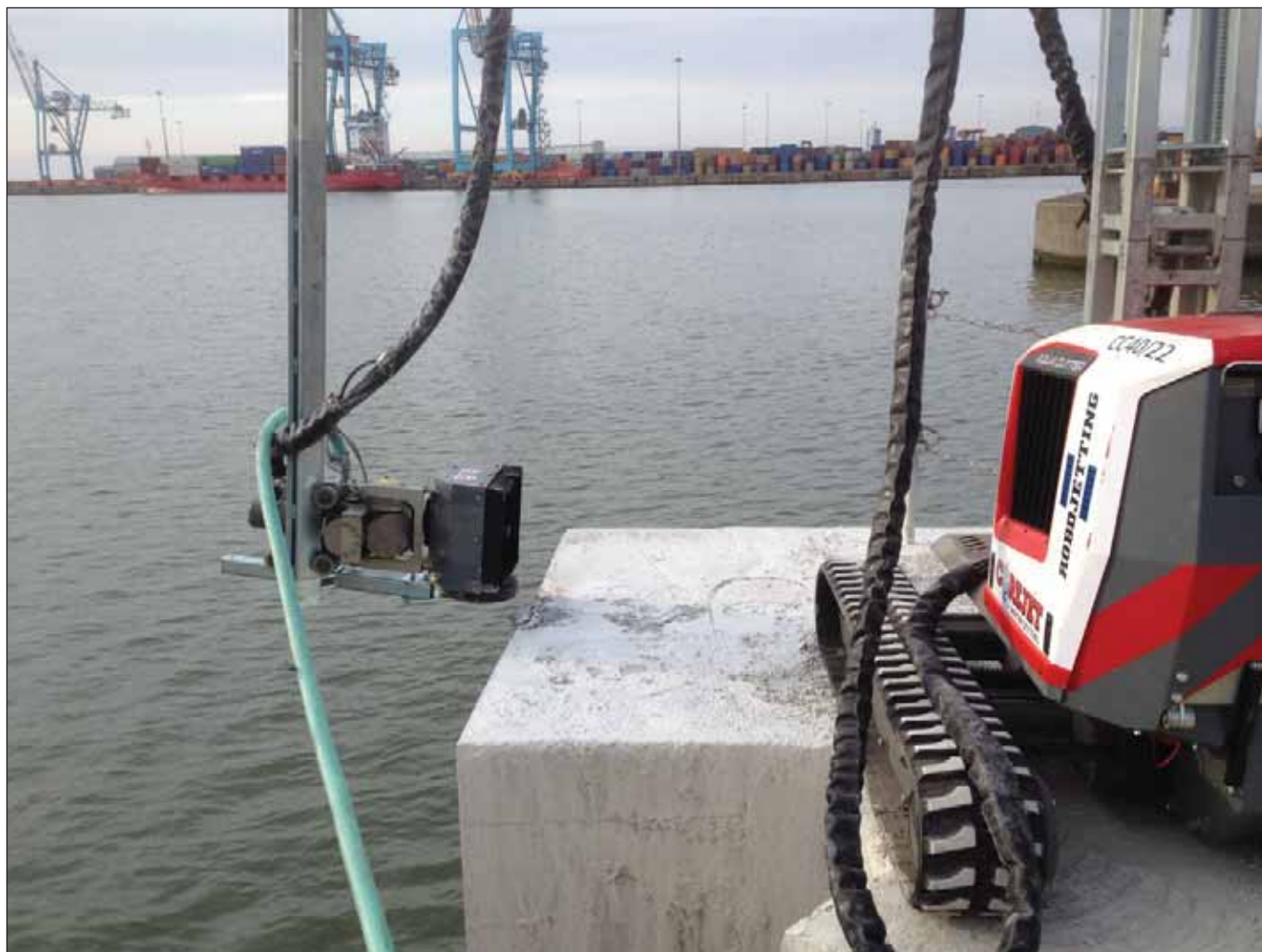


Hydrodemolition Techniques on the Port of Liverpool's Seaforth Passage Widening Project



Aqua Cutter device extending over edge without scaffolding. *See article on page 2.*

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See details inside

Hydrodemolition Techniques on the Port of Liverpool's Seaforth Passage Widening Project, from page 1

The UK's first Aqua Cutter Evolution 710V robotic unit from Aquajet Systems AB was 'put to work' on the Port of Liverpool's Seaforth Passage widening project for Peel Ports, introducing hydrodemolition techniques to speed construction work. These techniques eliminate the need for complicated scaffolding and improve concrete removal in a difficult marine environment.

British contractor Core Cut Ltd. is playing a crucial role in the preparation work underway for widening the Gladstone Lock entry and the adjacent quayside infrastructure at the Port of Liverpool, owned by Peel Ports.

The increasing size of next generation cargo ships calling at the port has resulted in a need to expand the area at Liverpool's Seaforth Passage and docks, which has been unchanged since its construction in 1971. The extra width of the passage will greatly improve turnaround times within the tidal windows.

Belfast-headquartered Farrans Construction secured the contract to carry out the work, which will widen the passage by 20 m to a total of 60 m on completion. It will also see new fendering around the Gladstone Lock port entry, the existing wall demolished and a new quay wall constructed.

Widening works initially required the re-routing of electrical and water services between the quay areas on either side of the Seaforth Passage.

It's here where the ability of Core Cut to offer both wire sawing and hydrodemolition services as a sub-contractor proved invaluable.

"As part of the passage widening works we have to demolish the existing service culvert. As a result, a service diversion 'U-Tube' is being constructed to replace the existing culvert crossing the passage," explained Farran's Section Engineer, Ryan Dillon.

In total, the new 'U-Tube' under construction is 120 m long. It consists of the risers at either side which are each 20 m long, a 70 m straight section under the sea bed and a further 10 m section at a 60 degree angle around the eastern port side's horizontal leg.

Fabricated from 1,020 mm diameter steel tubes, it will contain a 315 mm HDPE water main, six 33 kV cables, three 11 kV cables and various port comms, all pre-installed as the U-Tube is prefabricated on a separate quay.

This entire U-Tube structure will be transported from the pre-fabrication yard to the Seaforth Passage via a 250-ton crane barge before being installed to its final position via a three-crane lift.

Before this can be done, however, the receiving locations on both sides of the passage have to be cut out and removed in a controlled manner in order to protect the integrity of the existing structure and ensure it can be reinstated following the installation of the new U-Tube.



The Aquacutter ensured easy access to difficult-to-reach locations eliminating the need for expensive and complicated scaffolding.

"Pneumatic or mechanical breaking wasn't an option due to the vibrations it would have induced," explained Core Cut's Operations Director Ewan Crocker. "Drilling or hand lancing would also have required the erection of elaborate and expensive scaffolding and the use of man baskets.

"Due to the depth of the sections involved and the restricted working area – with slab depths in excess of a meter – floor and wall sawing and stitch drilling were also ruled out.

"We therefore proposed a combination of wire sawing and hydrodemolition techniques employing the Aqua Cutter Evolution 710V with its extension arms as a safe, cost effective and time-saving alternative."

Core Cut Ltd., headquartered in Broxburn, West Lothian in Scotland, has built a solid reputation in the field of diamond drilling, concrete sawing and controlled demolition, with a highly trained UK-wide team of over

(continued on page 10)

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Waterjetting Applied to Copper Recovery

by Arnold A. Kelson

Waterjetting has been around for awhile and by now has many useful applications. More come along periodically and blaze new trails in areas not previously trodden – waterjet reclamation of copper and other metals from scrap wire and cable is one example.

Copper Reclamation by Mechanical Recovery^[1]

For decades, metal from scrap wire and cable has been recovered by various methods: burning off the covering (now frowned upon by the EPA), skiving with a knife (slow, and effective only with a single wire), and now, the current favorite, chopping and grinding the wire and cable into small pieces by shredding and a series of granulators to free the metal from its covering. Vibrating screened tables and flotation methods then separate the lighter coverings from the heavier metal. Finally, the tailings are processed with specialized equipment to recover any residual metal with varying degrees of success. The operation is dusty, energy intensive, requires a large space, and a baghouse to capture the airborne particles that are generated. Normally, the separation approaches completeness only when extra equipment is employed. Some covering material remains with the metal, and the reverse is also true. The major advantage of chopping is capacity – it can handle 10,000 lbs. per hour or more of scrap, but that level of throughput comes at a steep price – around \$2 million,



Tangled wire cleaned at a waterjet company in Houston.

depending on the purity of metal desired. However, there are many smaller, less efficient operations, and a more than decade old estimate for scrap wire processed by chopping in North America was 1.2 to 1.4 billion pounds per year.

Copper Reclamation by Waterjetting

The use of high pressure waterjetting to recycle scrap wire and cable was conceived in 2004 with feasibility tests conducted in Omaha, NE, Houston, TX, and the Missouri University of Science and Technology, Rolla. A patent application was submitted in 2006 and Patent No. 8,007,563 issued on August 30, 2011.

The waterjet metal recycling process for wire and cable uses a line of plastic or rubber coated wire moving from a supply reel to a take-up reel past an array of fan-shaped high pressure (about 20,000 psi) waterjets positioned at an acute angle. These jets completely strip the coating from the wire to yield clean metal and coating material. The wire is not cut or deformed, so the wire remains in a pristine state. Single



Coil of cleaned twisted copper wire.

and stranded wire, and possibly power cable (not available at time of trials),



Basic waterjet trial at UM-Rolla

can be waterjet processed and the wire reused without melting, thereby saving energy and labor costs. The water can be filtered and reused and residue captured and sold. A patent application has recently been submitted to recover the metal from tangled bulk wire and coils of wire by waterjetting, thus widening the scope of the original patent.

Opportunity for Waterjet Equipment Manufacturers and Suppliers

For waterjet equipment manufacturers and suppliers, a new market is now available that did not previously exist. In a way, that is a barrier to marketing the process, because scrap producers like wire and cable manufacturers, electric utilities, and scrap dealers have no way of testing the effectiveness of the waterjetting concept, and there are hundreds out there who prefer to recover clean metal. The flip side is any of the above companies willing to take the risk to enter into an agreement to use the patent have complete control of the market for super clean copper. They may set up

(continued on page 29)

Jetstream's hands-free waterblast solutions deliver improved operator safety, productivity

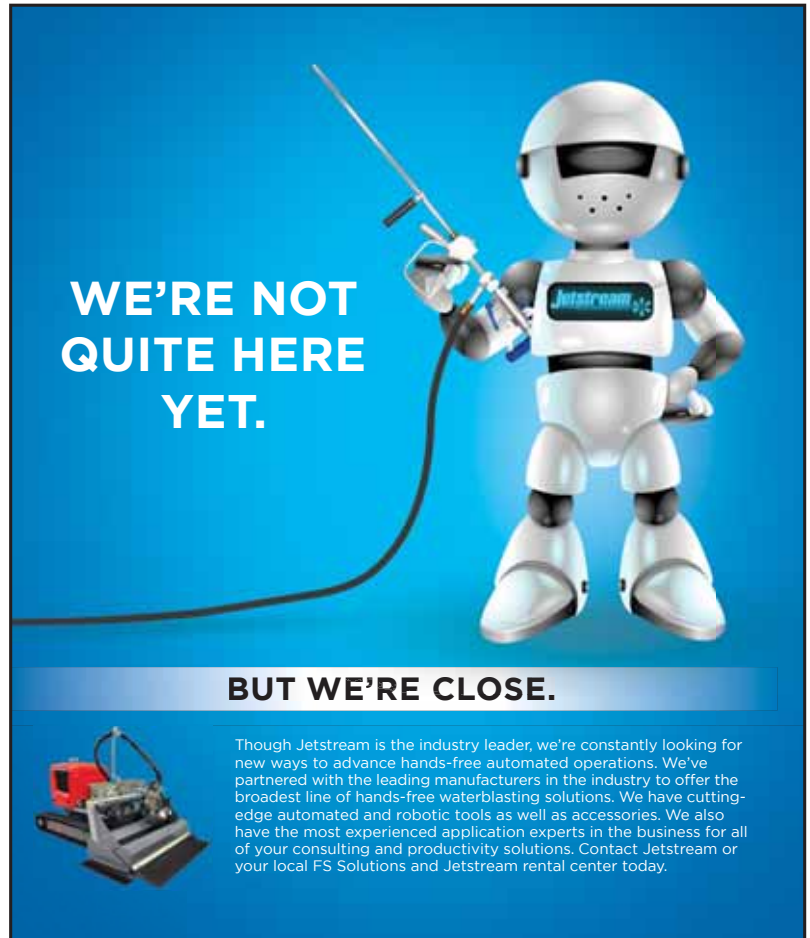
Provides broadest offering of hands-free cleaning solutions and training in the industry

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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Hose Safety Whitepaper

The Association of Hose Assemblers and Distributors (NAHAD) Hose Safety Institute®, with input from a WJTA-IMCA subcommittee and WJTA-IMCA member companies, has developed a whitepaper: *Safety First... the New Normal in High Pressure Hydroblasting*. The paper documents best practices for ensuring the safety and reliability of hydroblast hose assemblies.

NAHAD is comprised of member companies involved in the distribution and manufacture of hose, tubings, couplings, fittings, clamps and related accessories serving the industrial marketplace. NAHAD and its Hose Safety Institute set guidelines for hose assembly and fabrication of different types of hose used in industrial applications.

The new hydroblasting hose whitepaper begins with definitions of hoses and components in a hydroblast system. A recommendation is made to follow the WJTA-IMCA color coding scheme specified in the *Recommended Practices for the Use of High Pressure Waterjetting Equipment*. (WJTA-IMCA's color coding scheme is also available online at www.wjta.org/wjta/Color_Coding1.asp.)

The whitepaper goes on to describe specification and design considerations for high pressure hoses and apply the Hose Safety Institute's "STAMPED" mnemonic (Size, Temperature, Application, Material/Media, Pressure, Ends, Delivery).

Hose assembly fabrication considerations are addressed, as are in-service considerations. The paper describes the need for, and elements of, a hose management system and also provides a checklist for visual inspections of hydroblasting hoses. This section also addresses service life and inspections.

The final section describes symptoms and causes of hose failures complete with pictures demonstrating some of the ways in which hose failures can be identified. The visuals show examples of damage caused to hoses by a number of factors such as temperature and abrasion and suggests causes of the symptoms depicted.

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WJTA-IMCA has obtained permission to distribute the whitepaper to members. To view/download the final hydroblast hose whitepaper, visit: www.wjta.org/images/wjta/hydroblast_whitepaper.pdf. For more information on NAHAD or the Hose Safety Institute, visit: www.nahad.org.

HydroChem Receives Prestigious National Safety Awards

HydroChem has been recognized for outstanding safety performance by several nationally recognized safety organizations.

The Houston Business Roundtable (HBR) was established in 1973 as an association of construction users to be the owners' voice in Houston for the construction industry. Over the years HBR evolved to broaden its focus to include a major emphasis on safety and health, workforce development and best practices, not only in construction, but also in the operation and maintenance of facilities in the industry.

The HBR Safety Excellence Award process is a six-month-long effort and

involves, literally, hundreds of volunteers and participants. It begins with a request for nominations. This award is unique in that contractors must be nominated by their clients. There are no self-nominations. Contractor work sites are nominated where the client had verifiable safety performance data for the past calendar year. HydroChem was presented with the HBR Gold Award at the HBR Safety Awards Banquet held on May 16, 2014. HydroChem was nominated by ExxonMobil Baytown Complex and Dow Chemical Freeport Complex.

Additionally, HydroChem was honored for excellence in safety training on April 17th by the Safety Council of East Texas. The Safety Council of

East Texas is a 23 year-old nonprofit company that was formed by local contractors and industries to promote and improve workplace safety through safety training. HydroChem received the awards for 0% Incident Rate, Incident Rate Improvement, Two Years Worked-Zero Incidents, and Safety Excellence Through Training Finalist.

Rick Wall, council president of operations for the Safety Council of East Texas said, "The criteria to qualify for an award were stringent, and based upon the federal OSHA injury reporting requirements. HydroChem met the award requirements, and we are excited to recognize their efforts in

(continued on page 38)

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Are Your Hands Properly Protected?

Gloves are the first level of defense for your hands. Are you and your co-workers using the proper hand protection for the chemicals you're working with? Choosing the proper glove for your application is a critical first step. In order to make the correct choice, collect and analyze the following information:

- Get a complete and accurate description of the tasks where gloves are required.
- Identify all hazards that may require hand protection, including chemical hazards and physical hazards like cuts, burns, etc.
- Determine how much flexibility and touch sensitivity you need for your job. This may limit the thickness of the glove material you can use. You should also determine whether or not you need a non-slip grip.
- Determine your need for durability and resistance to deterioration or other damage due to contact with chemicals, sharp objects, rough surfaces, heat, etc. This may involve reviewing technical information about products such as permeation rate, breakthrough time, penetration, and degradation.

- Assess what type of contact you'll be experiencing – occasional contact, splashes, or continuous immersion.
- Consider how long you'll be exposed to the hazard(s).
- Determine the potential effects of skin exposure, such as irritation or corrosion, as well as system-wide health effects of chemical exposure.
- Identify what training will be required. Your training should include a discussion of the hazards, glove selection, limitations of gloves, what could happen if gloves fail, safe glove removal to prevent contamination, and when to dispose of or decontaminate gloves.
- Determine what size(s) of gloves you'll need to fit you and your co-workers.

Once you gather the information you need about your specific application, you'll need to choose the type of glove that fits your application. Below is a list of glove materials that will protect your hands from chemicals:

- **Poly Vinyl Chloride (PVC or Vinyl)**—protects against strong

Safety Corner



By Luis Garcia,
President, Gulf
Coast Region,
Northern Safety
& Industrial, and
WJTA-IMCA Board
Member.

acids and strong bases. Many PVC and vinyl gloves also protect against cuts and abrasion.

- **Neoprene**—protects against common oxidizing acids (nitric and sulfuric) and many other chemicals.
- **Nitrile**—synthetic rubber material resists a wide range of chemicals, as well as punctures, cuts, snags, and abrasion.
- **Sealed-Film (Laminate)**—one of the most chemical-resistant materials available that protects against almost anything. Excellent for hazmat applications where the chemicals present may be in question. They do not provide a close fit, good grip, or strong physical properties. Laminate gloves are quite thin and are commonly worn as

(continued on page 29)



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Neoprene Coated Gloves



Nitrile Gloves



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The family-run firm was founded by Ewan's father Alaster in 1976 and is now run by Ewan and his brother Finlay, as managing director.

They made the decision to invest in an Aqua Cutter 710V Evolution late last year, placing the order through the UK dealer, Aquapower Ltd.

"We quickly recognized the potential for hydrodemolition and as such set up a sub-division to handle the business named Corejet. It's a natural extension of our service package and completely complements our drilling and concrete sawing activities," confirmed Ewan, adding, "it's really paying dividends for us in securing contracts such as this one where we were able to beat off considerable competition."

Corejet was the only company to propose diamond cutting and hydrodemolition without sub-contracting to a third party, a core reason for them to order the Aqua Cutter.

The company was able to win the contract against the traditional hand-lancing companies, who would have required the erection of elaborate and expensive scaffolding over the water.

Corejet proposed using hydrodemolition techniques with the Aqua Cutter and its extension arm allowing it to reach 3.5 m over the side of the dock – saving both costs and time on the project.

The 710V Evolution robot has the flexibility to work horizontally, vertically and on over-head applications. The unique 3D positioning of the front power head gives the operator full freedom to efficiently reach all areas without limitations.

Wire sawing allowed Corejet to initially move large sections of concrete from both the receival locations over areas 3.5 meters wide and 2.5 metres long and also up to 3.5 meters deep.

In total some 260 tons of concrete was then removed in around 14 lifts ranging from five to 34 tons – and all as the busy shipping passage operated as normal around the work.

(continued on page 12)



Hydrodemolition was carried out without disrupting shipping movements to adjacent quays.



Remote control ensured safe operation throughout.



Corecut Ltd.'s Ewan Crocker (l.) and UK dealer Aquapower Ltd director Alistair Mackenzie.

All photographs in this article are courtesy of Core Cut Ltd.

Jet News is published by the WaterJet Technology Association (WJTA)-Industrial & Municipal Cleaning Association (IMCA) and is a benefit of membership in the Association.

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Robotic hydrodemolition duties were initiated on completion of wiresawing the concrete face to expose the rebar.

The 710V Aqua Cutter was then brought in to remove up to a depth of 500 mm of concrete from both end walls to expose the rebar. In total, Corejet was able to remove more than 26 m³ of concrete safely and efficiently from both receipt locations.

A key benefit of the hydrodemolition process is that it removes the concrete without damaging the rebar, ensuring swift re-concreting onto clear reinforcement once the U-Tube structure is in position.

It is recognized that hydrodemolition techniques will more than double the life of any repair or coating when compared with concrete removal using jack hammers.

The Aqua Cutter normally operates at a pressure of between 1000 bar – 2500 bar, but Corejet ran it successfully at 900 bar to carry out this work.

Working remotely and largely from the top of the dock walls, Corejet's robot cut in a trapezoid pattern to remove the concrete, at certain points with the power head – which contains no sensors – working below the water line.

“Robotic hydrodemolition provided the safest and most controlled solution for this job and the use of the extension arm and small hood allowed it to get at otherwise unreachable sections without the need for any additional temporary works,” says Farrans' Ryan Dillon.

“It also made it possible to remove the slab which was permanently submerged below dock water level in

an accurate and safe manner. The daily yield was very impressive.”

“The Aqua Cutter can get where other equipment can't,” added Ewan Crocker.

Aqua Cutter operators Hugh McCrory and Andrew Ramsay, with experience of competitive units, highlighted a key feature of the Evolution 710V machine being the independent movement of each track.

“We are able to widen or reduce the width of both tracks to allow greater stability of the robot while working within the very compact work space dictated by this job,” confirmed Andrew Ramsay.

Once all preliminary work has been completed at the Seaforth Dock, a new quay will be installed and the existing wall demolished. The completion of the overall project is expected to be around February 2015.

For more information, visit www.aquajet.se or www.corecut.co.uk. ■

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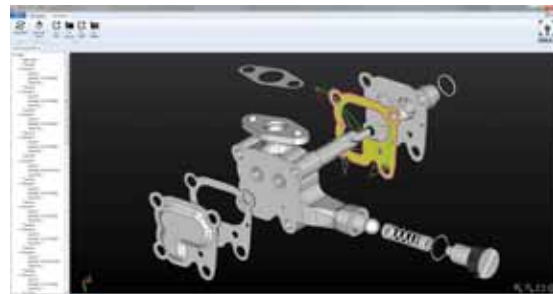
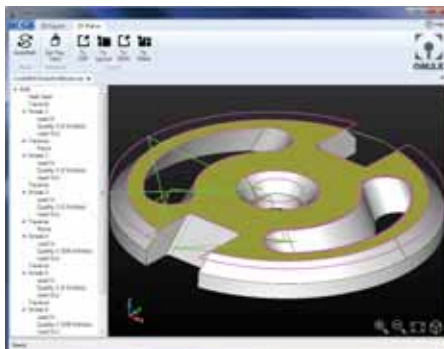


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Intelli-CAM incorporates Spatial's 3D InterOp to import CAD files from a variety of 3D sources, including CATIA, SolidWorks®, Solid Edge, Autodesk® Inventor®, Siemens® NX, Pro/E®, Creo® and much more. Intelli-CAM then applies custom solutions from OMAX and Spatial such as the advanced AutoPath function or slice plane to convert the geometry into full 3D paths suitable for waterjet cutting, ensuring the most precise part in the least amount of time and with minimal operator involvement.

"Helping OMAX expand the 3D capabilities of Intelli-CAM highlights the power of the Spatial component platform and the value our partnership with OMAX," explained Vivekan Iyengar, vice president of research and development for Spatial. "For Spatial, data reuse means delivering data in a manner that allows applications to more easily integrate into existing workflows with minimal disruption and high reliability. Reliability is important to OMAX. To their end user, any problem in the workflow has an associated cost and is typically seen as a problem in the application, not as a problem in the integrity of the incoming CAD model. 3D InterOp does the most to prevent the user from ever seeing those problems by automatically cleaning and repairing the CAD model during the import process."

According to Carl Olsen, lead software engineer for OMAX Corpora-

tion, Spatial's 3D InterOp technology allows OMAX to provide extremely robust and proven 3D file import capabilities to its JetMachining Center owners. "Our customers can now import practically any major 2D or 3D CAD drawing out there, which is especially beneficial to job shops because they often don't know the original CAD system for a file," he said. "Plus, they don't have to purchase expensive CAD software filter packages."

Olsen also noted that OMAX customers doing 3D programming for

5-axis waterjet cutting will find Intelli-CAM greatly simplifies those operations, suggesting that Intelli-CAM "may be the easiest to use 5-axis CAM software ever."

Intelli-CAM, which interfaces directly with OMAX's intuitive Intelli-MAX® Software Suite, is available as a free update to OMAX JetMachining Center owners and is backed by the company's unparalleled support.

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Peinemann's New Triple XLTC Tube Cleaner

The new Triple XLTC (3XLTC) on a flex frame, manufactured by Peinemann Equipment B.V., is designed to be handled by one person and features a wide body and wide track to accommodate even the larger type flex hoses. The flex frame set-up is very portable and easily mounted on the flange of bundles. All of the components of the tool and indexing frame were kept under 50 pounds, so no forklift or crane is necessary to set up the machine on a heat exchanger. Simple, light and affordable, the 3XLTC is ideal for small and large high pressure contractor businesses.



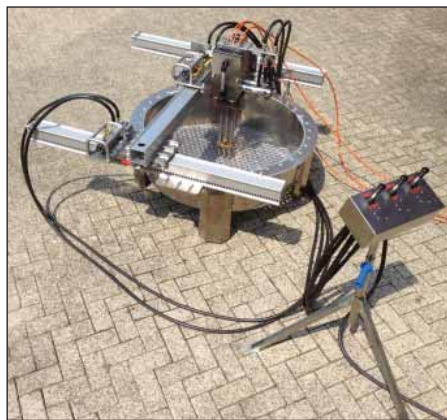
Peinemann demonstrates the new 3XLTC cleaning a fixed bundle during an open house in May 2014.

"Most plants nowadays are looking for automation. They would like to see the operators removed from any high pressure activities as much as possible," says Peinemann General Manager Joost Ballieux. "Our automated equipment enables workers to perform cleaning operations from a safe distance."

Several contractors were given an opportunity to test run the 3XLTC with positive results.

"Water Works Industrial Services experienced great success with the 3XLTC in a short time, using it on heat exchangers, fin fans, and the large diameter hose on a sulfur condenser," says Mark Blanchard.

"On our first job, we mounted the triple in a vertical application with 70 foot tubes cleaning from the bottom up," says Marty Allard, operations manager for Quadra Industrial. "The machine worked great with its low profile. We increased our efficiency from a dual lance to the triple lance, saving



Vertical set-up of the 3XLTC on flex frame.

our clients precious time and money while keeping the hands-off safety factor. The 3XLTC is a great addition to our tube cleaning tool box!"

"The 3XLTC system has been a great addition to our company and industry as a whole," says Mike Johnson of PSC, "providing both safe hands-free waterjetting of exchanger tubes for our employees and timely and consistent cleaning rates in our customers equipment."

"One of the advantages of the 3XLTC is that the tool runs most flex lances with the same tracks," says Ballieux. "This makes it a very versatile tool that can be used on all kinds of exchangers, including evaporators with two large 8/4 hoses, air fin coolers with two hoses and a wide pitch, as well as most normal exchangers with small diameter tubes from 1/2-inch to 2-inch ID tubes."

"As the tool is just a feeder," continues Ballieux, "it doesn't really matter what pressure is used. Since most hose manufacturers have come up with UHP hoses even in small sizes, contractors can also effectively use it with 40K pressure in certain cases involving extremely hard contaminations."

The tool is standard setup for 20K pressure with the latest DN 4 (1/16-inch – 4/2) and DN 5 hoses (1/8-inch – 5/2), which have recently been upgraded from 15K to 20K.

Peinemann Demonstrates New Equipment at Open House

In May 2014, Peinemann held an open house at its headquarters in Hoogvliet, Netherlands, to introduce and demonstrate the 3XLTC and other new equipment.

Peinemann demonstrated ID cleaning of a finfan cooler using the Two Lance Tube Cleaner FinFan (2LTC FinFan). The 3XLTC can also be used for this type of project by removing one HP hose from the middle and running only two hoses. For airfin coolers, Peinemann developed a simple system of two C clamps to attach a box rail on the header of the airfin cooler for the flex frame. Most airfin coolers are between 30 and 40 feet long, so Peinemann ran longer HP hoses to reach the end of the tubes and used a short lance (stinger) to go through the channel head without the nozzle going down.

(continued on page 25)

NEW FROM PEINEMANN EQUIPMENT

Revolutionary hands-free Triple Flex lance System

3-XLTC with Flexframe:

- Remote controlled flex lance feeder
- Handles almost all common flex lances (4/2-8/4) with only 1 size track!
- Portable and light weight components. (Max. 23 Kg /50 lbs)
- Can be used on fin-fan banks with optional C-clamps

Vertical setup

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PEINEMANN
EQUIPMENT

MultiCam Acquired by Family-Backed Investment Firm

MultiCam, a CNC cutting solutions manufacturer, was acquired by Rosewood Private Investments on May 12, 2014. Rosewood will partner with the current leadership team to accelerate organic growth and pursue strategic acquisitions of complementary businesses.

MultiCam has established itself as an international leader in the CNC cutting solutions industry with over sixty technology centers worldwide. The company has a long-standing tradition of product development and developing various technologies, including waterjet cutting systems as well as routing, digital finishing, knife, plasma, and laser CNC cutting systems.

“It was important for MultiCam to find a partner who shares our values, supports U.S. manufacturing, values our technology center network, and has a talented team that will help us grow well into the future” said Kris Hanchette, MultiCam’s president and CEO. “Rosewood brings more to the table than just capital and their team will be able to help MultiCam with strategy, lean manufacturing, and much more. We will work together to continue building a foundation that is not only good for growth, but will ensure that MultiCam can thrive well into the future.”

Rosewood is a unique investment firm based in Dallas, Texas. They are

responsible for investing the capital of a single high-net worth family, which in turn, allows them to have more flexibility than traditional private equity funds and a long-term investment perspective. Rosewood also has a successful track record of investing in manufacturing businesses and will be able to draw upon this experience to help MultiCam achieve its goals.

For more information on MultiCam, visit www.MultiCam.com or on Facebook: www.Facebook.com/MultiCamUSA.

New Group Hotel Added for WJTA-IMCA Expo

Excitement for the WJTA-IMCA Expo is extremely high, and a new hotel has been added to the group to accommodate increased reservations. The Hilton Garden Inn New Orleans Convention Center joins the Astor Crowne Plaza in the French Quarter and Hampton Inn & Suites Convention Center in hosting Expo participants.

Details for all three Expo hotels appear below.

Astor Crowne Plaza - New Orleans French Quarter

The Astor 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 reservations, use group block code **WJT** to **register online at www.wjta.org**, or call (888)696-4806 or (504)962-0500 and ask for the WaterJet Technology Association group rate.

Thursday, September 18, 2014, is the deadline for guaranteed room availability.

Note: The Astor Crowne Plaza is sold out for the date of Saturday, October 11.

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 \$215 single/\$225 double occupancy. Reserve your room online at www.wjta.org, or call (866)311-1200 or (504)566-9990 and request a reservation under the **WaterJet Technology Association** room block, coded **WJT** in the system.

Thursday, September 11, 2014, is the deadline for guaranteed room availability.

Hilton Garden Inn New Orleans Convention Center

The Hilton Garden Inn, 1001 S. Peters Street, is within walking distance of the exhibit hall and is also within walking distance or a short cab ride of the French Quarter and Bourbon Street. The room rate is \$209 single/\$219 double occupancy. Reserve your room online at www.wjta.org, or call 1-877-782-9444 and identify as a member of the **WaterJet Technology Association** group.



Thursday, September 11, 2014, is the deadline for guaranteed room availability.

Reservations received after deadline dates 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.

Please make your reservations early! As one of the premier tourist, convention, and business destinations in North America, New Orleans hotels fill up quickly. For more information on group hotels visit: <http://www.wjta.org/wjta/Accommodations.asp>.



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WJTA-IMCA Expo

Exhibitors

24 Hr Safety LLC	Jetstream of Houston, LLP
ANT Applied New Technologies AG	Keith Huber Corporation
Advanced Pressure Systems	LaPlace Equipment Co., Inc.
American Liquid Waste Magazine	Ledwell & Son Enterprises, Inc.
Ascentium Capital LLC	Lemasa Ind. E Com. Ltda.
Autoclave Engineers/Parker Hannifin	Lianyugang Longmai Mining Co., Ltd.
BIC Alliance	Maxpro Technologies
Bandlock Amesbury Group	NLB Corp.
Blast Environmental & Industrial Services, Inc.	Newson Gale, Inc.
Blasters, Inc.	Northern Safety & Industrial
CESCO/Aquamiser	PSI Pressure Systems International
CRP Industrial	Parker Hannifin-EPD
Cat Pumps	Peinemann Equipment B.V.
Cleaner Times/IWA	Powertrack International Inc.
D&S Professional Services	Presvac Systems
DeBusk Services Group, LLC	Ramvac Vacuum Excavators
Diesse Rubber Hoses S.p.A.	Reliable Pumps Consultants, Inc.
Dragon Products, Ltd.	Safety Lamp of Houston, Inc.
ENZ USA Inc.	SPIR STAR
ERS Industrial Cleaning Equipment/Reliant Industrial Staffing	Stewart R. Browne Manufacturing Co.
FS Solutions	StoneAge, Inc.
Fruitland Manufacturing	Stutes Enterprise Systems, Inc.
GHX Industrial, LLC	Sugino Corp.
GapVax, Inc.	Terydon, Inc.
Gardner Denver Water Jetting Systems, Inc.	The Blast Bag Company, Inc.
General Pump	Trillium Industrial Services
Giant Industries, Inc.	US Jetting, Inc.
Global Vacuum Systems, Inc.	Udor USA
Guzzler Manufacturing	Under Pressure Systems, Inc.
Hammelmann Corp.	United States Environmental Services
Heintzmann Corp.	Vac-Con, Inc.
High Pressure Equipment Co.	Vac-Tron Equipment LLC
Hydra-Flex, Inc.	Vacall
HydroChem	Vactor Manufacturing
JGB Enterprises, Inc.	Vacuum Truck Rentals, LLC
Jack Doheny Companies, Inc.	Veolia Environmental Services
	Warwick Mills, Inc.
	Wilco Supply, LP
	WOMA Corporation

As of 8-18-14

Live Demos



Tuesday, October 14

Waterblast Track

10:40 a.m.-11:25 a.m.

Busting Waterblast M
Bill Shires, StoneAg

11:30 a.m.-12:15 p.m.

Nozzle Selection
Bill Shires, StoneAg

12:20 p.m.-1:05 p.m.

Hose Fabrication, In
Jeff Davis, GHX Ind

Vacuum/HX Track

10:35 a.m.-11:35 a.m.

Hydroexcavation in a
Neil McLean, Hydro

11:40 a.m.-1:40 p.m.

Power of Vacuum
Phil Stein

1:10 p.m.-1:40 p.m.

The Hidden Dangers
Mike O'Brien, News

NEW: Panel Discussion

1:45 p.m.-3:00 p.m.

Hands Free Hydrobl
Featuring panelists
Services. Mod

Wednesday, October 15

11:00 a.m.-11:45 a.m.

Robotics in Hydrode
Patrik Andersson, A

Safety



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inserted in this newsletter.**



October 14-15, 2014

Ernest N. Morial Convention Center New Orleans, Louisiana

Exhibits



Education



Boot Camp Preliminary Schedule

Myths
e, Inc.

e, Inc.

Inspection and Documentation
Industrial, LLC

a Growing and Changing Marketplace
Excavation Consulting

s of Static Electricity in HAZLOC Vacuuming Operations
on Gale, Inc.

asting

from BASF Corporation, Dow Chemical, DuPont, HydroChem, PSC Industrial Services, Veolia Environmental
derated by Kathy Krupp, The Dow Chemical Company.

molition

quajet Systems AB

Preliminary Schedule of Events

Tuesday, October 14, 2014

8:00 a.m.-10:30 a.m.
Live Demonstrations
10:30 a.m.-5:00 p.m.
Exhibit Hall Open
10:30 a.m.-3:00 p.m.
Boot Camp
3:00 p.m.-5:00 p.m.
Reception in Exhibit Hall

Wednesday, October 15, 2014

8:00 a.m.-10:30 a.m.
Live Demonstrations
10:30 a.m.-1:00 p.m.
Exhibit Hall Open
11:00 a.m.-11:45 a.m.
Boot Camp

Networking



Automation



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"Everyone a Leader" - A New Process at High Pressure Equipment

By: Dr. Bruce E. Swanson, Ms. Sarah J. Murphy and Mr. Samuel B. Riley

"Everyone is a leader in our Company. Everyone shows responsibility for their part of the team effort and tries to improve it." This is the philosophy at High Pressure Equipment Company, LLC.

High Pressure Equipment Company (HiP), a manufacturer of specialty valves and fittings for elevated pressure applications, was located at a small manufacturing plant in West Millcreek, Pennsylvania, with just under 50 employees in 2012. That year Wasserstein & Co., an independent private equity and investment firm based in New York City, invested in a majority ownership of the company. The James family, long-time owners of the company, and the management team retained a minority share of the business as a commitment to the employees.

Under new ownership, the Company moved to a much larger facility during the spring of 2013 and expanded its organizational structure by almost doubling the workforce. Employees from within the company were promoted and professional positions were created to fill the new structure.

During the change, President Larry Loper, and CFO Larry Serafin, had a vision and goal of increasing their own leadership ability along with that of the entire plant. President Loper said, "My goal is to create a new climate in our Company. I want everyone to take leadership responsibility for their job and treat it like it is their own company. I want them to think as if they owned the Company and try to improve it." Loper and Serafin's



Larry Loper, president (left), Donald Glover, machinist (center), and Sarah Murphy, HR manager (right), complete a review for improving product quality and process efficiency.

in's vision led them to hire business consultant, Dr. Bruce Swanson. Dr. Swanson worked as a human resource and training manager at Lord Corporation for over 20 years. He understood the manufacturing industry and its people, having worked as a machinist early in his career. Most importantly his passion for teaching leadership and emotional intelligence, along with his belief that Everyone is a Leader, made Swanson the best fit for High Pressure.

President Larry Loper's vision is to create a new culture in the Company and to create an entrepreneurial workforce that looks upon their individual jobs as if it was their own company requiring a major investment in time, money, and limited resources for a small company that was growing and competing in a global marketplace. However, with the efforts of all, this investment in people is changing the culture at HiP.

How did High Pressure do it? The consulting team along with the management, decided to take a Top-Down approach. Top Management, including both Loper and Serafin, were trained on the same basic principles as those on the production floor.

A unique customized leadership training program was designed by the consulting team to accomplish HiP goals. The major goal of the program is to create value for the customer and eliminate waste. Trainees are taught that the customer will only pay for "value." Seven HiP Leadership Principles were created to be a guide and a focus for the trainees. These principles are:

1. Everyone is a leader.
2. Leadership begins with an awareness of one's self.
3. Leaders should have an entrepreneurial outlook.
4. Leadership is situational and dynamic.
5. Leaders are trainers.
6. Leaders are change agents.
7. Leaders have vision, both professional and personal.

Seven HiP Continuous Improvement Principles were also created to focus employees on "Creating Customer Value." These principles are:

1. Everyone works to create value for the customer.
2. Teamwork is essential. Everyone works together to help each other.
3. Everyone is a leader and follows the HiP seven "Leadership Principles."
4. Everyone takes responsibility to eliminate waste in the process.
5. Improving processes and eliminating waste is the goal.
6. The focus each day is on the customer/supplier relationship.

(continued on page 26)

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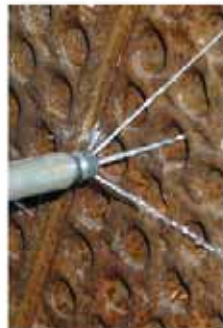


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The Advantages of Cutting with Multiple Heads

By Jeff Day, Sales Manager, WARDJet

Individuals who are just getting into waterjet cutting will often ask the team at WARDJet about the benefits of cutting with multiple heads. The obvious advantage is the ability to cut a higher volume of parts in the same amount of time as it takes to cut a single part. Another advantage of cutting with multiple heads that is often overlooked is the effect that cutting with multiple heads has on the cost per part. The table below illustrates the cost to run a one, two and three headed system.



	1-Headed System	2-Headed System	3-Headed System
Investment	\$150,000	\$200,000	\$235,000
Consumable Cost/Hour	\$35	\$60	\$90
Fixed Costs (\$/Hour)	\$41.21	\$44.11	\$46.14
Operator	\$20	\$20	\$20
Capital & Interest (based on 4000 hours per year)	\$8.71	\$11.61	\$13.64
Overhead	\$12.50	\$12.50	\$12.50
Consumable + Fixed Costs	\$76.21	\$104.11	\$136.14

Now let's use the examples from above to extrapolate a cost per part. For example, a job with 60 identical parts that will each take 10 minutes to cut (600 minutes of cutting, or 10 hours)...

	1-Headed System	2-Headed System	3-Headed System
Time to cut	10 hours	5 hours	3.34 hours
Total Consumable Cost	\$350	\$300	\$300
Consumable Cost per part	\$5.83	\$5.00	\$5.00
Total Fixed Costs	\$412.10	\$220.55	\$153.65
Fixed Costs per Part	\$6.87	\$3.68	\$2.56
Total Consumable + Fixed Costs	\$762.10	\$520.55	\$453.35
Total Cost per part	\$12.70	\$8.68	\$7.56
Cost Reduction vs. 1-Headed System		31.6%	40.5%

For individuals with higher production on their waterjet consistently, it is easy to see why cutting with multiple heads is justifiable.

For more information visit www.wardjet.com or contact Jeff Day at sales@wardjet.com.

October "Expo" Issue of *Jet News* copy deadline: AUGUST 29, 2014.

Be sure your news is submitted by August 29 for the October *Jet News*, or it may not appear in that issue.

Peinemann's New Triple XLTC Tube Cleaner, from page 16



Flexframe attached to the headerbox of an Airfin cooler with rotating gun nozzle.


"The flex frame offers the versatility to clamp an adapter for a gun type nozzle on the flex frame to clean the tube sheet or the packing area of the flange with the operator at a safe distance without any physical effort," says Ballieux.

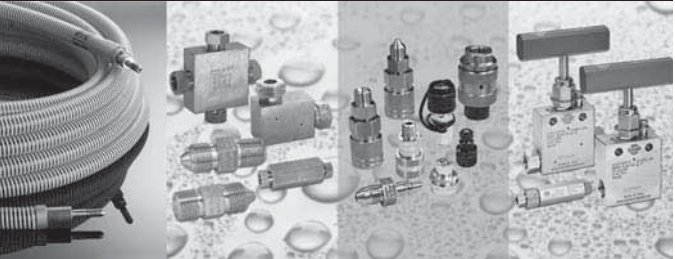
During the demonstration of the flex frame in a vertical position, Peinemann showed that by adding a free rolling trolley, a clamp plate adapter and a third box rail, the standard flex frame could be attached on a flange of a vertical exchanger without any other attachments. This set-up makes it possible to handle very large diameter horizontal exchangers and evaporators.

The new shellside machine Outside Bundle Cleaner (OBC-C) was developed to be handled by a simple 2.5-ton forklift and to withstand the reaction force of a 600HP pump. The OBC-C can be equipped with a hydraulic rotating nozzle and can clean from the top down, horizontal and both front and back of exchangers.



Outside Bundle Cleaner-C (OBC-C) and the standard indexing frame with 3XLTC used for cleaning bundles in the cleaning bay.







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The last demonstration was of the multi-lance Inside Bundle Cleaner 5 Lances (IBC-5) with a set of rotating gun nozzles attached to the front in order to clean the tube sheet hands-free. The IBC-5 has proven to be very reliable and is one of the fastest ID cleaning tools on the market with results of over 1000 tubes per hour cleaned during shutdowns.



Inside Bundle Cleaner 5 (IBC-5) with optional rotating gun nozzles for hands-free cleaning of tube sheet.

For more information, visit www.peinemannequipment.com. ■

“Everyone a Leader” - A New Process at High Pressure Equipment, from page 22

7. Each individual takes responsibility to improve his/her value and to become more effective and efficient.

The training is designed to be very interactive with case studies based on real situations and everyday issues in the plant. Every week participants engage in spirited questioning and discussions. Trainees are taught a variety of quality and management tools to solve issues and problems in their areas, while competing in a dynamic, global marketplace. Personal responsibility, continuous improvement, quality, and adding to customer value are expected. The focus on the fundamentals and improving the process are keys to success. The great basketball coach, John Wooden, said, “The secret to success is a lot of little things done well.” This is one of the philosophies at HiP.

The following is the basic typical training that everyone (managers and production employees) receives:

1. HiP Seven Leadership Principles
2. HiP Seven Continuous Improvement (Customer Value) Principles
3. Emotional Intelligence
 - Self-awareness
 - Self-discipline
 - Self-motivation
 - Understanding/caring
 - Interaction principles
4. Goal setting/planning
5. Basic business principles (value streams, profit margins, etc.)
6. Effective listening and communications
7. Avoiding conflict
8. Leadership & Life Management Program
9. Teamwork

The management team also received additional training in the following areas:

1. Performance review process/evaluations
2. Coaching and mentoring
3. Performance improvement
4. Managing conflict
5. Motivation
6. Presentations to small groups
7. 360-degree evaluations
8. Team leadership

Everyone has gone through, or is going through, a basic leadership training program with the management team receiving more training as is appropriate for the position. The basic program is designed to be delivered during a sixteen-week timeframe with the trainees meeting approximately one hour per week, while the management team meets every week for continuous training and development. One of the keys to success at HiP has been the fact that the entire management team has personally gone through the training program. The management team has also conducted a 360-degree review process for each team member in the leadership area. The management team continues to meet each week and to focus on continuous improvement.

Anonymous surveys have been conducted for the first three classes. Ninety-six percent of the participants rated their satisfaction with the training very high. Some of the anonymous comments were:



HiP team members received a certificate of completion for successfully completing a 14 week leadership course focused on the principle: “Everyone is a Leader.” Participating team members represent various departments at HiP: sales, machining, shipping, receiving, quality, maintenance, and purchasing.



The management team is committed to continuous improvement. Coming together was the beginning. Keeping together is continual progress. Working together is SUCCESS.

- Learning how to deal with people, change, and working together as a team was very valuable to me.
- Learning how to work together to accomplish goals on my job was very helpful.
- Learning to take a leadership role and solve problems was a very good experience.
- I felt the class was very comprehensive in relationship to leadership.

All participants responded that they would like to have more training in a variety of work areas.

(continued on page 28)

Hughes Helps Clean Up Steel Plant Emissions

UK high-pressure waterjetting/pumping systems manufacturer Hughes Pumps has recently manufactured and delivered a specialist automatic cleaning system for use in one of Brazil's leading steel production plants to remove tar deposits from furnace door seals and prevent emissions from being released into the atmosphere.

The specialist automatic cleaning system, designed and built by Hughes, is comprised of four Hughes Pumps HPS2200 pump sets with a performance of 92 lpm at 490 bar (24 usgpm at 7,100 psi), driven by 90 kW (120 hp) electric motors and fitted with enclosures; two 4-way and two 6-way manifolds with hydraulic stop valves to provide a total of twenty high pressure cleaning channels, allowing

for waterjet cleaning in multiple areas of the plant; two 2,000 litre and two 3,000 litre stainless steel water tank assemblies with automatic, self-cleaning water filters, boost pumps to provide a positive supply to the high pressure pumps and level controls; and twenty-eight self-rotating nozzles, permanently mounted to allow automatic cleaning.

The Brazilian steel manufacturer customer produces a wide range of specialist steel products to the civil construction, industrial, agricultural and automotive sectors. The Hughes



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



New ARM Lets Waterjet Operators Keep Their Distance

The new Automated Remote Manipulator (ARM) from NLB Corp. is a semi-automated waterjet system that increases operator protection while reducing downtime. It lets an operator manipulate a variety of accessories from the safety and comfort of a climate-controlled cab, using convenient joystick controls to position them and to start and stop the flow of high-pressure water (up to 40,000 psi, or 2,760 bar, at 600 hp).

With specialized tooling mounted on the arm of a mini excavator, the ARM efficiently handles applications as diverse as shellside tube bundle cleaning and hydrodemolition. Its unique quick-connect system makes it easy to change accessories, such as NLB's patented SPIN JET® and SPIN-NOZZLE® heads, to suit the job.

The ARM has a vertical reach of about 12 feet and a horizontal reach



The ARM lets an operator control waterjets from the cab.

of about 17 feet, with a wide waterjet pattern to maximize coverage. This allows the operator to stay out of the action, not only reducing risk but eliminating the fatigue of manual waterjetting and the possibility of inconsistent results from operators with different skill levels.

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

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.

“Everyone a Leader” - A New Process at High Pressure Equipment, from page 26

HiP will continue to train small groups (eight to ten people) of employees over the next eighteen months until all employees have been exposed to the leadership principles mentioned above. The management team favors smaller groups for training to facilitate good discussion and individual coaching.

One of the best ways to judge the success of this investment are the following comments from participants of the program:

- “This is an investment worth making for HiP. If you limit your company’s training, you limit your company’s growth. I’ve acquired reassurance and quality knowledge needed to address current situations with employ-

ees,” Mark Kaiser, second shift, supervisor/machinist, nineteen years of service.

- “I like it that the Company has let us all know that our opinion matters,” Seamus Louis, sales engineer.
- “I had reservations when I first started the program, but midway through I found the information interesting. I really found goal setting to be helpful both personally and professionally,” Donald Glover, machinist, nine years of service.

HiP, celebrating 60 years in business this year, has a solid beginning to a bold experiment. President Loper’s goal of creating a new climate at HiP

is well on its way to completion. Employees are learning to be leaders and take responsibility for their jobs, and creating customer value is the focus. Lifelong learning, continuous improvement, and individual leadership are processes that will make American manufacturing successful. The process has begun and will continue into the future at HiP. ■

Contributing Authors:

Dr. Bruce Swanson- Business Consultant, Life Coach (retired from LORD Corporation after 23 years in Human Resource and Training Management).

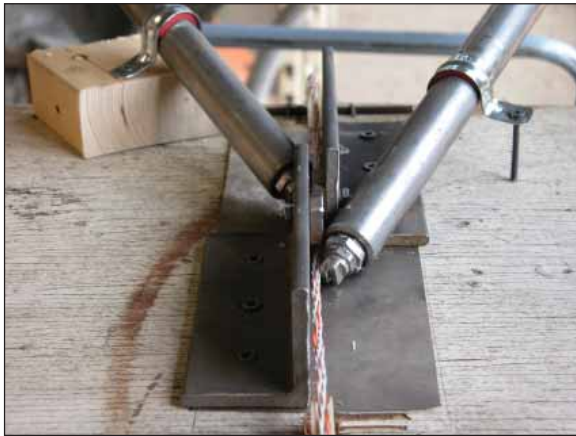
Ms. Sarah J. Murphy- Human Resource Manager, High Pressure Equipment Company.

Samuel B. Riley- Student Intern, Finance and Leadership.

Waterjetting Applied to Copper Recovery,

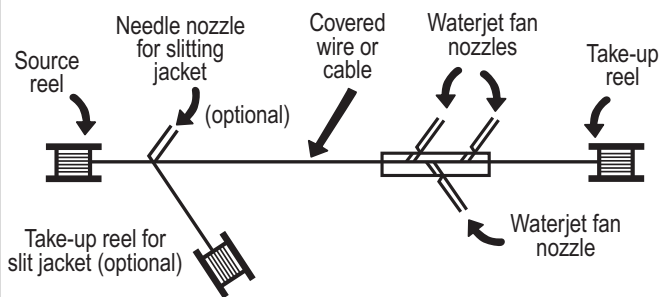
from page 4

a demonstration line to run trials, license the technology to their competitors, and sell their equipment and services to those who will outfit their plants with waterjetting lines. Wire manufacturers subject their products to various physical and electrical tests, and failure sends them to the scrap area. The benefit for this type of client is the metal reclamation can be done onsite, the equipment cost is reasonable, the footprint small, and if the wire is undamaged, it can be reused. The electric utilities not only dig up buried old and defective cable (the big stuff) that must be scrapped, but when installing new replacement cable, the length remaining on the supply reel may be too short for use and must be scrapped. The sales potential for waterjet equipment manufacturers and suppliers cannot be denied.



Dual fan jet setup with twisted wire at UM-Rolla.

WATERJETTING LINE FOR WIRE AND CABLE



Reference

1. Wire Chopping: 50 Years Young, John Groscurth and Mark Phillips, August 9, 2001. Article on website of Recycling today and viewed 2013.

Note: Included with this article are photographs taken during development trials. Understandably, the setups were not sophisticated as my budget was minimal.

For more information, contact Arnold Kelson by email at arnold-kielson@gmail.com or phone at 402-592-6986. ■

2014 WJTA-IMCA Expo

New Exhibit Spaces Added - Don't Miss Your Chance to Exhibit



The initial floorplan has filled up, and WJTA-IMCA has opened new truck spaces, bulk exhibit spaces and 10' x 10' booths to accommodate the increased interest for the 2014 Expo. At press time, the number of exhibitors is up by 26% and exhibit space up by 34% over 2013.



Reserve
your exhibit
space today.
Contact

Peter Wright at the WJTA-IMCA office by
telephone: 314-241-1445 or email wjta-imca@wjta.org.

Are Your Hands Properly Protected?, from page 8

liners under other gloves that protect in ways that laminate gloves cannot.

Choosing the proper glove is a critical step in protecting yourself against the hazards you and your co-workers face every day. To learn more about which glove is right for you, Northern Safety's technical support representatives can help. Call (800)922-8553, email: techsupport@northern-safety.com, or visit northern-safety.com. ■

Sources: ohsonline.com; safetydailyadvisor.com

DERC Rotocar Cleaning System; Pipe Cleaning with High Operator Safety

The DERC Rotocar Cleaning System has been developed to remove difficult incrustations from the inside of tubes and pipes up to 3000 mm, in a very fast and highly efficient manner, with high safety standards for the operator and the environment. This cleaning is done with a rotating 1/2" rubber high pressure hose with a fixed nozzle. The rotating hose is automatically fed inside the pipe, with an infinitely variable speed. This system has an output about 3 times higher than conventional high pressure technologies.



DERC rotocar cleaning system.

Rotate, push and pull

The working of the Rotocar is simple and efficient: an air powered high pressure swivel rotates a high pressure hose. On the end of the hose is a fixed nozzle with jets, which spray around the high pressure water resulting in a safe and efficient way of cleaning.



Total rotocar cleaning system with feeder unit and hose guide.

The Feeder Unit is provided with adjustable wheels to feed or pull the hose automatically in or out of the pipe. The rotating movement is synchronized with the forward movement of the nozzle. This gives a perfect seamless cleaning of the whole tube.

A Hose Guide is mounted on the front of the pipe. This Hose Guide is fully adjustable, so the hose can be fed properly.



Feeder unit.



Rotocar change position feeder unit.

A 2" stainless steel flexible hose is mounted between the Hose Guide and Feeder Unit for guiding the rotating hose into the tube. The hose will only rotate when there is water pressure, because a slip coupling is used.

Cleans complex, bended pipes

The rotating hose in combination with our special nozzle range ensures a perfect cleaning effect and is suitable for cleaning the most complex, bended and longest pipe line constructions.

Rotocar specifications:

- Available in
 - 1000 bar - 380 l/min
 - 1400 bar - 190 l/min
 - 3000 bar - 76 l/min
- Hose connection 3/4" NPT, 3/4" MP, M24x 1,5, 36x2, 9/16" HP or M14x1,5LH
- Rotating speed is adjustable from 20 to 300 rpm
- Length flexible stainless steel guide hose 3 meter (10 feet)
- Construction stainless steel
- Weight: approximate 70 kg
- Additional: a complete range of special Rotocar nozzles



Rotocar nozzles.

For more information, visit www.waterjetting.nl.

Federal Signal to Open FS Solution Location in Williston, North Dakota

Federal Signal Corporation's Environmental Solutions Group has opened a new FS Solutions service center in Williston, ND. Located at 305 Energy Street, the new FS Solutions center is part of the group's expansion of FS Solutions locations and service offerings for industrial, oil and gas, and utility customers in key areas throughout North America.

As the eleventh FS Solutions service center, the Williston location will stock high performance parts and accessories for Federal Signal's Guzzler brand of industrial vacuum trucks and Vector HXX vacuum excavators. The new center will also provide parts and service for most makes and models of industrial vacuum trucks and vacuum excavators.

"The FS Solutions center in Williston allows us to increase product, service and training offerings to industrial cleaning contractors and other industry professionals near northwestern North Dakota's booming oil patch and the surrounding area," said Tony Fuller, director of industrial sales for FS Solutions.

The oil and gas industry has placed a heavy emphasis on the safety and integrity of underground infrastructure, making vacuum excavation an invaluable option. Vector's line of vacuum excavators allow quick access to buried natural gas, petroleum pipelines and water mains, cutting through hardened scale and frozen ground with reduced risk of damage.

"Customers specializing in oil and gas services such as drilling mud



recovery, frac tank cleaning, and pipe and line installation can depend on thorough, responsive service from FS Solutions to keep their vacuum excavation equipment up and running, whether it's through expert repair, refurbish or rebuild support," Fuller said.

(continued on page 32)

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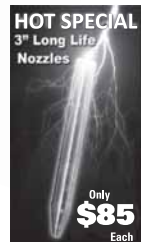
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Flow Introduces the Next Generation Direct Drive Pump

Flow International Corporation has announced the next generation direct drive ultrahigh-pressure pump technology, the HyPlex® Prime. The HyPlex Prime represents the newest advancements in highly efficient, direct drive waterjet pumps.

Combining breakthrough HyperJet® intensifier pump technology with direct drive pump efficiency, the pump is designed to minimize downtime. The newest HyPlex Prime design increases the maintenance intervals over prior models. This translates to consistent, reliable maintenance for all of the pump components.

With a highly modular design, the HyPlex Prime allows for customized performance at a production level price. The pump has a maximum developed pressure of 60,000 psi and comes standard with Flow's Pac-V patented control valve, which reduces maintenance and enables cutting at any pressure. Customers can tailor the pump performance for their needs.

For more information, visit www.flowwaterjet.com



Banshee BN15

The Banshee line of rotary tube cleaning nozzles has expanded with the introduction of the new BN15 tool. The BN15 (15 mm OD) reduces the jet stand-off distance in tubes where the BN13 has been used because the BN18 is too large to fit. Reducing the stand-off distance provides harder hitting power for 3/4" tubes. Additionally, the BN15 allows for the use of a larger hose resulting in higher flows and more power than the BN13.



Banshee BN15 Specifications

Tube ID Range	.75-1.2 in. (19-30 mm)
Maximum Pressure	22k psi (1500 bar)
Flow Range	7-10 gpm (26-38 l/min)
Flow Coefficient	.35 Cv
Inlet Connections	1/8 NPT, 1/8 BSPP, 3/8-24LH/RH
Length	3.0 in. (76 mm)
Diameter	.60 in. (15 mm)

For more information, visit www.stoneagetools.com.

Federal Signal to Open FS Solution Location in Williston, North Dakota, from page 31

To assist customers with their industrial vacuum and vacuum excavation needs, the new FS Solutions center will be staffed by knowledgeable, highly-trained employees possessing a wealth of vacuum excavation and industrial cleaning experience. The new center will provide genuine OEM parts and factory-trained, certified technicians to offer recommendations and resolutions to any challenges customers may present.

“At the Williston center or out in the field, the technicians at FS Solutions can repair, refurbish or run preventive or responsive diagnostics on Guzzler and Vactor equipment to determine what needs to be done to keep it in good working order – and get it back on the job,” Fuller said. “FS Solutions brings new life to used indus-

trial vacuum and vacuum excavation trucks, providing our customers with an affordable option for investing in new equipment.”

Additional FS Solutions centers are located in Birmingham, AL.; Long Beach, CA; Streator, IL.; Highland, IN.; Gonzales, LA.; New Brunswick, NJ; Toledo, OH; Lexington, SC; La Porte, TX; and Tacoma, WA.

To contact the FS Solutions center in Williston, ND, please call 701/572-7421. For more information about products and services available from the FS Solutions centers, or to find the nearest location, please call 800/822-8785, or visit www.fssolutionsgroup.com. ■

New, Mobile-Friendly WJTA-IMCA Website with Enhanced Content

WJTA-IMCA has launched a new, mobile-friendly, redesigned website.

Key features of the new site:

- Anonymous Incident/Near Miss Reporting Form
- Research Papers
- Technical Articles
- and more...

Take a look and let us know what you think! New content will continue to be added, so check back for news and updates. To suggest or contribute new content, please contact Peter Wright in the WJTA-IMCA office by email: wjta-imca@wjta.org or phone: 314/241-1445.

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New Vane Pump Pressure Offload System Option

Guzzler Manufacturing has introduced the Guzzler® CL (Classic) industrial vacuum loader with a vane pump offload system option to handle all types of liquid wastes and slurries in such industrial cleaning environments as materials processing plants, foundries, grain elevators, metal mining, steel and pulp and paper mills, railroads and shipyards. The Guzzler CL is also suited for a variety of oil and gas applications, including drilling mud removal, clean-up and recovery of valuable raw material, oil sludge and water removal, frac tank cleaning and general tank cleaning.

“The addition of a vane pump offload option on the Guzzler CL allows our customers to pressurize the debris body at a maximum of 14.5 psi for the offloading of liquids and sludges,” said Ben Schmitt, product manager at Guzzler Manufacturing. “The vane pump can also be reversed to create a vacuum of up to 28.5-in. Hg for vacuum loading of liquids and slurries that otherwise could not be loaded with an air mover. This option provides our customers with greater versatility, improving use and optimizing their time and ability to serve their end customers.”

Depending on material type, the Guzzler CL industrial vacuum loader can operate effectively in remote or inaccessible locations more than 1,000 feet away. Simple to operate and easy to maintain, this vacuum truck provides the lowest air-to-cloth ratio of any machine in its class.

“As the backbone of the Guzzler industrial vacuum loader line, the Guzzler CL has a great reputation in the field as a powerful and efficient industrial vacuum loader that recovers, contains and carries solids, dry bulk powders, liquids, slurries and thick sludge from hard to reach areas and tackles the most demanding wet/

dry industrial cleaning applications,” Schmitt said.

Guzzler RightStart® program

Included in the purchase of every Guzzler CL industrial vacuum loader is the Guzzler RightStart customer experience program which provides customers with the information, contacts, training and resources they need to be productive with their new machine. A factory-trained RightStart technician is available to perform training to ensure each customer understands how to operate the machine for maximum productivity.

For more information on the vane pump pressure offload system option on the Guzzler CL industrial vacuum loader from Guzzler Manufacturing, visit www.guzzler.com or call 1/800-627-3171.



Guzzler CL



Guzzler CL vane pump offload option

New NLB Waterjet Nozzle Cleans Tubes at Up to 40,000 psi

The new RPN4009, a self-rotating waterjet nozzle from NLB Corp., cleans pipes and tubes at pressures up to 40,000 psi (2,760 bar). Designed for a minimum pipe diameter of 0.75 inches (1.91 cm), it is the first nozzle in the Typhoon 10 series to operate at ultra-high pressure.

Like other Typhoon nozzles, the RPN4009 is precision machined and coated with titanium nitride for long life. It can be ordered with cutting/cleaning or polishing heads. Just 4-3/4 inches long (12.1 cm), this nozzle works at a maximum flow of 9 gpm (34 lpm) and rotates at 7,000 rpm.

The Typhoon 10 series includes four other waterjet nozzles for small tubes, operating at pressures from 15,000 psi to 24,000 psi (1,035 bar to 1,656 bar).



RPN4009 rotating nozzle cleans small tubes at up to 40,000 psi.

NLB also offers the Typhoon™ 20 self-rotating nozzle for pipe diameters of 6 inches to 10 inches (15.2 to 25.4 cm) and the Typhoon™ 60 for pipes up to 50 inches (127 cm) in diameter.

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

SPIR STAR Announces New President/CEO and Vice Presidents

SPIR STAR Ltd. has announced the promotion of **Joseph B. Derzopf**, formerly vice president and general manager to president and chief executive officer (CEO) of SPIR STAR. Mr. Derzopf joined the SPIR STAR team in 1997 and served as production manager before becoming the vice president and general manager in 2010. With his combination of product knowledge and awareness of customer needs, he will lead SPIR STAR with the highest standards of customer service.



Joseph B. Derzopf

Jerry Carter has been promoted to vice president of sales and chief commercial officer (CCO). Mr. Carter joined SPIR STAR in 1997 and worked his way up to the position of shop foreman. In 2002, he was promoted to inside sales, followed by senior sales coordinator in 2005 and sales manager in 2008. As vice president of sales and CCO, Mr. Carter will be responsible for overseeing the sales staff team, as well as developing and implementing new ideas to enhance the high standards of quality and customer service that SPIR STAR proudly represents.



Jerry Carter

Lars Zeisig has been promoted to vice president of finance and chief financial officer (CFO). Mr. Zeisig joined SPIR STAR in 2010 as a sales and research market analyst. Mr. Zeisig has a Bachelor of Science degree in International Business Administration, and is multi-lingual, fluent in Spanish and German, among other languages. Mr. Zeisig will play a key role to further expand the SPIR STAR network through distributors and resellers in North and South America, as well as being responsible for the accounting department.



Lars Zeisig

Jetstream Cutting Solutions CC Representing Jet Edge in Southern Africa

Jet Edge, Inc. has announced that Jetstream Cutting Solutions CC of Johannesburg, South Africa, has been selected as its waterjet systems distributor for Southern Africa.

Jetstream Cutting Solutions carries 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 supplies genuine Jet Edge OEM waterjet parts and is authorized to service Jet Edge waterjet equipment. In addition to Jet Edge waterjets, Jetstream sells, installs and services other 3-axis waterjet systems and UHP pumps.

"We are very proud to have Jetstream represent Jet Edge in Southern Africa," says Dave Anderson, Jet Edge

international sales manager. "They are a recognized Jetstream system supplier in their market, and their extensive experience with CNC technology and other waterjet systems will be a tremendous benefit to Jet Edge customers. Jetstream already supplies approximately 25 percent of the market in their territory. Jet Edge believes there is tremendous growth potential for our waterjet equipment on the Sub-Saharan African Continent."

Malcolm Cruickshank, Jetstream's founder and director, says he decided to carry Jet Edge waterjets after integrating a Jet Edge X-Stream pump with another 3-axis system.

"We know waterjet pumps and we could see this was a quality product," Cruickshank says. "After investigating Jet Edge and checking its cus-

tomers references, I could see that the companies who were using Jet Edge equipment were serious waterjet users. There was no reason not to use the Jet Edge pump.

"This is a very exciting time for us that we're involved with such a world renowned name in the waterjet industry. Our biggest market so far has been the glass industry, but the Jet Edge products will allow us to reach the larger metal cutting industry and to take on specialized projects as well."

For more information about Jetstream Cutting Solutions CC, visit www.jetstreamcutting.co.za or call +27 11 468 1093.

For more information about Jet Edge, visit www.jetedge.com or call (763)497-8726.

Write for Us

Jet News accepts original industry-related articles that have not already 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:

- Articles about new and innovative applications and equipment
- Case studies detailing implementation of a new product or technique
- 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.

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Advanced Industrial Applications
Advances in High Pressure Technology and Equipment
Automotive and Aerospace Applications
Cleaning and Coating Removal
Components and Systems
Construction and Non-Manufacturing Applications
Contractor Applications and Processes

Demilitarization
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Market and Future Needs
Novel Jets and Applications
Process Modeling and Control Studies
Rock Cutting
Safety, Training and Environmental Protection

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.

Brian Beheydt Joins WARDJet as COO

WARDJet is pleased to announce Brian Beheydt as its new chief operating officer (COO). In this role, Beheydt is responsible for overseeing all operational aspects of the company and streamlining the production process.

Prior to joining WARDJet, Beheydt spent over 20 years in the manufacturing industry holding various management positions. He has a BSBA degree in finance and extensive training with Six Sigma techniques.

WARDJet President Richard Ward says, "By adding Brian to our team, WARDJet proves our commitment to



Brian Beheydt

the development of quality systems and organization. WARDJet is growing, and we are allocating resources to support that growth. Brian brings valuable industry experience, knowledge, and systems to the company as we expand our customer base and increase production."

WJTA-IMCA Welcomes New Members

Corporate

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Tom Wendler
Anthony Pankow
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 West Allis, WI 53214
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 Fax: (414)755-0932

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 Phone: (706)465-2100
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 Email: stephen.iorga@gmail.com

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 Email: kyle@cesvac.com
 Phone: (804)605-9429

Owen J. Scott

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 128 Industrial Way
 Longview, WA 98632
 Phone: (360)577-5691
 Fax: (360)577-0974
 Email: owen@jammiesenviro.com

Dewey Seymour III

Deep South Industrial Services, Inc.
 515 Industrial Drive
 Rockmart, GA 30153-3524
 Phone: (678)757-1022
 Fax: (678)757-9926
 Email: dseymour@deepsouthind.com

New Line of 94k Advantage EP Pumps from H2O Jet

The new "Extreme Pressure" 94 K pump adds to H2O JET's premier selection of industrial workhorse pumps providing a great solution for the waterjet industry. The 94 K Advantage EP Pump impressively maintains maximum pressure and flow rate with the lowest pressure fluctuation throughout the complete ultra-high pressure range of cutting parameters while ensuring minimum downtime and increased productivity. The Advantage EP 94 K Pumps are now available in both 50 HP and 100 HP versions.



"H2O Jet is very excited to add the "EP" series of pumps to the line up! We now offer a wide range, from a SMP 10 HP 60,000 psi pump through the new Advantage 100 HP 94 K," says Alan Bennett, director of sales and marketing.

Visit www.waterjetparts.com or call (866)928-3753 to learn more about H2O JET's pumps and replacement parts.

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 Fax: (845)353-6829
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HydroChem Receives Prestigious National Safety Awards, from page 7

promoting safety training in the workplace. The companies receiving these awards understand that safety training is required by law and it is good business to provide a safe and healthful workplace for their employees.”

HydroChem was also recognized at the Gulf Coast Safety Council’s 14th Annual Contractor’s Safety Excellence Awards Banquet in Kenner, Louisiana on April 29, 2014. HydroChem was nominated by both the Chevron Products Pascagoula Refinery and the Dow Chemical – St. Charles Operations and as a result received the top overall Outstanding Safety Performance Award for the Biloxi Nominees and the top overall Outstanding Safety

Performance Award for the St. Rose Nominees.

American Fuel & Petrochemical Manufacturers (AFPM) is a trade association representing high-tech American manufacturers of virtually the entire U.S. supply of gasoline, diesel, jet fuel, other fuels and home heating oil, as well as the petrochemicals used as building blocks for thousands of vital products in daily life.

AFPM member maintenance contractor companies that work at least 20,000 hours and achieve a Total Recordable Incident Rate (TRIR) of 0.6 or less with no workplace related fatalities are eligible to apply for a

contractor merit award at a site. For the year of 2013, HydroChem received 31 AFPM nominations setting a record-high for the company. Sam Smolik - VP of HSE for LyondellBasell presented these awards at the AFPM Safety Conference Banquet that was held at the Henry B. Gonzalez Convention Center in San Antonio, Texas.

“We are extremely proud and excited to have been recognized for all of our efforts. These awards not only represent our company’s safe work practices, they also represent a strong working partnership within our customer sites,” said Tim Bonvillian, vice president of health, safety, environmental and training for HydroChem. ■

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