

## Abrasive Jet Cutting in a Nuclear Waste Storage Tank at Hanford, Washington



A riser plug for the high level radioactive waste tank is being flown into place to make sure the hole in the tank is not left open. This plug is for the largest access hole ever cut in an active radioactive waste storage tank at Hanford.

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## Abrasive Jet Cutting in a Nuclear Waste Storage Tank at Hanford, Washington, from page 1

**W**aterjet contractor AK Services made history recently by cutting the largest-ever access hole in an active U.S. Department of Energy (DOE) radioactive waste storage tank at the DOE's Hanford Site in southeastern Washington. The Boston-area waterjet contractor cut a 55-inch diameter hole in the top of the underground tank to allow for the installation of a robotic system that will remove 247,000 gallons of radioactive and chemical waste stored in the tank during the Manhattan Project and Cold War so it can be vitrified for safer storage.

Battling freezing temperatures and the challenges of running remote-controlled ultra-high pressure waterjet equipment from a 300-foot distance, AK Services used a specially engineered abrasive waterjet cutting machine to make the huge cut through 15 inches of concrete and steel rebar in just 22 hours. They performed the cut at eight inches per hour using an abrasivejet of garnet grit mixed with three gallons per minute of water pressurized to 48,000 psi with a Jet Edge waterjet intensifier pump.

The finished cut is the culmination of more than a year of careful



**A Hanford Site crew installs a plug into the hole that AK Services cut.**



**AK Services engineered a special abrasivejet cutting system that featured four redundant Jet Edge High Flow Abrasivejets in case one head should have failed. They accomplished the cut with one cutting head.**

planning and preparation by AK Services and Hanford Site Tank Farms prime contractor Washington River Protection Solutions (WRPS) to ensure worker safety and protection of the environment, said Kent Smith, WRPS deputy manager of retrieval and closure operations.

AK Services spent a year developing the waterjet cutting system for the project and testing different abrasives to get consistent data for rate of advance and garnet usage, said Carl Franson, AK Services vice president of operations.

“The motion device had to be specially developed to secure itself inside a 75-inch steel riser and cut a 55-inch hole,” Franson explained. “We also needed to be able to level the motion device to make sure it did not drag the abrasivejet focusing tubes on the concrete surface.”

AK Services engineered a three-piece stainless steel motion system with two circles separated by guide bushings with a ring gear in the middle. The ring gear

features four redundant Jet Edge High Flow Abrasivejet cutting heads in case of failure and is driven by a set of reduction gears and a drive motor to achieve the proper cutting rate. Pneumatically actuated rams are placed on the sides and bottom to level and secure the system.

“We were able to do the entire cut with the one lead cutting head,” Franson noted. “We used a Jet Edge High Flow Abrasivejet cutting head with a Roctec 100 focusing tube rather than the standard tungsten carbide, and we ordered diamond orifices from Jet Edge to ensure the longest life possible.”

Once the system was in place, the cut itself was easy according to Franson, though not without challenges.



**AK Services operated its equipment remotely from a 300-ft. distance. Work is monitored here on a video screen.**

“The biggest challenge was running the equipment from 300 feet away,” he said. “The tank top is in a radiation area and entry to the area is regulated to the extent that anything that enters the tank farm must be scanned and cleared prior to being released out of the fenced-in restricted area. The pumps and control systems had to be outside of the restricted area to ensure they did not become contaminated

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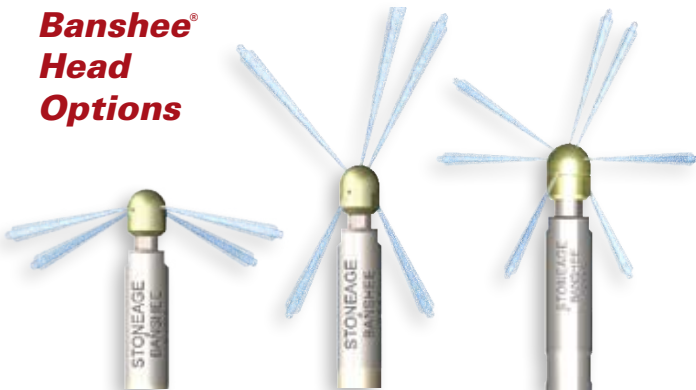


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# Hydrodemolition on Earthquake-Damaged Concrete Bridges in Chile

**B**adly damaged concrete beams on two bridges above Chile's new Santiago's Southern Approach (Acceso Sur Santiago) highway – caused by a recent earthquake – were removed using hydrodemolition techniques with an Aquajet Aqua Cutter HVD 6000 robot, by Santiago-based specialist contractor ISOTEC.

The recently opened 46 km highway has been designed to relieve traffic flow in to the Chilean capital Santiago's southern approaches to handle up to 25 million vehicles per year.

According to ISOTEC's Jose Alday, the role of the Aqua Cutter was to remove the concrete above the beams allowing them to be lifted clear and

replaced, while saving the rebar for reuse in installing the replacement beams.

“The hydrodemolition techniques proved ideal with no collateral damage to the remaining structure while removing the damaged concrete,” he said adding, “we also had to guarantee minimal impact for the highway users, allowing the highway to remain open throughout the removal process.”

Operating to a depth of up to 20 cm, the Aqua Cutter was able to expose the rebar with no damage, allowing it to be reused for the replacement beams.



**Serious earthquake damage.**

ISOTEC's hydrodemolition contract on both bridges was completed within 20 days with the

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*Steve Johnson, Division Manager  
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*Charlie Underwood, Operations Manager  
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# Meet the Candidates for the WJTA-IMCA Board of Directors

**PAT DEBUSK** has been in the industrial cleaning business since 1964, primarily in waterblasting, chemical cleaning, and vacuuming services. The services have been focused on the refining, chemical manufacturing, and oil production areas. His expertise is in actual job set-up, equipment recommendations, manpower requirements, and the financial success with whichever type of cleaning is recommended. Mr. DeBusk has a keen interest in new technology and practical applications of all technology. He is presently employed by Inland Industrial Services where he has worked for the past four years. Mr. DeBusk has been involved with the WJTA-IMCA in various capacities since its inception in the mid-1980's.



**Mission/Vision:** To see the WJTA-IMCA name be recognized worldwide as the essence of quality, a name recognized by industry as the leader in technology, quality products, and services, and as the premier industrial cleaning information center. I would like to have end users more involved in the organization, and I think their involvement is the key to long-term success.

**Nominated by:** Dee Green, Vice President, Inland Industrial Services, Deer Park, Texas.

**KAY DOHENY** is the owner of Jack Doheny Supplies, Inc., Northville, Michigan. After receiving her bachelor's degree in business marketing, she spent some time in Arizona selling industrial paper and packaging products. In 1985, Ms. Doheny moved back to Michigan and returned to work at the family business, Jack Doheny Supplies, Inc. Founded by her father, Jack Doheny Supplies has been in operation in excess of 50 years. Jack Doheny Supplies is dedicated solely to providing solutions for industrial and municipal cleaning equipment and maintenance of sewer systems. Now, as owner of the business, Ms. Doheny remains committed to moving this industry forward and to its related safety issues.



**Mission/Vision:** I was excited when the WJTA expanded to include IMCA having recognized the need and having been a supporter since its inception. I respect the quality individuals and companies who have gotten behind this

professional association, and I am excited and proud to be a part of its steady growth and impact. Private and public industries are being forced to make cuts across the board. Time away from the office, out of the field, additional training, and travel are heavily scrutinized and must be justifiable. Many organizations and associations in our industry are in jeopardy due to declining membership, exhibitor, and attendee support. It is imperative that the WJTA-IMCA bring hard value to our demanding industry to sustain continued growth. If elected, I will help promote the WJTA-IMCA organization at all of the major trade shows and through our daily business dealings. With my involvement in the industry and through related organizations, I truly understand the need to gain name recognition and the power of networking. I welcome the chance to serve on the board with the other industry leaders and help guide this growing and respected organization.

**Nominated by:** Bill Gaff, Vice President, Vacuum Truck Rentals, Richland, Mississippi.

**GREG GALECKI, Ph.D.**, is an associate professor of mining and nuclear engineering at Missouri University of Science and Technology (formerly University of Missouri-Rolla), Rolla, Missouri. Since 1993, he has been a senior research investigator at Missouri University of Science and Technology's (Missouri S & T's) Rock Mechanics and Explosives Research Center, where he currently serves as the director of the High Pressure Waterjet Laboratory. Dr. Galecki received his Ph.D. in mechanical engineering in 1978 from Wroclaw Technical University in Poland, and has worked in the field of machine-building technology, machinery, and machine tools, with related research and teaching since 1974. Dr. Galecki has more than 30 years of experience in experimental waterjet use, waterjet-assisted processes, and high pressure equipment design. Dr. Galecki's pioneering work to understand mixing and acceleration of abrasive particles has been a very important part of abrasive waterjet development. More recently, he has been developing abrasive slurry jets for precision machining of advanced materials. Dr. Galecki has authored or co-authored more than 100 research publications, including more than 20 invention disclosures or patents. His research interest is in the application of high pressure waterjets, with emphasis on mechanical component design and system integration.



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## Meet the Candidates for the WJTA-IMCA Board of Directors, from page 6

**Mission/Vision:** Over the years, waterjet technology has evolved through a period of specialized applications to the present, where custom applications have become standard in many industrial uses. However, the design of equipment and procedures remains very subjective. In an attempt to enhance objectivity, a discussion of standards for the waterjet industry should be initiated by WJTA-IMCA through the creation of a standards committee.

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

**LUIS GARCIA** is president and CEO of Channel Safety & Marine Supply, Inc. (CSM). He has been in the personal protective equipment (PPE) distribution business for over 20 years. Mr. Garcia is responsible for taking his start-up company, Channel Safety & Supply, Inc., from an initial \$1,000.00 investment in 1995



to a diverse multi-million dollar company with multiple locations today. 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, Mr. Garcia'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 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 McClister, Vice President – Support Services, Veolia Environmental Services, Baytown, Texas.

**AXEL HENNING, Ph.D.,** is the manager of R&D at OMAX Corporation in Kent, Washington. Dr. Henning started working with waterjets in 1991 under Prof. Hartmut Louis at the Waterjet Laboratory in Hannover, Germany. He then managed the waterjet laboratory at the University of Stuttgart, Germany, and later went on to the Fraunhofer Society to lead the group for flexible manufacturing where he conducted technological consultancy in waterjet deburring, industrial cleaning, and abrasive cutting. Dr. Henning received his engineering degree (Dipl.-Ing.) from Hannover University and his doctoral degree (Dr.-Ing.) from Stuttgart University. He has authored over 100 conference and journal papers in waterjet technology. At OMAX, Dr. Henning oversees research and development of innovative new products and components as well as improvements to performance and quality of abrasive waterjet cutting operation.



**Mission/Vision:** Having worked with waterjets for 20 years, I have seen waterjetting technology progress from being an exotic method to become a widely used manufacturing process. In order for it to become a common tool among the others that we now consider standard, we still have to increase awareness of the great advantages that waterjetting offers. This cannot be a mere machine sales task but has to start much earlier during the

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### Jet-Engine-Powered Water Jetter

Homelandsecuritynewswire.com reports that the city of Luoyang in the Henan Province of the Peoples Republic of China has a waterjetting machine designed for fighting high rise fires. This machine reportedly emits four tons of water per minute (128 cu. ft./min, 959 gpm). The jet is powered by a jet fighter engine. It fights fires by separating the fire from its oxygen supply. It has a range of 120 meters.



## Meet the Candidates for the WJTA-IMCA Board of Directors, from page 7

education of students and engineers. As an organization, the WJTA-IMCA has the potential to provide the means of information and education that must include trade shows and conferences but could also extend through means of internet and mentoring to universities, colleges and, yes, high schools. When you have seen the excitement in those student's eyes when learning about waterjetting, you know that there is a bright future for this technology and the WJTA-IMCA is absolutely geared to pave this path.

**Nominated by:** Greg Galecki, Ph.D., associate professor, Missouri University of Science and Technology, Rolla, Missouri.

**STEVE JOHNS** is the business unit manager for the Polyflex America operations for Parker Hannifin. Mr. Johns has not only been involved in the sales and direct customer interaction regarding UHP hose and fittings, but also understands the engineering behind these products. Mr. Johns brings 15 years of UHP experience, and he has a bachelor's degree in mechanical engineering to support his efforts and the WJTA-IMCA for which he has been a long standing member.



**Mission/Vision:** On behalf of all WJTA-IMCA members, I will actively work with and engage the WJTA-IMCA board to continue with their industry leadership within this growing marketplace. I will work to continue to promote the highest standards of learning and service through industry practices with an emphasis on the continued expansion on the need for safety awareness and Recommended Practices. I will also act as an industry liaison for all members and promote enthusiasm for the board and industry.

**Nominated by:** Paul H. Webster, Program Manager, Parker Hannifin Corporation, Energy Products Division, Stafford, Texas.

An official ballot listing the eligible nominees will be forwarded by mail to all eligible voting members of the WJTA-IMCA on June 28, 2011. Signed and executed ballots must be mailed to the WJTA-IMCA office for tallying by July 26, 2011. Election results will be announced in the *Jet News* and on the WJTA-IMCA website.

**BILL KRUPOWICZ** is a vice president of Federal Signal's Environmental Products Group and the general manager of Jetstream of Houston, LLP. Mr. Krupowicz has been with Federal Signal for 11 years and in his current role with Jetstream for more than five years.



His industry experiences span the functions of engineering, materials management, finance, marketing, global sales and general management. Over the past 26 years, Mr. Krupowicz has worked in the aerospace, construction equipment, papermaking equipment, and environmental products industries with such companies as Hughes Aircraft Company, Caterpillar, Beloit Corporation, and Federal Signal. He holds a bachelor's degree in mechanical engineering and a master's degree in business administration, both from the University of Illinois.

**Mission/Vision:** I am a firm believer in safety, and over the past five years I have truly gained an appreciation of both the cleaning power of UHP waterblasters and vacuum trucks and the potential safety risks to operators. Any and all improvements that can be made related to our operators' safety needs to be investigated. Safety is an area that is absolutely beneficial to all of our membership. I would see WJTA-IMCA as playing a key role in forwarding an industry-wide push in this area.

**Nominated by:** B.T. Steadman, Managing Member, Vacuum Truck Rentals, Richland, Mississippi.

**KATHY KRUPP** is the Texas operations managed services leader for The Dow Chemical Company in Freeport, Texas, a position she has held since September 2007. Ms. Krupp has been at Dow for 28 years, and she has held previous site level leadership positions that include regional purchasing manager, culture change and learning leader, and analytical resource leader. She earned her bachelor's degree in chemical engineering from Washington University in St. Louis, Missouri. Ms. Krupp is a member of Dow's Global Industrial Cleaning Supplier Management Team since it was chartered in 2008, and she is a facilitator of Dow's Global Hydroblasting Resource Network since late 2007. Ms. Krupp was a presenter during boot camp sessions at the 2010 WJTA-IMCA Expo.



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## Meet the Candidates for the WJTA-IMCA Board of Directors, from page 8

**Mission/Vision:** Several of the objectives of WJTA-IMCA align directly with my responsibilities and experiences in working with the industrial cleaning service providers at several major Dow sites. The strong partnership between Dow and the service providers supports mutual improvement in safety performance and technology application. Dow drove our service providers to develop and apply automated cleaning technology to achieve our shared goal of zero incidents during cleaning operations. The shared vision includes fully automating all hydroblasting jobs. Sharing my experiences with board members could enhance their understanding of the expectations of owner companies. The partnership between Dow and the industrial cleaning providers also resulted in the establishment of best practices related to several aspects of high pressure water cleaning. This knowledge can be leveraged to WJTA-IMCA by providing subject matter expertise to efforts to establish or revise the WJTA-IMCA recommended practices.

**Nominated by:** Gary Noto, executive vice president and chief operating officer, Veolia Environmental Services, League City, Texas.

**LARRY LOPER** is president - director of sales at High Pressure Equipment Company, Erie, Pennsylvania. Mr. Loper is responsible for the design and implementation of the company's marketing plan. Mr. Loper 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, AIChE, 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:** Steve Johns, Business Unit Manager, Parker Hannifin Corporation, Energy Products Division, Stafford, Texas.

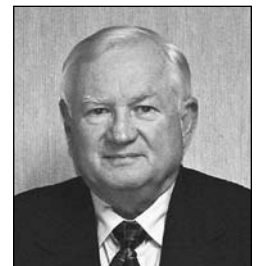
**KERRY PETRANEK** is the CEO of StoneAge, Inc., Durango, Colorado. She joined StoneAge in January 2007 as the director of operations and has since grown with the company. Ms. Petranek has been key in building StoneAge's global presence and distribution network. Her passion lies in organizational and leadership development and is focused on helping StoneAge employees grow both personally and professionally. Ms. Petranek was recently named one of Colorado's Top 25 most influential young professionals, and she is very involved in several Colorado- and Durango-based economic development groups.



**Mission/Vision:** I believe that better collaboration between the waterjet industry and end users is critical to the health of the organization and the waterjet industry. My vision is that the WJTA-IMCA should be the "go to" organization for up-to-date information on safety issues, regulation, best practices, and new technology. This can be accomplished with a re-vamped website having fresh and meaningful content contributed by industry experts, with a direct educational campaign focused on end users, and through a strong annual tradeshow and conference.

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

**FORREST A. SHOOK** is chairman of NLB Corporation in Wixom, Michigan. Mr. Shook has been involved in the waterjetting industry since 1963 and has been a member of WJTA since its inception. Starting as a contractor, Mr. Shook soon became disenchanted with the available equipment and began building his own pumps and accessories. NLB Corporation was officially created in 1971. During this time, Mr. Shook has made significant contributions to the advancement, development, and application of waterjet technology. He has identified new technologies and applications that have helped grow the waterjetting industry, all the while emphasizing operator and environmental safety. Mr. Shook has also pioneered new waterjet processes such as hydrodemolition, automotive grate cleaning, abrasive cutting, surface preparation,



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

tank cleaning, and many others. He holds many patents pertaining to waterjet technology.

**Mission/Vision:** It has been a privilege and an honor to be a part of an organization that has done so much to advance the field of waterjetting. If I am fortunate enough to return to the board I will continue to help identify new technologies and applications that will serve to further the waterjetting industry. In addition, I will represent the end users of waterjetting equipment, bringing their voice to the board meetings. And as always, I will emphasize operator and environmental safety in all that we strive towards.

**Nominated by:** Jim Van Dam, marketing manager, NLB Corporation, Wixom, Michigan.

**TRYAN STUTES** is the founder and president/CEO of Stutes Enterprise Systems, Inc., a leading waterjetting equipment rental and supply company in the Texas and Louisiana area established in late-1997. Mr. Stutes has been in the industrial cleaning business for over twenty years. During this time, he learned the value of solid work ethics and what the meaning of the word service really means. Since that time, using his experience from the field, he played a key role in the success of several industrial rental companies achieving top sales. Mr. Stutes started out with two rental units, one truck, a modest customer base, and big ambition. Stutes has become a leader in the industrial waterjetting equipment rental and supply industry, setting high standards for quality equipment and superior service to meet the needs of their customers. Mr. Stutes has worked with various manufacturers of waterjetting pumps, accessories, and tools to help improve their products making them more productive, safer, and more user friendly for field personnel. Stutes has multiple locations along the Gulf Coast and is a multimillion dollar company with plans to expand product lines, increase inventory and locations.



**Mission/Vision:** My mission is to promote the WJTA-IMCA and continue to seek out new members, not only from the petrochemical industrial markets, but from all other types of industries; to maintain existing members by providing outstanding customer service; to continue to improve, promote, and encourage the safety practice procedures; to work with manufacturers to develop cutting edge technology, equipment, and products to increase safety and

productivity; and to aid in the education process helping the end user understand that waterjetting is a specialized trade, an art, a skill and should be treated as such. As a board member, I will utilize the entrepreneur spirit as well as my years of technical experience to help accomplish the goals of the WJTA-IMCA. The WJTA-IMCA should be the vehicle to bridge manufacturers, rental companies, industrial service companies, and the end user together.

**Nominated by:** Pat DeBusk, Inland Industrial Services Group, LLC, Deer Park, Texas.

**MIKE TAPLIN** has 42 years of experience in the industrial services and environmental industries. His background includes project design, cost estimation, customer relations, marketing, sales, and overseeing regulatory compliance for the DOT, OSHA and EPA, as well as other organizations. He has also managed and coordinated industrial and municipal cleaning services. As a territory sales manager for Terra Contracting, Mr. Taplin is focused on the execution of project start-ups and follow-up client support, bidding and proposals, new project delivery, and developing business opportunities. Before joining Terra, Mr. Taplin was president and chief executive officer of Taplin Environmental Contracting. He had executive responsibility for leading the full-service industrial services company for several years. While at Taplin, he also developed an SOP for a Fortune 100 company roto-jetting procedures that were adopted corporate-wide and a non-entry tank cleaning (roto-jetting) protocol. These and other industrial cleaning technologies were introduced to west Michigan for the first time through his initiatives. Mr. Taplin also led and managed numerous large-scale projects, working with a broad and diverse range of corporate and municipal customers throughout the Midwest. He worked for many years in the family industrial business, A & B Industrial Services, the predecessor to Taplin Environmental Contracting, where he served in various capacities including equipment operator, foreman, and sales management. His experience in industrial cleaning includes high-pressure waterblasting, sewer cleaning and decontamination, wet and dry vacuuming, and heavy equipment operation.



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## Meet the Candidates for the WJTA-IMCA Board of Directors, from page 10

**Mission/Vision:** To continue the significant advances the Association has made in the waterblasting industry, especially in the area of developing new technologies to improve the safety for end-users. Enhancing the communication within our industry can be achieved by continuing to improve the Association's website as a central source of information for our industry regarding key issues, technological advancements, new applications, and new market opportunities on a global scale. And to continue to grow the membership of the Association to ensure that it provides a quality experience through its conferences, clinics, meetings, and educational programs to further the art and science of waterjet technology.

**Nominated by:** Richard Walsh, Vice President of Operations, Terra Contracting, LLC.

**FRANZ TRIEB, Ph.D.**, has been involved in the field of waterjet technology since 1979. First he joined the R&D and design department of Bohler Hochdrucktechnik (Austria), then the sales department in 1986 as product manager for high pressure pumps. Presently, Mr. Trieb serves as vice president of BHDT (formerly Bohler Hochdrucktechnik) with responsibility for the High Pressure Pump Division. With more than 31 years of industry experience and about 35 scientific papers on waterjet and high pressure technology, he has a special knowledge of pumps and components for processes up to 145,000 psi (1,000 MPa) operating pressure.



**Mission and Vision:** My mission is to increase the strength of the WJTA-IMCA and to promote waterjet technology on the world market. We should bring together all sectors of the waterjet industry to be beneficial for members of the community and also users of this unique technology. For me water is an impressive and essential medium. It fills the endless oceans, it vaporizes, forms mist and rises in the form of clouds, it becomes rain and even hail, it changes into ice and in this format can support enormous loads, however it never loses its inimitable character. Water is unique and never stops finding its own way.

**Nominated by:** Axel Henning, Ph.D., Manager of Research and Development, OMAX Corporation, Kent, Washington.

## 2011 WJTA-IMCA Conference and Expo

### Pre-Conference Workshop

## Waterjet Technology: Basics and Beyond

Monday, September 19, 2011

Preliminary Schedule of Events

### THE BASICS

7:30 a.m.–8:00 a.m.	Registration
8:05 a.m.–8:30 a.m.	History of Waterjet Technology
8:30 a.m.–9:00 a.m.	Applications of Waterjet Technology
9:00 a.m.–10:00 a.m.	Equipment Consideration
10:00 a.m.–10:15 a.m.	Break
10:15 a.m.–10:45 a.m.	UHP & Abrasive Cutting Applications
10:45 a.m.–11:45 a.m.	Safety
11:45 a.m.–12:45 p.m.	Lunch

### BEYOND THE BASICS

12:45 p.m.–1:45 p.m.	Cleaning Applications
1:45 p.m.–2:15 p.m.	Field Cutting Applications
2:15 p.m.–2:45 p.m.	Surface Prep
2:45 p.m.–3:00 p.m.	Break
3:00 p.m.–5:00 p.m.	Understanding the Power of Vacuum and How Industrial Loaders Work

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## Complimentary WJTA-IMCA Conference and Expo Registration

**VLN Advanced Technologies, Inc., Ottawa, Ontario, Canada,** is sponsoring complimentary registrations for the 2011 WJTA-IMCA Conference and Expo, September 19-21, 2011.

An individual who is interested in attending the Conference, but unable to do so without financial assistance, is encouraged to apply for a complimentary Conference registration made available through VLN's sponsorship.

To apply for a complimentary registration, complete the form on the WJTA-IMCA web site at [www.wjta.org](http://www.wjta.org). Click on 2011 WJTA-IMCA Conference and Expo under "Upcoming Events;" then click - Complimentary Conference Registration. Apply **NO LATER THAN JULY 15, 2011.**

Many thanks to VLN Advanced Technologies, Inc. and to VLN President Dr. Mohan M. Vijay for his generous sponsorship activity.

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# Jetstream Signs Distribution Agreement With Tst® Sweden

Jetstream of Houston, LLP, a leading manufacturer of industrial high-pressure waterblasting equipment, has announced a relationship with TST® Sweden AB to offer customers personal protective equipment for waterblasting and hydrodemolition applications from the TST Sweden product line. The agreement with the protective suit specialists at TST Sweden will give Jetstream's customers in the United States and Canada access to a wide range of advanced protective clothing and gear for ultra high pressure (UHP) applications.

"We constantly look for ways to serve our customers better, and the addition of the TST Sweden product line enables us to better meet our customers' needs," said Mike Bullard, parts and accessories marketing manager for Jetstream. TST Sweden waterjet protection products are now available for same day shipping from Jetstream, and can also be purchased or rented from FS Solutions locations throughout the United States.

"Waterjets generated by pressures as low as 1,000 psi can cause injury, but because of the price of quality protective gear, most users of waterjet protective equipment today are ultra high (40K) users," Bullard said. "TST Sweden's proven product range includes gear that provides excellent protection at a more affordable price. We're excited that the availability of these products will encourage more companies that operate at lower pressures to outfit their operators with waterjet protection gear, thus increasing the overall safety of the industry." He added that Jetstream recommends wearing appropriate protective gear at all times when operating waterjet equipment.

TST Sweden's products are designed for ease of use, increasing the likelihood that the operator will wear the clothing. Because the gear can be put on or removed quickly and easily, there is less downtime on the job. The company's protective clothing features ultra-high performance, high-molecular weight polyethylene Dyneema® fiber, which is thinner and more flexible than traditional materials, and 15 times stronger than steel on a weight-for-weight basis.

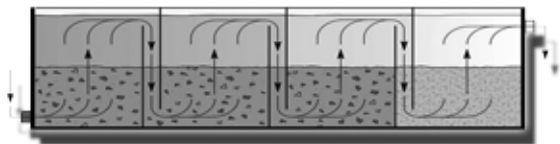
For more information about the TST Sweden safety gear available from Jetstream and the FS Solutions centers, please call 800/822-8785, or visit [www.waterblast.com](http://www.waterblast.com) or [www.fssolutionsgroup.com](http://www.fssolutionsgroup.com).

Founded in 1990, TST Sweden AB uses unique and revolutionary technology to develop and manufacture



a variety of protective clothing for defense against everything from heat, cold and high-pressure water to bacterial and chemical contamination to help achieve safer, more comfortable and more productive work environments. Visit [www.tst-sweden.com](http://www.tst-sweden.com) for more information.

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WJTA-IMCA Expo Booth #406

# Wireless Controls Simplify Surface Prep High Above the Ground

NLB Corp. has introduced wireless controls for its automated waterjet Crawler, a high-productivity surface preparation tool for towers and other large structures that avoids exposing personnel to the risk of falling.

The NLB SRT-10-W Crawler removes coatings (e.g. paint, epoxies) and scale faster than manual methods using nothing but ultra-high pressure (UHP) water — up to 40,000 psi, or 2,800 bar — from patented rotating nozzles. The Crawler moves up, down and across to strip storage tanks, ship hulls and other tall surfaces down to bare metal, controlled by an operator on the ground. The new wireless controls let a single operator direct the entire job from as far away as 1,500 feet and reduce the potential for tangled wires.



Users of NLB Crawlers report removal rates of up to 2,000 square feet per day, with reduced risk to the environment as well as operating personnel. The NLB SRT-10-W uses no abrasive and has vacuum recovery to contain the water and debris. No other containment is needed to protect the surrounding area, reducing clean-up and operating costs.

NLB Corp., a global leader in high-pressure and ultra-high pressure waterjet systems, manufactures a full line of quality waterjetting pump units and accessories for contractor and industrial uses, including surface preparation, product removal, tank and tube bundle cleaning, pavement stripe and rubber removal, concrete hydrodemolition, concrete and pipe cutting, and more.

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

*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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2011 WJTA-IMCA Conference and Expo  
September 19-21, 2011

## Boot Camp Sessions

### Preliminary Topics

#### Tuesday, September 20, 2011

Vacuum Trucks

Safety in Waterjetting

Driving to Zero... Together! (NEW)  
(see details below)

By: *Kathy Krupp*  
Managed Services Leader  
The Dow Chemical Company

Color Coding of Hoses

#### Wednesday, September 21, 2011

Automated Tube Cleaning

Hydro-Excavation

Automated Waterblasting Equipment

Nozzle Selection for Sewer Cleaning

High Pressure Waterblasting

## Driving to Zero... Together!

### Boot Camp Session - Tuesday, September 20

A strong partnership between each customer and contract service provider is essential to driving to zero incidents and injuries during hydroblasting jobs. Agreement on implementation of specific aspects of the management system is required to successfully eliminate incidents. Best practice recommendations will be outlined for management system elements aligned to safety and technology application. Best practices will include responsibilities of both the customer and the service provider.

Safety best practices will include pre-task analysis, near miss reporting, supervisory accountability, behavior based performance, incident investigations, management of change, and corrective action tracking. Specific examples may include preventing waterjet cuts and chemical exposures.

Technology application best practices will include hydroblasting automation, equipment identification and inspection, technician training and qualification, and job planning. Brief automation improvement case studies may be included.

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# Pacific Northwest Water Jet Shop

The “Great Recession” has been no match for Pegasus Northwest of Kent, Washington. The Boeing-certified industrial waterjet cutting shop has increased sales by 57% since 2007, keeping its five Jet Edge waterjet cutting machines humming 20 hours a day weekdays and 12 hours a day weekends.

Established in 1970, Pegasus Northwest has built a thriving business using computer-controlled 60,000 psi waterjets to cut parts from virtually any material up to 14 inches thick for a wide variety of industries, including military, marine, automotive, architectural, and aerospace. It counts Boeing among its major longtime customers, and credits the aerospace manufacturer for inspiring it to enter the precision waterjet cutting market in 1997.

Pegasus Northwest General Manager Ron Palstring attributes his company’s stunning success throughout the recession to its decision to invest in its quality program and greatly increase sales and marketing efforts.

While other businesses went into bunker mode, Pegasus Northwest took the initiative to become the first AS9100-certified company in Washington and hired a full-time sales and marketing manager to drum up new business. As a result, the waterjet company is running at 70% capacity and has even installed two additional Jet Edge waterjet cutting machines to keep up with demand.

“Currently Pegasus is the only AS9100-certified company in the state of Washington,” Palstring noted. “Boeing is a big part of our business, and we knew if we could become certified it would be to our advantage. The price tag for such certification was over \$30,000 plus a lot of hard work

from our quality manager and the entire staff. We have to pass annual audits and follow strict rules and procedures.”

Pegasus’s commitment to its quality program and experience meeting stringent aerospace industry performance requirements have helped it grow into one of the largest waterjet shops in the Pacific Northwest, Palstring added, emphasizing that the company adheres to the same quality control practices for all of its customers as it does for Boeing.

“We are known for our quality and three-day turnaround,” he said. “We can hold tight tolerances,  $\pm .005$  inch in most cases and sometimes even tighter depending on the material. We can cut thick materials and only leave  $+ .060$  inch excess per side, and we have drills mounted on our waterjets so we can pre-drill sensitive materials such as composites. We also invest in diamond waterjet orifices. The diamond heads last us approximately six months and gain us efficiency, accuracy, and increased nozzle life.”

Palstring is quick to point out that his company’s decision to invest in consistently accurate Jet Edge waterjets has not only given them an edge on quality, but also has won them Boeing’s confidence to calibrate their own machines.



**8-5 forged steel with ruler.**



**Cutting two 8-5 forged steel parts at a time.**



**Two heads cutting titanium with a waterjet.**

“Boeing approved and qualified our Jet Edge machines because of their consistency in accuracy,” he said. “We did this by collecting data for quarterly ball bar and laser calibrations over the past two years. Now Pegasus has authorization to ball bar and laser our own machines per our quality procedures. This is a huge time and cost saver.”

(continued on page 22)



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WJTA-IMCA Expo Booths #316/329

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# Guzzler Introduces Redesigned Guzzler NX Industrial Vacuum Loader

**G**uzzler Manufacturing, a leader in industrial vacuum loaders, has introduced the redesigned Guzzler NX industrial vacuum loader. Design improvements include a more powerful blower and the quietest operation in its class.

Built for clean-up and recovery of a wide range of materials, including solids, dry bulk powders, liquids, slurries, and thick, heavy sludge, the redesigned Guzzler NX provides total operator control over working speed, making it the most versatile loader on the market.

“The Guzzler NX has been redesigned for more efficient, easier operation from the inside out,” said Tony Fuller, director of industrial sales for Guzzler Manufacturing. “The new machine provides the same great quality, productivity and industry-leading performance our customers have come to expect from the original Guzzler NX, but at a much lower price. Plus, the lower operating weight improves fuel economy.”

At the heart of the Guzzler NX is the powerful Robuschi blower, which delivers 5,435 (free air) CFM, with vacuum capabilities up to 28 inches of mercury. The larger, injection-cooled blower allows the operator to load more material at a lower engine RPM, conserving fuel and significantly reducing noise levels. These advancements in blower and silencer technology eliminate the need for a sound shroud.

“The machine delivers ultra quiet operation without the expense or weight of a sound shroud,” Fuller said. “Rated at 88.9 dB per SAE Test J1372, the redesigned Guzzler

NX is the quietest vacuum loader in its class.”

The cyclone and bag houses on the redesigned Guzzler NX are configured together to maximize efficiency and reduce overall truck weight – without sacrificing loading capacity. An increased filter area, combined with offline cleaning, extends bag life while forcing carry-over back to the debris tank.

“The seventy-two 70-inch bags on the Guzzler NX provide a 4-to-1 air-to-cloth ratio, which is the lowest in the industry,” Fuller said. “This keeps the system clean and filtered for reliable performance and greater productivity.”

The Guzzler NX has the fewest leak points of any air mover, as well as the lowest pressure drop across the filtration system of any machine.

The Guzzler NX features patented Vacuum Recovery (VR) technology



that incorporates automatic offline cleaning of the integral bag house and cyclone, resulting in easier operation. Material is recovered back into the debris tank while the operator continues to work at the hose. While the self-cleaning system requires no activation by the operator, a manual override is included for applications that require forced cleaning.

“Our VR technology keeps the baghouses clean so the airflow remains strong throughout the vacuuming process,” Fuller said. “This enables the debris tank to be more fully loaded

(continued on page 30)



# WE ENHANCED THE LEGENDARY PRODUCTIVITY AND OFF-LOADED SOME OF THE PRICE.

Guzzler® and NX® are registered trademarks of Factor Manufacturing, Electric 0111 ©2011 Guzzler Manufacturing, Inc. Patent Number: 6,887,794 B2  
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WJTA-IMCA Expo Booth #517

# Attend WJTA-IMCA

## 2011 WJTA-IMCA Conference

### Preliminary Schedule of Events

September 19-21, 2011  
George R. Brown Convention Center

#### Monday, September 19, 2011

- 8:00 a.m.-3:00 p.m.  
Waterjet Technology – Basics and Beyond Pre-Conference Workshop
- 3:00 p.m.-5:00 p.m.  
Understanding the Power of Vacuum and How Industrial Loaders Work
- 6:00 p.m.-6:30 p.m.  
Awards Presentation in Exhibit Hall
- 6:30 p.m.-8:30 p.m.  
Industry Appreciation Reception – Exhibits Open

#### Tuesday, September 20, 2011

- 8:00-10:00 a.m.  
Live Demonstrations
- 10:30 a.m.-5:00 p.m.  
Exhibit Hall Open
- 10:30 a.m.-5:00 p.m.  
Boot Camp Sessions
- 1:00 p.m.-5:00 p.m.  
Paper Presentations
- 5:30 p.m.  
WJTA-IMCA General Membership Meeting

#### Wednesday, September 21, 2011

- 8:00-10:00 a.m.  
Live Demonstrations
- 10:30 a.m.-2:00 p.m.  
Boot Camp Sessions
- 10:30 a.m.-3:00 p.m.  
Exhibit Hall Open
- 1:00 p.m.-3:00 p.m.  
Paper Presentations



**Exhibits and Live Demonstrations**  
**One-day Workshop, Waterjet Technology**  
**Understanding the Power of Vacuum**  
**Vacuum Loaders Work**  
**Boot Camp Sessions**

#### Live Demonstrations by (preliminary list):

- GapVax
- Gardner Denver Water Jetting Systems
- Hammelmann Corporation
- Jetstream of Houston, LLP
- NLB Corp.
- Peinemann Equipment
- Red-D-Arc Inc.
- StoneAge Inc.
- Terydon, Inc.
- TurtleSkin WaterArmor by Warwick

*Hear recommendations to*  
**Driving to Zero... Together**  
by: *Kathy Krupp, Manager*

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during hydroblasting jobs. Agre  
cessfully eliminate incidents. B  
safety and technology applicat

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# WJTA's 2011 Main Event

## Conference and Expo

September 19-21, 2011

Convention Center • Houston, Texas



### Exhibitors

Advanced Pressure Systems  
BIC Alliance  
Blasters, Inc.  
Boatman Industries, Inc.  
CSM Supply  
Carolina Equipment & Supply (CESCO)  
Dragon Products, Ltd.  
Federal Signal  
Fruitland Tool & Manufacturing  
GMA Garnet (USA) Corporation  
GapVax, Inc.  
Gardner Denver Water Jetting Systems, Inc.  
General Pump  
Giant Industries, Inc.  
Hammelmann Corp.  
High Pressure Equipment Co.  
IMS Staff Services  
IVS Hydro, Inc.  
Inland Industrial Services Group, LLC  
Jack Doheny Companies, Inc.  
Kroy Industries, Inc.  
LaPlace Equipment Co., Inc.  
Lemasa Ind.e Co. Ltda.  
Maxpro Technologies, Inc.  
NLB Corp.  
Parker Hannifin-EPD  
Peinemann Equipment B.V.  
Powertrack International Inc.  
Pratt & Whitney Military Aftermarket Services, Inc., USA and VLN Advanced Technologies, Inc., Canada  
PRESVAC Systems  
Ramvac Vacuum Excavators  
Red-D-Arc Inc.  
SPIR STAR  
StoneAge, Inc.  
Stutes Enterprise Systems, Inc.  
Super Products LLC  
Terydon, Inc.  
The Blast Bag Company, Inc.  
TurtleSkin WaterArmor by Warwick  
Under Pressure Systems, Inc.  
Vacuum Truck Rentals LLC  
Wastequip  
Waterblasting Technologies  
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## Technology - Basics and Beyond

## Vacuum and How Industrial

See details throughout this issue of the *Jet News*

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Each customer and contract service provider is essential to driving to zero incidents and injuries. Agreement on implementation of specific aspects of the management system is required to succeed. Best practice recommendations will be outlined for management system elements aligned to the goal. Best practices will include responsibilities of both the customer and the service provider.

Information and to  
[www.wjta.org](http://www.wjta.org)



## Pacific Northwest Water Jet Shop, from page 16

The Jet Edge machines' accuracy also helps Pegasus keep pricing competitive because it is able to cut parts to customers' specifications, Palstring added.

"We can offer this because of our machine accuracy and skilled machine operators," he explained. "All of our waterjet operators control their cutter compensation and manage the tool wear (nozzle life)."

Pegasus's Jet Edge waterjet tables include a 12-ft. x 14-ft. with two heads and a drill, a 12-ft. x 8-ft. with two heads and a drill, a 6-ft. x 10-ft. with four heads and a drill, an 8-ft. x 10-ft. with four heads, and a 6-ft. x 10-ft. with two heads. Some of its machines have seen more than ten years of service, including the 18-year-old 6-ft. x 10-ft. system. The waterjets are powered by a 50hp, 100hp and three 150hp waterjet pumps. All five machines are plumbed to each pump to prevent downtime.

"I'm happy I went with Jet Edge and would purchase another machine if needed," Palstring said. "I like our Jet Edges so much that I even offer tours of our facility to their prospective customers who are not direct competitors. Jet Edge has excellent machine accuracy and reliability as well as pump and seal life, and I love that its systems have main Z and sub Z motors for individually controlling each waterjet nozzle. Jet Edge also has excellent customer service and tech support, plus a knowledgeable local sales rep and engineering staff."

For more information about Pegasus Northwest, visit [www.pegasusnw.com](http://www.pegasusnw.com) or call 253-854-5451. For more information about Jet Edge, visit [www.jetedge.com](http://www.jetedge.com), call 1-800-JET-EDGE (538-3343) or 763-497-8700.

## Living Water Studios Uses Industrial Waterjet Cutting Technology to Express Faith Through Art

In a unique fusion of faith, artistry, and manufacturing technology, Living Water Studios of Kent, Washington, has found an enduring new purpose for its parent company's industrial waterjet cutting machines. These high-tech machines, which normally are abuzz cutting titanium aircraft parts and other components at the Pegasus Northwest waterjet shop, have found a second calling sharing the waterjet company's Christian faith through stunning works of art.

Sequestered in a quiet loft not far from Pegasus Northwest's five pulsing Jet Edge waterjet cutting machines, Living Water Studios is a surprising respite within an otherwise bustling manufacturing facility. The Christian art studio opened in late 2009, the inspiration of Pegasus Northwest President Tim Schober, who wanted to share his faith through artistic signs fashioned from a sister company's unique architectural resin product, Lumicor®. Lumicor is a translucent material made from R4 recycled resins that incorporates natural elements such as leaves, reeds, grass, silks, metal, and glass as an inter layer.

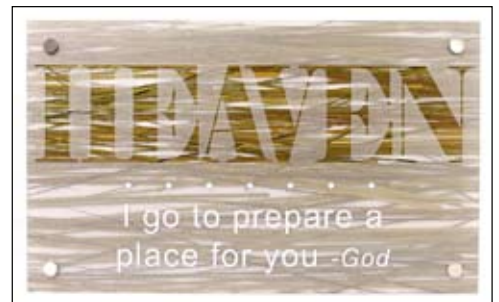
Living Water Studios makes its Lumicor signs by cutting small panels out of Lumicor, which is pre-drilled on the waterjet to prevent delamination, then hand cut with a router. To minimize material waste, the studio uses pieces of Lumicor that have been salvaged from flawed panels, cutting around



**Nothing is wasted at Living Water Studios, even old waterjet slats are repurposed as beautiful works of rusted metal art.** Photograph courtesy of Jet Edge.



**Living Water Studios uses 60,000 psi waterjets to "chisel" Statements in Stone from solid stone.** Photograph courtesy of Living Water Studios.



**Living Water Studios produces stunning signs featuring Christian and humorous expressions. The signs are fashioned from Lumicor®, a resin material that incorporates natural elements such as leaves, reeds, grass, silks, metal and glass as an inter layer.** Photograph courtesy Living Water Studios.

(continued on page 33)

## Abrasive Jet Cutting in a Nuclear Waste Storage Tank at Hanford, Washington,

from page 2



The riser plug for the high level radioactive waste tank is being flown into place to make sure the hole in the tank is not left open.

with radiation and then become the property of the DOE. We also had the added challenge of winter weather, so we installed air dryers and used air line antifreeze to keep the system from freezing up. The UHP lines were kept running, but as the temperatures dropped, we blew them out with air.”

After the concrete plug was lifted from the tank, it was immediately wrapped in a plastic sleeve to prevent spread of contamination and then was placed in an isolated area where it is being staged for disposal at the Hanford Site. A large riser was placed in the hole to support the robotic retrieval system. According to the DOE, the riser has a shield plug bolted to its opening and thick gasket material around its outside to seal the hole. The DOE plans to begin

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retrieving waste from the tank this summer. The tank is one of more than 100 similar underground tanks that the DOE is cleaning out as part of its environmental cleanup effort at the Hanford Site, which was once home to nine nuclear reactors that produced plutonium for the Manhattan Project and the U.S. nuclear arsenal. Hanford

is considered the most contaminated nuclear site in the U.S.

For more information about AK Services, visit [www.akservices.com](http://www.akservices.com) or call 617-884-9252. For more information about Jet Edge, visit [www.jetedge.com](http://www.jetedge.com), call 1-800-JET-EDGE (538-3343) or 763-497-8700.

*Photographs provided courtesy of AK Services.*

# Candidates Sought For 2011 WJTA-IMCA Awards

You are invited to submit candidates for the special awards that are presented biennially 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 and industrial cleaning technology and the industry as a whole. A list of previous WJTA-IMCA award recipients appears at right.

**Candidate nominations must be received no later than August 1, 2011.** The award recipient(s), to be selected by the Awards Committee of the WJTA-IMCA, will be honored at a presentation ceremony on Monday, September 19, 2011, in conjunction with the 2011 WJTA-IMCA Conference and Expo in Houston, Texas.

An official form for candidate nominations appears on page 26. Complete one form for each nomination submitted. Please make additional copies of the form as needed. Completed nomination forms may be faxed to (314)241-1449 or mailed to the WJTA-IMCA, 906 Olive Street, Suite 1200, St. Louis, MO 63101-1448, USA.

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**1981 Pioneer Award**  
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**1987 Pioneer Award**  
*Norman Franz, Ph.D.*

**1989 Pioneer Award**  
*Richard Paseman*

**1991 Pioneer Award**  
*John H. Olsen, Ph.D.*

**1993 Pioneer Award**  
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*Mohan Vijay, Ph.D.*

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**1995 Pioneer Award**  
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**Safety Award**  
*Autoclave Engineers*

**Service Award**  
*Thomas J. Labus*

**Technology Award**  
*Thomas J. Kim, Ph.D.*

**1997 Pioneer Award**  
*David A. Summers, Ph.D.*

**Service Award**  
*Andrew F. Conn, Ph.D.*

**Technology Award**  
*Prof. Dr-Ing. Hartmut Louis*

**1999 Pioneer Award**  
*Mohamed Hashish, Ph.D.*

**Safety Award**  
*Bruce Wood*

**Service Award**  
*John Wolgamott*

**Technology Award**  
*Ryoji Kobayashi, Ph.D.*

**2001 Pioneer Award**  
*George A. Savanick, Ph.D.*

**Technology Award**  
*Richard Ward*

**2003 Pioneer Award**  
*Pat DeBusk*

**Service Award**  
*Mohamed Hashish, Ph.D.*

**Technology Award**  
*Ernest S. Geskin, Ph.D.*

**2005 Pioneer Award**  
*Hartmut Louis, Dr.-Ing.*

**Safety Award**  
*TurtleSkin WaterArmor*

**Service Award**  
*NLB Corporation*

**Technology Award**  
*Jay Zeng, Ph.D.*

**2007 Pioneer Award**  
*Forrest Shook*

**Safety Award**  
*Vacuum Equipment Safety Committee*

**Service Award**  
*Tony Fuller*  
*Jim Petillo*

**Technology Award**  
*Mamidala Ramulu, Ph.D.*

**2009 Pioneer Award**  
*John Wolgamott*

**Safety Award**  
*Gary W. Toothe*  
*Philip Stein*

**Service Award**  
*Bill McClistor*





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# 2011 WJTA-IMCA Awards Nomination Form

**Instructions:** Complete sections below and submit a narrative (300-word maximum) 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 2011 WJTA-IMCA Award (please print or type full individual, company, or organization name):

\_\_\_\_\_ company, organization, or person

## Distinguished Pioneer Award

The nominee must:

- Have made contributions to the waterjet 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 industry 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 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 industry.

## 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 which increases the overall safety of waterjet equipment.

**CANDIDATE** \_\_\_\_\_ Company \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_

State \_\_\_\_\_ Country \_\_\_\_\_ Postal Code \_\_\_\_\_

Phone In US/Canada (\_\_\_\_\_) \_\_\_\_\_ Fax (\_\_\_\_\_) \_\_\_\_\_  
area code area code

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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 [\_\_\_\_\_] (\_\_\_\_\_) \_\_\_\_\_  
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**Nominations must be received no later than August 1, 2011.**

**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 63101-1434, USA.**



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WJTA-IMCA Expo Booth #1008

## Paper Presentations

- Abrasive Grain Breakage Process During the High Pressure Waterjet Formation, by *A. Percec*.
- Abrasive Slurry – Injection Jet (AS-IJ) a New CNC Cutting Technology, by *D. Liwszyc, A. Liwszyc and J. Liwszyc*.
- Current Practices in Design Standards and Criteria for High Pressure Waterblasting Tools and System Components, by *D. Wright*.
- Determination of Spatial Velocity Distributions of Abrasive Particles in Abrasive Water Jets Using Laser-Induced Fluorescence Under Real Conditions, by *K.C. Heiniger, R. Balz, H. Looser and J. Podzorski*.
- Effect of the Uniaxial Compressive Strength of the Rock on the Cutting Performance of AWJ, by *I. Karakurt, G. Aydin, and K. Aydiner*.
- Efficient Operation of Abrasive Waterjet Cutting in Industrial Applications, by *A. Henning and P. Miles*.
- Energy Loss From an Abrasive Waterjet for Rock Cutting, by *T. Oh and G. Cho*.
- How Automated Water Jetting Improves Tube Bundle Cleaning Efficiency, by *J. Van Dam and T. Shawver*.
- Influence of De-Painting Method on Substrate Surface Profile, by *H. Teimourian, H.V. Tamaddoni, B. Mutabi and A. Soleimanzadeh*.
- Measuring the Water Temperature Changes Throughout the Abrasive Water Jet Cutting System, by *M. Jerman, H. Orbanic, A. Lebar, I. Exteberria, A Suárez and M. Junkar*.
- Methods for AWJ Cutting Process Control, by *A. Lebar, M. Cvjeticanin, M. Junkar and H. Orbanic*.
- Micro-AWJ Technology for Micro-Meso Machining, by *H.-T. Liu, D. McNiel, and E. Schubert*.
- Performance Optimization of Abrasive Waterjet Technology in Granite Cutting, by *G. Aydin, I. Karakurt, and K. Aydiner*.
- Precision Robotic Waterjet and Abrasivejet Industrial Applications, by *D. Snider*.
- Selecting the Most Effective Waterblast Pressure and Flow for a Given Standoff Distance, by *D. Wright*.
- Stream-Forming Nozzles Out of Diamond Polycrystals for Gas-Abrasive and Liquid-Abrasive Cutting and Processing, by *N.I. Polushin, E.N. Sorokin, A.I. Laptev and V.N. Gulbin*.
- Stripping Coatings with High-Frequency Forced Pulsed and Ultra-high Pressure Waterjets: A Comparative Study, by *M. Vijay, M. van Wonderen, W. Yan, A. Tieu and B. Daniels*.
- Study on Abrasive Disintegration in an AWJ Cutting Head, by *P. Nambiath, G. Galecki, D. Tischler and S. Reynolds*.
- Submerged Abrasive Suspension Jets Issuing from Sheathed Nozzle with Ventilation, by *H. Ito, G. Peng and S. Shimizu*.
- Technique of Oil Jet Tank Cleaning Equipment, by *S. Xue, Z. Chen, Y. Wang, S. Ba, and H. Zhu*.
- The Effect of Diameter Ratio and Abrasive Grain Size on Exit Velocity by Numerical Simulation of Flow Through Abrasive Water Suspension Jet Nozzle Using Statistical Experimental Design, by *Deepak D, A. Devineni and N.Y Sharma*.
- The Super-High Pressure Plunger Pump, by *Yu.V. Kovalev, D.A. Smirnov, V.N. Gulbin, V.Yu. Chernobaev and A. V. Divaev*.
- The Technology and the Machine for Quarrying Fashioned Sidewalk Parts from Rock Massive by Ultra High Pressure - Waterjet, by *J. Asatryan and Kh. Suvaryan*.
- Theoretical and Experimental Basis of Water Pipeline Renovation with High-Pressure Water Jet Technique, by *P. Borkowski*.
- Two Special Mechanisms for Controlling the Waterjet Gun and Eliminating the Reaction Force of the Jet, by *H. Teimourian, H.V. Tamaddoni, B. Mutabi and A. Soleimanzadeh*.
- Waterjet Removal of Casting Residues from Large-Diameter Telescope Mirrors, by *H.B. Miller and S. Pandey*.
- What's Happening in Surface Preparation Standards for Paint, by *L. Frenzel*.

## StoneAge® Introduces the Banshee® BN13-40k™ Rotating Tube Cleaner

StoneAge has announced the availability of the Banshee BN13-40k, designed to clean tubes 5/8-inch to one-inch diameter at pressures up to 40k psi. The tube cleaning tool features StoneAge's high quality OS2™ sapphire nozzles. The BN13-40k offers two replaceable head models providing powerful unplugging and efficient polishing of tubes.

For more information, visit  
[www.stoneagetools.com](http://www.stoneagetools.com) or call  
(866)795-1586.



### IMPORTANT NOTICE REGARDING SPAM

Email addresses and other member contact information published in the WJTA-IMCA Membership Directory are meant to encourage helpful, informative communication between members. The information is not provided to circulate spam or junk mail.

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.

**Joe Gussman**  
**Appointed Branch**  
**Manager of Stutes'**  
**Beaumont, Texas,**  
**Location**

**S**tutes Enterprise Systems Inc., a leading waterjetting equipment rental and supply company, has appointed Joe Gussman branch manager of the Beaumont, Texas, location. Gussman will be responsible for the technical sales and marketing efforts at the Beaumont location.



**Joe Gussman**

Mr. Gussman has 15 years of experience in all facets of business, including P&L management, branch operations, and sales and job planning and execution, related to the industrial services in the refining and petrochemical market segments. He was most recently employed as hydro blasting manager at one of the Beaumont refineries. Mr. Gussman has also held operations manager and branch manager positions in the industrial cleaning field. His background is a unique balance of business development and operational business management. Mr. Gussman has demonstrated leadership, knowledge in the waterjetting community, and team work. His responsibilities will be the continued growth development of rental equipment and parts sales at the Beaumont location for Stutes.

Mr. Gussman can be reached at (409)724-7311, cell: (713)591-1727, email: [joe@aquablasters.com](mailto:joe@aquablasters.com).



# TurtleSkin® MFA WaterArmor

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**[www.turtleskin.com](http://www.turtleskin.com)**



WJTA-IMCA Expo Booth #229

## Guzzler Introduces Redesigned Guzzler NX Industrial Vacuum Loader, from page 18

than conventional trucks before stopping to dump material.”

The fully opening door and 50-degree dump angle ensures quick unloading of the 18 cubic yard debris tank.

“Guzzler offers the widest selection of offloading options of any manufacturer,” Fuller highlighted. “Our high dump body, vertical auger and dense phase offloading options provide complete solutions for our customers to reclaim, recycle and redistribute valuable material, which can easily be offloaded into storage silos, rail cars or other appropriate containers.”

The high dump body option features a heavy-duty, telescopic, hydraulic cylinder that lifts the debris body upwards and slightly backwards for extra clearance, allowing for the dumping of material directly into roll-off boxes up to 54 inches high. The vertical auger option, which features an isolation valve between the tank and auger for longer life and minimal cleanup, is the ultimate in controlled offloading for any free-flowing wet or dry material. Ideal for cement or bulk powder applications, the dense phase offloading option combines applied pressure with high airflow for true dense phase conveyance up to 120 ft (36.6 m) vertically.

The standard 18 cubic yard debris tank uses six adjustable, maintenance-free, over-center locks to close the rear door and ensure reliable, leak-free performance. During offloading, only the tank raises with a full opening rear door for increased efficiency and stability. All material is unloaded from the tanks, eliminating the need to clean out dump tubes.

With reduced gasket surface areas and chambers that don't share common walls, there are fewer leak points on the Guzzler NX, resulting in less maintenance. Featuring easy-accessible control valves and filter components, clearly identified and individually grounded circuits and solenoids located at ground level, the Guzzler NX can be safely and easily maintained. Additional safety features on the Guzzler NX include check valves on every cylinder and a ladder and catwalk for easy maintenance.

For more information on the redesigned Guzzler NX industrial vacuum loader from Guzzler Manufacturing, visit [www.guzzler.com](http://www.guzzler.com) or call (800) 627-3171.

## Barton Introduces Free Shipping for Web Orders of Waterjet Parts

**B**arton Mines Company, a leading supplier of abrasives and consumables for waterjet cutting systems, has launched a Free Shipping Everyday program for select web orders of waterjet parts.

Effective April 15, 2011, web orders of waterjet parts in excess of \$300 are eligible for free UPS Ground shipping. Visit the e-catalog at the waterjet parts link of Barton's website [www.barton.com](http://www.barton.com) for program details.

Barton stocks hundreds of consumables for most waterjet systems. Genuine Flow<sup>®</sup> and OMAX<sup>®</sup> parts are available, along with Barton exclusives such as HydroBloc bricks and the TRIDENT-2 Diamond Cutting Head. Competitively priced parts are also available for Jet Edge<sup>®</sup> and KMT<sup>®</sup> equipment.

A customer account is required to place online orders. Contact the Barton Sales Department at (800) 741-7756 or email [info@barton.com](mailto:info@barton.com) to set up a secure account. For more information visit [www.barton.com](http://www.barton.com).

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## NLB 605 Water Jet Unit Combines UHP with High-Horsepower

The NLB 605 series of waterjet pump units now gives users a powerful combination of ultra-high pressure and high horsepower in a rugged unit they can convert to a variety of operating pressures.

The range of the NLB 605 Series has been expanded to include eight operating pressures from 4,000 psi to 40,000 psi (275 bar to 2,800 bar), with engines of up to 600 hp (447 kW). Diesel and electric models are available. They offer flows as low as 20 gpm (83 lpm).



These reliable, highly-productive units can be converted from one pressure to another in about 20 minutes and are easy to maintain. NLB now offers 27 convertible waterjet pump units, more than any manufacturer.

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

## Hughes Adds Pressure to Cameroon Shipyard



Cameroon Shipyard and Industrial Engineering Ltd (CNIC) has recently taken delivery of a Hughes Pumps diesel engine driven Ultrabar 24 Ultra High Pressure (UHP) pumping unit for use on a wide range of maintenance and repair operations including surface preparation, tank and vessel cleaning, descaling, coating removal, and cold cutting.

The giant CNIC industrial engineering complex serves the maintenance and repair needs of shipping companies and marine industries operating on the western seaboard of Africa from Cape Verde down to Angola, and the rapidly expanding offshore petroleum activity in the Gulf of Guinea.

Airblast BV, suppliers of the Ultrabar 24, said, "This powerful unit was chosen because it is proven in the most demanding applications. Its enhanced flow rate means it is capable of high performance surface preparation, cleaning and cutting on single and twin gun applications. It's simple to operate and maintain, making it one of the most user-friendly UHP units on the market."

The Hughes Pumps Ultrabar 24 is one of a range of high pressure positive displacement plunger pumps and waterjetting equipment, designed for heavy duty cleaning and cutting at pressures to 2,750 bar (40,000 psi) and power ratings to 375 kW (500 hp). Options available include diesel engine or electric motor drive, trailer- or skid-mounted, with variants to suit any specific requirements plus a full range of accessories.

For more information, visit [www.hughes-pumps.co.uk](http://www.hughes-pumps.co.uk) or call [44] 1903 892358.

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## Hilton Americas - Houston

The **Hilton Americas - Houston**, 1600 Lamar, Houston, TX 77010, is directly connected to the George R. Brown Convention Center via two indoor sky-bridges. The room rates are \$142 single/\$152 double occupancy. For reservations, call toll-free (800)236-2905, contact the Hilton directly at (713)739-8000, or register online.

**Monday, August 29, 2011**, is the deadline for guaranteed room availability. Reservations received after August 29 will be confirmed on a space available basis. Rooms may still be available after August 29, but not necessarily at the rates listed above.

### Alternate Hotels

The **Hyatt Regency Houston**, 1200 Louisiana Street, Houston, TX 77002, is a 15-minute walk from the George R. Brown Convention Center. The room rates are \$142 single, \$152 double occupancy. Reserve your room online or call 888-421-1442. When calling, mention that you are attending the WJTA-IMCA Conference and mention the grouping code G-WATE to receive the group rates.



**August 19, 2011**, is the deadline for guaranteed room availability. Reservations received after August 19, will be confirmed on a space available basis. Rooms may still be available after August 19, but not necessarily at the rates listed above.

The **Embassy Suites Houston – Downtown**, 1515 Dallas Street, Houston, TX 77010, is a five-minute walk from the George R. Brown Convention Center. The room rates are \$159, single or double occupancy. Reserve your room online or call (888)482-0230. When calling, mention that you are attending the WJTA-IMCA Conference and the group code WJT to receive the group rates.

**August 22, 2011**, is the deadline for guaranteed room availability. Reservations received after August 22, will be confirmed on a space available basis. Rooms may still be available after August 22, but not necessarily at the rates listed above.

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## Comments Solicited on Improvements to Recommended Practices

Comments are solicited regarding improvements to the WJTA-IMCA publications, *Recommended Practices for the Use of Manually Operated 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](mailto:wjta-imca@wjta.org). Please specify which publication you are commenting on.



## Living Water Studios Uses Industrial Waterjet Cutting Technology to Express Faith Through Art, from page 22

the flaws. It uses a vinyl plotter to apply Christian sayings or humorous expressions to the surface in vinyl lettering, creating works of art that appeal to the eye as well as to the soul or funny bone.

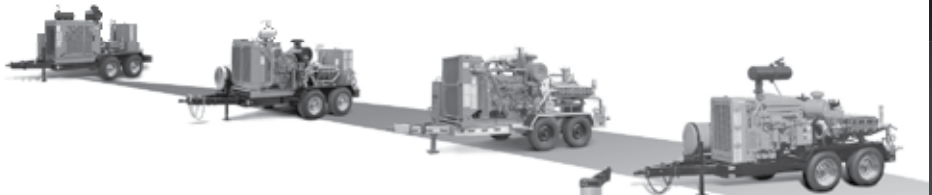
Since launching its initial Lumicor products, Living Water's creative team has expanded its product line under the artistic direction of designer Konstantin Voyevodin. The studio now offers "Statements in Stone" rock art that has been "chiseled" in stone by a 60,000 psi computer-controlled waterjet cutter as well as metal artwork that breathes new life to remnant material from the waterjet shop that otherwise might have been scrapped.

Nothing is wasted in the waterjet shop, not even the worn-out work surface slats from the waterjets themselves, says Ron Palstring, general manager of Pegasus Northwest and Living Water Studios. Living Water Studios has cleverly repurposed its waterjet slats as rusted metal artwork, saving them from the scrap bin.

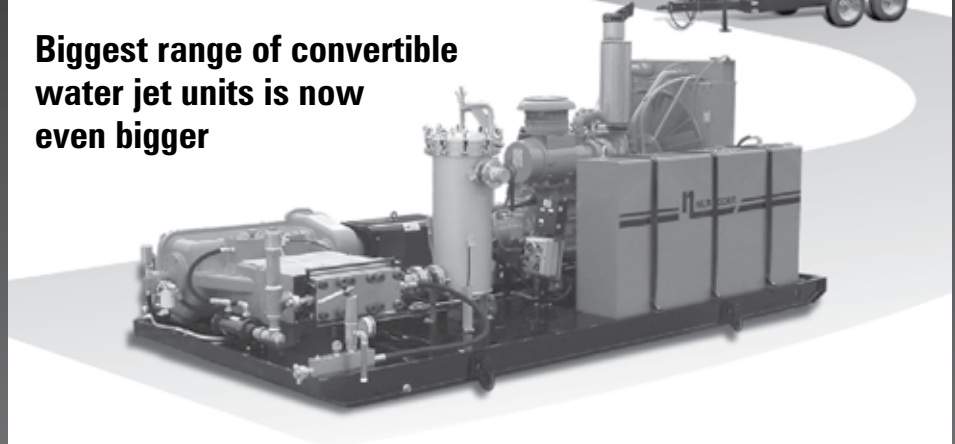
"We have been doing a lot of experimenting here," Palstring noted. "It's amazing what you can come up with when you have five brains working on it. We have a lot of customers who like the look of rusted metal, so the slats were a perfect choice. We took a look at a few designs, made some samples, and everyone loved them!"

Palstring credits waterjet technology for allowing Living Water Studios unlimited artistic possibilities.

# NLB 605 combines 600 hp with 40,000 psi



**Biggest range of convertible  
water jet units is now  
even bigger**



The NLB 605 convertible water jet unit, a contractor favorite for high flow and horsepower, now gives you even more: the ability to run at ultra-high pressure. It converts in a few simple steps to any of eight pressures, from 4,000 to 40,000 psi.

Like the other 26 NLB convertible models (the most in the industry), the NLB 605 offers high productivity and uptime with easy maintenance. NLB has developed more innovative water jet pumps and accessories than anyone over the past 40 years. For details, or the regional branch nearest you, visit [www.nlbcorp.com](http://www.nlbcorp.com).



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WJTA-IMCA Expo Booth #607

"The waterjet is limitless," he said. "We can design Statements in Stone rock art that weighs 50 pounds and is one foot long or we can get creative and use 500 pounds rocks that are five feet long. It is because of the waterjet that we are able to create unique products that you cannot find anywhere else."

Living Water Studios artwork is available at [www.livingwaterstudios.com](http://www.livingwaterstudios.com). The company also sells its products at Christian gift shows around the country and plans to sell through retail stores and churches as it continues to grow. Its recycled waterjet slat artwork will be available soon on [www.amazon.com](http://www.amazon.com).

## Hydrodemolition on Earthquake-Damaged Concrete Bridges in Chile, from page 4

damaged beams lifted clear and replaced in two night time operations by main contractor ICAFAL.

Hydrodemolition is a relatively new concept in South America, but widely used throughout Europe, with ISOTEC leading the way in Chile.

The company had initially specialized in high pressure water cleaning. "Taking advantage of this experience it was logical to expand our business in to hydrodemolition, taking delivery of the new Aqua Cutter HVD-6000 from Swedish manufacturer, Aquajet Systems."

### Hydrodemolition techniques

Concrete rehabilitation using hydrodemolition or waterjetting techniques is becoming an increasingly important aspect of civil engineering and building renovation projects. Applications can involve cleaning, roughening, removal of deteriorated concrete, and even cutting.



**The Aqua Cutter proved ideal to remove the concrete above the damaged beams.**

Waterjetting is actively used for the removal of chloride damaged concrete layers down to the reinforcement bars or to a depth where the chloride content is at or below the permissible level.

It causes no damage or vibration to the existing rebar and prevents damage or loosening of adjacent concrete and parts.

Using a high-pressure jet of water, supplied at a pressure of 1200 bar and a flow rate of 200 litres/min by the company's WOMA pump coupled to the HVD 6000, the Aqua Cutter

robot was able to blast the concrete without causing any damage to the reinforcement bars or adjoining concrete.

The Aqua Cutter robot from Aquajet is considered to be one of the most advanced offering a wide variety of features, ensuring top quality results are achieved safely at a high production rate with low operating and on-going costs. The robot is small and compact but at the same time big enough to handle the toughest applications.

For more information, visit [www.aquajet.se](http://www.aquajet.se) or call [46](383)50801.

---

## High Flow Abrasivejet Cutting Head Ideal for Portable Water Jet Cutting

**D**esigned with the waterjet contractor in mind, Jet Edge's High Flow Abrasivejet delivers up to 3.5 pounds per minute (1.96 kg/min) of abrasive and up to 8.6 gallons per minute (31.15 L/min) of ultra-high pressure water for abrasive waterjet cutting applications.

The High Flow Abrasivejet is ideal for cutting thick materials such as reinforced concrete or for making separation cuts in steel plates or pipes. It is capable of operating up to 55,000 psi (3800 bar) and is especially suited for use with lower-pressure, high-flow waterjet pumps. It can be used with any manufacturer's waterjet system.

For more information, visit [www.jetedge.com](http://www.jetedge.com) or call 1-800-JET-EDGE (538-3343) or 1-763-497-8700.



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## WJTA-IMCA Corporate Member Happenings

WJTA-IMCA Corporate Members can list their grand opening, open house, sale or other special event on the WJTA-IMCA Corporate Member Happenings page of the WJTA-IMCA website. This page is designed specifically for listings of corporate member events.

In order to list your event, please submit your company name, event, date, time and the location via email to [wjta-imca@wjta.org](mailto:wjta-imca@wjta.org), attention: LeAnn. A link from the listing to your website will be included. This service is limited to WJTA-IMCA corporate members.

### Not a WJTA-IMCA Corporate member?

Contact the WJTA-IMCA office today to upgrade your individual membership to a corporate membership and take advantage of the many benefits available to WJTA-IMCA corporate members. If you have already renewed your individual membership, you can still upgrade for 2011 by remitting the balance.

WJTA-IMCA, 906 Olive Street, Suite 1200, Saint Louis, MO 63101-1448, telephone: 314-241-1445, fax: 314-241-1449, email: [wjta-imca@wjta.org](mailto:wjta-imca@wjta.org), website: [www.wjta.org](http://www.wjta.org).

## NLB Catalog

NLB Corp. has released the 2011 edition of its popular waterjet accessory catalog, the biggest edition ever. The 106-page catalog can be requested at no charge from NLB, or downloaded from the company's website, [www.nlbcorp.com](http://www.nlbcorp.com).



The 2011 catalog introduces a variety of accessories developed in the past two years, such as new Typhoon™ self-rotating nozzles for tube cleaning, rotating line moles for pipe cleaning, and new automated systems for heat exchanger tube lancing. New 3-D tank cleaning heads and ultra-high pressure rotating heads have been added to the hundreds of accessories in the NLB line.

Surface preparation professionals will be interested in the latest NLB Crawler, VertaJet™ and vacuum recovery systems with new features. The catalog also has NLB's high-pressure and ultra-high pressure pump units — including 35 new convertible units — and a comprehensive reference section with hook-up drawings, nozzle flow charts, thrust and pressure drop tables, and English/metric conversions.

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

## TECHNI Waterjet™ Appoints International Service Manager

TECHNI Waterjet™, Lenexa, KS, has promoted Dennis Schmidt to the position of international service manager, TECHNI USA. Schmidt graduated from Swinburne University in Melbourne, Australia, with an advanced degree in mechatronics and robotics. Schmidt's rapid rise to management is a direct result of his hard work, dedication to the company and "can-do" attitude.

Schmidt comes from a background in engineering as he worked in Germany for Deutsche Bahn AG as a qualified fitter and turner and also as a locomotive engineer. He has over five years of experience in the waterjet cutting industry including past roles



**Dennis Schmidt**

in machine assembly and as a service technician. His responsibilities include direct supervision of all service technicians worldwide as well as customer support and service.

For more information, visit [www.techniwaterjet.com](http://www.techniwaterjet.com) or call 1-888-TECHNI-3.

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### Understanding the Power of Vacuum and How Industrial Vacuum Loaders Work by "The Professor," Phil Stein.

A special two-hour session will be offered two times: Monday, September 19, 3-5 p.m.; Tuesday, September 20, 10:30 a.m.-12:30 p.m.

## Jet Edge Appoints Area Manager for Shanghai, China Sales Office

Jet Edge, Inc. has appointed Haihong (Samuel) Song area manager for the waterjet manufacturer's new sales office in Shanghai, China.

Mr. Song is responsible for developing Jet Edge's business presence in China's rapidly growing manufacturing market. He will directly oversee Jet Edge's Shanghai office, coordinating all sales activities, managing sales personnel and distributors, and developing a key customer base.



**Haihong Samuel Song**

Jet Edge customers will benefit from Mr. Song's extensive engineering and waterjet industry background as well as from his expertise in 3-D waterjet application.

Mr. Song is a graduate of the Shanghai Institute of Electric Power, where he majored in electrical automation. He speaks fluent English and German as second languages.

Contact Mr. Song by email: [SongH@jetedge.com](mailto:SongH@jetedge.com), telephone: +86-21-5868 2809/3678 or Haihong.song - Skype.

For more information about Jet Edge, visit [www.jetedge.com](http://www.jetedge.com).

# WJTA-IMCA Welcomes New Members

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### Canadian Dewatering LP

*Verne McDougall*  
*Mitch Duckett*  
 19577-94 Avenue  
 Surrey, BC V4N 4E6 Canada  
 Phone: (604)888-0042  
 Fax: (604)888-0054

### CSM Supply

*Luis Garcia*  
*Kenneth Roush*  
*Jesse Cortez*  
 301 East Main  
 La Porte, TX 77571  
 Phone: (281)471-3368  
 Fax: (281)307-2298

### Pacific Jetting

*Rick Mohr*  
*Dave Kelly*  
 3501 Airport Road, Hangar 9  
 Placerville, CA 95667-6097  
 Phone: (530)626-6658  
 Fax: (530)626-3272

### Roztek Ltd.

*Harvey Cress*  
 324 Feldman Road  
 Timmins, ON P4N 7H6 Canada  
 Phone: (705)268-0768  
 Fax: (705)268-3011

### TMC Services, Inc.

*Linda Rudder*  
*Dave Cronk*  
*Barry Pryor*  
 One William Way  
 Bellingham, MA 2019  
 Phone: (800)223-8865

### Ultra High Specialties, LLC

*George Hardwick*  
 2419 Haven Crest Drive  
 Chattanooga, TN 37421  
 Phone: (423)595-2136  
 Fax: (423)855-4382

## Corporate Individual

### Jimmy A. Broyles

Vactor Manufacturing  
 1621 S. Illinois Street  
 Streator, IL 61364  
 Phone: (815)673-6081  
 Email: jbroyles@vactor.com

### Ellen Morgan

PSC  
 395 West Channel Road  
 Benicia, CA 94510  
 Phone: (707)746-8287  
 Email: emorgan@pscnow.com

## Individuals

### Frank Clanton

13306 Windy Oaks  
 Beach City, TX 77523  
 Phone: (281)383-3572  
 Email: ripc323209@aol.com

### Robert J. Culver

Upper Occoquan Service  
 Authority  
 14631 Compton Road  
 Centreville, VA 20121-2506  
 Phone: (703)830-2200  
 Fax: (703)830-0163  
 Email: bobby.culver@uosa.org

### Kathleen Duddek

Sandvik Materials Technology  
 P.O. Box 1220  
 Scranton, PA 18501  
 Phone: (570)585-7638  
 Email: kathy.duddek@sandvik.com

### Jonathan D. Dunn

Dunn Service Group, Inc.  
 P.O. Box 2610  
 Thomasville, NC 27361  
 Phone: (336)476-9274  
 Fax: (336)472-9328  
 Email: DunnSvcGrp@aol.com

### Minoo F. Engineer

Khoday Hydraulics  
 621 Khareghat Road  
 Dadar (E)  
 Mumbai, Maharashtra 400014  
 India  
 Phone: [91](22)24140707  
 Fax: [91](22)24145266  
 Email: khoday@vsnl.net

### Justin Fried

Milestone Wholesale  
 Materials, LLC  
 355 East 72nd Street, Suite 16A  
 New York, NY 10021  
 Phone: (203)258-2604  
 Email: j.fried@milestonematerials.net

### Jason Magwire

Pollard Pumping, Inc.  
 1805 S. 11th Street  
 Norfolk, NE 68071  
 Phone: (402)371-8492  
 Fax: (402)371-3732

### Jerome Marshall

Advanced Vacuum Services  
 5062 W. Base Road  
 Greensburg, IN 47240-9060  
 Phone: (812)662-7275  
 Fax: (812)663-6152  
 Email: jmarshall@advancedvacuum.com

### Jeff Mcgee

24 Sunset Drive  
 Martins Ferry, OH 43935  
 Phone: (740)633-3240  
 Email: mcgeeiff@comcast.net

### Mike Presseau

Domtar  
 1 Station Road  
 Espanola, ON P5E 1R6  
 Canada  
 Phone: (705)869-2035  
 Fax: (705)869-5494  
 Email: mike.presseau@domtar.com

### Flavio A. Sturlini

Singular Equipamentos, Ltda.  
 Av. Joao Paulo Ablas, 1152  
 Cotia, Sao Paulo 06711-250  
 Brazil  
 Phone: [55](11)4613-6922  
 Fax: [55](11)4613-6929  
 Email: flavio.singular@terra.com.br

### Tabb Thoms

ASR Services  
 P.O. Box 243002  
 Anchorage, AK 99524  
 Phone: (907)349-5000  
 Fax: (907)349-5008  
 Email: asr@ak.net

### Evan Thornton

Industrial Minerals (NZ) Ltd.  
 PO Box 302660  
 North Harbor, Auckland 0751  
 New Zealand  
 Phone: [64](9)476-2376  
 Fax: [64](9)476-2378  
 Email: sales@industrial-minerals.co.nz

## Student

### Michael S. Palubiak

Perfect Power Wash, LLC  
 3443 Summit Road  
 Norton, OH 44203  
 Phone: (330)523-9123  
 Email: michael@perfectpowerwash.net

### Darrell M. Williams II

Missouri University of Science  
 and Technology  
 1006 Kings Highway  
 Rolla, Missouri 65409  
 Phone: (657)201-9057  
 Email: darrell.williams@mst.edu

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## Jet Edge Exhibiting 90,000 PSI Waterjet Technology at EASTEC 2011

Jet Edge, Inc., will demonstrate its 90,000 psi waterjet cutting technology at the EASTEC 2011 Advanced Productivity Exposition, May 17-19 at the Eastern States Exposition Grounds in West Springfield, Massachusetts.

During EASTEC, Jet Edge will showcase several innovative precision waterjet cutting products, including its 90,000 psi (6,200 bar) X-Stream waterjet intensifier pumps and Mid Rail Gantry precision waterjet cutting machine. Jet Edge technical experts will be available to answer questions about waterjet cutting applications. Look for Jet Edge in booth 1128.

For more information, visit [www.jetedge.com](http://www.jetedge.com).

## Flow International Demonstrating Latest 3D Waterjet Cutting Technology at Houstex 2011

Flow International Corporation conducted live demonstrations of the latest advances in waterjet technology at Houstex 2011. The tradeshow was held at the George R. Brown Convention Center in Houston, Texas, April 18-20, 2011. Waterjets are the machine tool of choice for a wide variety of industries because of their accuracy and the nearly unlimited range of materials they can cut.

The Flow booth featured the Mach 4 cutting system that combines Flow's HyperJet® pump, rated at

94,000 psi, and Dynamic Waterjet® XD, high-precision flat stock and 3D cutting technology. This combination improves part cycle time and accuracy two to four times over standard non Dynamic systems.

Application specialists were on hand to answer questions and demonstrate how Flow's waterjet technology can help fabricators expand their capabilities.

For more information, visit [www.FlowWaterjet.com](http://www.FlowWaterjet.com).

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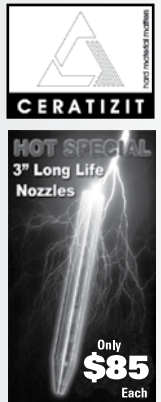


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| <input type="checkbox"/>   | <b>OPTIONAL TRIP to NASA's Johnson Center, Sunday, Sept. 18</b> .....                                   | \$ 30  | \$ 30  | \$ 30  | \$ 30  | = \$ _____ |
| <input type="checkbox"/>   | <b>Full Conference</b> .....  | \$ 399 | \$ 459 | \$ 459 | \$ 519 | = \$ _____ |
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| <input type="checkbox"/>   | <b>Combo</b> .....  | \$ 539 | \$ 599 | \$ 599 | \$ 659 | = \$ _____ |
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| <input type="checkbox"/>   | <b>Daily</b>  |        |        |        |        |            |
| <input type="checkbox"/>   | Monday, September 19 .....  | \$ 239 | \$ 299 | \$ 299 | \$ 359 | = \$ _____ |
| <small>Registration includes admittance to the Pre-Conference Seminar, luncheon and Industry Appreciation Reception.</small>   |   |        |        |        |        |            |
| <input type="checkbox"/>   | Tuesday, September 20 .....   | \$ 219 | \$ 279 | \$ 279 | \$ 339 | = \$ _____ |
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| <input type="checkbox"/>   | Wednesday, September 21 .....   | \$ 219 | \$ 279 | \$ 279 | \$ 339 | = \$ _____ |
| <small>Registration includes admittance to the exhibit hall, boot camp sessions, paper presentations and live demonstrations on Wednesday (9/21); and the Industry Appreciation Reception on Monday (9/19).</small>  |   |        |        |        |        |            |
| <input type="checkbox"/>   | <b>Exhibit Hall/Live Demo Pass</b>  |        |        |        |        |            |
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| <input type="checkbox"/>   | Tuesday, September 20, and Wednesday, September 21 .....  | \$ 45  | \$ 45  | \$ 45  | \$ 45  | = \$ _____ |
| <input type="checkbox"/>   | Tuesday, September 20 .....   | \$ 30  | \$ 30  | \$ 30  | \$ 30  | = \$ _____ |
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