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PROFESSIONALS

TV/VIDEO  
INSPECTION &  
LOCATION  
DIRECTORY / PG 40

## JOINING FORCES

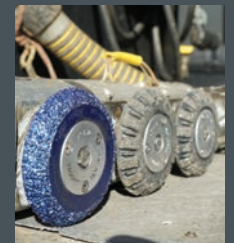
CONTRACTORS COLLABORATE  
TO MEET CUSTOMER NEEDS

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PRODUCT FOCUS

MAINLINE SEWER INSPECTION / 60



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**ON THE COVER //** In Green Bay, Wisconsin, two drain cleaning businesses with complementary services have put competition aside to form a mutually beneficial collaboration. Matthew Sadler, owner of Sadler Sewer & Drain Cleaning, and Mark Joski, who owns Joski Sewer Services, were connected six years ago by a plumber who knew them both. They refer work to each other based on their companies' strengths and they've even teamed up on jobs occasionally. (Photography by Mike Roemer)



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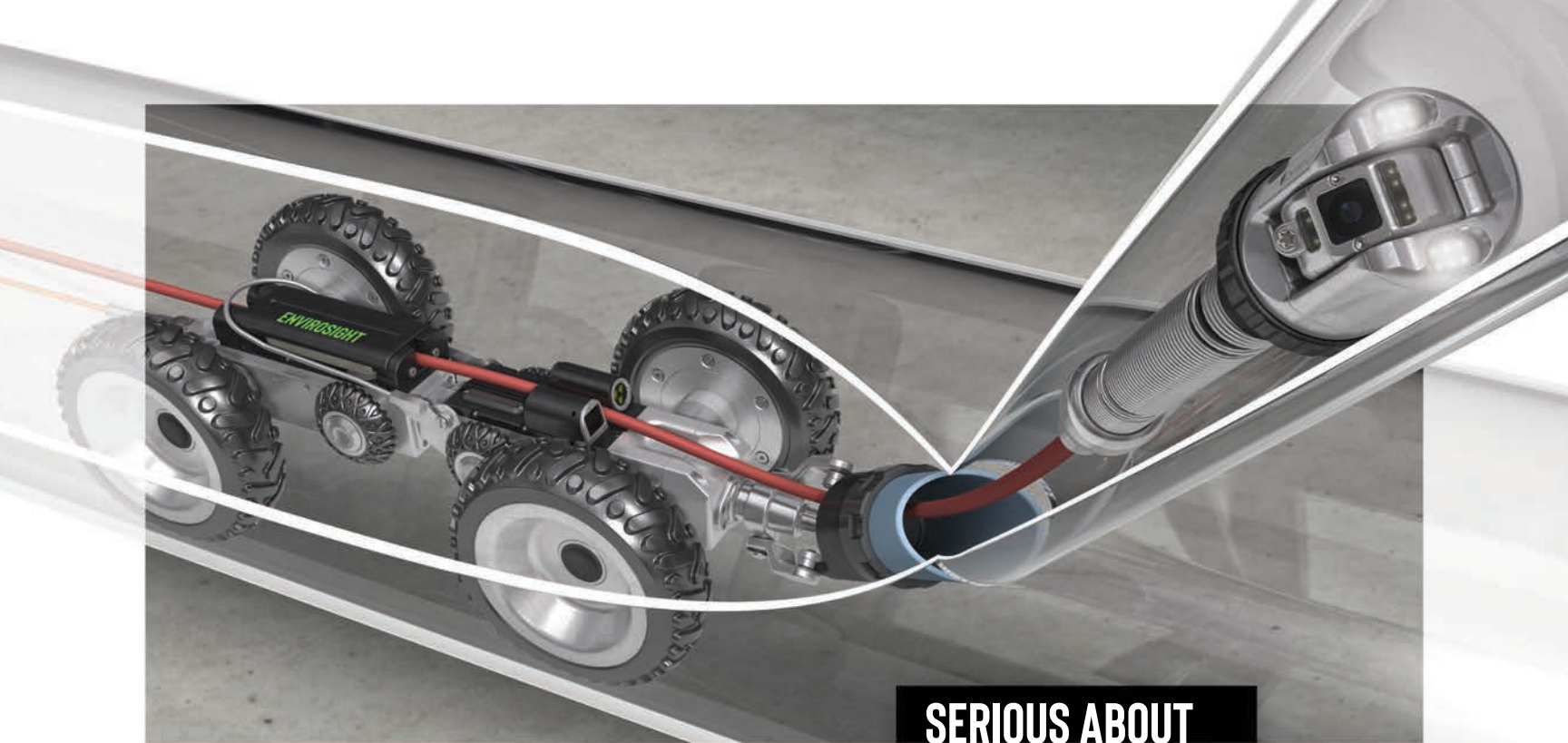
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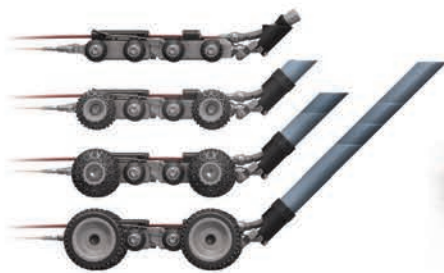


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# Cleaner

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## IN GOOD COMPANY

Teaming up with another contractor is possible if you focus on collaboration over competition

**IN MY COLUMN A FEW** months ago, I talked about using social media as a tool for sharing information and making connections in the industry.

While I still think it's beneficial to cultivate those friendships and build a network online, it's also great to have a colleague in your area you can rely on — for advice, an emergency equipment loan or to take care of one of your loyal customers if you can't get to them as soon as you'd like.

You might think true collaboration with a competitor might be next to impossible. But maybe the mistake is thinking of the other

company as competition at all. In most markets there is probably more than enough drain cleaning and rehabilitation work to go around. Unless you're really hurting for business, it probably will only benefit you to make friends with another contractor.

If you're thinking that sounds good in theory but tricky in execution, the two profiles in this issue show that it can be done. Both located in Green Bay, Wisconsin, Matthew Sadler and Mark Joski have different service specialties and routinely refer work to each other. For instance, Sadler Sewer & Drain Cleaning doesn't currently offer pipe lining, so Sadler recommends Joski to customers when that's the best option. If Joski gets too busy with lining jobs, especially in the summer, he sends drain service calls over to Sadler. They bounce ideas off each other and even team up to do a job together from time to time.

"We're both small companies," Joski says. "So, if I get in a jam, I call him. He does the same thing when he's in a jam. I go on vacation, he covers for me and vice versa."

In a large market with aging infrastructure, "There is more than enough work to go around for everyone," Sadler explains. "There is more work than we all can do."

The pair's connection began when an area plumber who sometimes referred work to Sadler asked him if he knew Joski. He didn't, but immediately reached out to Joski and suggested they meet up to talk. That moment of initiative six years ago was the start of an unofficial partnership that will more than likely continue when Sadler's son takes over the business next year. It helped both businesses become stronger. Read more about Joski and Sadler's partnership in the sidebars of each profile.

This sort of collaboration might not be for everyone; or you might reach out to a fellow drain cleaner or two and just not click with them. Maybe the first person you talk to isn't the best fit, but don't give up. Keep looking for someone to connect with. You need to establish trust and have a similar work ethic and approach to customer service for a partnership to develop. But picking up the phone and getting to know a like-minded competitor in your area could be a stepping stone to a mutually beneficial working relationship.

It's worked for Joski and Sadler, and it can work for you too.

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

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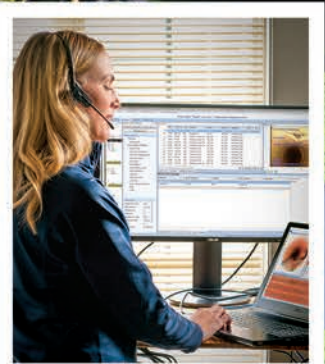




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### A Gallery of Cleaners

When photographers accompany our profiled contractors on job sites, far more photos are taken than are able to fit on the pages of the magazine. Every so often we put some photo galleries up on the website of those extra snapshots. Check out the latest one featuring our most recently profiled companies. >> [cleaner.com/featured](https://cleaner.com/featured)

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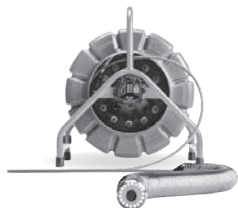
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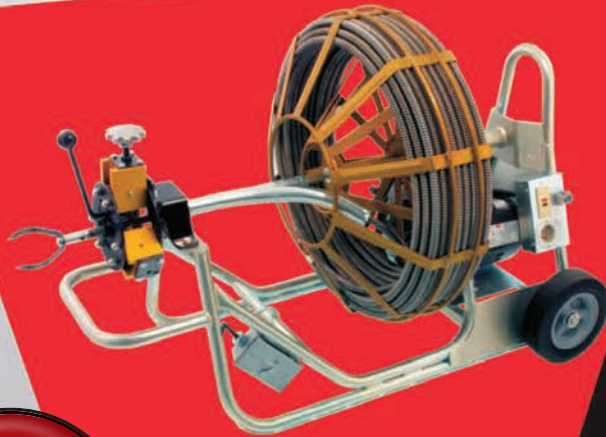
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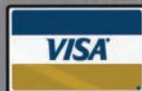
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# FINDING BALANCE

COMPLEMENTARY SEWER AND DRAIN SERVICES HELPED GREEN BAY CONTRACTOR EVOLVE WITH CLIENT NEEDS

// By Giles Lambertson

Photography by Mike Roemer



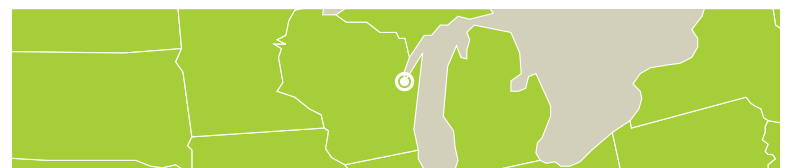
## FROM THE BEGINNING, MARK JOSKI WANTED HIS COMPANY TO BE A FULL-SERVICE BUSINESS.

He opened Joski Sewer Services in 2014 solely as a drain cleaner, but that was only “my foot in the door,” Joski says. He was already planning to expand.

Today, his company offers numerous and varied solutions with no one particular service dominating the work. “It’s pretty balanced. I do a lot of things. A sewer cleaning will lead to a pipe bursting when a pipe is found in need of repair — it all works together. I’m a one-stop shop and that was my goal from day one. It was planned.”

He works in and around Green Bay, Wisconsin, answering service calls for a 50-square-mile area in adjacent counties. He and three employees clean drains in Green Bay mostly, but the full range of his services is called upon in outlying areas, including bursting pipes for smaller municipalities.

His customer base reflects the diversity of his services. He cleans and inspects older lines, lays new sewer pipe and laterals, restores existing pipe systems by coating, lining or bursting them, excavates holes or grades driveways. These services attract



### Joski Sewer Services GREEN BAY, WISCONSIN

<b>OWNER</b>	Mark Joski
<b>YEARS IN BUSINESS</b>	7 years
<b>EMPLOYEES</b>	3
<b>SERVICES</b>	Sewer and drain cleaning, hydrojetting, sewer and lateral replacement, pipe lining, pipe bursting, pipe coating, inspection camera services, line locating services and excavating/trenching
<b>SERVICE AREA</b>	50 square miles surrounding Green Bay, Wisconsin
<b>WEBSITE</b>	<a href="http://www.joskisewer.com">www.joskisewer.com</a>



👉 Joski Sewer Services owner Mark Joski (center) with his crew, Masen Block (left) and Matt Aqatone at the company's new shop in New Franken, Wisconsin.

homeowners and business owners, land developers and municipal public works departments.

Consequently, Joski keeps busy. He has about a 50-50 mix of residential and nonresidential customers in any given month. "It all has been working out pretty well."

### SETTING UP SHOP

The 38-year-old business owner began working in the industry in 1999 as an employee of a Wisconsin sewer and water contractor. He traveled around the state completing three- or four-day projects, staying overnight in local motels until a task was completed. He eventually decided life on the road was not the career path for him.

So, he gave up that job and got out of the industry altogether, becoming a FedEx contractor. Four years into that work, Joski concluded he was experiencing little enjoyment from delivering packages. Furthermore, he longed to get back into the sewer and drain industry.



👉 Mark Joski lifts out a section of sidewalk for a residential sewer job in Green Bay, Wisconsin.



◀ Masen Block prepares a residential storm sewer connection while Joski looks over his work



A resident of Denmark, a small town about 15 miles southwest of Green Bay, he opened Joski Sewer Services at his home. Within a year of launching the business, Joski began to diversify. He first added excavation to his sewer and drain portfolio. He rented excavation equipment as needed — a skid-steer, a mini-excavator — until he began to question the economics of renting the machines. “I decided if I was going to use a piece of equipment more than two or three times a year, it didn’t pay to rent it.”

He opened a shop space in Green Bay because the city would be a foundation of his business. He also recognized that potential customers using Google would be more apt to find and click on “Joski Sewer Services” if it showed a Green Bay office.

Two years ago, he got into what he has found to be satisfying work: trenchless pipe repair. He began with epoxy coating, refurbishing cast iron pipe. The process involves a camera inspection to determine if a scaly pipe is a good candidate for coating, then removal of the worst of the scaling using Picote chain knocker descalers at the end of a mechanical router.

A Picote pump then infuses the interior of the pipe with a thick, two-part epoxy that is mixed as it’s pumped. The epoxy is mechanically brushed onto the surrounding pipe — beginning at the far end of a project — and then heat is introduced to dry the coat. The process is repeated twice more to create a hardened three-coat lining of the pipe.

“Generally, this is what we use inside buildings when a cast iron pipe is under a finished floor,” Joski says. In other applications, Joski sometimes uses a Picote CIP inverted lining product, which he began offering customers after experiencing success with the epoxy fix.

“A SEWER CLEANING WILL LEAD TO A PIPE BURSTING WHEN A PIPE IS FOUND IN NEED OF REPAIR — IT ALL WORKS TOGETHER. I’M A ONE-STOP SHOP AND THAT WAS MY GOAL FROM DAY ONE.”

MARK JOSKI



Most recently, the company is offering yet another trenchless solution: pipe bursting. Joski opts for the HammerHead PortaBurst system, which can ram new pipe into old lines 2 inches to 6 inches in diameter. The company also performs trenchless spot repairs.

Joski believes all of the trenchless systems will continue to attract customers. "It's noninvasive and saves customers a lot of money." The amount can vary, Joski says. "Every situation is different. Coating generally is comparable in cost to lining. Bursting pipe is a little cheaper and a little faster process, but some excavation is required for the equipment."

He always gives a customer the choice of how to proceed. "What I like to do is give them the price for doing it the old-fashioned way, digging up a pipe and replacing it. If it's in a building, that includes cutting up the floor and busting out the concrete. Coating and lining always is cheaper because my restoration costs are zero."

A solution to a totally different problem also keeps Joski Sewer Services busy — creating mini storm systems. It's a response to localized heavy rainfall in recent years, possibly a change in the area's climate. Flooding has been more common as a consequence and homeowners are finding their properties threatened by the downpours.

"They can't get the water away from the house and the excess water is creating basement wall problems," Joski says. Downspouts on homes commonly emptied the accumulated rainfall from roofs into the yard itself, or into shallow-buried corrugated black pipe that acted as a drain tile. "A lot of those systems are older. The stuff was cheap and fast to put in and frost has beaten it up." Water was pooling near the houses instead of draining away. Joski crews are

CONTINUED >>



👤 Mark Joski with his wife Briana, son Jace and daughter Charlee.

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◀◀ Joski cuts out a section of a sidewalk with a Husqvarna K760 Cut-n-Break concrete saw.

laying PVC pipe from the base of downspouts to an outlying area to carry away the water. “We’ve had a ton of mini storm sewer jobs.”

### GEARING UP

Joski Sewer Services has a fuller equipment yard than some competitors. The equipment includes the various Picote and Hammerhead machines for the trenchless fixes, an Insight Vision modular camera system, a small Milwaukee cable machine and

an old Regis cable machine, which mostly has been supplanted by a Picote Maxi Miller.

The company also locates lines for customers, including other contractors, and has Subsite and RIDGID tracers for that work. Yet Joski mostly just locates lines for his own projects now. “I used to do a lot more of it, but unfortunately the equipment is really expensive, and customers don’t want to pay what it really costs to do a job.”

He also owns various pieces of excavation equipment, more pieces than a typical sewer and drain cleaning shop has on hand. They include a John Deere 50 mini-excavator that weighs less than five tons and is powered by a 39 hp engine as well as a Komatsu 138LC, a 17-ton, tight-tailed excavator with a 97 hp engine. Also in the yard is a Ditch Witch FX30 trailered hydrovac unit for uncovering lines and a CASE skid-steer for backfilling.

Joski owns so much excavation equipment — including two dump trucks and various excavator attachments — because he also undertakes general earth-moving work. “Mostly in summer months,” Joski says. “Right now, I’m just doing sewer and drain work.

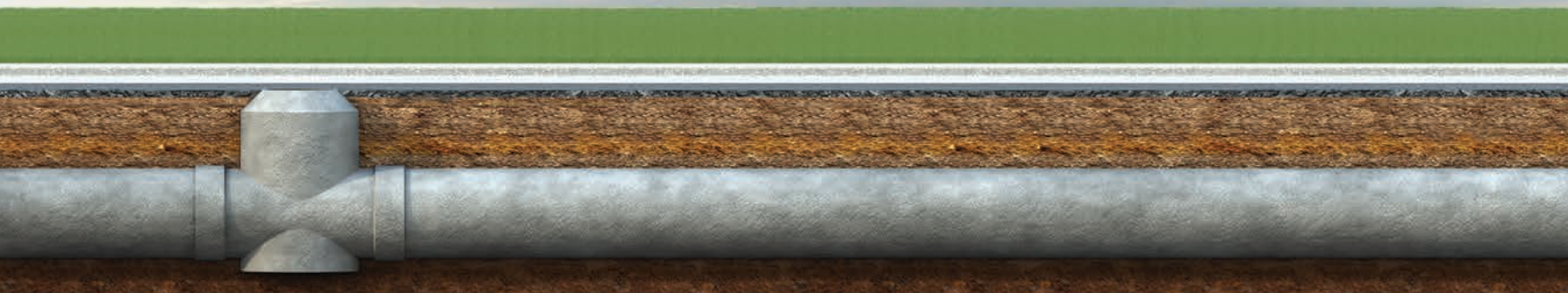
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## COMPLEMENTARY SERVICES

**M**ark Joski has an informal partner in his sewer and drain cleaning work — another Green Bay, Wisconsin, company doing sewer and drain cleaning work.

The owner of Joski Sewer Services got a call six years ago from Matthew Sadler, owner of Sadler Sewer & Drain Cleaning. Sadler's company also serves the Green Bay region of Wisconsin. A mutual acquaintance told Sadler that he and Joski might be able to help one another.

"Matt was a school teacher who had decided to do sewer and drain work full time. He called me out of the blue and wanted to know if we could work together," Joski recalls. "It's turned out to be a really good relationship."

The pair of business owners informally teamed up to bounce ideas off each other and to share work during busy times. "We're both small companies. So, if I get in a jam, I call him. He does the same thing when he's in a jam. I go on vacation, he covers for me and vice versa."

Most of the sharing is in drain cleaning jobs, which is Sadler's specialty. If Sadler Sewer runs into a situation where lining of pipe

seems the best solution, Sadler will recommend that the customer contact Joski Sewer Services. "And in the summer especially, when I get busy with extra excavation work," Joski says, "I'll send drain cleaning service calls over to Matthew."

They two have complementary expertise and equipment. Sadler's jetter is more powerful than Joski's, which can better resolve some situations, whereas Joski's jetter can unleash hot water, which helps in other situations. Joski says the cooperative exchanges of work "probably are daily" and the two companies sometimes team up on bigger projects.

The arrangement rarely confuses customers, and there's more than enough work to go around.

"It depends on the customer. If I send Matthew one of my customers, the customer usually reassures me I am his guy. Matt's customers do the same thing. But there is so much drain cleaning work out there, no one gets mad if a customer strays.

"I don't ask around, but I think a lot of companies work with each other. It probably happens more often than you think."

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« The Joski Sewer Services team prepares a trench for a new residential sewer connection in Green Bay.

“I DECIDED IF I WAS GOING TO USE A PIECE OF EQUIPMENT MORE THAN TWO OR THREE TIMES A YEAR, IT DIDN'T PAY TO RENT IT.”

MARK JOSKI

lines, of course, but he says it also is key to clearing restaurant lines. “You turn that boiler up to 220 degrees and that hot water really melts the grease.”

Joski looks ahead and sees further expansion of Joski Sewer Services. While he has no intention of introducing new services, expansion of current ones is likely and will partly depend on the labor force situation.

“I want to grow a little bit bigger, grow everything a little bit more,” he says. “Keep what I’m doing but growing it some more, after I find more help. Help’s hard to find today. I’m really fussy about who works for me. The work has to be spot-on because my name is on the company and finding that kind of help is hard to do.” c

But even in the summer, I don’t do a ton of other kinds of excavation work, like driveways and foundations, because there’s more money in putting pipe in the ground.”

Yet his reputation as a capable dirt-mover still brings him work. “I do have friends in the excavation business that I work with. Sometimes I’ll go to a job site and do the pipe work and then sub out some excavating while I’m there.” His sewer and drain employees are cross-trained to operate the machinery.

Joski’s jetter is a one of a kind. He had a pretty good idea what he wanted in a hydrojetter because of his experience working with a sewer contractor as well as from being around extended family members who are in business laying large-diameter sewer pipe. So, he built his own.

“I put it together myself, a trailer with a jetter on a skid. I built my own reels,” he says. It has 225 gallons of onboard water and produces 10 gpm. “You can buy the units all assembled but I saved a lot of money.” The unit is contained in an insulated trailer box so he can “pull it around in the winter without worrying about anything freezing.”

Because the jetter has an integrated heater unit, Joski can pressure-feed hot water into clogged lines. That helps free up frozen

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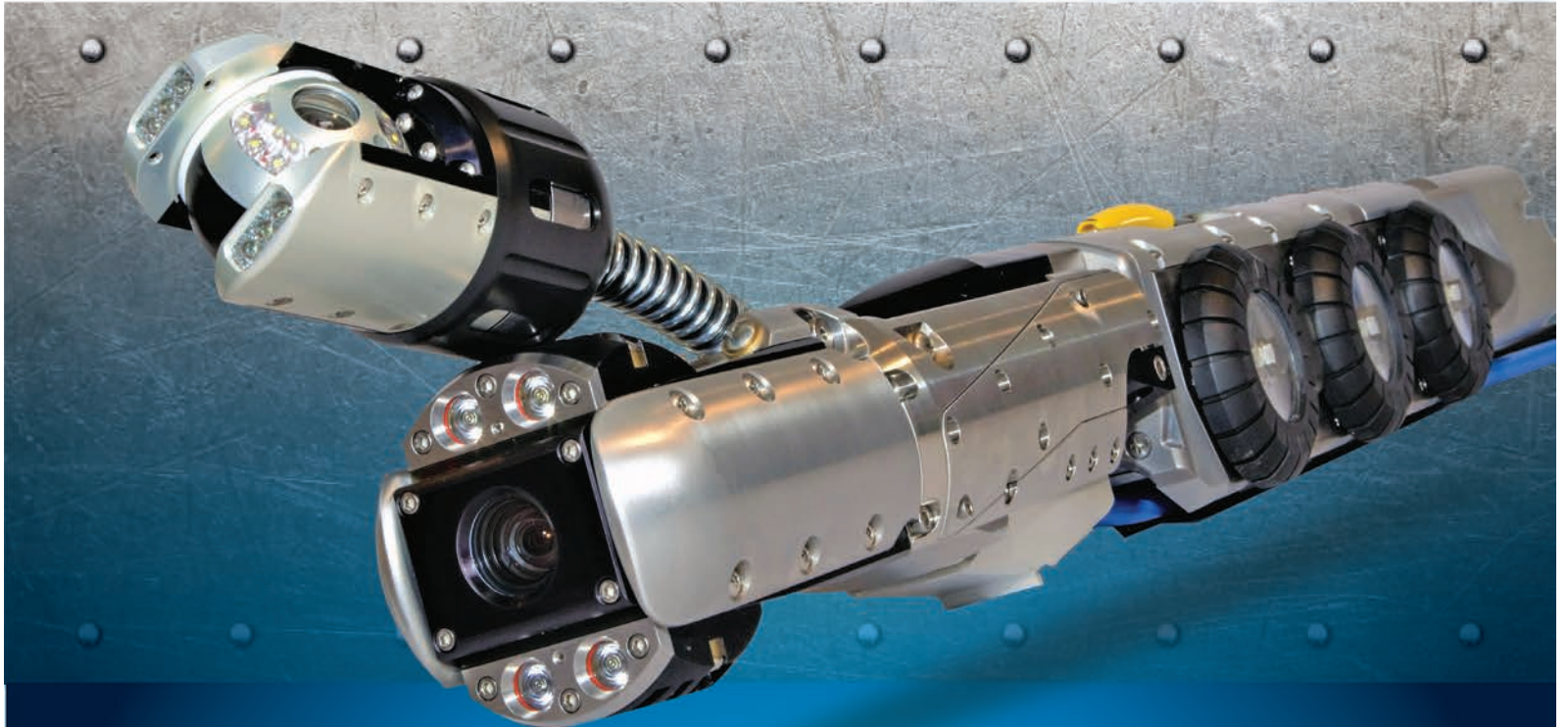
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Kate Zabriskie

## LOOSEN THE REINS

Learn to let go before micromanagement drives your employees away // By Kate Zabriskie

*He gives me a project and tells me to do it my way. I only wish he meant it. My way doesn't seem to hit the mark. He changes the smallest details. I dread each new job.*

*I've had this job for six years. At this point, I think I understand how it works. It's so frustrating to be treated like someone who just walked in the door.*

*Yesterday, I found her checking my work when she thought I was at lunch. It feels terrible not to be trusted. I need to look for a new job.*

Regardless of their intentions, business owners who micromanage often create an environment of fear, mistrust and disengagement. The constant oversight, checking in and nitpicking wears down even the strongest employee. Turnover goes up, engagement goes down and all the while, the managers who micromanage may not even know they're the source of the problem.

The good news is that with a little self-awareness and some hard work, micromanagers can learn to let go.

### STEP ONE: RECOGNIZE THE BEHAVIOR PATTERN

If your employees don't take initiative and always wait for you to delegate, you may have created a culture where they don't feel comfortable taking the next step without your say so.

If you find yourself redoing work, checking and rechecking assignments, or insisting you have to sign off on every project, chances are you have some micromanaging tendencies.

**IF HOW SOMETHING IS DONE DOESN'T MATTER, TREAT PEOPLE LIKE THE ADULTS THEY ARE, AND LET THEM COMPLETE WORK IN A WAY THAT WORKS FOR THEM.**

### STEP TWO: THINK ABOUT THE CONSEQUENCES

Micromanagers exact control. In the short term, they have command of the future. Long term, however, many micromanagers find themselves stuck in roles, unable to take vacation without staying in contact, and are essentially tied to their jobs.

Recovering micromanagers have a better change of self-rehabilitation when they know how they will benefit from changing their behavior. Ask yourself: Where do you want to be in a year? How about three? Do you have a replacement identified? Is that person ready to take over for you? If not, there is work to do if you plan to move on or at some point have a life outside the job.

### STEP THREE: WHEN DELEGATING, ASK YOURSELF IF "HOW" IS IMPORTANT

Once the recovering micromanager recognizes the problem and knows why change is important, it's time to get practical and start focusing on what instead of how.

In other words, if how something is done doesn't matter, treat people like the adults they are, and let them complete work in a way that works for them.

For jobs or tasks that do require a specific procedure be followed, explain why that is.

### STEP FOUR: SHOW PEOPLE WHAT A-GRADE WORK LOOKS LIKE

Recovering micromanagers will reduce their propensity to backslide if their employees deliver great work. What exactly does great work mean? Good question. If the micromanager has not explained what makes an A an A, how can that person possibly expect employees to produce a stellar work product with any regularity? Take the time to be complete, and you may be surprised at your team's ability to rise to the occasion.

### STEP FIVE: WORK ON ACCEPTING DIFFERENT APPROACHES

Old habits die hard, and change takes time without some help. A little narration can go a long way toward steering the brain in the right direction. "James is not me, and I am not James. It's okay that we don't work the same way." A mantra such as that can serve as a gentle reminder and help you recalibrate. Eventually, these new



mental tapes will start to replace old thinking patterns. With hope, the updated mental map will positively influence the manager's choices and behaviors.

#### STEP SIX: PERFORM THE GOLDILOCKS TEST

Recovering micromanagers aren't mind readers, so it's important that they get comfortable with feedback. A multiple-choice approach is often the best way to encourage candor. For instance, "I'd like to get some feedback from you about how you like to work. Am I too hands on, too hands off or just right? I'm asking because everyone operates differently, and it's important to me that we work well together."

A word of caution: Even with the Goldilocks approach, if you've micromanaged your team for a long time, it may take a while for them to give you frank feedback. Check in often and get specific. "Chuck, let's talk about this last project. Do you feel we got the delegation balance right or do we need to make some adjustments?"

#### STEP SEVEN: DON'T ARGUE WITH THE FEEDBACK

When someone gives you feedback you don't like or don't agree with, don't argue. Your employee's perception is the reality you must work with. So instead of fighting or withdrawing, ask questions. For example, "What I'm hearing is you would like me to focus more on the number of jobs you complete each day. Do I understand correctly? If I explained why in this case the process matters, do you think you might feel differently?"

#### STEP EIGHT: LOOK FOR WAYS TO LET GO AND TAKE ON NEW TASKS

Leaving the micromanaging lifestyle behind is a process and not an event. Self-development requires regular assessment and planning. In addition to asking for feedback, pay attention to where you spend your time that you shouldn't and where you could spend more time but don't. Are you working on strategic initiatives or navigating deep in the weeds? Are you developing people or hoarding work? Are you controlling or empowering? The questions are numerous and important to ask.

To sum it up, any activity that requires change can be hard work and at times even a little scary. For micromanagers, this can be especially true. Nevertheless, as most rehabilitated micromanagers will profess, it's a lot more

productive and rewarding to work in a place where people have the freedom to do their best work. If you're a micromanager or think you might be, now is the time to do something about it. **c**

#### ABOUT THE AUTHOR

Kate Zabriskie is president of Business Training Works, Inc., a Maryland-based talent development firm. Reach her at [www.businesstrainingworks.com](http://www.businesstrainingworks.com).

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## CUT WITH CAUTION

Chain knockers and cutters are powerful tools but need to be used correctly to avoid damaging pipe

// By Tim Dobbins

**T**HE LAST THING you want from a tool designed to fix problems is for it to create new ones. Unless you take the time to knowledgably choose and operate the right chain knocker or chain cutter for your next pipe cleaning job, that could be exactly what happens.

When used correctly in the right applications, the capability of these tools to power through the toughest clogs, roots and blockages provides a gift to the pipe cleaning industry. Paying attention to the

details of the environment and understanding the material options and specs of your individual system is key. Being careless can break equipment and damage pipes, making a seemingly simple job difficult and expensive.

### CHOOSING A CHAIN CUTTER

After 15 years as a part owner and engineer for Arthur Products, Richard Rauckhorst says there are a lot of things a contractor should think about when buying a chain cutter. “You need to know what your objective is. Consider your environment and equipment to start off with and be very selective.”

Obviously, the environmental conditions are going to vary with every job, but consider what you will most likely be handling and choose equipment accordingly. That sometimes means picking a tool built to adapt. “Every situation is unique. Customization when it comes to any nozzle is important, but when it comes to a chain cutter, it is ultimately important because there are a lot more moving parts to deal with,” Rauckhorst says. “Also, don’t get your expectations up too greatly as far as speed goes because you don’t know the exact environment this is going to be in. It could be hair roots, which are easy to clean, or trunks that aren’t so easy to clean.”

SewerProShop owner and 30-year veteran of the chain cutter and drain cleaning industry Reinhart Laimer agrees. “The operator needs to know first and foremost what they are going to be cutting. Are they cutting roots, or are they cutting grease? Grease can be as soft as butter or as hard as a rock.”

Once you’ve established the general conditions in which you will be working, take a good look at your equipment and understand that the effectiveness of a chain cutter is completely dependent on the pressure and flow you’re able to produce. Without enough gpm or psi, a cutter can easily become another blockade in the pipeline.

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◀ Rob Broccolo uses RIDGID 4-inch carbide chains on a K9-204 cable machine to clear a drainline.



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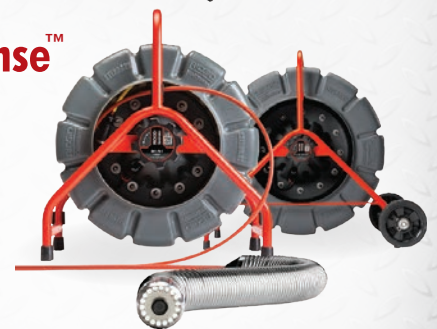
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# TECH PERSPECTIVE

“THE OPERATOR NEEDS TO KNOW FIRST AND FOREMOST WHAT THEY ARE GOING TO BE CUTTING. ARE THEY CUTTING ROOTS, OR ARE THEY CUTTING GREASE?”

REINHART LAIMER

“I need to know four technical parameters when helping a customer choose a cutter,” Laimer says. “First, what is the flow rate of the pump? Second, [what is] the operating pressure? It is very important to know this information because if you don’t use the right nozzle inserts with the right orifices, the cutter won’t go up the line properly. Next is the hose size in diameter and then the length. This allows you to calculate friction loss.”

Rauckhorst also talks of the importance of using a suitable amount power for any cutter or knocker. “When you have chain or cables or anything on a rotating head, you’re adding mass,” he says. “To get that mass to rotate it requires more power, and that power comes from your system’s water pressure and flow.”

It boils down to knowing that the distance and effectiveness of any cutter or knocker is directly influenced by the specific system behind the head and what materials it is going through.

## MATERIAL MATTERS

A lesson we all learned at a young age is if you’re not sure what something is, don’t touch it. The same holds true when using chain cutters and chain knockers. Make sure you know what the pipe is made from and match the material of the cutter or knocker properly to avoid damage to both equipment and pipes. Do some research before pushing in a tool and revving it up to full throttle.

“We supply a cable system, a rower chain and link chain option based on the primary type of pipe you are going to be in whether it be PVC, clay, cast or steel,” Rauckhorst says. “Let’s say you are in PVC pipe with light hair roots, I would recommend the cable. The cable is very effective, and it can loiter and not damage the PVC. If you stopped a chain and let it spin in one spot, it would erode away the PVC.”

Rob Broccolo Jr. began his career in the industry over a decade ago and he has owned and operated Professional Drain Services of Southern New England for the past four years. Through servicing the variety of drains the New England area has to offer, he has learned a thing or two. “I try to use non-carbide tipped chains in older pipes the first time around to make sure nothing breaks, but nine out of ten times, I’m using a carbide cutter,” he says.

Manufacturers like RIDGID have readily available documentation for their chain knockers showing which of their products should



Kevin Olenik attaches Renssi sand paper paddles to the cable on a RIDGID K9-306.

be used in specific pipe materials. When in doubt, contact the manufacturer of your particular chain cutter or knocker and ask.

## SIZE ACCORDING TO THE JOB

Choosing the proper size of cutter or knocker depends on the diameter of pipe to be cleaned. If you’re unsure, ask the manufacturer. They will be able to provide assistance when purchasing and have documents to help contractors choose a model according to pipeline inside diameter.

The end goal is obviously to clean wall to wall, but Broccolo says that sometimes it’s smart to start with a chain that is smaller than the diameter of the pipe. “A smaller cutter can help you to navigate through and give yourself an opening for the right size chain afterwards,” he says. “You don’t want to go too small because it could flip on you, but with some experience you get the feel for when to use that technique.”

## TRICKS OF THE TRADE

All three experts agree that with any chain cutter or knocker, it’s best to proceed with caution. Knowing the details of the environment and materials you’ll be working with is the first step, but even after that, they all mentioned other strategies to make sure their equipment lasts and the jobs get done.

"I always tell people to use a nozzle first to actually clean out the line from debris such as sand, silt and rocks before running the cutter through," Laimer says. "Our cutters spin at 4,000 rpm; if they hit rocks in the line, it can severely damage the cutter and the pipe. It is a root cutter, not a rock or concrete cutter."

Broccolo adds that he uses a camera for visual inspection to help him decide which cutter or knocker he should use or at least which one to start with. Camera visuals can also inform contractors if there are multiple types of blockages in the line such as wipes and roots. In that situation, Broccolo opts for a different style head on his cutter. "Penetrating heads are nice for when you're going into wipes or a soft blockage," he says. "They provide a little grab to the front so they can grab and twist, allowing the chains to get in there and start spinning wall to wall."

### LESSONS LEARNED

Experience is always helpful when operating any tool, for any job. Taking a few extra minutes to get things done right the first time will always be more efficient than the time it takes to clean up mistakes. "I've heard of people that either break the cable or flip the chains over inside the line and get it stuck," Broccolo says. "Let's say they're using a 102 or 204 from RIDGID and not using the clutch properly. A lot of times if you have too much exposed cable, it gets a chance to flip over on itself and next thing you know it jams and you end up snapping your cable."

Breaking a cable and leaving a knocker stuck in a line is usually not a quick, easy fix. "If you're lucky, you're able to get it out. But if you are in a deep line and you didn't take the time to set it up properly and use it properly and you happen to make that mistake, the next thing you know, you're fixing your machine on site wasting time and money and it's embarrassing in front of your customers," Broccolo says.

Cleaning with cutters and knockers is about evaluating each situation and knowing

your equipment well, because when used correctly, their effectiveness as a cleaning tool will boost your profitability and efficiency. **c**

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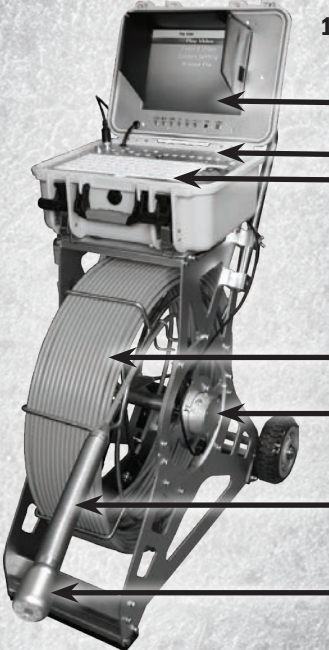
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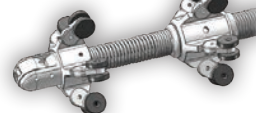
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## A STRONG PARTNER

Envirosight focuses on giving its customers an edge by providing efficient, reliable pipeline inspection solutions // By Kim Peterson

**E** NVIROSIGHT WAS STARTED in 2002 by President and CEO Rich Lindner. With experience gained at an industrial test and measurement company, Lindner knew products like the ROVVER X crawler and the Quickview zoom survey camera had unique potential for wastewater applications, so he set out to create a brand that emphasized localized support capabilities and customer experience.

Envirosight's goal has always been to help contractors and municipalities gain better insight with less effort and investment. In subsequent years, the development of products like the Jetscan HD video nozzle, the CleverScan manhole camera and the Digisewer side-scanning camera were guided by that principle.

Jake Wells has been with Envirosight since 2002, first as a consultant, then as marketing manager and today as marketing director and partner. Like Lindner, he came from the world of industrial test and measurement, focusing on technologies used to inspect equipment used in power generation, aviation, oil and gas, process piping, wastewater and more.

*Cleaner* recently spoke with Wells about the company's product development and how Envirosight's equipment and customer support help make inspection contractors more efficient.

### **CLEANER: Tell us a little about the history of Envirosight and its products.**

**Wells:** When Envirosight launched nearly two decades ago, we had a steep hill to climb. We offered a modular, highly maneuverable sewer inspection crawler to an industry that had long settled for large, clunky, single-purpose ones. But our team loves being out in the field with operators, and the more we showed the ROVVER crawler to contractors and municipalities, the more excited they got about how it could make their lives easier.

Fast-forward to today, and the agile, versatile ROVVER X is now one of the most popular sewer inspection crawler brands. That achievement is huge validation for our founding vision and our drive to keep trying new things.

### **CLEANER: What differentiates your inspection equipment from the competition?**

**Wells:** Innovation is in our DNA. We're always looking for ways to give our customers an edge. Not only did our approach to crawlers gain traction in the industry, we pioneered several other technologies that are now commonplace. The patented Quickview zoom assessment camera, for instance, gives sewer workers a rapid, affordable understanding of manhole and mainline condition using specialized zoom optics and illumination. Our Jetscan HD was the first video nozzle to do away with wired connections. And Digisewer was the first side-

« Envirosight inspection equipment works seamlessly with WinCan software, wirelessly uploading inspection results to the WinCan Web platform for instant sharing, real-time collaboration, rapid analysis and map-based data visualization.



“INNOVATION IS IN OUR DNA. WE’RE ALWAYS LOOKING FOR WAYS TO GIVE OUR CUSTOMERS AN EDGE.”

JAKE WELLS

scanning attachment offered for an inspection crawler system, allowing operators to rapidly capture a visual scan in a pipe with detail of every square inch.

**CLEANER: What sort of needs do they address? Tell us about some of the inspection systems and what applications they best serve.**

**Wells:** We’re always seeking to redefine industry expectations, and our new ROVVER X SAT II crawler is a great example of that. Lateral launch is one of the most demanding yet lucrative applications for contractors, and they are always seeking equipment that offers enhanced reliability, capability and productivity. The SAT II checks all the boxes — it has steerable eight-wheel drive for reaching difficult launch points, three onboard cameras, quick-change wheels for mainlines 6 to 80 inches, and it travels 984 feet and 146 feet in mainlines and laterals, respectively, at speeds up to 98 and 23 feet per minute. Best of all, we solved one of the toughest challenges: The SAT II’s belt-drive launching mechanism provides powerful pushing force without wear and tear on the launch cable.

**CLEANER: How do your systems help contractors be more efficient when inspecting sewer and lateral pipelines?**

**Wells:** For a contractor, efficiency means first knowing where to deploy your resources. Not every sewer needs a crawler inspection, and our sewer assessment tools — the Quickview zoom survey camera and Jetscan video nozzle — allow contractors to get a quick, affordable understanding of whether a line is in good condition or needs further attention.

When a line does need crawler inspection, several factors contribute to efficiency. First, how many applications can you tackle with a single system? Our modular crawler systems reconfigure in minutes with no tools needed, allowing a crew to inspect lines from 6 up to 96 inches.

Second, how easy is it to overcome obstacles to complete an inspection? The ROVVER X’s steerable six-wheel drivetrain climbs offsets, maneuvers around debris and protruding taps, and navigates through curved inverters to complete multiple sections from a single manhole.

Third, how easy is it to use? We know contractors face an uphill battle staffing their crews, so our equipment focuses on making the learning curve easy for operators. The ROVVER X’s touch-



With a modular design that rapidly reconfigures, the ROVVER X easily adapts to inspect lines from 6 to 96 inches in diameter. Steerable six-wheel drive allows it to power past debris, offsets and protruding taps.

screen interface allows an operator to control the crawler, code the inspection and wirelessly upload results to the cloud for immediate, effortless delivery to a supervisor or client.

**CLEANER: What are some of the solutions you’ve provided customers?**

**Wells:** We don’t believe in technology for technology’s sake. It has to make the day-to-day lives of sewer crews easier, and it has to make business sense for the owner. Our Cleverscan manhole scanner is a great example of this. Manholes have gained notoriety as a major contributor to inflow and infiltration, and as a result manhole inspection has grown as a revenue opportunity for contractors. When we surveyed the market, we saw only expensive and complicated systems that had to travel around in a van. We knew the going rate for manhole inspections would make it difficult to justify such an investment, so we developed an affordable, fully automated system that could ride around in any vehicle — and one that still produces a high-res image scan and detailed point cloud.

**CLEANER: Tell us more about the Preferred Build-Outs inspection vehicles. How have you determined the needs of contractors and then delivered the solutions?**

**Wells:** Over the years, we’ve delivered many hundreds of trucks from our East Coast and West Coast production facilities. We know each customer is unique and requires specific amenities to support the way they work. At the same time, all builds have certain things in common to ensure safety, productivity and convenience —

# BEHIND THE GEAR

this holds true from the largest fleet buyers down to single-truck contractors. We've standardized our builds to cover all those bases and offer a wide array of amenity options that can be selected *a la carte*. The result is that customers can be confident they have all their essential requirements met, while still getting a level of customization that enhances the way they work.

## **CLEANER: What are some recommendations for customers shopping for inspection equipment? How should a contractor go about finding the best fit for their company?**

**Wells:** Equipment performance — range, maneuverability, versatility — is important for overcoming the day-to-day challenges of sewer inspection. But many customers make the mistake of not looking beyond this. Uptime, cost of ownership, ease of use — these have a huge impact on a contractor's success but are easy to overlook if you're simply focusing on specifications. Have your crew run a rental or loaner system under real-world conditions for a couple weeks; get customer references and interview them about reliability

and productivity; and ask the manufacturer about uptime percentages, average annual cost of ownership and typical service life.

## **CLEANER: What is it like to work with Envirosight after a sale?**

**Wells:** Envirosight has a very large support, training and service network with 43 authorized locations and hundreds of factory-trained experts across North America. When challenges arise, our customers know that help is always nearby.

## **CLEANER: How do you see the drain cleaning and inspection industry evolving?**

**Wells:** The future is all about workflows. Getting video footage from a line, analyzing the data in a way that drives insight and decision-making and coordinating sewer maintenance teams across departments, geographies and areas of specialization — that can only happen with cloud-based technologies. Our equipment is designed to work with WinCan Web, which means it can download assigned inspections with prepopulated headers, allow the operator to complete and code the inspection directly on the control interface, and then upload the results wirelessly to the cloud for instant, secure sharing.

## **CLEANER: What's new for Envirosight in 2021? What can customers expect out of Envirosight in the future?**

**Wells:** Because our equipment interfaces directly with WinCan Web, our users are uniquely positioned to use new solutions from WinCan, including the Sewermatics suite of AI-powered data services.

Beyond that, we're developing some cool technologies that extract geometry from video and XYZ sensors to build a virtual model of wastewater assets — technologies like this will be the foundation of our industry's expansion into AR and VR and will support advanced modeling technologies.

## **CLEANER: What do you want your customers to think of when they hear the name Envirosight?**

**Wells:** Our customers consider the Envirosight team an extension of their own — we're here to help them solve tough applications, meet tight deadlines and maintain tight margins. When they struggle, we're standing by ready to help them find a path forward. And when they succeed, we succeed.

We've been at this since 2002, but our roots in the industry extend back much further. Get to know us, and you'll understand why some of the biggest names in municipal contracting call us "partner." **c**

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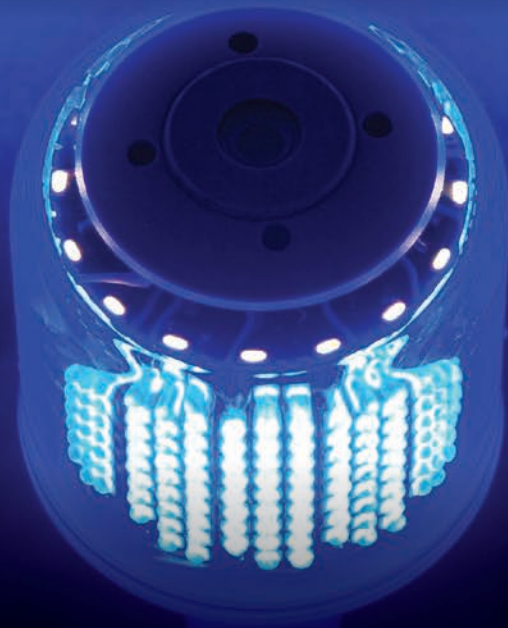
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<b>SECON</b> 6000 S Eastern Ave., Ste. 2C, Las Vegas, NV 89119 702-527-5100 www.seconnv.com sewerequipmentcompanyofnv.com See ad on page 67	SECON	1-1/2" to 10"	20" to 4'	Wi-Fi, SD Card		✓	✓	✓	✓ -Pipe/Leak/Valve/Sewer
<b>Southland Tool Mfg. Inc.</b> 1430 N Hundley St., Anaheim, CA 92806 714-632-8198 • (f) 714-632-8228 www.southlandtool.com sales@southlandtool.com See ad on page 23	ST-PRO CAM	6" to 8" (available to 18")	Any Size	SD Card, APP Readable					✓



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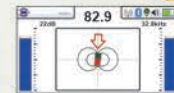
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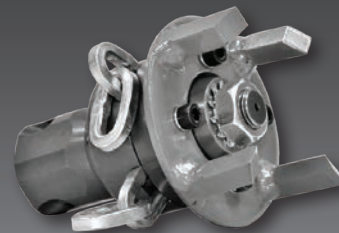
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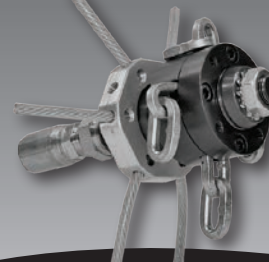
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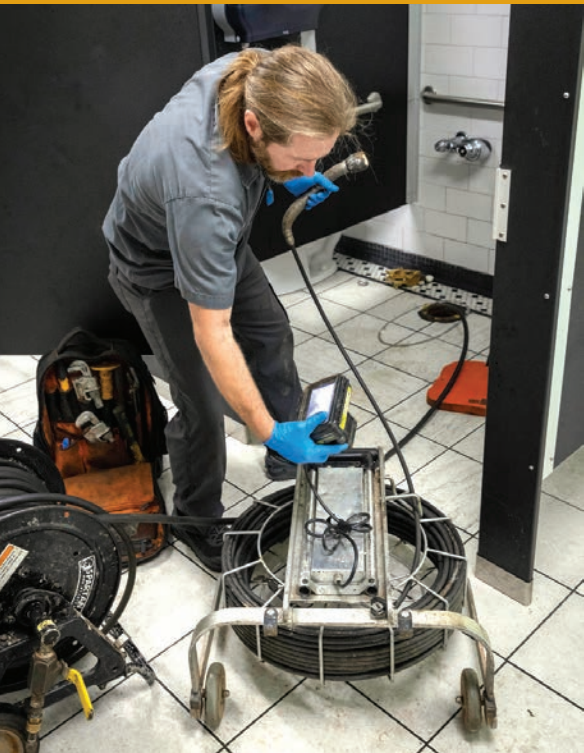
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# SET UP FOR SUCCESS

MATTHEW SADLER GREW A SOLID DRAIN CLEANING BUSINESS WHILE PREPARING HIS SON TO TAKE IT OVER

// By Giles Lambertson



Matthew Sadler, owner of Sadler Sewer and Drain Cleaning in Green Bay, Wisconsin, uses an Insight Vision Mini VU inspection camera to locate a clog in a restroom.

## IT'S RARE TO END UP IN THE CAREER YOU FIRST BECAME INFATUATED WITH AT FIVE YEARS OLD.

Matthew Sadler was introduced to sewer and drain cleaning when he was 5, when his father took it up. During the next 35 years, he pursued other interests but continued drain cleaning part time during high school, college and while teaching.

In 2015, Sadler committed to the trade full time and opened Sadler Sewer & Drain Cleaning. Six years later, he still loves the work, and his son is continuing the family tradition.

### A FAMILY AFFAIR

As is often the case with multigenerational companies, it began with Dad. Sadler's father, Bill, worked full time in the Green Bay, Wisconsin, sewer department. The elder Sadler became interested in doing drain and sewer work on his own when the family's sewer line became plugged.

"They couldn't find anyone to do it, so it was a couple of days before someone came and cleared the line," recalls Matthew Sadler. "My father watched the person working on the line and said to himself, 'I think I can do that.'"

That was in 1976 and Bill Sadler indeed found he could do it. He began clearing lines part time in the afternoons after punching out at the sewer department. Sadler remembers his father's "specialty" became answering sewer service calls between 3 p.m. and midnight, the hours when drain cleaning companies sometimes defer customer work until the following day.



« The Sadler Sewer and Drain Cleaning team consists of Matthew Sadler (right) and his son Max, who is taking over the business next year.

Bill Sadler worked alone out of the family home, hauling tools in his pickup truck. By 1981, 5-year-old Matthew was accompanying him on weekends to clean out grease traps at restaurants. “We did a lot of that together,” he remembers.

While growing up at home and even after he enrolled in Silver Lake College down state in Manitowoc, he worked with his father when he could. That routine continued even after he earned a degree and returned home to Green Bay in 2000 to teach at a pair of elementary public schools.

“I loved teaching. I have a passion for teaching writing and literacy to children,” Sadler says. Yet he left it behind after 14 years in the classroom to return to his “childhood dream” job of cleaning sewers and drains. “It became clear that the schools really were focused on production rather than on teaching. It was time for me to move on.”

### TOOLS OF THE TRADE

Sadler clears lines with more sophisticated tools than his father did. Basically, Bill Sadler had a hammer, a chisel, a screwdriver and



## Sadler Sewer & Drain Cleaning

GREEN BAY, WISCONSIN

**OWNER** Matthew Sadler

**YEARS IN BUSINESS** 6 years (full time)

**EMPLOYEES** 2

**SERVICES** Sewer and drain cleaning, clearing septic tank lines, camera inspection and locating of lines

**SERVICE AREA** 30-mile radius of Green Bay

**WEBSITE** [www.sadlersewer.com](http://www.sadlersewer.com)

an Electric Eel dual-cable machine. “The Model C,” his son says. “We still have that original Electric Eel, though it’s been rewired a bunch of times. It’s amazing how it’s served three generations.”

The old Model C cabling machine mostly has been supplanted by a tool of Sadler’s own contrivance. He adapted Electric Eel cables to operate on an 18-volt Milwaukee Super Hawg right-angle portable drill. “We’re completely cordless with all of our equipment.”

## TEAMING UP WITH THE COMPETITION

About six years ago, Matthew Sadler chatted with a master plumber in Green Bay named Richard Sinclair. The plumber periodically channeled work to Sadler Sewer & Drain Cleaning as well as to other sewer companies in the Green Bay, Wisconsin, area. One of the other companies was Joski Sewer Services, operated by Mark Joski.

“Do you know Mark?” Sinclair asked Sadler. Turns out Sadler didn’t, so Sinclair suggested they get to know one another. “He sometimes needs someone to do this or that,” he told Sadler, who called up Joski. He suggested they meet for breakfast and conversation. It was the start of a mutually beneficial working relationship.

For two ostensibly competing companies to help out one another might seem foolhardy. Either a customer is loyal to one sewer service or to the other, right? This is business, after all, where one company gets ahead by providing better service than another company.

“There is more than enough work to go around for everyone,” Matthew Sadler explains. “There is more work than we all can do.” Partly this surfeit of sewer jobs is a consequence of generally old infrastructure in and around Green Bay.

The cooperative approach to doing business produces mutual benefits. One company or the other is better equipped to do certain kinds of jobs and both companies are blessed with sufficient business to afford referring calls to each other. Cooperation seems to work.

How they swap jetter services is a good example. Sadler Sewer employs a Spartan Soldier jetter that runs 12 gpm at 3,000 psi, whereas Joski Sewer rolls out a jetting system with an integrated boiler. When a line is frozen or otherwise unresponsive to Sadler’s jetter exertions he calls Joski, who shows up with his heated solution and melts away the resistance. Sadler’s jetting unit is more powerful and produces more gallons per minute, so when Joski can’t break through a jam, he calls on Sadler to do the job.

Another example: Sadler Sewer currently doesn’t offer pipe lining, but Joski does. When Sadler suggests to a customer that lining a pipe makes more sense, he recommends Joski for the job. “And Mark sometimes calls me when one of his lining jobs has a separation and I’ll go do the repair. We know what the other does and turn over jobs as needed.”

By the same token, if a service call is notably close to the home or office of either company owner, the businessman farther away often will refer the would-be customer to the nearer office of his rival.

“He leaves his customers to me when he goes on vacation and I leave my customers to him when I go on vacation,” Sadler says. “We get him out of binds, and he gets us out of binds.”

Sometimes they undertake jobs together because of complementary expertise or equipment. Sadler, for example, is a certified scuba diver. “We just did a job together under Lake Michigan, clearing a drainline for a plant,” with Sadler donning his gear to direct the underwater operation.

“It is so convenient to have friendships in the industry,” Sadler says, adding that such working relationships are not uncommon in Green Bay among master plumbers. Yet the Sadler-Joski working relationship is exclusive.

Matthew Sadler’s son, Max, is about to take over the company and doesn’t see the nature of the informal partnership of the two companies changing into something contractual. “When we are able to have a friendly competitor relationship like that, it probably is of more value to each of us than if we were combined.”



Max Sadler searches for a sewer line with a RIDGID NaviTrack Scout locator.

To blast through compacted grease or a tangle of roots, Sadler has a Spartan Soldier trailer jetter that produces 12 gpm at 3,000 psi. With either a Warthog or HydraFlexReaper nozzle on the working end, the jetter is called upon 15 to 20 times a week “to give a customer the best possible product that will last the longest. Using a cable, you can charge a smaller fee and put a hole in a clog that will last a customer six months. Or the customer can spend a little more upfront and clean it with a jetter so it will last for three to five years.”



"IT'S ENTIRELY WORD OF MOUTH, BUT WE WORK HAND IN HAND WITH A MAJORITY OF PLUMBERS IN GREEN BAY. IT'S AMAZING TO HAVE THAT KIND OF RELATIONSHIP."

**MATTHEW SADLER**

For visual inspections, he tried several brands before settling on an Insight Vision camera system, produced in Saukville, Wisconsin. Sadler has four cameras on his shelf to avoid the risk of downtime if one is out of commission. Sadler remains open to other camera systems, however, and specifically wants to check out new camera developments from Milwaukee Tool. "We're keen to see the new technology that Milwaukee has."

#### STEADY WORK

A new customer base for Sadler Sewer is real estate agents who want a sewer and drain system on a property inspected before a deal closes. One regular Sadler customer is a company that flips houses and calls the company for an inspection before they put a renovated house on the market.

Sadler Sewer & Drain Cleaning is pretty much on speed dial with numerous Green Bay area plumbers. Ten or more times a week plumbers refer their customers to Sadler for camera inspection of lines and follow-up work. "We don't advertise at all. It's entirely word of mouth, but we work hand in hand with a majority of plumbers in Green Bay," Sadler says of the industry support. "It's amazing to have that kind of relationship."

Three-quarters of company service runs are to homes and businesses in Green Bay proper, but Sadler also regularly answers calls within 30 miles or so of the city, down to Appleton, for example. He also will trek into Michigan or farther north in Wisconsin if a customer seems to have no closer access to a jetter.

His work is a 50-50 split between commercial/industrial and residential clients. Industrial jobs come at a slightly higher rate because they can involve accessing lines buried

under a concrete floor. While he doesn't formally have a contract with the Green Bay public school system, the system calls on the former teacher for all its sewer work. "They have tunnels. It's fun to go down into the tunnels under the city, see the work of a hundred years ago, and come up with a solution." Other regular clients include the city park system and some paper mills.



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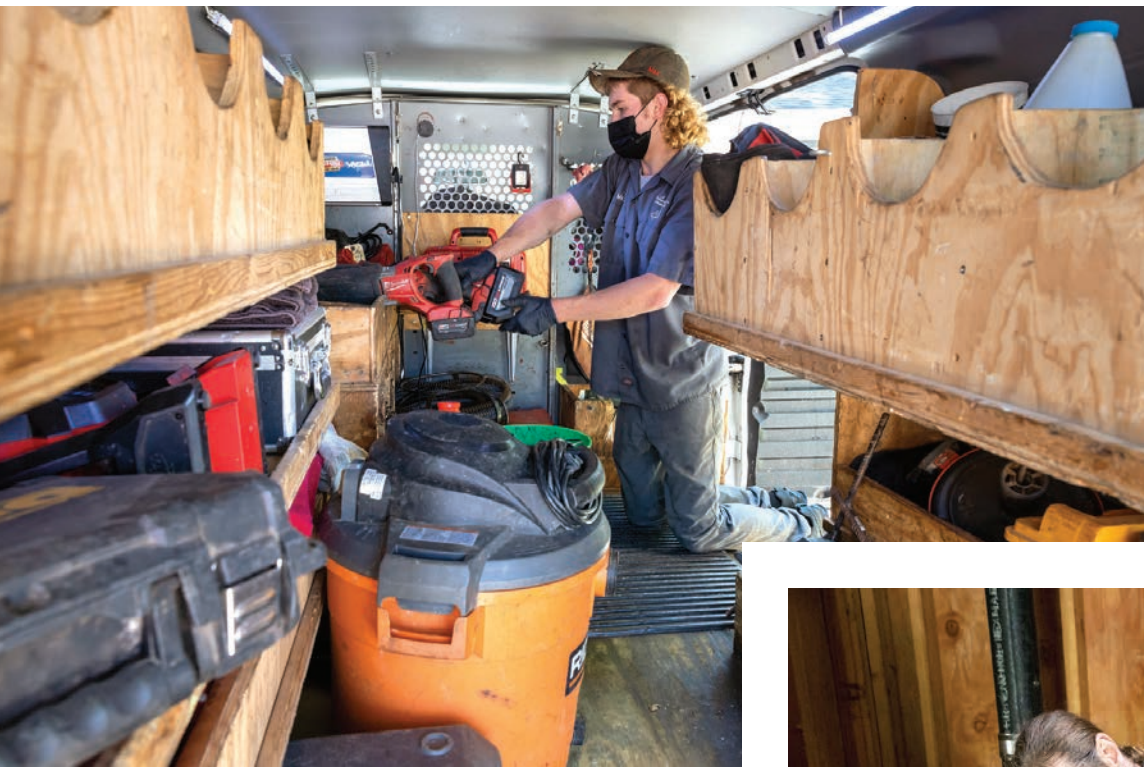
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◀ Max Sadler repacks his truck after completing a residential job in Green Bay, Wisconsin.

✔ Matthew Sadler works to clear a sewer lateral with a Warthog jetter nozzle, watching the progress with a Mini VU inspection camera from Insight Vision.

“IT’S FUN TO GO DOWN INTO THE TUNNELS UNDER THE CITY, SEE THE WORK OF A HUNDRED YEARS AGO, AND COME UP WITH A SOLUTION.”

MATTHEW SADLER

### THE NEXT GENERATION

Sadler Sewer & Drain Cleaning is one of those relatively rare companies that maintain family ownership for three generations. Sadler’s 18-year-old son Max has been working with his father since he, too, was 5 years old. He first just hung out with Dad and, as he grew older, began to work beside his father at the end of school days. For the last two years of high school, Max was home-schooled and increased his involvement in the family business. He trained with his father to master the various service options.

Max now drives his own company service van. He’s learned the business “front to back, including invoicing,” his father says, and along the way has earned his father’s complete trust. “I can go on vacation knowing my 18-year-old son is in charge of my business and that he will make proper choices. I’m amazed to watch him work with master plumbers, him showing them where the sewer is and where to dig to find it. They’re impressed.”

Sadler works from his home in Black Creek as well as from a Sadler Sewer & Drain Cleaning office in Green Bay. His son will use the Green Bay office as his home base. And, from time to time, Max might call on his sister Lucy. She, too, has worked with her father and can competently do the company books, as did her grandmother before her.

CONTINUED >>





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» Matthew Sadler prepares a Spartan Tool Soldier trailer jetter to clear a clog in a restroom at Bay Beach Amusement Park in Green Bay, Wisconsin.

“I’M AMAZED TO WATCH HIM WORK WITH MASTER PLUMBERS, HIM SHOWING THEM WHERE THE SEWER IS AND WHERE TO DIG TO FIND IT. THEY’RE IMPRESSED.”

**MATTHEW SADLER**

“My son and daughter and I like to work together but also to play. Even when we are working, we try to have fun, go biking and stuff. That’s what’s great about sewer work, ... you can do a job and then have a nice lunch somewhere. Being the owner of the business really helps.”

Sadler has positioned his son for success in Green Bay. Max will take over the family business in one year, at which point Sadler is moving to Oregon to pursue another business interest. “I love the wilderness and the outdoors. I want to spend more time skiing and by the ocean. I love to grow fruit trees. It’s a milder climate out there and I’m ready to leave 20 below zero temperatures.

“Max will take the company where he wants to take it, not just doing what worked for Dad. He can drive this sewer company wherever he wants it to go because it will be his. I am giving him the great gift of freedom.”

Max Sadler says he indeed may take the family business in another direction, taking on pipe lining as a new service. “It’s a pretty big industry and I want to learn more about it,” he says. His favorite aspect of the work, however, is interacting with customers. “My favorite part is the people I get to meet. It’s a real warm feeling to help someone with a problem.”

“My son and I often talk about this,” Sadler says. “We sometimes feel more like a counselor than a person on a service call — being there for someone to talk to, to help along the way. We find caring about their lives really rewarding.” **c**



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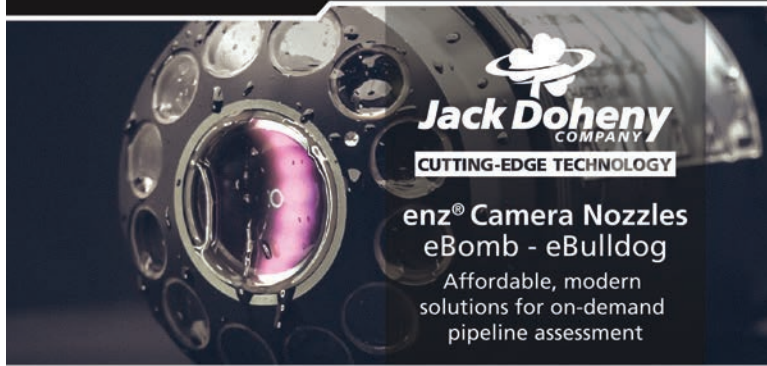
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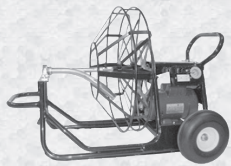
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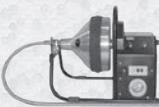
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## PUSH AND PULL

Multitasking trenchless pipe rehab machine creates solutions when bursting or HDD aren't an option // By Ken Wysocky

**W**HEN FACED WITH INSTALLING new pipe-lines in some of the rockiest topography around, trenchless pipe rehabilitation contractor Kurt Fossen knows the path of least resistance is the route best taken.

That's why his company, Trenchless Solutions in Missoula, Montana, invested in a PE-10 machine, built by PE Equipment. The machine is designed to pull or push existing waterline pipes on job sites where pipe bursting or horizontal directional drilling aren't good options. At the same time, the machine also pulls in a new pipe behind the pipe being replaced.

Better yet, this machine is a Swiss Army knife of sorts, also capable of pipe bursting and directional drilling by just changing out attachments on the same modular chassis.

"It's a very versatile machine," Fossen says.

"When it comes to customers, I'm a 'yes' guy. When somebody calls us with a problem, I like to be able to take care of them. I want as many tools as possible in my hands in order to rehab these lines with minimal disturbance to customers' properties. If we can't be true to our company's trenchless name, I feel like we're cheating them. Our goal is to be the go-to guys for trenchless rehab of underground utility lines. And a machine like this one help us do that because we can use it in applications where we have difficulty using other machines."

The company does trenchless pipe rehab work primarily for gas, water and sewer utilities. "Any pipe in the ground is fair game," he says.

### A CHALLENGING PROJECT

A good case in point was a tricky job the company tackled in fall 2019 at an elementary school connected to a middle school in Missoula. Each school suffered a waterline break in 2-inch copper lines.

Traditional line replacement in the elementary school would have required cutting about a 30-inch-wide, roughly 60-foot-

## TRENCHLESS SOLUTIONS

MISSOULA, MONTANA

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<b>OWNER</b>	Kurt Fossen
<b>MACHINE</b>	PE-10 drilling/pipe bursting/pipe removal machine from PE Equipment
<b>FUNCTION</b>	Trenchless pipeline replacement
<b>FEATURES</b>	For pipe bursting, can replace service lines from 3/4 to 3 inches in diameter and up to 150 feet long at up to 13 feet per minute, with 20,000 pounds of push/pull force; for directional drilling, 750 foot-pounds of rotational torque and up to 4-inch-diameter bores, with push/pull force of 18,000/20,000 pounds and speed up to 13 feet per minute; for rod pushing, 100-foot range, push/pull force of 20,000/18,000 pounds and speed up to 13 feet per minute. Variety of attachments included.
<b>COST</b>	About \$35,000 for all three functions
<b>WEBSITE</b>	<a href="http://www.trenchlessolutions.biz" style="color: white;">www.trenchlessolutions.biz</a>

long stretch of concrete floor through a classroom and over to a mechanical room. At the middle school, the repair would've required a 35- to 40-foot-long cut over to another mechanical room.

"That's a lot of concrete to tear out, not to mention all the dust, noise and disruption," says Fossen, who established his business in 2016 and has seven employees. "It probably would've taken us a week to do each line repair that way."

Pipe bursting wasn't an option because even the smallest bursting heads still were too big for the existing 2-inch diameter copper pipes. And directional drilling wasn't a good option, either, he says.

"The ground conditions were really nasty. And once you start drilling, you're a slave to the ground conditions; plus you never

CONTINUED >>



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# MONEY MACHINES



« Kurt Fossen, owner of Trenchless Solutions in Missoula, Montana, uses a PE-10 machine from PE Equipment for pipeline replacement on jobs where HDD or pipe bursting aren't good options.

disruption than anyone else could have. In one building, we went under a computer lab while kids were in class — there was no need to shut down the school. The PE-10 almost paid for itself with that one job.”

## HAPPY CUSTOMERS

The company bought the machine nearly two years ago. It's available as just a pipe bursting machine or just a rod pusher/puller for \$16,500 or as both a pipe burster and a rod pusher/puller for \$21,000. The directional-drilling

capability costs \$14,000 more.

The PE-10 is easy to operate and service — no complicated electronics or other hurdles to jump, Fossen says.

“It's a very well-engineered machine. We have very experienced bursting and drilling guys, so it didn't take them long to get the hang of it. But it's still very simple to operate.”

Significant productivity increases allow crews to do more jobs than they otherwise could, helping the company make more money.

“It's all about better efficiency,” Fossen says. “Plus we don't have to do all that topside restoration work that comes with open-cut jobs. For a contractor who doesn't have any other equipment, this machine is great because of its versatility. And for a company like ours, that already owns a lot of equipment, it's still a win when we run into specialized situations.”

Fossen says this ultimately leads to happier customers “because of the minimal impact on their yards, which in turn generates word-of-mouth referrals,” he adds. “It's created a grassroots referral program for us. I'd say it's been a spectacular investment ... we rolled the dice and hit a home run.” c

“OUR GOAL IS TO BE THE GO-TO GUYS FOR TRENCHLESS REHAB OF UNDERGROUND UTILITY LINES. AND A MACHINE LIKE THIS ONE HELP US DO THAT BECAUSE WE CAN USE IT IN APPLICATIONS WHERE WE HAVE DIFFICULTY USING OTHER MACHINES.”

KURT FOSSEN

know what you'll find, whether it's an old vault or even buried cars, which we've run into before. If there's already a pipe in the ground and you can use that to bring in a new one, it's much more straightforward than drilling.”

## MINIMAL DISRUPTION

So that's exactly what the Trenchless Solutions crew did. After digging a pit at each school for the PE-10, the crew also cut a roughly 16-inch-diameter hole in each mechanical room to access the water lines. Then in each case, they fed the PE-10's cable through the existing pipe from the pit to the mechanical room, then attached a special tip that affixed to the end of the copper pipe.

At the same time, they attached a roll of 3-inch-diameter HDPE pipe to the same tip. Then the PE-10 finished off the job by pulling out the existing pipe into the pit, where the operator cut it off in sections as it emerged and pulled in the HDPE pipe in place behind it. Think of it as similar to pipe bursting, but without the bursting, Fossen explains.

“It took about one day to install each of the new water lines. I can say with 100% confidence that we did it with far less





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## PRODUCT SPOTLIGHT NEW MANHOLE ASSESSMENT TECHNOLOGY REDUCES SSOs

By Craig Mandli

Keeping aging manholes watertight is often a constant struggle for contractors. Those manholes play a key role in protecting assets below the surface by creating a seal between aboveground contaminants and the belowground access point. But when inflow from surface water or infiltration of groundwater through defects in the structure come into play, the treatment of these excess flows turns costly, unnecessarily testing collections system limits and capacity at treatment plants.

RedZone Robotics, a U.S.-based robotics firm, recently introduced a new technology for manhole condition assessment aimed at reducing the risk of sanitary sewer overflow events caused by faulty manholes. Vertue is a multisensor inspection tool specifically suited for manhole inspections.

“With Vertue, utility operators are now able to capture full multisensor data, including 360-degree, high-definition imagery, laser and positioning of their manholes in a reliable way,” says Dave Petrosky, president and CEO of RedZone Robotics. “Utilities won’t need to go back and re-inspect due to poor lighting conditions or blurry images. They’re getting a true visual condition assessment every time.”

Vertue is offered as a stand-alone product and service, or as part of the Accelerated System Assessment Program (ASAP) from RedZone Robotics. The program provides an accelerated approach to condition assessment across an entire collections system, enabling

a system owner to identify and prioritize the maintenance and repairs that are needed. ASAP not only addresses the most severe infrastructure issues, but also leverages the nearly 100 million feet of inspections already assessed across hundreds of systems to establish a baseline condition required for long-term asset management planning.

“If the manholes in a city’s network are in poor condition, this could lead to significant infiltration of clear water during wet-weather events,” says Jeffrey Griffiths, the company’s vice president of sales and marketing. “Infiltration causes significant issues as it results in additional treatment costs and has the potential to put a treatment plant over its design capacity, which may result in an overflow event.”

According to Petrosky, field tests of the Vertue system have yielded significant success rates among test subjects. “We’ve stress-tested Vertue out in the field, and the level of detail we’re able to produce in our interactive 3D models is excellent,” he says. 412-476-8980; [www.redzone.com](http://www.redzone.com)



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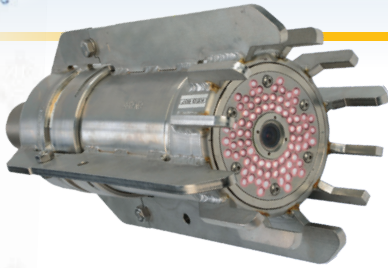
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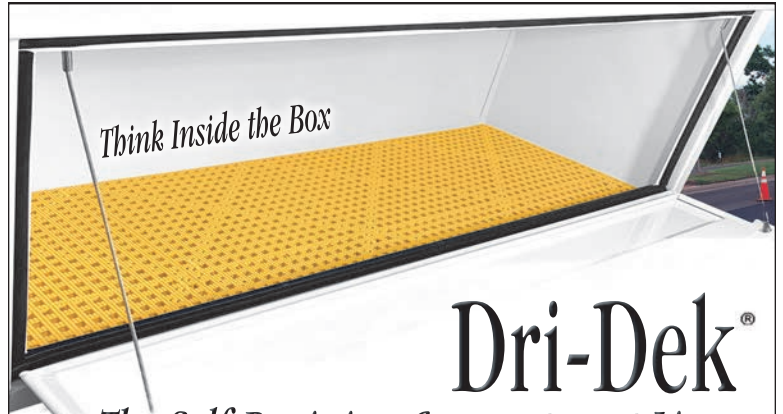

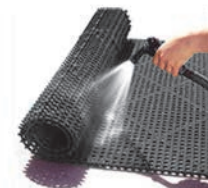
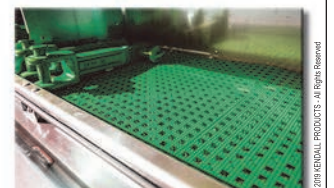
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2



### 2 // GENERAL PIPE CLEANERS PD-25 AUTO HANDY

General Pipe Cleaners' new PD-25 Auto Handy with automatic feed offers feeding speed and convenience in a handheld drain cleaner. The Auto Handy can be used as a hand tool or as a power tool by removing the turning handle and attaching a drill for extra muscle on tough clogs. Squeezing the feed lever as the container rotates feeds cable; to retract cable, reverse drill rotation and squeeze the lever. Auto Handy can clear clogs from 1 1/4- to 3-inch-diameter lines up to 50 feet long. Designed to withstand tough jobs in the field, its sturdy polyurethane drum has been drop tested from 8 feet, fully loaded, without damage. Auto Handy uses Flexicore cables made of heavy-gauge wire coiled tightly around an aircraft-type wire rope core, then heat treated, offering strength with optimal flexibility. 800-245-6200; [www.drainbrain.com](http://www.drainbrain.com) c

## MAINLINE SEWER INSPECTION

By Craig Mandli

### » INSPECTION CAMERAS/ACCESSORIES

#### 1 // ARIES INDUSTRIES MOBILE PATHFINDER SYSTEM

The Mobile Pathfinder System from Aries Industries is a lightweight, portable system for accurately inspecting mainlines that are 6 inches or larger. It includes a powerful transporter, camera and lightweight reel; these components are operated by an all-in-one remote control. The transporter comes in a variety of wheel sizes and is equipped with a rear-viewing camera and an adjustable electric lift to keep the camera centered in a range of pipe sizes. It features a WiperCam pan-and-tilt camera with an in-the-pipe cleaning system and field-replaceable wipers. The camera has a 300-degree viewing angle and LED lighting system to capture pipe details and ensure accurate assessments. The lightweight reel has 1,000 feet of low-friction, multiconductor cable, making the system fully portable. 800-234-7205; [www.ariesindustries.com](http://www.ariesindustries.com)



#### 2 // CPI PRODUCTS POLECAT

Sometimes push inspection cameras are hard to control when not in a pipe and trying to look into a ground-level space. It can be dangerous to kneel down and stick your head in these places, and in some areas, that violates safety rules. When needing to look into a manhole or confined space, inspectors often resort to improvising ways to control their inspection camera. The PoleCat from CPI Products is designed and made for this application. Simply strap an inspection camera to it with the preinstalled Velcro, loosen the lock nut, turn to the angle desired, attach any standard broomstick threaded extension pole and it's ready. It fits any push inspection camera and installs in minutes. 413-443-0925; [www.cplproducts.com](http://www.cplproducts.com)



#### 3 // ENVIROSIGHT VERISIGHT PRO+

The Verisight Pro+ from EnviroSight includes a stainless self-leveling camera with shadowless, variable LED illumination to capture crisp video footage, regardless of pipe material. With supplied centering devices, it inspects lines 2 inches and up and snakes through multiple bends for maximum range. An integral tri-band sonde (33 kHz, 512 Hz, 640 Hz) works with most any locator. Its rugged welded-steel coiler comes with 130, 200 or 330 feet of pushrod. The entire system runs continuously for six hours off internal rechargeable lithium-ion batteries, or off mains or vehicle power. Its multilanguage controller displays footage on an 8-inch TFT LCD screen and captures up to 90 hours of MP4 video on an SD/SDHC card (up to 32 GB) or USB stick (up to 128 GB). It lets you zoom 3X and capture images in JPEG format from both live and recorded video, and it offers a 16-page text writer with full QWERTY keyboard. 866-838-3763; [www.envirosight.com](http://www.envirosight.com)



#### 4 // EPL SOLUTIONS GVISION

The Gvision camera system from EPL Solutions offers a rugged, compact solution for inspecting pipelines 3 to 12 inches in diameter. Available with 200 to 400 feet of pushrod, the reel has a stiff yet flexible fiberglass cable that is optimized for farther pushes through turns and bends. The color camera is self-leveling and includes a powerful, convenient, always-on



512 Hz transmitter for quick and precise area determination. The antiglare LCD monitor delivers a clear, crisp picture even in direct sunlight. To record video inspections, connect a USB storage device or Apple mobile device directly into the USB port. The DVR outputs HD-quality videos, which can be stored and shared from a mobile device. 714-453-9760; [www.epls-usa.com](http://www.epls-usa.com)

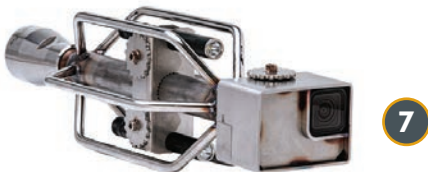
### 5 // FORBEST MINI PAN & TILT INSPECTION CAMERA SYSTEM

The Mini Pan & Tilt Inspection Camera System from Forbest can be used to inspect a pipe range from 2 to 36 inches. This system comes with a cable reel capable of holding 200 feet of cable and a 10-inch multifunction control station that allows the user to input text notes on video or still photos. The user can record the video or store the picture by using a USB stick or Micro SD card. Most of the company's camera heads are compatible with this system. 877-369-1199; [www.forbestusa.net](http://www.forbestusa.net)



### 6 // GENERAL PIPE CLEANERS GEN-EYE

The Gen-Eye USB video inspection system from General Pipe Cleaners lets the user record videos and photos on popular USB flash drives. The compact, lightweight package includes a Command Module with a USB port to store video or still images (up to 128 GB capacity), a 10.4-inch LCD color monitor for crisp, clear pictures and a full-size, waterproof keyboard for on-screen titling, footage counter, date and time stamp, and voice-over microphone. All are safely contained in a heavy-duty Pelican case that weighs just 12 pounds. 800-245-6200; [www.drainbrain.com](http://www.drainbrain.com)



### 7 // GP SEWER CAM

The GP Sewer Cam is made to be dropped. The heart of the jet-powered system is its durable and simple-to-use GoPro Hero 7 Black camera. Not only is GoPro camera technology affordable, but its durability guarantee has made it the go-to camera to document extreme sports, where it takes a physical beating. The skid unit is compatible with 6- to 18-inch pipe and is constructed from Type 304 stainless steel. Custom skids are available for larger pipe. GP Sewer Cam has teamed up with Arthur Products so every GP Sewer Cam comes with a custom-drilled (to buyer's jetting specs) nozzle. The unit is 4 1/2 pounds, has three screws and one moving part, and is completely made in the U.S. 310-774-9468; [www.gpsewercam.com](http://www.gpsewercam.com)



### 8 // ELECTRIC EEL ECAM PRO 2

The eCAM Pro 2 from Electric Eel has a built-in battery cradle that accepts a Milwaukee M18 or equivalent battery (battery not included). This allows for operation in remote locations or anywhere electricity is not available. It includes a rugged stainless steel-housed, 1.68-inch self-leveling color camera with sapphire lens; a 20-LED light ring with an impact-resistant polycarbonate light ring cover; and a high-resolution CCD element. A flexible camera spring navigates 3 inch P-traps. The unit comes standard with 200 feet of braided fiberglass premium 1/2-inch-diameter pushrod (reel capacity available up to 400 feet), industry-standard 512 Hz sonde, 10.4-inch daylight-readable monitor with click-touch controls, one-touch recording directly to a USB flash drive, voice-over recording, an 8X zoom function, audio/video out jacks, 8 inch wheels for easy maneuverability and a secure-locking reel brake. 800-833-1212; [www.electriceel.com](http://www.electriceel.com)

## 9 // HATHORN WI-FI DURASCOPE

Hathorn's Wi-Fi DuraSCOPE inspection cameras offer the convenience of streaming video inspections to an Apple or Android mobile device using the free PipeSTREAM app. It can be used to take screenshots, overlay voice commentary and share videos with up to four devices. It has the choice of DuraCAM self-leveling or straight-view camera heads in multiples sizes and an on-screen footage counter. Municipal-grade camera reels are built tough, with butt-welded steel-frame construction, stainless steel camera heads and a choice of HDPE premium pushrod size allows the user to push far and remain in the field longer. It has 512 Hz sonde control and external 18-volt Milwaukee battery compatibility for quick swap-outs and longer time in the field. 866-428-4676; [www.hathorncorp.com](http://www.hathorncorp.com)



## 10 // INSIGHT VISION CAMERAS IRIS

The IRIS inspection system from Insight Vision Cameras combines a motorized crawler, a motorized power-rewind/feed-assist cable drum and an easy-to-use inspection application. The corrosion-resistant brass-bodied crawler has a 180-degree pan and 360-degree tilt camera to inspect pipes from 6 to 12 inches (up to 18 inches with optional pneumatic wheel set). The reel has 600 feet of Kevlar coax cable and plenty of USB, HDMI and SD external ports. The 10-inch daylight-readable touch screen has the easy-to-use Insight Vision app running on a Windows 10 operating system. The system is portable and can be used with various setups or mounted in a truck. 262-268-9330; [www.insightvisioncameras.com](http://www.insightvisioncameras.com)



## 11 // MYTANA PGR400

MyTana's PGR400 push camera has the range and rigidity to inspect long laterals and small mains, with the choice of a 400- or 325-foot pushrod for use in lines 4 to 12 inches in diameter. The reel has a brake with adjustable drag to help manage the pushrod as you work. A self-leveling camera head with adjustable LED illumination delivers crisp video footage and includes a built-in 512 Hz sonde. The control box mounts securely on a full swivel bracket so you can position the 12-inch daylight-readable monitor for best viewing. All-digital recording lets you save footage to internal storage or USB flash drive. Operators can also stream video wirelessly to multiple devices. The rugged frame has balanced weight and anti-skid feet for easy maneuvering. A skid and camera guides for the camera head help jump offsets and navigate bends. 800-328-8170; [www.mytana.com](http://www.mytana.com)



## 12 // RATECH ELECTRONICS PLUMBER'S HELPER JR.

The Plumber's Helper Jr. pipe inspection system from Ratech Electronics is based on a small-scale reel and comes with 100 feet of mini Gel Rod cable, a removable compact command module with 7.1-inch LCD, a built-in battery and an SD recorder for recording digital images and video. This mini pipe inspection system is available with a full-spectrum, 1.375-inch, self-leveling color camera; a standard color camera; or any of the company's three micro camera heads — 5/8-, 3/4- or 1-inch diameter. 905-660-7072; [www.ratech-electronics.com](http://www.ratech-electronics.com)



## 13 // RIDGID SEESNAKE CSX VIA

The RIDGID SeeSnake CSx Via is a flexible, bring-your-own-screen inspection solution that provides a convenient means to stream, capture and share inspection images using an iOS, Android or Windows device. It enables reels with an interconnect port to be Wi-Fi enabled and utilizes the free RIDGID HQx Live app to remotely control the camera functions and





features. Simply dock in the CSx Via Wi-Fi control device to unlock flexibility, convenience and camera operations with just a mobile screen. Remotely control all functions and features of a camera reel, including TruSense, distance counter and sonde. Multi-reel compatibility provides maximum flexibility. Purpose-built for job site durability and protection, it can be paired with the HQx Dock to hold and protect personal devices. Use as a freestanding unit or mount onto any SeeSnake Compact Series reels for fast, easy setup. 800-474-3443; [www.ridgid.com](http://www.ridgid.com)

#### 14 // SECON EXTREME SERIES

Extreme Series cordless sewer cameras from SECON come with two 20-volt DeWALT batteries and a charging station. An 18-volt power supply is included for plug-in operation. They have SD card recording and Wi-Fi connection to view inspections in real time on personal smart devices. The unit includes a 7-inch color LCD monitor, 512 Hz sonde/transmitter and a stainless steel camera head. They are available with 100 to 300 feet of push cable and are capable of viewing 1 1/2- to 12-inch pipe. 702-527-5100; [www.seconv.com](http://www.seconv.com)



#### 15 // SPARTAN TOOL EXPLORER

The Explorer modular camera system from Spartan Tool has a control box that is compatible with five different pushrods up to 400 feet in length, letting the user quickly adapt to any environment. Included WinCan software allows the user to map full plumbing systems for future reference, and files can be saved to a WinCan account, the cloud, external USB drives and the system's internal storage. The stainless steel camera head provides a crisp, color picture to the superbright, sunlight-readable LCD. Change out reels to create a system that provides the ability to tackle any size job. 800-435-3866; [www.spartantool.com](http://www.spartantool.com)



#### 16 // SUBSITE ELECTRONICS LATERAL AND MAINLINE INSPECTION SYSTEM

The Lateral and Mainline Inspection System from Subsite Electronics is a fully integrated single-conductor-technology lateral launch system that performs mainline and lateral pipeline inspections simultaneously. This second-generation system uses picture-in-picture or dual video monitors and can inspect mainlines up to 500 feet in length and laterals of up to 200 feet. It can be used to inspect mainlines from 6 to 24 inches and lateral lines from 4 to 8 inches in diameter. It has a 40:1 zoom, pan-and-rotate mainline camera with auto iris and autofocus, a color rear-view camera, tilt connector for easy deployment and a high-resolution RodStar lateral camera. It offers a dual video monitor view format that lets the user view the mainline and lateral simultaneously. The six-wheel-drive tractor has three forward speeds, reverse and freewheel. 800-846-2713; [www.subsite.com](http://www.subsite.com)



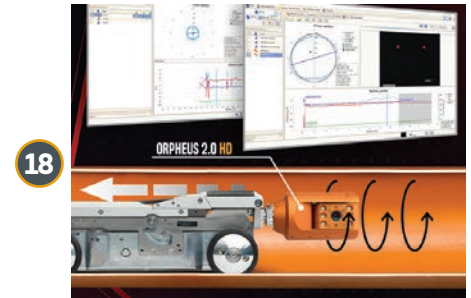
#### 17 // TRUGRIT TRACTION WHEELS

TruGrit Traction brand wheels provide traction in newly installed liners, or can be used as an extremely aggressive wheel to cut through heavy grease. The original TruGrit wheel uses a blend of flexible polymer and steel carbide grit to provide added traction in all pipe types and conditions, never getting dull, only getting better as they wear. The TruGrit Steel is a solid steel wheel with an exterior finish of aggressive carbide grit to maximize traction in heavy grease and debris. With innovative hub adapters, one universal TruGrit brand wheel will fit multiple OEMs including Aries, Cues, Envirosight, IBAK, Rausch, Subsite and Schwalm. 407-900-1091; [www.trugrittraction.com](http://www.trugrittraction.com)

## » LASER PROFILER

### 18 // RAPIDVIEW IBAK NORTH AMERICA LASERSCAN CONTINUOUS PROFILE ANALYSIS

RapidView IBAK North America's ORPHEUS 2.0 and ORPHEUS 2.0 HD camera heads include LaserScan Continuous Profile Analysis that allows users to pair their inspection system with IKAS Evolution software to detect deformation of the whole pipe in one continuous motion. When the LaserScan measurement is started, the camera will begin to rotate 300 degrees per second while moving in reverse (reversing speed determines accuracy of measurements). The camera takes a measurement every 12-degree rotation. With the profile analysis report completely integrated, identifying ovality, corrosion, reduction of cross-section and internal geometry is easy. It is possible to analyze the data report right from the inspection vehicle. 800-656-4225; [www.rapidview.com](http://www.rapidview.com)



## » MAPPING SOFTWARE

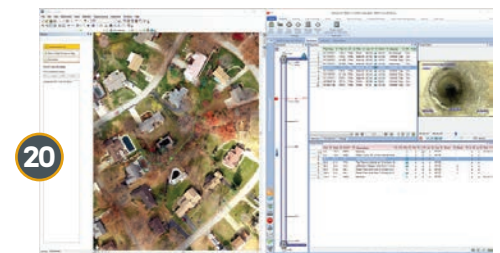
### 19 // VIVAX-METROTECH VM MAP UTILITY MAPPING APP

The VMMap Utility Mapping app from Vivax-Metrotech records data from the field, which is instantly available online via the VMMap Cloud web portal, or can be shared using the email function in the app. Location data is obtained from the mobile phone, or an external GPS device of your choice. Depth readings, GPS coordinates, the distance between locates and more are captured as data logs and can be saved as .xls, .txt, .shp and .kml extension files. The image capture feature allows the user to attach a JPEG format image to the surveys. This is useful to add points of interest or a snapshot of the completed survey. The app generates maps in real time, giving confidence to the field technician that the data being collected is accurate. 800-446-3392; [www.vxmt.com](http://www.vxmt.com)



### 20 // WINCAN VX

WinCan VX makes it easy to visualize inspection data with a variety of mapping tools including WinCan Maps and integrations with Esri's ArcGIS. For quick geospatial referencing, WinCan Map allows the tech to view inspection data overlaid on GIS map assets to easily understand systemwide condition and identify maintenance needs. This is a great way for operators in the field to gain insight into the layout of pipes at a job site. For a more in-depth approach, integrations with Esri's ArcGIS Pro offer analysis tools including heat mapping of pipe criticality. Export WinCan data directly to ArcGIS, eliminating manual conversions and data re-entry. Likewise, simply drag to select assets in ArcGIS for instant transfer of section data to WinCan. It also compares GIS data with inspection data and highlights any disparities. 877-626-8386; [www.wincan.com](http://www.wincan.com)



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### 21 // CUES CATVS

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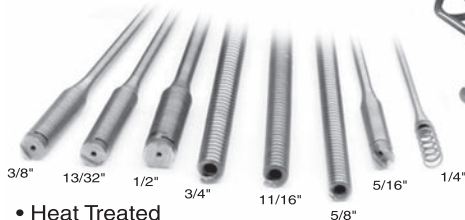
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## MAINLINE SEWER INSPECTION

// By Craig Mandli

### CITY USES MOBILE INSPECTION SOFTWARE TO STAY ORGANIZED



**PROBLEM** / Tyler is the largest city in Northeast Texas and is quickly growing. However, as cities grow quickly, sometimes the old buried infrastructure can remain out of sight and out of mind. Unfortunately, that situation came to a head in Tyler as the U.S. EPA and the state imposed a consent decree on the city in 2017. With almost 700 miles of aging sewer mains, the city had quite a bit of infrastructure to inspect, review and act on. Additionally, the settlement required that lower-income and minority areas receive greater attention. A GIS-centric solution would be necessary.

**SOLUTION** / The city operates two of its own CCTV inspection units, in addition to two separate contractors who televise the sewers. With upwards of six crews working every day collecting data, organizing this could be a challenge. However, with all crews using **ITpipes Mobile Inspection** software, the city is able to automatically import the data collected daily directly into Cityworks, utilizing ITpipes' Sync module. Additional scripting within ITpipes Web provides automated alerts through Cityworks when certain criteria are logged. This assures that large holes, collapses, blockages or other pipe defects that require immediate attention are addressed quickly.

**RESULT** / Tyler has been aggressive with rehabilitation of its sanitary sewer system. Pipes are selected for repair based on condition and geo-spatial location. The integration makes decision-making straightforward and provides actionable intelligence. Thanks to its implementations, Tyler has not only reduced overflows, but has received two Texas Municipal League awards in 2020 for its Public Works and Communications programs. 877-487-4737; [www.itpipes.com](http://www.itpipes.com)

### INSPECTION CAMERA ABLE TO REACH ALL NEEDED AREAS



**PROBLEM** / A midwestern drain cleaner that specializes in residential work was having an issue inspecting galvanized lines in a house. The company had a micro drain camera it was using, but it was only able to navigate about 50% of the inspection areas.

**SOLUTION** / After reviewing some information and videos on the **Miniflex** plumbing camera from **Medit**, the contractor called to discuss this unit and arranged a demo. In a bathroom sink, the Miniflex was able to go right into the drain and snake the line. In the tub, which was a plastic-lined pipe that turned into galvanized, the plumbing camera went in both ways to 7 feet. In the kitchen, which was solely plastic piping, both units worked.

**RESULT** / The contractor appreciated the fact that the Miniflex is a compact all-in-one design, and has a sonde built into the small camera head so the technician can locate it behind walls or under the floor. It was also the only unit that worked for the inspection of the older galvanized lines and navigated through bends in them. The company purchased a Miniflex unit. 800-239-9934; [www.fiberscope.net](http://www.fiberscope.net) **c**



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## DuPont, RecoveryPRO and BELFOR partner to clean cruise ship

DuPont Personal Protection, RecoveryPRO and BELFOR Group teamed up to conduct a deep cleaning aboard the Diamond Princess cruise ship following an outbreak of COVID-19 among its passengers and crew in February 2020. The collaboration among the companies, along with protocol guidance established by global health and safety organizations, resulted in an effective cleaning and disinfection solution, enabling the ship to be deemed safe to sail. RecoveryPRO led the cleaning and disinfection project aboard the ship with assistance from its parent company BELFOR Group. DuPont Tyvek personal protective garments were used to help keep the frontline cleaning crew workers safe.

## IPT welcomes Dennis Persaud as VP of operations

Internal Pipe Technologies appointed Dennis Persaud as vice president of operations. He will oversee the manufacturing operations at the IPT plant in Texas. With 13 years' experience in the CIPP lining industry, his last position was director of manufacturing, quality and compliance at Aquam Corp / NuFlow Technologies. **c**

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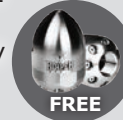


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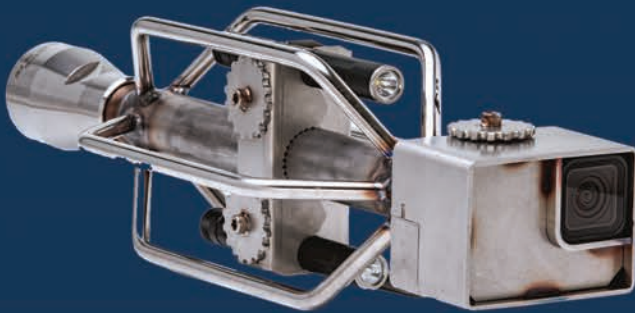
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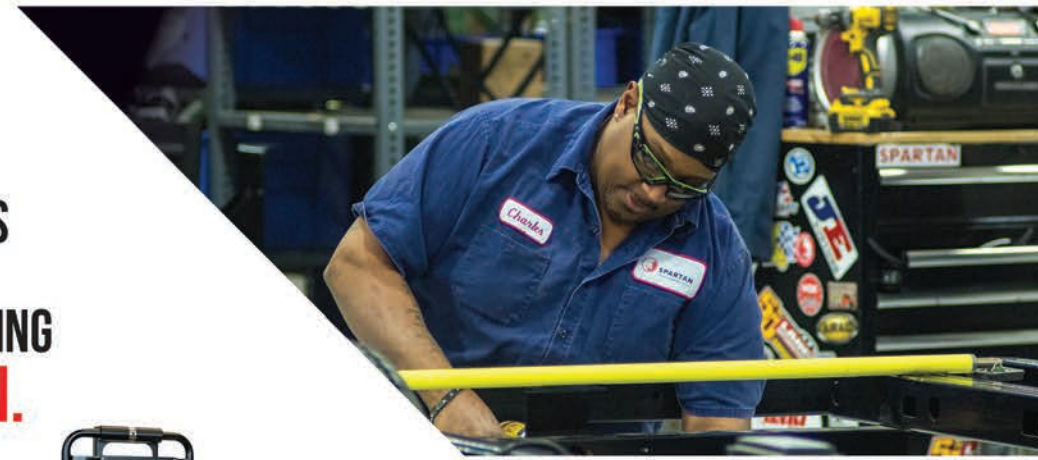
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