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1-1/2CG	1-1/2"	3/8", 1/2", and 9/16" Cables
2CG	2"	1/2", 9/16", 5/8", and 3/4" Cables
2-1/2CG	2-1/2"	5/8" and 3/4" Cables
3CG	3"	5/8" and 3/4" Cables
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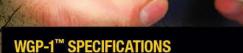
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Network connectivity allows remote diagnostics and maintenance, as well as automatic network connectivity allows remote diagnostics and measure defect size. Industrial images in the latest undate adds tools to measure defect size. Network connectivity allows remote diagnostics and maintenance, as well as automatic firmware updates. (The latest update adds tools to measure defect size, flow capacity, and lateral angle plus macro for one hutton crawler return.) link

lateral angle, plus macro for one-button crawler return.)



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December 2012

features

Big Enough for Any Job **Bv Peter Kenter**



On the cover: Capital Sewer Services president Gary Bates, standing in the foreground as operators Ian MacLean and Kenan Granilo flush a municipal sewer line, has helped guide the company's rapid growth over the past 12 years. In that time, the operation has been transformed from a small plumbing company to one of the largest sewer cleaning and repair contractors in all of Canada. (Photography by Jon Evans)

In the Driver's Seat

Input from all levels of the company helps the Drain Surgeons team find the right path for growth and expansion. By Marian Bond

Expo Preview: Sharing for Success

Expo Roundtable discussions help contractors network their way to better use of emerging technologies, improved customer service and marketing ideas that produce results. By Jim Kneiszel

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Six historic Indianapolis neighborhood districts showcase thriving art and music scenes. By Sharon Verbeten

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Sometimes the best stories aren't about insurmountable challenges or unprecedented growth; they simply focus on good people doing business the right way. By Luke Laggis

Better Business: Plan Ahead

Buyout agreements can be a safety net for you, your business and your family. By Fred S. Steingold

Safety First: Alarms Without Noise

Today's technology can alert people on work sites to backing machinery without waking up the whole neighborhood. By Henry Morgan

Money Manager: Web Wise

Understand your needs and the associated costs before launching or updating your company's website. By David Steinkraus

Tough Job: Command Performance

Sliplining eliminates water loss and restores pressure and flow in heating system for a military prep school and junior college in New Mexico. By Scottie Dayton

Money Machines: The Heat is On

Hot-water jetter improves Colorado contractor's efficiency and profitability when thawing frozen laterals. By Ken Wysocky

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- Money Manager: Get the right liability insurance
- Profile: Mr. Rooter of Southwest Florida
- Money Machines: The Crap Shooter

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A Good Conversation



Luke Laggis editor@cleaner.com

SOMETIMES THE BEST STORIES AREN'T ABOUT INSURMOUNTABLE CHALLENGES OR UNPRECEDENTED GROWTH; THEY SIMPLY FOCUS ON GOOD PEOPLE DOING BUSINESS THE RIGHT WAY

BY LUKE LAGGIS

got a call the other day from a reader in Santa Barbara, Calif. His name was Al. He wanted to tell me how much he appreciates the magazine and wanted to know how we choose the contractors we feature every month.

I always appreciate it when a reader calls to talk about the magazine. I typically end up asking far more questions than the caller. It's great feedback and it allows me to better gauge what's important to our audience. In this case, the caller said he likes to read about other contractors and how they're building their businesses and dealing with the issues he faces in his business every day. He said the stories in *Cleaner* have been a source of knowledge and inspiration, and he was hopeful that one day his business would be strong enough to be

Most of what he said about his business and the way he operates had nothing to do with lining pipes or choosing jetter nozzles, but it was critical to being a good business. He really understood customer service and the value it builds.

featured in the magazine. Yet, he said he didn't think he had done anything that warranted a feature profile at this point.

We talked for quite a while. Al told me about how he got into the industry and how he handles business. He talked a lot about customer service and the importance he places on respecting customers and making sure every job is done to their satisfaction.

As the conversation continued, Al talked about the root infestation problems in his area of Southern California and about being a licensed lateral

inspector in his city. He also talked about the makeup of his business — 60 percent residential and 40 percent commercial — and the size of his operations — two trucks based out of his home. But what really struck me was not the menu of services he offers or the growth of his business or anything about specific jobs, it was the earnestness that came from everything he said. Most of what he said about his business and the way he operates had nothing to do with lining pipes or choosing jetter nozzles, but it was critical to being a good business. He really understood customer service and the value it builds.

So, as Al and I talked, he finally began asking me more questions. He didn't think his humble business was big enough or successful enough to be

featured in *Cleaner*, but he wanted to know what he had to do to one day be worthy of consideration. I was on the spot, but the answer came easy: Keep doing what you're doing. While there was nothing particularly remarkable about the size or operations of his business, the earnestness with which he spoke of taking care of customers really was the story.

I explained that we typically feature contractors who are tackling tough jobs, solving problems, and helping

move the industry forward, but overall, our goal is to feature contractors who are doing really good work, the right way. And based on what I heard over the phone, that's how I would describe Al's business.

Before the conversation was over, I collected all his contact information and put it in my folder of potential profiles. Al's business might not be the biggest, but he's doing things the right way and I think you'll be reading more about it in these pages soon.

Enjoy this month's issue. c













INPUT FROM ALL LEVELS OF THE COMPANY HELPS THE DRAIN SURGEONS TEAM FIND THE RIGHT PATH FOR GROWTH AND EXPANSION BY MARIAN BOND

Benji Grimes joined Drain Surgeons in Arnold, Mo., with a business degree and experience in construction and real estate development, but he was a beginner in drain cleaning and sewer inspection. His immediate focus became learning all aspects of the industry so he could manage the company his parents, Herman and Connie Grimes, purchased in 2010.

Starting from the bottom up, Grimes worked alongside James Von Klemen, who originally opened Drain Surgeons cleaning grease traps with a single truck. Connie Grimes knew Von Klemen through her company, Grimes Tax, and when he wanted to sell Drain Surgeons, she and her husband saw an opportunity for an investment that would grow with the right leadership.

Von Klemen stayed on as a consultant after selling the company, which by that time had expanded to include five service vans and five employees. In addition to working with Von Klemen, Grimes began riding along with the technicians and learning the trade.

INPUT AND INSIGHT

"Since they bought the company we have added some services and equipment," says Benji Grimes. "We now have 13 employees, including my



brothers Andrew and Jason Grimes, who handle business administration and dispatching.

"Over time I consulted with the employees as to what they saw within the industry that would benefit Drain Surgeons," he continues, "What equipment would they like to see us acquire? What would make us more versatile, and develop more jobs? Some of the things they suggested included a crawler camera and a combination truck. We were able to include these things, and

(continued)

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ABOVE: Technicians Joe Donovan, left, and Rico Pozzo set up the ATV generator (Honda) and Envirosight ROVVER 125 inspection camera. RIGHT: Pozzo and Donovan review an inspection video with principal Benji Grimes.

began to build our portfolio and to see calls from contractors and engineering firms wanting us to come out and help solve their problems.

"It was important for us to get that perspective from our employees who had been around in the industry, who had a career in the business. It made sense for us to get their judgment as to what would be right for our company."

The customer base is now 70 percent commercial, industrial and municipal, and 30 percent in residential sewer and drain cleaning, with all related services. They travel throughout the St. Louis area and into southern Illinois, but will go wherever the job requires.

Grimes says preventive maintenance is something they stress with their clients, since homeowners do not want to have their basements flooded because of a stoppage, and factory owners don't want to pay thousands of dollars to shut down for a cleanup after a flood.

"It was important for us to get that perspective from our employees who had been around in the industry, who had a career in the business. It made sense for us to get their judgment as to what would be right for our company."

Benji Grimes

"Preventive maintenance is the answer," Grimes says. "We have a lot of old clay pipelines, and big trees, and a lot of root infiltration. We have the blockages, and it's just more cost effective when you consider what it would cost to dig-and-replace. People can spend \$130 a year for their home lines to be cleaned. The commercial customer can spend \$400 to \$500 a year to keep the lines clear of roots. We keep a database for our clients, and when it's time to clear a line we give them a call. Our guys go out. We clean it out. They are happy as can be. But here in our area, there will always be roots to clean out. Roots in the mainline, and roots in the laterals."

Preventive maintenance programs usually center on a once-a-year cleanout, but if history shows a more aggressive root problem, they might put the customer on a six-month schedule.



Drain Surgeons has worked for several municipalities in their service region. Grimes says some municipalities are making changes to their drain cleaning and inspection programs and are outsourcing more and more of their preventive maintenance work.

"It all depends on their budgets, their equipment and staff," he says. "Some municipalities bought big sewer equipment and hired staff to operate it, but the budgets keep creeping up. It's costing more to keep the equipment and to staff those vehicles. They save money in the long run by bringing in an outside company."

Another important client base for Drain Surgeons is in the community of universities and colleges. Drain Surgeons has worked on the campus of Washington University in St. Louis, as well as Missouri Baptist University, Saint Louis University, Webster University and others in the greater St. Louis area.

Some of these campuses are large, with older clay pipes that are prone to breaks in the joints caused by shifting ground. Roots get in and grow bigger and bigger, and eventually close off the entire line if not kept clear. New construction typically utilizes PVC pipe that eliminates most issues unless there is a collapse or a big piece of debris that has to be located and removed.

ON THE ROAD

The Drain Surgeons service fleet includes seven Ford E-250 extended vans, from 2003 to 2011. Grimes estimates that each service van carries close to \$50,000 in equipment and supplies. (continued)

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In lieu of a CCTV van, Drain Surgeons uses a Kawasaki Mule 4x4, which is transported in a Cargo South trailer behind a service van, providing easier access to difficult locations. An Envirosight ROVVER 125 camera with pan, tilt and zoom capability serves as the eyes of the unit. With the addition of the crawler camera, technicians can now take advantage of 600 feet of line, as opposed to a push camera with just 100 feet.

Grimes' team also uses Electric Eel eCam Pro and Ratech Electronics Elite Jr. cameras. Locating work is handled with a Radiodetection RD4000 and a RIDGID SeekTech SR-20.

"We keep a database for our clients, and when it's time to clear a line we give them a call. Our guys go out. We clean it out. They are happy as can be."

Benji Grimes

The company's 2002 Hi-Vac B-10 combo truck was acquired from a municipality in Colorado. It has a 2,000-gallon plastic water tank and a 10-yard debris tank, and the O'Brien (Hi-Vac Corp) pump provides 2,200 psi/65 gpm.

Grimes says the Hi-Vac allows them to clean and remove debris at the same time, rather than having a pump truck and a trailer jetter on the job. Another advantage of the B-10 is that the rodding reel is at the rear of the vehicle.

"When the reel is on the front of the truck, there is a hazard for the workers due to the high decibel levels, which can damage the hearing of the operator," he says.

Three trailer jetters include an FMC/John Bean Sewer Jetter producing 1,250 psi/35 gpm with a 300-gallon tank, an O'Brien 3510-E producing 2,500 psi/10 gpm and an O'Brien 2513-JE at 3,000 psi/4.8 gpm. They also have four Electric Eel portable jetters ranging from 1,500 psi/2 gpm to 3,000 psi/4.7 gpm. Grimes says the trailer jetters have been a plus for the company because they are more efficient and effective when cleaning larger lines.

GETTING THE BEST FOR THE MONEY

Drain Surgeons uses nozzles from Shamrock Pipe Tools and StoneAge, but Grimes says there's more to selecting a jetter nozzle than the gpm and psi rating. He looks at the warranty offered by the manufacturer. "I want to know if they stand behind the product. If we spend a couple thousand dollars on a nozzle, we want it to last. We want to know they have a warranty that will back up their product."

According to Grimes, paying more doesn't necessarily mean a better nozzle, but a nozzle with a good warranty catches his attention. Of course, matching the right nozzle to the job is also critical.

(continued)



Technician Joe Donovan assembles a Shamrock grease nozzle.

READY FOR ANYTHING

The biggest hurdle for Benji Grimes when he joined Drain Surgeons as a beginner in the industry was earning the respect of the technicians who were training him to do their jobs and to ultimately be their boss.

"These were people who had been here before my parents bought the company," says Grimes. "I had a college education, some work experience, but I was younger than the employees who I would be managing. It could have been an issue. They would be taking direction from me. But I had no problem learning from them, side by side. Whenever I was out there, I did all I could to show I was there for a purpose. To learn and to grow the company, and make things better for all of us and for the owners."

Grimes says that the brightest and most rewarding aspect of his experience has been working alongside the founder of Drain Surgeons, James Von Klemen, who, as a consultant, has shared a wealth of knowledge over the few years the two have worked together.

"Whenever I have a problem, I can rely on James, who spends at least two days a week with us," says Grimes. "James has brought me up to speed on many things. Working side by side, I have learned how to operate in the business world, manage a company, to write proposals and bid, to work with subcontractors. He has brought me up to task as he has the practical hands-on experience and is there to pass it on to me."

Grimes says that he spent about a year learning all that he could about the equipment and the systems, and then he moved into management and assessing how they could expand services and grow the base.

"James tells me I am ready for anything," says Grimes. "But it's really nice to have him here in case I run into something I have not yet seen,"

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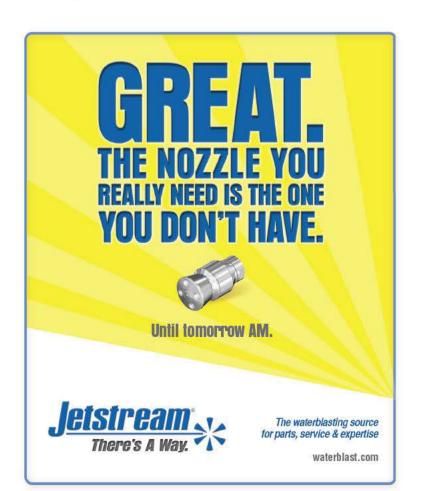
"An operator using a nozzle needs to know what he is doing," says Grimes. "The nozzle has to be rated with the correct psi and gpm for the flusher, or you won't get the proper performance and you can harm the pump and it could be costly to repair."

"An operator using a nozzle needs to know what he is doing. The nozzle has to be rated with the correct psi and gpm for the flusher, or you won't get the proper performance and you can harm the pump and it could be costly to repair." Benji Grimes

Grimes says using the proper nozzle with the jetter is like putting the right size tires on your car. Everything has to work together. They prefer Tier 3 nozzles, but also use Tier 2.

He says the network of contractors in the St. Louis area shares insight on equipment, and if someone has a bad experience, they typically share that information. On the other hand, if a contractor finds a great nozzle or other piece of equipment, that information is shared as well.

"We all talk," says Grimes. "There is plenty of work out there. It's not like, 'Oh my gosh, I'm in a bunker and no one can talk to me.' No. We have an open rapport."





The Drain Surgeons team includes, from left, technician Rico Pozzo, technician Roger Walka, technician Joe Donovan, assistant office manager Jason Grimes, technician Joe Richardson, owner Connie Grimes, technician Josh Mueller, principal Benji Grimes, master technician/consultant James Von Klemen, technician Tim Miller, and office manager Andrew Grimes.

ON SITE AND IN THE FIELD

Drain Surgeons operates out of a 3 1/2-acre site, with an acre for parking and a 2,500-square-foot building for office and warehouse space.

Grimes says his first duty at the beginning of every day is checking the maintenance board to see what needs to be addressed.

"If there are any maintenance jobs, I want to know about it and have that attended to," he says, adding that he and Von Klemen perform most maintenance duties in their own shop. "If a call should come in that requires that equipment and we're not ready to go, I may lose the job. So having equipment up and running, that is my first priority."

Another priority is making sure he has knowledgeable and skilled technicians in the field using the equipment to its full potential and taking good care of customers.

"You are only as strong as your technicians are good at their job," he says. "There are not a lot of sewer cleaners out there, and it takes a special person to do this job." c

more info

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Electric Eel 800/833-1212 www.electriceel.com (See ad page 42)

Envirosight 866/936-8476 www.envirosight.com (See ads on pages 5, 11)

FMC Technologies/ John Bean Sprayers 800/241-2308 www.johnbeansprayers.com

Hi-Vac Corporation 800/752-2400 www.hi-vac.com

Radiodetection 877/247-3797 www.radiodetection.com

Ratech Electronics, Ltd. 800/461-9200 www.ratech-electronics.com (See ad page 52)

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Big Enough FOR ANY JOB

IN ABOUT A DOZEN YEARS, CAPITAL SEWER SERVICES HAS GROWN FROM A SMALL PLUMBING FIRM TO ONE OF CANADA'S LARGEST SEWER CONTRACTORS BY PETER KENTER

For Gary Bates, president of Capital Sewer Services Inc. of Hamilton, Ontario, company growth not only drives revenue and market share, it's a survival strategy.

"Larger companies are positioned to take on increasingly large government contracts," he says. "With administration and contract costs approaching 20 percent of business costs, you've got to be big to thrive in the contemporary market."

Bates was launched into the family plumbing business in the early 1980s at age 16 in Mississauga, the city bordering Toronto's western flank. Seeing an opportunity in drain servicing, he launched Capital in 1998, with six employees, including two office staff workers and a couple of trucks.

(continued)

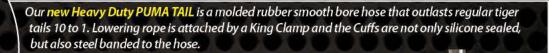




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"We were doing commercial drains and grease traps and worked regular restaurant drain cleaning contracts," says Bates. "We also had a contract with Toronto's downtown Eaton Centre shopping complex, the Air Canada Centre arena and many of the towers in the downtown core."

The business offerings grew rapidly in 2000 with an expansion into municipal drain contracts and closed circuit television (CCTV) inspection.

ENTERING THE CIPP MARKET

"In 2002, our vice president, Brian Ratchford, came on board with a wealth of expertise in curedin-place technology," he says. "Brian was always ahead of the curve, when very few municipalities were educated enough to request pipe relining."

Capital began to rapidly form itself into teams as business ramped up. That same year, the company expanded to 20 employees divided



"I hate to see a dirty truck. When we work on municipal contracts, city employees have the right to sit inside our CCTV vehicles and the last thing I want is for them to get dirty. They deserve a clean space inside the studio."

Gary Bates



roughly evenly among commercial, municipal and cured-in-place contracts. The company's vehicle fleet also expanded to 20.

As the need for space grew, Capital moved from Mississauga to Hamilton, about 30 miles southwest, in 2006. With lower operating costs and more land, the company began to build larger facilities.

Today, Capital operates a 30,000-square-foot operations building and a 4,000-square-foot wet-out facility to prepare cured-in-place liners in Hamilton. "There are maybe four wet-out facility locations in all of Canada, and we own one of them,"

Vac-Con operator Kenan Granilo operates the Vac-Con combination unit.

profile

CAPITAL SEWER SERVICES INC., HAMILTON, ONTARIO

PRESIDENT: **Gary Bates**

FOUNDED: 1998 EMPLOYEES:

SPECIALTIES: High pressure waterjetting, CCTV inspection, drain services, cured-in-place pipe lining

SERVICE AREA: All provinces of Canada WEBSITE: www.capitalsewer.com

says Bates. "It sharpens our competitive edge to be able to perform this service ourselves."

The facility parking lot provides a home to close to 65 trucks.

"The bulk of our fleet - mostly cube vans - are GMs and Fords," says Bates. "The bigger trucks and 18-wheelers are Volvos, Sterlings, Freightliners, Peterbilts and Internationals."

Capital's 15 combo vacuum trucks are supplied by Vac-Con. Boilers on the steam-curing vehicles are supplied by the Rush Sales Company. The CCTV inspection trucks are outfitted with CUES cameras, including pan-and-tilt models.

TAKING CARE OF THE FLEET

"We employ four full-time fleet staff including a fleet manager, who performs service on all vehicles," says Bates. "We also employ a full-time welder and a millwright. The vehicles are inspected daily, not only for safety but cleanliness. I hate to see a dirty truck. When we work on municipal contracts, city employees have the right to sit inside our CCTV vehicles and the last thing I want is for them to get dirty. They deserve a clean space inside the studio."

With more opportunities opening in western Canada, the company opened

(continued)



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SERVICE **PARTS** REBUILDS USED SALES **RENTALS TRAINING** a satellite office in Winnipeg, Manitoba, in 2009. The Winnipeg facility includes a 15,000-square-foot operations center, and houses 14 employees and an additional 10 trucks.

Today, the company's contracts are 90 percent municipal, with contracts running longer and trending larger in dollar value.

"The larger contracts require a bit more patience, learning the diplomacy of dealing with the municipal structure and working with the consulting firms they hire."

Gary Bates

"In the 1990s, we were getting sewer contracts in the \$50,000 to \$600,000 range," says Bates. "Today, they're coming in at \$5 to \$15 million. These are also longer-term contracts lasting two to three years instead of a single year. That's good for contractors, because if you're going to buy more than \$2 million worth of trucks to service a contract, you want to know you'll be keeping them occupied for a while."

A current \$5 million contract with the City of Toronto involves CCTV inspection and assessment of more than 300 miles of city sewer lines and 9,500

manholes. Capital works with Genivar, an engineering firm in Montreal, Quebec, to handle all of the data assessment for the project.

Capital is also taking on a \$9 million contract spanning three years for the nearby Region of Peel.



WORKING WITH MUNICIPAL GOVERNMENT

"The larger contracts require a bit more patience, learning the diplomacy of dealing with the municipal structure and working with the consulting firms they hire," says Bates.

SEWER LINE REHAB CHALLENGE INCLUDES 18 HOLES

It's a challenge getting through 18 holes of golf at St. Andrew's Valley Golf Club, a course that sits on the border of the communities of Aurora and Newmarket, about a half-hour north of Toronto. For Capital Sewer Services Inc., a bigger challenge was rehabilitating a concrete sewer line that ran directly through the first and second holes.

The job was part of a massive \$10.5 million relining contract awarded to the company in 2011 by York Region. The project's first phase involved relining a 1.2-mile section of sewer, about half of which ran through the course. Line diameter varied from 42 to 48 inches.

"The concrete line was about 50 years old but had been corroded by hydrogen sulfide gas," says company president Gary Bates. "Naturally, the golf course management supported the idea of relining over dig-and-replace." In addition, 15 manholes located on the course were being rehabilitated using an applied spray coating.

A MASSIVE BYPASS

Capital began the project with a massive bypass operation from a nearby pumping station. Rain for Rent supplied five noise-suppression pumps and four 18-inch pipelines designed to move out not only sewage but additional fluid volumes that could result from precipitation or flooding.

"We had to build a temporary manhole on the course so we could introduce our bypass equipment," says Bates. "We also needed to build a temporary half-mile road across the green using geotextile material, then build a temporary bridge across a stream that runs through the course. We were running 18-wheelers across that bridge and had quite a few mirrors broken by golf balls fired across the green."

The project was plagued by weather – in this case good weather that extended the golf season to two days before Christmas.

"Our project extended from November to May and we expected the golfers to leave early and come back in March, but the course re-opened in February," says Bates. "We were originally concerned about winter freezing, but had winter sinkage on our temporary road instead."

The project's second phase involved another half-mile sewer rehab, this time along a busy section of nearby Yonge Street south of the course. In this case, a large HDPE bypass was threaded above and belowground, underneath driveways to avoid inconveniencing businesses during the procedure. A series of sophisticated air valves was used to control air inside the bypass system.

"It's been a difficult project, probably the largest single CIPP contract ever put out in Canada," says Bates. "All of the dimensions were massive. Even the sewer chamber we worked on was big enough to drive a truck through."



The Capital Sewer Services administrative team includes, from left, receptionist Jeannie Bates-Elliott, data technician Carolyn Homing, payroll administrator Cathy Roszell, controller Laura Carvell, president Gary Bates, project administrator Theresa Amorim, accounting administrator Daniella Sucia and field project coordinator Neal Tucker.

Municipalities are also very specific in their requirements for software compatibility, particularly in the way CCTV inspections are recorded and reported.

"We must have over a quarter-million dollars worth of recording and reporting software, because every city wants something different," says Bates.

In 2004, the company aligned itself with National Liner LLC, then known as National Envirotech Group, becoming the first Canadian certified installer and service provider of National Liner cured-in-place materials. The alliance gives it access to the Complete Lateral System's flexible, no-dig pipe rehabilitation technology and the National Liner CIPP system, offering nonwoven polyester felt relining on sewer lines ranging from 6 to 120 inches in diameter.

"The switch to greener chemicals may fly in the face of a market that wants to see products and services offered cheaper and faster, but it will happen. In the meantime, we're absorbing some of the cost of this evolution." **Gary Bates**

"It's an alliance of five companies that not only benefit from bulk purchasing and access to installation equipment, but also from sharing expertise," says Bates. "Each of us works on different types of projects and tries new techniques under a range of climates from California, Texas and Florida to Milwaukee and all of Canada. If we try a new product, we can review it and add it to the supply list if it works out."

Because of delivery logistics, it's still to Capital's advantage to have resins delivered by AOC Canada in Guelph, Ontario, about a half-hour's drive north

For culverts and large pipes, Capital offers National Liner's 3S Segment Panel System, a series of molded, translucent PVC panels, which assemble to form a new lining on circular pipe 40 to 160 inches in diameter and culverts from 40-by-40 to 200-by-200 inches in diameter. It also offers the Channeline GRP system, which employs a structural liner composed of a center core, which

consists of silica sand and resin matrix and an outer glass mat/resin layer, which is coated with aggregate.

A SWITCH TO GREEN RESINS

The latest trend in pipe rehabilitation is the use of green resins and other chemicals that are less harmful to the environment. Capital now only uses green

"We are moving to make our lineup styrene-free and removing all petroleum from our products," says Bates. "In the cities of London and Toronto, Ontario, for example, all contracts

> specify that resins must be styrene-free for storm pipes. The switch to greener chemicals may fly in the face of a market that wants to see products and services offered cheaper and faster, but it will happen. In the meantime, we're absorbing some of the cost of this evolution."

Capital Sewer Services continues to operate at full capacity with a healthy slate of municipal contracts in

"Our strength continues to be the municipal market and we've achieved the critical mass where we can consistently remain competitive in that market," says Bates. "If the pundits are right, and smaller contractors are slowly driven out of the business by the requirements of managing large contracts, we'll still be here to take those contracts on." c

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Sharing for Success

EXPO ROUNDTABLE DISCUSSIONS HELP CONTRACTORS NETWORK THEIR WAY TO BETTER USE OF EMERGING TECHNOLOGIES, IMPROVED CUSTOMER SERVICE AND MARKETING IDEAS THAT PRODUCE RESULTS

BY JIM KNEISZEL

ou make the annual pilgrimage to the Pumper & Cleaner Environmental Expo for a variety of reasons ... surely to see the latest equipment the industry has to offer and to learn the latest technologies through Education Day seminars.

Effective networking with your industry colleagues is another key to making the most of your visit to the 2013 Pumper & Cleaner Expo in Indianapolis. Taking part in the Breakfast Roundtable discussions — set for 8 to 10 a.m. on Thursday, Feb. 28 — is the best way to accomplish that goal.

Just ask Mike Stephens, of SCS Stephens LLC in Haslett, Mich., who participated in a Roundtable discussion about maintenance contracts for wastewater treatment systems at the 2012 Expo. He'll tell you he came away with practical advice from fellow service providers who work across the country.

"I was able to exchange maintenance agreements with other contractors from the Roundtable discussion. We showed each other what we use for contracts and that was really beneficial," Stephens says. "If somebody else is doing something that's working, why do we have to reinvent the wheel? If someone's already drafted a really good service contract and good marketing — or a clever idea in another state — why not use it?"

Stephens and other contractors at his table explored some of the ideas they've used to promote maintenance contracts among their customers. Then they exchanged business cards and delved deeper into the topic in the weeks following the Expo. Eventually they were faxing their agreements to each other for critique, looking for ways to improve the documents.

The result is improved service for customers through regular system checks, and an improved environment for everyone, Stephens says. He would like to stay on the topic of maintenance at the upcoming Expo.

"All of them have something to share with the group. All perspectives are helpful to come up with a good answer. I think sometimes the guys who don't think they have something to offer, we don't give them the credit they deserve."

Dave Gustafson

"Different people have different perspectives," he says. "I enjoyed being able to talk to companies that were maintaining twice as many systems as I do and those doing a smaller number. It was a really good experience."

Maintenance contracts were one of many timely business topics explored at the 2012 Roundtable discussions. And many more are in the works for 2013. After grabbing a buffet breakfast, participants will choose a topic and start networking. You are invited to move from table to table to discuss a host of topics ranging from providing services to social media marketing.

The Pumper & Cleaner Breakfast Roundtable discussions will be held from 8 to 10 a.m. on Thursday, Feb. 28. Go to www.pumpershow.com for updates and more details.

HOT TOPICS

Dave Gustafson, a University of Minnesota Extension Service engineer and regular speaker at Pumper & Cleaner Expo seminars, led a 2012 Roundtable that veered into a fascinating hot topic: hydrogen sulfide deterioration in concrete tanks.

The discussion wasn't what Gustafson expected, but it brought to light valuable information about an issue that helped inform his table participants from California, Ohio, New Jersey, New York and Virginia.

"Part of the value of the Roundtable discussions is trying to deal with topics that contractors are working on right now. What are the issues we're wrestling with today?" he says. "I was able to talk to contractors about what they were seeing and interpret it from the research standpoint."

Pinpointing important trends in service and maintenance helps participating contractors keep pace with an evolving industry, Gustafson says. As technologies to treat and transport wastewater change and improve, a wellinformed contractor will provide better customer service and become a more effective steward of the environment, he says.

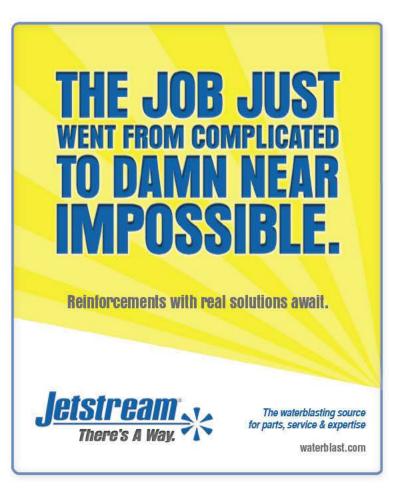
And Gustafson says the networking efforts he begins at the Expo Roundtables continue throughout the year, adding tremendous value to his work and, he hopes, to the advancement of the contractors he's befriended.

Gustafson and other industry educators take part in the Roundtables as moderators, keeping the discussions on topic and adding their expertise wherever possible. As a moderator, Gustafson has a message for all Expo attendees considering taking part in the Roundtables in 2013: The more the merrier.

"Sometimes guys are worried they're not going to have anything to say. But everyone has a perspective. They've all been involved in the industry, so all of them have something to share with the group," Gustafson says. "All perspectives are helpful to come up with a good answer. I think sometimes the guys who don't think they have something to offer, we don't give them the credit they deserve. If you don't come, your reference is missed. We don't have your insights, experiences and understanding." c















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		Torpedo Pulling Nozzle	The pulling champion nozzle, for long runs, hills	2" -24"	14 to 80	1,500	2 lbs.		8	1/2" -3/4" -1"
		Fluke, bottom cleaner	Superior silt & debris removal in an economical package	6" - 36"	16 to 100	1,500	17 lbs.		10	1/2" - 3/4" - 1"
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		Spider 60 & 80 chain cutter	When jets alone cannot clear your roots chains will	6" - 12"	50 to 100	1,500 - 3,000	18 lbs.		6	3/4" - 1"
A	All Jetting Technologies, Inc. 2740 Martin Downs Blvd., Ste. 318, Palm City, FL 34990	1/4" - 28 UNF Sapphire Nozzles & Plugs	Ultra High Pressure waterjetting up to 55,000 PSI	NA	3 to 30	20,000 - 55,000	<1 oz.	1		Sapphire nozzles .003040
All Jetting Technologies, Inc.	770 000 4040 40 770 000 0000	3/8" - 24 UNF Sapphire Nozzles & Plugs	Ultra High Pressure waterjetting up to 55,000 PSI	NA	3 to 30	20,000 - 55,000	<1 oz	1		Sapphire nozzles .003040
See ad page 80		7/16" - 20 UNF Sapphire Nozzles & Plugs	Ultra High Pressure waterjetting up to 55,000 PSI	NA	3 to 30	20,000 - 55,000	<1 oz.	1		Sapphire nozzles .003040
		Long Stern Sapphire Nozzle & Plugs, 60° seating angle	Ultra High Pressure waterjetting up to 55,000 PSI	NA	3 to 30	20,000 - 55,000	<1 oz	1		Sapphire nozzles .003040
		M10 x 1.5 thread - 5mm Hex Key Sapphire Nozzles & Plugs	Ultra High Pressure waterjetting up to 55,000 PSI	NA	3 to 30	20,000 - 55,000	<1 oz.	1		Sapphire nozzles .003040
		5/16" Hex with 3/8" -24 UNF Sapphire Nozzles & Plugs	Ultra High Pressure waterjetting up to 55,000 PSI	NA	3 to 30	20,000 - 55,000	<1 oz	.1		Sapphire nozzles .003040
See ad page 55	Amazing Machinery, Inc. 2160 S Lee Hwy., Cleveland, TN 37311	Deicer/Degreaser Pro	Deicer Degreaser	2" - 16"	2 to 60	2,000 - 5,000	4 oz 6 oz.	3	6	1,8" -1,4" -3,8" -1,2"
	800-504-7435 • 423-472-2527 • (f) 800-504-7436 www.amazingmachinery.com sales@amazingmachinery.com	Spin-Jet Pro	Flushing/Cleaning	2" -16"	2 to 60	2,000 - 5,000	9 oz 12 oz.		4	1,8" -1,4" -3,8" -1,/2"
See ad page 79	Aqua Mole Technologies Inc.	Blind Thruster	General Purpose Cleaning	2" and Up	2.5 to 80	1,500 - 10,000	0.3 oz 1.3 lbs.		4-6 or 8	1/8" - 1"
11.5	11929 Abbey Rd., Unit C, North Royalton, OH 44133 800-457-2782 • 440-237-2984 • (f) 440-237-2987	Corner	Assists Through Corner & Tees	2" and Up	2.5 to 80	1,500 - 10,000	0.3 oz 1.3 lbs.		4	1/8" - 1"
	www.aquamole.com aquamole@sbcglobal.net	Degreaser/De-Icer	Forward Cleaning or Pushing	2" and Up	2.5 to 80	1,500 - 10,000	0.3 oz 1.3 lbs.	3	6	1/8" - 1"
		Flusher	General Purpose Cleaning	2" and Up	2.5 to 80	CONTRACTOR	0.3 oz 1.3 lbs.		6 or 8	1/8" - 1"
		High Thrust Degreaser/De-loer	Forward Cleaning or Pushing	2" and Up	2.5 to 80	1,500 - 10,000	0.3 oz 1.3 lbs.	3	6	1/8" - 1"
		Monster	Dual Angle for Thrust and Flush	2" and Up	2.5 to 80	1,500 - 10,000	0.3 oz 1,3 lbs.	1	6 or 8	1/8" - 1"
		RJ Spinners (Rotor Jet)	360° Cleaning Coverage	3" and Up	2.5 to 60	1,500 - 10,000	0.63 oz 11 oz.		. 4	1/8" - 3/4"
		Super Thruster	Super Max Pulling/Penetrating	2" and Up	2.5 to 18	1,500 - 10,000	0.3 oz 1.5 oz.	Ť	3 to 6	1/8" - 1/2"
		Sweeper	Superior Cleaning	2" and Up	2.5 to 80	1,500 - 10,000	0.3 oz 1,3 lbs.		6 or 8	1/8" - 1"
		Thruster	Max. Pulling to Penetrate Plugged Lines	2" and Up	2.5 to 80	1,500 - 10,000	0.3 oz 1.3 lbs.	1	3-4 or 6	1/8" - 1"

(Nozzle Directory continued)

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Nozzle Company Directory 2012

753	Company	Name of Nozzle	Application	Pipe Diameter	Flow Rate (GPM)	Max Operating Pressure (PSI)	Weight	# of Avail. Front Jets	# of Avail. Rear Jets	Hose Size/ Connecting Thread
	Arthur Products Co. 1140 Industrial Pky., Medina, OH 44256 800-322-0510 • 330-725-4905 • (f) 330-722-2698 www.arthurproducts.com apo@apclsq.com See ad page 45	Round Nose (RN)	Cornering	1" -24"	1.7 to 80	1,200-15,000	varies	# of Jets & Pattern determined by customer	# of Jets & Pattern determined by customer	1/8" - 1"
ARTHUR PRODUCTS CO.		Round Nose Hex (RNH)	Penetration and or Flushing	1" -24"	1.7 to 80	1,200-15,000	varies	# of Jets & Pattern determined by oustomer	#of Jets & Pattern determined by customer	1/8" - 1"
See ad page 45		Evaporator (EV)	De-icer Degreaser	1" - 24"	1.7 to 80	1,200-15,000	varies	# of Jets & Pattern determined by customer	# of Jets & Pattern determined by customer	1/8" - 3/4"
		Impactor (LT)	Heavily Fouled Pipes	1" -24"	1.7 to 80	1,200-15,000	varies	# of Jets & Pattern determined by customer	# of Jets & Patiem determined by customer	1/8" - 3/4"
		PX Revolver (SJ)	Cleaning & Polishing; Full 360° rotation	1" -24"	1.7 to 80	1,200-15,000	varies	# of Jets & Pattern determined by oustomer	determined by customer	1/8" - 1"
		Contractor Series (CS)	Heavy Duty Design for Penetration	6" -24"	6 to 120	1,200-15,000	varies	# of Jets & Pattern determined by customer	# of Jets & Patiem determined by customer	1/2" - 1"
		Hard Hitter (HH)	Surface Cleaning	NA	1.7 to 80	1,200-15,000	varies	1		1/8" - 1"
		Tow Hook (TH)	Cable Towing & Vertical Cleaning	2" - 12"	2 to 80	1,200-10,000	varies		# of Jets & Pattern determined by customer	3/8" - 1/2"
		Cnt-R-KUT Basic Kit	Multi Purpose Tool - Fixed Nozzle System with Integrated Flexible Centering Device	2" - 12"	2.5 to 80	1,200-10,000	varies	1	3	3/8"- 1/2" - 1"
		Cnt-R-KUT Elite Kit	Multi Purpose Chain & Cable Tool 360 degree rotating Nozzle System with Integrated Flexible Centering Device	2" - 12"	4 to 80	2,000-10,000	varies	2	6	3/8"- 1/2" - 1"
See ad page 71	Chempure Products Corp. P0 Box 740, Bolivar, 0H 44612 800-288-7873 ● 330-874-4300 ● (f) 330-874-4448 www.chempure.com lloyd@chempure.com	Root Rat	Root & Encrustation Removal	2" -30"	4 to 150	1,800 - 2,500	0.5 lbs5 lbs.		2-4	1/4" - 1 1/4"
Conned many C4	Cloverleaf Tool Co.	Ultimate Penetrator	Sewer/Storm Pipe Cleaning	12" - 24"	60 to 80	2,500	10 lbs.	1	Rear Jets # of Jets & Patlem determined by oustomer # of Jets & Batlem determined by oustomer # of Jets & Batlem determined by oustomer # of Jets & Batlem determined by oustomer	3/4" - 1 1/4"
See ad page 64	PO Box 1338, Tallevast, FL 34270 800-365-6583 • 941-739-0707 • (f) 941-739-0001 www.cloverleaftool.com sales@cloverleaftool.com	Big Shark/Small Shark	Sewer/Storm Pipe Cleaning	12" - 60"	60 to 80	1,800 - 2,500	30 lbs:/14 lbs.	1	12	3/4" - 1" - 1 1/4"
		Aluminium Grease	Sewer Pipe Cleaning	6" - 12"	40 to 80	1,800 - 2,500	2 lbs.	1	6	3/4" - 1"
		Bomb	Sewer Pipe Cleaning	6" - 15"	60 to 80	1,800 - 2,500	3 lbs.	1	5	1"
		Chisel	Sewer Pipe Cleaning	6" - 15"	60 to 80	1,800 - 2,500	21bs.	1	6	3/4" - 1"
		Truder	Sewer/Storm Pipe Cleaning	12" - 24"	60 to 80	1,800 - 2,500	16 lbs.	1	3	1"
		Floor Cleaner	Sewer/Storm Pipe Cleaning	10" - 48"	60 to 120	1,800 - 3,000	50 lbs.		N 350	3/4" - 1" - 1 1/4"
		Floor Cleaner	Sewer Pipe Cleaning	6" - 12"	16 to 25	2,500 - 5,000	8 lbs.			1/2"
		Traction	Sewer Cleaning	4" - 12"	16 to 25	3,000 - 5,000	1 lb.	1		1/2*
		Bomb	Sewer Cleaning	4" - 12"	16 to 25	3,000 - 5,000	2 lbs.	1	14	1/2"
	Enz USA Inc.	Standard Nozzle	Removal of sludge deposits	6" - 14"	30 to 80	1,500 - 4,000	1.7 lbs.	1	8	1"
nz wsa inc.	1585 Beverly Ct., Unit 115, Aurora, IL 60502	Grenade Nozzle	Clogging and debris	6" - 16"	40 to 80	1,500 - 4,000	10 lbs.	1	10	1"
0 1 50	877-369-8721 • 630-692-7880 • (f) 630-692-7885	Chisel Nozzle	Removal of stone	4" - 12"	35 to 80	1,500 - 4,000	1.1 lbs.	4	6	1"
See ad page 58	www.enzusainc.com sales@enzusainc.com	Rotodrill Nozzle	Gravel and Soft Deposits - Pipe cleaning prior to use of chain scraper	6" - 14"	45 to 80	1,500 - 4,000	1.9 lbs.	1	6	1"
		Flounder	Pentration of completely clogged pipes- opening root masses - opening frozen pipelines	12" - 24"	50 to 80	1,500 - 4,000	27 lbs.		8	1"
		Bulldozer Nozzle	Removal of heavey debris - excellent penetration in blocked and frozen pipes	12" - 35"	40 to 80	1,500 - 4,000	57 lbs.	1	8	1"
		Bulldog Nozzle	Removal of mud	8" -24"	40 to 80	1,500 - 4,000	16 lbs.	1	11	1"
		Turboplus Nozzle	Loose debris in flat pipes and channels	8" - 40"	40 to 80	1,500 - 4,000	32 lbs.			1"
		Turbine Cutter Nozzle	Cleaning of large storm pipe with heavy debris	2.5" - 8"	8 to 50	1,500 - 4,000	2 lbs.			3/8"
		10 200R Rotating Chain Scraper	General Cleaning of Grease and Roots	8" - 16"	50 to 80	1,500 - 4,000	78 lbs.			1/2"
See ad page 31	MyTana Mfg. Co. Inc. 746 Selby Ave., St. Paul, MN 55104	Cornering	Navigating Elbows	1 1/2" - 8"+	2 to 18	1,200 - 4,000	<8 oz.	1		1/8" - 1/2"
1.175		Pentrating Thrust	Paper Products	1 1/2" - 8"+	2 to 18	1,200 - 4,000	<8 oz.	1		1/8" - 1/2"
	800-328-8170 • 651-222-1738 • (f) 651-222-1739 www.mytana.com_idonaldson@mytana.com	Blind Thrust	Pulling Power	1 1/2" - 8"+	2 to 18	1,200 - 4,000	<8 oz.			1/8" - 1/2"
	www.nytana.com juonatusuneentytana.com	Monster Flush	Pulling & Cleaning	11/2" - 8"+	2 to 18	1,200 - 4,000	<8 oz.	1	1000	1/8" - 1/2"
		General	Cleaning	11/2"-8"+	2 to 18	1,200 - 4,000	<8 oz.		1,500	1/8" - 1/2"
		Rotating	Cleaning	1 1/2" - 8"+	2 to 18	1,200 - 4,000	<8 oz.	2		1/8" - 1/2"
		Degreasing/Deloing	Grease & Frozen Lines	11/2" - 8"+	2 to 18	1,200 - 4,000	<8 oz.	3	100	1/8" - 1/2"
		Drop Head	Tough Corners Commercial	1 1/2" - 4"	2 to 2	1,500	<80Z		No.	1/8" - 1/4"
		Jetter Leader	Navigating	3"-8"	4 to 12	3,000	<8 oz.			3/8*

(Nozzle Directory continued)

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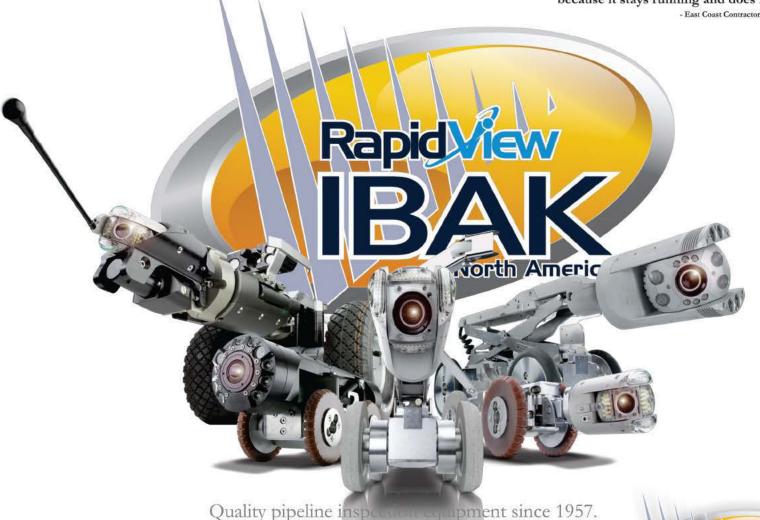
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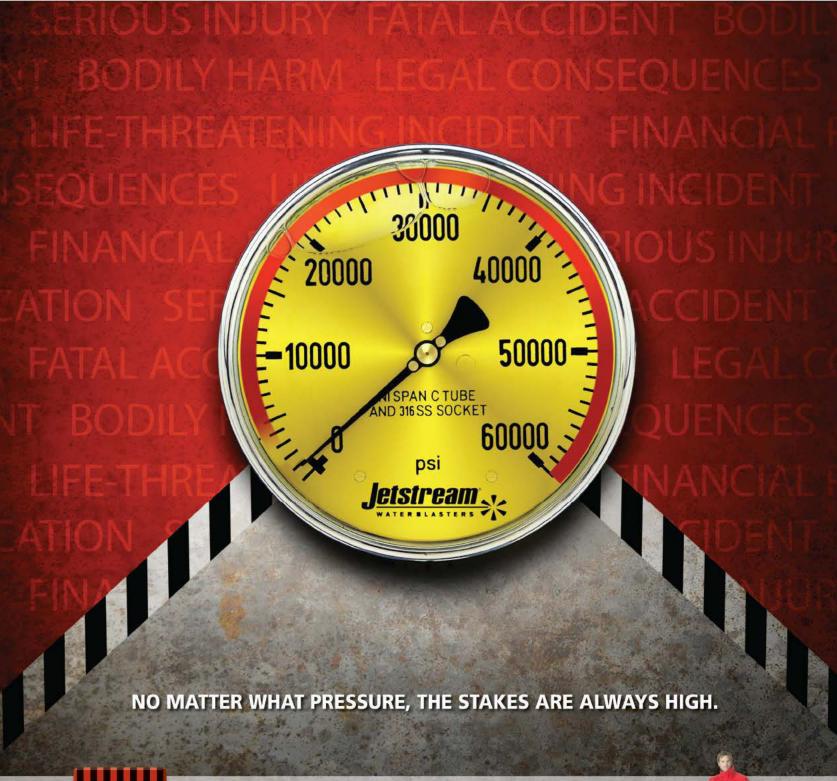
(800)-656-4225

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Nozzle Company Directory 2012

		The state of the s	Nozzie Company Directory								
	Company	Name of Nozzle	Application	Pipe Diameter	Flow Rate (GPM)	Max Operating Pressure (PSI)	Weight	# of Avail. Front Jets	# of Avail. Rear Jets	Hose Size/ Connecting Thread	
See ad page 20 NLB Corp. 29830 Beck Rd., Wixom, MI 48393 248-624-5555 ● (f) 248-624-0908 www.nlbcorp.com nlbmktg@nlbusa.com		Typhoon™ 10	Pipe & Tube Cleaning	5/8" and Up	9 to 20	15,000 to 40,000	2 oz 4 oz.	4 or 5		1/16" -9/16"	
	Typhoon™20	Pipe & Tube Cleaning	6" - 10"	20	24,000	3 lbs.	5		3/4"		
NozzTeq₀	NozzTeq® Inc.	BL Swiper™	Sewer Lines for Reduction of Blown Toilets	6" - 18"	25 to 177	500 - 4,000	3 lbs.		4	1/2"	
See ad page 11	1497 Main St. #354, Dunedin, FL 34698 866-620-5915 • 603-413-6583 • (f) 603-413-6744	C-RAY 200™	Bottom Cleaner Storm or Sewer	8" - 48"	30 to 250	900 - 4,000	22 lbs.	- 1	6	1/2"	
occur page 11	www.nozzteq.com info@nozzteq.com	C-RAY 400™	Storm water and sewer line bottom cleaner	15" and Up	40 to 350	900 - 4,000	42 lbs.	1	8	1*	
		GOBLIN GREASE EATER™	Grease nozzle sewer lines or storm lines	6" - 18"	40 to 350	900 - 4,000	12 lbs.	1	10	1 1/4" - 1 1/2	
		HAMMERHEAD™	Sewer Lines and Storm Lines Debris Remover	6" - 12"	5 to 80	900 - 4,000	3 lbs.		4	1" - 1 1/4"	
		IceBear Penetrating Nozzle	Penetrating	1" and Up	5 to 80	900 - 6,000	1 lb. without sled	3	4-6	3/4" - 1"	
		JAWS**	Sewer Lines and Storm Lines Debris Remover	6" - 24"	30 to 266	900 - 4,000	8 lbs.		6	3/4"	
		Large Spinner	Grease, Small Roots, Debris & buildup; sewer or storm lines	8" - 24"	40 to 250	900 - 4,000	10 lbs.	4	6	3/8"	
		Multi-Global Nozzle	Penetrating Nozzle	2" and Up	5 to 250	900 - 6,000	1 lb. without sled	Up to 4	4-6	3/4"	
		Small Spinner	Grease, Laterals, Small Roots	2" - 8"	18 to 40	900 - 4,000	2 lbs.	2	4	1/2"	
See ad page 92	Spartan Tool	Warrior Scrubber Nozzle	Cleaning Stoppages for distance	3" - 24"	12 to 35	2,000 - 4,000	1.2 oz 4.4 oz.		6	3/8" - 1/2"	
	1506 W Division St., Mendota, IL 61342 800-435-3866 ● 815-539-7411 ● (†) 888-876-2371 www.spartantool.com customerservice@spartantool.com	Warrior Laser Nozzle	Piercing a hole or cutting through obstructions	3" - 24"	12 to 35	2,000 - 4,000	1.2 oz 4.4 oz.	1	6	3/8" - 1/2"	
		Warrior Rocket Nozzle	Cleaning heavily compacted lines of soot	3" - 24"	12 to 18	2,000 - 4,000	9 oz.	1	6	3/8" - 1/2"	
		Warrior Flusher Nozzle	Pushes debris forward	3" - 24"	12 to 18	2,000 - 4,000	8 oz.	4	6	3/8" - 1/2"	
		Soldier Super Spin	360° Cleaning Coverage	3" - 24"	12 to 18	2,000 - 4,000	4.5 oz 1 lb.	2	5	3/8" - 1/2"	
e ads pages 4, 67	StoneAge Tools 466 S Skylane Dr., Durango, CO 81303 866-795-1586 ● 970-259-2869 ● (f) 970-259-2868 www.stoneagetools.com customerservice@stoneagetools.com	Warthog WV-1/4	loe and Grease/Sludge Removal and Descaling	2"-4"	3 to 8	2,000 - 5,000	.45 lbs.	Ť	2	1/4"	
		Warthog WT-3/8-C	Root cutting, Ice and Grease/ Sludge Removal and Descaling	3" -6"	5 to 12	2,000 - 5,000	1.2 lbs.	1	2	1/8" - 3/8"	
		Warthog WS-1/2	Root cutting, Ice and Grease/ Sludge Removal and Descaling	4" - 8"	8 to 20	1,500 - 5,000	2.95 lbs.	1	2	1/2"	
		Warthog WH-1/2	Root cutting, Ice and Grease/ Sludge Removal and Descaling	6" -8"	10 to 50	1,500 - 8,000	4.7 lbs.	1	2	1/2"	
		Warthog WHP-3/4 Puller	Root cutting, Ice and Grease/ Sludge Removal and Descaling (Excellent for longer runs or inclines)	6" - 18"	15 to 50	1,500 - 8,000	4.7 lbs.	Ť	2	1/2"	
		Warthog WG-1 Classic	Root cutting, Ice and Grease/ Sludge Removal and Descaling	8" - 36"	50 to 80	1,500 - 5,000	10.9 lbs.	1	4	1/2"	
		Warthog WGP-1 Puller	Root cutting, Ice and Grease/ Sludge Removal and Descaling (Excellent for longer runs or inclines)	8" - 36"	50 to 80	1,500 - 5,000	10.9 lbs.	1	4	3/4"	
		Warthog WD 1-1/4	Root cutting, Ice and Grease/ Sludge Removal and Descaling	8" - 36"	80 to 120	1,500 - 8,000	11 lbs.	1	6	3/4"	
See ad page 13	US Jetting, LLC	RDP (Rapid Power Delivery)	General all purpose cleaning nozzle	3"-18"	10 to 36	10,000	1 lb.	1-4	6	3/8" - 1"	
W 2	800-538-8464 • 770-740-9917 • (f) 770-740-0297 www.usjetting.com sales@usjetting.com	RPD Chisel and Egg Style	Forward push when working down stream with the flow	2"-18"	10 to 65	5,000	1 - 3 lbs.	1-4	6-12	3/8'-1"	
		Standard Drain Jet	De loing or hard blockage penetration	3"-8"	6 to 18	5,000	6 oz.	1	6	1/2"	
		Ball Jets	Used in damaged pipes with offset joints	1"-8"	4 to 25	5,000	6 oz 1 lb.	1	3-6	1/8" - 1/2"	
		Dragon Jet	Large diameter storm drain culvert cleaning	10" - 48"	18 to 80	4,000	50 lbs.		4	1/2" - 1"	
		Water Lubricated Rotary Nozzle	Grease and Root Removal	4"-12"	10 to 25	10,000	3 lbs.	1	2		
		Controlled Rotation Nozzle	Grease, roots and hard scale	4"-18"	6 to 80	8,000	5 - 20 lbs.	1	2-4		
		Monro Oribital Drain Nozzle	Cutting obstacles out of pipes	4"-12"	10 to 30	10,000	5 lbs.	1	3		
		Vac Pump	Venturi vac pump		10 to 25	3,000	40 lbs.		6		

(Nozzle Directory continued)





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Nozzle Company Directory 2012

Company	Name of Nozzle	Application	Pipe Diameter	Flow Rate (GPM)	Max Operating Pressure (PSI)	Weight	# of Avail. Front Jets	# of Avail. Rear Jets	Hose Size/ Connecting Thread
USB - Sewer Equipment Corporation 1700 Enterprise Way, Sta. 116, Marietta, GA 30067 866-408-2814 ● 770-984-8880 ● (f) 770-984-2802 www.usbsec.com info@usbsec.com	Flying Nozzle - 3D	Preventative Maintenance in hilly difficult terrain; Silt, Sand & Large Debris Removal	4" - 24"	13 to 120	2,000 - 4,000	1/2/5/12 lbs.		6/8/8/8	1/2" - 1 1/4"
	Cleaning Nozzle - 3D	General Cleaning of Sand, Silt, Mud & Grease	4" - 15"	13 to 80	2,000 - 4,000	1/2/5/6 lbs.	1	6/8/8/10	1/2" - 1"
	Pipe Wolf	Total obstructions & Blockages caused by Roots, Grease & Organic Material	4" - 24"	12 to 120	2,000 - 4,000	1/4/4/12 lbs.	3	6	1/2" - 1 1/4"
	Primus Nozzle	Grease, Scale, Crusts & Roots	4" - 24"	14 to 120	2,000 - 4,000	4/6/7/10 lbs.	5/6/6/6	3/4/6/6	1/2" - 1 1/4"
	Superior Penetrator Nozzle - 3D	Pipe lines w/off-sets, drop joints, voids, etc.	6" - 15"	30 to 120	2,000 - 3,000	10 lbs.	1	8	3/4" - 1 1/4"
	Dredger Nozzle	Removal of heavy solids, silt, sand & sludge at the bottom of pipe	8" - 96"	40 to 120	2,000 - 3,000	22/40/56/59 lbs.		6/8/10/14	3/4" - 1 1/4"
	Antiblaster Nozzle - 3D	Shallow sewer lines, Sewer lines close to homes	6" - 12"	30 to 80	2,000 - 3,000	4 lbs.	1	8	3/4" - 1"
	Ulitmate Chisel Nozzle	Total obstructions, blockages & pipe deformations	6" - 24"	50	2,000 - 3,000	5 1/2 lbs.	4	6	3/4" - 1 1/4"
	Grand Slam - 3D	General Sewer Cleaning	6" - 15"	50 to 120	2,000 - 3,000	13 lbs.		8	3/4" - 1 1/4"
	Super Slam - 3D	General Cleaning in large sewer/storm lines	10" - 40"	50 to 120	2,000 - 3,000	19 lbs.		12	3/4" - 1 1/4"
	USB - Sewer Equipment Corporation 1700 Enterprise Way, Ste. 116, Marietta, GA 30067 866-408-2814 • 770-984-8880 • (f) 770-984-2802	USB - Sewer Equipment Corporation 1700 Enterprise Way, Ste. 116, Marietta, GA 30067 866-408-2814 ◆ 770-984-8880 ◆ (f) 770-984-2802 www.usbsec.com info@usbsec.com Pipe Wolf Primus Nozzle Superior Penetrator Nozzle - 3D Dredger Nozzle Antiblaster Nozzle - 3D Ulitmate Chisel Nozzle Grand Slam - 3D	USB - Sewer Equipment Corporation 1700 Enterprise Way, Ste. 116, Marietta, GA 30067 866-408-2814 ● 770-984-8880 ● (f) 770-984-2802 www.usbsec.com info@usbsec.com Flying Nozzle - 3D Cleaning Nozzle - 3D Cleaning Nozzle - 3D Silt, Mud & Grease Pipe Wolf Total obstructions & Blockages caused by Roots, Grease & Organic Material Primus Nozzle Superior Penetrator Nozzle - 3D Dredger Nozzle Antiblaster Nozzle - 3D Shallow sewer lines, Sewer lines close to hornes Ulitmate Chisel Nozzle Greand Slam - 3D General Cleaning in large General Cleaning in large	USB - Sewer Equipment Corporation 1700 Enterprise Way, Ste. 116, Marietta, GA 30067 866-408-2814 • 770-984-8880 • (f) 770-984-2802 www.usbsec.com info@usbsec.com Pipe Wolf Sit, Mud & Grease Pipe Wolf Crease & Organic Material Primus Nozzle Grease, Scale, Crusts & Roots 4" - 24" Superior Penetrator Nozzle - 3D Diedger Nozzle - 3D Antiblaster Nozzle - 3D Shallow sewer lines, Sewer lines, Sewer lines close to homes Ultimate Chisel Nozzle Grand Slam - 3D General Cleaning in large 6" - 15" Super Slam - 3D General Cleaning in large 10" - 40"	USB - Sewer Equipment Corporation 1700 Enterprise Way, Ste. 116, Marietta, GA 30067 866-408-2814 • 770-984-8880 • (f) 770-984-2802 www.usbsec.com info@usbsec.com Pipe Wolf Total obstructions & Blockages caused by Roots, Grease & Organic Material Primus Nozzle Grease, Scale, Crusts & Roots 4' - 24" 14 to 120 Superior Penetrator Nozzle - 3D Dredger Nozzle Application Diameter (GPM) Preventative Maintenance in hilly difficult terrain; Silt, Sand & Large Debris Removal & 4' - 24" 13 to 120 General Cleaning of Sand, Silt, Mud & Grease & Organic Material Primus Nozzle Grease, Scale, Crusts & Roots 4' - 24" 14 to 120 Superior Penetrator Nozzle - 3D Dredger Nozzle Antiblaster Nozzle - 3D Shallow sewer lines, Sewer lines close to hornes Ulitmate Chisel Nozzle Total obstructions, blockages & pipe deformations Grand Slam - 3D General Cleaning in large 10" - 40" 50 to 120	Value	Value	Value of Nozzle	Vision V

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Distributors Directory 2012

	Company	Nozzie Lines
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See ad page 55	Amazing Machinery, Inc. 2160 S Lee Hwy., Cleveland, TN 37311 800-504-7435 ● 423-472-2527 ● (f) 800-504-7436 www.amazingmachinery.com sales@amazingmachinery.com	Arthur Products
See ad page 17	Harben, Inc. PO Box 2250, Cumming, GA 30041 800-327-5387 ● 770-889-9535 ● (f) 770-887-9411 www.harben.com brian.gilbert@harben.com	StoneAge, Enz USA, KEG
See ad page 77	Jetter Depot 745 Atlanta Rd., Ste. 207, Cumming, GA 30040 (f) 678-807-2944 sales@jetterdepot.com www.jetterdepot.com	Nuova Contec
See ad page 84	MTech 7401 First PI., Cleveland, OH 44146 800-362-0240 ● 440-646-0996 ● (f) 440-646-9953 sales@mtechcompany.com www.mtechcompany.com	StoneAge, Advanced (Lindhorst) Workhorse, Shamrock, UEMSI
See ad page 52	Pat's Pump & Blower 630 W Church St., Orlando, FL 32805 800-359-7867 ◆ 407-841-7867 ◆ (f) 407-648-2096 www.patspump.com patspump@aol.com	Shamrock, USB - Sewer Equipment Corporation, Aquatech, Aqua Mole, WorldTec, Sewer Equipment
See ad page 75	PrimeLine Products, Inc. 309 Altamonte Commerce Blvd., Ste. 1518 Altamonte Springs, FL 32714 877-409-7888 • 407-772-8131 • (f) 407-786-8131 www.primelineproducts.com andy@prime-line.net	NozzTeq
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Plan Ahead

BUYOUT AGREEMENTS CAN BE A SAFETY NET FOR YOU, YOUR BUSINESS AND YOUR FAMILY

BY FRED S. STEINGOLD



Fred S. Stelingold practices law in Ann Aribor, Mich. He is the author of Legal Guide for Starting and Running a Small Business and The Employer's Legal Handbook, published by Nolo. Legal strategies may vary depending on the state in which you live and the specifics of your situation. See your lawyer for legal advice.

es, breaking up is hard to do. But planning ahead can ease the pain. If you're in business with others, chances are the current co-ownership won't last forever. Lots of things can happen. You or a co-owner

- · Decide to move out of state to pursue a new line of work
- · Become physically or mentally disabled or even die
- · Seek to buy out a co-owner's interest in the business, or
- Want to sell to an outsider

What happens then? Will the transition proceed smoothly and fairly? Or will there be discord and possibly litigation? The answer may depend on how well you've planned for the future.

Certainly, during the sunny, optimistic days when you're putting the business together, it's hard to focus on breaking up. And it's equally difficult when the business is humming merrily along. But planning ahead can save a ton of grief for all involved.

To avoid anguishing problems, it makes sense for every business with two or more owners to put together a buyout agreement. This is true whether your business is set up as a partnership, a corporation or a limited liability company. percent of the corporate stock. They don't foresee problems down the road so they don't bother with a buy-sell agreement. A few years later, Joe and Cindy have a serious disagreement over how to expand the business. To avoid further hassles, Joe sells his shares to Albert, whom Cindy has never met. The two quickly reach an impasse on management issues and the business comes to a standstill.

Scenario #2: Joe and Cindy form a small corporation – and they wisely create a buyout agreement to deal with what happens if one of them wants to leave the business. A few years later when they disagree on how to expand, Joe decides to sell his shares. Albert offers to buy the shares for \$10 each. The buysell agreement requires Joe to offer the shares to Cindy at the same price. Rather than share control of the business with a stranger, Cindy buys Joe's shares. The business continues to run smoothly and prosper.

A GUARANTEED BUYER

Laurence and Mancuso also elaborate on another way a buyout agreement can help you:

"If you're moving out of state and want to sell your ownership interest, an

agreement can compel the other owners to buy it from you - in effect providing a market for that ownership interest where one might not naturally exist.

"If you and your co-owners don't make that kind of agreement, there's no guarantee that you could ever get cash for your interest."

And a buyout agreement can also guarantee that your spouse and children get fairly compensated for your business interest if you die. Again, let's consider two scenarios:

Scenario #1: Norm, Betty and Phil form a small corporation, each receiving one-third of the shares. They neglect to sign a buy-sell agreement. Three years later, Norm dies unexpectedly. His wife and two children inherit his shares. They want to sell the shares to raise money for college and other living expenses but there's no real market out there. Betty and Phil buy the shares for a pittance.

Scenario #2: Norm, Betty and Phil set up their corporation and plan for the future by signing a buyout agreement. When Norm dies unexpectedly, the corporation is required to buy his shares from his wife and children. Under the formula set up in the buyout agreement, the corporation pays a total of \$250,000 in five annual installments of \$50,000 each. Norm's family is able live more comfortably.

As you can see, not only can a buyout agreement guarantee a buyer for a departing owner's interest; it can also provide a price (or a price formula) and a time schedule for payment. Sometimes the buyout of a deceased owner is funded by life insurance that the business pays for

Certainly, during the sunny, optimistic days when you're putting the business together, it's hard to focus on breaking up. And it's equally difficult when the business is humming merrily along. But planning ahead can save a ton of grief for all involved.

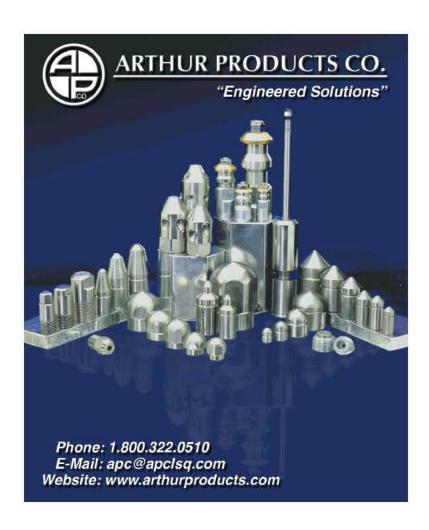
So what exactly is a buyout agreement? It's a binding contract that controls the buying and selling of ownership interests in your business. Importantly, it makes sure that you and your co-owners aren't forced to work with strangers or other people you won't get along with. It also helps makes sure that if a coowner leaves the business, he or she will receive a reasonable cash settlement. Or if a co-owner dies, his or her heirs will be paid fairly.

RETAINING CONTROL OF A BUSINESS

Two lawyers - Bethany Laurence and Anthony Mancuso - have written a superb book called Business Buyout Agreements. In it, they point out that the main purpose of a buy-sell agreement is to protect the rights of the remaining business owners when one owner departs, either voluntarily or involuntarily.

"The remaining owners," they say, "are allowed to decide whether an interest can be sold to an outsider or whether an ex-spouse or an heir should be allowed to keep their newly gained ownership interest."

To better understand this point, consider the following scenarios. Scenario #1: Joe and Cindy form a small corporation. Each receives 50





TIMING IS CRUCIAL

You want to create your buyout agreement before it's needed - especially before you know who will be most affected by it. That helps assure the agreement will be fair and reasonable. Ideally, you'd like to get the job done when you form your business, but it can be done later.

If you have a partnership, you can put the buyout terms into your written partnership agreement. If you have a corporation, you can put the buyout language in a pre-incorporation agreement or shareholder's agreement - or a separate buyout document. With a limited liability company, the logical place is the operating agreement.

The Laurence-Mancuso book is a great starting point for putting together a buyout agreement since it contains sample forms and digital files. Before the agreement gets signed, however, it's smart to have a lawyer look it over.



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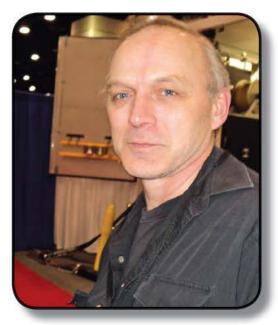
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National Association of Wastewater Technicians

8 a.m.

Introduction to Pressure Distribution

9:30 a.m.

Designing Systems, Boundaries and Barriers from a Soils Perspective

11 a.m. 1:30 p.m.

Pump Choices and Settings: Decisions for Proper Operation Operation and Maintenance of Pressure Distribution Laterals

3 p.m.

Installing with Management in Mind: How to Get the Most out of Your System

4:30 p.m.

Design and Maintenance of Grease Interceptors

SSCSC

Southern Section Collection Systems Committee

8 a.m.

Seven Powerful Tools for CCTV Inspection Perfection

9:30 a.m.

Easements — A Collection System Maintenance Nightmare

11 a.m.

Nozzle Science — The Next Generation of Tier 3 Nozzles and Beyond

1:30 p.m.

Pass or Fail - Is Your Company Going To Make It? How to Ensure Success

3 p.m.

Social Media and Web-Based Promotion: Is it Right for Your Business?

4:30 p.m.

Pipeline Relining and Rehabilitation Solutions

NOWRA

National Onsite Wastewater Recycling Association

8 a.m.

Time Dosing ... Why? How? And How Much?

9:30 a.m.

Loading Rates — How Much Can the Soil Take?

11 a.m.

Troubleshooting Pumps, Floats and Panels

1:30 p.m.

The Dirty Dozen — Toxins That Kill Septics

3 p.m.

How Installers Can Use the Poor Economy to Increase Profits

4:30 p.m.

Are Seepage Pits Really Bad?

8 a.m.

Designing Drip Dispersal Systems

9:30 a.m.

Soil Erosion Control During and After Septic System Installation

11 a.m.

Decentralized Wastewater Collection System Maintenance

NOWRA Room 2

Independent Residential Service Contractors Association

1:30 p.m.

IEXSTAR

The Art and Science of Business Management

3 p.m.

The Business of Contracting

National Environmental Health Association

8 a.m.

What Makes a Professional in Onsite Wastewater Systems?

9:30 a.m.

Part One: The Science and Engineering of Onsite Wastewater Treatment Part Two: The Science and Engineering of Onsite Wastewater Treatment

11 a.m.

Education and Training: Professionalization of the Practitioners

1:30 p.m.

3 p.m. Management Models: Management and Becoming a Management Entity

4:30 p.m.

The Future of the Onsite Wastewater Industry: How to Make it Work for You!

NASSCO

National Association of Sewer Service Companies

8 a.m.

Ultraviolet Manhole Rehabilitation

9:30 a.m.

Convey Your Stormwater and Plug Your Holes!

11 a.m.

Jet Up! Sewer and Storm Water Cleaning

1:30 p.m.

Rethinking Collection Maintenance with Sewer Line Rapid Assessment Tool or SL-RAT

3 p.m.

4:30 p.m.

Case Study of Cleaning Large Diameter Sanitary Sewers and Siphons Pipeline Assessment Certification Program (PACP) 2013 Update Workshop

Business Coach

8 a.m. - 5:30 p.m.

2013 - Your Best Year Ever

WaterJet Technology Association

8 a.m.

Safety and Efficiency — You Don't Have to Choose!

9:30 a.m.

Selecting the Best Jetting Tip Doesn't Have to Be Scary

11 a.m.

Hydroexcavation — The Non-Destructive Solution

Vacuum System Information

1:30 p.m.

Understanding the Power: Physics of Vacuum and How it Works

PSA

Portable Sanitation Association International

4:30 p.m.

GAP: Good Agricultural Practices



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TUESDAY TRACKS

FEBRUARY 26TH, 2013

TRANSPORTATION AND LAND APPLICATION

8 a.m. Driver Compliance and Certification: How to Meet DOT Requirements
9:30 a.m. Staying in Compliance with 503 Regulations for Land Application
11 a.m. Land Application: Case Study of a Long-Term Operation

INDUSTRY SAFETY

8 a.m. One Piece Nozzles Enhance Performance and Safety
9:30 a.m. Confined Space Entry Permit and Equipment Review
11 a.m. Utility Line Locating

SSCSC

8 a.m. Making Emergency Response Your Business

9:30 a.m. How to Protect and Maintain Sewer Hose From Mini Jetters to Combination Units

11 a.m. How to be Successful in the Cleaning/CCTV Business

GENERAL BUSINESS

8 a.m. New Untopped Techniques to Capture Today's Customers
9:30 a.m. 10 Steps to Marketing Success
11 a.m. Cloud Computing for Small Business and the Field Service Industry

SEWER COLLECTION & REHABILITATION

8 a.m. Chemical Grouts and Grouting Methods
9:30 a.m. Watch Your Assets — Remote Monitoring Can Save You Big Bucks
11 a.m. Lateral Connection Rehabilitation: Biggest Bang for the Rehabilitation Buck

SPANISH/ESPANO!

8 a.m. Floods in Mexico City
9:30 a.m. Best Practices for Working in Confined Spaces
11 a.m. How to Overcome the Difficulties of Doing Business in South America

WEDNESDAY TRACKS

FEBRUARY 27TH, 2013

SEWER COLLECTION & REHABILITATION

8 a.m. Cash for Compliance: The New Boom in Home Sewer Replacement
9:30 a.m. Trenchless Point Repairs, a Low Cost Permanent Solution
11 a.m. Penn State University Performs Manhole-to-Manhole Lining In-House

GAS, OIL & MINING

8 a.m. How to Decide What Dewatering Option is Best for You
9:30 a.m. Blower 101: The Basic Operation of the Positive Displacement Blower
11 a.m. Principles and Equipment of Hydro-Pneumatic Vacuum Excavation

GENERAL BUSINESS

8 a.m. Save Money — Move Your Business to the Cloud

9:30 a.m. Morally Bankrupt

11 a.m. Measuring Success Matters: Your Ads, Your Agents, Your Technicians

MUNICIPAL

8 a.m. Benefits of Digital Side Scanning Inspection Camera Systems
9:30 a.m. Application for Sewer and Storm Nozzles
11 a.m. Grinder Pumps & Application

PORTABLE LIQUID WASTE

8 a.m. A View from the Receiving End: Regulatory Challenges in FOG Programs
11 a.m. Now You Smell Me, Now You Don't: Deodorants

NEW TECHNOLOGY

8 a.m. Improving Safety and Technology with Wireless Technology

9:30 a.m. New Technology for Locating Sewer Line Leaks

11 a.m. Solve Decentralized System Malfunction Issues and Site Challenges

ADVANCED INSTALLER COURSE

8 a.m. - 5 p.m.

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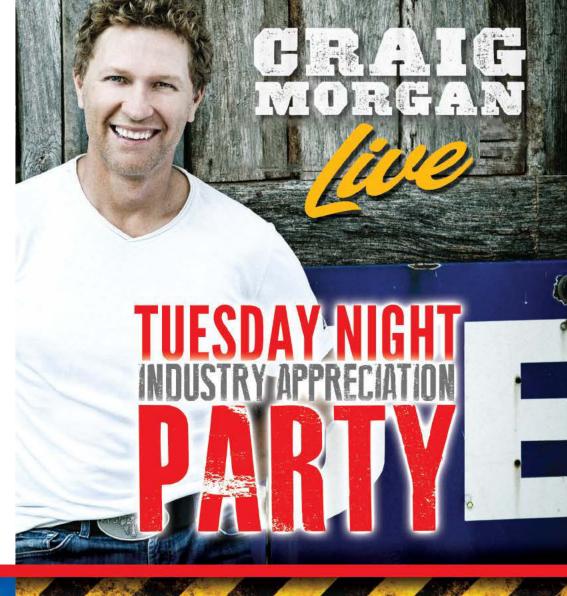
Tuesday, February 26th

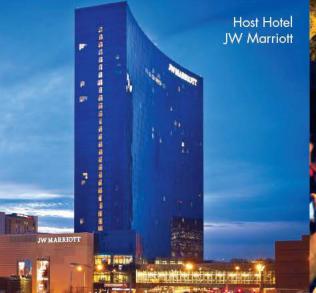
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ABOUT THE AUTHOR Henry Morgan Is business development manager of Brigade Electronics Inc., based in New York City.

Alarms Without Noise

TODAY'S TECHNOLOGY CAN ALERT PEOPLE ON WORK SITES TO BACKING MACHINERY WITHOUT WAKING UP THE WHOLE NEIGHBORHOOD

BY HENRY MORGAN

- it is a safety concern and health hazard. No one can turn the daily noise down with a remote control. The noise barriers between city streets, busy job sites and public

cross the United States, noise pollution is not just an inconvenience

spaces have virtually dissolved. A common noise in urban and some rural settings comes from backup alarms on heavy machinery.

Today, technology offers alternatives to these alarms. One such technology replaces the traditional beeping noise with a sound that covers a broad band of frequencies. Workers on the job site can hear the alarm when danger is imminent, yet the sound is largely inaudible outside the work zone.



COMMUNITY CONCERNS

Many accidents are caused by smaller machines in environments where workers are thought to be most safe. Many involve backing vehicles - their beeper alarms sounding at full volume. These alarms, producing sound in a narrow band of frequencies, have at least three drawbacks:

- · Those who hear them cannot easily perceive the direction from which the danger is coming.
- · The sound becomes ineffective because most of the time when people hear it, no danger is imminent (think of the boy crying wolf).
- They cause noise pollution.

Additionally, long-term overexposure to narrowband alarm sounds can lead to hearing damage. Alarms also can be irritants to communities and neighborhoods. Growing numbers of cities and villages are adopting noise ordinances to protect not just residential areas but sensitive facilities like schools, hospitals and nursing homes.

A DIFFERENT SOUND

Where vehicle backup warnings are concerned, broadband alarms have proven effective in reducing noise pollution and enhancing worker safety. These alarms are becoming a viable choice for a wide variety of applications.

The devices are designed to keep the alarm noise on the site, and ensure a fast and appropriate response from those close by. The key words here are locatability and frequency. Broadband sound is more effective at alerting people to imminent danger because the person who hears it can instantly pinpoint the direction of its source.

One might question whether people on work sites would hear such a sound above the roar of engines and other work site noise. Experience definitively shows they do.

Yet the sound is heard only in and around the immediate danger area. These multi-frequency alarms span the sound spectrum from 400 Hz to over 10,000 Hz, avoiding the irritation and potential ear damage caused by shrill, narrowband sounds.

A broadband backup alarm makes a repetitive sound, but instead of beeping, it issues a shhhh ... shhhh ... shhhh. One might question whether people on work sites would hear such a sound above the roar of engines and other work site noise. Experience definitively shows they do.

HEAR, LOOK, LEARN

A logical question is whether workers accustomed to beeping alarms would recognize the broadband sound without training. In reality, some organizations use broadband alarms only on controlled sites where workers can be trained. However, most users in the United Kingdom have found that, because the sound is distinctive and its source readily located, workers on first exposure have an instant "hear, look, learn" reaction. The same is true of work site passers-by.

One broadband alarm was professionally recognized by the Society of Automotive Engineers (SAE) with the Noise Management Innovations prize at the 2005 Environmental Excellence in Transportation Awards.

The citation stated, "Broadband sound backup alarms provide a massive reduction in the noise pollution caused by conventional narrowband backup alarms, together with providing a safer working environment."

The wider implications are evident: While narrowband alarms are designed to improve safety, they can actually contribute to danger by causing confusion and stress. In contrast, broadband alarms are locatable and are heard only in and around the immediate danger area. This improves response and reduces noise complaints.

As industries take notice of the benefits of broadband backup alarms, the results could be greater workplace safety and less noise pollution. c



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Web Wise

UNDERSTAND YOUR NEEDS AND THE ASSOCIATED COSTS BEFORE LAUNCHING OR UPDATING YOUR COMPANY'S WEBSITE

BY DAVID STEINKRAUS

hether you've been in business for a while or are just starting, you need to get information about your services out in front of potential customers. In the modern world, that means having an Internet presence. You may be in the Yellow Pages and generating some word-of-mouth referrals, but customers today are more likely to find you through an Internet search. If you're not online in some way, you won't receive that call.

Websites are more than just a route for people to find you. It's easy to tell people about new services, display photos of what you do, publish customer testimonials, provide customers with an easy path to your email, and even allow people to book their own appointments or pay for supplies or services.

Getting on the Internet is not something you have to lose sleep over. There are tools and other professionals at your disposal, but there are also traps to avoid.

GO IT ALONE

There are two primary ways to put your business on the Internet: do it yourself or hire a professional.

DIY websites operate on a simple concept: You pay an Internet hosting company a monthly fee, typically \$5 to \$16. In return, you may store a certain number of pages on their servers. These companies typically also provide software templates, which accept your specific information.

A DESIGNER CAN PRODUCE A MORE COMPLEX SITE. YOU PAY MORE. BUT YOU GET A CUSTOMIZED PRODUCT.

A basic site produced by a professional service may cost a few hundred to a few thousand dollars. Greater complexity raises the cost.

If you have prepared a Christmas card or brochure using a template in some writing program like Microsoft Word, you already know how DIY Web design software works. You put your words in boxes, upload photos, and the software drops your pieces into a predefined layout. Then it generates the lines of computer code that tell someone's Web browser - Internet Explorer, Firefox or Chrome, for example - how to display the website on a computer screen.

If you're on an extremely tight budget and all you want is some sort of Internet presence, these DIY sites may do the job for you, says Daryl Schmucker, who runs Noble Webworks in Bradenton, Fla. He suggests two that produce decent results: weebly.com and squarespace.com.

To a degree, Schmucker competes with the DIY services he mentioned. "In another way I'm not because a business owner typically doesn't have time to put a nice website together and manage it," he says.

So for DIY, price is the good news. Now for the bad:

Some of the DIY software simply doesn't work. Websites are blank or information is missing, and the do-it-yourselfer is unlikely to know how to fix this even if he knows how to test his pages with one of the free tools provided by the World Wide Web Consortium (www.w3.org), which sets Internet standards.

Next, these sites are basic. They won't let your customers book appointments, for example. And there is no individuality. Your site will look like any other company's that used the same template.

DIY sites also don't do any search engine optimization. That is the process of inserting keywords in a website so it is more likely to be among the top results in an Internet search.

PAY FOR HELP

A designer can produce a more complex site. You pay more, but you get a customized product. A basic site produced by a professional service may cost a few hundred to a few thousand dollars. Greater complexity raises the cost.

In his market, Schmucker says, adding the capability to accept payments (called e-commerce) will approximately double the price of a website because there is a great deal of work involved in setting up the payment software and establishing secure connections to a business account. Another costly complexity is installing software to integrate appointments booked by customers on a website with appointments booked by the staff in your office.

If you decide to consult a designer, go in prepared. Do some exploring and come up with examples of websites you like. Also have an idea of how many and what types of pages you need. For example, you may want a page for photos, a page on which customers can find your contact information, and a page of customer testimonials.

Social media - services such as Twitter and Facebook - are another option to consider. They are an outgrowth of time-honored business practices: maintaining relationships with customers. Some website designers set up Facebook pages and Twitter accounts for their clients, and using either an inhouse or freelance writer, will see to it that those pages are regularly updated with news or articles about the market. Search engines like Google like sites with high-quality, frequent updates, and that's difficult for a small-business person do while running the business.

GET IT IN WRITING

Whatever services you decide on, make sure everything is spelled out in a contract. Without one, there are simply too many chances for financial misunderstanding.



The contract should specify the services you are buying, such as the number and types of pages on the site; complex services such as scheduling or e-commerce; who is responsible for providing the words and photos to be used on the site; who will maintain the site (solve problems and update the information), and whether there is any extra or ongoing charge for that.

The contract should also provide for the immediate or eventual transfer of intellectual property to you, the business owner. That means the rights to the information published on the site and to any custom software or code created to make the site work. Do this and it's like a truck you own: You may do as you please with the website information including having someone else work on it later. Fail to do this, and it's like someone else owning your truck: You can use it but only in ways the owner allows.

Schmucker offers one other piece of advice: Register your own domain name or Internet address. Don't let your designer handle that detail and maintain any residual rights to the name. Like the name of your business, that domain name is an asset, Schmucker says. Register it yourself and you cannot be held hostage should some dispute arise between you and a Web designer.

ABOUT THE AUTHOR David Steinkraus is a freelance bushess writer in Racine, Wis.

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SLIPLINING ELIMINATES WATER LOSS AND RESTORES PRESSURE AND FLOW IN HEATING SYSTEM FOR A MILITARY PREP SCHOOL AND JUNIOR COLLEGE IN NEW MEXICO

BY SCOTTIE DAYTON

he heating system at the New Mexico Military Institute in Roswell was losing significant water, but maintenance providers had no idea where it was going on the 300-acre campus. Rust also clogged the system's water filters occasionally.

The institute hired CuraFlo Services in Mesa, Ariz., to clean and line the 1/2- to 3-inch pipes inside the buildings. CuraFlo subcontracted Triton Lining Technologies in Indianapolis, Ind., to clean and coat the exterior 6-inch ID steel supply and return pipes with a corrosion-preventive spray epoxy. When the Triton crew excavated at predetermined locations, they discovered the pipes were too corroded to rehabilitate as planned.

Open-cutting would disrupt the campus, take too long, and cost more than the allocated budget. "Our challenge was to find a solution and complete the project within the original budget," says company founder Gary Sorohan. "The obvious answer was sliplining, but we couldn't locate a North American

product that would withstand temperatures of 180 degrees Fahrenheit and operating pressures of 40 to 45 psi."

(continued)

tough job

PROJECT: Replace heating pipes with minimum

disturbance to classes or campus

CUSTOMER: New Mexico Military Institute, Roswell, N.M.

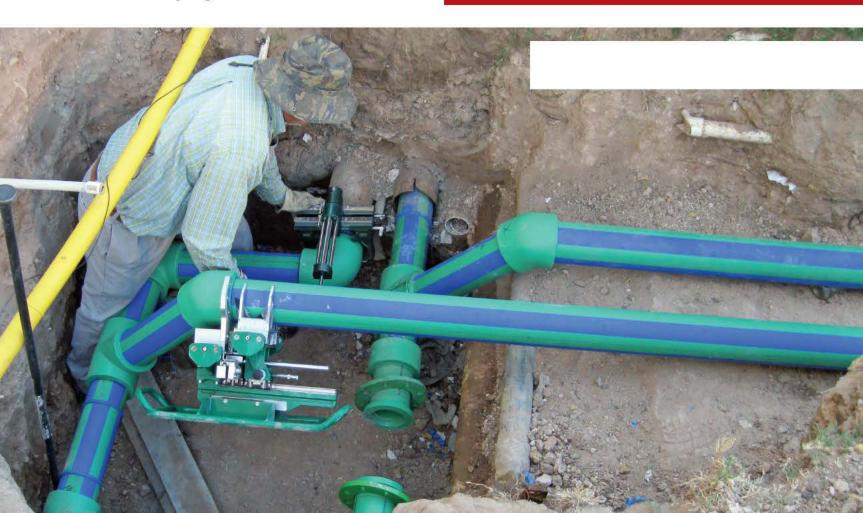
CONTRACTOR: Triton Lining Technologies, Indianapolis, Ind.

EQUIPMENT: Climatherm composite pipe

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RESULTS: Heating system restored and leaks eliminated





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RELAX AND LET THE GAMAJET BLAST DEBRIS (INCLUDING GREASE)



ABOVE: A winch system pulls pairs of clamped custom-made drag scrapers into heating pipes to clean them in Roswell, N.M. Inset: Double sets of squeegee plugs remove tailings. RIGHT: Fusing the 13-foot-long sticks of Climatherm SDR 11 composite pipe from Aquatherm left a weld bead. Workers removed the interior bead using a long pole with a spring-loaded blade that shaved off and extracted the bead. The light blue ring on the end of the pipe is the thermal liner.

It took almost a year before Sorohan found Climatherm SDR 11 composite pipe from Aquatherm (supplied by Ferguson, Indianapolis, Ind.) Made of Fusiolen PP-R, a polypropylene material, the pipe was rated at 180 degrees with a working pressure of 50 psi. After half a day's training on how to butt- and socket-fuse the product, the team rehabilitated the heating system in two phases separated by winter.

CAUTIOUS CLEANING

The original pipes, wrapped in Styrofoam and cellophane, lay side-by-side in trenches 3 to 6 feet deep. The insulation and dry ground absorbed thousands of gallons of water escaping through the perforated lines.

Due to the close proximity of numerous other utilities, pipe bursting was not an option. "Vice president of facilities David West also was concerned about the number of long open trenches required by other processes," says Sorohan, who proposed inserting a 5-inch OD pipe with 4-inch ID. An engineer at the institute determined that the hydraulic efficiency of the smaller pipe would supply enough water to run the system.

As-built plans correctly identified the location of tees and 90-degree bends in all but two instances. The team excavated 5- by 7-foot-long access pits at these points for the Triton winches that pulled the cleaning tools and replacement pipe. They also excavated slip trenches at insert points to pull in the pipe without bending it.

Pairs of clamped Christmas tree drag scrapers, custom made in Great Britain and dragged through the host piping, removed incrustation and tubercula-



tion. To prevent the aggressive cleaners from taking out the whole pipe, workers bent the blades a little so they didn't press as hard against the walls. Double sets of squeegee plugs were dragged behind the scrapers to remove tailings.

Cleaning was necessary to ensure a clear path with no surprises, and for other reasons. "If the slightly larger pulling cap hit a hard incrustation, it

Thousands of gallons of water escaped through hundreds of small holes, as seen in this section of 6-inch ID steel heating pipe.



could lock up and we'd have no way of reversing," says Sorohan. "If debris drags in front of the cap, it will cause a blockage and stop the pull. We also don't want sharp nodules scouring the new pipe."

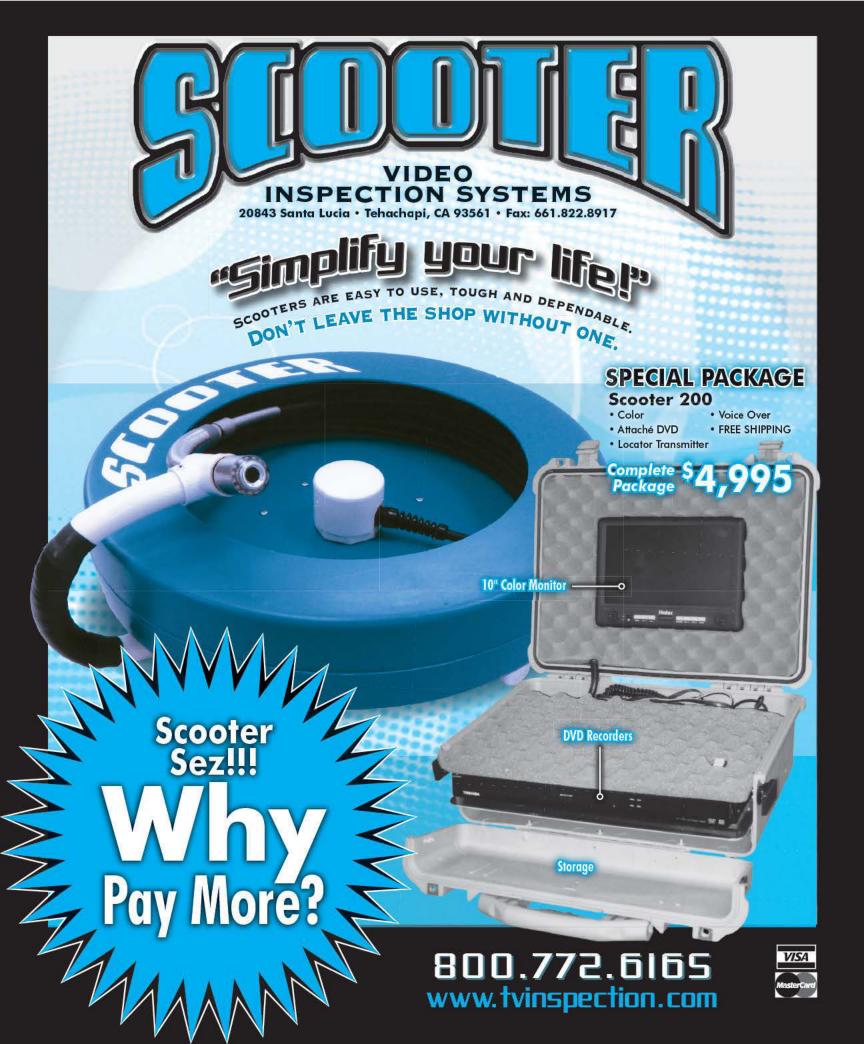
FUSION FIXTURES

Every day at noon, up to 870 cadets – with military band playing – marched in formation to the mess hall. "We had to be very mindful that we didn't block off routes or create hazards with our equipment, hoses and cables," says Sorohan.

"Out of 6,000 feet, we had one leak on a coupling fused in the hole. For never having worked with Climatherm pipe before, I think that speaks highly of how user-friendly it is."

Gary Sorohan

Ernie Beaty and Brad Hoop butt-fused 13-foot-long sticks using a manual McElroy 2LC welding machine to precisely align the pipes. The process left an external and internal weld bead. "If we didn't remove the internal beads, they would cause friction or reduce capacity," says Sorohan. After each weld, Hoop inserted a long pole that released a spring-loaded blade when turned counterclockwise. Rotating the tool 360 degrees clockwise shaved off the bead and locked it in the blade for extraction. (continued)



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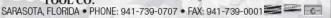
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Ernie Beaty from Triton Lining Technologies socket-fuses fittings for the end of a pipe run.

As the team excavated where pipes turned to enter buildings, they discovered 3-inch-wide balancing valves between the supply and return tees. "That surprised us because now we had to install new valves and the closest match was 10 inches wide," says Sorohan.

The additional width made it impossible to run the tees parallel into the building. "We had to offset one, then bring it back into alignment with multiple bends," says Sorohan. "It added a lot of fittings because numerous other pipes were in the way. Assembling the offsets became the most challenging part of the project."

Where possible, the crew socket-fused what looked like a hamster maze of fittings aboveground, but too often the connections were assembled around other pipes in a narrow space or underground hole. "We worked bent over, on our knees, and occasionally upside down," says Sorohan. "The manual labor took a heavy toll on us." Everything was done by hand because automatic equipment was too large to fit in the work areas.

UNDER PRESSURE

Before inserting a length of pipe, the team pressure-tested it to 150 percent of operating pressure for two hours. They then butt-fused a cap with a metal rod and eye to the pipe, attached a steel cable, and pulled in the pipe with a Triton winch. "We did 32 pulls representing 16 supply and return lines," says Sorohan. The shortest pull was 30 feet, the longest was 500 feet, and the average was 250 feet.

Once installed, they pressure-tested the line for 30 minutes at 150 percent, deflated it, and pumped to 150 percent again for two hours. The final test involved pressurizing the line to 150 percent, holding it for two minutes, deflating the pressure to 15 percent of maximum, holding it for two more minutes, then repeating the process three more times with five minutes for the final interval.

"Rapid cycling and high- and low-pressure tests ensure the fused connections are properly installed," says Sorohan. "Out of 6,000 feet, we had one leak on a coupling fused in the hole. For having never worked with Climatherm pipe before, I think that speaks highly of how user-friendly it is."

To prevent heat loss, the crew replaced insulation that had been removed with batting, or they built little frames around the pipes and filled the spaces with spray foam. They also restored sidewalks, block pavement and grass.

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The Heat is On

HOT-WATER JETTER IMPROVES COLORADO CONTRACTOR'S EFFICIENCY AND PROFITABILITY WHEN THAWING FROZEN LATERALS

BY KEN WYSOCKY

ust like in sports, savvy contractors are always on the lookout for a game-changer - that one piece of equipment that can dramatically improve productivity, efficiency and the bottom line. At Grand Lake Plumbing & Heating Co. in Grand Lake, Colo., that unit is a custombuilt HotJet USA water jetter.

Why? The unit enables technicians to thaw out frozen pipelines during frigid Colorado winters in significantly less time than with the smaller portable jetters they used to use.

"It's the best piece of equipment we've ever bought in terms of getting a new kind of work and being more efficient doing it," says Chris Wood, the company's service manager. "In all honesty, it's pretty amazing what the HotJet water jetter has been able to do for us.

"First of all, it opened up a whole new realm of business for us," he continues. "Without this unit, I'd be sending customers to my competitors who have the capability to get the job done in an efficient manner. Secondly, it helps us thaw sewer lines much more efficiently than our smaller portable sewer machines, which run off tap-water pressure."



The HotJet USA hot-water jetter produces about 2,800 psi at a maximum of 25 gpm, helping workers thaw frozen sewer lines much more efficiently.



Grand Lake Plumbing & Heating's custom-built HotJet USA trailer jetter has provided a significant boost in business over the winter months.

money machines

OWNER: Grand Lake Plumbing & Heating Co.,

Grand Lake, Colo.

MACHINE: HotJet USA water jetter (division of Power Line Industries) **FUNCTION:** Clearing frozen residential and commercial lateral lines

FEATURES:

A 35 hp Vanguard gas engine; 2,800 psi at 8 to 25 gpm; a 350-gallon water tank; a Hotsy 5900 kerosene heating unit;

enclosed Haulmark trailer

COST: About \$30,000

WEBSITE: www.grandlakeplumbing.com

As an example, Wood points to a particularly tough job one winter: thawing out a 3-inch frozen water main that services a water treatment facility on an area ranch. Technicians ended up clearing out about 750 feet of ice in 13 hours.

"It would have been impossible to do with our smaller jetters," he says. "It was frozen solid every inch of the way because the frost line was unusually deep that year."

Sheer power makes the biggest difference in productivity: about 2,800 psi at a maximum of 25 gpm compared to 1,200 psi at 8 gpm generated by the smaller jetter units. That's the difference between moving feet per minute versus inches per minute, respectively, Wood says. (continued)



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NEW Varco Sewerflex Blue 3000psi PEST VALUE			\$2.45 ft	\$2.89 ft		
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4000	psi rated •	Safety Gre	een - Pressu	re Tested •	Precoupled	l assemblies	MXM pipe	thread swive	el fittings	
	<u>50 ft</u>	75 ft	100 ft	150 ft	200 ft	250 ft	300 ft	400 ft	500 ft	600 ft
<u>1/8"</u>	\$14.19	\$19.73	\$24.50	\$34.81	\$45.13	\$52.69	\$62.10	\$80.93	\$99.77	\$118.6
<u>¾16</u>	\$24.26	\$30.80	\$38.40	\$51.30	\$78.63	\$78.63	\$92.29	\$119.61	\$146.94	\$174.2
<u>¼"</u>	\$27.71	-	\$51.86	\$75.97	\$100.07	\$117.36	\$139.77	\$184.57	\$229.37	\$274.1
3/8"	\$57.64	\$84.76	\$117.64	\$140.33	\$199.70	\$241.03	\$282.33	\$354.80	\$435.90	\$517.0
PIR	HANA L	ATERAL	LINE / JE	TTER H	OSE					
4000	psi rated •	Safety Gre	een – Pressu	re Tested •	Precoupled	l assemblies	MXM pipe	thread swive	el fittings	
	50 ft	75 ft	100 ft	150 ft	200 ft	250 ft	300 ft	400 ft	500 ft	600 ft
1/6"	\$46.11	\$54.82	\$63.47	\$84.19	\$110.00	\$137.81	\$164.94	\$221.05	\$276.32	AUSTON
½" ¾6'	\$46.11 \$52.48	\$54.82 \$61.79	\$63.47 \$71.49	\$84.19 \$95.64	\$110.00 \$118.89	THE RESIDENCE	De Meurician	Contract of the	I Water medi	\$334.5
-	Nessex.	Maria de Cara	No.	Ivaniversi		\$137.81	\$164.94	\$221.05	\$276.32	\$334.5 \$359.2 \$433.8

12012

"In a typical, 100-foot-long frozen sewer line, it might take us several hours to get through it with the smaller jetters," Wood explains. "But with this bigger machine, it sometimes takes as little as 30 minutes. Over the course of a year, that's a ton of time."

The ability to produce hotter water – up to 200 degrees – and carry more of it, also improves productivity. The company's smaller jetters can supply only 40 to 50 gallons of hot water at a time, which means time-consuming – and efficiency-killing – refills, Wood says.

"It might take us a full day to do a job if we have to wait for a water heater to recover and keep producing the same amount of hot water as our 350gallon tank carries," he says. "That's a big-time improvement in profitability,

"In a typical, 100-foot-long frozen sewer line, it might take us several hours to get through it with the smaller jetters. But with this bigger machine, it sometimes takes as little as 30 minutes. Over the course of a year, that's a ton of time."

Chris Wood

too, because we might be able to do three or four jobs in a day instead of one.

And it improves customer satisfaction because they don't have to wait as long."

A 35 hp Vanguard gas engine powers the unit, which features a 350-gallon water tank; a Hotsy 5900 kerosene heating unit; a hose reel that can carry 100 feet of supply-line hose; a hose reel with an additional 300 feet of pressure hose that can handle up to 4,000 psi; and two additional 100-foot pressure hoses for even longer drain lines.

The additional hose capacity also improves productivity by allowing crews to perform commercial jobs from one entry point. Otherwise, they'd have to use numerous entry points, which involves reeling and unreeling hose and moving the trailer in between entries. On average, this reduces time on jobs by about 25 percent, Wood estimates, which he notes is a substantial amount over the course of a year.

Frozen residential and commercial lateral lines are an ongoing problem in the region from about January through April. Wood says Grand Lake Plumbing specified an 18-foot Haulmark enclosed trailer to protect components from the brutally cold winter temperatures in Colorado, which often dip below zero. An electric heater keeps the inside warm. Moreover, the sides of the trailer act as a "moving billboard" that effectively promotes the company, Wood says.

In summer, crews don't use the HotJet unit as frequently. But when winter rolls around, the workhorse gets busy again, increasing customer satisfaction and improving productivity.

"I think it's more than paid for itself," Wood says. c

SHOW US THE MONEY (MACHINE)

Money Machines, a feature in *Cleaner*, reports on innovative work vehicles that help contractors operate more efficiently, satisfy customers and earn more profit. We'd like to know about your Money Machine — be it a service van, camera truck, jetting rig, vacuum unit or any vehicle that really helps drive your business. To nominate your vehicle for a feature in this column, send an email to editor@cleaner.com. Tell us briefly but specifically what features make it a great producer. And send a picture — because appearance counts. We look forward to seeing your Money Machine.

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Some people stare up at space and dream.

Others reach for it.









Culture Club

SIX HISTORIC INDIANAPOLIS NEIGHBORHOOD DISTRICTS SHOWCASE THRIVING ART AND MUSIC SCENES

BY SHARON VERBETEN

ists, galleries, boutique shops, restaurants and bars, and the Fountain Square Theatre Building, which has the only two authentic duckpin bowling alleys in the Midwest - Action Bowl and Atomic Bowl. ABOVE: The phrase on the Fountain Square website says it all about the district: "Funky. Artsy. Retro," with vibrant lights, nightlife and fun-loving crowds.

LEFT: Fountain Square is just south of the city. It is home to art-

ounded and platted in 1821, Indianapolis (population 876,804) is known for being located at the "Crossroads of America." Its unique and varied tourist attractions are just part of what makes Indy, well, Indy.

According to Visit Indy conventions and meetings communications manager Lisa Wallace, "Visitor favorites include the green space, canal and

attractions conveniently located in White River State Park steps away from hotels. Two new attractions include the Dallara IndyCar Factory and our Cultural Trail, an innovative project connecting visitors on bike or foot with hotels, restaurants and eclectic neighborhoods throughout the city. The Indianapolis Museum of Art is also popular with prominent works of art inside and 152 acres of gardens and grounds outside that house the original (Robert Indiana) LOVE sculpture."

Those are just some of the attractions located in the city's six distinct cultural districts. These include Broad Ripple Village, The Canal and White River State Park, Fountain Square, Indiana Avenue, Mass Ave. and the Wholesale District. Nestled in these districts are public art, galleries, museums, shops and recreation. Four of the six districts are conveniently located downtown, the site of the Pumper & Cleaner Environmental Expo.

SEE IT ALL

Broad Ripple Village is set against the backdrop of public art, graffiti murals and green spaces. It's the ideal venue for those adventuresome souls who enjoy art, creative spaces and ethnic foods. Shopping options include works by local artisans, as well as vintage furniture and collectibles. The Indianapolis Art Center and the ARTSPARK outdoor laboratory are located in Broad Ripple.

The Canal and White River State Park are more for history and outdoor lovers. Limestone walkways and American Indian art are part of the experience in this district.

Scattered throughout the Canal and 250-acre White River State Park are some of the city's most inspiring museums and attractions.

"New attractions include the Dallara IndyCar Factory and our Cultural Trail, an innovative project connecting visitors on bike or foot with hotels, restaurants and eclectic neighborhoods."

Lisa Wallace

The Canal Walk — on the "waterfront" — provides an urban respite for fitness enthusiasts and serenity seekers. This district is also home to the Indianapolis Zoo, the Eiteljorg Museum of American Indians and Western Art, the Glick Indiana History Center, the Indiana State Museum and the NCAA Hall of Champions.

Fountain Square is a historic community spotlighted by a town square and central fountain, evoking images of a European city. It is a literary and artistic haven and home to more offbeat activities like duckpin bowling and swing dancing. More than 75 artists call the Wheeler Arts Community or Murphy Art Center home.

Indiana Avenue anchors the district that spans the Central Canal and White River. Here history, jazz, restored neighborhoods and spirituality embrace



A Mass Ave. outdoor patio beer garden is one of the great meeting places in this eclectic neighborhood.

the city's rich African-American heritage. Several venues are on the National Register of Historic Places.

Mass Ave. is the city's arts and theater district, including five performing arts theaters. Shops feature local artists' works, and an array of original outdoor

The Wholesale District brings an urban excitement to the city with marquees, tuxedoed doormen and a mall to delight shoppers — the two-block, four-story Circle Centre mall. This is the heart of the business district, home to historic buildings, massive skyscrapers and the Indianapolis Symphony Orchestra and Indiana Repertory Theatre.

The Bankers Life Fieldhouse is home to the NBA's Indiana Pacers and WNBA's Indiana Fever. Lucas Oil Stadium hosts the NFL's Indianapolis Colts. ©

FOR MORE INFORMATION:

- Broad Ripple Village, 6311 Westfield Blvd.; 317/251-2782; www.DiscoverBroadRippleVillage.com
- · Canal and White River State Park, 801 W. Washington St.; 317/233-2434; www.DiscoverCanal.com
- Fountain Square, Fountain Square Merchants Association, www.DiscoverFountainSquare.com
- Indiana Avenue, Madame Walker Theatre Center, 617 Indiana Ave.; 317/236-2099; www.DiscoverIndianaAvenue.com
- Mass Ave., 430 Massachusetts Ave.; 317/637-8996 ext. 202; www.DiscoverMassAve.com
- Wholesale District, 11 Monument Circle; 317/237-2202; www.DiscoverWholesaleDistrict.com

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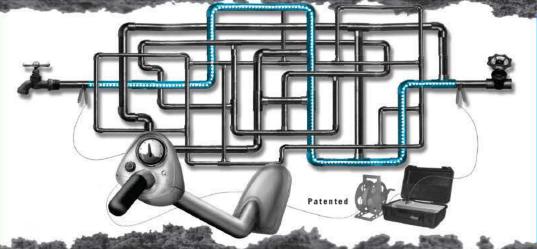
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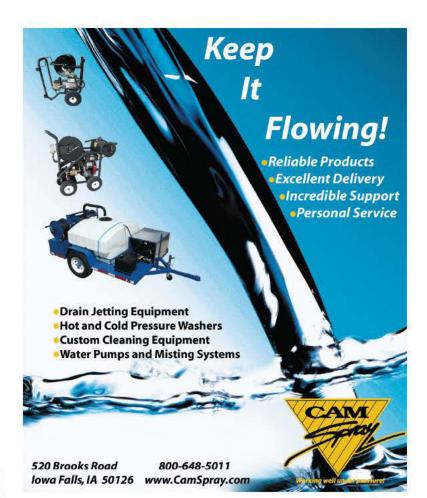
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Root Control BY BRIANA JONES













SKID-MOUNT JETTERS

RCJ series skid-mount jetters from Cam Spray are available in flows and pressures of 12 gpm at 2,700 psi, 8 gpm at 3,500 psi and 7 gpm at 4,000 psi. Jetters include a three-plunger industrial pump with pulse feature powered by a 688 cc Honda engine. Units feature 200 feet of jetter hose that can also be used to supply an optional portable reel cart available with 200 or 300 feet of jet hose. They include a 35-gallon buffer water tank with float control, powder-coated heavy-tube frame, washdown gun and four-nozzle set. Jetters easily mount in the side door of a cargo van or on a truck bed. 800/648-5011; www.camspray.com.

2. LOW-MAINTENANCE NOZZLES

Root Rat cutting nozzles from Chempure are used with jetters from 11 hp to large truck-mounted models. Manufactured of hardened stainless steel, the cutters come with a toolbox with two interchangeable rotors - one with cables and the other with chains. The combination kit includes extra chain, cable and bearings. They need no repair or rebuilding other than bearing replacement, which can be completed in less than two minutes for less than \$10 in parts. 800/288-7873; www.chempure.com.

DRAIN CLEANING EQUIPMENT

The TorqueMaster line of drain cleaning equipment from Coast Manufacturing clears lines from 1 to 10 inches and over 300 feet long. The TM750 Main Line machines have double-welded tubular steel frames that are powdercoated to eliminate corrosion. They include a 3/4 hp dual capacitor motor to ensure the motor starts easily, every time. The main shaft drive is made from stress-proof steel to ensure years of trouble-free service. Sealed ball bearings on the shaft and drive arm never need lubrication. A straightforward pulley drive system offers dependability and maintainability. The machines feature 10-inch-diameter solid polyurethane tires that won't go flat, an extra-wide rear handle for stability in the upright position, and quick and easy one-man reel changeover. 800/541-7015; www.coastmanufacturing.com.

4. GREASE LIQUEFIER

Jet Power II grease liquefier from Duke's Root Control, Inc. dissolves grease on contact and homogenizes it so it cannot recoagulate. The product is non-petroleum based, biodegradable, noncaustic, nonacidic and noncorrosive. It can be applied quickly and easily with a municipality's own jetting equipment. The solution is sprayed upstream from the affected pipe and treatment requires only 10 to 15 minutes. Ten gallons are needed to produce 1,000 gallons of solution, which will treat about 1,000 feet of sewer pipe. 800/447-6687; www.dukes.com.

5. PIVOTING DRAIN CLEANER

The DM150 drain cleaning machine from Duracable Manufacturing cleans residential lines, sink drains, bathtubs, shower drains, roof vents and floor drains. It is equipped with a 1/6 hp motor that operates at 230 rpm. The machine can operate in five positions (from zero to 90 degrees) that can be secured in notched positions to keep the reel from slipping during operation.

It includes a heavy-duty casted self-aligning head bearing to maintain proper reel alignment while in operation. The head bearing also holds the reel in place and allows a quick reel change. The pivot machine can be run with three reel sizes, including an 8-inch reel for 1/4-inch cable, a 14-inch reel for 3/8-inch cable, and a 14-inch oversized reel for 1/2-inch cable. A mini power cable feed and return is available to help run cable at a steady pace. The unit can also be transported easily with an additional machine cart. 877/244-0556; www.duracable.com.

HYDROSTATIC CLEANER

The Model 800 hydrostatic sewer cleaner from Electric Eel cleans 4- to 24-inch-diameter pipes for distances up to 650 feet. It features variable-drive speeds and an automatic transmission. A convenient hand lever controls the cleaning speeds at full torque from 50 to 1,000 rpm. The unit runs 8-foot sectional, heavy-duty, self-feeding municipal cables that require no handling by the operator and allow for fast cleaning. (continued)

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7. ROOT CUTTERS

Root cutters from Enz USA can clean pipes from 3 to 48 inches in diameter. Chain scrapers remove all debris and roots. Turbine model 10.060A/B/ CTR cleans 3- to 8-inch pipes, model 10.125TR cleans 6- to 12-inch pipes, model 10.150R cleans 6- to 10-inch pipes, model 10.200R cleans 8- to 16-inch pipes, and model 10.400R cleans 16- to 48-inch pipes. All turbine units are complete with sealed bearings, while the others operate with sealed swivel joints. This allows each one to be operated with clean and recycled water, while being relatively maintenance-free. The units can remove roots, grease, solids, mineral deposits, concrete and grout. Diamond Tap Cutters are available to remove protruding laterals from 6- to 24-inch lines. 877/369-8721; www.enzusainc.com.

8. MINI ROOT CLEANER

The Mini-Rooter Pro from General Pipe Cleaners includes wheels and a folding handle for easy transport, maneuverability and storage. The compact unit clears drains from rooftop to basement, including kitchen, bath and laundry lines. The detachable drum boosts portability, and cables can be swapped with minimal mess and downtime. The drum holds up to 75 feet of 3/8- or 1/2-inch Flexicore cable for 2-, 3- and most 4-inch lines. For small drain work, the optional J-Drum handles thinner, more flexible cables. And the optional Power Cable Feed drives and retracts cable at up to 16 feet per minute. Flexicore cable is heavy-gauge wire coiled tightly around 49-strand aircraft-type wire rope. 800/245-6200; www.drainbrain.com/mrp.

HEAVY-DUTY DRAIN CLEANER

The Model GO 68HD heavy-duty electric drain cleaning machine from Gorlitz Sewer & Drain cleans pipes from 3 to 8 inches in diameter. It is available in two versions with an open steel reel or enclosed polyethylene drum and can be outfitted with an optional power feeder. Units come standard with 150 feet of 11/16-inch hollow core cable, which can reach most blockages with a single reel. The unit weighs 185 pounds. Adding a loading ramp and electric winch to any vehicle makes transporting the unit quick and simple. 562/944-3060; www.gorlitz.com.

10. LATERAL LAUNCHER

The Logiball Lateral Launcher guides 1/2- or 3/8-inch hose and nozzle into the lateral connection from the mainline sewer. Winched in tandem with the CCTV camera, the 0-90 VDC motor rotates the guiding arm and nozzle into the lateral connection. Rotation controls commonly use existing multiconductor tractor controls. With the pump turned on, the back jets propel the hose into the lateral for cleaning and cutting roots. 800/246-5988; www. logiball.com.

11. FOAMING SYSTEM

The mini-foamer system from Municipal Sales, Inc. is used for applying foaming root, grease and odor control products. The foam itself is not the catalyst, but rather the carrier that allows the active ingredient to make better contact with the target, whether it be roots or grease. Root control products are contact herbicides and need to make contact with the roots to be effective. A root control agent is also available that acts as a contact herbicide and a regrowth inhibiter.

The units are user friendly with factory-set proportioning so no adjustments are needed. The system can be used to apply foaming root control products to sanitary sewer laterals through clean-outs via a flow-through plug assembly that keeps foam isolated and directed towards a downstream objective. They can also be used to apply grease and odor control products such as Bio-Septic FOG, a biological stimulant, directly to the surface of structures such as grease traps and wet wells. 518/747-2044; www.municipalsales.net.

12. SLED-STYLE MACHINE

The M81 Big Workhorse from MyTana Mfg. Company is a mainline, sled-style machine with the option of easily adding additional reels of cable when runs of more than 125 feet are encountered. The unit is equipped with a capacitor smart motor, which is quieter than universal motors commonly found on shop vacs or hand drills. The quiet operation allows users to listen to the cable as it works its way down the pipe, and helps the operator react quickly when cable torque starts to build.

The machine is suitable for 3- to 10-inch sewer mainlines. It is available with 11/16- or 3/4-inch sewer cable, up to 125 feet long. The gearbox drive

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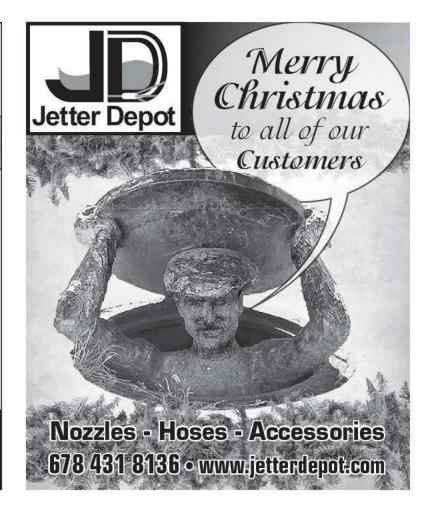
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SEWER AND STORM CUTTER

The Paikert sewer and storm cutter nozzle from NozzTeq is a low-speed, hydro-torque impact cutter designed for severe root blockages, concrete, grease, protruding laterals and any other substance. The cutter uses double root saw blades along with single hardened bits to remove thick, heavy root growth. It operates up to 5,000 psi and is available in sizes from 4 to 24 inches with the proper jetting machine. 866/620-5915; www.nozzteq.com.

14. PNEUMATIC CUTTER

The Micro-Cutter from Nu Flow Technologies is a pneumatic cutter used to clean and remove calcite and roots from the inside of a variety of pipes including steel, cast iron and Orangeburg. The system rotates at 1,500 rpm in 1 1/2- to 6-inch pipes in lengths up to 100 feet, and will negotiate turns of 90 degrees in pipes down to 2 inches in diameter.

The cutter runs at 40 cfm and allows for multiple cutting heads. The heads can cut through dense corrosion and root intrusion. The drill tip has an adjustable spline available in various sizes to match different pipe diameters. 800/834-9597; www.nuflowtech.com.

15. TURBOJET NOZZLE

The RR3000 Root Ranger nozzle from RIDGID offers a single rear-facing turbojet. It blasts a concentrated stream of water that shears root obstructions from the drain wall. The nozzle can clear lines up to 8 inches, and can clear lines larger than the one it originally entered. For example, if the easiest access point for a 6-inch line is dropping into a clean-out upstream into a 2 1/2-inch line, a traditional drain cleaner is limited by the cutter size that will fit. A jetter can clear up to its rated capacity regardless of how it got into the line. RIDG-ID's KJ-3100 jetter comes standard with 200 feet of hose, so users can reach blockages regardless of where they started. 800/769-7743; www.ridgid.com.

16. ROOT CUTTER KIT

The Puma Hi-Torque Hydraulic Root Cutter Kit from Southland Tool includes a heavy-duty cutter that produces 235 ft-lbs torque at low speed. The kit includes four EZ skids that bolt on the front plate. Skids are marked with the size for easy identification. It includes four saw blades, flat or concave in 6-, 8-, 10- and 12-inch sizes. The kit includes the saw hub, motor turning tool, Allen wrench, instructions and toolbox. The EZ skids are available up to 24 inches with high stability to keep the cutter centered. 714/632-8198; www. southlandtool.com.

17. ROOT MACHINE

The Model 1065 root machine from Spartan Tool cleans roots in drain lines from 3 to 10 inches. The smart motor automatically senses the need for additional power and gears down to cut through stubborn roots. The Dial-A-Cable power feeder allows users to quickly feed cable down the line, saving time on the job and wear and tear on the body. The enclosed drum keeps sewer juice contained and makes post-job cleanup easy. With additional drums and cable, users can clean lines at distances out to 250 feet. Permanent magnet motors provide all the power with a small amount of noise. Coupled with Spartan's SparShine lightweight 0.66 Magnum cable, the machine delivers high-quality root cutting power. 800/435-3866; www.spartantool.com.

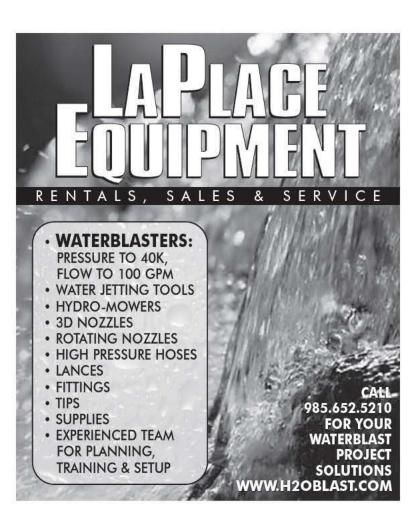
18. ROTARY NOZZLES

The Super Spin water-lubricated rotary nozzles from US Jetting are available in 3/4- and 1/2-inch sizes and can be jetted for flows from 10 to 40 gpm and up to 10,000 psi. The flush-mounted, high-intensity jets offer enhanced cutting power. 800/538-8464; www.usjetting.com.

19. FLEXIBLE CHAIN CUTTER

The Turbo IV flexible chain cutter from USB-Sewer Equipment Corporation is made of tempered stainless steel and offers a unique, continuously adjustable guide skid. The reliable and efficient cutter offers high-quality drive and thrust. The chain retainer is driven by a high-performance turbine to remove roots, grease and mineral deposits from 15- to 36-inch sewer lines. Various bits for the chain make the cutter versatile when removing heavy mineral deposits. An optimized 3D hydromechanics design in conjunction with ceramic nozzle inserts allows the cutter to be used with recycled or clean water. The unit requires no lubrication. 866/408-2814; www.usbsec.com. c

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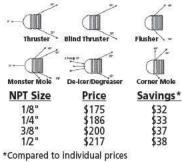




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info@nawt.org

Pre-Expo NAWT

info@nawt.org

Technician:

NAWT Vacuum Truck

January 8, 2013 - East Lansing, MI

February 24, 2013 - Indianapolis, IN

MI & NAWT - Contact Mark Scott at

(989) 275-5011 or mscott@i2k.com

February 23-24, 2013 - Indianapolis, IN







PIPELINE RENEWAL HIRES FIELD OPERATIONS MANAGER

Pipeline Renewal Technologies named Sean Lipscomb field operations manager. He will be responsible for ensuring the success of PRT's Janssen Process licensees through service, training and support.



Sean Lipscomb

ARIES NAMES OHIO DISTRIBUTOR

Aries Industries named Southeastern Equipment Co. a distributor for its pipeline inspection and rehabilitation equipment in Ohio. The line includes pipeline and sewer cameras, deep well and bore hole cameras, lateral reinstatement cutters and sealing/grout systems, as well as surveying equipment.

FEDERAL SIGNAL OPENS LOCATION IN INDIANA

Federal Signal Corp.'s Environmental Solutions Group opened a rental center in Highland, Ind. Located at 9932 Express Drive, the seventh rental center stocks parts and accessories for Federal Signal's Jetstream brand of waterblasters and other makes.

ALFA LAVAL ACQUIRES GAMAJET

Alfa Laval acquired Gamajet Cleaning Systems, forming a new company, Alfa Laval Tank Equipment Inc. It will operate as Gamajet Cleaning Systems and remain in Exton, Pa. Robert Delaney, president of Gamajet, was named president of the new company. Alfa Laval's existing line of tank cleaning equipment, Toftejorg, was absorbed by the new company for North America. Sales, support and service of Toftejorg equipment will be handled at Gamajet's Exton office.

PEERLESS ELECTRONICS LAUNCHES E-COMMERCE SITE

Peerless Electronics, distributor of electromechanical and interconnect products, launched an e-commerce store at www.peerlesselectronics.com/store/categories/Transportation. Each online product includes specs, technical descriptions, manufacturer hyperlinks, photos and drawings.

DEBUSK JOINS VACUUM TRUCK RENTALS SALES TEAM

Pat DeBusk joined the sales department at Vacuum Truck Rentals and will focus on the Gulf Coast markets. An active member of the WJTA Association, he is the former owner and president of Hydro Services, now Hydro Chem, and served in a number of management positions.

AMAZING MACHINERY MOVES INTO NEW FACILITY

Equipment supplier Amazing Machinery moved into a new 6,000-squarefoot building in Cleveland, Tenn. The location includes 2,000 square feet of dedicated retail and showroom space.

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Epoxy pipe liner offers high temperature, chemical resistance

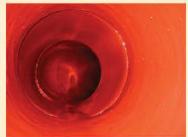
BY ED WODALSKI

High-temperature, chemical-resistant epoxy (RN750NP) for pipe lining from Nu Flow Technologies can reach a maximum temperature of 210 degrees F, has a strong chemical resistance, and is 50 percent stronger and cures twice as fast as Nu Flow's standard epoxy.

Designed for use in pipes from 1/2 to 12 inches in diameter, the ambient-cured epoxy is blown through the pipe using compressed air, similar to Nu Flow's lining system for potable water.

"It goes on fairly thin, from 8 to 10 mils (thick)," says Bob Fowle, chemist with Nu Flow. Applications include heat exchangers, mining and the pulp and paper industry. Relined pipes can be put into service after approximately 24 hours.





Sold in 5-gallon containers, the epoxy is weighed on site and mixed in a 2:1 ratio. A 200-foot section of 4-inch line might require 3 to 4 gallons.

"You have about 15 to 20 minutes to get it into the line, but the air will push it through the line for about an hour," he says. The application is complete when excess epoxy exits at the open end of the line.

The coating is not suitable for potable drinking water or European pipe systems. 800/834-9597; www.nuflowtech.com.

RIDGID 600 SERIES TUBE BENDERS

The 600 Series tube benders from RIDGID can bend tubes 3/16 to 1/2 inch in diameter with bend radiuses from 5/8 inch to 38 mm. The two-stage handle system enables bends from 90 to 180 degrees without crossing handles, keeping bends in-plane and accurate.



Features include visible gain marks to ensure properly aligned bending angles, extra-long handles for increased leverage, vise clamp block for extra stability, and cushioned handle grips. 800/769-7743; www.ridgid.com.

DITCH WITCH RIDE-ON TRENCHER, VIBRATORY PLOW

The RT80 Quad heavy-duty, rideon trencher and vibratory plow from Ditch Witch is designed to provide traction on rough and uneven terrain.



The 83 hp trencher features a three-speed, shift-on-the-fly ground drive, 39,000-pound static load rating and 30,742 pounds of break-out capacity. The track frames pivot about the centerline of the axle for stability in muddy conditions or when applying high torque to pull through hard ground. Attachments include vibratory plow, traversing trencher, saw and backhoe. 800/654-6481; www.ditchwitch.com.

AGRU AMERICA SUREFIT PIPE REHABILITATION

SureFIT close fit liner from Agru America is designed for rehabilitating damaged pipelines with minimal environmental impact. Applications



include sewage disposal and industrial piping, as well as natural gas and potable water supplies. The PE 100 liner is applied using steam and pressure. It can be inserted via existing manholes or small construction pits. When heated with steam, the liner regains its original round shape and adjusts to the wall of the pipe. 800/373-2478; www.agruamerica.com.

VANAIR AIR N ARC POWER SYSTEM

The Air N Arc 1300 power system from Vanair offers six forms of power in a single 48-inch unit, including 40 cfm rotary screw compressor, 7 kW AC generator, 300-amp welder, battery booster and charger, and 10.5 gpm hydraulic pump - all driven by a single engine. Small enough to fit behind the cab or



on the side pack of a vehicle, the power system provides full functionality with the truck engine off. 800/526-8817; www.vanair.com.

GUZZLER CL VACUUM LOADER

The Guzzler Classic (CL) industrial vacuum loader from Guzzler Manufacturing features enhanced operator ergonomics and improved air routing, filtration and maintenance.



Hydraulic and electrical components mounted on the boom have been relocated to eye level for easier access. The unit has an 18-cubic-yard capacity and optional full-opening rear door. The bag house and cyclone clean-out access doors have been enlarged for easier access, and transition to the dump tubes has been widened for more effective dumping. The linear wall connection from the cyclone to the bag house has been increased for more efficient airflow. 800/627-3171; www.guzzler.com. c

What you learn on these pages could be worth \$1,000s.

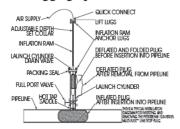
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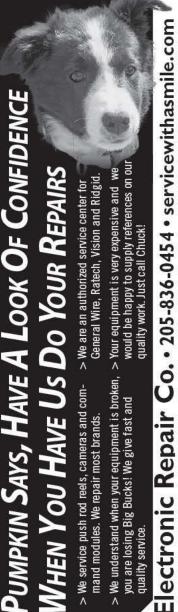


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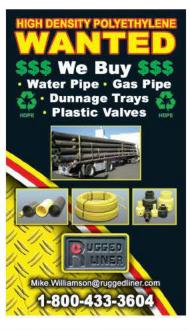
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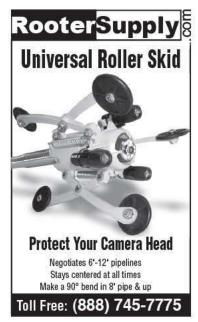


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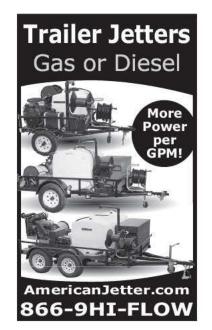
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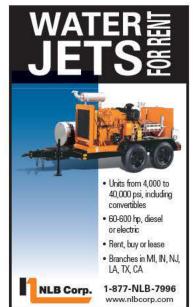


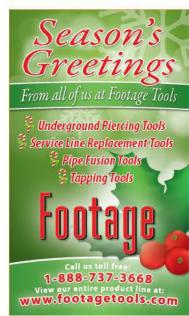


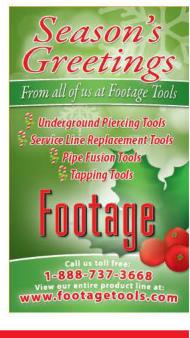














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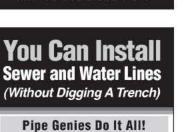
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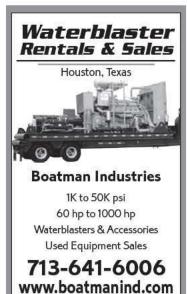
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General Wire models J-3055, J-3080, and J-2000; Spartan #717; Electric Eel gas jetters. The Cable Center: 800-257-7209.

HAZARDOUS WASTE UNITS

1995 International 4900 with a 2,300 U.S. gallon Presvac, carbon steel, DOT certified 412, vacuum pressure tank. (Stock #6004C) www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (CBM)

HAZARDOUS WASTE UNITS

Presvac 2,300 U.S. gallon, carbon steel with a Masport H15W vacuum pump installed on a 1993 GMC Kodiak cab and chassis. (Stock #6615V) www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (CBM)

New 3,200 U.S. gallon, carbon steel, DOT certified 407/412 vacuum tank; dump type with full open rear door and a Presvac PVB-750 vacuum-pressure pump installed on a 2012 Peterbilt. 348 cab and chassis. (Stock #13526V) www.VacuumSalesInc. com, (888) VAC-UNIT (822-8648). (CBM)

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JETTERS-TRAILER

O'Brien trailer jet unit: White with 300 gallon tank, for sale by owner, mod. #SKJ-4A, runs great! \$7,500. Call Don at 616-291-4226, MI.



2006 Isuzu NPR: 5.2 turbo diesel jetter truck, automatic, low miles, 14' box, good tires, 1,500 watt inverter, 110V outlets, heavy duty hitch, like new, everything works 100%, new inspection. Shelving included, 2011 hydro jetter system, 27 hp, 12 gpm pump, 3,000 psi. Too many extras to list. System is 1 year old with 11.2 hours on meter. This is the ultimate plumbing truck. More pics available.\$27,800 570-360-2640

JETTERS-TRAILER

O'Brien 3518-SC: Single axle trailer with electric brakes, white in color, 65 hp Cummins diesel, water-cooled engine, Giant pump, 4,000 psi, 18 gpm, 400' of 1/2" hose, fixed rotating beacon light, wash down package, tiger tail, fill hose, 350 gallon tank, intellacount hose footage counter, wireless handheld remote, 61.1 hours use, 2007 model purchased in December 2008. \$22,500. 803-768-2028.



2004 US Jet SE with wireless remote: 18 gpm, run dry pump, Hatz silent pak, 455 hours, power pivot reel, newer parker 1/2 hose, 3 standard nozzles, mini jet kit hose, serviced on a regular basis, good condition.\$19,000

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2006 ENCLOSED JETTER TRAILER: 14' ready for your motor and pump, 7,000 GVW, motorized hose reel, 50 gallon diesel tank, insulated, white, man door. \$4,900. 484-225-

1442, cshafer@ptd.net, PA.



1993 SECA 747FR trailer jet with Ford 4-cyl. motor, 728 hours, 500 gallon water tank, 35 gpm @ 2,000 psi, Myers pump.\$11,500

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Xtreme Flow Hot/Cold Jetter! Model #HJ2TA8536, tandem axle trailer, 35 hp Vanguard 8.5 gpm @ 3,600 psi, 325 gallon water tank, 300' hose, General Pump. List \$34,995. On sale for \$29,995. Fully loaded!

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1999 Freightliner FL 80 with 2100 Vactor, 12-yd. debris body, 1,500 gallon water tanks, 80 gpm @ 2,500 psi water pump. \$75,000. 614-837-3010, OH.

2006 GMC TC6500 cab and chassis with Pipe Hunter trunk mounted jetting unit, 3,000 psi @ 50 gpm with a 1,000-gallon water tank, rear mounted hose reel with Jet Eye Camera System, 6,800 original miles, like new. \$99,000 sale price. (Stock #13234V) www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (CBM)

Peabody Myers: 1987 Ford F-800 diesel jetter truck, 56,000 actual miles, 1,500 gallon, 36 gpm @ 3,000 psi, new tires, arrow board, extras. \$9,000 or best reasonable offer, retiring, clean title, pipes to 24 inches, photos available. Buddy, 951-227-5623.

Jack Doheny Supplies Inc. offers a full range of late model combo units and DOT industrial vacuum loaders. Call us @1-800-3DOHENY.

1989 Aquatech SJ1000: 1,000 gallon tank, Ford 6 cylinder aux. engine, new Meyers D65 pump, 1" x 500' hose, 1989 GMC Topkick chassis, CAT diesel, Allison automatic, 79,500 miles, former municipal machine. \$8,500. MSC Equipment: 800-969-1672, VA. (C12)





2007 Vac-Con model VPD4212LHAE on a International model 7400 with an automatic transmission, Roots 827 PD blower, 80 gpm @ 2,000 psi, rebuilt water pump, 800 foot, 1" iet hose, 12-vd. debris tank, extendible boom. articulating hose reel, new white paint. Pictures at www.empireequip.com. \$159,500. Call 714-639-8352, CA.

2006 Vactor 2115-J6-F mounted on Sterling LT7501; 16-yd. debris body, 80@2,500, twostage fan, John Deere auxiliary engine, municipal trade, approximately 45k miles. Machine has been inspected, and in EXCELLENT condition, \$159,000/FOB, Grand Rapids, Ml. Call Todd Fredrickson, Fredrickson Supply. 616-949-2385 or todd@fredricksonsupply.com for more info.



2006 International Vac-Con: 80 gpm, 3-stage fan, 12-yd. debris tank, 73,000 \$145,000 Call 877-389-2227 IN C1



2003 Sterling L7500 Vac Truck: CAT 3125 @ 315 hp, A/T, 55k miles, spring susp., 2003 Vac-Con V390LHAD, 3 compressor fans, 10' telescopic boom, HS drive, articulating hose reel, hi-dump debris tank.....\$79,500

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JET VACS

2005 Sterling LT7501, Vac-Con jet vac: 1,500 gallon water tank with a 12-yd. debris tank. \$85,000. 240-417-0175, MD.

1985 Vactor jet rodder, model 810, needs work \$11,500. 781-344-8328, MA.

Vac-Con industrial machine mounted on a pre-owned 1999 International cab and chassis. (Stock #3918C) www.VacuumSalesInc. com, (888) VAC-UNIT (822-8648). (CBM)

1991 Vac-Con jet/vac, runs great, pump was rebuilt 3 years ago and used very little since. Call or email with questions, truck needs to go, price reduced. \$15,000. kyle@accuje tiowa.com or 515-360-8582, IA. (C12)



2006 Peterbilt Vac-Con: 80 gpm, 3-stage fan, 12-yd. debris tank, 65,000 ...\$145,000 Call 1-877-389-2227 IN

1999 Sterling cab & chassis with a Vactor 2110, combination vacuum loader and high pressure sewer cleaning system. (Stock www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648).

2006 Sterling with a VacAll AJV 1215: 12 yard debris body, 1,500 gallon water, combination vacuum/jetting unit. (Stock #5673C) www. VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (CBM)

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Salesman needed to lead a sales force for storm retention cleaning company located in northern Virginia. At least 2 years experience in the industry and at least 1 year experience in sales industry. Email resume and salary requirements to qualitypipecleaning@gmail. (C01) com.



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Strong Mfg. Spraymate: 35D/60 manhole rehab, grout pumping, fireproof insulation, lightweight cellular grout machine etc. Check out www.stronamfa.com for more info. Completely refurbished. New tires, paint, tune up, water pump, plumbing, etc., Wisconsin V4 engine. Very low hours. Nice unit!.....\$21,500/OBO 815-378-7401 IL

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RIDGID model #300 with stand, RIDGID tristand vises, RP 330 ProPress kit. The Cable Center: 800-257-7209. (CBM)







TOOLS

Ritchie Yellow Jacket Recovery System & BULLET 7 cfm pump. The Cable Center: 800-257-7209. (CBM)

Bosch Brute hammer drill with cart irons. The Cable Center: 800-257-7209.

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2005 Cyclops Mainline Inspection System installed in a low mileage 1999 Ford 1 ton extended diesel with hi-top. P&T color camera, HD transporter, 850' cable, DVD, keyboard data entry, auxiliary wheel kit, traction wheel kit and manhole hardware, 90 day factory warranty on TV system. Ready to go to work. \$39,500. Call Bill at 830-249-9756.



CCTV Aries 2007 Freightliner: Diesel pipeline inspection step-van with brand new command center, never been used, fully loaded sewer TV system in 18' step-van. Portable pathfinder, pan and tilt, Badger, LETS lateral launcher, pole camera, thermal image camera, DVD/ VCR, PipeTech software, compressor, restroom, sink, generator, winch, plus much more! Finance\$250,000/OBO CALL 925-784-2837

New Cyclops Electronics Valu-Pac IV Standard: P&T color camera, heavy duty transporter, all-in-one controller for camera, lights, reel and transporter, 15" LCD monitor, DVD rec/ player, keyboard data system with on-screen footage, motorized reel with 500' TV/tow cable. All for only \$32,700. Call 830-249-9756 and talk to the guys that build 'em.

1998 CUES Mainline TV System: GMC Savanna 3500, CUES with Pro-Data on-screen titler, Honda generator, Sony combo DVD/ VHS, 1,700' of M/C cable, pan & tilt camera with shorty transporter. \$29,500. 608-835-7767, WI. (C12)

CUES TV System: 1999 Ford E-350 truck with pan & tilt camera, slide-out Honda generator, and DVD recorders. \$8,500. 352-419-9093, Ocala, FL.

FOR SALE: Aries CCTV inspection truck, 2008 GMC C4500 4x4, excellent condition & low miles, with laser profiler. Please call 612-210-5524, FL.

Used and rebuilt camera kits in stock: RIDGID Mini Compact, Mini Color, Standard Self-Leveling, General Gen-Eye I, II and III, Aries Seeker, and SRECO kits. The Cable Center: 800-257-7209.

TV INSPECTION

Aries video inspection equipment for sale: 2 badgers, 1 camera, wheels, blocks, spare parts, Satellite III, and portable easement machine with 500' cable, used once. Call 800-356-4468 or email sales@russellreid.com for photos and details.



2008 Dodge Sprinter Van 3500: Mercedes diesel, 9,500 miles, Envirosight Supervision & DigiSewer cameras, 1,000 foot cable reel, Reese winch system, Quickview pole camera, wash down system, everything is like new. Onan diesel generator has 150 hours, camera unit has less hours. Serious inquiries only!

815-693-2929 IL C12

VACUUM LOADERS

1999 Sterling cab & chassis with a Cusco Turbovac 3800 industrial loader with a jetting system. (Stock #3163C) www. VacuumSalesInc.com, (888) VÁC-UNIT (822-8648). (CBM)



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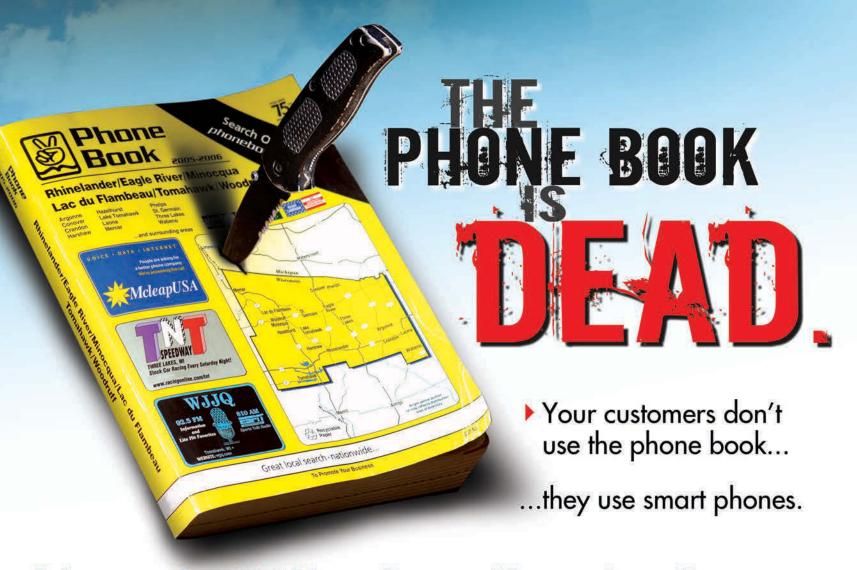
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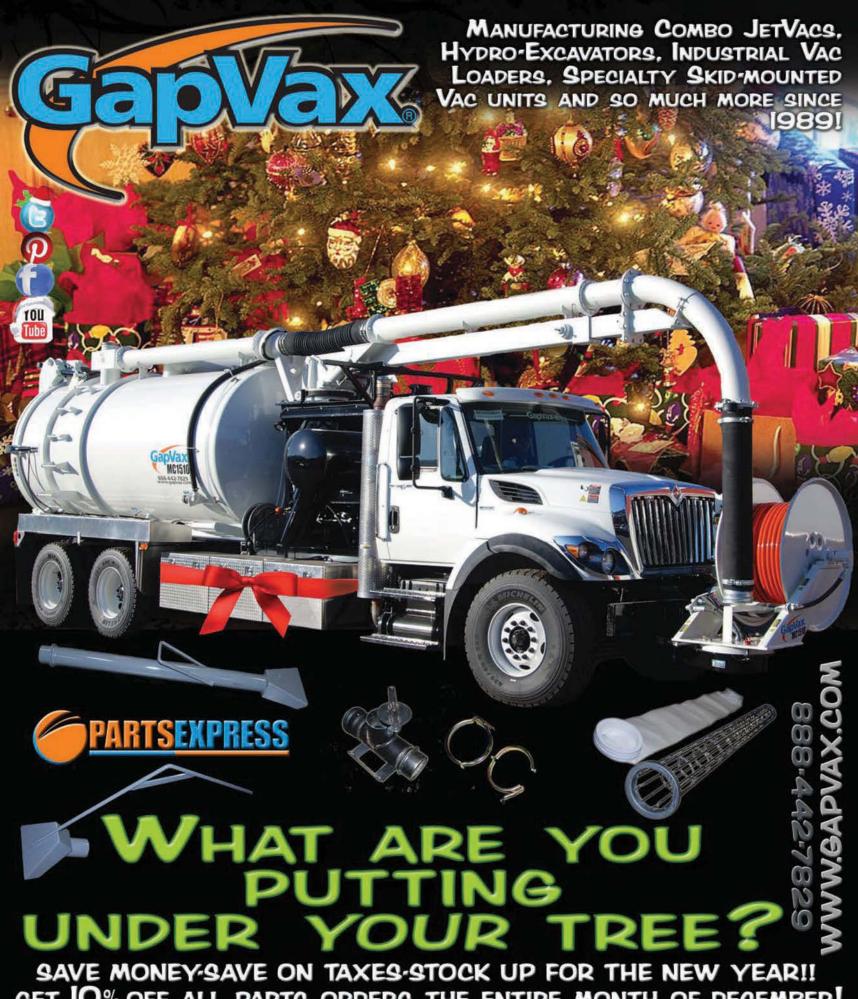
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