



Live Demonstrations in the Big Easy

New hydroblasting products took center stage at WJTA-IMCA's inaugural New Orleans Expo in 2014, including robotic equipment, wireless controls, surface prep, and more. The 2015 Conference & Expo will again include live equipment demonstrations, as well as technical sessions, educational opportunities, and an expanded exhibit hall. Visit www.wjtaimca2015.com for details.

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Biéreau Tunnel Repaired with Hydrodemolition

The Belgian railway operator Infrabel urgently needed to repair defective concrete in the Biéreau Tunnel just south of Brussels. Hydrodemolition with a Conjet Robot 365 was used to selectively remove the damaged and decaying concrete at record speed.

The 875 m long, 10.5 m diameter Biéreau Tunnel forms part of the 4.4 km long dual Line 161D railway track linking the cities of Ottignies and Louvain-la-Neuve, 34 km south of the Belgian capital of Brussels. It was opened in 1975, and, during its near 40 years of service, the tunnel's concrete skin had deteriorated and parts were falling off. It needed urgent repairs, and the Belgian railway operator Infrabel has invested more than €4M in the tunnel's restoration.

Closing the tunnel completely was not possible due to public transport demands in the urban area. So it was decided the only option was to restore the tunnel in two sections, working and repairing the concrete from one track while trains passed

by slowly on the other line. The restricted space and necessary safety and environmental precautions were critical considerations for the overall renovation project, which had to be completed in just 220 days.

Due to these restrictions, the restoration contractor Bageci, a regional branch of industrial Belgian Group CFE, opted for the hydrodemolition technique, which uses a very high-pressure waterjet to selectively remove the defective concrete from the walls and roof. Bageci purchased a Conjet Robot 365 with multipurpose arm and a specially adapted feedbeam, carrying the cradle and jetting lance, to fit the curvature of the tunnel wall. Conjet's representative in Belgium, BPC International, sold the hydrodemolition equipment and was also responsible for service, support and spare parts supply to guarantee 24-hour productivity and availability of the Conjet robot.

A 500kW Hammelmann S1200-48 high-pressure water pump and the Conjet Robot were installed on flatbed

rail wagons fitted with foldable, protective walls. This allowed the hydrodemolition and restoration work to be completed on one side of the tunnel while trains could safely pass on the opposite track.

“Due to the special safety and environmental demands and lack of space, hydrodemolition was really our only option from the very start,” says Bageci tunnel project manager Luc Bosmans. “We thought it was going to be the most productive method for this tunnel work, and it proved to be very efficient.”

In total, the Conjet Robot 365, together with the Hammelmann pump operating up to a pressure of 1200 bar, worked 1,370 h in the Biéreau Tunnel and selectively removed 1,610 m³ of defective concrete from the tunnel circumference at an average depth of 80 mm to 100 mm. The total area treated was approximately 17,000 m².

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Hydrodemolition with a Conjet Robot 365 was used to selectively remove the damaged and decaying concrete at record speed from the Biéreau Tunnel just south of Brussels.





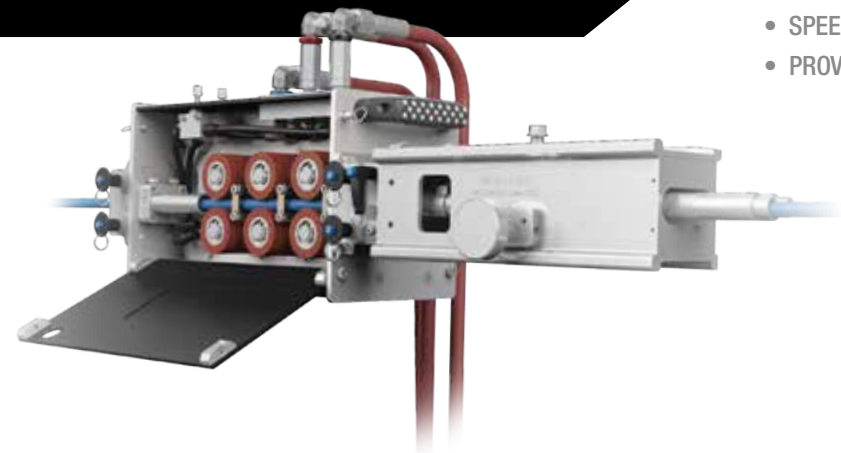
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Lydia Frenzel Receives John D. Keane Award of Merit

L ydia Frenzel, Ph.D., executive director of the Advisory Council, Vancouver, Washington, was recently honored with the John D. Keane



Award of Merit. Presented by the Society for Protective Coatings (SSPC), the award acknowledges outstanding leadership and significant contributions to the development of the protective coatings industry and to SSPC.

For many years, Dr. Frenzel has been a recognized authority on waterjetting and surface preparation. Since 1985, she has co-chaired the SSPC/NACE committees on waterblasting. Dr. Frenzel has received the JPCL's Most Influential Persons in Coatings Award (2004) and the SSPC Technical Achievement Award in 1996 and 2012.

Dr. Frenzel serves on the WJTA-IMCA Safety Committee for High Pressure, and she has served several terms on the WJTA-IMCA Board of Directors.

Biéreau Tunnel Repaired with Hydrodemolition

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Bageci also removed the concrete debris and damaged rebar and applied new high quality concrete on the tunnel lining. "This restoration has been completed in 220 days with the Conjet Robot demolishing and removing concrete at a rate of about 1.35 m³/h. In my opinion this is an excellent result," says Bosmans.

"Throughout the tunnel the concrete has been harder and more resistant in some places, but with the auto regulation the Conjet robot selectively demolished and removed only the damaged concrete to the right depth over the entire surface," says Bageci site manager Sandro Bonsiambiante. "Another advantage was the high availability of the equipment. There is a lot of environmental dust and wear and tear on equipment in this kind of

application and the spare parts supply has been excellent with no serious breakdowns."

The Conjet Robot 365 consists of a carrier that includes pulse monitored drive wheels, electric and hydraulic systems and a simple, easy-to-use control system. The carrier can be equipped with optional attachments, such as standard feed beam, tower or a rotor assembly and can also be operated by a wireless control. The cutting head features a $\pm 45^\circ$ attack angle of the jetting lance as standard, variable oscillation width and encoders for lance turning and cradle position.

For more information, visit www.conjet.com or email: lars.nilsson@conjet.com.

Evergreen Acquires GEM Mobile Treatment Services

E vergreen Industrial Services, a leading provider of comprehensive industrial cleaning services for oil refineries, petrochemical plants, power generation plants, manufacturing sites and mills, has acquired GEM Mobile Treatment Services from Sterling Partners, a private equity firm. GEM Mobile Treatment Services provides engineered environmental remediation solutions for vapor control and wastewater treatment needs in the petroleum, petrochemical, environmental and energy industries. Financial details surrounding the transaction were not disclosed.

"Since partnering with Sterling to scale our business, we've built GEM to be a market leader that provides critical engineered solutions to our customers," says GEM founder and COO Paul Anderson. "We're excited to continue serving our customers in partnership with Evergreen."

Anderson will assume leadership of GEM from Steve Ragiel, who has served as CEO since 2012.

"Sterling's capital investment, understanding of this niche market and experience working with founder-led businesses has enabled GEM's management team to broaden the Company's service offerings and expand into new markets," Ragiel says. "Due to the unique solutions we offer and the strategic plan we've developed, GEM is positioned to keep growing under Paul's leadership as it enters this next phase."

For more information, visit www.evergreenes.com.



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Clean Power, Clean Air: How Tier 4 Emission Standards Affect the Water Jet Industry

NLB Corp. has prepared this white paper to acquaint water jet users with the EPA's Tier 4 emissions standards and the issues associated with compliance, two important considerations in deciding when to invest in new equipment.

Introduction

For nearly two decades, the Environmental Protection Agency (EPA) has been tightening standards for the emission of harmful exhaust gases from diesel-powered equipment, such as high-pressure water jet units. Until January, 2015, these regulations applied only to new engines under 750 hp, but the latest rules (known as Tier 4) mandate lower emission levels from larger engines as well.

Until recently, the engines driving water jet units were not designed to meet these standards, but today engine manufacturers are adding new technology. While this adds cost to the engine (and, therefore, to the water jet unit it powers), it also improves fuel economy, which reduces operating expense. These savings offset a substantial portion of the investment.

EPA goal: near-zero emissions

The Tier 4 standards are part of a national program by the EPA to reduce emissions from non-road diesel engines, a category that includes water jet pump units as well as excavators, generators, compressors, and a host of other equipment. These reductions are to be accomplished using the Best Available Control Technology, or BACT. Full details can be found at the EPA website, <http://www.epa.gov/otaq/nonroad-diesel.htm>. Essentially, the EPA wants non-road engines to have the same sort of advanced emission control technologies required of trucks and buses.

In 1996 the EPA announced that future emissions of nitrogen oxides (NO_x) had to be limited to 10% of then-current levels and particulate matter (PM) emissions to 5%. (PM is the black soot or smoke in the exhaust of a diesel engine.) The agency estimated that its new standards would reduce NO_x emissions by about a million tons per year by 2010...the equivalent of taking 35 million cars off the road. Reductions in carbon monoxide (CO) and non-methane hydrocarbon emissions (NMHC) were also mandated.

Recognizing that achieving these changes would not be simple (or inexpensive) for manufacturers, the EPA decided to phase them in. Diesel engines of 11 hp to 750 hp would have to reduce emission levels to a certain level (called Tier 1) by 2000, followed by progressively lower levels in 2006 (Tier 2), and 2008 (Tier 3).

An even stricter set of standards—Tier 4—was established for engines above 750 hp. This was implemented in two stages, with Interim (Tier 4i) taking effect in 2011 and Final (Tier 4F) in January, 2015. Figures 1 and 2 detail these standards and the resulting 90% reduction in emissions.

The importance of compliance

Compliance with Tier 4F standards is now mandatory in areas that have not yet attained current EPA air quality standards, and in some areas that have. It is

required by the California Air Resources Board (CARB) and written into bid specifications and site permits for DOT and public works projects in various states, including New Jersey, Pennsylvania and Massachusetts.

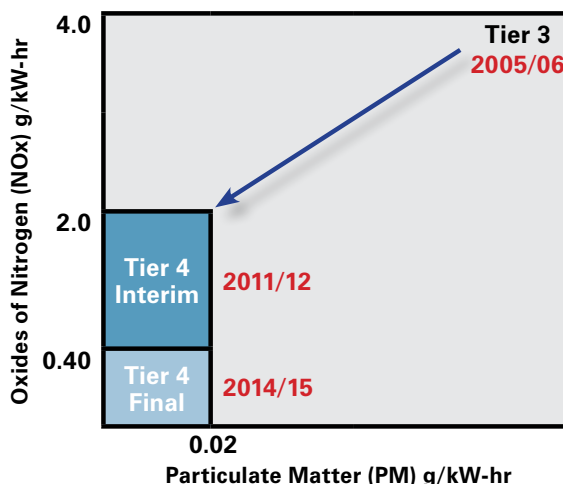
In addition, a growing number of companies — especially large, publicly-owned firms — are making environmental goals key elements of their business strategies. Dow Chemical Company and 3M, for example, now require that all diesel-powered equipment brought into their facilities (wherever they are) be Tier 4F-certified.

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Figure 1 – Tier 4 emissions standards
(all figures in g/kW-hr)

	Tier 4i (752-1207 hp)	Tier 4F (>752-1207 hp)
On Jan. 1 of	2011	2015
NO_x	3.50	0.67
HC	0.40	0.19
CO	3.50	3.50
PM	0.10	0.03

Figure 2 – Emissions reduced by 90%, to near-zero



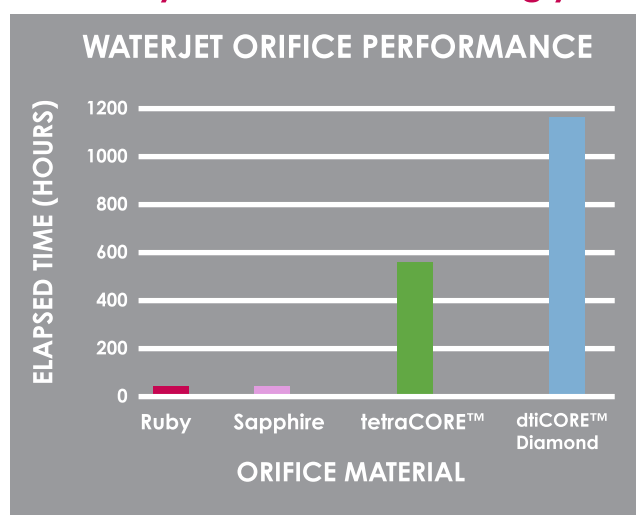


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Clean Power, Clean Air: How Tier 4 Emission Standards Affect the Water Jet Industry

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This puts water jet contractors whose equipment is not Tier-4F-compliant at risk of being shut out of projects. Furthermore, should they be caught using older, non-compliant equipment where it is not allowed, they can be liable for fines of \$37,500 per violation, as well as the costs of litigation and lost time. Water jet users who want to be competitive in the future — or get ahead of competitors today — need to consider investing in new equipment.

Advanced engine technology

The two primary technologies that enable diesel engines to achieve Tier 4F emission levels are exhaust gas recirculation (EGR) and selective catalytic reduction (SCR). Some engines use a combination of the two.

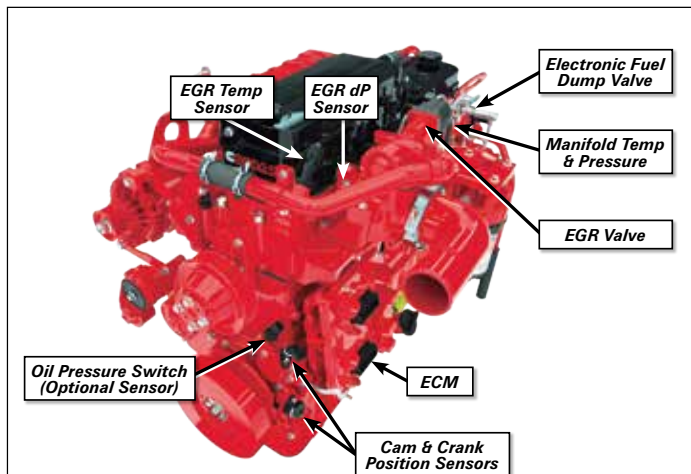


Figure 3 – Diesel engine with EGR and ECM

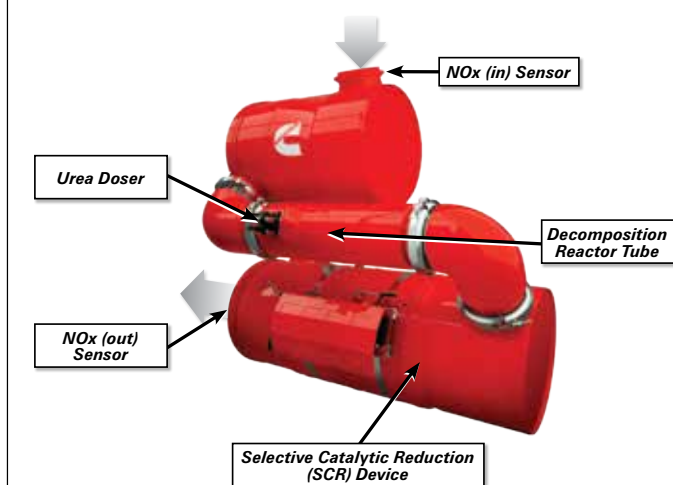


Figure 4 – SCR after-treatment system

Images courtesy of Cummins Inc.

EGR (Figure 3) refers to cooled exhaust gas recirculation, which recirculates some of the exhaust gases back to the combustion chamber. This has the dual effect of reducing the combustion temperature and reducing the formation of NO_x. Large engines (like those used on stationary generator sets) may also have an exhaust pre-heater and Diesel Particulate Filter (DPF) to jumpstart the NO_x conversion process. Together, they can heat the exhaust to 450°F in as little as nine minutes.

SCR (Figure 4), a technology widely used in Europe, is becoming more common in North America. It sprays diesel exhaust fluid (DEF), or aqueous urea, into the exhaust stream, where the urea reacts with the exhaust NO_x. This reaction reduces NO_x emissions to an average of less than 0.67 g/kW-hr. The DEF dosing system, supply and return tubing, and control and monitoring functions are all integrated into the engine's electronic controls.

Additional emissions controls are added to the exhaust system, where the traditional muffler is typically replaced by a catalytic converter or particulate filter.

Despite the additional technology, water jet units with Tier 4F-compliant engines operate much the same as older units. Displacement is much more efficient (more torque at lower horsepower), and some users report better cold weather starting.

Fluids, fuel efficiency and operating costs

Users should be aware of some differences, however. Tier 4F engines are designed to run on environmentally-friendly fluids, including:

- Ultra-low sulfur diesel fuel (ULSD), with sulfur content of no more than 15 ppm
- Low-ash oil meeting CES 20081 CJ-4, typically 15W-40 (this can also be used in older engines)
- Fully-formulated coolant, 50/50, meeting ASTM D6210
- Urea meeting ISO 22241-1, such as AdBlue DEF 32.5%

While these fluids cost more than those typically used in Tier 3 or Tier 4i engines, this expense is more than offset by the Tier 4F engine's greater fuel efficiency. Cummins Inc. has documented these savings for its QSB6.7 and QSL9 diesel engines, which are found in some water jet units manufactured by NLB Corp., a water jet industry leader.

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Clean Power, Clean Air: How Tier 4 Emission Standards Affect the Water Jet Industry

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Figure 5 shows (assuming 1,000 hours of operation) that fluid costs for Tier 4F engines are 6.3% less or 9.2% less than for Tier 3 engines of the same horsepower. This improvement comes from the Brake-Specific Fuel

Payback periods depend on the user's particular circumstances, but 1,000 hours a year is a conservative figure (for many water jet users, 2,000 hours is more common) and units used more frequently will pay for themselves sooner.

Tier 3 to 4F Fluid Operating Cost	QSB6.7 260hp at 2500 (2200 Point)			QSL9 350hp at 2100 (2000 Point)		
	Tier 3	Tier 4i	Tier 4F	Tier 3	Tier 4i	Tier 4F
BSFC Improvement	Base	-5.0%	-3.0%	Base	-5.0%	-1.5%
BSFC (lb/hp-hr)	0.383	0.351	0.34	0.381	0.355	0.349
Load Factor .5 (Gal/Hr)	7.0	6.4	6.2	9.4	8.8	8.6
Urea Consumption (% fuel)			3%			3%
Diesel Price	\$4.10	\$4.10	\$4.10	\$4.10	\$4.10	\$4.10
Urea Price			\$3.08			\$3.08
Total Fuel Cost/1000 Hrs	\$28,752	\$26,350	\$25,524	\$38,502	\$35,875	\$35,269
Total Urea Cost/1000 Hrs			\$574.29			\$793.54
Total Fluid Cost/1000 Hrs	\$28,752	\$26,350	\$26,098	\$38,502	\$35,875	\$36,062
Savings vs Tier 4i			-1.0%			+0.5%
Savings vs Tier 3			-9.2%			-6.3%

Figure 5 – Fluid Costs

Consumption (BSFC), which indicates the load and rpm at which an engine maximizes power from its fuel. For a 260 hp engine, a 3% reduction in BSFC – assuming prices of \$4.10 per gallon for diesel fuel and \$3.08 for urea – means an annual fluid cost of about \$26,100. This represents a savings of about \$2,650 vs. a Tier 3 engine.

That's just the beginning. Since Tier 4-compliant engines generate more torque with less horsepower, it is now practical to use water jet units with smaller engines for many jobs. For example (Figure 5 again), the lower fluid costs for a water jet unit with a 260 hp Tier4F engine instead of a 350 hp Tier 3 engine can save a user \$12,400 a year. Savings would be even greater for someone switching from a 350 hp engine with emission controls that predate Tier 3.

Summary: the case for Tier 4 compliance

Water jet units that meet Tier 4F requirements deliver the cleanest water jet power ever, minimizing pollution and enhancing public health. But even without these “big picture” advantages, there are solid business reasons to use them:

1. better fuel economy and lower operating costs
2. opportunities to do jobs virtually anywhere
3. avoiding fines and legal costs for non-compliance
4. customer and public goodwill for reducing air pollution

Although immediate compliance with new regulations is usually the best long-term financial decision, a company's analysis must take many factors into consideration. NLB hopes the information presented here will make this task a little easier.

White paper reprinted courtesy of NLB Corp. For more information about NLB and NLB's new UltraGreen series of Tier 4-compliant pump units, visit www.nlbcorp.com or email nlbmktg@nlbusa.com.

New Hose Safety Institute White Paper on Liquid Vacuum Hose Assemblies

The Association for Hose and Accessories Distribution (NAHAD) Hose Safety Institute has published a new white paper focused on best practices for ensuring safety and reliability of liquid vacuum hose assemblies. Hose assembly safety is becoming increasingly important in many industries today, particularly in high-risk applications involving hazardous substances, high temperatures and high pressures, such as water jetting and where employee safety is crucial. Injuries, environmental impacts, regulatory actions and facility downtime due to hose failures lead to

costly direct and indirect expenses, which quickly erode any top line revenue gains. In some applications, hose failures can lead to environmental losses which can range from relatively minor to Reportable Quantity (RQ) levels. RQ losses can significantly impact the environment and lead to EPA or DEQ inspections, regulatory penalties, fines and work delays.

The new white paper is available for WJTA-IMCA members to download at www.ow.ly/LaYEB.

Safety Corner – Gas Detection

Gas detection remains a top priority for safety managers in many industries. And rightly so, as accidents and safety incidents involving hazardous gas exposure can lead to illness and even death. Combustible gas explosions cause destruction including fires, structural damage, and loss of life. Depending on the scope, these conditions could affect entire communities.



By Luis Garcia, President, Gulf Coast Region, Northern Safety & Industrial, and a member of the WJTA-IMCA Board of Directors.

Gas Monitors

Abnormal gas concentrations in the air bring danger to workplaces and worksites. Unfortunately, some gases don't have a smell, and therefore, their presence can go undetected. OSHA's requirements for the implementation of gas monitoring equipment warn workers, prevent illness, protect property, and save lives.

When the sensor inside of a gas monitor detects a certain chemical above a pre-set level, it alerts the user, generally via a loud audible alarm, vibration, and a bright light. These alerts can prompt the worker to take actions such as shutting off a gas valve, turning on ventilation fans, or evacuating an area.

Safety personnel should choose gas detection equipment carefully. Some criteria to consider are: specific hazards and risks at the worksite, ease of use, maintenance, datalogging capabilities, and training and support from the manufacturer. Many safety managers choose smaller, personal monitors that are carried on each individual. One of the advantages of a wireless, personal detector is that it can be swapped out for another while repairs are performed. Work can continue, and downtime is minimized.

Not only is detecting the gases important, but measuring worker exposure to gases and looking at alarm incident history are also critical to maintain safety. The data provided by air monitors can show bump testing frequency, time of an event, gas concentrations, trends, and more. Taking the time to analyze data gives a safety manager indication if there's a growing problem and shows where improvements can be made. Patterns in alarm data can also identify risks to productivity and alert a manager to arrange for additional worker training. This leads to better health and safety, and reduced downtime.

Maintenance for Personal Gas Monitors

Without proper maintenance, air monitors won't perform at their peak. A typical schedule for a portable gas detector includes a daily bump test. A bump test is crucial to safety,

and in some units, is an automatic feature. Bump testing checks for functionality by exposing the detector to a known concentration of the gas to ensure that the detector will respond. Additionally, calibration should be performed on a regular basis as directed by the manufacturer's instructions and

anytime a bump test's results are not within the acceptable range. Docking stations are an easy way to automate these functions.

Two personal gas detectors on the market today

The new BW Clip from Honeywell Analytics delivers up to three years of maintenance-free use. Its one-button operation offers a user-friendly experience and has an automated self-test for improved safety. If the detector finds an issue in critical functionality, it will shut itself down to protect the worker from unsafe use. It can be a reliable day-to-day companion in the quest for worker safety.

The Gas Clip from Gas Clip Technologies remains a favorite with safety managers. Its visual, vibrating, and 95 dB alarms alert workers of dangerous gas levels. The detector offers a larger battery capacity, real-time gas reading capability, and adjustable alarm set points. Its 6-digit ID is handy when units are used in harsh environments in which ID stickers commonly come off or get lost. All models also come standard with a bump check reminder.

Choosing proper gas detection equipment is a key step for safety for workers, employers, and their community. Personal gas detectors are a great choice for their portability and ease of use. If you have questions about gas detection at your workplace, please give the Technical Support Reps at Northern Safety a call at 800-922-8553. They'll give you the information you need to make the right choice for you and your co-workers.

Examples of two personal gas detectors on the market include the Honeywell Analytics BW Clip and the Gas Clip from Gas Clip Technologies.



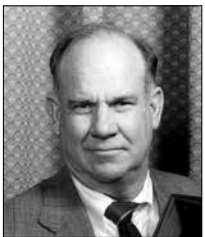
Meet the Candidates for the WJTA-IMCA Board of Directors



JOOST BALLIEUX is the general manager for Peinemann Equipment B.V., Hoogvliet, Netherlands. He holds a degree in commercial economics and studied civil engineering. Following a tour of duty in the army on a mission with the United Nations to Bosnia as a communications specialist, Joost worked for a trading company in the Middle East to implement ISO 9000 and later joined the sales force where he was introduced to Peinemann. He joined Peinemann in 1998 as a sales manager and later became the company's general manager.

Mission/Vision: In the last 18 years, I have personally dedicated most of my time to find solutions for high pressure cleaning jobs, mainly for cleaning heat exchangers, with the help of a few local Dutch cleaning contractors and other people from the field of high pressure cleaning. As we do business on a worldwide level, it is my goal to promote hands-free cleaning in every country of the world to avoid (deadly) high pressure accidents that still take place very year. I believe I could bring a bit of European know-how and mentality to the WJTA-IMCA Board to make the organization more international and help to make the organization grow on a global level.

***Nominated by:** Wout Bol, International Sales Manager, Peinemann Equipment B.V., Hoogvliet, Netherlands.*



PAT DEBUSK, vice president of DeBusk Services Group, Pasadena, Texas, has been involved in the WJTA-IMCA since its beginning. Pat has over 50 years of experience in the industrial cleaning business and has tremendous knowledge of the industry from all aspects. In

addition, Pat is an excellent person that is respected by more people than any person I know, says Dee Green.

Mission/Vision: To help bridge the gap between end users of high pressure water and those providing the service and to promote the use of high pressure water throughout industry in a safe, constructive and economic manner.

***Nominated by:** Dee Green, Vice President of Sales, DeBusk Services Group, Pasadena, Texas.*



LUIS GARCIA is president of the Gulf Coast Region, Northern Safety and Industrial. He has been in the personal protective equipment (PPE) distribution business for over 24 years. Luis is responsible for taking his start-up company, Channel Safety &

Marine Supply, Inc., from an initial \$1,000.00 investment in 1995 to a diverse, multi-million dollar company with multiple locations. His strong sense of entrepreneurship has helped develop significant relationships across varying industries. He has extensive experience working closely with key companies in the PPE industry to develop innovative industry-specific PPE products. During his career, Luis's proximity to numerous industrial and petrochemical industries has provided broad experience in the industrial vacuuming and hydroblasting industry.

Mission/Vision: My vision as a WJTA-IMCA board member is to bring awareness to the personal protective equipment side of the vacuum truck and hydroblasting technology industry. In my opinion, this area is an important aspect to the expansion of this technology. I feel my 20 plus years of experience with PPE manufacturers will allow me to draw the two industries together, thus spurring development of new and improved methods to keep our end-users safe. I feel I have a unique view to bring to the WJTA-IMCA organization, having had wide-ranging experience with equipment manufacturers, as well as the end-users. As a member of the WJTA-IMCA board, I believe my ability to lure the interest of the PPE industry to waterjet technology, will serve to trigger more development in the safety aspect of the technology and place the WJTA-IMCA as a go-to progressive organization promoting and setting the standard for the safe implementation of industrial vacuuming and waterblasting equipment.

***Nominated by:** Bill Gaff, Vacuum Truck Rentals, LLC, Streator, Illinois.*



MOHAMED HASHISH, Ph.D., is a founding member of the WJTA-IMCA. He is a senior technical fellow at Flow International Corporation, Seattle, Washington, where he has been working since 1979. In 1980, Mohamed invented the abrasive waterjet technology, revolutionizing the field of waterjet cutting. He is also honored as an affiliate professor at the Mechanical Engineering Department, University of Washington. Mohamed holds about 44 patents in the areas of jet cutting, surface preparation, and high pressure technology. He has published more than 320 papers in many journals and conference proceedings. He edited several proceedings for the WJTA-IMCA and the American Society of Mechanical Engineers (ASME). He was also selected for the first technology award from WJTA and then awarded the pioneer and service awards. Mohamed

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Meet the Candidates for the WJTA-IMCA Board of Directors from page 11

currently serves on the WJTA-IMCA Board of Directors, is a fellow of the ASME, and has several professional activities, such as being a reviewer for the National Science Foundation (NSF) and several journals.

Mission/Vision: My vision for the WJTA-IMCA is to continue to be the world leading organization in promoting and spreading the different aspects of the waterjet technology, safety, training, and best practices to all who are involved in this industry already, or who may benefit from it in the future, and continue to provide the greatest value to all the members. My mission on the board is to ensure that the WJTA-IMCA is providing the latest information on technology, new applications, whether for the field or the factory, and to provide the necessary information for education, training, safety, and best practices through publications, videos, boot camps, conferences, exhibits, and the web.

Nominated by: Professor Ramulu Mamidala, University of Washington Department of Mechanical Engineering, Seattle, Washington.



BILL KRUPOWICZ is a vice president of Federal Signal's Environmental Solutions Group (ESG). He is the general manager of Jetstream of Houston, LLP, and the vice president of industrial sales and global sales for ESG. Bill has been with Federal

Signal for 15 years. His current role spans Jetstream waterblasters, Guzzler industrial air movers and Vactor hydroexcavators. Bill's industry experiences span the functions of engineering, materials management, finance, marketing, global sales and general management. Over the past 31 years, Bill has worked in the aerospace, construction equipment, papermaking equipment and environmental solutions industries with such companies as Hughes Aircraft Company, Caterpillar, Beloit Corporation and Federal Signal. Bill holds a Bachelor of Science degree in mechanical engineering and a Master of Business Administration degree, both from the University of Illinois.

Mission/Vision: The WJTA-IMCA should provide our members and organizations with solutions to their business, operational and financial needs. I believe these needs range from training and certification programs, to safety initiatives, to expanding our market reach, to inter-industry collaborations. WJTA-IMCA should work towards creating a framework for the safe and effective growth of our industry.

Nominated by: Kerry Siggins, Chief Executive Officer, StoneAge, Inc., Durango, Colorado.



LARRY LOPER is president of High Pressure Equipment Company (HiP), Erie, Pennsylvania. HiP is a manufacturer of valves, fittings and tubing for use in elevated pressure applications. Larry has a bachelor's degree in chemistry and a master's degree in business administration. He currently serves as WJTA-IMCA treasurer, and he is a member of the American Chemical Society, Society for Petroleum Engineers, American Institute for Chemical Engineering, and the WJTA-IMCA.

Mission/Vision: I will continue to work with the directors and membership in the further development of the organization. I will work closely with manufacturers, contractors, and component suppliers to ensure that the membership continues to benefit from this quality association.

Nominated by: George A. Savanick, Ph.D., Consultant, Apple Valley, Minnesota.



DANA D. MOORE, DuPont Global Contractor Safety Competency Lead, Orange, Texas, is a 1994 graduate of Murray State University, Murray, Kentucky, where she received a Bachelor of Science degree in occupational safety and health. Dana has worked with

DuPont as a contractor safety professional for twenty years. In her current role, Dana is leading the "hands-free high pressure water cleaning" initiative for DuPont and acts as the subject matter expert (SME). She is an active member of the WJTA-IMCA and participated in a 2014 boot camp panel discussion on the benefits and challenges of implementing a hands-free hydroblasting strategy.

Mission/Vision: Continue to drive the benefits of implementing a hands-free hydroblasting strategy while bridging gaps between end users and service providers and to promote the safe use of high pressure water cleaning throughout industry and drive zero incidents and injuries while providing a quality service that is economically practical.

Nominated by: Pat DeBusk, Vice President, DeBusk Services Group, Pasadena, Texas.

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Meet the Candidates for the WJTA-IMCA Board of Directors from page 9



JEFF NYBERG is senior vice president, Core Services, PSC, Pueblo, Colorado. Jeff has been with the PSC family for over 30 years and became senior vice president in 2013 managing the Core Services group. As his career progressed through PSC, Jeff has served in every major operational management position in the company. He oversees the Loss Prevention System (LPS) Core Team, the Mechanical Integrity Team and the Craft Certification Team. Because of his extensive experience with equipment operations, Jeff is also responsible for the capital budget, fleet allocation and asset utilization across PSC.

Mission/Vision: My vision for WJTA-IMCA is to continue to champion improvements in safety, research and technology. In addition, I believe we can expand the role of waterjet applications throughout American industry. I believe I can help expand the association's visibility into the western U.S. as well as into the upstream industry. I want to continue to position the WJTA-IMCA as the leading voice and advocate for the industry and its workers.

Nominated by: Kerry Siggins, Chief Executive Officer, StoneAge, Inc., Durango, Colorado.



KERRY SIGGINS is the chief executive officer of StoneAge, Inc., a leading manufacturer of high pressure waterblasting and sewer cleaning tools and equipment based in Durango, Colorado. Kerry joined StoneAge in January of 2007 as the director of operations and was named chief executive officer in 2009. Kerry has been a WJTA-IMCA board member since 2011. Kerry was recently named one of Colorado's Top 25 Most Influential Young Professionals and she was a founding board member of the La Plata Economic Development Alliance. She also sits on the Fort Lewis School of Business Advisory Board.

Mission/Vision: I am honored to be nominated for a second term as a WJTA-IMCA board member. Over the past four years, we have achieved several key milestones that I am proud to have been a part of. Through an intensive strategic planning process and execution, we have revamped our website, moved the conference and expo to New Orleans, increased exhibitorship at the conference/expo, updated the Hydroblasting Recommended Practices handbook, and rolled out the high pressure hose coloring system. If reelected, I look forward to partnering with key safety and training organizations to develop hydroblasting skills

training, promoting the adoption of hands-free hydroblasting equipment to create safer and more efficient working conditions within our industry, and growing our membership to include more end users and international participants.

Nominated by: John Wolgamott, Chairman, StoneAge, Inc., Durango, Colorado.



DREW A. WALTENBAUGH is the chief executive officer of NLB Corp., Wixom, Michigan. He began his professional career in 1982 with Pure Carbon Company. Drew earned his Bachelor of Science degree in chemical engineering from the Pennsylvania State University in 1982 and his Master of Business Administration degree in finance from Oakland University in 2003. Drew has been a member of the American Institute of Chemical Engineers (AIChE) since 1980 and became a lifetime member of the Beta Gamma Sigma Honors Fraternity in 2003. While at Pure Carbon Company (manufacturer of seal faces and bearings for pumps), Drew held numerous positions: engineering, quality, production control, business unit manager and plant manager. Drew relocated to Michigan in 1996 joining Foamade Industries (automotive component supplier) as the plant manager, and held several positions culminating in the role of chief operating officer. Drew joined NLB in 2010 and became its CEO and president in 2012. Drew was inducted to the Who's Who Worldwide membership of Business Leaders in the 1992-1993 Who's Who Registry. Drew's work at NLB includes a vision to utilize the very strong positive brand and product reputation that NLB has established since 1971 as the springboard in moving the organization forward as one of the safest providers of waterjetting products in the world, while simultaneously striving to deliver exemplary customer service to all customers.

Mission/Vision: My vision for WJTA-IMCA is to become integral to our organization in expanding the safest use of waterjetting technology through an educational process to current and prospective waterjet users. The goal is to drive this vision through a world-wide endeavor, requiring an ongoing honing of the skillsets of all WJTA-IMCA members in the uses of existing and new technology. Key areas of focus include work towards implementation of industry-wide safety standards (color coding, best practices, etc.); assist WJTA-IMCA to make this the organization that both industrial contractors and industrial contract services buyers look to for direction and best practices (inclusive of waterjetting manufacturers and vacuum equipment

(continued on page 14)

Meet the Candidates for the WJTA-IMCA Board of Directors from page 13

suppliers); work towards consistency in developing and implementing an industry-wide training program; assist in identifying and publishing information regarding the latest advancements in the market through our publications, papers and seminars; and enhance WJTA-IMCA presence in the areas of surface preparation, hydro-demolition

and cutting applications. Driving our members to rely on the WJTA-IMCA for guidance, safety and performance standards must be core to our mission.

Nominated by: Jim Van Dam, Director of Product Development and Marketing, NLB Corp., Wixom, Michigan.

On August 3, 2015, a list of nominees and a biographical sketch for each individual will be circulated by email to the eligible voting membership with a link to vote online via the WJTA-IMCA website.

In order to vote online, members must have an email address in their membership profile. The email address is also the user name.

Members will be able to login with their unique username and password to fill out a ballot, which will be initialed, signed, and submitted electronically through the website. Members may request a written ballot be mailed to them, which must be signed and returned to the WJTA-IMCA office by mail, fax or email. If a member returns multiple ballots (be they written or electronic), only the first ballot received will be counted. Online ballots and printed ballots must be received by the WJTA-IMCA office for tallying **no later than September 21, 2015**.

In the event of a tie for a position on the Board, a runoff election between the tied candidates will be conducted using the procedures outlined above over a two-week period following the initial election.

The names of newly elected board members will be announced on the WJTA-IMCA website and in Jet News.

Diver Sustains Water Jetting Injury

The following incident report is reprinted with permission from the *International Marine Contractors Association Safety Flash 03/15, March 2015*, www.imca-int.com.

A member has reported an incident in which a diver injured himself using a water jetting tool. The incident occurred during the removal of marine growth from the leg of an offshore platform. When the diver was shifting the water jet from one side to another, the trigger was accidentally pressed as the nozzle passed over the diver's knee. No injury was felt or noticed by the diver at that time and the diver continued working. On returning to the surface on completion of the dive, the diver felt pain while undressing and an acute injury was noticed about 7.5 cm long and about 2 mm deep approximately 5 cm above the left knee.

First aid was administered to the diver on board the vessel, before he was medevaced to base by chopper for immediate medical attention. The diver was later shifted to an onshore hospital for further treatment where it was declared only as a superficial injury and only a change of dressing was advised till recovery.

Our members' investigation noted the following:

- During the water jetting dive the diver had on a wetsuit and a diving denim coverall for his protection;
- The safety lock was not activated on the water jet, allowing it to trigger while shifting position or location in water.

Our member took the following actions:

- The supervisor to give additional briefing before use of high pressure water jetting equipment;

- Divers should ask for the water jet to be 'made cold' or pressure turned off, before moving locations.

Members may wish to refer to the following similar incidents (key words: *water jet*):

- IMCA SF 06/07 Incident 1. *Diver injury using cavitation blaster;*
- IMCA SF 05/11 Incident 5. *Diver safety – high pressure water jetting operations.*

Members may wish to refer to IMCA D 049 – *Code of practice for the use of high pressure jetting equipment by divers.*

Reprinted with permission from the International Marine Contractors Association Safety Flash 03/15, March 2015, www.imca-int.com.



Setting the Standard for Over 30 Years.

Candidates Sought for 2015 WJTA-IMCA Awards

Members are invited to submit candidates for special awards presented by the WJTA-IMCA to honor a company, organization, or individual who has made a significant contribution to the industry through accomplishments that directly enhance waterjet technology and/or industrial cleaning.

Award recipients will be selected by the WJTA-IMCA Awards Committee and honored at a presentation ceremony on Tuesday, November 3, 2015, in conjunction with the 2015 WJTA-IMCA Conference & Expo in New Orleans.

Candidate nominations must be received no later than **September 15, 2015**.

Process for submitting nominees for awards:

- **Online:** To submit your nominee online, go to www.wjta.org and click on Candidates Sought for WJTA-IMCA Awards under the heading NEWS.

OR

- **Email, Fax or Mail:** An official form for candidate nominations appears on page 17 of this issue. Complete one form for each nomination submitted. Make additional copies of the form as needed. Attach a narrative and biographical sketch to support each nominee. Return completed forms and supporting documentation to the WJTA-IMCA by email: wjta-imca@wjta.org, fax: (314)241-1449, or mail: WJTA-IMCA, 906 Olive Street, Suite 1200, St. Louis, MO 63101-1448, USA.

Previous Award Recipients

1981	Pioneer Award <i>Jacob Frank</i>	2001	Pioneer Award <i>George A. Savanick, Ph.D.</i>	
1983	Pioneer Award <i>H.D. Stephens</i>		Technology Award <i>Richard Ward</i>	
1985	Pioneer Award <i>William Cooley, D.Sc.</i>	2003	Pioneer Award <i>Pat DeBusk</i>	
1987	Pioneer Award <i>Norman Franz, Ph.D.</i>		Service Award <i>Mohamed Hashish, Ph.D.</i>	
1989	Pioneer Award <i>Richard Paseman</i>		Technology Award <i>Ernest S. Geskin, Ph.D.</i>	
1991	Pioneer Award <i>John H. Olsen, Ph.D.</i>	2005	Pioneer Award <i>Dr.-Ing. Hartmut Louis</i>	
1993	Pioneer Award <i>Fun-Den Wang, Ph.D.</i>		Safety Award <i>TurtleSkin WaterArmor</i>	
	Safety Award <i>David Summers, Ph.D.</i>		Service Award <i>NLB Corporation</i>	
			Technology Award <i>Jay Zeng, Ph.D.</i>	
	Service Award <i>George A. Savanick, Ph.D.</i>	2007	Pioneer Award <i>Forrest Shook</i>	
			Safety Award <i>Vacuum Equipment Safety Committee</i>	
	Technology Award <i>Mohamed Hashish, Ph.D.</i>		Service Award <i>Tony Fuller</i>	
				<i>Jim Petillo</i>
	Technology Award <i>Autoclave Engineers</i>			Technology Award <i>Ramulu Mamidala, Ph.D.</i>
1995	Pioneer Award <i>George Rankin</i>	2009	Pioneer Award <i>John Wolgamott</i>	
	Safety Award <i>Autoclave Engineers</i>		Safety Award <i>Gary W. Toothe</i>	
	Service Award <i>Thomas J. Labus</i>			<i>Philip Stein</i>
	Technology Award <i>Thomas J. Kim, Ph.D.</i>		Service Award <i>Bill McClister</i>	
1997	Pioneer Award <i>David A. Summers, Ph.D.</i>		Technology Award <i>Seiji Shimizu, Ph.D.</i>	
	Service Award <i>Andrew F. Conn, Ph.D.</i>	2011	Pioneer Award <i>Bill McClister</i>	
	Technology Award <i>Dr.-Ing. Hartmut Louis</i>		Technology Award <i>Jerry Zink</i>	
1999	Pioneer Award <i>Mohamed Hashish, Ph.D.</i>	2013	Pioneer Award <i>Kenneth C. Carroll</i>	
	Safety Award <i>Bruce Wood</i>		Safety Award <i>WOMA Corporation</i>	
	Service Award <i>John Wolgamott</i>			
	Technology Award <i>Ryoji Kobavashi, Ph.D.</i>			

See awards nomination form on page 17, or nominate your candidate online at www.wjta.org.

2015 WJTA-IMCA Awards Nomination Form

Instructions: Complete sections below and submit a narrative (300-word maximum) and biographical sketch to support your nomination on a separate sheet of paper. Please print or type all information.

I nominate the following **company, organization, or person as a candidate** to receive a 2015 WJTA-IMCA Award:

_____ (please print or type full individual, company, or organization name)

☐ Distinguished Pioneer Award

The nominee must:

- Have made contributions to the waterjet and/or industrial cleaning industries
- Have made contributions to the achievement of the goals of WJTA-IMCA
- Have high moral character
- Have strong personal and business ethics
- Be dedicated to the future of the waterjet and/or industrial cleaning industries and to the growth of WJTA-IMCA

☐ Service Award

How has the nominated company, organization, or individual contributed in time and talent toward improvement in the industry or in the WJTA-IMCA?

☐ Technology Award

What has the nominated company, organization, or individual done to introduce new and innovative ideas in engineering or manufacturing? This could include, but is not limited to, new products, new manufacturing techniques, patents...any unique activity that advanced the technology of the waterjet and/or industrial cleaning industries.

☐ Safety Award

What has the nominated company, organization, or individual done to introduce new and innovative ideas in safety? This could include, but is not limited to, new products, new concepts, new safety techniques...any unique activity that increases the overall safety of waterjet and/or industrial cleaning equipment.

CANDIDATE _____ Company _____

Address _____ City _____

State _____ Country _____ Postal Code _____

Phone In US/Canada (_____) _____ Fax (_____) _____
area code area code

Phone Outside US/Canada [_____] (_____) _____ Fax [_____] (_____) _____
country code city code country code city code

CANDIDATE SUBMITTED BY _____ Company _____

Address _____ City _____

State _____ Country _____ Postal Code _____

Phone In US/Canada (_____) _____ Fax (_____) _____
area code area code

Phone Outside US/Canada [_____] (_____) _____ Fax [_____] (_____) _____
country code city code country code city code

Nominations must be received no later than September 15, 2015.

For a prompt response, fax completed form to (314)241-1449, or mail to the WJTA-IMCA, 906 Olive Street, Suite 1200, St. Louis, MO 63101-1448, USA.

WJTA-IMCA Conference/Expo Group Hotels: Make Your Reservations Early!

Make your reservations for the 2015 WJTA-IMCA Conference and Expo early! As one of the premier tourist, convention, and business destinations in North America, New Orleans' hotels fill up quickly. Reserve your room online at www.wjta.org/wjta/Accommodations.asp using the group code specified or contact the hotel by telephone.

Crowne Plaza - New Orleans French Quarter

The Crowne Plaza, 739 Canal Street at Bourbon Street, is a classic New Orleans-style hotel in the French Quarter. The room rate is \$189 single/double occupancy. For online reservations, use group block code **WJT** or call (888)696-4806 or (504)962-0500 and ask for the **WaterJet Technology Association** group rate.

Tuesday, Oct. 6, 2015, is the deadline for guaranteed room availability.

Hampton Inn & Suites - New Orleans Convention Center

Located in New Orleans' Warehouse District across the street from the convention center, the Hampton Inn & Suites is at 1201 Convention Center Boulevard. The room rate is \$169 single/\$179 double occupancy. For online reservations, use group block code **WJT** or call (866)311-1200 or (504)566-9990 and request a reservation under the **WaterJet Technology Association**.

Wednesday, Sept. 30, 2015, is the deadline for guaranteed room availability.

Hilton New Orleans Riverside

The Hilton New Orleans Riverside is located just north of the convention center at Poydras Street and Convention Center Boulevard. The room rate is \$169 single/double occupancy. Register online or call (504)584-3959 and ask for the WJTA-IMCA Conference & Expo room block.

Monday, Oct. 5, 2015, is the deadline for guaranteed room availability.

Reservations received after deadline dates listed will be confirmed on a space-available basis. Rooms may still be available after the deadline dates given, but not necessarily at the rates listed above.

Housing Scams Target Conference/Expo Participants

Beware of unaffiliated housing providers. WJTA-IMCA participants have been targeted by companies claiming to be affiliated with the 2015 WJTA-IMCA Conference & Expo, including "Global Travel Partners."

This is a common scam targeting trade show participants that can leave you without a room or worse. Reservations in WJTA-IMCA's group block should be made directly through the hotels listed on this page. Information on group rates and links to book online are available at <http://www.wjta.org/wjta/Accommodations.asp>.

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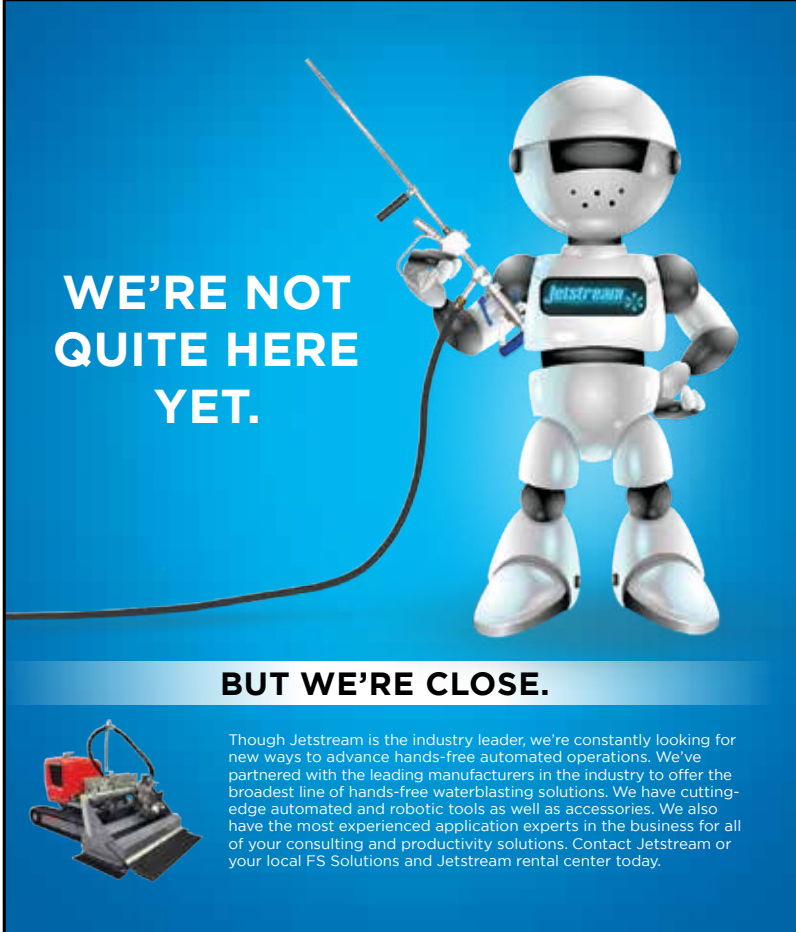
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Jetstream of Houston, LLP, a leading manufacturer of industrial high-pressure waterblasting equipment, parts and accessories, continues to invest and grow in providing industrial cleaning contractors with the most productive hands-free solutions available. By partnering with the leading manufacturers of automated tools and robotics – including Aquajet Systems, Peinemann, StoneAge and Terydon, Jetstream offers the industry's best total equipment solutions for such hands-free, high-pressure waterblasting applications as hydrodemolition, pipe cleaning, surface cleaning and preparation, tank and vessel cleaning and tube cleaning.

"These strategic partnerships enhance Jetstream's product offering and provide customers with greater access to category-leading specialty equipment and accessories that enhance operator safety and productivity and help contractors perform their jobs more profitably," said Joe Varca, business unit director at Jetstream. "The collaboration with these well-known automation partners, combined with our nine FS Solutions authorized retail support and rental centers across the United States, enables Jetstream to better meet our customers' needs for total hands-free solutions, including the purchase and/or rental of Jetstream waterblasting equipment, parts, accessories, training and service support."

With the goal of reducing the number of workplace fatalities and injuries related to improper use of high-pressure waterblasting and providing a safer environment for equipment operators, Jetstream is developing and delivering hands-free waterblasting solutions and training to industrial cleaning contractors. As part of the initiative, Jetstream's experts consult with customers, visiting job sites to identify the right hands-free waterblasting solutions for the location.

"Jetstream and FS Solutions can demo, sell and rent the broadest offering of hands-free cleaning solutions in the industry, including automated and robotic tools and accessories," Varca said.



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(Advertisement)

Matching Your Vacuum Excavation Equipment to the Right Job

By Ben Schmitt, Product Manager, Vactor Manufacturing

With more than 19 million miles of buried utilities in the United States, there are plenty of obstacles to navigate around when performing an excavation project. While services such as One-Call are a great starting point to identify a utility's location, properly exposing a utility is the only sure way to know where that valuable infrastructure truly lies. Electronic locating methods are not always accurate and may also miss unknown utilities in the area.

Visually locating these utilities with vacuum excavation is essential to mitigating risk of striking underground utilities. The risk of striking a fiber-optic, electrical or gas line can result in thousands – and sometimes millions – of dollars in fines, lawsuits and even death.

Selecting the right vacuum excavator

The search for a vacuum excavator begins the same as any piece of equipment: know the job you're planning to complete. By identifying the type of work your crew will perform, the equipment decision process will run a lot more smoothly.

It's also helpful to know the size of a typical application so that the correct size debris body is selected to complete the work as efficiently as possible. For example, vacuum excavation manufacturers supply debris capacities ranging from 1 cubic yard of capacity on trailer units and upwards of 21 cubic yards of debris on larger truck-mounted units.

With so many options available to those looking to purchase or rent vacuum excavation equipment, it's important to consider the size of excavations to be completed with the equipment. Factors to consider include:

- Travel distance to a disposal site
- State and local weight restrictions
- Excavation distance from the unit
- Availability of water
- Soil conditions
- Temperature

Air vs. water

When exploring vacuum excavation systems, the decision between an air or hydro unit is an important one. Both mediums have very distinct advantages.

Air vacuum excavators use compressed air to loosen the soil and positive displacement blowers to vacuum the spoils into a tank. Hydro-excavation uses high-pressure water to loosen soils, and the residual slurry spoils are easily extracted into the debris tank via positive displacement blower or centrifugal compressors.

Air vacuum excavation advantages

Some utility companies, DOTs or power plants specify air vacuum excavation for a given job for a number of reasons. Air vacuum excavation is desired in applications where the soil tends to be loose, water is not readily available, in small-scale excavation projects, or where immediate backfill of the hole is required. When working around buried electrical lines or brittle utilities, air vacuum excavation is often preferred due to the lower operating pressures.



The key to efficient hydro-excavation is to use the proper amount of water for the job. This will maximize productivity and operator efficiency.



Hydro-excavation uses high pressure water to loosen soils, and the residual slurry spoils are easily extracted into the debris tank via a positive displacement blower or centrifugal compressors.



By identifying the type of work your crew will perform, the equipment decision process will run a lot more smoothly.

(continued on page 22)

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Tier 4 certification isn't required everywhere yet,

but it will be. Get out in front with an UltraGreen water jet unit, available for sale or rent at all six NLB regional branches. Ask about our trade-in programs for older NLB units, too.

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Matching Your Vacuum Excavation Equipment

to the Right Job from page 20

- Air is limitless. Onboard compressors generate the required pressure on demand so there is no need to refill water.
- Air is nonconductive. When vacuuming around live electrical wires, pneumatic excavation can be a preferred choice over hydro-excavation.
- Air vacuum excavation provides dry spoils which can immediately be returned to the excavation site. Many applications in the utility segment require exposing the utility, making the repair, and then backfilling the material. This can't be done with hydro-excavation.
- Air vacuum excavation uses lower excavation pressures compared to hydro-excavation. Protective coatings and brittle underground utilities can easily be damaged when using hydro-excavation if the operator is not careful.
- Onboard compressors also allow the use of pneumatic tools often required in utility applications.

Hydro-excavation advantages

The key to efficient hydro-excavation is to only use enough water to cut the soil effectively. All too often,

operators use more water than is required and spend more time offloading material. Using the proper amount of water for the job will maximize the operator's efficiency and maximize productivity.

- Hydro-excavation is much faster than air vacuum excavation. Because of its heavier density, water is able to move more material faster and more efficiently.
- In frozen ground or harder materials, water can be heated with on-board water heaters to aid in cutting through these materials.
- Hydro-excavation equipment can often be used for adjacent applications, such as tank and pit cleaning. With the onboard high-pressure water pump, hydro-excavators can perform many alternate applications that cannot be completed with pneumatic excavators.
- Hydro-excavation does not produce the sandblasting effect the way air does. This reduces the potential for damage to underground utilities.
- Water is also a lubricant, which helps to prolong the life of the excavation equipment by reducing wear on the vacuum hose and other components in the air stream. Water also prevents hose clogging. Hydro-excavation can be considered less messy, as it does not have the dust component associated with air excavation.
- Hydro-excavation is also quieter than air excavation, so there is less noise fatigue for the operator.

Equipment training is essential

It's essential that vacuum excavation equipment operators are proficient in the safe and proper use of the equipment to efficiently locate underground utilities while protecting vulnerable and expensive infrastructure. Training – especially in the areas of proper setup, operation, evacuation techniques and load handling – is strongly recommended to ensure that the operator is familiar with the specific method of vacuum excavation so they can safely maximize their efficiency and productivity on the job. While it can take some time to master, excavation technique and nozzle performance can significantly improve overall productivity.

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WJTA-IMCA Asks for Your Incident Reports

New Safety Initiative Provides Real World Topics to Share with Your Team

In the previous *Jet News*, we shared two brief incident reports that could serve as safety meeting topics and be shared with your employees, colleagues, or customers.

Without question, safety must be at the forefront of every supervisor's and worker's focus. It is for this reason that we wish to provide our membership with real situations and incidents that have occurred as well as corrective actions to prevent reoccurrence.

In order to continue providing this resource to the industry, we are asking for your help. Submit reports on past or present incidents and near misses anonymously with the quick web form on WJTA-IMCA's website at ow.ly/HHdgL or click "Incident Reporting Form" under the "Resources" menu at www.wjta.org. You can also

email reports to wjta-imca@wjta.org. Any potentially identifying information will be removed from the reports prior to publication in the *Jet News* and website.

Workplace safety requires constant vigilance, and even situations that seem basic to industry veterans can provide important instruction for new workers and field personnel.

Submissions could include incidents/near misses from the field, or even reports from equipment manufacturers, distributors, and rental companies about inappropriate modifications or applications of equipment, creating hazardous situations.

For more information on this initiative, contact Peter Wright in the WJTA-IMCA office by phone: 314-241-1445 or email: wjta-imca@wjta.org.

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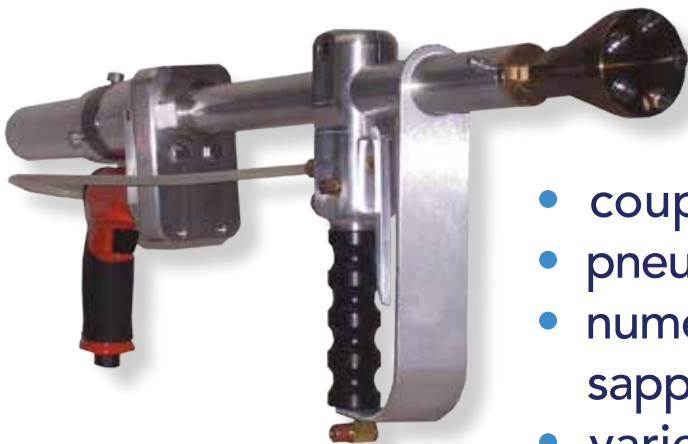
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"Our customers come first"

Peinemann's New 2XLTC Tube Cleaner

The new 2XLTC, manufactured by Peinemann Equipment B.V., is designed with the operators in mind. It can be handled and operated by a single person and can be put to use in a multitude of tube/pipe cleaning tasks.

The focus of Peinemann Equipment is to develop new tools for industrial cleaning that are modular in design and to offer cleaning solutions that are safe, multifunctional and efficient. Contractors require multifunctional

tools that will give a better return on their investment.

The latest 2XLTC design is a result of an earlier success story from Peinemann Equipment – the Triple XLTC Tube Cleaner. The new design is based on the same philosophy of using the wider tracks to accommodate a multitude of flex hoses (from 3/2 up to 8/4).

It remains light in overall weight and is easy to set up, remotely operated, modular in design and affordable. The main difference between the Triple XLTC and the 2XLTC is that the 2XLTC can be altered from a tube cleaning tool into a pipe cleaning tool as well. By simply changing the tracks to suit 1/2-inch and 3/4-inch hoses, and by adding a standard air motor, you create a powerful tool for a large range of pipe cleaning applications. Despite

the carryable weight of only 50 lbs., the 2XLTC is a power-package creating up to 400 lbs. of force.

After a considerable testing period, the 2XLTC was first shown at the WWETT Show in Indianapolis. Many positive reviews and responses were received by the contractors who acknowledged the versatility and safe operations of the new Peinemann tool.

Peinemann Equipment has manufactured high pressure waterblasting equipment for many years, and due to the strict laws in Holland (SIR – Institute of Industrial Cleaning) and with the help of contractors worldwide, the company

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Multifunctional for different types of applications.



The multipurpose 2XLTC can easily be altered into a pipe cleaning tool.



IMPORTANT NOTICE REGARDING SPAM

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The WJTA-IMCA leadership requests that members respect the contact information of fellow members and not use that information for the dissemination of spam or junk email. Membership information is not meant to be circulated beyond the WJTA-IMCA membership.

NEW 2-IN-1 FLEXLANCE TOOL 2XLTC/XXLTC



The new 2XLTC is the latest addition to our flexlance range. Like with all our latest "X" models the 2XLTC will allow the use of multiple hose sizes ranging from 3/2 up to 8/4 to cover the majority of tubes. This device is light weight (23kg-50lbs), easy to use and multifunctional. The 2XLTC is a great tool for cleaning most of the encountered heat exchangers, both horizontal and vertical as well as bundles with larger ID tubes such as evaporators. It can be used on our flex frame, our standard XY frame or even on a scaffold construction for vertical exchangers.



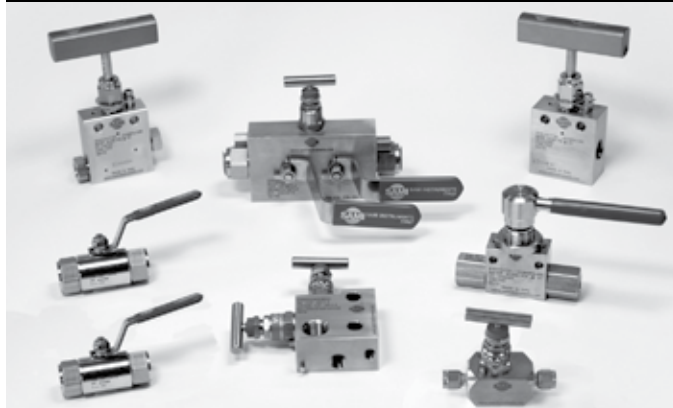
As with most cleaning equipment from Peinemann this new 2XLTC can easily be converted for additional tasks. This 2XLTC is a multifunctional tool that can easily be converted to allow for a single large hose for pipecleaning applications. The single large hose set up, know as XXLTC, comes with an easy exchangeable track and a dual motor set up. The larger single track will allow for 1/2" and 3/4" hoses and has a large force of 185kg -400 lbs in order to work with large lengths of hoses for pipelines.

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SPIR STAR, Ltd. is Celebrating 20 Years in Houston!



SPIR STAR Ltd., Houston, Texas, is celebrating its twenty year anniversary in 2015. Since its beginning in 1995, SPIR STAR Ltd. has become a leading provider of high pressure fluid control products including hose assemblies, fittings, and valves with working pressures up to 60,000 psi.

SPIR STAR would like to thank all who have supported the company over the years. Visit SPIR STAR at www.spirstar.com.

Write for Us

Jet News accepts original industry-related articles that have not been submitted to other publications. All submissions are subject to editorial review prior to acceptance. Once accepted, articles become the property of *Jet News* and cannot be reproduced elsewhere without permission.

What to Submit:

- Case studies detailing implementation of a new product or technique
- Articles about new and innovative applications and equipment
- Articles related to total quality management, management trends, marketing, state and federal legislative and regulatory issues, and safety issues
- Articles specific to any specialty area
- Career and student focused features

Jet News also welcomes letters to the editor.

Preparing the Manuscript

Articles should be approximately 1,000-1,500 words long and submitted via email as a Word document. Illustrations, photographs, graphics and charts are encouraged to complement the article. All accompanying materials should be labeled to provide appropriate originator credit. Suggested captions are required.

Degrees and accreditations, professional titles and current position should be included. All statements based on published findings should be referenced appropriately. References should be listed numerically within the text and at the end of the article. Articles not meeting submission criteria may be returned for reformatting at the editor's discretion.

Send submissions to wjta-imca@wjta.org, attention: George A. Savanick, Ph.D.

Peinemann's New 2XLTC Tube Cleaner from page 26

has developed many types of cleaning equipment that are proven in the field and that contribute to a much safer and more efficient way of heat exchanger and pipe cleaning.

High pressure water has been used in the chemical and petrochemical industries as a cleaning agent for many years. One of the most important applications is the cleaning of heat exchangers, and Peinemann Equipment has been at the forefront of efforts to drive the change to automatic (remote) operation.

"Thanks to our global network of agents and customers, we aim to minimize work related accidents



Manual Cleaning



Automated Cleaning

during heat exchanger and pipe cleaning," says Joost Ballieux, Peinemann's general manager. "The fact that Peinemann Equipment is committed to developing tools where the work can be done safer and more effectively simply creates a win-win situation for all parties involved."

For more information, visit www.peinemannequipment.com or email: equipment@peinemann.nl.

Hammelmann Opens New Location

Hammelmann Corporation has opened its third U.S. location in Prairieville, Louisiana, for sales, rental and service of Hammelmann products and equipment. Stephen Laviers will head up the new facility, which is located at 37310 Commerce Lane in Prairieville.

For more information, contact Stephen Laviers by email: stephen.laviers@hammelmann.com or call (225)384-5453.



Comments Solicited on Improvements to Recommended Practices

Comments are solicited regarding improvements to the WJTA-IMCA publications, Recommended Practices for the Use of High Pressure Waterjetting Equipment and Recommended Practices for the Use of Industrial Vacuum Equipment. While both publications are reviewed periodically at the WJTA-IMCA conferences and throughout the year, your comments and suggestions for improving the publications are invited and welcome anytime.

Please address your comments and suggestions to: WJTA-IMCA, 906 Olive Street, Suite 1200, St. Louis, MO 63101-1448, phone: (314)241-1445, fax: (314) 241-1449, email: wjta-imca@wjta.org. Please specify which publication you are commenting on.

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Flow Waterjet Inspiration Brings Entrepreneurial Artist to New Heights



Rendering of the feature wall created by C2 Resource Studio for the Baccarat Hotel.

C2 Resource Studio designed and created a custom antique mirror sculptural wall for the Baccarat Hotel in New York City exclusively with their Flow waterjet system. Utilizing Flow waterjet technology C2 Resource Studio was able to create a custom design, bringing the architectural project to the next level.

Initially purchasing a Flow waterjet to cut stone and stained glass elements, Chip Hunter, owner of C2 Resource Studio, developed his business into one of the quickest growing multi-medium boutique fabricators in the U.S. and internationally. “We offer our customers unique, creative and fresh concepts and options. We often bring their original designs and vision to reality where other resources are not experienced or comfortable working outside the box,” says Hunter.

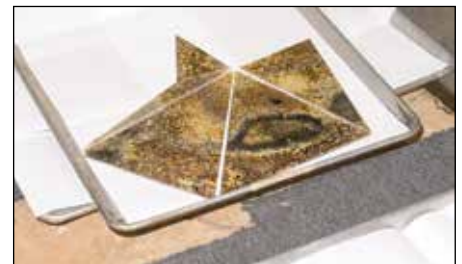
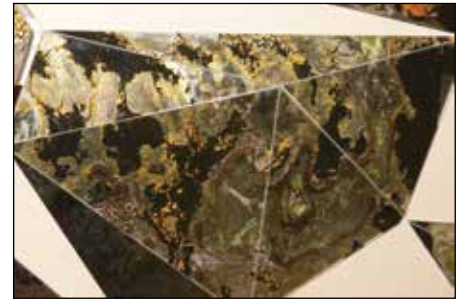
C2 Resources uses the waterjet to service both the architectural and design communities. The waterjet allows Hunter to tap into a diverse

and eclectic mix of mediums from the strongest metals and alloys to the most sensitive of fine glass materials.

“Since buying and developing my skills with the Flow waterjet, there are almost no limitations to the work we can do,” continues Hunter. “It just gets better and more exciting day to day. With the level of artistry and detail that we’ve developed over the last few years I can’t wait to see what we’ll be doing in the near future.”

C2 has a number of cutting edge productions slated for the 2015 year. Upcoming projects include Pandora Lighting Elements, a patented lighting process which will span 24,000 square feet at the U.S. Embassy in Jakarta, Indonesia; design elements for the Intercontinental Barclay Hotel in New York City, fabricating more than 20,000 square feet; and artistic glass panels for the NYU Hospital Kimmel Pavilion.

Some of the cutting edge new products being offered and/or released



Baccarat Wall 1-4.

are a patented back painted metallic textured material for wall coverings and design accents and a proprietary stained glass fabrication process that allows 300% more detail, strong enough for endless applications, with no lead and relatively no maintenance.

For more information, visit www.FlowWaterjet.com or www.C2Resource.com.

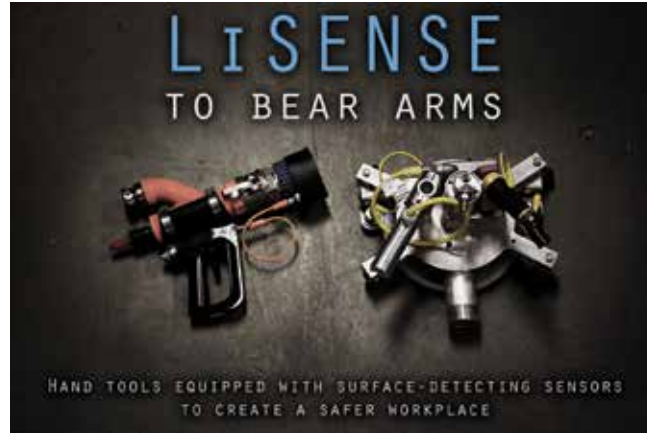
2015 WJTA-IMCA Conference & Expo, Nov. 2-4. Details at www.wjtaimca2015.com

We Sense a Change in the Industry: Terydon's Introduction to Safe Hands-On Tooling

By Terry Gromes Jr., Terydon, Inc.

The major advances in technology that have emerged over the last several decades have had an impact on virtually every aspect of modern life. Elementary books are replaced by iPads, automobiles are parallel-parking themselves, and the thought of a conventional pay phone is non-existent. Post cards are replaced by emails, restaurant directions are routed in real-time by Google Maps, and your pager-flashlight-calculator-dictionary-radio-camera-phonebook-turned-cellphone has more computing power than NASA had to reach the moon. From the alarm clock at the crack of dawn to the entertainment center at night, everyday life has been supplemented. The trusty coffee pot brewing fresh java every morning could easily be awarded the Employee of the Month for that matter. And as technology advances each step, it affects various industries as well. Transportation, medicine, communication, every aspect has been progressing forward at such a blazing speed, that the hottest thing three months ago is now old news. But just how has advancement of modern technology affected the waterblasting industry?

Waterblasting, too, has evolved considerably over the course of its existence. The days of "walking the dog" have reached a close, and end-users now have an arsenal of tools branching beyond the rigid lance and duct tape. Aggressive pursuit by contractors, plants, and manufacturers alike to take steps in a positive direction not only to increase production, but most importantly to create a safer work place. "Automation" has become a branded term, and the masses are rushing to deliver "hands-free solutions." With the implicit hazards that come with the benefits



of waterblasting, that makes to be the common sense approach, right? Or did we miss something?

The waterblasting industry has focused so in-depth on the complete removal of water from the operator's hands that it has overlooked the core objective of this push: to make the job safer for the end-user, without sacrificing productivity. Mandates have been stapled into place without a secure solution in sight. Large excavator-style hydroblast robots have been designed to replace the shotgunner, and where they can surpass a shotgunner doing pad work, a mountainous predicament arises when surface prep must be performed up a flight of stairs or within confined spaces. This event has been so overlooked that only an estimated 40% of surface prep work is being completed during shut-down by these man-displacing machines. This leaves 60% of the work un-achievable by automation, and a variance must be written for a shotgunner to perform the duty. By the shotgunner inserting himself back into the hazards that we were initially attempting to eliminate, this has brought us around in full circle. With the safe surface prep dilemma left unsolved, Terydon has taken a broad step in implementing worldwide technology into waterblasting to offer a matter-of-fact safe and productive solution to surface prep cleaning. Enter

"LiSENSE Technology."

Originally developed for the U.S. Navy in conjunction with Penn State Applied Research Labs for confined cleaning inside submarines, this patent-pending development was incorporated around a different approach: instead of starting from scratch on the drafting board to pioneer a native solution, let's instead make our existing tooling safer.

From that hypothesis, the LiSENSE Technology was conceived; arm the existing hand tools with surface-detecting sensors which control when the high pressure water can be engaged. The inductive proximity sensor technology over a half century old was the focal point. Since hands-on surface prep has served our industry for decades, by applying sensors to these tools, there would be no learning curve. Achieving the IP67 electronics rating was a priority to ensure its performance in our labor-intensive scenarios, and the options of using a 110 outlet or the pump battery converted to 24VDC power were added as on-site conveniences. And Terydon's objective of creating a sophisticated line of safe hand tools was now achievable by a variety of safety features previously unseen in this industry.

In a sense, the LiSENSE Technology's functionality mirrors our present safety standards on current hands-on tooling. The most recognizable safety mechanism to date is arguably the secondary hand trigger, refusing the actuation of high pressure water until both the primary and secondary triggers have been engaged. The LiSENSE sensors work in this same light; by requiring detection of a metallic surface, the sensors will not allow high pressure water to be turned

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We Sense a Change in the Industry: Terydon's Introduction to Safe Hands-On Tooling

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on until the tool is held to the surface and location is confirmed by the sensors. This restricts an event where the operator, as well as his colleague working beside him, may be exposed to hazard of a water cut. Once the surface is located and water is engaged to clean, the function of the LiSENSE Sensor transforms to an Emergency Stop Dead-Man Switch: if the tool is removed from the proximity of the surface, the sensors no longer identify the surface and instantly shut water off. Again, this inherent safety measure avoids the threat of injury via high pressure water.

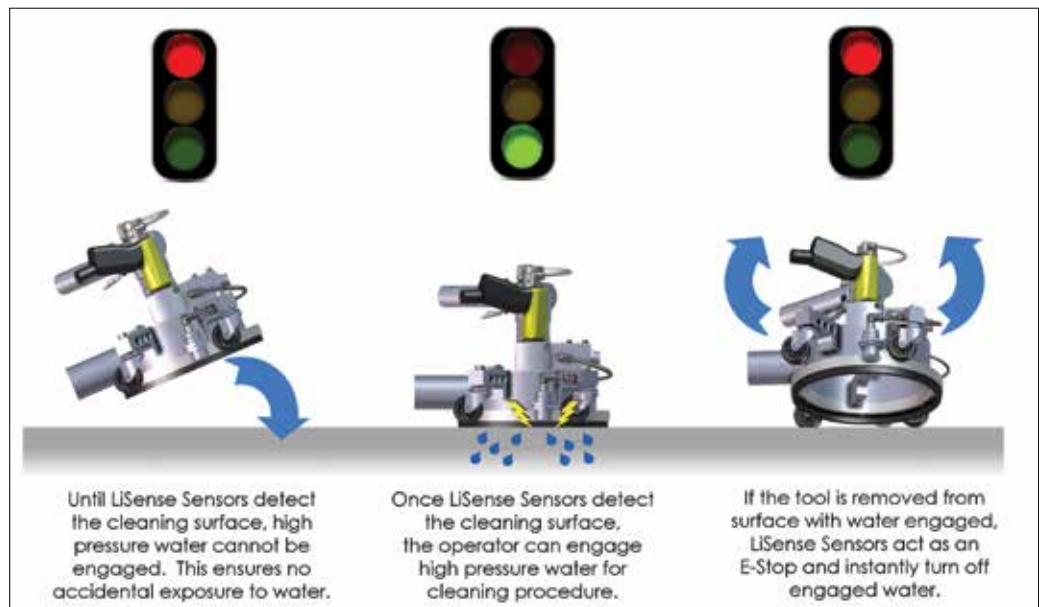
The second safety feature adapted industry-wide is the barrel length of the conventional shotgun or swivel gun. Because of threat of high pressure water, many plants have mandated a barrel of at least 48 inches so that workers cannot expose their lower body to water at the end. However, by grasping the gun body with its intent to clean, the long barrel creates an operational disadvantage due to the pivot point created at the end-user. Simple math dictates that the reaction force created at the end of a long barrel results in lack of full control by the end-user, indirectly constituting a hazardous work area. With the addition of Terydon's LiSENSE sensors, the same precedent applies to barrel length. Sensors detecting the surface for water engagement then converting to an E-Stop if removed from surface, invalidate the precept of the long barrel. Moreover, a shorter barrel proposes enhanced control over the water at the end, suppressing a considerable amount of the reaction force back thrust. Where the rules for a long barrel gun have been implemented with the correct intent, the

LiSENSE Technology introduces an alternative of a safer, shorter gun.

Additionally, the unforeseen advantage unique to the electric power is its benefits over air. In an industry erected around pneumatics, we have accepted that tool performance would be compromised due to the erratic characteristics and shortcomings of air power. One focus is the response time of air over distance. For example, in controlled settings, the performance time for a traditional pneumatic signal to travel to dump high pressure water at a remote safety valve from an air-actuated tool takes 2.2 seconds every 35 feet. At those same settings, however, Terydon's electric signal response time would be 0.06 seconds, over 30 times faster than air! Where exposure to high pressure water for 2 seconds could certainly be life-threatening, shutting off water in milliseconds via electric signal exponentially decreases the odds of injury! This unprecedented water supremacy paints Terydon as the sole supplier of the safest hand tools worldwide.

The applications? Endless. It is accepted that excavator-style cleaners have surpassed the productivity and safety of the hand-gunner in pad work, and the LiSENSE Technology is not designed to replace the excavator, but instead to compliment it. While the pad work is being performed, a hand-gunner can now do what he does best; clean hands-on: up two flights of stairs, down a cat-walk, through a man-way, up scaffolding, and around an obstruction, all while achieving ultimate safety.

The solution Terydon's LiSENSE Technology promotes is an invigorating jolt to the waterblasting industry, no doubt. With this proven technology, the oft-spoken theory that the sole solution to safety is "hands-free", is up for debate. By accepting the resources around us from breakthroughs in other industries, we can make the current products we already own safer, thereby improving the safety of the end-user, while we continue to evolve our world into a resourceful and dynamic industry.



LiSense Surface Detection

For more information, visit www.terydont.com.

New Convertible Pump Offers 350 hp with Portability

A new high-pressure waterjet pump unit from NLB Corp., the Model 350, combines an innovative new fluid end design with a rugged 350 hp (261 kW) diesel engine in a unit that can be easily towed to job sites. It is the latest model in the popular NLB 225 Series of convertible pump units.

The Model 350 is rated for a maximum operating pressure of 20,000 psi (1,680 bar) and can be quickly converted to operate at other pressures (8,000 psi, 10,000 psi, 15,000 psi) with a simple conversion kit. Flows range from 26 gpm to 63 gpm (98 lpm to 238 lpm). The rugged, trailer-mounted unit minimizes its overall footprint with internal gearing that eliminates large pulleys and belts.

The Model 350 is one of many NLB pump units that can be ordered in an UltraGreen™ configuration, assuring compliance with the latest Tier 4F emission requirements for diesel engines from the Environmental Protection Agency while significantly reducing operating costs.

With the introduction of the Model 350, NLB's range of convertible waterjet pump units now includes 30 models.

For more information, visit www.nlbcorp.com or call: (248)624-5555.



NLB 350 350 hp convertible waterjet pump unit.

Ledwell Hydro-Knife Available for Rent from Vacuum Truck Rentals

Ledwell & Son Enterprises, Inc., has announced the Ledwell Hydro-Knife is available for rent from Vacuum Truck Rental. The Hydro-Knife is a pioneering mobile hot water jetting truck used in hydro-excavation and commercial/industrial cleaning operations.

With a capacity of 2,100 gallons, the Hydro-Knife provides up to 200°F

water at 3,000 psi. Two 125-foot long hoses work independently or in tandem to deliver 10 gpm each (20 gpm total) utilizing heavy duty spray guns, lances, and interchangeable nozzles.

The Hydro-Knife supports multiple excavators with or without onboard water systems, and provides an ideal temperature and pressure combination

(200°F/3,000 psi) for cleaning job site equipment and structures.

Vacuum Truck Rentals offers a variety of equipment, including 3,000 gallon DOT liquid vacuum units, 130/150 barrel DOT vacuum trailers, vacuum trucks, sewer cleaners and hydro-excavation trucks. Vacuum Truck Rentals has ten locations in eight states around the country.

For more information on renting the Hydro-Knife, call Vacuum Truck Rentals at (888)955-2087 or visit www.vactruckrental.com.



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AutoBox Flex Lancing System for Heat Exchanger Cleaning

StoneAge has announced the availability of the AutoBox ABX-2L Automated Flex Lancing System, specifically designed for hands-free heat exchanger tube cleaning applications with an emphasis on safety, portability, and usability. When paired with StoneAge Banshee rotary tube cleaning nozzles and the new lightweight positioner, the ABX-2L is a turnkey solution for safe and efficient tube cleaning in the harshest exchanger environments.

The benefits of automated waterblasting are well documented to include increased operator safety as well as productivity. With the AutoBox ABX-2L, the operator controls the exchanger cleaning process with StoneAge's newly redesigned control box from a remote position outside the danger zone of pressurized equipment and process chemical splashback. Therefore, the requirements for personal protective equipment (PPE) are diminished, along with fatigue, heat-related illness, and frequent staff rotations. Unlike hand-driven lancing, the feed rate of the AutoBox system is precisely controlled, delivering thorough, consistent cleaning to every tube throughout the bundle.

The AutoBox ABX-2L also offers a number of productivity features unique to the industry. It is resistant to corrosives making it a suitable solution for caustic environments where other automated equipment can fail. "The StoneAge machine works great in acid service and has allowed us to become 100% automated," states Mark Blanchard, owner of Waterworks Industrial Services in Geismar, Louisiana. Waterworks specializes in exchanger, tank, and pipe cleaning



and has been proactively adopting automated technologies since 2005.

A complete ABX-2L system is made up of modular components, each weighing less than the 50 lb maximum lifting capacity specified by many plants. "Everything is portable enough to carry," says Earl Madere, business development manager of StoneAge, adding that the portability and compact design of the system enables operation in locations that may have previously been accessible only for manual lancing.

StoneAge's approach to engineering combines practical functionality with thoughtful design to produce highly effective and usable equipment. The ABX-2L comes with an integrated lance guide and positioner that enables simple and accurate indexing and pitch adjustment on the fly. The positioner rails can be coupled to expand to different exchanger sizes and come with a variety of attachment

options. "StoneAge has done a great job of building a lightweight frame that's easy to mount on an exchanger, reports Doug Mcgee of Evergreen Industrial Services in La Porte, Texas. Noting the built-in capability for hands-free shotgun cleaning of the bundle face and components once the system is positioned, Mcgee continues, "You can set it up, hook your hose to it and stand back. Eliminating any kind of manual hydroblasting is a tremendous advantage."

For Waterworks Industrial Services, the ABX-2L has delivered a safe work environment, production increases up to three-fold over prior cleaning methods, and predictably consistent cleaning rates. "What that does for us is allow our customer to put his equipment back in service faster," concludes Blanchard.

For more information, visit www.stoneagetools.com/abx-2l.

**Mark your calendar for the world's premier waterjet and industrial cleaning event:
2015 WJTA-IMCA Conference & Expo, Nov. 2-4. Details at www.wjtaimca2015.com**

Hughes Pumps Blasts Leaf Mulch on Tyne and Wear Metro Network

A train that's designed to help overcome the perennial problems of track leaf mulch on some of the UK's railways is using a powerful, custom-built water jetting system manufactured by Hughes Pumps.

The new track cleaning system, in use on the North East of England's Tyne and Wear Metro network, has been successfully clearing the tracks of the leaf mulch that prevents low rail adhesion during the autumn/winter period – the cause of regular delays to services. Tyne and Wear Metro operator Nexus purchased a Hughes Pumps waterjetting system following a sealed tender bid against four other suppliers. Supplied as a complete built unit, the waterjetting system was fitted to an existing locomotive capable of travelling around the Metro network for 24 hours a day, which, a spokesman for Nexus says, has dramatically helped reduce the amount of Metro service delays over the autumn/winter months.



The Hughes Pumps system, using a HPS2200DC pumpset that delivers 85 lpm (22 gpm) at 1000 bar (14,500 psi), is powered by a Deutz TDC6.1L6 Tier 4 diesel engine. The pumping system is mounted in a weather canopy with roller shutter doors on each side and includes remote control from the train driver's cab. Waterjetting nozzles are positioned over each railhead at the front and rear of the train. A diverter valve, operated from the driver's cab, diverts high pressure water to the front or rear of the train depending on direction of travel. A friction enhancer dispensing pump and 10,000 litre (2650 gallon) water tank provide 90 minutes of continuous jetting.

Hughes Pumps has considerable experience with the rail sector through the supply of systems used for cleaning, and the removal of leaves from railway lines – including UK's Chiltern Railways with Balfour Beatty Rail and Taiwan's Taipei and Kaohsiung Metro Systems.

For more information, visit www.hughes-pumps.co.uk or email: sales@hughes-pumps.co.uk.



HIGH & ULTRA HIGH PRESSURE

Hughes Pumps' flange mounting option makes the pumps very simple to install and more compact than other like-for-like units, but still powerful enough for the most arduous water-jetting applications. Pumps available in 10K, 20K and 40K PSI.

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We also welcome enquiries from potential new distributors in territories without representation.



Waterjet Intensifier Pump for Shops with Limited Power

Jet Edge, Inc. has introduced its new iP60-30 60,000 psi (4100 bar), 30hp (22 kw) hydraulic waterjet intensifier pump.

Designed for waterjet shops that desire the reliability of a hydraulic intensifier pump, but have limited power, the iP60-30 draws only 37 full load amps at 460vac (60Hz) or 74 full load amps at 230vac (60Hz). It is capable of producing 0.6 gpm (2.3 L/m) of ultra-high pressure water at a continuous operating pressure of 55,000 psi (3800 bar). Economically priced and easy to maintain, the iP60-30 is ideally suited for rural shops, R&D labs, schools, and small budget-conscious waterjet cutting shops.

The iP60-30 features a reliable tie-rod design that eliminates threads on the high pressure cylinders, end caps, and hydraulic cylinders. This reduces the likelihood of cracking and increases component life. Matched metal components prevent galling of hydraulic components. The iP60-30 includes a hydraulic

accumulator to provide smoother hydraulic pressure, reduce spikes and prolong hydraulic pump life.

For full specifications, visit www.jetedge.com, e-mail: sales@jetedge.com or call: (763)497-8700.



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All Jetting Technologies, Inc.	www.alljetting.com	pg. 25
Diamond Technology Innovations (DTI)	www.waterjetdiamonds.com	pg. 24
GMA Garnet (USA) Corporation.	www.garnetsales.com	pgs. 7, 37
Guzzler Manufacturing	www.guzzler.com	pg. 5
Hammelmann Corporation	www.hammelmann.com	pg. 18
High Pressure Equipment Co.	www.highpressure.com	back cover
Hughes Pumps	www.hughes-pumps.co.uk	pg. 35
Jetstream of Houston, LLC.	www.waterblast.com	pg. 19
Maxpro Technologies, Inc.	www.maxprotech.com	insert
NLB Corp.	www.nlbcorp.com	pg. 21
Peinemann Equipment B.V.	www.peinemannequipment.com	pg. 27
SPIR STAR.	www.spirstar.com	pgs. 23, 28
StoneAge, Inc.	www.stoneagetools.com	pg. 3
Stutes Enterprise Systems	www.aquablasters.com	pg. 42
TetraCore	www.tetracore.com	pg. 7
Vacuum Truck Rentals, LLC.	www.vactruckrental.com	pg. 22

General Pump Welcomes Nick Viestenz to Sales



General Pump has announced that Nick Viestenz officially joined the company's outside sales staff in January 2015. Certainly a familiar face in the industry, Nick has been with General Pump for 12 years in a variety of capacities. Having spent two years in General Pump's Service Department, three years in research and development and the past six years in customer service/inside

sales, Nick brings extensive knowledge of pumps and their use in pressure wash, vehicle cleaning and industrial applications to General Pump's sales force.

Nick lives in Eagan, Minnesota, with his wife, Whitney, and daughter Khloe.

For more information, visit www.gpcompanies.com or call (651)454-6500.

Flow Waterjet Launches Flow Blog

Flow International Corporation has released a new blog, FlowBlog, which focuses on educating people on waterjet technology and industry trends.

"The goal of the blog is to be interactive," says Chip Burnham, vice president of marketing for Flow and the lead contributor of the blog. "We invite our readers to participate by leaving comments, suggesting future posts, and asking questions. The content should really be driven by the consumers." Burnham will be joined by other leading experts in the waterjet industry, many of which have dedicated their careers to the technology such as Dr. Mohamed Hashish, the inventor of the abrasive waterjet.

"This blog is about educating the manufacturing community on waterjet technology," says Burnham. We will be covering all aspects of waterjets, from how they work, what they can do, how they compare to other technologies, and how they're used by successful shops.

For more information, visit www.FlowWaterjet.com.



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WJTA-IMCA Welcomes New Members

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Thai Nam Industrial Investment Jsc Ngo Van Dzung 5th floor, 194 Le Trong Tan Street, Khuong Mai Ward Hanoi, 10000 Vietnam Phone: [84](4)36410356	Jan Fredrik Bjoerge Froyas vei 11 Sofiemyr, 1412 Norway Email: janfredrikbjorge@hotmail.com Phone: [47](906)09-779	Jon Randolph Abrasive Products & Equipment 302 Deerwood Glen Drive Deer Park, Texas 77536 Email: jrandolph@apec-lp.com Phone: (281)930-0808	
Corporate Individual	Jack Edward Cannon III DanChem Technologies 1975 Old Richmond Road Danville, Virginia 24540 Phone: (434)797-8120	<hr/> <h2>Hasmak Representation Division to Sell Jet Edge Waterjet Systems in Turkey</h2> <p>Jet Edge, Inc. has selected Hasmak as its waterjet systems dealer for Turkey. Hasmak carries Jet Edge's EDGE X-5® 5-axis waterjet cutting systems and X-Stream® line of UHP intensifier pumps, plus Jet Edge's full line of waterjet cutting and surface preparation equipment, including waterjet cutting machines, waterjet intensifier pumps and portable waterjetting systems. The company also carries Jet Edge OEM waterjet parts and will eventually be authorized to service Jet Edge waterjet equipment.</p> <p>Based in Istanbul, Hasmak is a leading Turkish company with offices in Istanbul, Adana and Mersen. The company's three major divisions include Hasmak Representation, Hasmak Trading and Hasmak Construction.</p> <p>"For 25 years, Hasmak has led the way in industrializing many developing countries in Eurasia and North Africa," says David Anderson, Jet Edge international sales manager. "We are proud to have them represent Jet Edge. They understand how ultra-high pressure waterjet technology can benefit the many industries they serve, from offering a safer cutting alternative in hazardous environments to increasing productivity and reducing waste in plant operations."</p> <p><i>For more information, visit www.jetedge.com or call (763)497-8726.</i></p>	
Mike Bollinger StoneAge, Inc. 466 S. Skylane Drive Durango, Colorado 81303-6002 Email: mike.bollinger@stoneagetools.com Phone: (970)259-2869	OT Coleman DanChem Technologies 1975 Old Richmond Road Danville, Virginia 24540 Email: ot.coleman@danchem.com Phone: (434)797-8120		
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Stephen Laviers Hammelmann Corporation 37310 Commerce Lane Prairieville, Louisiana 70769 Email: stephen.laviers@hammelmann.com Phone: (225)384-5453	Randall Damas Retro Systems, LLC 12690 Dogwood Trail North Royalton, Ohio 44133 Phone: (216)533-4854		
Erin Patla StoneAge, Inc. 466 S. Skylane Drive Durango, Colorado 81303-6002 Email: erin.patla@stoneagetools.com Phone: (970)259-2869	Colin Fisher-Jones Candlewood Management Service 31 Newbury Road Howell, New Jersey 07731-2109 Phone: (732)363-5541		
Corey Waller StoneAge, Inc. 466 S. Skylane Drive Durango, Colorado 81303-6002 Email: corey.waller@stoneagetools.com Phone: (970)259-2869	Ethan Leeds Trainright Industrial Services (Aust) Pty Ltd 54 Woodlea Court Woodend, Victoria 3442 Australia Phone: [96](0414)638-197		

Dense Phase Offload Guzzler CL, Tri-drive Rear Axle for Guzzcavator

Guzzler Manufacturing has introduced a dense phase offload option for the Guzzler® CL industrial vacuum loader and a tri-drive rear axle configuration for the Guzzcavator® combination vacuum loader and vacuum excavator.

Designed to increase value by recovering valuable resources for reuse, the optional batch offloading system is ideal for offloading powders, such as cement and lime, into large silos. The truck features a high-pressure (14.5 psi), direct drive cyclo-blower rotary pump with up to 750 CFM of free air displacement. The system pneumatically conveys material through a four-inch (10.16 cm) hose up to 125 feet (7.62 m) vertically.

“The rear of the dense phase offload configuration features a specially designed transfer cone with six fluidizing nozzles that fluff material into the air stream for improved

material conveyance,” says Ben Schmitt, product manager at Guzzler Manufacturing.

The powerful and efficient industrial vacuum system operates effectively in remote or inaccessible locations more than 1,000 feet away. Simple to operate and easy to maintain, this Guzzler vacuum truck provides 100-percent accessibility to all internal chambers, and provides the lowest air-to-cloth ratio of any machine in its class.

The Guzzler CL is also available with a vane pump pressure offload system (high-pressure, low airflow) which is ideal for the vacuum loading of liquids, sludges and thicker materials.

“The tri-drive rear axle configuration on the Guzzcavator combination vacuum loader and vacuum excavator allows for maximum debris carrying capacity and improved traction in off-road conditions, compared to a

conventional tandem axle,” Schmitt says. “The multi-purpose Guzzcavator allows industrial cleaning contractors to offer their customers additional services, creating new income avenues that can result in an improved bottom line.”

The 1,300-gallon, twin-steer, tri-drive rear axle Guzzcavator features an 18 cubic yard (13.76 cu m) debris body, providing up to seven hours of continuous operation between refills. In addition to handling a variety of wet/dry industrial cleaning applications (such as cleaning and recovering solids and dry bulk powders, liquids, slurries and thick sludge), the Guzzcavator vacuum truck can also perform vacuum excavation work including potholing, slot trenching, water valve box repair, locating existing fiber optic lines, cables and other utilities, and oil and gas field support.

For more information, call (800)627-3171, or visit www.guzzler.com.



Safer, Easier Manual Waterblasting with the DERC Jet-Easy



Jet-Easy in container.



Detail of gun in positioning ball.



Jet-Easy in use.



Easy way of changing vertical height.

The engineers of DERC Salotech designed a safe and easy way of manual cleaning of smaller objects in a cleaning container – the Jet-Easy. By using the Jet-Easy, the operator has a limitation of freedom of movement that helps prevent the operator from hurting himself with a waterjet. The guiding of the gun is fixed in a frame, which can move free horizontally and vertically. The reaction force during the work will be caught by the fixed frame.



Situation of product in cleaning container.

The Jet-Easy is mounted onto an adjustable frame. This frame can easily glide over a rail mounted along the side of the whole container. The lance of the high pressure gun is clamped in a positioning ball fixed in the frame in which the gun can move freely, but limited.

Features include improved operator safety, reaction forces can be absorbed, less stressful for operator, a simple stainless steel construction, and suitability for most high pressure guns.

The Jet-Easy is an ideal solution for cleaning smaller objects in a cleaning container.

For more information, call +31 (0)186 62 14 84, e-mail: info@salotech.nl, or visit www.salotech.nl.

**2015 WJTA-IMCA Conference & Expo, November 2-4
Morial Convention Center, New Orleans**

StoneAge Inc. Named One of *OUTSIDE*'s Best Places to Work

StoneAge, Inc. was named as one of OUTSIDE's Best Places to Work 2014. Each year, OUTSIDE recognizes the top 100 companies in the United States that help their employees strike the ideal balance between work and play. These companies encourage employees to lead an active lifestyle, are eco-conscious, and prioritize giving back to the community.

To find the best places to work in the United States, OUTSIDE conducted a rigorous eight-month vetting process in partnership with the Best Companies Group to assess the policies, practices, and demographics of hundreds of companies, and went straight to the employees to hear about factors like corporate culture, role satisfaction, work environment and overall employee engagement. The Best Places to Work list represents the cream of the crop: companies who cultivate a comfortable and collaborative workplace, enable their employees to enjoy the great outdoors and take pride in their roles in the community and the environment.

"If you're considering a career change or searching for your dream job, OUTSIDE's Best Places to Work list is the first place to look," says OUTSIDE Executive Editor Michael Roberts. "These companies set the standard for workplaces that really value their employees and offer an experience that's fulfilling inside and outside the office."

Visit StoneAge at www.stoneagetools.com.

Envirosystems Appoints Eugene Cookson Jr. to Board of Directors

Envirosystems has announced the appointment of Eugene A. Cookson Jr. as a director to Envirosystems' Board of Directors. Cookson's appointment as an independent director is effective immediately.

"I am pleased and honored to welcome Gene to the Envirosystems' Board," says Mike Ryan, chief executive officer, Envirosystems. "His extensive experience in environmental services and the growth and management of multiple location service businesses will complement and strengthen our board as we begin the next chapter of Envirosystems' growth."

Cookson currently serves as chief operating officer of Liquid Environmental Solutions (LES). Before joining LES, Cookson was president of SWS Environmental Services from 2010 to 2014, where he oversaw the integration of two equally sized environmental services companies into a sophisticated national firm.

Cookson also served in a variety of roles at Clean Harbors from 1991 to 2009, including as chief operating officer and executive vice president-business strategy. He was instrumental in the revenue growth of the company from approximately \$200 million in 1998 to \$1 billion in 2008.

For more information, visit www.envirosystemsglobal.com.

TST Launches New Series of CE Certified Safety Clothes

TST Sweden has launched a new series of CE certified safety clothes. It is an adaptation of ProOperator Protective Clothing for High Pressure Cleaning, developed to meet the demands of the oil industry.

ProOperator Protective Clothing is now available in a version that is CE certified according to EN ISO 20471:2013 Class 3 High Visibility. The new clothes are comfortable and functional, and protect from dangerous waterjets up to 500 bar. One of the key ingredients for the protection is Dyneema®, a high-strength synthetic fiber.

For more information, visit www.tst-sweden.com.

WJTA-IMCA Safety Manuals

One of the WJTA-IMCA's primary goals is to improve safety within the industry. *The Recommended Practices for the Use of High Pressure Waterjetting Equipment* provides recommendations for the safe and efficient operation of high pressure waterjetting equipment. It is often used in the training of operators and new employees.

The new Spanish edition contains all the updates and revisions of the English-language 5th edition, including the new and expanded recommendations on color coding, design criteria, establishment of a hydroblasting zone, hose inspections and testing, safety shrouds, and more.

The new translated manual is ideal for sharing the safety recommendations of WJTA-IMCA with Spanish-speaking employees, colleagues, and customers.

Place your order online through WJTA-IMCA's secure online store at www.wjta.org, or contact the WJTA-IMCA office by phone or email.

Hypertherm Named a 2015 World's Most Ethical Company

Hypertherm, a U.S. based manufacturer of waterjet, plasma, and laser cutting systems, has announced its selection as a 2015 World's Most Ethical Company® by the Ethisphere Institute.

The World's Most Ethical Companies designation recognizes organizations for having a material impact on the way business is conducted by fostering a culture of ethics and transparency at every level of the company. Hypertherm is one of eleven companies new to this year's list, and one of only three companies in the Machine Tools & Accessories sector. Other companies earning the "Most Ethical" designation include Deere and Company, GE, Google, and The Nature Conservancy.

"This honor underscores Hypertherm's commitment to meeting the highest ethical business standards and practices, ensuring long-term value to key stakeholders including our associates, customers, and communities," says Evan Smith, Hypertherm's CEO and president. "Transparency, honesty, and integrity – long a part of Hypertherm's core values and included in our Code of Ethics – define who we are as individuals and as a company."

Visit Hypertherm at www.hypertherm.com.

2015 WJTA-IMCA Conference & Expo Preliminary Schedule of Events

Monday, November 2

9:00 a.m.-5:00 p.m. Basics and Beyond Short Course
Research Papers and Case Studies

Tuesday, November 3

8:00 a.m.-10:30 a.m. Live Demonstrations
9:00 a.m.-5:30 p.m. Exhibit Hall Open
10:30 a.m.-3:30 p.m. Boot Camp
Research Papers and Case Studies
3:30 p.m.-5:30 p.m. Industry Appreciation Reception

Wednesday, November 4

8:00 a.m.-10:30 a.m. Live Demonstrations
9:00 a.m.-1:00 p.m. Exhibit Hall Open
9:00 a.m.-1:00 p.m. Research Papers and Case Studies
10:30 a.m.-1:00 p.m. Boot Camp



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