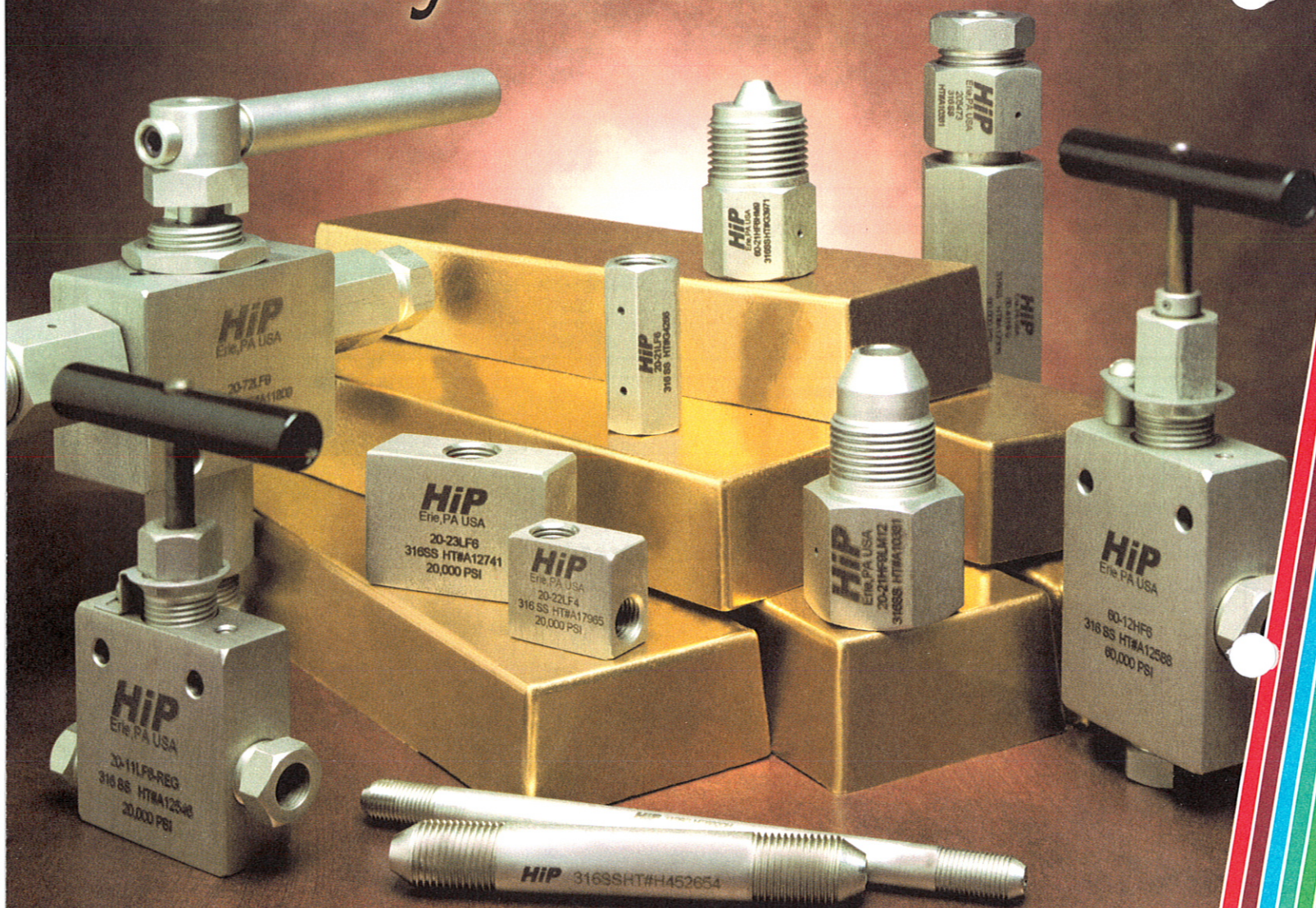


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Jet News

2003
MAY 2002

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Singapore's Merlion Statue



Singapore's national symbol, the Merlion, spouts a waterjet from its mouth. The Merlion is comprised of a lion's head and a fishtail. The Merlion statue is 8.6 meters high, weighs 70 tons and occupies a prominent place near the mouth of the Singapore River in Singapore. A small Merlion (the Merlion Cub), which sits directly behind the big Merlion, is two meters high and weighs 2.3 tons. Photograph copyright 2003

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2003 American Waterjet Conference

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Hydrodemolition In Italian Tunnels

Italian civil engineering contractor CO.I.P.I. S.p.A. has successfully used its two Swedish Conjet Robot 362 hydrodemolition robots and its own purpose built "Cammello" hydrodemolition machine, with a Conjet computer control system, to assist with high speed concrete repairs to a section of one of the two road tunnels on the main A22 Verona Brennero autostrada at Bolzano, in the north east of Italy, about 80 km from the Austrian border. Damaged parts of concrete tunnel lining in a section of the southern 6 m radius horseshoe shaped tunnel were removed in just 18 days. Damage to the concrete was due to a combination of carbonization, chloride attack and freezing and thawing cycles.

CO.I.P.I. S.p.A., based in Colle Umberto north of Venice and working for client Brennero Motorway, used the two high pressure waterjetting Conjet Robot 362s and the "Cammello" to remove the weakened concrete and clean the reinforcement in the tunnel lining. A 400 kW Conjet PP345 and two 350 kW Conjet PP340 pump units provided high pressure water for the hydrodemolition machines.


The Conjet Robot 362s, with multi-purpose extension arms, and "Cammello" selectively removed the



CO.I.P.I.'s Conjet Robot 362s assisted in high speed tunnel repairs at Bolzano in Northern Italy


damaged concrete to a depth of 10 mm to 40 mm both above and below the reinforcement, which was also

(continued on page 4)



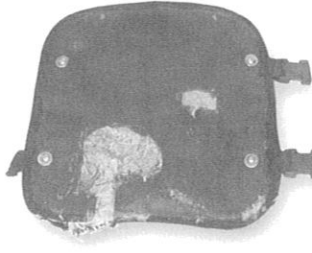
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By Fax: Fill out the registration form with your credit card information and call our 24-hour fax number at: (314)241-1449.

By Mail: Fill out the registration form and mail with applicable payment to: WJTA, 917 Locust Street, Suite 1100, St. Louis, MO 63101-1419.

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Seven Ways To Register

<input type="checkbox"/> Full Conference ONLY	\$ 495	\$ 555	\$ 555	\$ 615	= \$
<input type="checkbox"/> Combo (Full Conference PLUS Preconference Seminar)	\$ 665	\$ 725	\$ 725	\$ 785	= \$
Specify preconference workshop: <input type="checkbox"/> Waterjet Short Course <input type="checkbox"/> Advanced Topics on Surface Prep					
<input type="checkbox"/> Daily					
<input type="checkbox"/> Sunday (includes lunch)	\$ 280	\$ 340	\$ 340	\$ 400	= \$
Specify: <input type="checkbox"/> Waterjet Short Course <input type="checkbox"/> Advanced Topics on Surface Prep					
<input type="checkbox"/> Monday (includes Luncheon in Exhibit Hall)	\$ 265	\$ 295	\$ 295	\$ 325	= \$
<input type="checkbox"/> Tuesday (includes Luncheon in Exhibit Hall)	\$ 265	\$ 295	\$ 295	\$ 325	= \$
<input type="checkbox"/> Exhibit Hall/Live Demo Pass					
<input type="checkbox"/> Monday (does NOT include Luncheon in Exhibit Hall)	\$ 25	\$ 25	\$ 25	\$ 25	= \$
<input type="checkbox"/> Tuesday (does NOT include Luncheon in Exhibit Hall)	\$ 25	\$ 25	\$ 25	\$ 25	= \$
<input type="checkbox"/> Student (WJTA members ONLY)	\$ 20	\$ 20	N/A	N/A	= \$

MULTIPLE CORPORATE REGISTRATIONS (Applies to third and subsequent registrants from same company)

<input type="checkbox"/> Full Conference ONLY	\$ 445	\$ 505	\$ 505	\$ 565	= \$
<input type="checkbox"/> Combo (Full Conference PLUS Preconference Seminar)	\$ 615	\$ 675	\$ 675	\$ 735	= \$
Specify: <input type="checkbox"/> Waterjet Short Course <input type="checkbox"/> Advanced Topics on Surface Prep					

WJTA MEMBERSHIP (US, Mexico, Canada)
☐ \$60 Individual ☐ \$20 Student ☐ \$400 Corporate = \$

WJTA MEMBERSHIP - International (all other countries)
☐ \$80 Individual ☐ \$40 Student ☐ \$460 Corporate = \$

☐ Conference Proceedings _____ Copies x \$89.00 = \$

2003 WJTA Conference registrants may purchase extra copies of the Conference Proceedings on CD-ROM for only \$89. Regularly priced at \$109, you will **SAVE \$20**. Offer valid through 8/31/03.

SPECIAL OFFER!

4 EXTRA TICKETS — The Full and Combo registrations include one ticket per registration for the Exhibit Hall Luncheons (Monday and Tuesday), Welcoming Reception in Exhibit Hall (Sunday evening) and Awards Presentation/Party (Monday evening). Each Daily registration includes a luncheon ticket for the day registered: Sunday, Monday and/or Tuesday. Sunday daily includes Welcoming Reception in Exhibit Hall. Additional tickets may be purchased as follows:

<input type="checkbox"/> Welcoming Reception in Exhibit Hall - Sunday	\$ 75	\$ 75	\$ 75	\$ 75	= \$
<input type="checkbox"/> Luncheon in Exhibit Hall - Monday or Tuesday or both (\$60)	\$ 30	\$ 30	\$ 30	\$ 30	= \$
<input type="checkbox"/> WJTA Awards Presentation/Party - Monday	\$ 75	\$ 75	\$ 75	\$ 75	= \$

TOTAL ENCLOSED

\$ _____

Seven Easy Ways To Attend The 2003 Waterjet Conference

1. FULL CONFERENCE

Includes admission to all research and applications sessions (except preconference workshops on Sunday, August 17), onsite live demonstrations, pass to Welcoming Reception in Exhibit Hall (Sunday, August 17), exhibits, luncheon on Monday, August 18, and Tuesday, August 19, coffee breaks, and WJTA Party on Monday, August 18. Each full registration also receives one copy of the Conference Proceedings on CD-ROM.

2. COMBO

Includes everything listed under Full Conference PLUS your choice of one of the two preconference workshops on Sunday, August 17.

3. SAVE \$ ON MULTIPLE EMPLOYEE FULL/COMBO REGISTRATIONS

Companies that purchase three or more full or combo registrations receive a special discount for each additional employee registered after the first two. To take advantage of the special discount, register the first two (2) employees from your company at the regular FULL/COMBO rates and receive the discounted rate for the third and subsequent employee registrations.

4. DAILY ATTENDANCE

Includes admission to all research and applications sessions, onsite live demonstrations, exhibit hall, coffee breaks, and luncheon on that day. Register for one day and receive a "50% off" coupon for the 2003 Conference Proceedings on CD-ROM. Register for two days and the Proceedings are included. **NOTE:** Admission to the WJTA Party on Monday is **NOT** included in the daily registration fee, and tickets for this event must be purchased separately.

5. PRECONFERENCE WORKSHOPS

- Waterjet Short Course
- Advanced Topics in Surface Preparation

Includes handout materials for workshop, coffee breaks, luncheon, and August 17 Welcoming Reception in Exhibit Hall.

6. EXHIBIT HALL and/or LIVE DEMO PASS

A \$25 exhibit hall and/or live demonstration pass for one day includes admission to the WJTA Exhibit Hall where you'll see waterjet equipment, supplies, and services, onsite live demonstrations between the hours of 8:00 a.m.-10:00 a.m., and designated contractor programs. Passes do **NOT** include luncheon in the exhibit hall. Tickets for lunch can be purchased separately.

You must purchase a ticket to attend the Welcoming Reception in the Exhibit Hall on Sunday, August 17, if you are not registered as a Full or Combo, or you are not registered for one of the two Preconference Workshops.

7. STUDENTS

The registration fee for WJTA student members is \$20. Student registration includes admittance to technical programs, onsite live demonstrations, and the exhibit hall on Monday and Tuesday, but does **NOT** include copies of the Proceedings, Welcoming Reception in Exhibit Hall on Sunday, August 17, or admittance to any food/social functions. **NO** discount is available for students that are not members of the WJTA. WJTA student members must be enrolled **full-time** in a university graduate or undergraduate program.

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Web Site: www.wjta.org

WJTA members and early-bird registrants SAVE up to \$120!

WJTA members receive a special discount off the regular registration fees. You will also receive a discount if your registration is postmarked or received in the WJTA office by **August 1, 2003**. Total Savings: Up to \$120!

2003 WJTA AMERICAN WATERJET CONFERENCE PROCEEDINGS

The *Conference Proceedings* for 2003 will be on CD-ROM only. The two-volume books that were available in past years will not be produced.

CANCELLATION POLICY

Fees will be refunded in full for cancellations received at least four weeks prior to the Conference. Cancellations received more than 10 days and less than four weeks prior to the Conference will be subject to a \$50 charge. No refund will be made for cancellations received less than 10 days prior to the Conference. However, substitutions may be made at anytime. Refunds will not be processed until after the Conference.

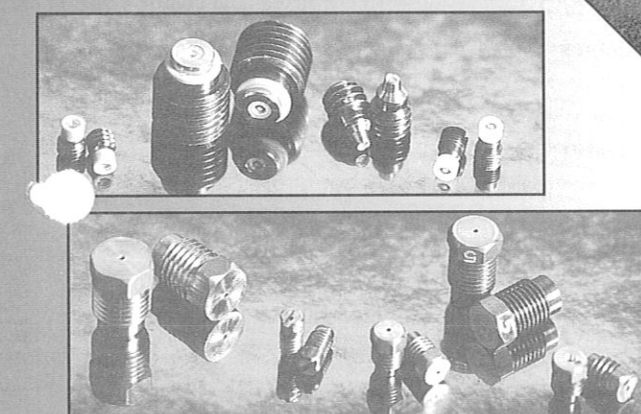
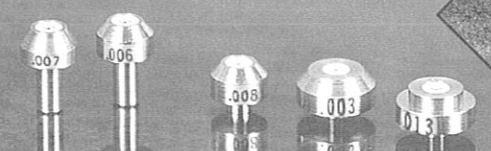
Hotel Reservations

It's not too early to make hotel reservations for the 2003 WJTA American Waterjet Conference to be held August 17-19, 2003, at the Adams Mark Hotel, Houston, Texas, USA. For room reservations call the Adams Mark at (800)436-2326. Be sure to identify yourself as a participant in the WJTA Conference.

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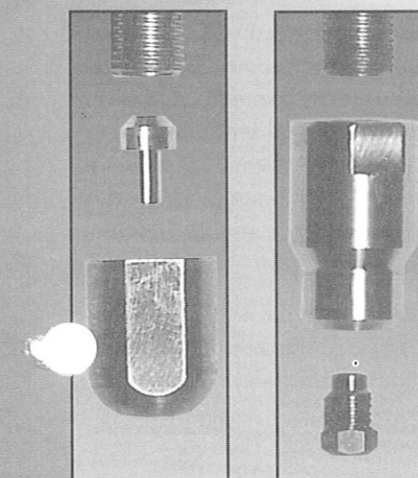
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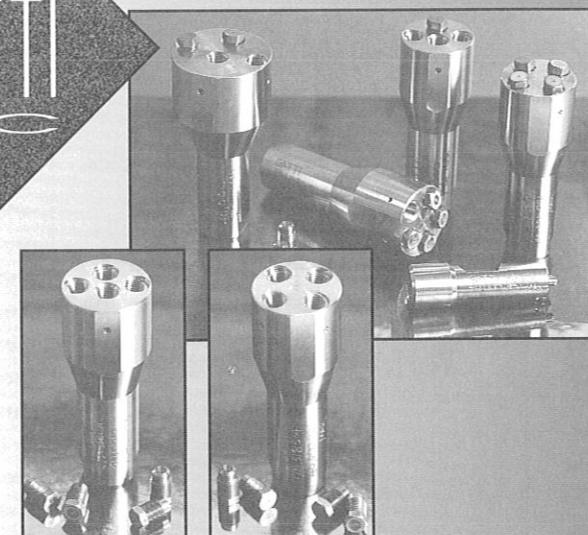
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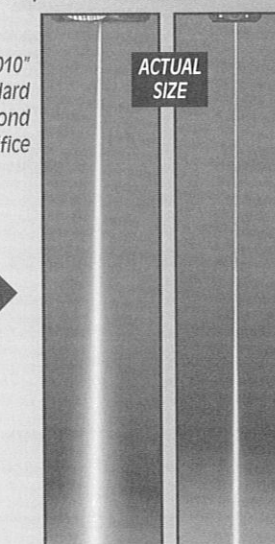
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Hydrodemolition In Italian Tunnels, from page 2

cleaned of rust. Approximately 360 m³ of 27 N/mm² concrete had to be removed from a 488 m long stretch of the multi-section 12.4 km long southern tunnel. The three hydrodemolition machines each worked approximately 15 high pressure hours per day on three shifts for the first 10 days, followed by 10 high pressure hours per day on two shifts for the remaining eight days. This resulted in an approximate combined average production from the three machines of around 20 m³ per day of concrete, equivalent to approximately 0.52 m³ per high pressure hour per machine.

The concrete surface of the tunnel lining had suffered mainly from carbonization and chloride attack, combined with freeze and thaw cycles and traffic vibration. Carbonization occurs because concrete is a naturally basic material, but carbon dioxide in the

air causes a chemical reaction in the concrete, which destroys the ability of the cement to protect the steel reinforcement from corrosion. The pH in the concrete protects the steel from corroding, but carbonization lowers the pH value and when this drops below a level of pH9 the corrosion of the reinforcement accelerates, leading to a breakdown in the protection.

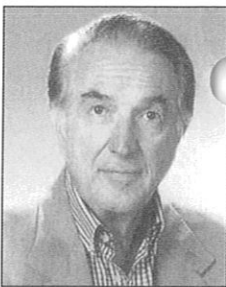
Chloride, which is spread as salt on the road surface for de-icing, splashes up and penetrates the concrete through surface cracks and capillary attraction. The ingress of salt speeds up corrosion of the interior steel reinforcement, which expands as it corrodes causing cracking and bursting of the concrete structure.

“Waterjet technology using automated selective hydrodemolition with high pressure jets of water offers advantages and technical solutions that are safer than traditional mechanical demolition methods,” says CO.I.PI president Dario Piccin. “Hydrodemolition does not cause any further cracking or breaking to the concrete. It selectively removes the decayed concrete, leaving an uneven, textured, undamaged surface for an excellent bonding of new

concrete. Also, the reinforcing bars are perfectly cleaned and the chloride in the porosity is washed away. This project is an example of how a job that is completed very rapidly, using hydrodemolition technology, is extremely advantageous for a road or rail authority, as the time that the service is interrupted is reduced to a minimum.”

After CO.I.PI. S.p.A. removed the old and damaged concrete from the tunnel lining and exposed and cleaned the reinforcement, another contractor followed on to complete the restoration with a new cast in-situ surfacing layer of high strength concrete, prior to the tunnel’s return to traffic.

For more information, contact Conjet AB, ph: 46-8-5565-2240, fx: 46-8-5565-2260, email: conjet@conjet.se, www.conjet.com. In the US, contact Stephen Toms, National Hydro Inc., ph: 1-517-223-0915, fax: 1-517-223-9525, email: toms@ismi.net.



CO.I.PI. President
Dario Piccin

Andy Conn Resigns From Board of Directors

Dr. Andy Conn, secretary of the WaterJet Technology Association (WJTA), has resigned from the WJTA Board of Directors effective August 1, 2003, in order to concentrate on teaching. Dr. Conn was one of the founding members of the WJTA. He has served as a member of the Board of Directors and as a member of the Executive Committee of the association for most of the years of existence of WJTA.

Dr. Conn worked for 20 years at Hydronautics, Inc., in Maryland, where he was active in the development and application of several unique waterjetting systems. He then began

independent consulting with the founding of Conn Consulting. He is a member of the faculty at Johns Hopkins University where he teaches courses in the mechanical engineering department.

Dr. Conn has authored over 120 technical papers and reports in material science and waterjet technology, and he has presented technical lectures at over 50 national and international conferences. He is an acknowledged expert in the generation and application of cavitating jets.

The WJTA thanks Dr. Conn for his valuable service to the association and to the waterjet community.

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By Mail: Fill out the order form and mail with applicable payment to: WJTA, 917 Locust Street, Ste. 1100, St. Louis, MO 63101-1419.

		WJTA Member Price	Non Member Price	Shipping & Handling	
_____ Proceedings Book & CD-ROM of The 2001 WJTA American Waterjet Conference (2001)	@	\$ 130.00	\$ 155.00	\$ 8.00	= \$ _____
_____ Proceedings Book & CD-ROM of The 10th American Waterjet Conference (1999)	@	\$ 65.00	\$ 80.00	\$ 8.00	= \$ _____
_____ Proceedings Of The 9th American Waterjet Conference (1997)	@	\$ 35.00	\$ 50.00	\$ 8.00	= \$ _____
_____ Proceedings Of The 8th American Waterjet Conference (1995)	@	\$ 25.00	\$ 35.00	\$ 8.00	= \$ _____
_____ An Overview of Waterjet Fundamentals And Applications, Fifth Edition (2001)	@	\$ 55.00	\$ 70.00	\$ 8.00	= \$ _____
A limited supply of the 6th and 7th Conference Proceedings are available for the cost of shipping (varies depending on destination). Contact WJTA for details.					

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Shipping and Handling

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100 - or more copies \$0.25 per book _____ # of copies x \$ _____ = \$ _____

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For shipping and handling charges outside the USA, contact the WJTA Office.

TOTAL ENCLOSED \$ _____

2003 WJTA Awards Nomination Form

Instructions: Complete each section 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 2003 WJTA Award (please print or type full individual, company or organization name):

Check award (check only one award per form) for which nomination is being made:

☐ **Distinguished Pioneer Award**

The nominee must:

- Have made contributions to the waterjet industry;
- Have made contributions to the achievement of the goals of WJTA;
- 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.

☐ **Service Award**

How has the nominated company, organization or individual contributed in time and talent toward improvement in the WaterJet Technology Association?

☐ **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

Phone Outside US/Canada ____ _____ Fax ____ _____
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CANDIDATE SUBMITTED BY: _____ Company: _____

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Nominations must be received no later than July 2, 2003.

For a prompt response, fax completed form to (314)241-1449, or mail to the WJTA, 917 Locust Street, Suite 1100, St. Louis, MO 63101-1419, USA.

A Rotary Nozzle That Injects Abrasives Into A Waterjet

There have been growing concerns about the utilization of traditional and blasting abrasives for today's surface preparation applications. The cost of containment and the use of more expensive blasting medias that contractors are being forced to use are increasing the costs of coating removals. The containment of dust from dry blasting has also become a prime concern in many shipyards. Many shipyards are reducing or prohibiting dry blasting.

The use of high and ultra high waterjetting has fulfilled some of the requirements needed to replace dry blasting. Previous dry blasted surfaces can now be stripped and cleaned leaving the original profile intact. With the use of ultra high waterjetting containment is not an issue any longer because waterjetting does not produce dust.

The patented RIPP 3000 rotary nozzle developed by Universal Minerals is beginning to show up in a few of the shipyards and petrochemical plants in the U.S. This nozzle is a 360-degree rotating water nozzle that injects abrasives into the water stream. The nozzle is used in conjunction with a rotating gyro gun. Pressures ranging from 20,000-40,000 psi have been primarily used with this nozzle. The nozzle requires only 1-3 pounds per minute abrasive and only 2-5 GPM water consumption. This is only 60-180 pounds per hour where dry blasting consumption can be from 600-960 pounds per hour.

The RIP 3000 is the first piece of equipment in the surface preparation industry that makes a successful marriage of ultra high water and abrasives. Now, the operator can greatly reduce dust problems or required containment and can still achieve a 0.5-5.5 mill profile

depending on stand off distance and grit sizing that is used. The most common abrasive being used with the RIP 3000 is garnet. Garnet being harder and usually cleaner has produced some of the highest production rates, but any abrasive can be used with this nozzle. The new water-soluble abrasives have been used very successfully with the RIPP 3000. Universal Minerals is pleased to offer its Maxxstrip, which is an aggressive water soluble abrasive.

The nozzle works effectively in tough applications such as in the removal of coal tar type coatings. In most all applications the RIP 3000 is 2-3 times faster in production than standard dry blasting without the dust problems. The RIP 3000 will have a much reduced requirement for abrasives. The results are cost reductions in abrasive usage, cleanup and disposal of spent abrasives.

(continued on page 6)



NLB 40250D



NLB 4030D

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NLB 40201D



NLB 4075D

ULTRA-CLEAN 40® pumps from NLB set the standard — ask anybody who uses one.

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A Rotary Nozzle That Injects Abrasives Into A Waterjet, from page 5

Studies are showing that the use of high and ultra high pressure water blasting removes many of the potential soluble contaminants and debris left on the substrate. Surfaces are left much cleaner with water blasting compared to dry blasted surfaces. Water blasting leaves a much cleaner surface for the new coating.

Users of the RIP 3000 are realizing production rates from 5-7 square feet per minute on most epoxy coatings of 10-14 mills. Higher rates have been achieved on enamels and others. Mill scale removal rates range from 6-10 square feet per minute.


Contractors using ultra high pressure equipment can easily adapt this equipment to their existing equipment line. Universal Minerals can demonstrate similar production rates indicated above when using the

	Conventional Dry Blasting	20K to 40K Water Only	RIP 3000 (10K to 40K with abrasive)
Abrasive Consumption	600 - 960 lbs. per hour	None	60 - 180 lbs. per hour
Dust Containment Required	Yes	None	None
Profile	0.5 - 5.5 mil	None	0.5 - 5.5 mil
Spent Grit Disposal Cost	Significant	None	80% Less Than Dry Blasting
GPM	None	6 - 8	2 - 5
Production Rate To Remove 10-14 Mills of Epoxy Coating	4 - 5 sq. ft. per minute	1 - 3 sq. ft. per minute	5 - 7 sq. ft. per minute
Mill Scale Removal Rate	3 - 5 sq. ft. per minute	None	6 - 10 sq. ft. per minute
Coal Tar Coatings Removal	Very Slow	Very Slow	Effective Removal Rate
Profiling Shipyard Weld Seams	Effective Production Rate	None	2 - 3 Times Faster Than Dry Blasting

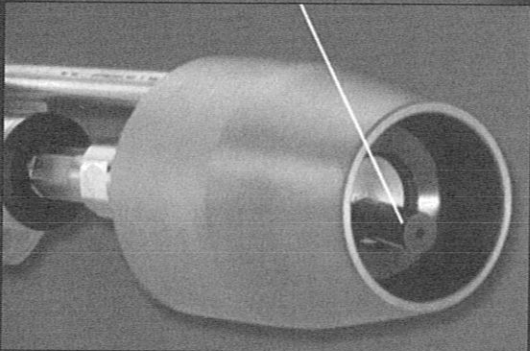
RIP 3000 with 10K waterjetting equipment and abrasives.

For more information, visit www.universalminerals.com or www.waterjetsupply.com

WaterJetSupply.com or contact Universal Minerals by phone: (800)528-7086 or (520)748-0405, or by fax: (520)748-8503.



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Universal Minerals, Inc.



Full 360° rotation for broader coverage, faster cleaning times

for systems using 20K to 40K psi.

RIP 3000 Rotary Abrasive Injection Nozzle
Lower cost, dustless, high production, rotary abrasive injected water blasting nozzle that exceeds dry blasting performance.

Only the RIP 3000 nozzle offers:

- No Tarping
- Steel Profiling
- White Metal Finish
- Reduced completion time
- Reduces abrasive consumption up to 75%

The RIP 3000 nozzle offers production speeds four to five times faster than conventional water blasting and can be used with any pump, rotation gyro gun, or robotic system. It works with any granulated material.

Corporate Office – Toll Free: 1.800.528.7086

Sales Office – Toll Free: 1.877.633.9692

Candidates Sought For 2003 WJTA Awards

You are invited to submit candidates for the special awards that are presented biennially by the WaterJet Technology Association to honor a company, organization or individual who has made a significant contribution to the industry through accomplishments that directly enhance waterjet technology and the industry as a whole. A list of previous WJTA award recipients appears below.

Candidate nominations must be received no later than July 2, 2003. The award recipient(s), to be selected by the Awards Committee of the WaterJet Technology Association, will be honored at a presentation ceremony on Monday, August 18, 2003, in conjunction with the WJTA 2003 American Waterjet Conference in Houston, Texas.

An official form for candidate nominations appears on page 20. 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: WaterJet Technology Association, 917 Locust Street, Suite 1100, St. Louis, MO 63101-1419 USA.

Previous Award Recipients		
1981	Pioneer Award	Jacob Frank (deceased)
1983	Pioneer Award	H.D Stephens, Bedford, England
1985	Pioneer Award	William Cooley, Chevy Chase, MD
1987	Pioneer Award	Norman Franz, Ph.D., Vancouver, BC, Canada
1989	Pioneer Award	Richard Paseman, Houston, TX
1991	Pioneer Award	John H. Olsen, Ph.D., Kent, WA
1993	Pioneer Award	Fun-Den Wang, Ph.D., Golden, CO
	Safety Award	David Summers, Ph.D., Rolla, MO
		NLB Corporation, Wixom, MI
	Service Award	George A. Savanick, Ph.D., Apple Valley, MN
		Mohan Vijay, Ph.D., Gloucester, ON, Canada
	Technology Award	Mohamed Hashish, Ph.D., Kent, WA
		Autoclave Engineers, Erie, PA
		Hammelmann Corporation, Dayton, OH
1995	Pioneer Award	George Rankin, Houston, TX
	Safety Award	Autoclave Engineers, Erie, PA
	Service Award	Thomas J. Labus, Lake Geneva, WI
	Technology Award	Thomas J. Kim, Ph.D., Kingston, RI
1997	Pioneer Award	David A. Summers, Ph.D., Rolla, MO
	Service Award	Andrew F. Conn, Ph.D., Baltimore, MD
	Technology Award	Prof. Dr-Ing. Hartmut Louis, Hannover, Germany
1999	Pioneer Award	Mohamed Hashish, Ph.D., Kent, WA
	Safety Award	Bruce Wood (deceased)
	Service Award	John Wolgamott, Durango, CO
	Technology Award	Ryoji Kobayashi, Ph.D., Ishinomaki, Japan
2001	Pioneer Award	George A. Savanick, Ph.D., Apple Valley, MN
	Technology Award	Richard Ward, Kent, OH

An Overview of Waterjet Fundamentals and Applications 2003

Revised and Updated

Scheduled for Saturday, August 17, 2003, in conjunction with the WJTA American Waterjet Conference (see page 15).

The Cutting and Cleaning Programs will be presented concurrently

Cutting Program	Cleaning Program
Waterjet Fundamentals by Andrew Conn, PhD Conn Consulting	Introduction to Waterjetting by David Summers, PhD University of Missouri-Rolla (UMR)
Jet Material Interaction by Mohamed Hashish, PhD Flow International Corporation	Waterjet Fundamentals by Andrew Conn, PhD Conn Consulting
Equipment and Tools Overview by Thomas Kim, PhD University of Rhode Island (URI)	Waterblast Equipment by Michael Woodward, PhD Gardner Denver Water Jetting Systems
Factory Applications by Mohamed Hashish, PhD Flow International Corporation	Waterblast Applications by John Wolgamott StoneAge, Inc.
Machine Shop Practices by John Olsen, PhD OMAX	Contractor Practices by Tim Bonvillian HydroChem Industrial Services, Inc.
Safety by Richard Ward RICHEL, Inc.	Safety by David Summers, PhD UMR

Louis Bolding
Laverdiere Construction
4055 W. Jackson
Macomb, IL 61455
Phone: (309)837-1258
Fax: (309)833-4993

Kurt A. Burton
Boeing Aerospace
8900 Frost Avenue
Berkeley, MO 63134-1004
Phone: (314)232-1740
Fax: (314)234-6536

Ceasar M. Cabrera
Mecaunica De Servicious/
UPS
Cdl. Bosaue 2 Honay
Bioque 2 Casa 15 Ylo 19
Cuenca, Azuay 59304
Ecuador
Phone: [593](07)863 409
Fax: [593](07)861 179

Ken Cassady
CLA Stainless Fittings
19002 Carrot Street
Spring, TX 77379
Phone: (281)370-6792
Fax: (281)370-0491

Cody Cuthill
Normcan Control, Inc.
PO Box 250
Standard, AB T0J 3H0
Canada
Phone: (403)644-0002
Fax: (403)644-0003

Jay Dickson
Burny - Cleveland Motion
Controls, Inc.
7550 Hub Parkway
Cleveland, OH 44125
Phone: (216)524-8800
Fax: (216)642-2199

Jimmie Dugas
American Industrial
Craftsmen
4021 Ambassador Caffery
Parkway
Building A, Suite 100
Lafayette, LA 70503
Phone: (337)593-8700
Fax: (337)593-0376

Kim Jung Gyu
Seoul National University
School of Civil, Urban &
Geosystem Eng.
San56-1, Shilim-dong
Gwanak-gu
Seoul 151 742
Republic of Korea
Phone: [82](2)880-7233
Fax: [82](2)877-0925

John Hepler
NEO Corporation
PO Box 646
Waynesville, NC 28786
Phone: (828)456-4332
Fax: (828)456-4216

Geoff Holt
Mainstream Sewer Service
170 Kiser Hicks Road
Roxboro, NC 27573
Phone: (336)322-3123
Fax: (336)502-1001

Gary James
Mundy Maintenance &
Services, LLC
P.O. Box 2435
Pampa, TX 79065
Phone: (806)669-0443
Fax: (806)669-1324

Duane Johnson
Ingersoll-Rand
One Aro Center
Bryan, OH 43506

Michael Johnson
PSC
330 Walcot Road
West Lake, LA 70669
Phone: (800)460-4976

Fred Joslin
Pratt & Whitney Aircraft
400 Main Street
M/S 165-01
East Hartford, CT 06108
Phone: (860)565-9976
Fax: (860)565-6410

Mark E. Kuchta
Colorado School of Mines
1500 Illinois Street
Golden, CO 80401
Phone: (303)273-3306
Fax: (303)273-3719

Trevor Matthews
On Site Hydraulics
The Lodge, Pakenham Rd.
Monkstown, Co.
Dublin, Ireland
Phone: [353](86)8138448
Fax: [353](86)2841662

Henry F. McCabe
McCabe Industrial Minerals
7225 S. 85th East Avenue
Suite 400
Tulsa, OK 74133
Phone: (918)252-5090
Fax: (918)252-5433

Douglas Mills
Fort Wayne Wire Die, Inc.
2424 American Way
Fort Wayne, IN 46809
Phone: (260)747-1681
Fax: (260)747-4269

Jim Montgomery
Drain Brain Intl., Ltd.
Meadowlands Bibury
Cirencester
Gloucestershire GL7 5LZ
United Kingdom
Phone: [44](1285)740682
Fax: [44](1285)40638

Weishun Ni
Ingersoll-Rand
One Aro Center
Bryan, OH 43506

P.R. Parameswaran
Deluxe Hydroblasting Ser.
318/9 Pantnager
Siddhivinayak Society
Hingwala Road, Ghatkopar
(East)
Mumbai, Maharashtra
400075 India
Phone:[91](002)25124357
Fax: [91](002)25165679

Frank Pude
University of Hannover
Institute of Materials
Science
Appelstr. 11a
Hannover 30167
Germany
Phone: [49](511)762 4404
Fax: [49](511)762 2979

R. Radhakrishnan
Materials Modification,
Inc.
2721 - D Merrilee Drive
Fairfax, VA 22031
Phone: (703)560-1371
Fax: (703)560-1372

D.C. Robery
Mourik UK Limited
3 Berwood Road
Corringham, Essex SS
17-FQX
United Kingdom
Phone: [44](1375)677959
Fax: [44](1375)677455

Eric Roll
Ingersoll-Rand
One Aro Center
Bryan, OH 43506

Clay South
Collex PTY, LTD.
4-6 Rivers Street
Bibra Lake, WA 6163
Australia
Phone: [61](8)9418 9300
Fax: [61](8)9418 9311

Mike Vineyard
Qualitec Consulting Group
15810 Park Ten Place
Suite 255
Houston, TX 77084
Phone: (281)600-8195
Fax: (281)600-8091

Steve Ulm
Jetsteam of Houston, LLP
4930 Cranswick
Houston, TX 77041-7724
Phone: (713)462-7000
Fax: (713)462-5387

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Richel Offers Waterjet Cutting Courses

Richel, Inc., a full service waterjet consulting and engineering group in Kent, Ohio, is offering the 36th Waterjet Cutting Techniques Course Sunday through Tuesday, May 18-20, 2003. It is designed to provide rigorous hands-on training in waterjet cutting as well as **a foundation in the basic principles** of waterjet technology, operation, and practice including comparison of waterjet with laser, plasma and oxy-fuel.

The presentation is supported with video, computer generated interactive displays, CAD/CAM and controller demonstrations and will provide information on abrasive recycling. You will have an opportunity to scan, program and cut parts, rebuild cutting heads and intensifier pumps, and **run a waterjet**.

The instructor, Richard Ward, CEO, Richel, Inc., has given presentations nationally and internationally. Training will be held at Richel's 12,000 square foot facility at 4485 Crystal Parkway, Suite 100, Kent, Ohio (south of Cleveland). To enroll and obtain more information, please call: 330-677-9100; fax: 330-677-9121; email: richel@richel.com; or visit: www.richel.com.

Hydrodemolition At A Historic Swimming Pool In Finland

An historic swimming pool in the Finnish town of Pori is being novated with the aid of two Aquacutter hydrodemolition robots from Aquajet Systems.

Built in 1957 and designed by world-renowned Finnish architect Yrjö Lindegren, the outdoor swimming pool at the Pori Sports Centre is currently being restored. The Finnish authorities have designated the pool a structure of historical significance as the art déco design resembles Lundegren's famous Helsinki Olympic Stadium project that was used for the 1952 Games.

Once the project is completed in 2004, the entire swimming pool area will have been restored to its original design – repair work completed in 1984 was not deemed to be in keeping with the 1950s design – while the pool itself will have been deepened to allow international swimming events to be held.

Finnish demolition contractor esipiikkaus Oy has been awarded the contract to remove all old and degraded concrete from the floor and sides of the pool.

Using two Aquacutter hydrodemolition robots from Aquajet Systems, the contractor will remove approximately 1,200m² of concrete from the 50m x 20m pool. This includes the four sides as well as the floor areas at the deep end and shallow end. In the initial stages of the contract the main contractor removed a 15m-long floor section in the middle of the pool with jackhammers to a depth of 1m, to allow for pool deepening.

An Aquacutter HD6000 equipped with a Robot Arm removed concrete from sloping areas which connect the middle section of the pool with the flat bottomed deep end.

The slopes were too steep to allow the tracked Aquacutter to climb, but the flexible Robot Arm feature allowed the unit to remain on flat areas while removing concrete at a

45° angle to itself. The Robot Arm has two pivoting 360° joints and two telescopic extendable arms that allow the Aquacutter's lance to work at various angles and heights.

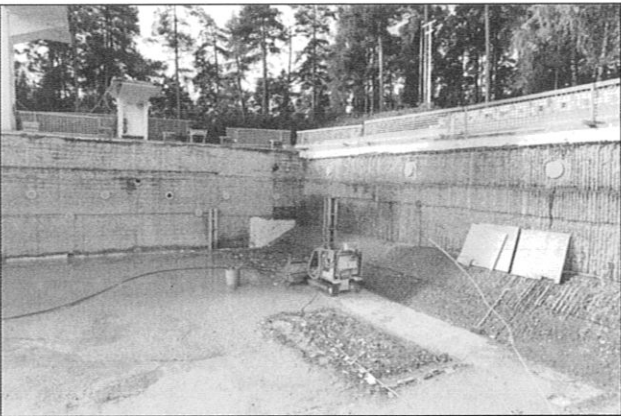
“Without the Robot Arm unit we would not have been able to reach the sloping areas,” says Timo Jaakkola of Vesipiikkaus. “The Robot Arm reached all difficult areas and left a surface free of old crumbling concrete which will bond easily with new concrete.”

Another Aquacutter, an HVE 6000 robot, has been utilized for concrete removal from the pool's floor and sides. To reach the sides of the 4.2m deep end, the contractor erected the tower on the robot to reach all areas.

The Aquacutter's have removed concrete from a thickness of 40mm up to a maximum of 150mm on all areas. On lower parts of the pool's sides the concrete thickness is greater due to the extra load bearing.

Working with a constant lance angle of 20° and a roller speed of 4m/min, the Aquacutters have removed all soft concrete up to the original rebars.

Where the rebars were found to be rusty or concrete beneath the rebars soft, the units were re-programmed to adjust travel speed and cutting depth which cleared the concrete and cleaned the rebars.



Renovation of historic outdoor swimming pool is underway. Photo courtesy of Aquajet Systems AB.



Making progress on the pool walls and floor. Photo courtesy of Aquajet Systems AB.

“On the sides of the pool especially, the original mortar was still quite hard, but underneath the ageing concrete was very crumbly,” says Timo Jaakkola. “Our job has been to basically cut away all soft pockets of concrete and leave a good bonding surface. The Aquacutters have done this excellently and in good time.”

The Aquacutters have been removing approximately 7m² of concrete per hour and are both connected to NLB high pressure pumps discharging 60-100 liters of water per minute at 1400bar.

For more information, visit www.aquajet.se or contact Aquajet Systems by phone: 46(0)383 508 01, fax: 46(0)383 507 3 or email: aquajet@aquajet.se

Hydrodemolition On A Bridge In Sweden

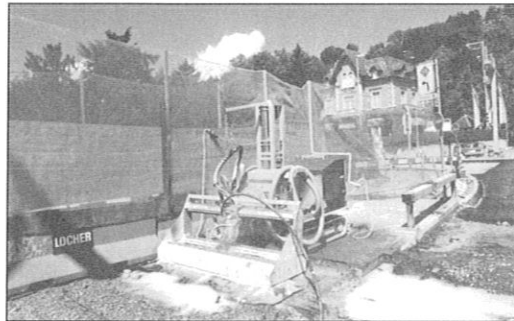
The Swedish National Road Administration, Construction and Maintenance Division (Vägverket Produktion) recently purchased its first Aquacutter hydro-demolition robot from Aquajet Systems. In its first project, a two-lane bridge in Södertälje, concrete is being removed and replaced.

The Swedish National Road Administration has been renting Aquacutter hydrodemolition robots from Aquajet Systems since 1999. Having satisfied themselves with the reliability and performance of these units, the Administration purchased its first Aquacutter robot in mid-2002.

Ronnie Jilderen of the Swedish National Road Administration says, "The Aquacutter has tracks which allow it to travel easily over uneven surfaces and rebars, while the remote Total Control system and diesel engine means fewer cables and less chance of an accident."

The Swedish National Road Administration has taken delivery of an HVD6000 TC Aquacutter robot. The power head on this diesel-powered unit can rotate and tilt and so operate on horizontal or vertical surfaces.

The HVD6000 TC model is equipped with Aquajet System's Total Control and radio remote control system. This system allows the operator to control all functions of the unit remotely. The unit has the option of up to four different speeds, all of which can be used on the same traverse, while the nozzle can be altered from -44° to +44°. The power of the waterjet corresponds with the speed and the angle of the nozzle, and this in turn corresponds with the depth



The Swedish National Road Administration using the Aquacutter robot on a bridge project in Södertälje, 30km south of the Swedish capital of Stockholm. Photo courtesy of Aquajet Systems AB.

and strength of the concrete to be removed. The machine's computer memory bank is able to store all relevant information for each individual overpass.

Apart from the high pressure water hose connecting the robot to its WOMA high pressure water pump, no other connections are needed for this unit.

"We chose the HVD unit because it is powered by a diesel engine, and this means no electric cable connection, which we prefer on outdoor jobs," says Mr. Jilderen. "Also the HVD6000 TC unit has excellent compact dimensions which make it ideal for a range of jobs, including small restrictive sites," he adds.

An old two-lane road bridge crossing over a railway branch line is being repaired in this project. The structure is 60 years old, but concrete repairs were made some 20 years ago. However, the concrete used was of a poor quality and needs to be removed and replaced.

First, the bridge deck was divided in two, leaving one side open to traffic while work proceeded on the other. Once the first side is complete, traffic will

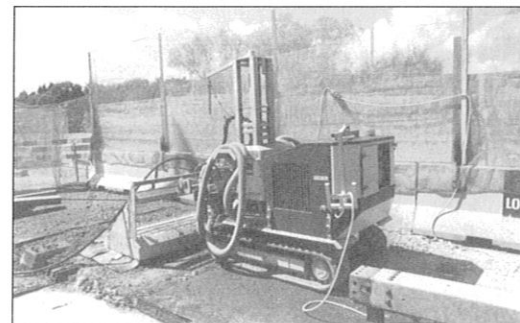
be switched to the finished side so repair work can begin on the other side.

The bridge deck is approximately 20m in length with each lane 7m wide. Working over a period of three days, the Aquacutter robot removed the concrete bridge deck to a maximum of 30mm in depth and over an area of 220m².

According to Mr. Jilderen, the robot removed the old concrete down to the original rebars, which were cleaned of any rust. Once all old and crumbly concrete was removed, a clean bonding surface is left, ready for the new concrete deck.

"In 18 hours, the robot removed all the required concrete from the bridge deck," says Mr. Jilderen, "leaving behind a good uneven surface that is perfect for bonding with the new concrete. We generally worked with a 35° angle for the lance, which worked well on most of the damaged concrete. The advantage of this machine is, however, that different angles can be set for various concrete areas, which means all damaged areas are removed."

For more information, visit www.aquajet.se or contact Aquajet Systems by phone: 46(0)383 508 01, fax: 46(0)383 507 3 or email: aquajet@aquajet.se



The Aquacutter robot removing the concrete surface of the bridge deck. Photo courtesy of Aquajet Systems AB.

Welcome WJTA New Members

Corporate

Berkeley Chemical Research, Inc.
W. Glenn Howells, Ph.D.
Dennis R. Watt, Esq.
PO Box 9264
Berkeley, CA 94709-0264
Phone: (510)526-6272
Fax: (510)525-2375

Canadian Industrial Cleaning Services, Inc.
Ed Walcot
Charlie Walcot
Stefan Wojewski
Box 219
Port Alberni, BC V9Y 7M7
Canada
Phone: (250)723-6919
Fax: (250)723-9635

DeBusk Industrial Services Co.
Andrew DeBusk
John Corneav
Dee Green
205 North 11th Street
LaPorte, TX 77571
Phone: (281)842-8000
Fax: (281)842-8008

HydroPressure Cleaning, Inc.
Bill Wellman
Jeff Glass
Jim Quinn
413 Dawson Drive
Camarillo, CA 93012
Phone: (805)383-2868
Fax: (805)388-0423

Integral Services Co.
Mohd Abdul Kareem
Ahmad Al Swaha
Mohd Arshad Wal
PO Box 3683
Salmiya 22037
Kuwait
Phone: [956]326-2706

J.J. White, Inc.
Edward Ducey
Bob Lindenberger
Sam Romero
5500 Bingham Street
Philadelphia, PA 19120
Phone: (215)722-1000
Fax: (215)745-6229

MacKinnon & Olding Limited
Scott MacKinnon
Darryl Fredericks
Calvin McKay
PO Box 37
Dartmouth, NS B2Y 3Y2
Canada
Phone: (902)468-5157
Fax: (902)468-8138

PSI Middle East LLC
Cornelis Verweij
R. Briggs
J. Ombler
PO Box 37705
Dubai, United Arab Emirates
Phone: [971](4)340 0722
Fax: [971](4)340 0733

Sprague Products
Michael J. Greene
10195 Brecksville Road
Brecksville, OH 44141
Phone: (440)838-7690
Fax: (440)838-7513
Frank Neidhart
Sprague/Nova Swiss
Vogelsang Strasse 24
Effretikon CH8307
Switzerland
Phone: [41](52)354-1604
Fax: [41](52)354-1688

Ray Theaker
109 The Common - Holt
Trowbridge, Wilts
BA14-6QL
United Kingdom
Phone: [44](1225)782-643
Fax: [44](1308)459-995

Technical Jetting Services
Troy DaSilva
Terry Bishop
20 Venture Drive, Unite #6
Scarborough, ON M1B 3R7
Canada
Phone: (416)282-8900
Fax: (416)282-5253

New Corporate Alternates

Jason Duhon
Trusco, Inc.
11333 Veterans Memorial Drive
Abbeville, LA 70510
Phone: (337)893-5392
Fax: (337)893-7848

Tony Fuller
Jetstream of Houston, LLP
4930 Cranswick
Houston, TX 77041-7724
Phone: (713)462-7000
Fax: (713)462-5387

Michael Georgiou
WOMA Corporation
PO Box 6793
Edison, NJ 08818
Phone: (800)258-5530
Fax: (723)417-0015

Kristy Gussarson
Jetstream of Houston, LLP
1300 West Bartlett Road
Elgin, IL 60120
Phone: (847)622-7044
Fax: (847)742-3035

Harry Richmond
Universal Minerals
6311 Brookhill Drive
Houston, TX 77087
Phone: (877)633-9692
Fax: (520)748-8503

Salvatore Russo
Waterjet Italiana s.r.l.
Viale G.B. Stucchi 66/5
Monza (MI) 20052
Italy
Phone: 39204971
Fax: 392842479

John Tweedel
Trusco, Inc.
11333 Veterans Memorial Drive
Abbeville, LA 70510
Phone: (337)893-5392
Fax: (337)893-7848

Individual

Roy H. Ambrose
Palmetto Industrial Services, Inc.
40 Pascon Court
Gaston, SC 29053
Phone: (803)359-9343
Fax: (803)926-7574

Demetrius Bazos
True Grit
A Division of Argolis Construction, LTD.
8014 Coronet Road
Edmonton, AB T6E 4N9
Canada
Phone: (780)414-1192
Fax: (780)465-1196

Andrew Berchin
Inland Waters of Ohio
2195 Drydock Avenue
Cleveland, OH 44113
Phone: (216)861-3949
Fax: (216)861-3156

(continued on page 18)

New Catalog Offers Hundreds Of Waterjet Accessories

A new, 72-page catalog from NLB Corp. highlights the company's expanded line of high-pressure and ultra-high pressure waterjet accessories. New additions include lances and foot control valves with a quick-change cartridge seal, a 20,000-psi 3-D tank cleaning head, and automated systems for tube lancing and stripe removal.

NLB offers nearly 500 high-quality waterjetting accessories for a wide variety of applications. They operate at pressures up to 10,000, 20,000 or 40,000 psi (700, 1,400 or 2,800 bar) and all are designed to work with NLB waterjet pumps.

The easy-to-use catalog is full of specifications, photographs and cutaway drawings, so readers can quickly match accessories to their needs. Complete ordering information is provided, as well as a variety of water jetting reference data, including flow charts, thrust and pressure drop tables, and English/metric conversion charts.

The NLB accessory catalog is available, at no charge, from NLB's marketing department in Wixom, Michigan. Call (248)624-5555, fax (248)624-0908, email: nlbmktg@nlbusa.com or visit www.nlbcorp.com.

Flow International Opens Louisiana Training Facility

Flow International Corporation celebrated the opening of its new equipment training, orientation, maintenance, and distribution facility in Lafayette, LA, with an open house on March 20. The Kent, Washington-based company provides total ultrahigh-pressure (UHP) waterjet system solutions for industries including surface preparation, job and machine shop, automotive, aerospace, paper, and food preparation.

The Lafayette facility provides 24-hours-a-day, seven-days-a-week technical support, on-site and classroom training (including CD-ROMs and videos for troubleshooting sessions), and operational training for FLOW equipment users. FLOW currently has over 40 service engineers available nationwide and offers unlimited telephone support.

Users also have the opportunity to receive FLOW product certification via written and operational exams and to update the certification free of charge for up to two years. This allows users to achieve the highest level of productivity and consistency from waterjet systems for an extended period of time.

At the Lafayette facility users can see eight different FLOW-manufactured products and tools in use. These products include the A-3000 surface prep hand tool, the HydroCat™ surface prep system, handheld vacuum recovery units, cutting applications, deck-cleaning tools, the Eliminator lane stripe removal robot, non-skid removal tools for large surface coatings, and vessel cleaners for rail cars.

For more information, visit www.flowcorp.com, or call (253)850-3500.

WJTA Conference Live Onsite Demonstrations:

(participant list as of April 15, 2003)

Aqua-Dyne, Inc.
Gardner Denver Water Jetting Systems
International Waterjet Parts (IWP)
NLB Corp.
TurtleSkin WaterArmor by Warwick
Universal Minerals

If you are interested in demonstrating your equipment at the conference, contact Ken Carroll at (314)241-1445.



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A New Intensifier From Ingersoll Rand

Ingersoll Rand has, in line with its tradition of designing and manufacturing innovative waterjet components and parts, launched a new addition to its reputable line of Streamline™ intensifiers. The SL IV 100 S is uniquely designed and well positioned to offer the end user high uptime and eliminate or reduce downtime.

This pump unit has only one intensifier. When compared with the traditional dual intensifier pumps on the market today, the SL IV 100 S has half the components and delivers the same output. The end user will not only benefit from its high operational efficiency and greater reliability, but will also reap tremendous gains from substantial cost savings, due to fewer high-pressure components. Ingersoll-Rand is certainly proud to be the first company in the world to design and release a pump with a single 100-hp intensifier, coupled with a full 100-hp redundancy option.

Among many performance options characteristic of the 100 S, there are three that make this product stand out:

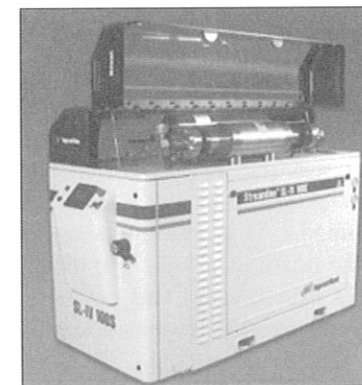
- **Its modem capability.** This allows for remote interactive trouble-shooting by an Ingersoll-Rand technician, while helping the operator or the maintenance person on site. This has a potential for saving thousands of dollars associated with maintenance/service travelled.

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- **Its proportional control panel.** It offers variable pressure control while cutting. This offers a dramatic reduction in the cutting time required when working with fragile materials such as ceramic tile and glass.
- **Its digital high-pressure readout.** The operator can get a quick-at-a-glance display of the current operating pressure without looking for other gauges in the piping, which takes away the complexity of the monitoring process.

The pump can operate continuously at 60,000 psi and deliver 2 gallons a minute of cutting water. All the parts and services are provided and supported by qualified technical and customer service representatives. This new design definitely attests to the Company's commitment to provide



low process cost water jetting solutions. The Business Unit also remains committed to high levels of customer satisfaction.

For more information, contact Ingersoll-Rand Waterjet Systems, 635 West 12th Street, P.O. Box 231, Baxter Springs, KS 66713 USA, 1-800-826-9274 (US), 1-620-856-2151 (Outside US), 1-620-856-2242 (Fax), E-Mail: wjet_sales@irco.com, Web site: www.irco.com.

Rampart Hydro Services Hires New Controller

Rampart Hydro Services has hired Laurie Nelson as controller. Ms. Nelson brings to the position over ten years of progressively responsible experience in the financial/accounting field. Most recently, she served as controller for Miller Centrifugal Casting Company. Previously, she was an accountant, financial analyst and then assistant controller for UniMold, Inc.

Nelson studied accounting at the University of Maryland and has a significant background in all financial aspects of the controller function, including closings, audits, monthly reporting and internal controls. She is also experienced in cash management, MIS management, risk management,

negotiation with vendors and customers, budgeting and forecasting, and benefit plan administration.

Rampart Hydro Services provides UHP hydrodemolition on bridge decks, parking garages, dams and spillways, tunnels, wastewater treatment facilities, bridge substructures, and structures. The company's Runway Division also provides UHP hydrocleaning for rubber removal, runway paint removal, membrane coating removal, and thorough cleaning to remove many common contaminants, including curing compound, pavement stains, rust spots, fuel residue and grease.

For more information, call 412-262-4511 or visit www.rampart-hydro.com.

New Developments At LAI

Stewart Cramer was named president of LAI Companies, a nationwide contract manufacturing company specializing in advanced laser and waterjet machining.

Cramer succeeds Robert Ulrich, the late founder and president of LAI. Cramer, who joined LAI in 1999, was promoted from the position of vice president of business development and engineering. He previously held the position of director of aerospace products. He is based in the company's Phoenix facility.

Ed Janowski was named plant manager at LAI Midwest, Inc., a precision manufacturer in Minneapolis, Minn., specializing in laser and waterjet machining services. Janowski comes to LAI with more than 20 years of experience in diversified manufacturing operations that include large companies such as Boeing, as well as smaller, privately owned companies. His previous areas of responsibility have

included building and equipment maintenance, building construction, process engineering, manufacturing engineering, and production and manufacturing management. He was recently production manager at the Medical Micro Electronics Division of HEI, Inc., Victoria, Minn.

LAI also recently announced record sales of \$12.4 million in 2002, up 1.8 percent from \$12.2 million in 2001. The company distributed a fourth-quarter incentive bonus of six percent to its employees. The incentive plan is set up as a monthly bonus program for LAI employees based on actual gross profits. An incentive was earned each month in 2002.

LAI Companies operates contract-manufacturing facilities nationwide, including LAI East, Westminster, Md.; LAI Midwest, Minneapolis; and LAI Southwest, Phoenix. The privately held company is known as the world's

largest combined laser and waterjet contract-manufacturing service in the United States. For more information on LAI, visit LAIco.com.

New 25/4 Hose From SPIR STAR

SPIR STAR has announced the availability of its new 25/4 hose developed for nitrogen gas transfer, high flow waterblasting, and hydraulic workover. With a chemical resistant Polyamide inner core, outer cover, and backed up with four layers of high tensile steel wire, this 1-inch ID hose can handle working pressure up to 13,000 psi. Available with 1-inch NPT, Type M swivel and 1-inch JIC end fittings.

Call your SPIR STAR representative at 1-800-890-7827 or (713) 856-8989 for more information.

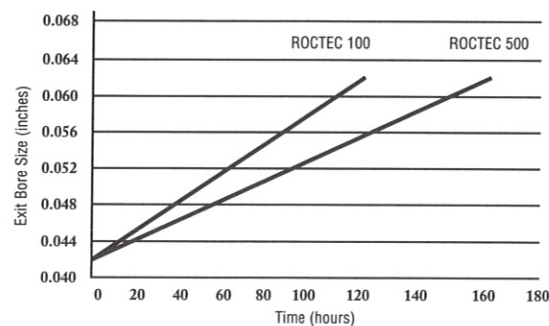
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2003 WJTA American Waterjet Conference

August 17-19, 2003, Adam's Mark Hotel, Houston, Texas
Preliminary Schedule of Events

Sunday, August 17, 2003

- | | |
|---------------------|---|
| 8:00 a.m.-5:00 p.m. | Concurrent Pre-Conference Workshops |
| | • An Overview of Waterjet Fundamentals and Applications |
| | Concurrent Overview Sessions: Cutting and Cleaning Programs |
| | • Advanced Topics on Surface Preparation |
| 6:30 p.m.-9:30 p.m. | Welcoming Reception, Official Opening of Exhibit Hall |

Monday, August 18, 2003

- | | |
|-----------------------|--|
| 8:00 a.m.-10:00 a.m. | Onsite Live Demonstrations |
| 10:00 a.m.-11:30 a.m. | Poster Session In Exhibit Hall |
| 10:00 a.m.-5:00 p.m. | Exhibits Open |
| 11:30 a.m.-1:00 p.m. | Lunch in Exhibit Hall |
| 1:00 p.m.-5:00 p.m. | Research, Development, New Technology: Paper Presentations |
| 1:00 p.m.-2:45 p.m. | Winning Strategies for Doing Business In Industry - Alligator Management & Marketing by Earl Heard, President, The BIC Alliance |
| 3:00 p.m.-4:00 p.m. | Contractor's Roundtable: Technology Issues for the Contractor
Moderated by:
David A. Summers, Ph.D.
Curators' Distinguished Professor of Mining Engineering and Director of the Rock Mechanics & Explosives Research Center, High Pressure Waterjet Laboratory, University of Missouri at Rolla |
| 5:00 p.m.-6:00 p.m. | WJTA Membership Meeting |
| 7:30 p.m.-10:30 p.m. | Awards Presentation/Party |

Tuesday, August 19, 2003

- | | |
|-----------------------|---|
| 8:00 a.m.-10:00 a.m. | Onsite Live Demonstrations |
| 10:00 a.m.-11:30 a.m. | Poster Session in Exhibit Hall |
| 10:30 a.m.-5:00 p.m. | Exhibits Open |
| 11:30 a.m.-1:00 p.m. | Lunch in Exhibit Hall |
| 1:30 p.m.-5:30 p.m. | Research, Development, New Technology: Paper Presentations |
| 1:00 p.m.-2:30 p.m. | Contractor's Roundtable: Safety Issues for the Contractor
Moderated by:
Tim Bonvillian, Vice President
HydroChem Industrial Services, Inc.
Deer Park, Texas |

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Nominated by: Lydia M. Frenzel, Executive Director, Advisory Council, San Marcos, Texas.

JACK RUSSELL

Jack Russell is Subject Matter Expert (SME) for Global Process Cleaning Technologies at Dow Chemical, Freeport, Texas. He has been with Dow for 27 years, and he has been a member of the WJTA for 14 years. Mr. Russell is responsible for working with plants and waterjet companies to help improve cleaning applications.

Mission: I believe the WaterJet Technology Association provides major contributions to both waterjet users and process cleaning companies. The WaterJet Technology Association has provided technical and practical information throughout all industries and promoted the integrity of equipment design and manufacture. I would like to help promote the ever-increasing needs to help the waterjet industry to succeed because it is a vital part of our business success.

Nominated by: Pat DeBusk, Executive Vice President, HydroChem Industrial Services, Inc., Deer Park, Texas.

Safety Committee Solicits Comments On Improvements To Recommended Practices

The WJTA Safety Committee solicits comments regarding improvements to the publication, *Recommended Practices for the Use of Manually Operated High Pressure Waterjetting Equipment*. While the Recommended Practices is reviewed periodically at the biennial conferences of the WaterJet Technology Association, your comments and suggestions for improving the publication are invited and welcome anytime.

Please address your comments and suggestions to: Safety Committee, c/o WJTA, 917 Locust Street, Suite 1100, St. Louis, MO 63101-1419, fax: (314)241-1449, e-mail: wjta@wjta.org, web site: www.wjta.org.

FORREST A. SHOOK

Forrest A. Shook is the owner and president of NLB Corporation, Wixom, Michigan. Mr. Shook has been involved in the waterjetting industry for over 30 years and has been a member of WJTA since its inception. Mr. Shook has served on the WJTA board since 1987.

Mission: 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 advance 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: Steve Thomas, Engineering Manager, NLB Corporation, Wixom, Michigan.

JOHN WOLGAMOTT

John Wolgamott is president of StoneAge, Inc., Durango, Colorado. He first worked with waterjets in 1974 as a research engineer at the Colorado

School of Mines using waterjets to cut and drill rock at up to 60,000 psi. In 1979, he moved to Durango to start StoneAge, a manufacturer of high pressure waterjet tools and equipment, with his partner Gerry Zink. Mr. Wolgamott is a charter member of the WaterJet Technology Association and has served on its board of Directors since it's founding in 1981. He has served the organization in many capacities including chairman of the board since 1997.

Mission: Mr. Wolgamott's vision for WJTA is to serve its members by sharing information and working together to advance the profession. Waterjetting is still a young technology with a great deal of potential to expand its usefulness in a variety of applications. However, he believes we need to join forces to market our technology and present a unified set of safety standards.

Nominated by: Craig L. Anderson, Business Unit Manager, Parker Hannifin Corp. Polyflex Multitube Business Unit, Stafford, Texas.

Upcoming Events

August 16-19, 2003
WJTA American Waterjet Conference, Adam's Mark Hotel, Houston, Texas. *Celebrating the 20th Anniversary of the WaterJet Technology Association*. Visit www.wjta.org, e-mail wjta@wjta.org, call (314)241-1445 or fax (314)241-1449.

October 27-29, 2003
7th Pacific Rim International Conference on Water Jetting Technology, Seogwipo KAL Hotel, Jeju, Korea, originally scheduled for May 18-22, has been postponed to October due to the SARS virus. Contact Conference Chairman Prof. Chung-In Lee or Conference Secretary General Dr. Wan-Mo Kim, The Korean Society of Water Jet Technology, Research Institute of Energy & Resources, Seoul National University, San 56-1 Shilim-Dong, Gwanak-Gu, Seoul, 151-742, Korea, phone +82-2-880-7233, fax +82-2-873-2717, e-mail: kswjt@kojet.org, web site: www.kojet.org

WJTA Elections

Six (6) board member positions, each for a four-year term of office, beginning August 16, 2003, are to be filled. In addition, the recent resignation from the board of Andy Conn has resulted in a seventh open position. The candidate elected to complete Andy Conn's unexpired term of office will serve the remaining two years (2004-2005) of a four-year term until August 2005. Thus, a total of seven member positions will be elected from the list of candidates given below.

An official ballot listing the eligible nominees and a brief biographical sketch for each individual will be forwarded by mail to all eligible voting members of the Association on May 18, 2003. Signed and executed, ballots must be mailed to the WJTA office for tallying by July 3, 2003.

Meet The Candidates
WJTA Board of Directors

CRAIG L. ANDERSON

Craig Anderson is a business unit manager for Parker Hannifin Corp. Polyflex-Multitube Business Unit, Stafford, Texas, and Ravenna, Ohio, a position he has held since 1996. He has managed all aspects of various product lines of hose and polymer products. Mr. Anderson also held the positions of product manager, and senior sales engineer at Parker Hannifin. Mr. Anderson attended Bowling Green State University, Bowling Green, Ohio, where he earned a Bachelor of Science degree in construction engineering and management.

Mission: I would like to continue my service to the WJTA with a full term in office and expand my ideas with the

energy required to push our organization to the next level of success. My mission/vision is: Continued progress on a formal WJTA marketing plan with the formation of a Marketing Committee; Increase WJTA membership through value-added and expanded services; Expand the WJTA's reputation to other related organizations, such as SSPC, and consider membership in the organization; Outline and establish goals for the organization around: 1) research and academic excellence, and 2) best business practices for our membership; Work to enhance the WJTA website's functionality; Expand the member education offering by becoming the technology pipeline between research and commercialization; and Evaluate participation in seminars, tradeshow and conferences held by related associations and industry groups.

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

PAT DEBUSK

Pat DeBusk is executive vice president of HydroChem Industrial Services, Deer Park, Texas. A waterblast contractor for 39 years, Mr. DeBusk is very active in new equipment development. Mr. DeBusk has been a WJTA member since the association was founded in 1983, and he is presently on the WJTA Board of Directors and serving as the 2003 WJTA Conference Chairman.

Mission: I believe the WaterJet Technology Association should continue

to develop its interests and expand membership to represent the water blasting industry worldwide. My mission/vision is to: Invite dialogue from all WJTA members, so the WJTA will become a forum for technical and practical information. The association should promote integrity of equipment design, manufacture and sales. Members should regulate themselves and their industry prior to any government move in the waterjet area.

Nominated by: Lydia M. Frenzel, Ph.D., Executive Director, Advisory Council, San Marcos, Texas, and Tom Bonvillian, Vice President, HydroChem Industrial Services, Inc., Deer Park, Texas.

LYDIA M. FRENZEL, Ph.D.

Lydia M. Frenzel, Ph.D., is executive director of the Advisory Council, San Marcos, Texas, and she has served on the WJTA Board of Directors since 1995. An active advocate, industry resource and cross connector of waterjetting and wet

(continued on page 12)

WJTA Conference Sponsors

(sponsor list as of April 15, 2003)

- BuTech Pressure Systems
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- International Waterjet Parts
- Jet Edge
- NLB Corporation
- Parker Polyflex
- TurtleSkin WaterArmor by Warwick
- Universal Minerals
- WOMA Corporation

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abrasive blasting methods to many market sectors in domestic and global applications, Dr. Frenzel shares her knowledge and experience.

Mission: Your future, the future of the WJTA, is linked to a clear, positive, public expression of the advantages offered by the growth of the fluid jet industry. I will continue to enhance WJTA's reputation as the leading global association by expanding our sphere of influence in other technical societies and standards organization. I want to increase the growth of the WJTA by creating a strong program aimed at increasing cooperation between contractors for the purposes of fostering trade in the industry and making end users aware of the breadth and depth of this industry.

Nominated by: Forrest Shook, President, NLB Corporation, Wixom, Michigan.

JUDE LAGUE

Jude Lague is president of Jet Edge, St. Michael, Minnesota. Mr. Lague has been involved in the waterjet industry for nine years. He received Bachelor of Science degrees in marketing and business administration from Minnesota State (Mankato).

Mission: As a board member, I promise to be open-minded and do my best to advance our industry. The WJTA has been the leader in establishing safe guidelines for the waterjet industry. Working pressures and flow rates continue to increase. The WJTA must continue to review current practices to insure that these apply to the higher pressure/flow rates. If potential customers view our industry as dangerous they will find an alternative technology. If the industry views waterjet as "high

risk," manufacturers and users could face higher insurance premiums. We all have an economic stake in keeping our industry safe. Through the Jet News and waterjet conferences, the WJTA continues to be the best source of waterjet information. When the WJTA was founded, communication was a primary objective. Communication must continue to be a primary objective. I have been a member of other associations that report market data. Sales numbers of a market segment are typically what

are reported. The major players in that market segment anonymously report their sales numbers to non-biased board members. These numbers are compiled and then released to the association. The individual players in the market segment typically are not identified. The data is very valuable in understanding market size and trends. I believe our association should identify the segments within the

(continued on page 13)

WJTA Conference Exhibitors

(exhibitor list as of April 15, 2003)

AccuSTREAM
Aimm Technologies, Inc.
Ameri-Force Labor Services
Aqua-Dyne, Inc.
Autoclave Engineers, Fluid Components Division of SnapTite, Inc.
Barton Mines Co., LLC
Boatman Industries Inc.
Boride Products
Business & Industry Connection (BIC) Magazine
BuTech Pressure Systems
CADCRAFT AB
Cat Pumps
Chemac, Inc.
Cleaner Times Magazine
Ebbco Inc.
Flow-Tech Products GMBH
Gardner Denver Water Jetting Systems, Inc.
General Pump, Inc.
Hammelmann Corporation
Heintzmann Corp.

High Pressure Equipment Company
International Waterjet Parts Jet Edge
Jetstream of Houston, LLP
LaPlace Equipment Company
NLB Corporation
Parker Polyflex
Peinemann Equipment
PowerTrack International, Inc.
Pratt & Whitney Advanced System Technologies
South Houston Hose
SPIRSTAR, Inc.
Sprague Prod.
StoneAge, Inc.
TurtleSkin WaterArmor by Warwick
Universal Minerals
VLN Advanced Technologies, Inc.
WGI Heavy Minerals
Wilco Supply, Inc.
WOMA Corporation

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waterjet industry. We should explore the possibility of reporting numbers within those segments.

Nominated by: David Dumas, Sales Manager, Jet Edge, St. Michael, Minnesota.

LARRY LOPER

Larry Loper is vice president of marketing and 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 also served as technical sales coordinator of Autoclave Engineers where he provided sales support for world markets and coordinated activities for a specific project line. Mr. Loper has a Bachelor's degree in chemistry and a Master's degree in business

administration. He currently serves as WJTA treasurer, and he is a member of the American Chemical Society, Society for Petroleum Engineers, AICHE, and the WJTA.

Mission: Larry Loper will work with the directors and membership in the further development of the organization. He will work closely with manufacturers, contractors, and component suppliers to insure that the membership continues to benefit from this quality Association.

Nominated by: Craig L. Anderson, Business Unit Manager, Parker Hannifin Corp. Polyflex Multitube Business Unit, Stafford, Texas.

PETE MITCHELL

Pete Mitchell is the vice president of sales for the Waterjet Division of

Universal Minerals, Inc., a WJTA corporate member since 1992. Mr. Mitchell also served as General Manager for AST Waterjet, Inc., a precision waterjet cutting job shop.

Mission: I have solid work experience in the waterjet industry from both a vendor and end user standpoint. Currently as a vendor providing technical support, I work on a one to one basis with my customers in job shops, manufacturing facilities and the surface preparation industry. I have become familiar with the issues that my customers face on a daily basis. I will enthusiastically bring these issues to the attention of our organization. As a board member, I will be in a great position to provide technical and practical support to our growing industry.

(continued on page 14)



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