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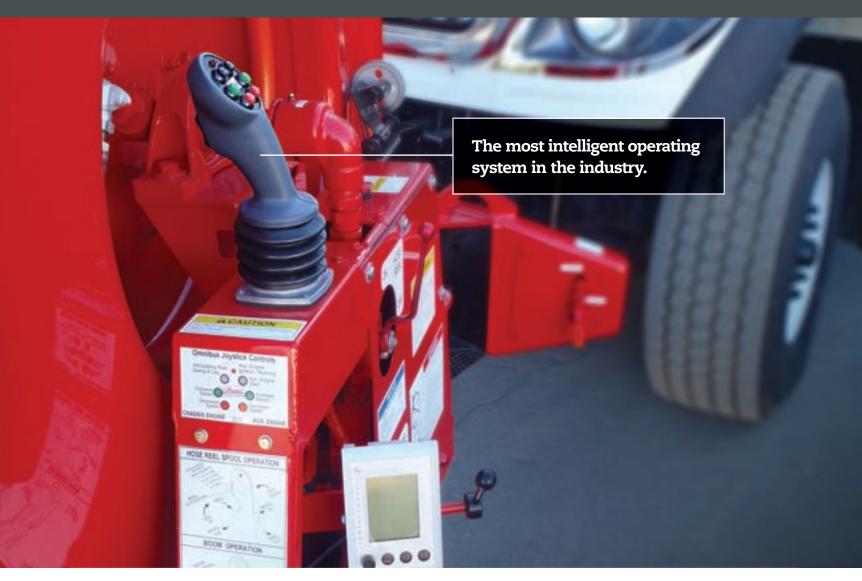
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#### June 2011

#### **features**

**28 Mud Is Money**By Marian Bond



**On the cover:** Richard Young and partner Jose Santos developed Hydro Spy LLC in Houston with a business plan that saw the emergence of hydroexcavation as a major force. The company has seen its client list grow, and with it the size of projects. The Hydro Spy team includes, from left, Moises Arcentales, Richard Young, Jose Santos, and Iram Beltran. (Photography by Glen Ellman)

#### 12 A Solids Success

A talent for technical innovation and a knack for building personal relationships propelled a one-truck vacuum outfit into a thriving biosolids management business.

By Peter Kenter

#### 38 Tech Perspective: The Business End

The performance of a \$300,000 combination truck actually depends on the choice of the much less expensive piece of metal at the end of the hose.

By Ted J. Rulseh

#### departments

#### 10 From the Editor: 'You Get What You Pay For'

To the surprise of some, this adage applies to the people who work for you, just as much as it does to the equipment and supplies you buy. By Ted J. Rulseh

#### 22 Safety First: No Fun At All

This trip down a water slide could have cost a sewer contractor employee his life. The safety lesson is clear: Follow procedures and never take shortcuts.

By Ted J. Rulseh

#### 44 Money Manager: Keeping a Rein on Legal Costs

Work with your attorney on ways to streamline legal work and tailor billing practices. And above all, stay out of court if possible.

By Fred S. Steingold

#### 50 Better Business: Tough Conversations

Here are four techniques to help you say what needs to be said, with integrity, when it's hard for you to say it and the other person doesn't want to hear it.

By JoAn Majors

#### 54 Money Machines: Bought Right

Harmon Plumbing got a bargain on two used step vans, which carry a large inventory and greatly reduce trips to the supply house. By Ken Wysocky

#### 58 Tough Job: Fruit of the Vine

Old-school methods and pipe bursting help a contractor replace collapsed drain lines without interrupting wine production.

By Scottie Dayton

#### 64 Product Focus: Municipal/Industrial Maintenance

By Scottie Dayton

#### **68** Industry News

#### 72 Product News

Product Spotlight: Spherical Cutting Tool Negotiates Tight Turns By Ed Wodalski

#### COMING IN JULY

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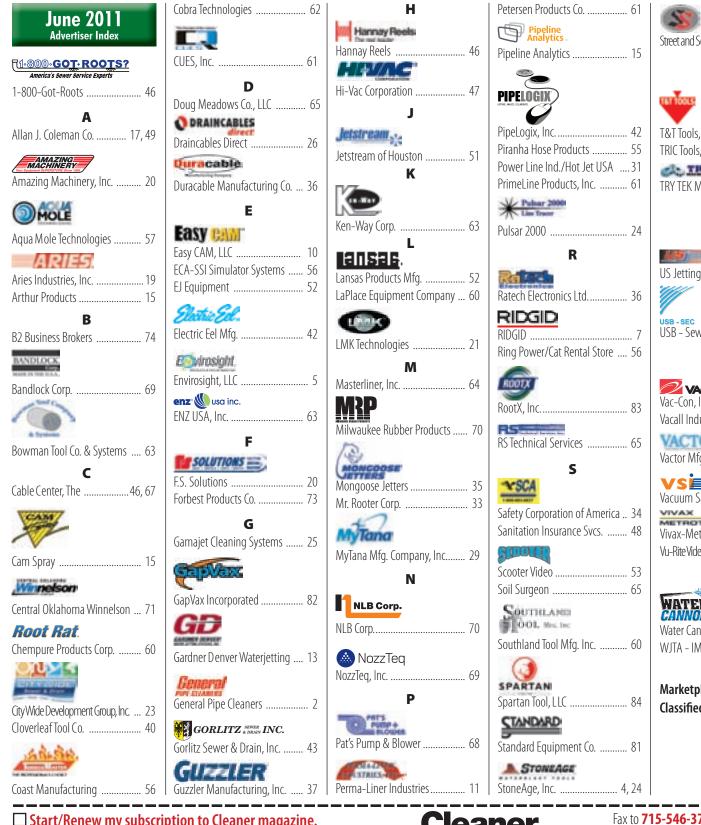
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TO THE SURPRISE OF SOME, THIS ADAGE APPLIES TO THE PEOPLE WHO WORK FOR YOU, JUST AS MUCH AS IT DOES TO THE EQUIPMENT AND SUPPLIES YOU BUY

#### BY TED J. RULSEH, EDITOR

write this as our governor here in Wisconsin is about to cut the benefits of government workers, in effect reducing their take-home pay by several percent.

It's being done to save money, of course. In the short run it might, but what about the long term? Can you really get the same amount and quality of work from the same people for less money? And if you pay them less, will they stick around?

Both interesting questions. Without getting into all the politics of how much public employees earn or should earn, this raises an issue fundamental to businesses. If you had the choice, would you pay your people as little as possible to force costs down? Or would you hire the very best people you could find and pay them the maximum possible to get the greatest production?

Evidence suggests the latter approach can be better for business health.

The late great basketball coach and TV sports commentator Al McGuire liked to say: "The most expensive thing is cheap labor." In other words, while in theory you can hire people for little money, bill their time at a high rate,

#### THE COSTCO MODEL

If you want an example of a business that gets this, consider the Costco discount club. Here's a business that essentially competes on price, head to head against the biggest price-cutter of all – Wal-Mart and its Sam's Club warehouse outlets. So we would expect Costco to pay as close to the bare minimum as possible to stay competitive.

But guess what – they do just the opposite. They pay wages ridiculously higher than their competitors offer. A 2009 news article said the average Costco employee earned \$17 an hour, some 42 percent more than Sam's Club people got. And significantly better benefits, too. Plus good 401(k) matching contributions. Turnover? There is very little. Once hired, people stay.

Chief executive Jim Sinegal has been quoted as saying he believes in rewarding the people who made the company what it is: "They're entitled to buy homes and live in reasonably nice neighborhoods and send their children to school."

Costco actually gets beat up on Wall Street for paying its people so much

If you had the choice, would you pay your people as little as possible to force down costs?

Or would you hire the very best people you could find and pay them the maximum possible to get the greatest production?

and make an incredible profit, the reality is that you will pay a price in low productivity, shoddy work, and unhappy customers. That's the epitome of false economy.

Does this apply to your field of endeavor? Most likely, yes. In hiring people, as in buying a truck, waterjetter or inspection camera, you get what you pay for.

instead of taking more profit for stockholders. The unasked questions: Would the profits actually be better if people were paid less? Or do the profits exist precisely *because* the company pays its people so well?

Remember, Costco competes successfully on price despite paying its people significantly more. The only possible explanation is that Costco's higher-paid people are that much more productive. Pay them less and what happens to productivity?

#### WHAT'S IT GOING TO BE?

So, what's your approach to hiring and compensating people? You don't necessarily have to mimic Wal-Mart or Costco. You can construct your own compensation model to suit your business and market.

But if you've found yourself wondering why your people can't seem to get more done, or why you have to deal with so many mistakes, or why people are always up and quitting after a year or two on the job, you might want to look at how you're paying.

Offering better pay and benefits automatically allows you to be more selective – to attract the best. Businesses like Costco have figured out that it isn't what employees cost that matters – it's what they earn for the company.  $\circ$ 



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# A Solids SUCCESS

A TALENT FOR TECHNICAL INNOVATION AND A KNACK FOR BUILDING PERSONAL RELATIONSHIPS PROPELLED A ONE-TRUCK VACUUM OUTFIT INTO A THRIVING BIOSOLIDS MANAGEMENT BUSINESS BY PETER KENTER

Hank and Shane VanVeen grew up around their father's cleaning business, eventually joining it as employees. "Our dad owned the cleaning business for 25 years, so we were involved to one degree or another since we were knee-high," says Hank.

But when the business was sold to a larger corporation, the brothers found they didn't fit in with the new corporate culture, and so they launched a company of their own. They started by focusing on wastewater treatment plant services, including tank and lagoon pumping and aeration basin, wet well

and digester cleaning, but soon expanded into long-term municipal biosolids management contracts.

Today, their company, Wessuc, has 35 full-time and about 25 seasonal employees, operating from home base in Brantford, Ont., Can., 20 miles from the steel town of Hamilton and about 60 miles west of Toronto. Wessuc has worked as far away as Ottawa, 275 miles north, and Sarnia, 180 miles west. The business is about 95 percent municipal. The large and diverse fleet includes three vacuum trucks and 20 hauling vehicles.

(continued)





The business name? "It's pronounced 'WESS-uck,'" says Hank VanVeen, "but when we make a sales call, we tell them to remember that, 'We suck.' It's been a great marketing tool for getting people to remember us, although we don't get asked to sponsor a lot of local sports teams."

#### **BIDDING ON BIOSOLIDS**

When the brothers started their business, the VanVeen name was still well regarded for vacuum truck service in the area, so they capitalized by establishing a one-truck cleaner outfit in 2000. They concentrated on traditional vacuum service during the first year, but were consistently asked to bid on biosolids removal for municipalities.

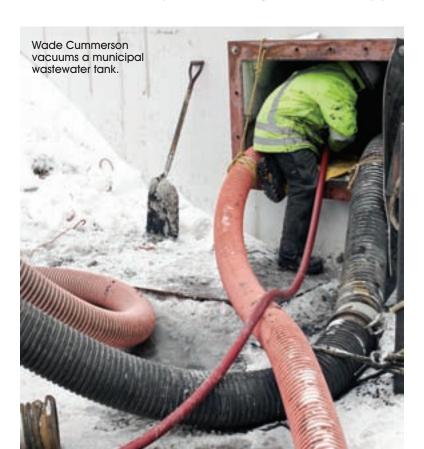
"The company that owned our father's company had bought out most of the other firms offering biosolids service in the province, and there was very little competition left at that point, so we decided to get into the game," says VanVeen. "We thought we could make some improvements to the type of service offered at a competitive price."

In Ontario, biosolids are largely used as farm fertilizer from April through November, but can be applied only when there are no crops in the field. Most municipal contracts last five to seven years

so that contractors can justify buying the specialized equipment they need. Wessuc won its first biosolids contract with the city of Brantford in 2001 through the Ontario Clean Water Agency, which manages water systems on behalf of member municipalities.

#### **GEARING UP**

"We had already been doing tank cleanout work for the city, and we were able to present a case to the bank that we had enough experience in the field, and that we had a five-year contract waiting for us, so we could pay off





Mike Shantz helps transport the filter aid (ENPRENE from En Chuan Chemical Industries) for dewatering. The solids will go to a landfill or to a compost facility.

"The company that owned our father's company had bought out most of the other firms offering biosolids service in the province, and there was very little competition left at that point, so we decided to get into the game. We thought we could make some improvements to the type of service offered at a competitive price."

#### Hank VanVeen

equipment costs over the contract," says VanVeen. "I'm not saying we were approved by the first lending institution we approached, but we were able to make our case for a loan before beginning the contract."

For starters, the VanVeens purchased a dragline system manufactured by Hydro Engineering, an injector bar, assorted hoses, several pickup trucks and tanks, and a John Deere tractor for land application.

(continued)

#### profile

## WESSUC INC., BRANTFORD, ONT., CANADA

PRESIDENT: Shane VanVeen

DUNDED: 200

SERVICE AREA: Southern Ontario

SMPLOYEES: 35 full-time 25 season

PECIALTIES: Wastewater services including biosolids management

and tank, lagoon and digester cleaning

WEBSITE: www.wessuc.com











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"To succeed in the business you need to stay on top of regulations, get certificates of approval from the Ontario Ministry of Environment (MOE), and make sure the groundwater and nearby bodies of water won't be affected," says VanVeen. "You also need to know what you're applying to the soil, making sure it contains no high levels of heavy metals or pathogens, and you need to know the condition of the soil, to make sure that it can use what you're applying.

"We didn't know farmers in the community at the time, so it took a lot of knocking on doors. Biosolids have been presented as anything from toxic waste to the greatest thing since sliced bread, so we needed to promote the idea of using biosolids as fertilizer. We didn't necessarily have all the answers, but we did know where to find them, and generally the farming community was very receptive."

The land application method is up to the contractor. Wessuc injects the material directly into the soil to avoid aerosol spreading and maintain quality control.

#### **EXPANDING NORTH**

In 2002, Wessuc picked up a five-year biosolids contract with the City of Barrie about 90 miles north. The company opened a satellite office there, assigning a program manager and a land coordinator to the job.

Increasingly, Wessuc was asked to bid on contracts to clean out the digesters used for treatment of wastewater sludges. The work required cleaning of digesters ranging from 40 to 110 feet in diameter. The tanks are largely drained, leaving a heavy material composed of biosolids and trash.

"If we're going to land-apply immediately, then 5 percent solids is fine. If it's going into storage, we'll dewater it to about 35 percent."

#### Hank VanVeen

Workers remove trash using a pre-screening device developed by Wessuc staff and built by Reist Industries of Elmira, Ont. The device uses a series of automated rakes that scrape the screen as trash and solids collect on it. The trash is emptied into a bin, while the remaining material is further processed. Sometimes crews add water to make the biosolids easier to vacuum. Injecting polymer promotes clumping of solids and aids mechanical dewatering.

"Initially, we rented a centrifuge and a belt press to dewater the material, but we had issues with both," says VanVeen. "The centrifuge was finicky and didn't like the variance between thick loads and thin loads, and the equipment choked up on grit, sand, hairballs and plastic. We also had issues with the belt press, which wore out quickly when it had to handle too much grit."

Roland Ostermeier adjusts the blade on the rotary drum of a dewatering unit from Alar Engineering Corp., Waterloo.

The company found greater success with a rotary vacuum drum filter from Alar Engineering Corp. The equipment creates a vacuum inside the drum, drawing the liquid through a filter media covering its surface. The dewatered slurry travels over the topside of the drum, forming a cake, which is removed for land application.

"The drum units are traditionally stationary, but Reist Welding created a covered trailer for the unit, making it one of the few mobile units in North America and certainly the only one in our market," says VanVeen. "It gives us a great competitive advantage. It uses less power, and we get very high effluent quality. The water we return to the digester contains roughly 16 to 20 mg/l of total suspended solids."

The degree of dewatering depends on the material's destination. "If we're going to land-apply immediately, then 5 percent solids is fine," says VanVeen. "If it's going into storage, we'll dewater it to about 35 percent."

(continued)



#### **HIGH-TECH TEXTILES**

When a sewage lagoon in Port Perry, Ont., required a rapid cleanout, Wessuc offered to meet the tight schedule with a novel solution: geotextile dewatering bags.

"The Region of Durham had awarded us a three-year biosolids contract for three lagoons, requiring the first lagoon to be serviced in May and ready for use by June," says vice president Hank VanVeen. "We put forward different options, including the use of the geotextile bags, which had never been used in the province, and they accepted."

The dewatering bags are essentially giant, permeable socks. Biosolids material is placed inside the bags, and gravity acts on the contents to leach liquid through tiny pores. The bags used in Port Perry were supplied by TenCate Geosynthetics and measured about 60 feet in circumference by 200 feet long.

Instead of mechanically dewatering the biosolids, the Wessuc team removed the material from the lagoons and pumped it into five bags to dewater at a leisurely pace. The staging area for the bags was protected with an impermeable liner to prevent liquids from leaching into the soil.

"We added polymer to the biosolids to help separate the liquids from the solids," says VanVeen. "At the beginning of the operation, we were pumping between 800 and 1,200 gallons of fluid per minute back into the lagoon. That gradually slowed down through the dewatering process."

The biosolids were taken off site in August and September when the material ranged between 42 and 55 percent solids. "The lagoon was ready for use by the end of June," says VanVeen. The project won the 2008 Exemplary Biosolids Management Program Award from the Ontario Water Environment Association.

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The Wessuc team includes, from left, Wade Cummerson, Hank VanVeen Sr., Ryan VanVeen, Roland Ostermeier, Shane VanVeen, Hank VanVeen, Pieter Stulp, and Mike Shantz.

Contracts are also difficult to quote accurately without knowing the solids content of biosolids, notes VanVeen. Municipalities offer tenders by volume, while Wessuc encourages them to tender on a dry weight basis.

#### PERSONAL TOUCH

Wessuc finds 70 percent of its contracts through personal contact. The other 30 percent are mined from postings of public tenders in newspapers and bid services. Other municipal jobs include cleaning of pump stations, water towers, clarifiers and grit tanks. Non-municipal contracts include cleaning of grain elevators, silos, and catch basins at car washes and other businesses.

Hydroexcavation contracts round out the portfolio.

Wessuc operates four John Deere tractors and three vacuum trucks, one with a vacuum system by Berex and a 2,100-gallon debris tank, a second with a vacuum system by Westech Vac Systems Ltd. and a 3,500-gallon debris tank, and a third with a Cusco vacuum system and a 2,200-gallon debris tank. Its fleet of hauling trucks includes 10 Volvos, five Internationals, four Freightliners and one Mack.

Although Ontario has provincial standards for biosolids application, the company must keep up with regulatory change. In January 2011, reporting responsibility shifted from the MOE to the Ministry of Agriculture, Food and Rural Affairs. "Essentially, what were guidelines before are now regulations," says VanVeen. "The field work will be the same, but we have to pay attention to the new reporting structure."

To accommodate future contracts, the company is examining options for its own biosolids storage facility. "We can't apply the material in the winter or when there's a crop in the fields, so the notion that we can apply biosolids on municipal schedules is a bit of fiction," says VanVeen.

"Additional storage will help us smooth out the application schedules and allow us to work to the farmers' schedules. We have the expertise and the equipment to run a successful biosolids management operation, but at the heart of it, the business is based on personal relationships, not only with clients but with the agricultural community." C

#### **HUMAN RESOURCE CHALLENGE**

After acquiring another five-year contract with the Region of Waterloo in 2005, the company had doubled in size. "It was a challenge just with regard to hiring and training," says VanVeen. "It was a huge learning curve, and at that point we began to delegate more of that function within the company."

Operational efficiency also became more important. To that end, the company devised a unique guidance system to improve the effectiveness of land application. Traditionally, operators would set the optimum rate of application, but then manually reduce flow rates to compensate for changes in tractor speed.

"We looked at it from the perspective of how quickly we could safely apply a tank of biosolids," says VanVeen. "We worked with local John Deere dealer, AgraTurf Equipment Services in Ayr, to create an injection system in which we did the reverse - the flowmeter governs the speed of the tractor. The tractor automatically adjusts its speed to maintain the maximum rate of flow."

The tractors were also outfitted with a GPS tracking system with auto-steer that aligns the tractor to a rigid application pattern.

"We looked at it from the perspective of how much we were making each minute per gallon applied. It makes more sense to keep the flow rate steady and speed up or slow down the tractor to compensate for the lay of the land."

#### Hank VanVeen

Meanwhile, the cleaning side of the business keeps growing. Wessuc recently completed a large digester cleanout contract for the Region of Waterloo's Kitchener wastewater treatment plant, now being upgraded. The project required five workers for three months.

"The lengths of the digester contracts are difficult to estimate," says Van-Veen. "The digester had a 2.6-million-gallon capacity, but it isn't about the volume of water the tank can hold. It's about the solids that are left when the tank is drained. We have the capacity to dewater about 260 cubic yards of sludge in eight hours, but the cold weather limited our productive days because of freezing across the hoses."

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#### No Fun At All

THIS TRIP DOWN A WATER SLIDE COULD HAVE COST A SEWER CONTRACTOR EMPLOYEE HIS LIFE. THE SAFETY LESSON IS CLEAR: FOLLOW PROCEDURES AND NEVER TAKE SHORTCUTS.

BY TED J. RULSEH

magine working inside a large sewer interceptor and being swept away by the current. That's a "water slide" trip no one would enjoy.

Yet it happened to a 37-year-old contract worker in Pierce County, Wash., back on March 21. The obvious question is: How does something like this happen? The man sustained only minor injuries - he was rescued, then treated and released at a local hospital - but it's a minor miracle that he survived.

The man, an employee of Frank Coluccio Construction Co. in Seattle, was working in a temporary access shaft built for a project that involved lining of the sewer interceptor, which carries all the flow to Pierce County's Chambers Creek Regional Wastewater Treatment Plant in University Place, Wash.

By all accounts, he and co-workers had performed a proper confined-space entry with all necessary equipment. But the man, while checking the pipe alignment, decided to unclip his safety harness to look around the corner and into the pipe. He somehow became caught in the flow of sewage (about 1,600 gpm) and, because untethered, was swept downstream.

"This man wouldn't be alive today if it weren't for the (Pierce County) people. I credit them for saving his life, and it was great working with people who didn't lose their cool and are well-versed in their training."

#### **Kevin Kroenert**

This incident ended happily because the Pierce County collection system maintenance team acted quickly and heroically, drawing on extensive mandatory training members had taken over the years. But there are two obvious lessons:

First, avoid taking shortcuts or deviating from safety procedures at any time, in any way, when working in sewers. Second, never underestimate the importance of safety training. Because, you never know.

#### **DEEP UNDERGROUND**

County personnel reported that the man was working inside the access shaft some 150 feet below ground. The concrete pipe was to be lined with a reinforced fiberglass liner, and the installation required two temporary access shafts to enable liner placement.

Terry Soden, the county sewer and water utility's maintenance and operations manager, noted that about 400 feet from where the man slid into the pipe, the slope dropped off to a 4 percent grade and the flow sped up significantly. The man ultimately slid some 3,200 feet down the pipe and passed two access points before managing to stop himself just beyond the energy dissipater where the pipe narrowed to 48 inches.

That was about 300 feet from the bar screens in the treatment plant headworks. "What made the rescue possible was that he was able to communicate verbally," Soden reported. "As he was going down that pipe, not connected to anything and with no communication device, he could have run into some obstruction, bumped his head and become unconscious. Then we wouldn't have known where he was in the system.

"When our people got a call from our inspector on the surface just shortly after it occurred, they started



A well-trained staff and quick response time help save a 37-year-old contract worker's life after he was swept away inside a large sewer interceptor. (Photo courtesy of Terry Soden)

opening all three access points on the wastewater treatment plant site. They were actually able to hear him yelling, so they could pin down where he was. It's also fortunate that there was enough headspace in the pipe to allow him to breathe."

#### **SEQUENCE OF EVENTS**

According to the county's report on the incident, public works and utilities inspector Bob Buckley called maintenance program manager Scott Roth at the treatment plant at 7:53 a.m. to report the accident. "Roth immediately used his two-way radio to alert everyone at the plant that an emergency confined-space entry maneuver with harnesses and lifelines was needed," according to an account written by Mary Powers, county public information officer.

"Collection system manager Larry Butner grabbed his high-powered flashlight and a chain hoist and ran to the most upstream point, the energy dissipater. It is pitch black inside the pipe, and his light would help the man see. Meanwhile, the others set up hoists and formed two-man entry teams at the next two downstream points."

West Pierce Fire and Rescue was called just before 8 a.m. and told to prepare for a swift-water rescue.

By the sound of the man's voice, the county crew determined that he had passed the energy dissipater and was moving toward the headworks. At the next opening, they lowered a rope and waited. Finally they saw a hand emerge from the water and grab the rope. The man then stood up and grabbed the manhole ladder, about 25 feet below grade.

Directed by confined-space entry supervisor Mark Newport and West Pierce

Fire and Rescue commander Kevin Kroenert, an employee was lowered to hook a retrieval cable to the man just as he was letting go of the ladder.

The West Pierce firefighters and paramedics removed the man's gear as soon as he was pulled to the surface, decontaminated him in an on-site shower, and took him to the local hospital, where he was treated for minor injuries and released

#### **BARELY SURVIVED**

At the time he was rescued, the man was oriented feet downstream, and his waders were full of water. His hardhat had been knocked off when he passed under a grate. Powers reported that Kroenert told county utility managers, "This man wouldn't be alive today if it weren't for your people. I credit them for saving his life, and it was great working with people who didn't lose their cool and are well-versed in their training."

"One thing we learn is always to be connected, so that if you have to be retrieved, you're attached to a mechanical device to help get you out." **Terry Soden** 

Local news reports said the state Department of Labor & Industries was investigating whether the accident involved violations of any worker safety laws.

Soden noted that all treatment plant and collection system employees are required to pass confined-space entry and fall-protection training. "Everybody in the industry practices confined-space entry and self-rescue," he said. "One thing we learn is always to be connected, so that if you have to be retrieved, you're attached to a mechanical device to help get you out.

"When we train, we have a mock manhole. All 80 members of my staff in the maintenance and operations realm train on that. They actually have to pull somebody up and be pulled up. We train on this annually. I've been here 25 years, and we'd never before had an incident where we had to retrieve somebody in an emergency situation.

"We applied what we had learned about keeping ourselves and our coworkers safe. It worked out rather well. In 30 minutes, it was all over but the shouting. I'm very proud of my staff. In the midst of duress, they handled it very professionally." c

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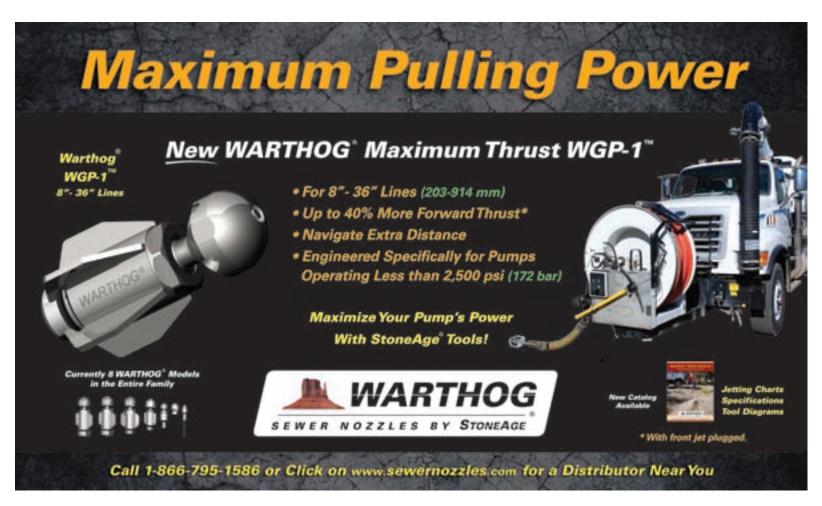
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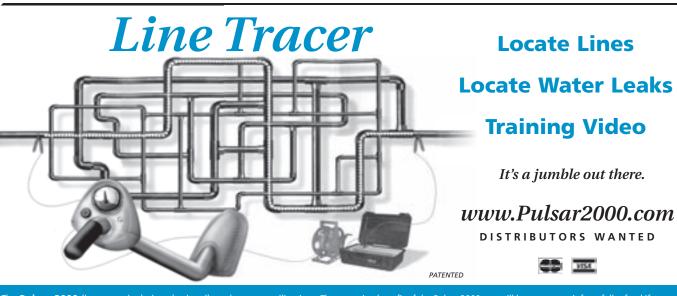
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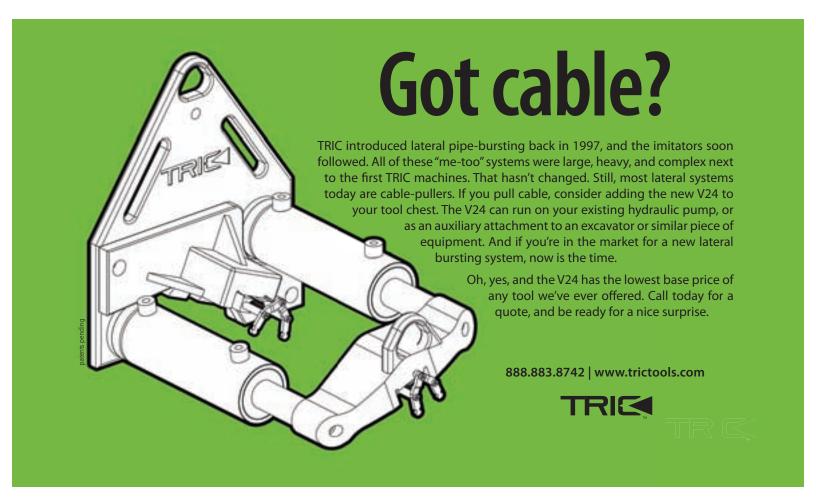
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Richard Young and partner Jose Santos developed Hydro Spy LLC with a business plan that saw the emergence of hydroexcavation as a major force.

Opening in January of 2009 with \$50,000, a business plan, and a rented vacuum truck, the two put their combined 10 years of experience with the process and their managerial skills on the line as they promoted their company.

They attended business networking events in Texas and developed the website that now attracts 75 to 80 percent of their clientele. Along the way, Hydro Spy, based in Houston, has served customers in Texas, Colorado, Louisiana and Mississippi.

As they closed the books at the end of 2010 after 24 months of operation, they were awaiting the delivery of a 2010 GapVax hydroexcavator, bringing them closer to their business plan goals.

With four employees, the company has seen its client list grow. From doing jobs that lasted three or four days, they've grown into larger projects HYDRO SPY PARTNERS PUT THEIR FAITH IN THE EMERGING TECHNOLOGY OF HYDROEXCAVATION AND QUICKLY BUILT A BUSINESS WITH A MULTISTATE CLIENTELE

BY MARIAN BOND

lasting three to four weeks. They have also snared a contract for standby hydroexcavation services with a major gas producer for utilities in several states.

#### **BREAKING THE BARRIER**

Neither man had special training in hydroexcavation when they hired on for construction jobs. Santos was 19 when he started. Young also wanted a paycheck after he tried unsuccessfully to make a career in writing and music. The

#### profile

#### **HYDRO SPY LLC, HOUSTON, TEXAS**

Richard Young, Jose Santos OWNERS:

YEARS IN BUSINESS:

SPECIALTY: Hydroexcavation

EMPLOYEES:

CUSTOMERS: Utilities, refineries, mines, contractors

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(continued)





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Left photo: Beltran and Arcentales fill the truck with water for the day's work. Lower photo: Jose Santos rechecks the drill point for accuracy with a Rycom utility locator before digging.

"We did research and found what had happened in Canada, where they use hydroexcavation whenever digging near utility lines. We believe we are in an emerging industry. We wanted to go for fast, quality service with referrals and repeat business."

#### **Richard Young**

two discovered their future in mud and worked their way up to management before becoming partners and going on their own.

Both saw potential for a business built entirely on hydroexcavation and its many applications. "We wanted to provide a service where the benefit to the client justified the cost," Young says.

"That was our concept. We did research and found what had happened in Canada, where they use hydroexcavation whenever digging near utility lines. We believe we are in an emerging industry. We wanted to go for fast, quality service with referrals and repeat business.

"In my experience as an operations manager, I found that people had been searching on the Internet for this service. And still, a lot of contractors just don't know about the process, but are running into situations where they would pre-

fer not to dig."

They shopped a business plan trying to get financing, building a model based on four trucks. "We didn't envision a huge fleet because

Hydro Spy's new hydroexcavator is a 2010 GapVax unit on a 2010 Volvo chassis. Photo courtesy of Hydro Spy. we anticipated others getting into the market, and this is a capital-

heavy business," Young says. "Trucks are expensive. You need to keep them working. You have to pay the note, the insurance, the personnel. If the work isn't there, you still pay all those."

Lenders liked the plan but did not come through with financing: They questioned why anyone would start a business in a recession. "People said we couldn't get the money, and we wouldn't get any work," Young says. "We thought: Why not start out in a recession? Get your foot in."

#### **PICKING TARGETS**

Hydro Spy started by targeting utilities, pipeline contractors, and refinery service contractors. However, clients now also include electrical contractors and others.

Determined, the partners gathered their funds and built a website that launched in June 2009. They also took part in Blue Book Showcases held in major cities, where contractors, subcontractors and suppliers meet under one roof and at no charge to offer their services to prospects. The Blue Book Building and Construction Network has been supporting the construction industry since 1013.

Through Showcase events in Houston and San Antonio, Young and Santos were surprised to find that of 100 contractors, only one or two knew about hydroexcavation. At one event, they generated more than \$100,000 of work from one new client.

(continued)





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Jose Santos, right, conducts an on-site preliminary safety meeting with the team.

They had to educate potential clients on the benefits of hydroexcavation and provide data on their work backgrounds. They did one of their first jobs as a donation - which turned into a three-day job with pay.

Another call came on a Saturday at midnight: A customer needed an emergency job on Sunday morning. They researched the project overnight, showed up in the morning, did the job, and picked up a customer.

As a startup, Young and Santos took on some daunting projects. A utility company needed to locate some lines believed to be at least 50 feet deep. "It took us several probes,

but we found the utility without ever opening up the ground," says Young. "The lines were 54.7 feet deep."

Even in building pipelines above ground, support piers must be constructed, requiring deep holes. If the location is restricted, Hydro Spy parks a GapVax hydroexcavator up to 400 feet from the site and extends the water and vacuum hoses.

#### **PULLING IT TOGETHER**

Launching the website gave the company a huge presence in the Houston arena. Young put his experience with websites to work and spent about four weeks on the effort, so that anyone searching for hydroexcavation would find Hydro Spy. "Our focus was on the right domain name and keywords to get us ahead of others who come into the region," Young recalls.

#### AIMING TO LEAD

Applications for hydroexcavation trucks run from trenching, line locating and probing, to culvert cleanouts, lift station work, and oil rig vacuum support. Hydro Spy does it all.

"We actively promote hydroexcavation as the missing link in pipeline and underground utility damage prevention," says owner Richard Young. "We define this as cutting-edge green technology that uses pressurized water to safely and surgically convert solid ground into mud that is simultaneously sucked up by a powerful truck-mounted vacuum system. The technology has many applications but is basically used to safely excavate around pipelines and other underground utilities."

Young says that after 16 months in business the company was approaching \$1 million in revenue and had a backlog of more than half a million dollars of awarded work. During 2011, they planned to add two new vacuum trucks to the rolling stock. Says Young, "Our plans are to lead the industry where it should go."



In 85 percent of jobs, Hydro Spy is a subcontractor. In that role or as the prime contractor, the company strives for integrity and customer satisfaction. The website lists a service guarantee: If the customer is not happy, there is no charge.

"We are that confident in our ability to go out and do a great job," Young says. "We know how expensive the technology is. We want a client to know how hard we work to get a job done. We go over and beyond. This is why educating the client about the technology is critical. When we go on a job site, we brief them on the process and the scenario and what they want us to do. We want it to go smoothly.

#### "Our focus was on the right domain name and keywords to get us ahead of others who come into the region."

#### **Richard Young**

"We explain that when we dig this hole, because of the ground conditions, there may be a need to insert a casing to keep the hole open. All is discussed ahead of time. The workers in the field need to know if there will be a casing in the hole. After we dig, we have 10 to 15 minutes to get a casing in, or it will

"On one job, the client's workers left the site for lunch and were not there to take care of the casing, and there was a collapse. The owner was upset, but we said we would not charge him. In fact, he did insist on paying the bill."

#### **GROWING AND GAINING**

During the first few months in business, rental costs took a toll on the company. "We had our client base, but we were not making much profit," Young says. "We needed our own truck, but still didn't have the financing."

After 11 months, a 2002 GapVax HV-46 HX vacuum loader became available for purchase through a lender in North Carolina, and that's when things really kicked off.

(continued)

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The GapVax unit remains the truck of choice. It came with a 1,600-gallon aluminum water tank, a water pump by Giant delivering 2,900 psi/19 gpm, a 14.5-cubic-yard debris body, and a vacuum blower developing 3,800 cfm/28 inches Hg.

The equipment list expanded to include a Rycom Instruments cable, pipe and fault locator used to supplement subsurface utility engineering projects and locate hard-to-find utilities. They also have an Ingersoll Rand compressor with 185 cfm free-air delivery rating for air excavation and directional bores for electrical PVC conduit installations.

"It's good to find people not set in their ways. We bring them in and go from the ground up. We want open-minded people who are not afraid to get muddy. This is tough work, and we want people to push forward."

#### **Richard Young**

#### STAFFING UP

Hiring technicians was always in the plan. Initially they hired part-time help when jobs came along, but in 2010 they added four technicians, some experienced and some new. Santos says starting from scratch with a new hire is not a bad thing.

"It's good to find people not set in their ways," he says. "We bring them in





Richard Young, left, and Jose Santos show what's left in the truck after cleaning a line -- "Mud is money."

and go from the ground up. We want open-minded people who are not afraid to get muddy. This is tough work, and we want people to push forward."

Santos and Young give new hires an orientation about the equipment and the industry and take them out for training, teaching them how to dig holes, trench, and locate utilities without damage. "We know in a couple days if a person will make it," Santos says. Safety is always an issue, and the training makes workers aware that the water lance can be a formidable cutting tool.

#### **SORTING IT OUT**

As a rule, Santos goes to job sites with the truck and two operators to maintain quality control. Young stays at headquarters to manage and generate business, but also works in the field when necessary.

Equipment maintenance is a top priority. The firm keeps careful records on the hydroexcavators, which receive maintenance including new fluids and

filters every 300 hours of operation. Drivers are encouraged to check the trucks for leaks or loose bolts and to crawl under the trucks to inspect critical components.

Everything to do with Hydro Spy carries attitude and accomplishment. "When I first got into this line of work, it was just for a short-time place to get some experience driving a truck and to pick up a paycheck," Santos says.

"But I found it exciting and interesting. Richard and I decided we would make something out of it. We just segued from being operators to being owners. It took a while, but we have proven we're on the right track." ©

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Tech Perspective looks at technology-related issues and provides information and advice that cleaning professionals can apply to equipment selection and to their daily work in the field. Industry members are welcome to offer ideas for this column. Please direct them to editor Ted J. Rulseh, editor@cleaner.com.

# The Business End

THE PERFORMANCE OF A \$300,000 COMBINATION TRUCK ACTUALLY DEPENDS ON THE CHOICE OF THE MUCH LESS EXPENSIVE PIECE OF METAL AT THE END OF THE HOSE

BY TED J. RULSEH

ontractor Duane Johnson recalls accompanying a city crew that was proud of its brand-new combination truck. They were trying without success to clean grout from a line. Johnson suggested switching to a high-speed rotating nozzle.

Upon deploying the nozzle, the operator looked at the pressure gauge, went into a panic, and hit the truck's kill switch. He said the truck should not be operating at such a high pressure at the engine rpm he was using.

Upon questioning, it turned out that the truck had never developed adequate pressure because the crew had been using for the past eight years a single basic cleaning nozzle that had a useful life expectancy of six months. "I guarantee that crew never really cleaned a stick of pipe," Johnson says. "They had been driving that truck all over town and never really cleaned a thing."

This case, while extreme, illustrates the importance of nozzles in the pipe cleaning process, says Johnson, vice president of Affordable Pipeline Services in San Diego, Calif. The kind, quality and condition of nozzles ultimately

determines the effectiveness of a cleaning truck in any given application, Johnson told attendees at an Education Day seminar at the 2010 Pumper & Cleaner Expo in Louisville.

#### **WHY IT MATTERS**

A combination truck water pump delivers a specific amount of energy. The amount of that energy applied to the cleaning task depends on what happens to the water between the pump and the pipe.

"The first thing that affects energy is the hose," says Johnson. "Every time you put a fitting on a hose, you lose seven pounds of pressure. For every foot of 1-inch hose, you lose one pound of pressure. The pressure loss for a 1-inch inside-diameter hose 600 feet long is 600 psi. So for a combination truck delivering 2,000 psi, the pressure at the nozzle is 1,400 psi."

The number of fittings on the nozzle, the number and size of the jets, and the angles of the jets also affect performance. Therefore, it's important to apply





Tier 1 nozzles consist of a steel housing with orifices drilled out in different locations and sizes and at different angles. "The issue with these nozzles is that they have a flat inner surface," says Johnson. "So all energy we haven't lost in the hose comes into the nozzle, hits the flat surface,

A nozzle sits inside of a 33-inch simulated pipe while Duane Johnson teaches a class on large diameter

cleaning at a collections workshop.

and has to redirect and come out

"There are circumstances where a Tier 1 nozzle will do the job, and circumstances where it might take a week to do what you could have done in four hours with a nozzle better suited for the task. These nozzles are less expensive, but they also deliver less performance, and they don't last as long."

Tier 2 nozzles are designed for longer life and better performance. Durable inserts can be removed and re-

placed while the main body of the nozzle remains intact. Some of these nozzles use long-lasting titanium or ceramic inserts and include flow straighteners that improve fluid mechanics by reducing turbulence.

Tier 3 nozzles are the next evolution. They include features such as internal ceramic discs and controlled rotation, but most important, they direct flow more efficiently so that energy loss is greatly reduced. The nozzles therefore operate at higher capacity and clean more effectively. In general, these nozzles cost significantly more than Tier 1 and Tier 2 nozzles, but they can make a drastic difference in performance.

the appropriate nozzle to any given task. "Often, contractors pay a lot for a truck and then are reluctant to spend money on nozzles," says Johnson. "But why would you spend \$350,000 on a truck and then use a \$60 nozzle?"

#### **FLOW VERSUS PRESSURE**

At the most basic level, Johnson says, contractors need to understand the functions of flow and pressure. In general, pressure cleans pipe and flow volume provides thrust and moves material. "Going from 60 gpm to 80 gpm enables you to move more heavy solids," says Johnson. "You'll have more thrust to propel the nozzle down the line. But you'll have less ability to cut material off the pipe wall."

Conversely, while a 4,000 psi trailer-mounted waterjetter may be more effective at cutting roots than a 2,000 psi combination truck, the trailer jetter will be less effective in moving the debris out of the line because it delivers only 12 to 18 gpm, versus the truck's 60 to

80 gpm.

Also fundamental to jetting, in Johnson's view, is the use of skids. That's first and foremost for safety reasons - to help keep the nozzle from shooting out of the manhole with lethal force if, for example, the cleaning truck operator is inattentive

and fails to notice the leader hose emerging from the manhole. He prescribes a nozzle-skid combination 1.5 times the diameter of the pipe being cleaned.

A skid also improves cleaning: By keeping the nozzle off the bottom of the pipe, the skid enables more of the jets to do their work. While most nozzles are designed to be positioned at or near the center of the pipe, the application dictates the type of skid to use.

Johnson notes that operators may refrain from using a skid because it makes it harder to extract the nozzle from the line at the end of a cleaning run. Safety implications aside, "We spend twice as long cleaning the pipe because we don't want to spend five minutes kicking the nozzle out of the line."

#### **ADVANCES IN NOZZLES**

Johnson notes that nozzles have improved greatly in recent years – a huge variety of kinds and sizes enable contractors to fit a nozzle to almost any application. The question is which nozzles to select in the face of specific needs and a limited budget.

"The biggest change in the past several years is in nozzle technology," Johnson says. "Nozzles used to be made by guys at lathes. Now they're designed by engineers." Nozzles are classified in three tiers.

#### **CHOOSING WISELY**

Johnson advises contractors to select nozzles with an eye toward the application, be it general sewer or storm drain cleaning, clearing blockages, cutting roots, or removing tuberculation. Rarely will a single nozzle suffice.

"If you're going to clean a neighborhood with 7,000 feet of pipe in one day, you can't do it with one nozzle. You'll never find 7,000 feet of pipe in which every section has the same problems."

**Duane Johnson** 

"If you're going to clean a neighborhood with 7,000 feet of pipe in one day, you can't do it with one nozzle," he says. "You'll never find 7,000 feet of pipe in which every section has the same problems. Some areas will have roots, some will have grease, some will have sags in the pipe. Each condition requires a different nozzle."

In shopping for nozzles, Johnson recommends asking manufacturers exactly what each nozzle is designed to do. By shopping with basic knowledge of nozzles and their characteristics, contractors can make choices that enable them to select an assortment that will meet everyday needs cost-effectively.

Finally, Johnson recommends training all waterjet equipment operators thoroughly, and for that he suggests starting with the Jetter Code of Practice Manual, published by NASSCO.

"Many cities have training programs for jetter operators," he says, "but in the contractor world, training often passes from Bill, to Tom, to Fred, to Sam, to George, and something is left out in each of those exchanges. I would suggest that anyone who owns a cleaning truck get this manual. It is an excellent source of information, even for highly experienced operators." c



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# **Keeping a Rein on Legal Costs**



Fred S. Steingold practices law in Ann Arbor, 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.

WORK WITH YOUR ATTORNEY ON WAYS TO STREAMLINE LEGAL WORK AND TAILOR BILLING PRACTICES, AND ABOVE ALL, STAY OUT OF COURT IF POSSIBLE.

BY FRED S. STEINGOLD

egal fees are a necessary cost of doing business, but you don't want them to get out of hand. Fortunately, you can trim legal costs without compromising the quality of essential legal services.

For starters, be sure you have a good handle on how your lawyer assesses fees. If you haven't discussed fees with your lawyer recently, maybe now is the time for a heart-to-heart talk. In most instances, you'll find that your lawyer charges by the hour. What's his or her hourly rate? What's being charged for the time of associates, paralegals and others in the lawyer's office? Are these rates competitive?

Price isn't everything, or even the most important thing, in a lawyer-client relationship. But if your lawyer is the highest charger in town, you should explore the possibility that equally talented but less expensive legal help is available.

#### **ALTERNATIVE BILLING**

The hourly method of billing can be modified to fit special circumstances. Your lawyer may be willing to quote a fixed fee for a particular piece of work regardless of the hours involved. For example, if you're buying the assets of another company, your lawyer may be willing to prepare the purchase agreement and review the closing documents for a flat fee.

Or your lawyer may be willing to place a ceiling on the charges for a particular piece of business. At the very least, get an estimate of how much a given job will

cost. Having given you an estimate, your lawyer will have second thoughts about exceeding the quote - or will let you know when charges are approaching the ceiling you set.

In collection cases, discuss a contingent fee arrangement. With such a fee, your lawyer gets paid only if money is actually collected from the

person who owes it. He or she thus shares the risk of winning or losing.

Insist on itemized statements and try to have them sent to you monthly. If legal expenses start to rise precipitously, you'll know early in the game when you can do something about it.

Have a clear understanding of what expenses will be passed along to you. Customarily, lawyers will bill you for some out-of-pocket expenses in addition to their services. You may be billed for long-distance phone calls, photocopies, court filing fees and depositions. If your lawyer bills you for travel, lodging and meals, be sure to set mutually agreeable ground rules in advance. You don't need to foot the bill for first-class travel and other luxuries.

#### LITIGATION IS COSTLY

To the extent possible, stay out of court. Authorize lawsuits only as a last resort. And if you're sued or threatened with a suit, explore ways to settle as quickly as possible. Lawsuits drain your company's time and energy.

Once a dispute is in court, the costs are largely beyond your control. The course of litigation is dictated as much by the whims of the judicial system and the tactics of the opposing lawyer as by the skill of your own lawyer. If you can't settle a dispute, consider arbitration, which is generally speedier and less expensive than a lawsuit.

Sometimes a business person starts a suit or digs in to defend one because "a principle is at stake." But after two years of litigation and thousands of dollars of legal fees, the so-called "principle" can seem very remote. Don't let the impulse to teach the other guy a lesson cloud your business judgment.

Business people sometimes find themselves embroiled in a court case because they "don't want to set a precedent." They feel that making peace with one problem customer or supplier will open the door to scores of other similar compromises.

Generally this isn't true. No legal precedent is established when you settle on a case-by-case basis. Furthermore, it's unlikely that others will find out about a settlement and demand equal treatment.

Save money by having your lawyer devise forms for routine legal transactions. Then consult with your lawyer, perhaps by phone, for special language in exceptional cases. Landlords have used lease forms this way for years.

It's usually not necessary to involve your lawyer in the early stages of a business deal. Handle the negotiations yourself and work out the general outline of the deal. Then have your lawyer draft a contract.

You'll also save money if you consult with your lawyer on several matters at

It pays to read the trade journals in your field to keep up with specific legal developments that your lawyer may have missed. Send pertinent clippings to your lawyer. This can dramatically reduce legal research time.

> one time. In a one-hour conference, you can review with your lawyer the annual updating of your corporate record book, the renewal of your lease, and drafting an employee manual.

#### **MORE WAYS TO SAVE**

Looking for more ways to save costs? Try handling some matters yourself. Take some cases to small claims court. After all, that's what small claims courts are for. Your lawyer can provide behind-the-scenes coaching at a minimal cost.

Assist with the gathering of documents needed for a real estate transaction. Help line up witnesses for a trial. Try your hand at the first draft of a contract and then give your lawyer the relatively inexpensive task of reviewing and polishing the

It pays to read the trade journals in your field to keep up with specific legal developments that your lawyer may have missed. Send pertinent clippings to your lawyer. This can dramatically reduce legal research time. Finally, keep track of legal expenses and deduct them at tax time. C

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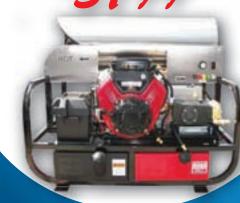






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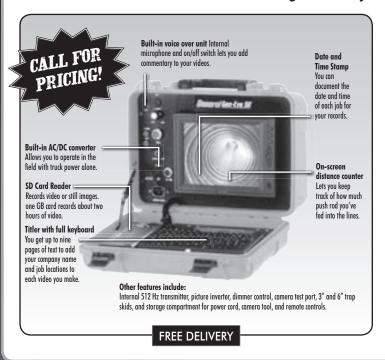


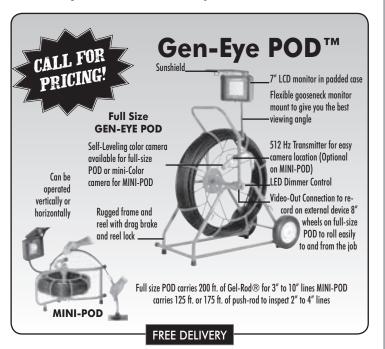
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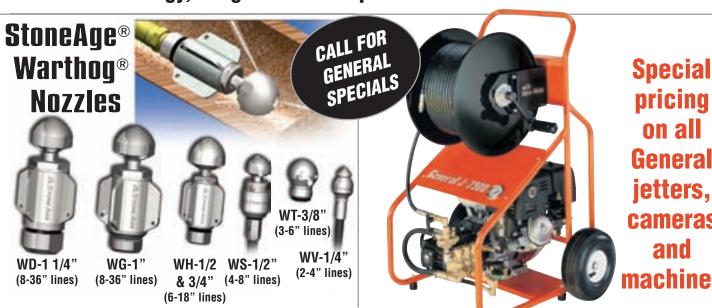
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# **Tough Conversations**

HERE ARE FOUR TECHNIQUES TO HELP YOU SAY WHAT NEEDS TO BE SAID, WITH INTEGRITY, WHEN IT'S HARD FOR YOU TO SAY IT AND THE OTHER PERSON DOESN'T WANT TO HEAR IT

BY JoAn MAJORS

'd like to see you in my office at the end of the day." This is one of those requests that just gives a person chills, a pit in the stomach, cold sweats, even nausea.

Often the one hearing those words is not the only one feeling the discomfort. What is it about a request like this that makes everyone involved just dread the moment? How can a simple request evoke such emotion?

Unfortunately, this is the way most people have learned to handle concerns, take care of business, lay down the law. When it comes to delivering tough conversations, starting with the right yes, and you then have the freedom to discuss the troubling issue - be it constant tardiness or whatever else. She has involved herself by saying yes.

2. Ask permission to be honest. If you as a subordinate want to confront an issue with someone in management, it works similarly, but the words are different. You don't want to make the other person look bad or foolish, so be discrete. Step into the person's office or schedule a time to go over your concerns.

You might say, "John, do I have permission to be honest with you?" John will respond with less concern about the outcome because you have been person to engage at a different level and cuts down on defensive responses.

4. Assume innocence and avoid accusatory language. When having tough conversations, don't assume you know everything about the person or the behavior that is creating the problem. It is often more than meets the eye.

When you ask for permission to coach or be honest, presume that the other party has no idea there is an issue or problem – assume innocence. The fact Susan is habitually tardy doesn't mean she disrespects you or the organization. Don't assume that you know why it is happening.

When having tough conversations, don't assume you know everything about the person or the behavior that is creating the problem. It is often more than meets the eye.

question and the right attitude can change everything about the encounter and the outcome.

Many people simply cannot handle these conversations well, but four guidelines will give even the most timid at heart, and the most brutally honest, a way to offer unpleasant information while maintaining integrity and having empathy.

First, a simple guideline. It doesn't matter if the exchange is from a manager to a subordinate, or from a subordinate to a manager. By starting with a question, you allow the other person to listen and participate at his or her rate of speed, not yours. Then you must be willing to wait for the answer. The simple act of asking a question allows the other party to choose to join the conversation.

1. Ask permission to coach. When you have an issue with a team member and need the person to listen and respond, you must engage that person in the process. Consider calling the team member to your office and finding something to compliment – and then deliver the tough news about the

For example: "Susan, you are one of our best telephone salespeople. Do I have permission to coach you in another area?" She will most likely say respectful in your request. Besides, who would say, "No, I want you to lie to me"?

The other person may seem puzzled when you ask. Don't fill in the silence – wait for the response. However uncomfortable this might seem, it will create the results you want. Once the question is asked and answered, both parties will listen differ-

3. Leave out the limiting terms. When speaking to someone about habits, behaviors, or personal life, it is important not to sugarcoat. For instance, in discussing a sensitive area, people often use words like, "we," "a little," "sort of," "kind of," and others that tend to make the issue appear less impactful.

A manager may say to a team member, "Susan, we have a little problem with your tardiness." And Susan may think: "If 'we' have a problem and it is 'little,' why are you talking to me?"

As a manager, you might instead say, "Susan, there is a problem with your continuous tardiness. I am concerned and believe you should be too." This phrasing causes Susan to hear the concern. You should only share the concern after asking permission to coach - that question allows the

Susan could have a dying mother or a new diagnosis that is causing her to have blood work done often in the morning. Assuming that she is innocent is much more productive than accusing her. If you wonder what is happening, then just ask. But when you ask, don't do it with an attitude.

Remember: Manager to team member, ask permission to coach. Subordinate to manager, ask permission to be honest. Use words that don't limit the impact of the issue. Assume innocence and stay away from accusations.

These four techniques will cut down on the defensive mechanisms we all have in our personalities when we know bad news is coming. Focus on the fix, not the flaw. It's an approach that can help you encourage others to excellence. ©

**ABOUT THE AUTHOR** JoAn Majors is a member of the National Speakers Association and the Global Speakers Network. For information on her seminars and her book, Encouragementors: 16 Attitude Steps for Building Your Business, Family & Future, visit www. ioanmaiors.com.

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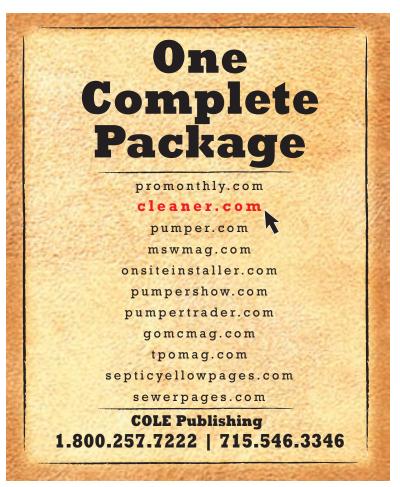
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# **Bought Right**

HARMON PLUMBING GOT A BARGAIN ON TWO USED STEP VANS, WHICH CARRY A LARGE INVENTORY AND GREATLY REDUCE TRIPS TO THE SUPPLY HOUSE

#### BY KEN WYSOCKY

he technicians at Harmon Plumbing Services Inc. in Raleigh, N.C., don't know the folks at the local parts warehouse nearly as well as they might. They don't visit often, thanks to the company's two spacious 1999 Ford step vans.

"We stock our trucks to the point where they can do about two weeks' worth of work without restocking," says owner Steve Harmon, who does business as a Rooter-Man franchise. "The trucks truly are rolling warehouses. We save fuel and labor on trips to the parts warehouse. Plus we can sell, sell, sell without running all over the place. The guys can sell more fixtures at one location because they have them in stock.

"The best thing you can do is keep your guys away from a supply warehouse. Being very conservative, I'd estimate each truck saves us at least five hours a week, or about 500 hours a year in all. That adds more than \$125,000 to our annual gross sales."

#### **GOVERNMENT SURPLUS**

The 1-ton vans have aluminum bodies made by Utilimaster Corp. and tandem rear tires that can carry extra weight. Harmon bought the vans from a local Ford dealer, who bought them at a government surplus auction. The trucks had logged about 24,000 miles apiece, and Harmon paid \$12,500 for each of them.

#### money machines

**OWNER:** Harmon Plumbing Services Inc.

(dba Rooter-Man), Raleigh, N.C.

**VEHICLES** 1999 Ford step vans

**FUNCTION:** Plumbing and drain cleaning service

PRIMARY EQUIPMENT: \$6,000 parts inventory, three sizes of drain

and sewer cable machines

**COST:** \$12,500 each

"I was really excited," says Harmon, who had always wanted the large vans because of their high ceilings (6 feet, 1 inch); roomy interiors (a little more than 12 by 7 feet); wider high-visibility windshields; and large sides for big, eye-catching graphics. "I felt like I hit the jackpot because I knew I could make money with them," Harmon says. "It wouldn't take long to get a good return on my investment."

Harmon and his crew added fluorescent lights inside and bought generic 2-foot-deep industrial shelving for storage. They flipped the shelves upside-down to make use of a half-inch lip that holds plastic storage bins in place. "We like to stay organized so guys aren't fumbling around for tools and equipment," Harmon says. "With the high ceilings, our guys can walk through the aisle without crouching over."

Each truck carries about \$6,000 worth of parts, plus a RIDGID K-60 cable machine, a Super-Vee handheld cable machine from General Pipe Cleaners, and a GO 50 cable machine from Gorlitz Sewer & Drain. The company also owns a Gorlitz GO 15 cable unit.

Plumber Rick Brown shows the spacious interior of one of Harmon Plumbing Services' vans. (Photo courtesy of Steve Harmon)



"Before, we were limited in many ways by smaller trucks. Now we can stock three to four times as much in terms of tools, material and equipment. We're fully prepared for anything."

#### **Steve Harmon**

#### LOTS OF AD SPACE

**USB - SEC** 

To advertise his business, Harmon took advantage of the vans' sidewalls, which offer about three times as much space as a conventional cargo van. "On the side, from the cab door to the rear door, you've got about 12 feet of space," he says. "And because they're white trucks, the graphics really stand out. We use 3M reflective graphics. If one of my trucks goes around here at night, every one knows it."

The extra space lets Harmon list the phone numbers for all three metropolitan areas his company serves, and he can use much larger numbers, easily The company relies on two 1999 tandem-axle Ford step vans, both purchased from government surplus and now outfitted for plumbing and drain cleaning. (Photo courtesy of Tracey Washburn)

visible from a distance. "We get a couple calls a month from people who see the trucks," he notes. "One recent call turned into a \$6,500 residential sewer line replacement."

Another benefit is that even though more than 10 years old, the vans don't look out of style. "That's important because customers are concerned if you park something in their driveway or on their curb that looks old," Harmon says. "You don't want to give the impression that you're not successful enough to buy good, modern equipment."

To make the vans easier to maneuver, Harmon had rear-view backup cameras installed. "Before, we were limited in many ways by smaller trucks," he says. "Now we can stock three to four times as much in terms of tools, material and equipment. We're fully prepared for anything." c

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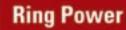


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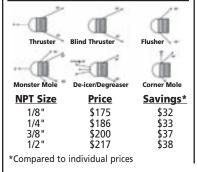
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# Fruit of the Vine

OLD-SCHOOL METHODS AND PIPE BURSTING HELP A CONTRACTOR REPLACE COLLAPSED DRAIN LINES WITHOUT INTERRUPTING WINE PRODUCTION

#### BY SCOTTIE DAYTON

n the middle of the grape-harvesting season at the Charles Krug Winery in St. Helena, Calif., workers washing 40,000-gallon fermenting tanks and wooden storage barrels noticed that the water drained slowly while the level in a manhole rose.

A contractor inspecting the 150-year-old 3-, 6- and 8-inch asbestos cement lines could not push his camera through the areas where acidic wine fumes had eroded the crown of the pipes, allowing soil to cave in. Other contractors waterjetting the lines pulled in more soil than they removed.

Jeff Rodgers, winery superintendent, asked Ryan Peterson, owner of Express Plumbing Affordable Trenchless Co. in Carmichael, Calif., if he could replace the 500-foot-long 8-inch pipe without tearing up the floor or interrupting winemaking. Peterson promised not to charge the winery if he failed. The men agreed with a handshake.

"I had doubts," Peterson says. "We'd never keep the host pipe clean enough to line it – not with all that gravel falling in – and a fresh cave-in would collapse the liner. Pipe bursting was the only alternative."



### tough job

PROJECT: Restore collapsed drain lines in a winery

during peak production

CUSTOMER: Charles Krug Winery, St. Helena, Calif.

CONTRACTOR: Express Plumbing Affordable Trenchless Co.,

Carmichael, Calif.

EQUIPMENT: M50 pipe bursting system, TRIC Tools Inc.

RESULTS: Lines replaced without disrupting the winemaking process

LEFT PHOTO: The stud on the end of the 7/8-inch cable threads into the end of the 10-inch HDPE SDR 17 pipe. RIGHT PHOTO: A nylon lift strap wrapped around the modified 8-inch static mole keeps it from sliding off the head core while tilted down for entry. Old cable grippers welded to the mole increase its base diameter to accommodate the 10-inch burst. (Courtesy of TRIC Tools Inc.)





Two Express Plumbing Affordable Trenchless Co. workers direct Gilbert Guerrero in the tracked Mustang ME3003 mini-excavator as he lines up the 10-inch HDPE pipe for the 350-foot pull.

upstream manhole and excavating it for the pulling pit.

"The ground was solid here, which is why we pulled upstream instead of downstream," says Peterson. "Because we worked around the winemaking process, it took two weeks to clean 500 feet."

The day of the pull, the men set up the cribbing, 24-inch-thick resistance plate, and 20 gpm/5,000 psi TRIC/Enerpac pump powering an M50 ram with 48 tons of pulling force and 19.24 square inches of piston area. Lien chose an 8-inch bursting head with 5.5-inchdiameter nose attached to a 5/8-inch swage cable to pull in the 8-inch HDPE SDR 17 pipe. The pull took four hours and was uneventful.

Peterson consulted Michael Lien, director of operations for TRIC Tools. He loaned equipment and offered advice. "The last thing we wanted was to halt production to dig up the floors if something went wrong," says Peterson. Careful planning and coordination of daily schedules kept the winery operating at full capacity throughout the labor-intensive project.

#### **ORIGINAL BUILDING**

Two 300- by 8-foot side aisles crossed the main aisle in the original winery building. Back-to-back fermenting tanks lined both sides of the side aisles. When workers washed the tanks, water ran into a trough and down 3-inch drain lines teed to a 6-inch feed line under the aisle, then emptied into the 8-inch pipe beneath the main aisle. That line drained by gravity to a 10-footdeep manhole in the parking lot before flowing to a holding pond.

"I had doubts. We'd never keep the host pipe clean enough to line it - not with all that gravel falling in and a fresh cave-in would collapse the liner. Pipe bursting was the only alternative."

#### **Ryan Peterson**

Peterson's crew excavated the manhole for an entry pit, then devised a method to clean and televise the 8-inch pipe all the way to the 4-foot-deep manhole behind the building. "We went old school," says Peterson. "We shoved 20-foot sticks of 2- and 3-inch pipe by hand through an open section of pipe until stopped by an obstruction."

They then duct-taped a SeeSnake camera from RIDGID to the hose on Peterson's trailer-mounted waterjetter from General Pipe Cleaners, shoved the hose out the smaller pipe, and turned on the water. A subcontractor vacuumed the debris.

When the hose on the reel paid out, workers used an electric saw to cut through the 8-inch-thick asbestos cement floor to where the camera had stopped, then hand-dug down to find it. Running water with the saw minimized dust. They repeated the process three times before reaching the

#### WHILE YOU'RE AT IT

Rodgers then asked Peterson to replace the 6-inch feed lines. "Working around the production schedule was our biggest impediment," says Peterson. "We needed four 4-foot-square entry pits, one at each end of the two side aisles, and two 4-foot-square pulling pits above the new pipe in the main aisle."

Workers potholed the 4-foot-deep excavations by hand. The preparation work and four pulls of 150 feet each took three weeks. The crew also cut 2-footwide sections across the side aisles to the drain line on each trough and replaced those pipes. They then cut 3-foot-square holes above the feed lines and tied in the drain lines before connecting them into the mainline. "We used electric saddle fusion fittings throughout the job to prevent the wine from deteriorating anything," says Peterson.

Rodgers told Peterson to replace the last segment of asbestos cement pipe - a 10-inch line running under the barrel washroom to an unknown point. "The pipes entering the building were PVC," says Peterson. "We found an access point and launched our camera and jetter setup. The old pipe ran straight from the building to a rose garden, turned 45 degrees, and converged with two 8-inch lines in the asphalt driveway in front of the scale house."

The crew excavated 4-inch-square pulling pits at the conversion point and where the plastic pipe changed to asbestos cement outside the washroom. They excavated the entry pit in the rose garden. "Truckloads of grapes arrived all day for weighing," says Peterson. "We stopped and started work a thousand times to stay out of their way."

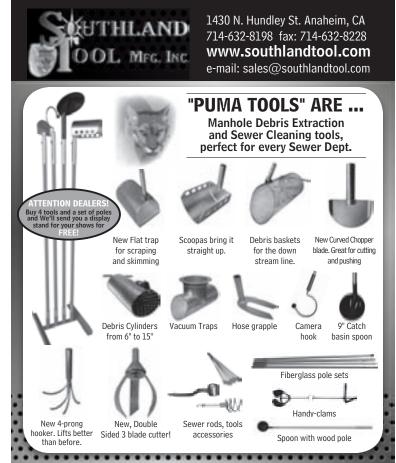
Lien replaced the 8-inch bursting head with a modified 8-inch static mole and switched to a 7/8-inch standard cable. "We welded on old cable grippers to increase the base diameter so it would accommodate a 10-inch burst," he says. "The mole slides forward freely to facilitate removal in tight spots without having to disconnect the cable from the pipe."

The total pull of 350 feet was flawless. After fusing the pipes and backfilling the holes, the crew cleaned the complete piping system all the way to the pond to remove any residual gravel. Peterson's success led to similar work from other wineries. C











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BY SCOTTIE DAYTON

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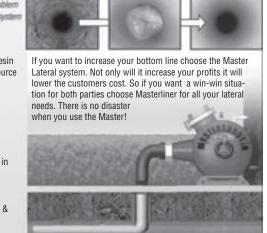
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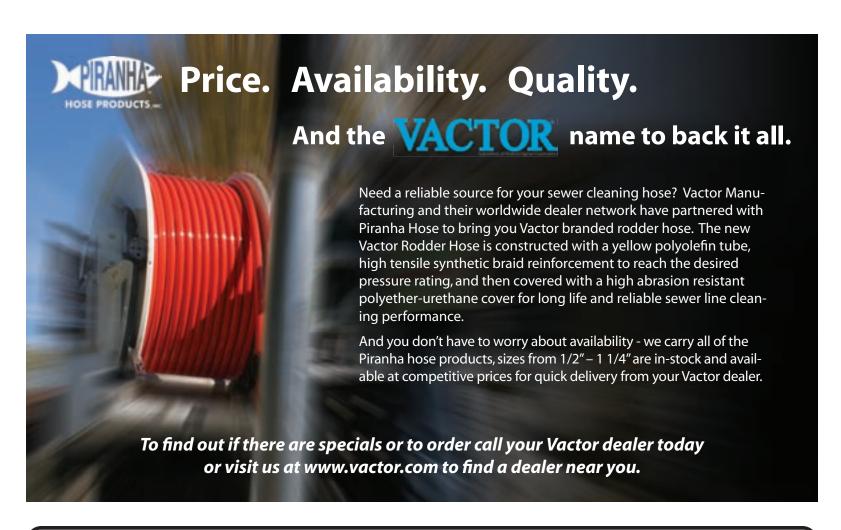
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# Indianapolis 2012



# TOP TEN REASONS INDIANAPOLIS IS THE BEST PLACE FOR THE 2012 PUMPER & CLEANER EXPO

- 10. David Letterman is from Indianapolis, so Top Ten lists are everywhere.
- 9. If they can handle 80,000 Super Bowl fans, 15,000 Pumper & Cleaners should be doable.
- 8. 4,700 hotel rooms connected to the convention center that's nearly 2,000 more than Opryland.
- 7. Over 200 restaurants, bars, and entertainment options all within walking distance close walking distance.
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- 5. Send your significant other shopping the Convention Center is attached to a mall!
- 4. No matter what state you are from, there's only one way to pronounce "Indianapolis".
- 3. The last major crime spree in the city was by Indianapolis native John Dillinger in 1931.
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#### SIMPLE SOLUTIONS ADDS ODOR CONTROL DEALER

R.C. Worst & Company Inc. has joined Simple Solutions Distributing as a dealer for the Wolverine Brand of odor control products.

#### **GORMAN-RUPP MANSFIELD DIVISION RECEIVES ISO CERTIFICATION**

The Gorman-Rupp Co.'s Mansfield, Ohio, division achieved certification to ISO 14001:2004 for environmental management. Certification of the pump manufacturer recognizes the use of best management practices, technical advances, continual improvement and environmental awareness.

#### WASTEQUIP LAUNCHES REDESIGNED WEBSITE

Wastequip launched a redesigned website, www.wastequip.com. The site features product videos, sales quotes and market segments. Other features include downloadable literature, training information and company news.

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#### **NLB RELEASES WATERJET ACCESSORY CATALOG**

NLB Corp. released the 2011 edition of its waterjet accessory catalog. The 106-page edition can be downloaded from the company's website, www.nlbcorp.com.

#### JETSTREAM SIGNS DISTRIBUTION AGREEMENT

Jetstream of Houston LLP signed a distribution agreement with TST Sweden to offer personal protective equipment for waterblasting and hydrodemolition applications from the TST product line in the U.S. and Canada.

#### DIRECTOR, **ENGINEER JOIN MIDWEST MOLE**

Randy Marra joined Midwest Mole Inc. as director of business development and Brent Hofer joined the company as project engineer and esti-





Randy Marra

**Brent Hofer** 

mator. Marra brings 30 years experience in underground construction experience to his position, while Hofer has 10 years experience in the construction industry.

#### **GROTE INDUSTRIES NAMES MANAGERS**

Grote Industries named Kent Bode to a national management role. Mark Blackford national fleet manager and Jim Holmes southeastern OEM regional sales man-



ager. Bode joins the aftermarket sales department as manager of the south central aftermarket region and national account manager for the heavy-duty division. Bode has been with Grote for nearly 15 years. Blackford has been with Grote for almost 20 years, while Holmes joins the company with 15 years of sales and support experience.

#### HOBAS PIPE USA RECEIVES ISO CERTIFICATION

HOBAS Pipe USA obtained ISO 14001 certification for environmental management. Certification was granted after audits by TUV SUD Management Service GmbH. HOBAS also is ISO 9001 certified.

#### LIQUI-FORCE TO INSTALL SPECTRASHIELD IN CANADA

SpectraShield Liner Systems named Liqui-Force Services, Kingsville, Ont., the exclusive licensee and installer for the SpectraShield system in Canada. Liqui-Force provides mainline sewer, manhole and trenchless lateral rehabilitation throughout Canada. c

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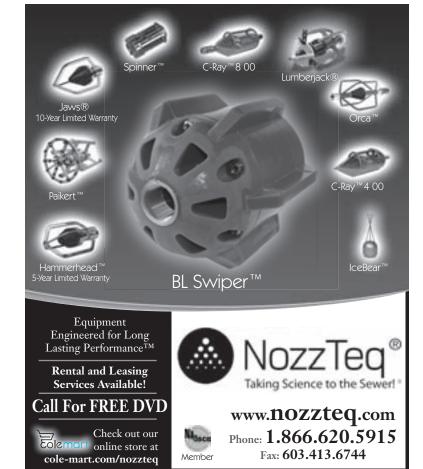
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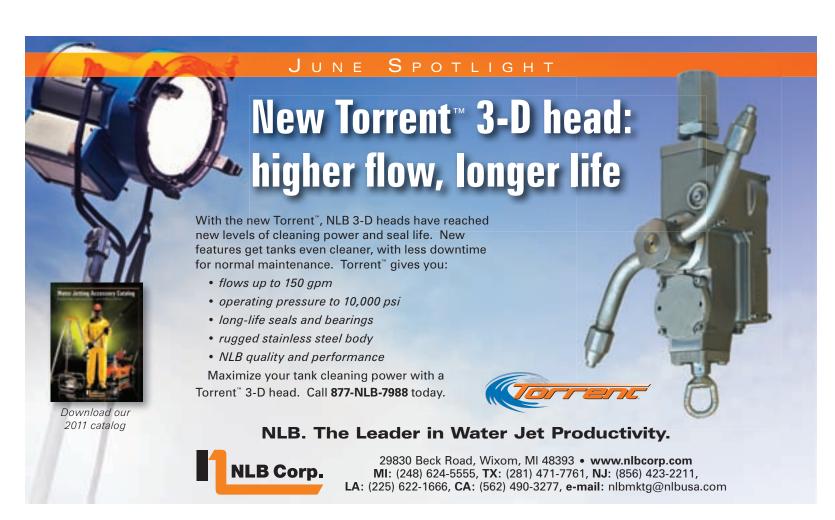
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## **Spherical Cutting Tool Negotiates Tight Turns**

BY ED WODALSKI

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"Debris, as it comes off, pushes itself out and doesn't get jammed up," says Dana Hicks, sales manager. "There's not an edge that's going to get caught on something." Developed in Europe and adapted to the U.S. market by ENZ USA, the tool can be used with any drain cleaning

Made to remove clogs where high-pressure water can't be used, the tools can cut through roots, grease and other debris. "I had a guy use it on



concrete deposits," Hicks says. "He wore out the tool, but there was nothing else he could find to use. I'm sure it would take out tuberculation in cast-iron pipe." 630/692-7880; www.enzusainc.com.

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The Guzzler NX vacuum truck from Guzzler Mfg. has been redesigned to enhance productivity at a lower price. The cyclone and baghouses are



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Series LH medium-duty power cord reels from Reelcraft Industries can handle up to 100 feet of cord. The powder-coated hand-crank reels have four circuit breaker-protected outlets built in. 800/444-3134; www.reelcraft.com.





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The Stick locator from Rycom Instruments Inc. features frequency flexibility and recessed keypad. It is designed to withstand years of field use without the need for periodic calibration, adjustment or re-

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#### **NLB INTRODUCES WIRELESS CRAWLER CONTROL**

Wireless controls for the SRT-10-W automated wateriet Crawler from NLB Corp. eliminate the chance of operators falling when cleaning towers and other large surfaces. The Crawler removes paint and epoxies using water at up to 40,000 psi. The Crawler can move up, down and across to strip surfaces down to bare metal, while controlled by the operator from up to 1,500 feet away. 248/624-5555; www. nlbcorp.com.



#### AIT INTRODUCES SIDEWINDER PUSH CAMERA

The Sidewinder pushrod inspection system from Advanced Inspection Technologies Inc. is designed for petrochemical, cleaning validation and other applications. It can inspect up to 100 feet of boiler tubes, floor drains, steam lines and other difficult to reach areas. Weighing 4.5 pounds, the camera can snake through pipes as small as 0.75 inches. Features include stainless steel cable reel, high-resolution 720 X 480 pixel image, fiberglass/stainless steel pushrod and LED light. Images can be recorded on the removable 16 GB SD memory card. The internal battery can be recharged for three hours of continuous operation. 321/610-8977; www.aitproducts.com.

#### **MV PRODUCTS OFFERS VACUUM FORELINE TRAPS**

Vacuum foreline traps from MV Products, division of Mass-Vac Inc., have a variety of filters for trapping solids, organic solvents and other contaminants, protecting vacuum systems from oil back streaming. The traps feature the MV Multi-Trap, capable of accumulating up to 2,500 cubic inches of solids and Posi-Trap for up to 50 cfm applications. Both are available in several sizes with stainless



steel, copper gauze, molecular sieve, activated charcoal, pleated polypropylene and Sodasorb filters. 978/667-2393; www.massvac.com. C





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Established in 1985, owner is retiring. Reputable business includes real estate servicing the entire Chicagoland area with sludge and biosolids disposal and treatment services. Real estate and shop included with sale valued at \$750,000, business grosses in excess of \$3 million annually, \$6.3 million in equipment and assets including several TerraGators, Vac Trailers, dump trailers, loaders and much more. \$4,900,000. Huge potential, good profit and priced right. Non-disclosure Agreement required, all P&L statements, list of assets, and financials available to qualified buyers.

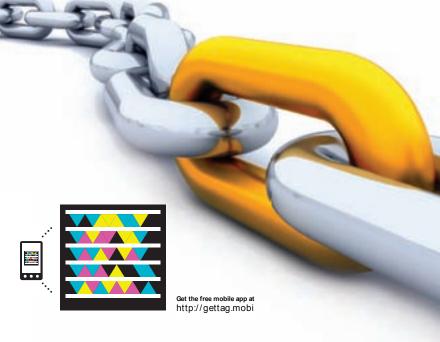
Amarillo, Texas sewer, drain & plumbing business established in 1976. Owner wants to retire, so take the keys to a 2004 Sprinter outfitted with all of the equipment you'll need to run this business. Price includes real estate with 80x100 shop/office on two city lots. Good gross, good profit, financials available with signed non-disclosure. Offered at \$495,000.

Successful business with a large amount of equipment and inventory. Profitable sewer and septic business in central Pennsylvania. Increasing revenue over the past 3 years and a large amount of equipment and inventory. Equipment is a mix of old and new, but all is working and making money.

Selling price \$250,000.

Well-Established and Profitable Texas Septic, Sewer & Installation Business For Sale.

Price reduced. Grossing in excess of \$600,000 annually, customer list of nearly 2,000 accounts and
430 contracted customers. Includes nice late model equipment, most are 2007, 2008 model years. Owner
retiring after nearly 40 years in business. Real estate available upon request. Reduced to \$450,000.



#### Established portable restroom and septic service business located in central Virginia.

Excellent gross each of the past 3 years with no decline in revenue makes this business recession-proof.

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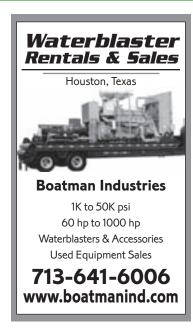


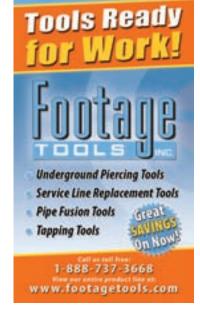


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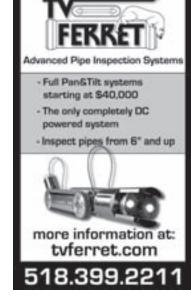














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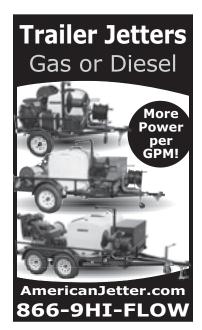
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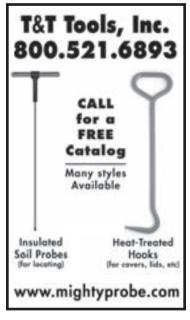
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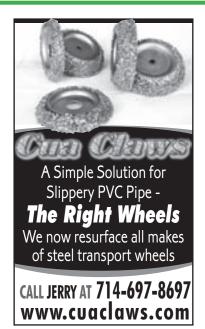
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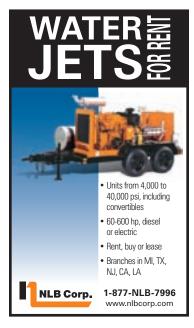


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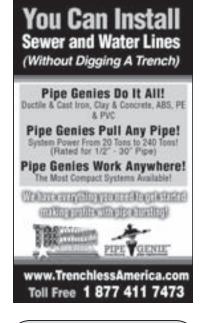








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Chicago-Area Biosolids, Land Application, Dredging and Industrial Services Business. Established in 1985, owner is retiring. Reputable business includes real estate servicing the entire Chicagoland area with sludge and biosolids disposal and treatment services. Real estate and shop included with sale valued at \$750,000, business grosses in excess of \$3 million annually. \$6.3 million in equipment and assets including several TerraGators, Vac Trailers, dump trailers, loaders and much more. Offered at \$4,900,000 - huge potential, good profit and priced right. Non-Disclosure Agreement reguired, all P&L statements, list of assets, and financials available to qualified buyers. E-mail jeffb@colepublishing.com or call 800-257-7222 and ask for Jeff Bruss for more details. A B2 Business Brokerage Listing - www. BTwo.biz.

Amarillo, Texas sewer, drain & plumbing business established in 1976. Owner wants to retire, so take the keys to a 2004 Sprinter outfitted with all of the equipment vou'll need to run this business. Price includes real estate with 80x100 shop/office on two city lots. Good gross, good profit, financials available with signed non-disclosure. Offered at \$495,000. E-mail jeffb@colepublishing.com or call 800-257-7222 and ask for Jeff Bruss for more details. A B2 Business Brokerage Listing - www.BTwo.biz. (CBM)

#### **BUSINESSES**

**Well-Established and Profitable Texas** Septic, Sewer & Installation Business For Sale. PRICE RECENTLY REDUCED. Grossing in excess of \$600,000 annually, customer list of nearly 2,000 accounts and 430 contracted customers. Includes nice late model equipment, most are 2007, 2008 model years. Owner retiring after nearly 40 years in business. Real estate available upon request. Reduced to \$450,000. E-mail jeffb@colepub lishing.com or call 800-257-7222 and ask for Jeff Bruss for more details. A B2 Business Brokerage Listing - www.BTwo.biz.

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Successful business with a large amount of equipment and inventory. Profitable sewer and septic business in central Pennsylvania. Increasing revenue over the past 3 years and a large amount of equipment and inventory. Equipment is a mix of old and new, but all is working and making money. Selling price \$250,000. E-mail jeffb@colepublishing. com or call 800-257-7222 and ask for Jeff Bruss for more details. A B2 Business Brokerage Listing - www.BTwo.biz. (CBM)

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814-696-1000 PA

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1990 Camel 200 80 GPM/2000 psi, Roots TS32 blower, mounted on Ford with 240 HP diesel, automatic. Just over 40,000 miles. Municipally owned and in great shape. \$48,000 OBO. Call Jack @ 614-419-4579, see at www.ziamunicipalsupply.com.

1999 Sterling cab and chassis with a Vactor 2100 combination vacuum loader and high pressure sewer cleaning system. (Stock #2129V) www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (C06)



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1996 Ford F800 w/Vactor 2103: Cummins @ 175 hp, Fuller FS5306A, 177" WB, 9,000/17,500 axles, Vactor 2103-16 mini-vac 1600 cfm, s/n: 96-01V-5720.

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1994 Vac-Con, 16-yard debris tank, 1250 gal. water tanks. Telescoping boom with articulating hose reel, 3-stage vacuum. L8000 Ford chassis, 127,545 miles. \$45,000. Call 601-373-3736 MS.

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1998 Mack RD6885 with a 3200 US gallon stainless steel vacuum tank unit. (Stock www.VacuumSalesInc.com, #6653V) (888) VAC-UNIT (822-8648). (C06)



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#### SEPTIC TRUCKS

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\*\*\*www.servicewithasmile.com\*\*\* **Sewer Cam Reel and Camera Repair: Authorized for General Wire. Ratech &** Ridgid. Quality service on all brands. Need more info? Give Chuck a call. Electronic Repair Co., Birmingham, AL 35206. 205-836-0454; email: part@ servicewithasmile.com.

**Dynamic Repairs - Inspection Camera** Repairs: 48-hr. turn-around time. General Wire, Ratech, Ridgid, Pearpoint, Electric Eel. Gator Cams, Insight Vision, Vision Intruders. Quality service on all brands. Rental equipment available. For more info. call Jack at 973-478-0893. Lodi, New Jersey.

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3200 US gallon stainless steel vacuum tank. (Stock #0488V) www.VacuumSales Inc.com. (888) VAC-UNIT (822-8648).

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1994 Chevy Vandura 3500 Hi-Top. 1,000 ft. cable; 2 Aries crawlers; 2 Aries pan & tilt cameras; new Aries Wincam program w/computer; brand new Onan generator. \$17,000. 845-374-1161 NY (C07)

1998 Cues Mainline TV System: GMC Savanna 3500, Cues w/Pro-Data on-screen titler, Honda generator, Sony combo DVD/ VHS, 1700' of M/C cable, pan & tilt camera w/shorty transporter. \$39,500. 608-835-7767

Used and rebuilt color and black & white camera kits. Ridgid SeeSnakes, General, Gen-Eye, Pearpoint. The Cable Center. 1-800-257-7209.

#### TV INSPECTION

1995 Vandura GMC Van, 190,000 miles. Equipped with Ques system. Consisting of Inspector General System and tractor camera. \$9,000. Call 601-373-3736 MS.

Spartan cameras, used. 1 full size color reel; 1 monitor with VCR: 3 mini camera kits. The Cable Center, 1-800-257-7209.

Mytana cameras, used. 3 full size reels, 6 color camera heads, 2 mini reels, 3 monitor packages. The Cable Center, 1-800-257-

TV Ferret: Complete used, pan & tilt system, 600 ft. cable, 6" crawler. More turn-key systems. Starting at \$20,000. www.tvferret.com. 518-399-2211. (CBM)

#### **VACUUM LOADERS**

2006 Ultra-Vac Model HVV-9145 mounted on a 2006 International. The unit has 3,482 hours and 27,884 miles. This truck is in service working every day. \$145,000. Call 205-492-5290 AL.

1999 International with a Guzzler Ace 27" HG wet/dry industrial vacuum tank loader. Demo/ Rental unit. (Stock #7390) www.Vacuum SalesInc.com, (888) VAC-UNIT (822-8648).

#### VACUUM TRAILER



2007 Ring-O-Matic 750 High CFM Vac Trailer: Cat 3024 @ 50 HP, 696 hours, liquid-cooled, 750 gallon cap.,. 850 CFM lobe style blower, 20,860# .....\$29.500 CBM

715-546-2680 WI

#### WANTED

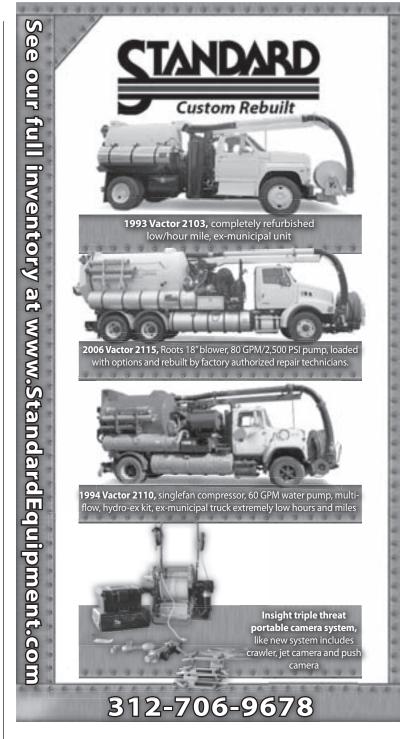
WANTED TO BUY: Any make/model GapVax. Email inquiry@gapvax.com or call 888-442-7829.

WANTED: We buy sewer trucks. Any year, any condition. Results immediately. 915-239-2266 or mmachinerymexico@gmail.com.

(CBM)

Very serious and well qualified buyer looking for sewer, septic or industrial business in Dallas. Texas area. Must be grossing between \$500,000-\$1,000,000. All inquiries are kept confidential. Call Jeff at 800-257-7222.(CBM)

Wanted to Buy: Vactor 2100's and late model Guzzlers. Cash. 800-336-4369. (CPBM)



#### WATERBLASTING

Gardner Denver TF-450 VSDT 52 GPM max 10K max. Gardner Denver T-450 w/Jetstream fluid end transmission 12K max 40.91 GPM max. THE-500UH 50K bare shaft pump. Wheatley 165 20K @ 17 GPM. Wheatley 125 10K @ 20 GPM. Wheatley P-313 10K @ 8.4 GPM. Aqua-Dvne C 450-DS 20K @ 33 GPM. Allis-Chalmers 10x8x22 700 HP. Boatman Ind. 713-641-6006. View @ www. boatmanind.com.

#### WATERBLASTING

40,000 PSI sapphire nozzles, UHP hoses & replacement parts. Excellent quality & prices. 772-286-1218; info@alljetting.com; www.all jetting.com. (CBM)

WATER JETTING EQUIPMENT: We sell, repair and retrofit water blasters. Visit us at: www.waterjettingequipment.com or phone 714-259-7700. (CBM)

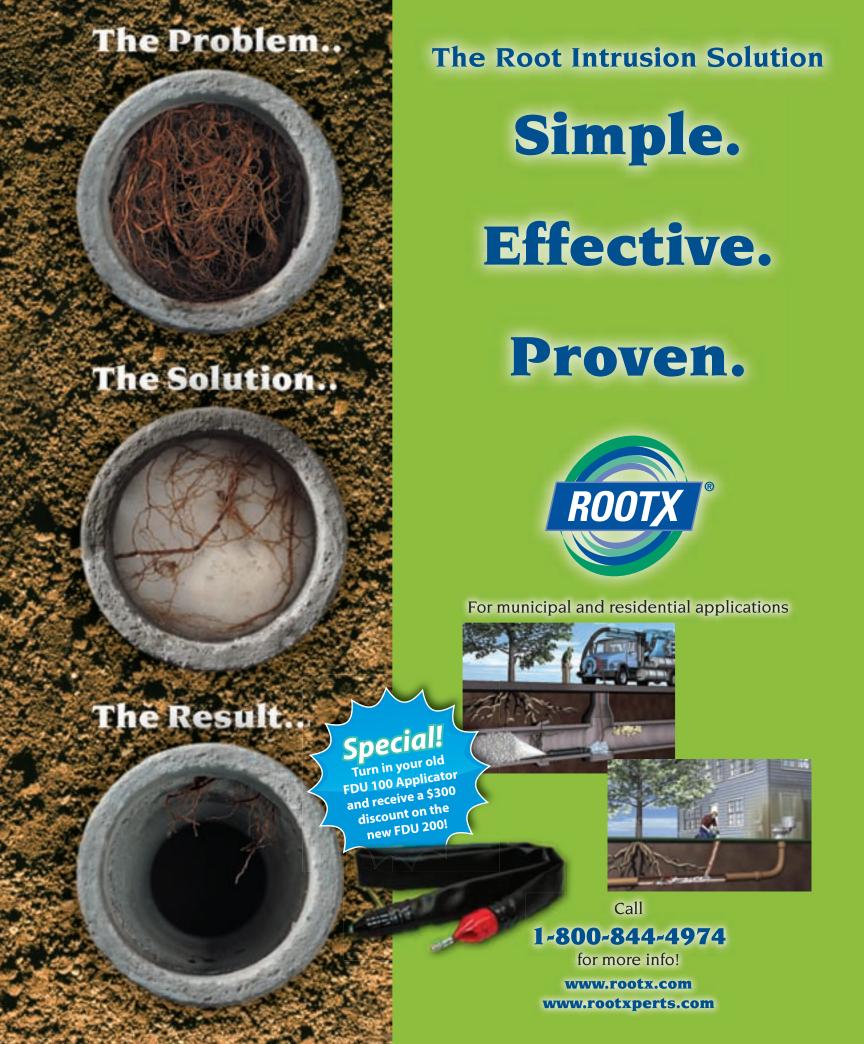
















## Ultimate Warrior/ Hi-Flow Ultimate Warrior

**Introducing the most powerful force in the field.** Spartan unleashes two of the industry's toughest jetters. The Ultimate Warrior brings you all the features of Spartan's revolutionary Warrior — a fully enclosed, sound-dampening fiberglass body, the power of 4,000 PSI at 18 GPM, and a 180° pivoting hose reel with optional six-function remote control for easy operation in tight quarters — but in a dual axle configuration with a towable capacity of 600 gallons. And that's not all. Its alter ego, the new Hi-Flow Ultimate Warrior offers 3,000 PSI at 35 GPM, perfect for small municipalities and use in larger sewers.