see increased revenue and great employee retention **Page 14**

▲ **On The Road**
USING GPS TECHNOLOGY TO
BOOST EFFICIENCY AND PROFITS
Page 26

▲ **First Responders**
WATER HEATER INSTALLATION
REVITALIZES CENTURY-OLD HOME
Page 30

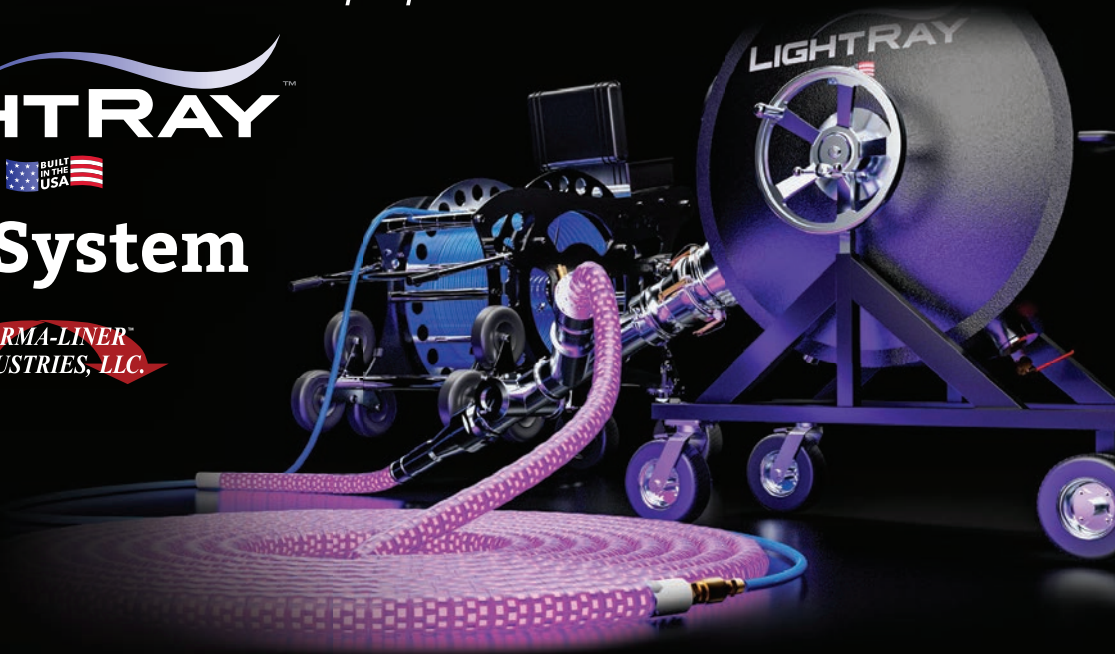
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On the Road

GPS Keeps Business on Track

Technology increases profitability and operational efficiencies on many levels.

- By Ken Wysocky



On the Cover

Radiant Plumbing & Air Conditioning service plumber James Farr uses a drill to secure a new tankless water heater during installation at a residential property in Austin, Texas. Radiant Plumbing & Heating, based in Austin, has 250-plus employees and 124 service vehicles serving the greater Austin and San Antonio region. Under the leadership of Brad Casebier, the company has grown significantly since it was founded in 1999. (Photography by Jimmy Lee Zuniga)

Coming Next Month - Annual Buyer's Guide

- ▲ Plumber Profile: Jolly Plumbing (Wildler, Kentucky)
- ▲ On the Road: Rinnai tankless water heater

8 From the Editor: Take out the Measuring Stick

Revenue, customer satisfaction and market knowledge can all come together to provide success stories for your company.
- By Cory Dellenbach

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14 Profile: Radiating Success

Dramatic changes position Texas plumbing company to see increased revenue and great employee retention.
- By Ken Wysocky

22 Smart Business: The Dreaded Conversations

Set expectations, communicate clearly and meet regularly to improve productivity in your workplace.
- By Liz Uram

28 Rolling Billboard: A Perfect Plumbing Solution Arroyo Grande, California

30 First Responders: New and Improved

Advanced, efficient boiler system helps revitalize century-old home with better and expanded heating.
- By Mike Boyd

32 Industry Insider: Learning from the Military

Following these three simple steps can help you pull through almost any situation your plumbing company could run into.
- By Dave Bailey

34 Product News: Product Spotlight: Versatile water filtration system easy to install and maintain

- By Craig Mandli

36 Industry News

38 Product Focus: Septic and Sewer Systems

- By Craig Mandli

43 Case Studies: Septic and Sewer Systems

- By Craig Mandli

44 Calendar

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Allan J. Coleman Co. 9
American Jetter 45



AQUAGUARD LLC 24



Ashland Pump.....21



Cam Spray17



Central Oklahoma Winnelson12

Crane Pumps & Systems..... 29



Duracable Manufacturing Co.... 46

ePIPE / ACE DuraFlo12

FastEST, Inc.36

Flows.com23



General Pipe Cleaners,
div. of General Wire Spring..... 48



HotJet USA..... 3, 45



IPP Solutions, LLC19

Milwaukee Tool..... 25



Mongoose Jetters
by Sewer Equipment13



NuFlow Technologies..... 47



Picote Solutions33



Pipe Lining Supply2



Pulsar 2000, Inc.37



Service Nation/Roundtable.....37



Spartan Tool LLC.....5



Vista Water Group11

Western Drain Supply21



Z PLUMBERZ.....7

Classifieds 45

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Published monthly by COLE Publishing, Inc.
1720 Maple Lake Dam Rd., PO Box 220
Three Lakes, WI 54562

Call toll-free 800-257-7222
Outside of U.S. or Canada call 715-546-3346
Mon.- Fri., 7:30 a.m.-5 p.m. CST
Website: www.plumbermag.com
Email: info@plumbermag.com | Fax: 715-546-3786

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CONTROLLED CIRCULATION: 22,000 per month
This figure includes both U.S. and international distribution.

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Cory Dellenbach



Take out the Measuring Stick

Revenue, customer satisfaction and market knowledge can all come together to provide success stories for your company

One of my favorite things to hear about when talking to contractors for profiles in *Plumber* magazine is hearing the success stories they share. Those success could be in the form of revenue, big growth or even the addition of new services.

You'll hear about one of those plumbers who has seen great success with his company as we profile Radiant Plumbing & Air Conditioning, of Austin, Texas, in this issue. Co-founder Brad Casebier started the company in 1999 along with his wife and last year Radiant saw an impressive revenue of over \$50 million.

Checking out your company's finances is one of the biggest measures of success for any business owner out there, but there are many other ways to measure it, whether your company is a large one with 100-plus employees, or a small one with two employees.

CHECKING CUSTOMER SATISFACTION

After finances, customers satisfaction is probably the next most important measure of success for companies. If your customers aren't satisfied after your services, they probably won't be calling you again to do more work.

How do you measure customer satisfaction? You could look at the reviews online and see where improvement is needed and reach out to those customers who review poorly.

After finances, customers satisfaction is probably the next most important measure of success for companies. If your customers aren't satisfied after your services, they probably won't be calling you again to do more work.

If you don't have a lot of online reviews, try sending surveys or reviews out to customers who just called upon your services. You could even have your plumbers asking after a job if the customer is satisfied — make sure they are trained for any response that may follow.

GETTING NEW CUSTOMERS

To go along with the customer satisfaction, you could also measure success by the number of new customers you are getting each year. If your business is stagnant with the same customers, you might need to kick up your marketing strategy.

You should be tracking who your current customers are and who the new ones are and look at those numbers at the end of each month, quarter or year. Average how many customers you get from each new business action — like adding services or upping your marketing efforts. By averaging your new customers every so often, you can see how successful your business is at drawing in new people.

KNOWING YOUR MARKET

You might wonder how knowing your market can measure success. Well, you need to know how the market in your area is doing in order to track success. If you and your competitors are all struggling, it might be because there is a lull in the local market.

Don't be down if your profitability decreases. It might be a result of the industry overall and out of your control. Decreased profitability could be a good time to introduce new services or new products your company can offer.

SMALL SAMPLING

These are just small sampling of ways you can track your company's success. Do you have other methods to do so? Let me know by emailing me at editor@plumbermag.com or calling me at 715-350-8436.

Enjoy this issue! 

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WORKFORCE GROWTH

Woman Documents Plumbing Journey Through Social Media

Anna Pearson, a plumbing apprentice in Las Vegas, uses her social media platforms, where she is affectionately known as the Plumbing Princess, to document her journey and promote the plumbing trade. “Genuinely, I want people to join the trades. I want it to be a growing industry again,” Pearson says. Read more about her in this online exclusive.

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OVERHEARD ONLINE

“Most times companies give techs the keys to a truck and tell them to bring back a check at the end of the day. And that's where they leave it. But they need more than that — they need consistent training.”

— *Company's Heavy Training Investment Pays Off*

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BUSINESS STRATEGY

Maximize Job Site Productivity

How efficient you are with your work can be the difference between a thriving, successful business and a struggling one. Because doing more with less is becoming the norm, contractors are evolving to meet the needs of both their companies and their clients by incorporating key strategies. A few of them are covered in this online exclusive.

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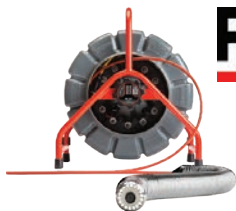
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RADIATING SUCCESS

Dramatic changes
position Texas plumbing
company to see
increased revenue and
great employee retention

By Ken Wysocky | Photography by Jimmy Lee Zuniga



Radiant Plumbing & Air Conditioning, Austin, Texas

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▼ Radiant Plumbing & Air Conditioning co-founders Brad Casebier and Sarah Casebier pose in front of a Radiant truck in downtown Austin, Texas. The two founded the company in 1999 and have grown it to 250-plus employees and 124 service vehicles serving the greater Austin and San Antonio areas. The couple recently sold a majority share of the company and Brad has transitioned to chief executive officer of the company. (Photo courtesy of Radiant Plumbing & Air Conditioning)



From its attention-getting marketing programs to its staff of six full-time recruiters to its eye-popping annual revenue to its six-figure salaries for technicians, Radiant Plumbing & Air Conditioning is anything but a typical contractor.

And that suits Brad Casebier, the co-founder and chief executive officer, just fine.

“We know we don’t run like a normal plumbing company,” says Casebier, who established the company in Austin in 1999. “But we’re excited about that.”

When Casebier, 46, first started out, he didn’t have his sights set on creating a company that would generate \$52 million in revenue in 2021, \$36 million in 2020 and \$20 million in 2019. Nor did he plan on employing more than 250 people. Or running entertaining radio and television ad campaigns that would make him and his wife, Sarah, well known in the Austin community. Or running 124 service vehicles and acquiring three other plumbing companies.

Instead, he aspired to following in the footsteps of his father, Dan Casebier, also a plumber.

“I just wanted to recreate what my dad did — make a living by plumbing houses,” he says. “I’m just thankful Sarah was willing to try something new.

“Back then, I didn’t really think I was smart enough or good enough to play at a high level,” he continues. “I had to overcome a lot of limiting beliefs about myself. I didn’t want to be the bottleneck that holds back the company.

“Sometimes you just need people to jar you into realizing what’s possible and start thinking that maybe there’s more out there than you think.”

“Back then, I didn’t really think I was smart enough or good enough to play at a high level. I had to overcome a lot of limiting beliefs about myself.”

Brad Casebier



◀ Radiant Plumbing & Air Conditioning service plumber James Farr prepares a new tankless water heater for installation at a residential property in Austin, Texas. Radiant Plumbing & Heating, based in Austin, has 250-plus employees and 124 service vehicles serving the greater Austin and San Antonio region. Under the leadership of Brad Casebier, the company has grown significantly since it was founded in 1999.



◀ Service plumber Matthew King checks for any additional leaks at a home that suffered damage from Texas' winter storm freeze in 2021.

OUTSIDE COUNSEL, MENTORING

In Casebier's case, some of that jarring occurred after joining the Service Roundtable (now Service Nation), a group that enables thousands of contractors to network with peers and share best business practices, solve problems and so forth.

Casebier became a journeyman plumber at age 17, a master plumber at age 20 and opened his first company, Brad Casebier Plumbing, in Austin at age 23. He says joining the organization in 2005 marked a turning point for his fledgling company.

"We were doing new-construction plumbing and were starting to hire people," he notes. "But we realized that the more people we hired, the less money we made and the more stressful the finance side of the business became with collections, payroll and other things.

"So Sarah did some research and found Service Roundtable."

Plumber Gives Reputation Management, Online-Ratings App a Five-Star Review

As consumers increasingly rely on online ratings to make choices about everything from buying appliances to hiring contractors, reputation management is a high priority for companies. At Radiant Plumbing & Air Conditioning in Austin, management relies on an app called Podium to generate reviews — and bolster its online street cred.

"In today's world, consumers make a lot of decisions based on star ratings — it's the new peer-to-peer process," says Brad Casebier, CEO at Radiant. "People used to talk to their neighbors to get a contractor referral, but now they go online."

Casebier says that prior to subscribing to Podium about five years ago, the company did "OK" with online reviews, with roughly 700 reviews and an average of around 4.7 stars per review.

According to the most-recent figures, the company now has 7,747 reviews, primarily on Google, with an

average rating of 4.9 stars.

"As you can image, that draws some customers," he says. "Podium is a great tool for helping you build an online reputation in your community."

The platform is easy to use. At Radiant, it works in tandem with ServiceTitan, a business management system that's also an invaluable tool for the company. The two systems can "talk" to each other, he says.

When technicians finish jobs, they use a Podium app on their cellphones to send customers a text (or sometimes an email) that asks them for a quick rating on a scale of one to five stars. If technicians don't do this, Podium does it automatically, using customer contact information stored in the ServiceTitan database, he explains.

"But there's a 75% better chance of getting a review if the technician sends the request," Casebier notes.

If customers are unhappy with the service received, they're quickly redirected to someone at Radiant that can

Through the organization, the Casebiers met great mentors like Joe Crisara (a nationally known sales coach), Ellen Rohr (a nationally known business makeover expert) and plumbing legend Frank Blau. (He developed the flat-rate pricing concept and has been a long-time champion of turning plumbers into businessmen).

The main takeaway from all this mentoring? Switch from new-construction plumbing, a cyclical sector where good and consistent profit margins are difficult to maintain, and focus instead on service and repair work, he says.

"As much as I loved new construction, I knew we had to leave it," Casebier says. "It's risky when you try to submit an accurate bid on, say, a three-year project and still remain profitable. It made me feel more like a gambler than a businessman.

"With service work, we could understand the cash flow and the cause and effect of everything we did and make quick adjustments when needed."

So Sarah quit her job as a registered nurse to work full-time for the company, which was renamed Radiant Plumbing in 2005, he says.

ANOTHER "AHA!" MOMENT

Around 2015, Casebier started engineering another dramatic shift that positioned the company for great growth: building a corporate culture that would make it easier to attract and retain quality technicians.

address the issue.

"It's a pretty incredible system," Casebier says. "Most of our competitors have hundreds of reviews, but we have thousands. So that helps us stand out."

The monthly fee for using the service varies by how many customer contacts a company makes; the base program costs \$189 a month for less than 1,000 contacts, Casebier says.

"It costs us maybe a few hundred dollars a month," he says. But compared to the benefits, the cost is so minimal it almost feels like it's a free service, he notes.

Of course, to get the great reviews, technicians also have to provide great service and do quality work.

"It's not just the app that gets you great reviews," he says. "You have to actually do a good job."



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“I really woke up and realized that the great battle in this industry is for the technicians. That’s the biggest problem plumbing companies need to solve in order to succeed.”

Brad Casebier

▲ Excavation crew chief Sean Garcia uses a Kubota HST tractor with an excavator attachment to remove a pile of dirt while Joe Grabowski, left, and Adrian Arellano work together to clear a path at a residential job near Austin.

“I really woke up and realized that the great battle in this industry is for the technicians,” he says. “That’s the biggest problem plumbing companies need to solve in order to succeed.”

For Casebier, that meant establishing a new business paradigm that emphasized company culture instead of achieving more ego-related goals, such as reaching cherished financial benchmarks.

“I realized that working at Radiant was okay, but it wasn’t great,” he says. “We all know there’s not enough plumbers to go around, but I figured we could solve that by becoming the best place to work in the nation.

“There are plenty of technicians to hire if you build something attractive enough — make your company stand out from the competition,” he continues. “I’d been too focused on building a big business.”

CULTIVATING A GREAT CULTURE

Doing this required a lot of dialogue with technicians to find out what they liked and didn’t like about working at Radiant, as well as what they needed to be happy employees.

“We had to find out their pain points and frustrations,” Casebier says. “We looked at all the things that technicians talked about and started working on it. Paying people more money is great, but they won’t stay if your company still sucks.”

As an example, Casebier points to a company decision

to reimburse technicians for productivity-enhancing Pro-Press tools from Milwaukee Tool.

Providing good tools and equipment also serves as a technician-retention tool, he notes.

The company provides technicians with other Milwaukee Tool power tools, too. It also owns a variety of drain cleaning equipment, including RIDGID KJ-1750 water jetters (1,750 psi at 1.4 gpm); Model 727 water jetters from Spartan Tool (3,000 psi at 4 gpm); Model 300 drum cable machines from Spartan; RIDGID K-400 drum cable machines; Go 15 sink-and-tub drain machines from Gorlitz Sewer & Drain; RIDGID SeeSnake mini and nanoReel pipeline-inspection cameras; a RIDGID NaviTrack Scout pipeline locator; and a Gen-Ear leak-detection system from General Pipe Cleaners (a division of General Wire Spring Co.).

For service vehicles the company primarily runs Nissan NV cargo vans and Ford E-350 cutaway vans equipped with fiberglass bodies made by Unicell Body.

LIMITED AFTER-HOURS SERVICE

The company also virtually eliminated another pain point for technicians: on-call duty for after-hours emergency service.

“They hated it,” he says. “So now we just have the bottom four performers on rotation for after-hours service and we only offer it to existing Radiant customers with property-damaging emergencies.”

Casebier also decided to step back from a constant emphasis on financial goals, which stressed out employees.

“It’s unhealthy if your number one objective is hitting financial goals,” he says. “We also made a million other little changes like that, which completely changed the tone of our company.

“Now everything is centered on how it affects the technicians and the customers’ experience,” Casebier explains. “Great financial results are the outcome of doing those two things right. We had it backwards, and after we flipped it upside down, it was like rocket fuel in terms of our growth.”

BUILDING A BRAND

A strong emphasis on marketing also changed the company’s fortunes by making Radiant Plumbing a household name in the Austin area. Starting around 2009, the company embarked on an integrated marketing campaign that included radio and television ads featuring Casebier and his wife.

“We’re crazy about marketing,” says Casebier, who estimates the company spends an average of about 6% of its total annual revenue on advertising. “Our ads are more like those quirky Old Spice ads than a typical plumber ad.

“Austin has embraced Brad and Sarah from Radiant Plumbing and we get recognized all over town.”



▲ Service plumber Preston Nichols secures pipe installation.

Vinyl wraps on service trucks also play a prominent role in marketing. The trucks show technicians — and the Casebiers — doing zany things, he says.

“Our trucks are ridiculous,” Casebier says. “The wraps feature pictures of technicians or Sarah and I doing crazy stuff. One shows one of our technicians snorkeling. Another guy is hugging a toilet. And another guy is dancing with a water heater.

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NATIONWIDE SEARCH FOR TECHNICIANS

Building a great culture also requires hiring the right people, Casebier emphasizes.

“We’re dedicated only to hiring people that belong here — hiring people one at a time and getting the right guys in the trucks,” he says. “Otherwise we risk destroying our culture.”

To find quality technicians, Radiant has a staff of six full-time recruiters who spend a lot of their time prospecting for new technicians.

“We needed recruiters because all the good technicians already have jobs,” Casebier says. “Furthermore, there’s a small pool of plumbers in Austin, so if we want to keep growing, we have to look outside of the city for technicians.

“The nation now is our recruiting playground, with most of our new technicians coming from out of state.”

In the end, the company’s success stems from this three-pronged approach: a full-scale marketing program, building a great culture and dedicated recruiters, Casebier says.

“You have to build a great culture, recruit the right way and be really good at marketing,” he says. “The marketing comes first because you have to generate enough work for the technicians to do. Then comes a great culture and hiring recruiters.

“If you can do all three of those things, you can grow at any pace you want.”

HIGH TECHNICIAN INCOMES

It doesn’t hurt that technicians at Radiant earn an average of nearly \$97,000 a year on 38-hour work weeks. Casebier says the company can afford to pay technicians that kind of money because their closing rates and average ticket sales are “extraordinary.”



▲ From left, excavation crew chief Roberto Casto, Quintus Wilson and drains install apprentice Michael Scott Martinez are all smiles ready for their day as they load up the company truck and other equipment. Radiant Plumbing & Air Conditioning has created a great environment for its employees, and one that will draw in plumbers from around the country.

“They get a percentage of whatever they sell and they’re really good at what they do,” he says. “You can hire guys to drive around town and just get bids from customers and go broke, but our guys are good at building relationships with customers — finding common ground and presenting great options, then closing the deal.”

Technicians don’t use a high-pressure approach, however.

“The term upselling is a big downer,” Casebier says. “Our technicians provide options and customers pick the one they’re excited about.”

SUCCESS BEGETS SUCCESS

Radiant’s success hasn’t gone unnoticed. In 2021, the Casebiers sold a majority stake in the company to The Riverside Company, a private equity group. The Casebiers never planned on selling the company, Casebier says.

But then the company’s revenue doubled in 2021. At about the same time, private equity investors ran out of good companies to invest in, because of the pandemic, he notes.

“But they saw home-service businesses were thriving, so we became a sexy business to invest in,” Casebier says.

“The company fetched a ridiculous price. So we had to ask ourselves that if things ever went south, would we be okay with having turned down such a great financial opportunity? And the answer was ‘no.’”

As a result, Casebier now is the CEO of Radiant and reports to a Riverside board of directors. And his new focus is finding more companies that “resonate” and that will benefit

“You have to build a great culture, recruit the right way and be really good at marketing. The marketing comes first, because you have to generate enough work for the technicians to do. Then comes a great culture and hiring recruiters.”

Brad Casebier



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from his passion for building great cultures.

Radiant already has acquired three companies with solid growth potential in San Antonio, suburban Denver and Spokane, Washington. The three companies generated a combined revenue of more than \$100 million last year, Casebier says.

"I'm always looking for companies that look like the right fit for us," he says. "And after that, we'll keep building them by hiring people one person at a time, if they fit our culture. If we just do that, we'll keep growing." ■

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Liz Uram

The Dreaded Conversations

Set expectations, communicate clearly and meet regularly to improve productivity in your workplace

By Liz Uram

Have you ever dreaded having a conversation with an employee who wasn't meeting performance expectations? If so, you are not alone.

Most managers would agree that one of their least favorite tasks is talking to an employee about poor performance. When performance conversations are ignored, success is left up to interpretation. This can only result in conflict because everyone has different perceptions.

When an employee's failures can no longer be avoided, too many managers say in frustration, "They should have known!" And the good-intentioned employee who thinks they are knocking it out of the park is shocked when they finally find out they are barely getting by.

Addressing performance issues can be unpleasant and stressful. To avoid this discomfort, some managers ignore the issue and hope the situation improves on its own. Avoiding difficult discussions leads down dead-end roads, causing:

1. High stress levels. There are enough things in life to stress out about and discussing performance doesn't need to be one of them.
2. Poor morale. One of the fastest ways to demotivate a team is to ignore poor performers. The rest of the team can see what's going on and they are looking to the manager to address it. When the manager doesn't deal with it, it can result in negative attitudes. Bad attitudes are contagious and soon there are bigger issues to deal with than one person's performance.
3. Low-performing teams. People will perform to the standard that's allowed. A manager who doesn't hold people accountable sends the message that it's okay to deliver less than what's acceptable.

These are dead ends to career growth — for both the employees and manager — and can affect the organization as a whole, so they must be avoided.

Most people want to do a good job and will rise to the expectations when they know what they are. Don't assume that people understand the expectations. One survey revealed that 50% of employees don't understand what is expected of them at work.

Luckily, there is a better way; but first let's look at some things that don't work. At some point, every manager is tempted to take the softer, easier way. Here are some methods that have been tried:

Generic emails

Avoid the temptation to send a generic email to the whole team to address an individual performance issue. The person who caused the problem doesn't know you are talking to them because they aren't intentionally doing anything wrong. Or they know the manager is talking about them, but they aren't going to change because they know they won't be held accountable. It's a no-win situation.

Posting signs

The answer to the question "Can't you read the sign?" is "No." Check out the common areas in your facility. You might find a sign similar to "Clean up after yourself, your mother doesn't work here." Or, "Put all items back where you found them." Despite the signs the problems persist.

Signs generally don't work because no one reads them. No matter how large or bold the font, or how many exclamation points are used.

Employee handbook updates

Another common method some managers try is to update the employee handbook. This method is probably the least effective of the three. The reality is that most

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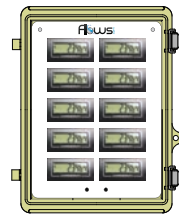


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employees don't read the handbook. In fact, one survey revealed that 61% of millennials did not read any or all of the employee handbook.

These methods don't work. Let's look at a simple three-step solution that does:

1. Set clear performance expectations
2. Communicate the performance expectations
3. Meet regularly to discuss performance progress

Set clear expectations

You can only hold people accountable when they know what's expected of them. When performance expectations have been clearly defined it's easy to measure achievement and give feedback. The key is to define the expectation in black and white so there is no room for ambiguity. A manager needs to understand what is important to measure and how to measure it.

One company improved its order entry accuracy rate from 65% to 99% after the expectations for completion were defined. The low completion rate was a result of the team leaving a field on the order form blank. They weren't lazy — they just didn't understand why the field needed to be completed and the manager had never defined the expectation.

Communicate expectations


Communicating performance expectations before there is a problem is the key to no-stress conversations later on.

Most people want to do a good job and will rise to the expectations when they know what they are. Don't assume that people know. One survey revealed that 50% of employees don't what is expected of them at work.

Document the performance expectations and share them with new employees right away so they are set for success from the start.

Meet regularly

Meeting regularly with people individually to discuss their progress creates a culture of trust. How often you need to meet with people varies but a good rule of thumb is to meet at least once a month. If you defined and communicated the expectations in advance, there won't be any surprises. The employee will know exactly how they're doing. If they are falling short you can turn it into a positive coaching conversation to help them get back on track.

When these three simple rules are followed, performance discussions are easy, transparent and positive. The manager earns a good reputation, the team is motivated and there is less conflict. Those are great benefits that result in successful teams and organizations that are able to fulfill their mission and purpose. 

Liz Uram is a nationally recognized speaker, trainer, consultant and author. She equips leaders with the tools they need to communicate like a boss so they can make a bigger impact, get better results, and motivate others to do their best. Contact her at www.lizuram.com.



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GPS Keeps Business on Track

Technology increases profitability and operational efficiencies on many levels

By Ken Wysocky

For Steve Fox, the third-generation owner of Fox Plumbing in San Diego, the GPS TrackIt technology his company uses is so much more than just a way to track service vehicles.

The technology also enables him to minimize fuel costs, increase operational efficiencies, reduce insurance premiums, resolve customer disputes over service calls and determine if company vehicles are used improperly.

The technology also enables him to put on a coaching hat — have a teachable moment with technicians and dispatchers.

“It’s very easy to use,” says Fox. “You just click on the desktop app and boom, you can see everything that’s going on. It helps me out on so many different levels.

“And it’s not just for companies with large fleets, either,” he adds. Established in 1992, the family-owned company runs five service vehicles (Nissan 1/2- and 3/4-ton cargo vans) and employs nine people, including six technicians that serve the greater San Diego metro area.

“It helps optimize efficiency even for a smaller company like mine,” he says.


Fox says he’s been using GPS technology for more than 15 years, back when GPS units relied on a wire antenna. Today’s wireless units can be hidden under dashboards, operate on a cloud-based platform and include an array of useful business management features.

EFFICIENT ROUTING

One of the most valuable features is truck tracking and route optimization/efficiency, Fox says.

“I can look at the map during the day and see if we have technicians driving in a circle or a square route that begins and ends at the same point, or if they’re zig-zagging across town all the time, burning fuel unnecessarily,” he explains.

The system also tells him when technicians start and turn off their vehicles, which they’re allowed to take home but are not allowed to use for personal driving. The vehicle



| | |
|----------------------------|--|
| COMPANY | Fox Plumbing, San Diego, California |
| OWNER | Steve Fox |
| MACHINE | Cloud-based GPS technology from GPS TrackIt |
| FUNCTION | Vehicle tracking and locating; speeding, hard braking and turning notifications |
| BENEFITS | Reduced insurance and fuel expenses, route optimization, enforcing proper use of company vehicles, coaching tool for drivers and dispatchers, resolving time-on-the-job customer disputes. |
| COST | \$20 a month for each GPS unit |
| WEBSITE | www.foxplumbing.com |
| GPS TRACKIT WEBSITE | www.gpstrackit.com |

start/shutdown data helps immeasurably if a customer calls to complain about the price of a plumbing job and claims a technician was on the job for, say, only 10 or 15 minutes.

“I can check the GPS and it shows the technician was there for an hour,” Fox says. “It’s a great verification tool for other things, too, like timecards. I had one guy that just wrote 8 a.m. to 5 p.m. every day on his timecard, but the GPS showed he usually left his house around 8:15 — and the clock doesn’t start until our technicians are on a job site.”

“For me, it’s all about customer service — how fast can I service the next customer and strategize accordingly as service calls come in. I have too much to do each day to spend all my time tracking employees on GPS.”

Steve Fox

VEHICLE TRACKING

Furthermore, the system also reveals if drivers are using their vehicles for personal use.

“It’s a privilege to be able to take the trucks home, so I want to be able to track authorized and unauthorized use,” he notes.

It also sends email notification if drivers brake hard, turn while going too fast or exceed speed limits, he adds.

“By knowing that kind of information, I can remind a guy to drive his vehicle like it’s his grandmother’s car, not a NASCAR race car,” Fox says.

The coaching also extends to dispatchers, thanks to a feature that can show the routes driven by trucks each day.

“Gasoline is so dang expensive these days that it helps if I can coach a dispatcher about having drivers take the most efficient routes,” he says. Or if technicians make too many trips to supply houses, Fox can remind them that it’s more cost-effective to make sure their trucks are fully stocked at the start of each day.

ENHANCED SERVICE

As for the GPS tracking creating a big-brother-is-watching atmosphere that breeds resentment, Fox says it’s all about how it’s presented. He says he tells employees that it has nothing to do with them or a lack of trust — unless they’re using vehicles for personal use or driving recklessly.



▲ Fox Plumbing owner Steve Fox stands next to one of his company’s service vehicles at the shop in San Diego. Fox Plumbing uses cloud-based GPS technology from GPS TrackIt on all of their service vehicles to better serve customers and help cut costs for the company. (Photo courtesy Fox Plumbing)

“For me, it’s all about customer service — how fast can I service the next customer and strategize accordingly as service calls come in,” he says. “I have too much to do each day to spend all my time tracking employees on GPS. And furthermore, if someone steals a truck while it’s parked at an employee’s home, I want to quickly find out where it is so we can get it back.”


Fox says he pays about \$20 a month per unit for having the GPS units installed on eight company vehicles. And he believes he receives great value from that \$160 a month.

“It’s extremely worth it,” he says. “It’s a cost of doing business, but it easily pays for itself. It’s an invaluable part of our business.” **PI**



A Perfect Plumbing Solution

Arroyo Grande, California

It might not be the “newest” truck on the road, but a truck that will be added to A Perfect Plumbing Solution’s fleet soon will be new to the company. For the last four years, Paul Karp, owner of the Arroyo Grande company has been working on this GMC 2500 V-8 from the 1960s. The final piece of the puzzle is completing a transmission upgrade to a 4L70e so he can get it on the freeway and go from job to job. Karp opened his company in 2007 and crafted the logo on the side of the truck — and on all of his other service vehicles — in 2017. For more information on A Perfect Plumbing Solution, go to www.facebook.com/aperfectplumbingsolution/. 

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New and Improved

Advanced, efficient boiler system helps revitalize century-old home with better and expanded heating

By Mike Boyd

The owner of a 107-year-old home had been having issues with the home's boiler and needed a solution for that and for a major basement finishing project.

Michael Bartholomay-Berreth, owner of the 2,700-square-foot, two-story Craftsman residence built in 1914 in Fargo, North Dakota, had decided to convert their unfinished basement into a warm, livable space consisting of a living room and bedroom with radiant heated floors.

"We live in Fargo, so obviously a house is only as good as its heating system," says Bartholomay-Berreth. "Heating the basement was a major concern because it got very cold down there in the winter — sometimes dipping below 50 degrees. On top of that, our existing boiler was really inefficient and was the only heat source for the first and second floor radiators."


The installation of an innovative and highly efficient boiler from Weil-McLain helped make the basement remodel a success and the family's home comfortably warm throughout.

SELECTING THE RIGHT BOILER

Bartholomay-Berreth contacted John Robinson at Esser Plumbing & Heating in Perham, Minnesota, which performs commercial and residential installations and services throughout the Lakes area in Minnesota and the Fargo-Moorhead area, to handle the upgrade.

“The location of the boiler is in a cramped space the size of a small closet and Esser did such a great job installing and feeding all of the lines in there. Thankfully this boiler is designed for easy access and installation into tight areas.”

Michael Bartholomay-Berreth



Fargo, ND

PROJECT Installing a boiler to provide more heat to a two-story home

CUSTOMER Homeowner in Fargo, North Dakota

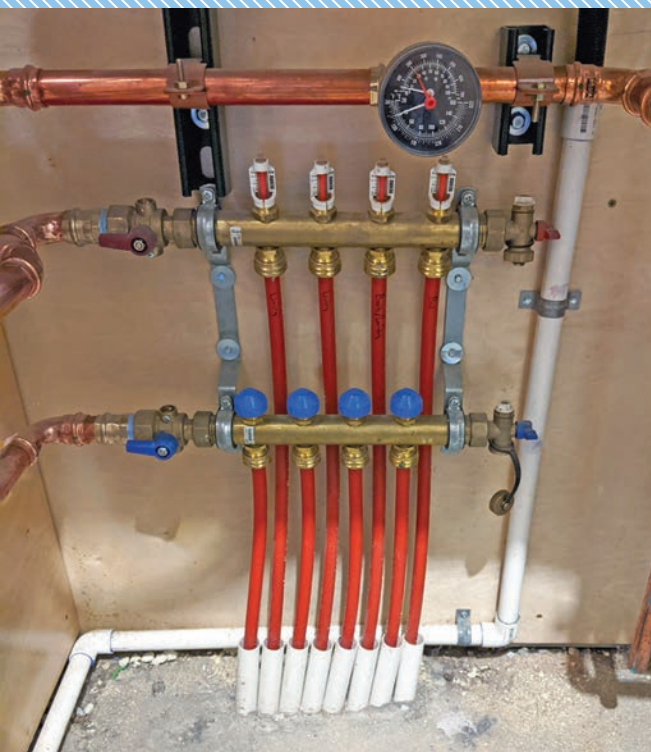
CONTRACTOR Esser Aire Serv Plumbing & Heating (Perham, Minnesota)

EQUIPMENT Weil-McLain ECO Tec 150 MBH gas boiler, Smart40 Triangle Tube indirect tank

RESULTS The plumbing team installed the boiler, an indirect tank for hot water and radiant flooring to improve the heat in the two-story home. The homeowner enjoys the new system and learning all of the things he can do with it with a touch-screen control panel.

"Upon inspection, the heating system consisted of a very old boiler and an old gravity system with pipes hanging below the ceiling and 2 1/2 inch lines connected to the boiler," says Robinson. "With limited space for the boiler replacement, the homeowner sought a single boiler solution to heat the basement's new radiant floors and provide multizone capability for the main floor and second-floor radiators."

After careful review, Robinson recommended installing a Weil-McLain brand high-efficiency ECO Tec 150 MBH gas boiler featuring powerful, intuitive controls and built-in zone control designed to provide targeted, abundant heat for all levels of the home.



- ◀ The radiant flooring tubes going from the boiler to the rest of the home. (Photography by Michael Bartholomay-Berreth)
- ▶ Wanting to upgrade heating in his house in Fargo, North Dakota, the homeowner hired Esser Plumbing & Heating of Perham, Minnesota, to install this Weil-McLain brand high-efficiency ECO Tec 150 MBH gas boiler (left). The boiler features powerful, intuitive controls and built-in zone control designed to provide targeted heat for all levels of the home. At right is the Smart40 Indirect Tank from Triangle Tube also installed.



BREAKING NEW GROUND

As part of the basement remodeling project, the contracting team broke up and removed all the concrete floor from the basement. Then they dug out the ground to lower the floor level a foot to make room for the installation of radiant floor heat.

With the radiant heat and the new concrete flooring installed, the team connected the radiant flooring and all the existing cast iron hot water radiators on the upper levels of the home to the new ECO Tec boiler. In addition, the team installed a Smart40 indirect tank (Triangle Tube) for hot water, also powered by the ECO Tec boiler.

"The location of the boiler is in a cramped space the size of a small closet and Esser did such a great job installing and feeding all of the lines in there," says Bartholomay-Berreth. "Thankfully this boiler is designed for easy access and installation into tight areas."

The new boiler features heat only and combi versions for all residential space and domestic hot water heating. It features a durable stainless steel fire tube heat exchanger with sound dampening air silencer, corrosion resistant condensate collector base, easy-to-use setup wizards and touch screen display.

BOILER INSTALLATION BENEFITS

Bartholomay-Berreth has experienced several benefits from the new boiler installation.

"The new system was the ideal solution to our problems," says Bartholomay-Berreth. "Esser Plumbing & Heating did an unbelievable job getting the system up and running

quickly. The result was a new boiler that provides highly efficient heat and hot water for our entire home."

Bartholomay-Berreth also enjoys learning more about the user-friendly ECO Tec unit.

"I've been monitoring the boiler to see how the system works and to use the cool touchscreen," says Bartholomay-Berreth. "I like to see which zones are receiving heat at any given time to learn more about how it works. The unit is pretty slick. Its intelligent boiler control is able to supply higher temperatures to the radiators and water heater, for them to operate as designed; and a lower temperature to the radiant floor system, for a warm even heat."

Most importantly, the house is a warmer and more comfortable environment.

"This is a special house that has been around a long time," said Bartholomay-Berreth. "And our new boiler system lets us appreciate and enjoy it that much more." **P**

Featured Equipment

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Dave Bailey

Learning from the Military

Following these three simple steps can help you pull through almost any situation your plumbing company could run into

By Dave Bailey

I started in the plumbing industry in 1997, working as a drain technician for a national plumbing company whose claim to fame was making customers troubles go down the drain. I learned the trade and honed my skills. After more than 23 years in the field, I now work for a company that teaches contractors how to build a better business with the goal of exiting profitably.

For most of those 23 years, I also worked as an aircraft mechanic in the U.S. Air Force and as a flight engineer in the Texas Air National Guard. I found that the requirement of following processes, procedures and checklists in the military helped me to grow as a plumber. I developed my own processes with the tasks that I did regularly. Not only did it help me to be more efficient, but it also helped me keep my callback percentage below 3%, and my close rate above 95%. When I transitioned to work with Service Nation, I realized that my unique perspective on the use of procedures could help contractors, especially when their business faces a crisis.

Managing in-flight emergencies is one of the things that any flight crew on an aircraft needs to be prepared to deal with. The flight manual for a C-130 has a checklist for all known emergencies. Regardless of the emergency, the first three steps are always the same:

1. Maintain directional control.
2. Analyze the situation.
3. Take coordinated corrective action.

I found that the requirement of following processes, procedures, and checklists in the military helped me to grow as a plumber.

You may have noticed that I said that the flight manual has a checklist for “all known emergencies.” No matter how prepared you feel, there are always unforeseen circumstances that can happen. When these things happen, you may not have all the answers, but if you follow the first three steps, you will be much better prepared to deal with the emergency.

MAINTAIN DIRECTIONAL CONTROL

Probably one of the most overlooked steps. In an emergency, it is easy to get so task saturated, and so fixated on the emergency, that nobody is flying the airplane. Several accidents have happened because the crew has been so distracted by solving the crisis that they forget to fly the airplane.

Whether you have had a major medical emergency, had an employee embezzle money or a mysterious virus quarantine most of the country, someone must run your company. Someone must keep it from flying into the ground. Do you have a plan for emergencies? You should. The most successful contractors have written processes and procedures and make sure key employees are aware of and are aware. This ensures that someone will be there to direct your business if you are not able.

ANALYZE THE SITUATION

Now that you have recognized that there is an emergency, and your business is flying straight and level, it is time to figure out exactly what the issue is and its possible fixes. On the flight deck, depending on the emergency, we may have to do what is called a “controllability check.” Can we safely control the direction of the airplane? Do the flight controls, engines and pressurization work?

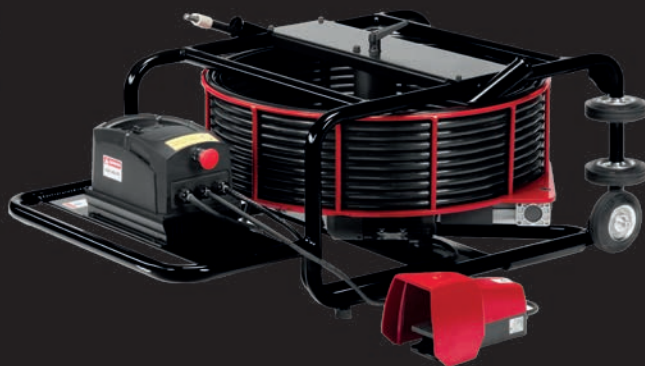
In your business, once you recognize the emergency, it is time to figure out how much damage there is. Are the phones still ringing? Do you have enough staff to take

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Now that you have kept your business from crashing, and you have identified exactly what is going on, it is time to act.

care of your customers? Most importantly, are all your employees safe? If you are incapacitated, is there someone that can make important decisions, sign checks, pay the bills and make sure that payroll is taken care of? Larger companies have managers, departments and teams that work together to keep the company operating safely and to report the condition of their departments. Smaller companies could work with a coach or a group of like-minded contractors to determine the best way to analyze and recover from an emergency.

TAKE COORDINATED CORRECTIVE ACTION

You notice that it says, "COORDINATED corrective action." That means that you talk to your crew — your key people — before you act. It may be your significant other, managers or supervisors, a business coach or a peer.

Now that you have kept your business from crashing, and you have identified exactly what is going on, it is time to act. Whether you have decided to increase marketing,

decided to get a loan to back up operating expenses or you have designated someone that you trust to run things when you cannot, you have a plan for when it is needed. After that, you can work as a team to adapt to changing conditions.

Regardless of the emergency, remain calm. Having a plan in place means you will be leading and making decisive actions, they will be backing you up. When emergencies arise, following these three steps will keep your company safe and productive. **P**

Dave Bailey is the vertical market manager, plumbing for Service Nation Inc. and has 25 years working in the plumbing industry — 23 in the field. If you would like to send a message to him, email dbailey@servicenation.com.

HAVE A
STORY IDEA?

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Product Spotlight

Versatile water filtration system easy to install and maintain

By Craig Mandli

Everyone should have access to fresh, clean, good-tasting water. But sometimes factors like outdated infrastructure or naturally occurring elements in groundwater lead to undesirable nutrients which require additional steps to filter. ENPRESS specializes in providing solutions for those issues, and recently introduced the E3 Filtration System with Integrated Bypass that utilizes industry standard threaded fitting kit connections to simplify installation by plumbers and water treatment dealers and streamlines field installation inventory requirements.

“This is a point-of-entry filtration system that allows for easy changeout of unique filtration systems and comes with an integrated bypass for easy access for filter change-out and simple installer installation in a home or business,” says Mike Mormino, vice president of sales and marketing for ENPRESS. “We have leveraged our years of experience in the water treatment industry to offer a product that has nothing like it in the space.”

The system comes standard with 1-inch MNPT elbow or straight connectors to the bypass and requires no gluing. An Umbrella Cap is included with every system, along with a 3/8-inch Parker fitting and shut-off integrated into the inlet side to allow rapid tubing connection for draining of



the system of sediment and water during filter changeout. This connection system is compatible with all existing Enpress point-of-entry filters.

“It has multiple filter configurations from pleated and string wound filters, carbon blocks for the removal of chlorine/chloramine, to certified systems for lead/PFAS removal to arsenic in the future,” says Mormino.

The E3 includes the ENPRESS Cartridge Tank that serves as an alternative to small and inefficient traditional 2.5- or 4.5-inch housings, or expensive stainless steel cartridge housings, and is an NSF 61 and 44 listed device. Nine filtration series options are available, with each series offering unique filtration capacities and flow rates from residential requirements up to 150 gpm. Each filter comes with a handle designed top cap for lightweight and easy removal, a bag for proper disposal, and a double O-ring seal. It is specifically designed for residential, light commercial and commercial point-of-entry installations and applications. The systems feature an easy to access top and bottom opening for use with multiple filtration connections and solutions, in a lightweight and cost-effective package. It is 100% non-metallic, with multiple configuration options available. **866-859-9274; www.enpress.com**

Navien's Product and Service mobile app

Navien has launched the Navien Products and Service mobile app for Apple and Android devices. Industry professionals can log installation and service information for the units they work on, live chat with Navien technical support, scan unit serial numbers to register their installations including via NavienRewards, take job site photos to add to unit service logs, search for local wholesalers and see the latest Navien training classes. Owners of Navien products can scan a unit's serial number and register it for warranty, search for



local and federal rebates, find a local installer or service professional, download brochures and operation manuals, and more. **800-519-8794; www.navieninc.com**

Aqua-Rex WK4 and WK5 commercial water conditioners

Aqua-Rex has upgraded its commercial electronic water conditioners for treating hard water. The two largest standard models, WK4 for treating pipes up to 4 inches and the WK5 for treating pipes up to 6 inches, now feature a fault-recording system which can be accessed through the LCD display. It provides



a complete operating history including times the unit has been disconnected and brought back online. The upgrade is further enhanced by a digital monitoring feature that informs the user if any aerals have been disconnected or grounded to the treated pipe. In addition to recording a fault, the controller will alarm the user in real time on their building management system by a failsafe connection. In place of the previous 120-volt power input, a new low-voltage power supply can be connected to any USB outlets or transformer, eliminating the need for UL certification and reducing energy consumption. **877-640-2170; www.aqua-rex.com**

Milwaukee Tool performance-driven apparel

Milwaukee Tool enhances its lineup of workwear with the new Hybrid Work Tee, WORKSKIN Performance Fitted Hat, WORKSKIN Performance Neck Gaiter and color expansion of the WORKSKIN Lightweight Performance Shirt. Built to protect against the elements, the Hybrid Work Tee offers UPF 50 protection for those warm days on the job site and moisture-wicking fabric to stay dry while working. The WORKSKIN Performance Fitted Hat prepares users for high activity jobs while drying fast and staying cool. Constructed from a Milwaukee Tool-designed moisture-wicking fabric with an adjustable rear drawstring, the WORKSKIN Performance Neck Gaiter dries fast to keep users cool. **800-729-3878; www.milwaukeetool.com**



Kohler Hyten elevated toilet seat

Kohler Co.'s Hyten elevated toilet seat is a new solution for consumers who are aging-in-place or those with mobility issues. The Hyten seat adds 3 inches of height for comfort while sitting and improves accessibility while



lowering to and raising from the seat. The design of the seat is sleek yet functional, without looking institutional, providing a solution for those experiencing mobility issues without compromising on function or design. The Hyten has top-mounting hardware for easy installation with a screwdriver and no reaching under the bowl to install. The seat will be available in a round-front and elongated options to fit existing toilets. Grip-Tight bumpers prevent the seat from shifting, increasing security, while Kohler's Quiet-Close hinges ensure the seat lid won't slam. **920-457-4441; www.kohler.com**

Spartan Tool Vision app

Spartan Tool's redesigned Vision app is a user-friendly platform that puts a wide range of options and features at an operator's fingertips. The app is designed to work with Spartan Tool's Traveler series of cameras and delivers the ability to effortlessly control the camera within pipes. Users can manipulate the camera view, and the app also offers several features that allow users to share findings with others. The new PDF Report Builder is optimized for tablet and smartphone use. Reports are easy to customize to needs and can be quickly completed on site and quickly sent to customers through the app. The Vision app is available for iOS and Android devices. **800-435-3866; www.spartantool.com**



RIDGID SeeSnake rM200 camera reel series

The RIDGID SeeSnake rM200 Camera Reel with TruSense now has enhanced transport and storage features. Ideal for tackling lines up to 200 feet in length and 1 1/2 to 8 inches in diameter, the rM200's new camera functionality features TruSense technology with high dynamic range imaging and TiltSense inclinometer for clearer in-pipe vision. New smooth wheel assembly provides easier transport, while taller storage bins increase internal capacity. **800-474-3443; www.ridgid.com**



Superior 5-E Electric smoke blower finds faults, odors, leaks and inflow

When testing laterals, building plumbing, or pumping or inspecting septic tanks, smoke testing is a quick and effective way to find plumbing faults that lead to odors, leaks and inflow. Superior Signal Company's Superior 5-E Electric Smoke Blower easily connects to any clean-out, port or vent to smoke test the entire system in just a few minutes. The Superior 5-E Electric smoker gently pushes smoke throughout a system to find cracks or leaks and quickly identify problems. Made in the U.S., the durable Superior 5-E Electric smoker is competitively priced and comes complete with 8 feet of industrial grade hose. Used with Superior Smoke Candles, this cost-effective solution is ideal for hard-to-find odors, leaks and other faults in commercial, residential and municipal facilities. **732-251-0800; www.superiorsignal.com/PL5**



Rinnai appoints new executive leadership structure

Rinnai has announced the elevation of three leaders in the organization. Judd Greene has been promoted to senior vice president of administration with responsibilities for human resources, finance and information technology. Greene joined Rinnai in 2009 as an accounting supervisor, was promoted to controller in 2013 and vice president of finance in 2018. Tim Wiley has been promoted to senior vice president of customer experience with responsibilities for sales, marketing, commercial, quality assurance and customer care. Wiley joined Rinnai in 2015 as vice president of sales and has led the sales organization delivering double-digit annual revenue growth. Kevin Headley has been promoted to vice president of sales with responsibilities for sales in the U.S. and Canada. Headley joined Rinnai in 2020 as senior director of sales and has taken an active role in developing the organization's factory direct and inside sales teams.

Jim Felker joins SJE as regional sales manager

SJE welcomed Jim Felker as its newest regional sales manager. A 20-year industry veteran, he will be working out of his home in Oxford, Michigan, covering the northeast territory for SJE Rhombus and CSI Controls. Most recently, he worked in outside sales at Sales Service Plus, a manufacturer's rep that represents SJE Rhombus.



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Franklin Electric announces recipients for outstanding achievements

At Franklin Electric's annual Commercial Summit — a gathering of team members from across its operations — winners of this year's awards for outstanding performance, sales and customer support were announced. The winners named were Field Salesperson of the Year, Jimmy Vela; Field Service Engineer of the Year, Ryan Horner; and Team of the Year, U.S. South Central Region. The team members, led by Darol Hayes, included Chase Ellsworth, Dave Batdorff, Erasmo Barron, Ilse Gallegos, Jennifer Ford, Jesse Zwiebel, Jimmy Vela, Hannah Kinningham and Woody Kunkel.

15 Neighborly brands ranked among top franchises

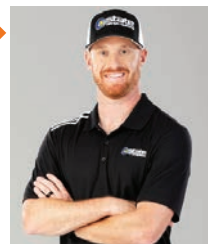
Neighborly brands Aire Serv, Five Star Painting, The Grounds Guys, HouseMaster, Glass Doctor, Molly Maid, Mosquito Joe, Mr. Appliance, Mr. Electric, Mr. Handyman, Mr. Rooter, Precision Door Service, Rainbow International, Real Property Management and ShelfGenie were all included among the top 500 franchises in *Entrepreneur's* Franchise 500. Each franchise is given a cumulative score based on an analysis of more than 150 data points, and the 500 franchises with the highest cumulative scores become the Franchise 500 in ranking order.

Bradford White expands online training options

Bradford White Water Heaters added six new e-learning course options to its For the Pro Training Academy platform. Launched in November, the Pro Training Academy enhances the company's exclusive For the Pro suite of online resources with premium self-paced e-learning options. The latest additions to the Academy provide overviews and installation, maintenance and troubleshooting information on the Bradford White AeroTherm heat pump water heater and Infiniti K and L tankless water heaters.

State Water Heaters announces 2022 NASCAR partnership

State Water Heaters announced it will partner with Jeb Burton and Our Motorsports for the 2022 NASCAR season. State has worked with Burton for more than a decade, but this will be the first season in partnership with Our Motorsports out of Massachusetts. 



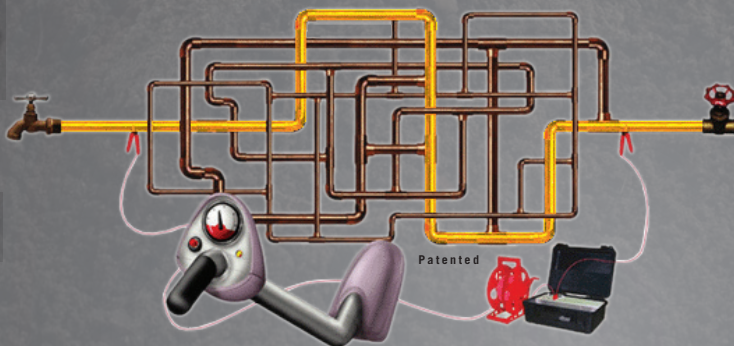
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if you are not satisfied. If you want to learn more about the Pulsar 2000 and our leak locating equipment, please call **214-388-8838** or e-mail jsmll@aol.com for a free demonstration video or CD and references of satisfied customers.

We have been using the **Pulsar 2000** along with the XL2 fluid detector and Geophones since January 1989 in our leak locating business. Our leak locates are **accurate 95% of the time**, but I can honestly say, the line we trace is always there. Our equipment is user-friendly and requires very little training, as you will see on the video. Purchase the **Pulsar 2000** line tracer, XL2 fluid detector and Geophones, and start locating leaks immediately.

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Septic and Sewer Systems

By Craig Mandli

Advanced Treatment Units

Delta Treatment Systems ECOPOD

The ECOPOD series for advanced wastewater treatment from **Delta Treatment Systems** is easy to install, low maintenance and effective in reducing levels of nitrogen, BOD and TSS. The simple design can treat 500 to 1,500 gpd for residential systems and up to 250,000 gpd for commercial systems. It is NSF/ANSI 40 and 245 certified to exceed Class I requirements for effluent quality. The intra-tank bioreactor can be inserted into an average-sized round or rectangular concrete, fiberglass, or plastic onsite wastewater treatment tank or vault. It uses a fixed-film process that is stable, reliable, and robust and is customizable for individual residential installations, cluster designs, and small-to medium-size commercial applications. It minimizes sludge production, reducing pump out frequency, and a remote monitoring system is available. It is FHA and VA acceptable and is suitable for intermittent usage. **800-219-9183; www.deltatreatment.com**



Eljen Geotextile Sand Filter

The GSF, or **Geotextile Sand Filter**, advanced wastewater treatment and dispersal system from **Eljen** is designed to provide treatment and dispersal in the same footprint, easy installations and minimal maintenance. This product is used for both commercial and residential applications. Utilizing a two-stage pretreatment process, the geotextile modules apply filtered septic tank effluent to the soil and increase the long-term acceptance rate. Open-air channels within the module support aerobic bacterial growth on the module's geotextile fabric, surpassing the surface area required for traditional absorption systems. The result is simple installations in a smaller soil absorption area. The system is tested and certified by NSF to NSF/ANSI Standard 40. **800-444-1359; www.eljen.com**



Norweco Singlair Green R3

The **Singlair Green R3** water reuse system from **Norweco** reduces water consumption, reuses treated effluent and recycles water to conserve and recharge water resources. It provides a solution to chronic water shortages and reduces energy costs associated with water and wastewater treatment. The system quietly, efficiently and automatically treats all incoming wastewater to the highest level for restricted indoor and unrestricted outdoor use, according to the maker. The system exceeds the effluent requirements of NSF/ANSI Standards 40, 245 and 350. It qualifies for green building credits under both the LEED rating system and the NAHB ICC 700 National Green Building Standard. **800-667-9326; www.norweco.com**



Commercial Treatment System

BioMicrobics HighStrengthFAST

HighStrengthFAST wastewater treatment systems from **BioMicrobics** are scalable wastewater solutions for commercial properties of all sizes. They are engineered to treat wastewater containing high BOD concentrations and often having higher FOG levels than standard sanitary-strength sewage. Models are available to treat 900 to 9,000 gpd and are designed for extreme environments such as specialty food/beverage/agriculture applications. **800-753-3278; www.biomicrobics.com**



Jet Inc Commercial Systems

Commercial Wastewater Treatment Extended Air plants and newer MBBR Plants from **Jet Inc.** are modular in design, can treat varying strengths and flows from 1500 to 300,000 gpd and allow for phase build-out.

This makes it possible for convenience stores, motels, shopping centers, and service stations to be constructed along interstate highways far from any town. Decentralized systems and subdivisions can be developed miles beyond sewer lines. Factories can be erected in rural areas. These systems can also be used for pretreatment before discharging into central systems to reduce overall system load. The time-tested plants, utilizing a variety of controls, treat wastewater through an aerobic digestion process that enables microscopic living organisms to transform wastewater into a clear, odorless liquid. The company offers assistance with design, engineering and construction, as well as onsite 24/7 tech support, plant start-up commissioning and operator training. **800-321-6960; www.jetincorp.com**



Excavation Equipment

Ditch Witch BH782

Whether contractors are loading, digging or moving material, the **Ditch Witch BH782** backhoe attachment is designed to help contractors stay efficient on a variety of earthmoving tasks. It is available with a standard mini attachment plate and is compatible with Ditch Witch's fleet of mini stand-on skid-steers starting with the SK800 through the SK1550. The attachment offers a standard 12-inch bucket and can dig up to 78 inches. With a 180-degree swing radius, it can help improve operator agility and efficiency on the job site. To maximize productivity, it is equipped with a dual independent machine stabilizer. For increased multifunction performance, it offers intuitive operator controls to maximize job site uptime. It also comes with a single plug-and-play harness to integrate and install the harness to the machine more easily and seamlessly. **580-336-4402; www.ditchwitch.com**



Disinfection Equipment/System

SALCOR 3G UV Wastewater Disinfection Unit

The **3G UV Wastewater Disinfection Unit** from **SALCOR** is used for residential, commercial and municipal applications, and it is UL-certified NEMA 6P flood-proof and NSF/Washington State Protocol six-month tested (with 21 upstream treatment systems). It inactivates bacteria/virus pathogens, including superbugs. Rated at 9,000 gpd gravity flow, it is meant as a reliable building block for large water recovery/reuse systems. When installed in 12-unit parallel/series arrays with ABS pipe fittings, systems can disinfect more than 100,000 gpd. Gravity flow equalizes without distribution boxes. Each unit has a foul-resistant Teflon lamp covering, two-year long-life lamp with efficient installation, minimal annual maintenance and energy use of less than 40 watts. **760-731-0745; www.salcor.world**



Soil Surgeon hydroexcavating tool

The **Soil Surgeon** hydroexcavating tool fits any sewer combination truck equipped with a telescoping 6- or 8-inch boom. The tool has a 1-inch water connection. The operator controls water pressure and power through truck controls. It has a 6-foot Tuff-Tube with handles to guide the unit down for potholing or side to side for trenching. Six jets boring inward cut the soil, while six boring outward bring the tube down. **949-363-1401; www.soilsurgeoninc.com**



Grease Bacteria/Chemical



Duracable Manufacturing ProClean Drain Line & Grease Trap Treatment

ProClean Drain Line & Grease Trap Treatment from Duracable Manufacturing can reduce the need for grease trap pumping by as much as 65%. It uses a high concentrate of selectively adapted bacteria to degrade

greases, fats, long-chain fatty acids and other organic wastes. Suitable for commercial locations such as restaurants, where a heavy concentration of waste products can clog drains quickly, it builds a biofilm of microbes on the walls of drain-lines and grease traps. It works continuously, consuming grease and organic waste before it has a chance to build up. It is safe to use around food processing areas. For best results, use with a Time Flow Meter, also available from Duracable. **800-247-4081; www.duracable.com**

Pumps



Ashland Pump effluent pumps

Heavy-duty effluent pumps from **Ashland Pump** are available in multiple horsepower

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

Franklin Electric Little Giant Pit+Plus

The **Little Giant Pit+Plus** package from **Franklin Electric** is known for providing an all-in-one solution for light duty wastewater management. Each package



includes a roto-molded polyethylene basin – the pit – combined with the user's choice of Little Giant pump. The addition of the 1 hp grinder pump option joins the already available 4/10 and 1/2 hp sewage pump choices. The basin is available in two sizes: the 24x24 JR or 20x30 SR. The Little Giant 16G Series 1 hp grinder pump has a cutting mechanism modeled after the unique design used in larger Franklin Electric models and delivers proven performance. The heavy-duty 1 hp Class F motor provides optimal power to prevent flushables and other debris from clogging and causing downtime. **844-250-4982; www.littlegiant.com**

Liberty Pumps ProVore

The **ProVore** grinder from **Liberty Pumps** is designed for use in applications where the addition of a bathroom or other fixtures below sewer lines requires pumping. It has the same V-Slice cutter technology used in the Omnivore Series. Powered by a 1 hp motor, this smaller grinder is designed to operate on a standard 115- or 230-volt circuit, requiring only a 20-amp breaker. No special wiring is needed. The pump comes with a 2-inch vertical-style discharge and a standard leg pattern matching the LE Series. This allows for an easy retrofit into existing systems, according to the maker. Compact factory-assembled systems are available in simplex and duplex versions: the ProVore 380 and ProVore 680. **800-543-2550; www.libertypumps.com**



Polylok PL-CPE4A

The **Polylok PL-CPE4A** is a submersible, 4/10 hp, 115-volt, single-phase effluent pump with a 2-inch NPT vertical discharge. It has a maximum head of 38 feet and a maximum flow of 56 gpm. The pump is designed with a 3,450 rpm oil-filled permanent split-capacitor motor and has an amp rating of 6.6 for 115 volts, a rugged cast iron housing and volute equipped with a cast iron vortex impeller capable of passing 3/4-inch-diameter solids. The stainless steel shaft is supported by two single-row, oil-lubricated ball bearings. The shaft seal is an inboard design with a secondary Exclusion V seal. It has a 20-foot UL/CSA-listed power cable suitable for submersible service and fitted with a three-prong plug. The unit is supplied with an integrated clip for the included piggyback mechanical float switch and used for automatic operation. **888-765-9565; www.polylok.com**



Webtrol Pumps VS5A24

The VS5A24 from **Webtrol Pumps** is a versatile solids-handling and dewatering sewage ejector pump suitable for residential sewage applications. It has a 1/2 hp motor, 2-inch discharge, and passes 2-inch solids. The motor is continuous duty, and three-phase models are available. It is designed with recessed cast iron vortex impellers and volutes and a stainless-steel motor housing. It also has a double mechanical seal, potted epoxy cord seals, and a maintenance-free design. The pumps can be guide rail mounted. 800-769-7867; www.webtrol.com



Pump Control

SJE Rhombus Installer Friendly Series (IFS)

Installer Friendly Series (IFS) single phase panels from **SJE Rhombus** have been redesigned to feature an easy-to-use color LCD on the inner door for programming and system monitoring. Use the menu navigation to select Pump Hand/Off/Auto mode, convert between demand or timed dose operation, adjust pump activation levels, and switch between traditional floats or the C-Level sensor for continuous level monitoring, all while in the field. Users can also check the Tank Level Indication and setpoint monitoring at-a-glance. The simplex panel controls one 120/208/240V single phase and the duplex controls two 120/208/240V single phase pumps. Both models are housed in lockable 12- by 10- by 6-inch NEMA 4X enclosures, made with ultraviolet-stabilized thermoplastic. This product is UL/cUL listed. 888-342-5753; www.sjerrhombus.com



Septic System Bacteria/Chemicals

Century Chemical Bio-Tab

Bio-Tab from **Century Chemical** is a tablet that sinks to the bottom of septic tanks where buildup problems begin. There, self-reproducing bacteria and enzymes gradually dissolve to create



a growing area of activity, digesting and liquefying organic waste — treating the entire system, including the drainfield. Common household chemicals such as antibacterial products, bleaches, detergents, or a heavy presence of antibiotics can kill already low levels of bacteria in the septic system. When this happens, waste is no longer being digested, resulting in buildups of solids that plug the system and give off offensive odors. The tablets are able to establish themselves by working from the inside out, and regular usage — combined with routine pumping — can aid and support the natural digestion of waste, helping septic systems to maintain good working condition. 800-348-3505; www.bio-tab.com

DRAINBO Septic System Treatment and Cleaner

DRAINBO's Septic System Treatment and Cleaner takes care of the complete septic system from beginning to end via its three paths of action. First, starting at the mainline it digests buildup to ensure the line is free flowing year-round. Second, it increases digestion in the tank to ensure it is running at peak performance. Third, it works its way into the leachfield, eliminating biofilm and sludge buildup that lead to system failure. It can also be used weekly over an eight-week period to rejuvenate failing systems. It does all this while being certified safe and all-natural. One treatment treats up to a 2,000-gallon system and only needs to be used quarterly to insure peak performance. Private labeling is available. 877-372-4626; www.drainbo.com



Lenzyme

Lenzyme is an enzyme-bacteria product used as a septic biological maintainer, drain cleaner and sewage treating agent in the home and in industrial, commercial and municipal installations. It can be packaged in the company's brand name or private labeled. It may also be used in formulations designed for a given condition or application, such as drains, septic tanks and cesspools, and for industrial and commercial application. It is approved by the USDA for use in sewage and/or drainlines of official establishments operating under the federal meat, poultry and egg products inspection program and is only sold to licensed contractors. 800-223-3083; www.lenzyme.com



Oatey Hercules Bacta-Life

Hercules Bacta-Life from **Oatey** is a concentrated powdered product formulated to bacterially repopulate recently pumped septic systems. It is a blend of specialized microbes, highly potent enzymes, micronutrients and growth accelerators to digest grease, soap scum, starch, proteins, carbohydrates and cellulose/paper. The product disperses quickly on contact with water, and immediately begins to break down deposits and neutralize odors in wastewater systems. It contains no acids, caustics or solvents and is safe for use in all areas of wastewater plumbing. It enhances the natural biology of cesspools, septic tanks and drainage areas. It removes heavy buildup in traps, drains, sewers and sump/lift stations when used on a regular basis. Regular use maintains free-flowing drains and sewers and helps keep septic systems at full activity. It can also be used in commercial grease traps, for sewer and drainline maintenance and backyard composting. **800-203-1155; www.oatey.com**



Septic Tank

JMI Pumps Systems low-profile poly septic tank

JMI Pumps Systems has partnered with Norwesco to offer a low-profile poly septic tank. These one-piece tanks come in 1,000, 1,250 and 1,500 gallons, with either one or two compartments. They include internal support columns that help increase the tank's integrity while preventing tanks from moving during backfilling. Depending on soil conditions, these tanks typically can be buried deeper than other poly tanks, making them ideal for concrete replacements. These low-profile poly tanks can be easily brought to jobsites by the contractor, which in turn alleviates downtime from waiting on a concrete tank to be delivered and placed. These tanks can also be simply moved on job sites without large equipment, making them ideal for hard-to-reach places. **800-234-5490; www.jmipumps.com**




Septic Tank Components

Pagoda Vent

Vent pipe filters from **Pagoda Vent** provide septic field microbes with the oxygen needed to thrive. They give concrete tanks gas release to mitigate microbial-induced corrosion and provide pressure relief for pumps. They provide proper ventilation, while remaining inconspicuous and attractive in the landscape. The units are durable, lightweight and will not rust. An optional odor filter cartridge using a specialized concentrated media offers years of lasting odor control and fits concealed in the device, according to the maker. **888-864-1468; www.pagodavent.com**



Superior Signal 5E Electric Smoker

The **5E Electric Smoker** from **Superior Signal** offers an efficient solution to find difficult leaks and odors in residential and commercial plumbing systems or septic tanks. Connect the blower to any plumbing clean-out or vent with the appropriate-size smoke candle to force smoke through faults and cracks, easily identifying sources of odor and hard-to-find leaks. Smoke candles produce a highly visible, non-toxic smoke and are biodegradable. They are manufactured with zero-waste stream and include labels printed with vegetable-based ink on recycled paper as well as biodegradable, recycled paperboard tubes. The unit does not generate harmful exhaust gases and handles all residential and commercial smoke-testing applications. The unit comes with an 8-foot, industrial-grade flex hose, weighs 8 pounds and requires no maintenance. **800-945-8378; www.superiorsignal.com** 



Septic and Sewer Systems

By Craig Mandli

Heavy-duty grinder pump chosen as a cost-saving solution for unusual floating bathroom application



Problem: The lifeguards employed at Bonelli Park in San Dimas, California, have a unique headquarters for when they need to take a break or use the bathroom while on duty — a floating boathouse on the 250-acre lake. But, after years of use, the existing facility recently needed a remodel, especially the bathroom within, due to an inaccessible leak.

Solution: The team at Saniflo recommended the **Sanibest Pro** for the application. Ideal for public facilities that cannot be closely monitored, the heavy-duty grinder can quickly dispose of larger objects that might well clog a conventional toilet. In the case of the floating facility, the wastewater from both the toilet and the sink flow through a 1-inch discharge pipe from the Sanibest Pro up 25 feet into the park's sewage system.


Result: The entire bathroom application took less than a day to finish and went smoothly. "We were working with a smaller budget and choosing Saniflo helped us stay within scope," says project manager John Tietjen. "Also, I'm very big on customer service. When Saniflo showed up, on site, with a truck that had a toilet in the back for a demo, I had a great feeling." 800-363-5874; www.saniflo.com

Pretreating high-strength waste for orchard and winery



Problem: After one year of careful monitoring by the local county health department and the Indiana Department of Health, it was determined in 2017 that the waste strength loading at Huber's Orchard and Winery, located in Starlight, Indiana, was too high for the new mound system, and an additional pretreatment system was needed to lower the waste strength prior to discharge to the mounds.

Solution: Zoeller Pump Co. offered design assistance and components for a new mound system to treat waste from numerous structures. They recommended a recirculating media filter (RMF) treatment system to be installed between the existing septic tanks and the mound system. The treatment systems are similar to recirculating sand filters, with the main difference being the size of the treatment media, which is typically 3/8-inch-diameter pea gravel instead of sand media. Zoeller found after many years of use that 3/8-inch pea gravel does not plug. A local engineer designed the new RMF at 4,000 gpd using a waste strength of approximately 700 mg/L BOD₅, which required a 30-by-30-foot RMF. Commissioning of the RMF was done in October 2019.

Result: After one month, the new RMF was treating wastewater efficiently, meeting the objective of effectively pretreating effluent prior to discharge to the mound system. Samples collected averaged 10.5 mg/L BOD₅ and 2.3 mg/L TSS. 800-928-7867; www.zoeller.com 

May 10-11

7th Emerging Water Technologies Symposium,
Westin Riverwalk, San Antonio. www.ewts.org

May 12

124th Annual Tennessee PHCC Trade Show,
Knoxville Expo Center, Knoxville, Tennessee.
Visit taphcc.com/annual-events.html

June 27-29

Canadian Mechanical & Plumbing Exposition,
Metro Toronto Convention Centre, Toronto, Ontario.
Visit www.ciph.com

June 12-15

AWWA Annual Conference & Exposition,
Henry B. Gonzalez Convention Center, San Antonio.
Visit events.awwa.org

June 19-21

**Canadian Institute of Plumbing & Heating
Annual Business Conference,**
Jasper Park Lodge, Jasper, Alberta. Visit www.ciph.com

June 27-29

**Safety 2022 Professional Development
Conference & Exposition,**
McCormick Place, Chicago.
Visit safety.assp.org

Sept. 11-15

**International Association of Plumbing and
Mechanical Officials 93rd Annual Education
and Business Conference,**
Sheraton Charlotte, Charlotte, North Carolina.
Visit iapmo.org/ibu/events

Sept. 16-21

**American Society of Plumbing Engineers
Convention & Expo,**
Indiana Convention Center, Indianapolis.
Visit www.aspe.org

Sept. 27-28

Canada's National Hydronics Conference,
World Trade Center Prairieland Park, Saskatoon,
Saskatchewan, Canada. Visit ciph.com/page/CHC

Oct. 5-7

PHCC Connect 2022,
The Westin Charlotte and Charlotte Convention Center,
Charlotte, North Carolina.
Visit www.phccweb.org/connect

Oct. 18-21

Service World Expo,
Tampa Convention Center, Tampa, Florida.
Visit www.serviceworldexpo.com

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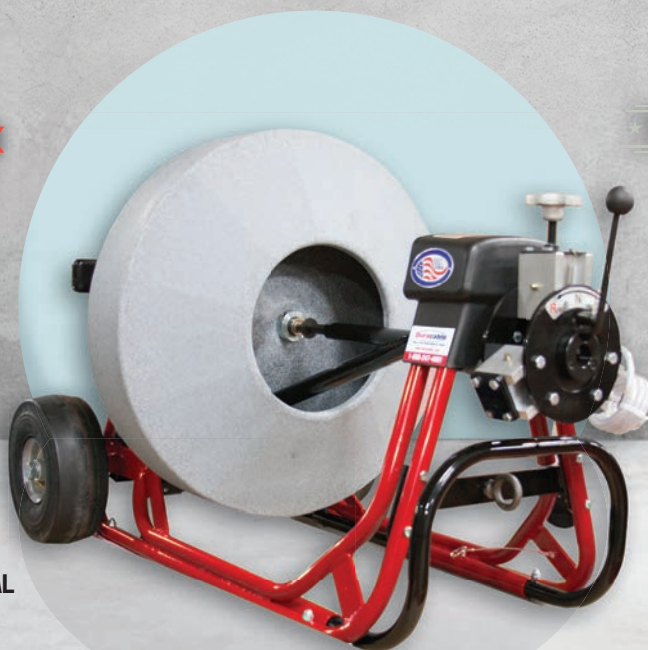
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Brendan Macfarlane,
Revive Pipes in Calgary, Alberta Canada

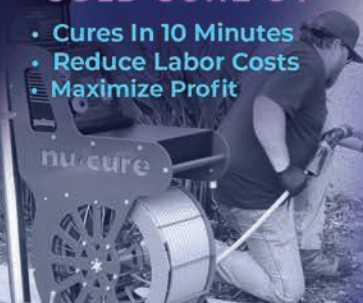
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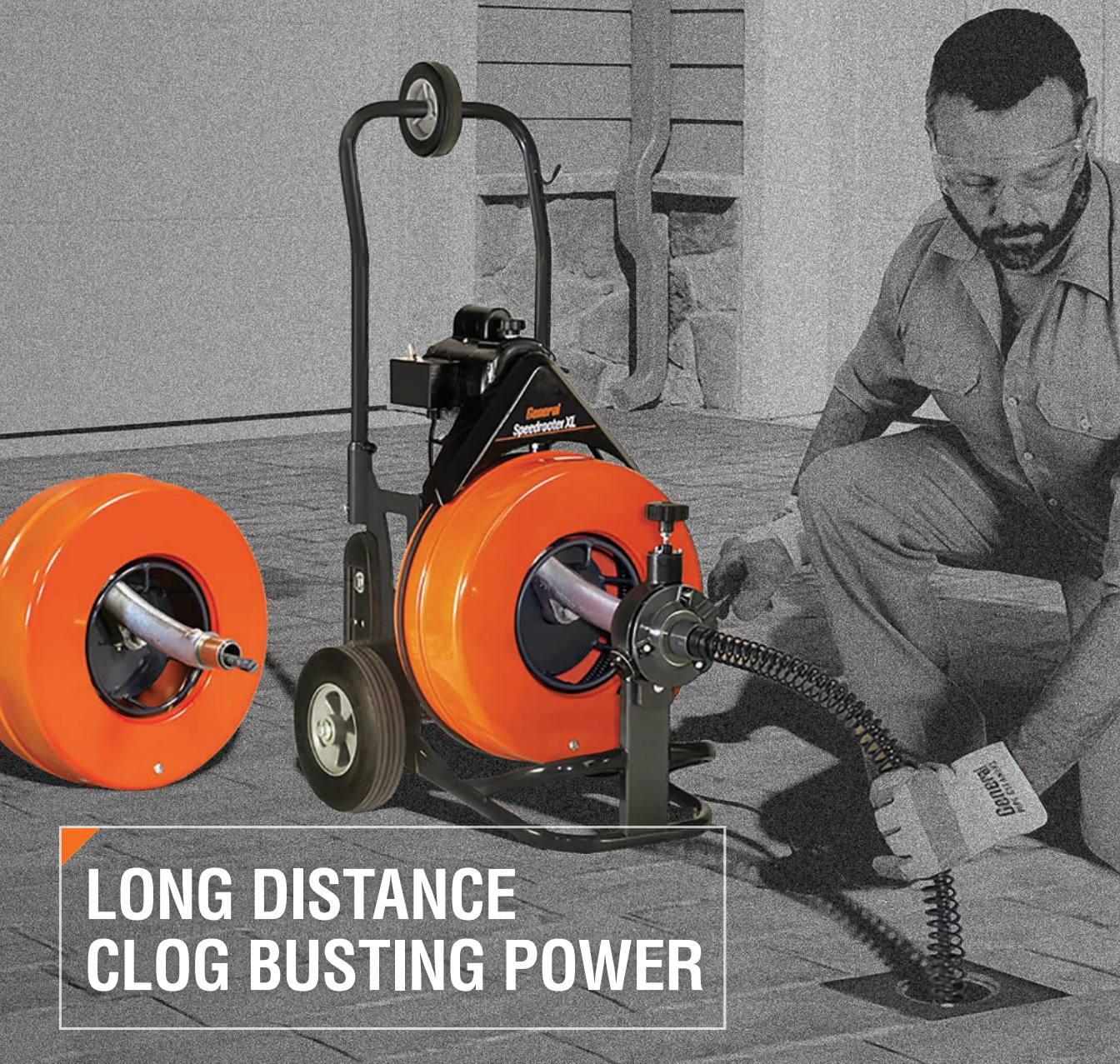
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