

The Clarifier

WISCONSIN WASTEWATER OPERATORS' ASSOCIATION, INC.

Volume 154, February 2004



City of Milton Wastewater Treatment Facility

**38th Annual W.W.O.A. Conference
October 26-29, 2004**

Wisconsin Dells and Kalahari Resort Headquarters

**HOST:
Reedsburg Wastewater Treatment Plant**



The Clarifier

Visit our Web Site at www.wwoa.org

Volume 154, February 2004, Page 2



President's Message

I need to come clean, fess up, and spill the beans about the office of WWOA President. Besides the great honor the position is itself, there are many other things that come along in its path. An example of that is the opportunity to speak publicly as the representative of the organization. I have received several of these in the past few weeks. In case you didn't see my acceptance of the gavel speech at the convention last fall, my speech giving technique is equivalent to a father assembling a swing set on Christmas Eve. In other words, a lot of reading and not a lot of eye contact.

Another thing is this "President's Message". I will be honest, for several years when I was hoping to become president, the ideas for this column flowed out of me faster than an illegal discharge. I could think of things to write about at the drop of a hat. Then you become president. You think of the great people that have written this column before and the content of their messages. There have been poems and prose, updates and business briefings, congratulatory messages and letters of sympathy. Never any sign of writer's block, never!

Many people see this column, whether they believe the content or not are yet to be determined, but they see it nonetheless. Now you have to be careful about what you write because people are easily offended these days. Therefore, I have decided to take a different approach. I am hoping that each and every one of you that reads this column this year looks at it as a lighthearted approach to what we do. We all have enough pressures at work already to read some "heavy handed" article by a guy that will be replaced in a

year's time. So I ask you to sit back and relate in your own way to the things I write about in this Column.

The last two weeks of the year are always "vacation use up" days here. I've always encouraged my crew to not donate vacation time back to the City. So hence, we have somewhat of a skeleton crew. I like to take advantage of this time to close out project files, archive project files, clean out the stuff in the drawers and work space that are more appropriate for the previous year than the next one. Along this time, I too use some vacation time, some of it sort of working in the office accomplishing the above and other time just sort of goofing off.

It happened to be one of these days, when I received a phone call from a resident that lives on a street that will be a part of our 2004 construction project. Mind you now that this project is in such a preliminary stage, plans haven't even been drawn for it. The resident called to inquire if indeed his property would be impacted by the project, and when his question was confirmed, started to complain about the project. Now stay with me here. We don't know how the property is impacted, we have no drawings, but we do have a complaint. To say the least I was a little dumbfounded by it all because I was in the middle of putting away the 2003 project files, and already receiving complaints for 2004. This was a first for me, complaints before a project!

And so it goes in our line of work. You deal with the public in the best manner you can. You try to be "Politically Correct", and after you have finished with the person you wonder what world this person is living in! Public Relations (PR) has always intrigued me. Look at all the people you deal with, and then look at all the different personalities and character traits (and I mean character traits!) they possess. You never know which direction someone is coming from, but we always seem to figure him or her out and eventually

their concerns are answered. PR is a very important function of our jobs. If you let it go and never deal with any PR, our industry will be forever doomed. If you don't take the time to explain to people what you do, where you do it, and what you do it with, they will live their entire lives in the "flush and forget" world. We not only do a disservice to ourselves, but we miss the opportunity to help people from being "wastewater ignorant". That is almost enough to keep you awake at night, thinking some poor soul may go through life never knowing the truth or the facts of our business! As we enter the Compliance Maintenance Annual Report time of year, take a little extra time to explain to your Boards, Commissions, or whatever governing body you have, these very same points. Politicians' career with a governing body is considerably shorter than that of a wastewater operator. Be sure to get the word out to them.

Enjoy the Day!

Randy Herwig
WWOA President



Milton WWTP

The City of Milton hosted an open house at the newly improved wastewater treatment plant on August 14, 2003. The City upgraded the treatment plant to meet Milton's needs for the next 20 years, utilizing Strand Associates, Inc. for the planning, design and construction management. The enhancements include expanded biological and chemical treatment processes that are computer controlled and state-of-the-art.

Wastewater enters the plant and goes through a screening process to remove large debris. New



**CRANE
ENGINEERING
SALES INC.**

**CALL 24/7:
920-733-4425**

**Kimberly
Waukesha
Wisconsin Rapids**

www.crane-eng.com

NOW 3 SERVICE CENTERS!

Our technicians uncover the "story" behind every repair. We analyze your equipment and your systems to determine if the MTBPM (mean time between periodic maintenance) is suitable for the application. After gaining this knowledge we can then make the appropriate repairs and system recommendations.

- On-Site Repair of Pumps, Gearboxes, Valves and Instrumentation
- Free Tear-Down and Inspection Report in our shop on most equipment
- Preventative maintenance and repair training seminars on-site or in our Davis Training Center
- 24 Hour 7 Days Per Week
- One Year Warranty on All Work



mechanical fine screens remove and discharge material that is cleaned, bagged, and disposed of in a landfill. Then phosphorus is removed to decrease the growth of algae when the treated water is discharged into the Rock River. Additional aeration tanks were added as part of the upgrade, as well as new, larger blowers. Air is introduced into the aeration tanks and the microorganisms feed on and reduce the organic matter. From the aeration tanks, water flows into the final clarifiers, where the microorganisms settle out and are separated from the clarified water. The water is then disinfected in the chlorine contact tank. Finally the treated and disinfected water flows to the effluent pumping station, where it is pumped out to the Rock River via an outfall that is shared with the Consolidated Koshkonong Sanitary District. Waste activated sludge is thickened, stored, and spread on farmlands in the spring and fall.

The project was bid in April 2002 and construction was completed on time and under budget in June 2003. In order to minimize costs, the existing structures and processes were utilized to the maximum extent, whenever feasible. The upgraded WWTP was designed to provide advanced secondary treatment for an average annual flow of 0.625 MGD.

MARK YOUR CALENDAR NOW

77th Annual CSWEA Meeting
May 16 – 19, 2004

Monona Terrace Convention Center
Madison, Wisconsin

Here is an excellent opportunity to attend a Central States Water Environment Association Meeting in Wisconsin at a premier location, the Monona Terrace in Madison.

Two days of technical sessions and exhibits are available for you, along with social events that provide the time to renew old friendships and make new ones, an excellent networking opportunity for water and wastewater professionals.

Check the CSWEA web site at: www.cswea.org for more details. If you are a WEF / CSWEA member, look for your registration information in early March.

Building Trust in the Water/Wastewater Industry

As one of the largest mechanical and fire protection contractors in the United States, J. F. Ahern Co. believes in providing the same level of service and professionalism on all jobs, regardless of size. We get the job done, and have the track record to prove it.

For more information, contact Pete Wachs in our Water/Wastewater Department.

TEL: (920) 921-9020
FAX: (920) 921-8632

Building the Midwest Since 1880



Construction • Design/Build
Preventive Maintenance • Service



J. F. Ahern Co.

Full Service Mechanical and Fire Protection Contractors since 1880
 855 Morris St., P.O. Box 1316 • Fond du Lac, WI 54936-1316
 TEL (920) 921-9020 • FAX (920) 929-8825 • www.jfahern.com
 Wisconsin • Illinois • Missouri • Nebraska • Iowa

Your Best Source for Pumps & Parts

Feeding chemicals? Nobody has more equipment in stock.

- More Tank Choices
- More Pump Choices
- More Polymer Systems
- More Gas Systems
- More Process Analyzers
- More Tablet Choices

Plus, we offer the highest level of technical support, ready to handle your toughest application questions. Put us to the test. You'll join the thousands of other water and wastewater operators who get the best treatment from USABlueBook.



Thousands of items ready to ship!



USABlueBook®

Get the Best Treatment™

1-800-548-1234 • www.usabluebook.com

PERCEPTION vs. REALITY

"I never knew this was here." "Wow!" "I thought all the pipes just went to the lake." "The automation is incredible." "Who would have guessed this was here?" "How many people work here, I don't see many people around." Any of these comments sound familiar? If you've conducted tours of your treatment plant you probably have heard similar things said.

At our annual conference in the Dells, Kay Marshall gave a report at the business meeting on her committee's activities related to career development. She reminded us of the fact that we are all getting older, (thanks Kay) and that in the next 10 years or so many of us will be looking at retirement. The down side, she reported, is that there are very few young folks who have plans to replace us, and guidance counselors basically are oblivious to our vocation.

So what can you do to help in this area? **ACTUALLY THERE IS PLENTY YOU CAN DO.** Let's first face the music. Most kids these days have visions of the flashy, high tech jobs, sitting in a well-furnished office at a computer as a broker or an engineer. Working at a "sewage" treatment plant has no appeal to them, if by chance it even crossed their mind at all. Then there are many who want to do something for the "environment". "Maybe I'll work for the DNR," they will say. "Do something with animals".

So what is it we can do? **YOU CAN HELP CHANGE THE PERCEPTION!!!!!!** Here's how.

- No. 1 Become involved in your local school systems, both public and private. Don't just wait for someone to call for a tour. Send letters to principals, science, biology, and chemistry teachers. You will be surprised by the response. When touring people through your plant, explain the details. Let them know what it takes to produce clean water. Talk up the technology involved in your plant, be it the computerization, instrumentation, and or the process control you utilize to run the plant. By giving tours we can change the perception of many young minds who are perhaps searching for a career field.
- No. 2 Offer to supply "bugs" to the biology class for viewing microscopically. Biology teachers are usually collecting pond water for live organisms and would love to get some different subjects under the scope.
- No. 3 Participate in a "School to Work" program or similar event in your district. These can be a lot of

fun and give you a chance to explain what we really do.

- No. 4. Work with local service groups to give them tours or presentations. Many of these folks don't even know where you are located not to mention what actually goes on at the plant.
- No. 5 Present a professional image when addressing your governing committees, groups coming through the plant, talking on the phone or e-mailing others.

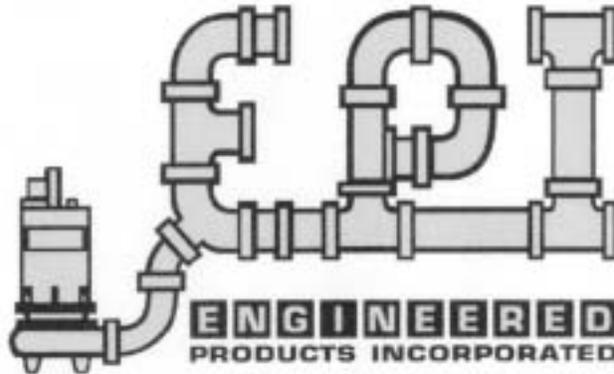
Yes, this will all take some effort, but I can assure you, it will be worth it. Word does travel and when adults and kids start to realize what really goes on at our plants, they usually are amazed and pass it on. For those who want high tech, or want a job benefiting the environment, - guess what - we're right here in almost every community.

By becoming involved with the community from an educational standpoint, you can provide an important link to so many people who have no idea what we do. We all need to promote our vocation to insure there will be people to take our place in the future. Give it a try. You won't be disappointed.

Hawkins Water Treatment Group
Meeting the Water Needs of Municipal, Commercial, Industrial
Municipal and Institutional Organizations in the Upper Midwest.

MINNESOTA	Minneapolis 612-331-9100	NORTH DAKOTA	Fargo 701-293-9618
MONTANA	Billings 406-245-6246		Washburn 701-462-8588
IOWA	Slater 515-685-2250	SOUTH DAKOTA	Black Hawk 605-787-6881
ILLINOIS	Willow Springs 708-467-0125		Sioux Falls 605-368-5793
NEBRASKA	Lincoln 402-589-1851	WISCONSIN	Fond du Lac 920-923-1850
			Superior 715-392-5121

390 E. Hennepin Avenue
Minneapolis, MN 55413
Phone: 612-331-9100
Fax: 612-617-8096



SPECIALIZING IN THE WATER AND WASTEWATER INDUSTRY

SALES ♦ SERVICE ♦ REPAIR ♦ INSTALLATION

ENGINEERED PRODUCTS HAS EXPERIENCE WITH THE FOLLOWING MANUFACTURED EQUIPMENT

PUMPS

HYDROMATIC
FAIRBANKS
NETZSCH
CROWN/BARNES
CHICAGO
GORMAN-RUPP

FLYGT
MYERS
TSURUMI
EBARA
WEINMAN

MARLOW PISTON
SMITH & LOVELESS
A-C
PACO
MOYNO
E-ONE

BLOWERS

SUTORBILT
ROOTS
MD PNEUMATIC
KAESER • SPENCER
GARDNER DENVER
HOFFMAN/LAMPSON

VALVES PLUG ♦ CHECK ♦ GATE ♦ BUTTERFLY

HOMESTEAD	DEZURIK	NIBCO
MOSSER	TECHNO	TROY
BERMAD	CLOW	GA

MISCELLANEOUS

BLOWER FILTERS	PUMP FLOATS
MECHANICAL SEALS	CHART RECORDERS
BEARINGS	FLOW METERS
MISC PARTS	CHEM FEED SYSTEMS

MECHANICAL FINE SCREENS

WASTE TECH INC • HUBER • HYCOR

CORROSION RESTORATION LIFT STATIONS & CLARIFIERS

SANDBLAST • PRIME/PAINT • REBUILD CLARIFIER SLUDGE COLLECTOR DRIVE UNITS

PROFESSIONAL SERVICES

EQUIPMENT SELECTION • SIZING • INSTALLATION • START UP

DESIGN/RETROFIT/TURN KEY WATER/WASTEWATER TREATMENT

TO INCLUDE LIFT STATIONS / ALL PROCESS PROJECTS WITH SINGLE SOURCE RESPONSIBILITY

ENGINEERED PRODUCTS INC. ♦ GREEN BAY, WISCONSIN

800 • 793 • 3557

Clarifier Brain Teaser - Phosphorus Removal

Introductory:

What is the NR Code number that deals with phosphorus removal regulations?

- A. NR 111
- B. NR 218
- C. NR 105
- D. NR 217

Answer: **D.** NR 217

Advanced:

Your facility uses ferrous sulfate and polymer to remove phosphorus chemically and physically, and the loads of ferrous have been consistently good. You have been testing your influent daily and see no increases in phosphorus loading. However, your effluent phosphorus has been on the rise. One of the other problems that you have had lately is with filamentous growth in your aeration basins, so you have been

shortening the sludge age up quite a bit by wasting more to get the little demons out of there. Also, the D.O. has been uncontrollably high. What could be the problem with the inefficient phosphorus removal?

- A. Filamentous organisms can tie up iron compounds.
- B. The metal and coagulant doses may be tied up in the RAS and WAS.
- C. The high D.O. may cause filament shear, causing poor molecular binding of the iron with the phosphorus.
- D. Someone is sneaking over the fence at night and dumping something high in phosphorus into your facility.

Answer: **B.** By decreasing the biological mass suddenly with steady loading, you might be underdosing Ferrous and polymer.

Actually, come to think about it, D is also a possibility.

Mapping for Success



"OUR Village has always valued and protected our water resources. Using GIS, we've been able to identify our sewer system priorities and effectively plan for future maintenance and development."

—Jerry Butts, Belleville Director of Public Works

GIS can be an effective tool for managing public infrastructure. MSA has helped communities like Belleville use GIS to map their sewer system data, analyze system conditions, project future needs, and control costs. If your community wants to maximize your mapping investments, turn to MSA—Your Trusted Partner!

MSA

PROFESSIONAL SERVICES
TRANSPORTATION • MUNICIPAL
DEVELOPMENT • ENVIRONMENTAL

"Your Trusted Partner"

1-800-362-4505

www.msa-ps.com

Government Affairs Seminar

February 26, 2004

Marriott Madison West, 1313 John Q. Hammonds Drive, Middleton, WI

8:00 Registration
 8:20 Welcome/Opening Remarks Tom Foltz
 Session Moderator: Bernie Robertson
 8:30 Keynote Address
 Secretary Scott Hassett
 8:50 NR 149 Laboratory Certification
 Alfredo Sotomayor and Amy Tutwiler
 9:45 Chloride and Mercury Issues/Variations
 Tom Muga
 10:15 Morning Break
 10:30 Biosolids Issues
 Greg Kester
 11:15 Effects of New Bacteria Standard on
 Disinfection
 Toni Glymph
 11:45 Lunch
 Session Moderator: Dave Taylor
 12:45 Sanitary Sewer Overflows
 Paul Kent and Duane Schuettpelz

1:30 Water Quantity and Water Reuse
 Jamal Awad
 2:00 Afternoon Break
 2:15 Security Programs
 Bill Desing
 2:45 New Ammonia WQ Standards Rule
 Rick Reichardt
 3:15 DNR Update
 Roger Larson
 3:45 Seminar Adjourns - See you next year!

Registration: \$65 On-Site Registration (after 2/9/04)
 (includes program materials, breaks and lunch)

Seminar Details

Information: Contact Tom Foltz at (608) 251-4843
 Where: Marriott Madison West
 1313 John Q. Hammonds Drive
 Middleton, Wisconsin 53562
 (608) 831-2000 or (800) 228-9290



**24 HOUR
 SERVICE**

BRAUN PUMP & CONTROLS

1-800-211-6432

FOR WATER AND WASTE WATER EQUIPMENT.
 FAST AND EFFICIENT FACTORY TRAINED STAFF,
 EXPERIENCED IN ALL ASPECTS OF WATER AND
 WASTEWATER TREATMENT FIELD.

We Use Only Original Equipment Manufactured Parts

1574 3rd Avenue SW, Suite 2, New Prague, MN 56071
 (Office) 952-758-6600 • (Fax) 952-758-7778
 218-566-4994 (Northern Minnesota Shop)
 715-656-4481 (Wisconsin Shop) • 630-879-6610 (Illinois Office)
www.braunpump.com

FIELD SERVICE / IN SHOP REPAIR

- PUMP REPAIRS • ALL MAKES
- CONTROL REHABILITATION
- LIFT STATION REHABILITATION
- DEWATERING EQUIPMENT RENTALS and INSTALLATION
- CHECK VALVE REPLACEMENT
- CONTROL TROUBLE SHOOTING
- CONSULTING
- EQUIPPED FOR CONFINED SPACE ENTRY
- EMERGENCY BYPASSING SYSTEMS

Clarifier Brain Teaser - December 2003

Subject: Wastewater Ponds and Lagoons

Introductory Level:

It's winter in Wisconsin. The temperature of your wastewater pond is dropping fast. You'd like to keep nitrifying, since you've just been given a brand new ammonia limit on your permit. What options do you have to keep temperatures from dipping too low?

- A. Lower pond level, increase circulation rates, operate in parallel
- B. Raise pond level, decrease circulation rates, operate in series
- C. Install new aerators, add another holding pond
- D. Discharge as fast as possible

ANSWER: B. Increasing the depth may help keep the temperatures warmer. High circulation rates and operating in parallel, dividing the flow, will decrease the temperatures.

Advanced Level:

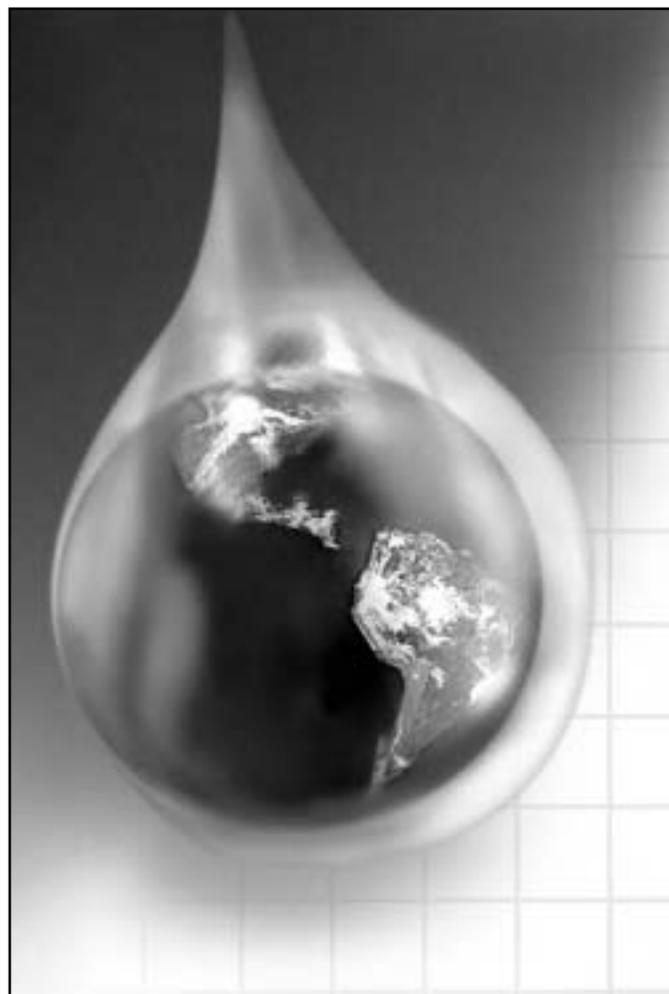
A new food industry, Lotsaslop, Inc., is moving into town. They estimate that their BOD loading will be about 2,000 mg/L and their flow approximately 50,000 gallons per day into your wastewater treatment pond system. Your primary treatment pond, without counting your polishing pond, is 850 feet wide and 1020 feet long. The primary pond's average depth is 4 feet. How much loading, in pounds of BOD per day per acre, will this industry be adding to your primary pond?

- A. 8340 lbs BOD/day/acre
- B. 191 lbs BOD/day/acre
- C. 10.6 lbs BOD/day/acre
- D. 41.9 lbs BOD/day/acre

Answer: D.

$$\frac{850 \text{ feet} \times 1020 \text{ feet}}{43,560 \text{ sq. ft. ac.}} = 19.90 \text{ acres}$$

$$\frac{2,000 \text{ mg/L} \times .050 \text{ MG} \times 8.34 \text{ lbs/gal}}{19.90 \text{ acres}} = 41.9 \text{ lbs BOD/day/acre}$$



*See the world you live in,
the water you
depend on.*

Eau Claire, WI - Green Bay, WI - Madison, WI - Waukesha, WI
(800) 666-3103 • www.AyresAssociates.com

AYRES
ASSOCIATES

Engineers
Architects
Scientists
Photogrammetrists

**Wisconsin Wastewater Operators' Association, Inc.
Clarifier Advertising Space Contract**

Please submit this order form and advance payment to reserve advertising space for a single insertion or multiple issues. The WWOA Clarifier is authorized to insert our advertising under the terms and conditions specified herein.

Name of Organization _____
 Address _____
 Telephone _____ Fax _____ Email Address _____
 Space _____ Size _____ First Insertion Issue _____
 #1 February _____ @ \$ _____ Per Insertion
 #2 April _____ @ \$ _____ Per Insertion
 #3 June _____ @ \$ _____ Per Insertion
 #4 September _____ @ \$ _____ Per Insertion
 #5 December _____ @ \$ _____ Per Insertion

We understand that all advertising is net payable in advance with advertising order.

Make check payable to: WWOA Executive Secretary

Send contract and payment to: Richard D. McKee,
 WWOA Executive Secretary
 416 Herman Street
 Arena WI 53503

Authorized By: Name _____ Position _____

Signature _____ Date _____

For complete contract regulations :

Executive Secretary, Richard D. McKee (608) 753-9362 Email: rdmckee@charter.net

Clarifier Editor, Dan Busch (920) 438-1101 Email: dbusch@gbmsd.org

Space	Ad Size	1 Issue	2 Issues	3 Issues	4 Issues	5 Issues
Full Page	H - 9 1/2", W - 7 1/2"	\$230	\$220	\$200	\$185	\$175
1/2 Page, (1 Column)	H - 9 1/2", W - 3 1/2"	\$145	\$130	\$120	\$110	\$100
1/2 Page, (1 Banner)	H - 4 3/4", W - 7 1/2"	\$145	\$130	\$120	\$110	\$100
1/4 Page, (1/2 Column)	H - 4 3/4", W - 3 1/2"	\$90	\$85	\$80	\$75	\$70
1/8 Page, (1/4 Column)	H - 2 3/8", W - 3 1/2"	\$60	\$55	\$50	\$45	\$40

- Prices in advertising rates are based on camera-ready copy or prepared layout with camera-ready logo and/or artwork reduced to size.
- Layouts of copy should be in black and white only: no colored inks.
- Reduced rate is based on the same copy being used for each consecutive issue. **Each change of copy will result in higher charges, according to the number of issues in which change copy is used.**
- Agencies are entitled to one copy of an issue regardless of the number of advertisements placed by the agency in the publication.
- Agency commissions are not deductible from advertising rates.

NCD WWOA Region Meeting

The Training Center at North Central Labs in Birnamwood was the site of the August 26 NCD WWOA Region meeting. This beautiful facility and the wonderful people who work there made the meeting a very enjoyable experience for all who attended. There were operators from all over the state that made the drive to NCL for the meeting. The morning started out with coffee and donuts supplied by NCL. Rich Boden of Plover helped organize the meeting and introduced the speakers. He started out the meeting by thanking NCL for hosting the meeting and introduced Mike Raynovic. Mike then welcomed everyone to the meeting and explained the agenda for the day.

Jerry from NCL, a Chemist/Biologist, then took his turn in front of the crowd and gave a very thorough talk on laboratory techniques. Mr. Raynovic then gave one of his talks on BOD troubleshooting and supplied the audience with great advice with a touch of humor mixed in. A short break followed Mike's talk. Next up was Brian from NCL introducing new equipment for Wastewater Labs. Ken Bloom the North Central District Vice Chairman then conducted the business meeting. Ken introduced the members of the newly formed Steering Committee. Members of the committee are as follows: Rich Boden (Plover), Tom Zager (Wisconsin Rapids), Ron Dickrell (Marshfield), Jeremy Cramer (Stevens Point), and Ken Johnson (Rib Mountain). He then gave an explanation of the committee.

The members of the operator's competition team for the upcoming WWOA Conference were announced. Members of the team are Matt Saloun (Whiting), Chris Helgestad (Spencer), Ken Bloom (Marathon City), and Jeremy Cramer (Stevens Point). It was announced that the Almond WWTP was receiving an EPA award for Excellence in the Small Facility category. Everyone in attendance applauded loudly. After the Business Meeting a very delicious lunch was served, followed by tours of the facility.

The meeting started back up after lunch with Ryan Wittrock of Thermo Orion giving a speedy talk on new products being offered by Orion. John Wilharm then gave a short presentation on new lab equipment being offered by Mettler-Toledo. Christine Brittin of YSI was up next and gave a brief talk on new products

being offered by YSI. This was followed by Paul Stinson of ERTCO who talked about new products and about a program to trade in old mercury thermometers. David Webb of the WI DNR then followed with a very informative update on NR 148-149 and what is coming up in the near future for WWTP laboratories. After David's talk, Lacey Hoyt and Bonnie Kotila of the DNR talked about mistakes to avoid on the monthly DMR's. The meeting was a great success with many people in attendance. The North Central District was treated to a great meeting at a great facility thanks to Mike Raynovic and his great staff at NCL.

2004 Clarifier Deadlines	
April 2004	- March 12, 2004
June 2004	- May 14, 2004
September 2004	- August 13, 2004
December 2004	- November 12, 2004

A BRIGHTER WAY TO CONTROL WATER



Nobody knows controls and instrumentation for water and wastewater processes like P.J. Kortens. Whatever your system and control challenges, we offer professional technical support ... over the phone, in the field, day or night. We'll be there!

Calibration services

- Levels, pressure, flow and temperature control

Analytical measurements

- Turbidity, pH, dissolved oxygen

System design and integration

- PLC programming
- SCADA integration
- Telemetry systems

Preventative maintenance and service contracts

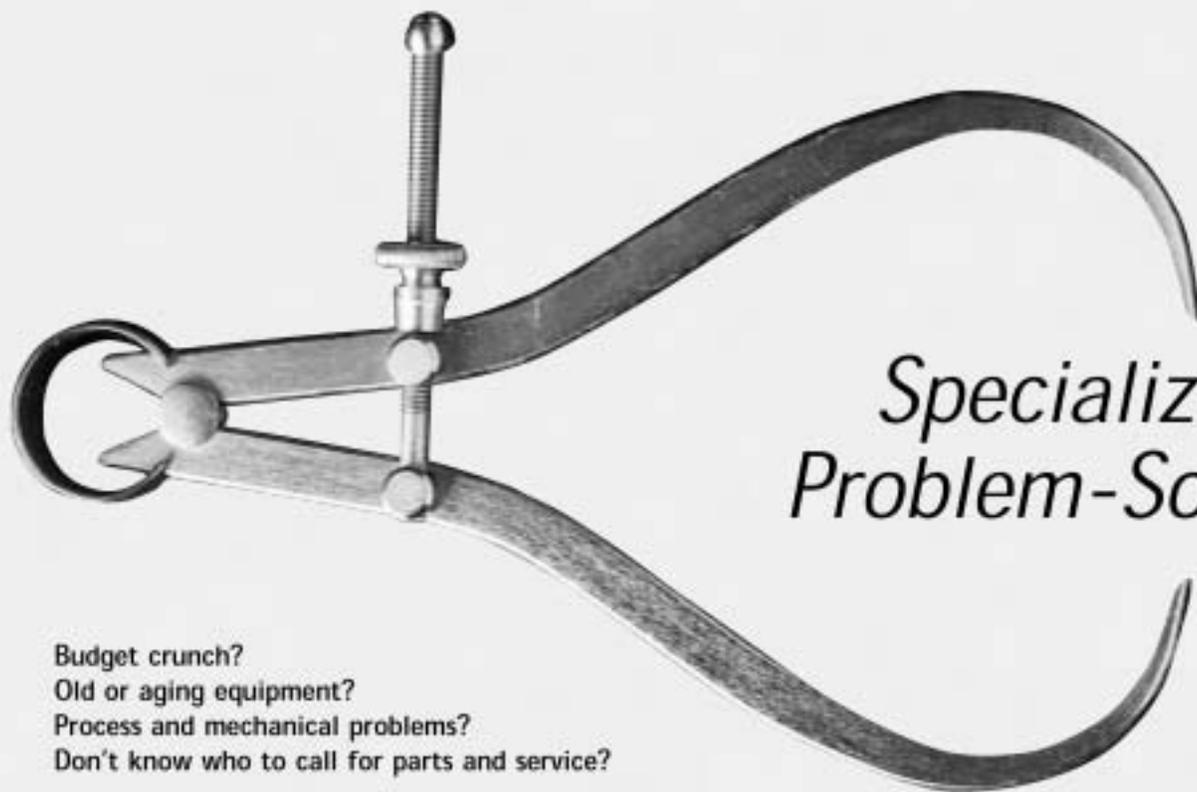
ISO 9002 CERTIFIED

PJKco.
P. J. KORTENS and COMPANY, INC.

Appleton, WI
920-730-9023
service@pjkco.com

With over 120 years of combined experience, you'll get the "brightest" solution the first time.

PJK-005



Specialized Problem-Solving

- Budget crunch?
- Old or aging equipment?
- Process and mechanical problems?
- Don't know who to call for parts and service?

Call Environmental Resources: "The Equipment Doctors."

Call our team of experienced professionals to make your existing process equipment run at peak performance and reliability, guaranteed. For every equipment make, type or model, any age or condition. For 40% less cost and 60% less time than new equipment. From headworks to sand filters, and everything in between, call for:

- Service Information and Assistance
- Discount Parts and Custom Components
- Assessments and Trouble-shooting
- Capacity and Efficiency Upgrades
- Repairs and Restorations
- Retrofits and Replacements
- Market Appraisals and Cost Estimates
- Technical Consulting and Project Management

Service is our business... our only business.

Celebrating 10 years of
Technical Excellence
1993-2003



**Environmental
Resources Inc.**

"The Equipment Doctors"

PO Box 786
Pewaukee, WI 53072
800-691-0998
FAX 262-691-0992
erxmwh@aol.com



(L to R) Rod Rhodes-Public Works Department, Dan Knapp-Public Works Director, & Mike McGinnis-Wastewater Operator

Northwest District Wastewater Operators Fall Meeting City of Chetek- October 17, 2003

The fall meeting was held in the City of Chetek at the Northwood's Brewpub-Grill. There were 67 people in attendance.

Introduction was done by Craig Walkey-Vice chair, due to the absence of Chairman Kurt Damrow. Following the introduction Craig introduced the DPW director, Dan Knapp, who welcomed the group to the City of Chetek in the absence of the Honorable Mayor of Chetek who had a prior commitment.

Craig introduced the first presenter, Chris Groh, who represents the Wisconsin Rural Water Association. Chris' topic was on Pathogens in the work place. Chris reaffirmed the reason why an operator should not lick their fingers during the work shift. Chris went into a lengthy discussion why the elimination of pathogens is so important. Chris' discussion covered the history of first pathogen control methods, progressive efforts toward sanitation, the introduction of chlorine, the progression of water borne disease control/elimination. Chris also briefly discussed viruses, bacteria such as Typhoid fever, Cholera, Salmonellas, and Helicobacter pylori, E Coli0157. Also covered were Fungi, Parasites, Endameba histolytic, Giardia, Chyptoporida, and SARS. After all that Chris discussed preventative measures one can take to minimize problems with all little "things" such as UV, chlorine and ultra violet. After Chris presentation, everyone wanted to go home and take a bath.

The next presentation was by Pat Ryan who represents U.S. Filter. Pat was the lead engineer on the pretreatment process for an industrial application in Chetek, "Parker Hannifin Company". Pat discussed the pretreatment process of membrane filtration to remove Zinc and

Chrome. Pat also covered other applications for micro filtration pretreatment in an industrial application.

The next presentation was by Bonnie Kotila, DNR out of the Rhinelander office. Bonnie spoke on a topic that is near and dear to all our hearts, the DMR reports. Bonnie used an overhead to point out common mistakes found on the DMR reports. She showed examples and discussed what she would like to see on these reports to make them usable without having to send them back to the operator for revising. Everyone had a copy of the sample report to make notes and it looked like everyone did make notes. I guess she put the fear of God in their hearts.

The next presentation was by Jim Johnson (yes that is his real name) representing Technical Equipment sales. Jim focused on UV stuff. Jim discussed advantages of UV such as, no chemical to deal with and works on electricity. Jim discussed what UV light is and types of UV light such as, UV-A, UV-B, and UV-C. Jim discussed how UV light inactivates/destroys microorganisms. Jim discussed the formula of $D=I \times T$ or Dose= Intensity times time. There is a point during dosage where higher dosages will not create a "0". Discussion further covered factors used in sizing UV systems such as, suspended solids, iron, hydraulics, hardness, temperature, water source, design, and lamp life. During design you need to do a spectrophotomer test of

Engineering America, Inc., Helping to Build a Sound American Infrastructure

REPRESENTING

- Bolted Flat Panel Steel Tanks- Factory Applied Coatings
- Wastewater Mixing Systems
- Prefabricated Water Booster Stations
- Industrial Dry Bulk Handling Systems
- Pneumatic Conveying Systems
- Dryers
- Class " A " Sludge Process Systems
- Specialty Valves
- Clarifiers
- UV Disinfection
- Wastewater Process Pumps
- Aluminum Domes & Covers
- Blowers, Centrifugal & Positive Displacement
- Custom Sound Enclosures
- Modular Buildings
- Sequencing Batch Reactor Treatment Systems
- Aeration Equipment & Systems



ENGINEERING AMERICA, INC.

647 Hale Ave. N
Oakdale, MN. 55128
Phone (651) 777-4041
Fax (651) 777-5312
www.engamerica.com

Contact Mike Couch for all of your
Water and Wastewater needs at
mcouch@engamerica.com



actual water to get a general idea for sizing and type. Jim discussed low vs. medium pressure lamps and wavelengths needed to produce favorable results. Jim discussed the correlation of temperature inside of the lamps vs. vaporization of mercury in lamps. Also discussed Amalgam lamp types, and cleaning of UV systems, such as automatic vs. manual. Jim discussed how electronic ballast works and why submerged tubes/ballast have advantages over above ground ballast.

The next presentation was by Darren Lochner representing UW Extension Red Cedar River Basin coordinator. Darren's topic focused around the Red Cedar water shed. Darren went into great detail on the basin land use, basin geographic, basin issues, and basin projects in progress. Darren discussed the extensive testing done in the basin to determine where the phosphorus loadings were coming from and the sampling showed 66% agricultural and 11% forest. Darren asked what stakeholders were - anyone who lives, works, or plays in the basin. Included in the list of stakeholders are: lake associations, realtors, general public, municipalities, and industrial dischargers. Darren discussed TMDL projects, the process and the goals of 45% reduction. The next piece of the puzzle will be storm water run off, stay tuned for more.

The next presentation was by Dave Braun representing Braun Pump. Dave first discussed types of drain plugs used by different manufacturers. The best for servicing and removal would be stainless steel. Dave had many good maintenance tips to follow for pump equipment. Tips such as, use dielectric oil for motors, what to look for if you find moisture in the oil, how to set proper tolerances on the wear rings, using stainless chains in lift station applications for pumps, use of Meggs for testing motor insulation-line voltage-motor housing, and used an overhead to show a good lift station lay out for cables, pumps, valve pits and controls. Dave is full of great information and is willing to share his knowledge with anyone who wants to listen.

Following the presentations was the business meeting. The treasurers report was read, the balance in the checkbook before the meeting was \$1969.26. The secretary's report was given and the group accepted both reports. The main topic was election of officers. Craig Walkey, Vice Chair, moved up into the Chairman position. Mike Romsos was re-elected as Treasurer and Wally Thom was re-elected as Secretary. The new Vice Chairperson is Mike LaRose. Elections were closed. Meeting dates and places for 2004 will be as follows:

Spring April 16, 2004	Camp Phillips Scout Reservation in Haugen, WI
Summer July 16, 2004	Village of Butternut, WI
Fall October 15, 2004	Village of Turtle Lake, WI

A motion was made to adjourn.

Respectfully submitted,

Wally H. Thom
NWWOA Secretary



TMI Coatings, Inc.
2805 Dodd Road
Eagan, MN 55121
651-452-6100 or 800-328-0229

TMI COATINGS is experienced in "COATING"

FIBERGLASS DOMES
CLARIFIERS/TANKS
COVERED BASINS
STRUCTURAL STEEL
INDUSTRIAL FLOORS

Wisconsin references available



WASTEWATER CONSULTING

*In Partnership
With You*

DONOHUE®
ASSOCIATES

Sheboygan, Wis. 920-208-0296 Madison 608-268-0720 Milwaukee, Wis. 414-431-5700

www.donohue-associates.com

Developing & Implementing A Grease Removal Program

By Steve Tice, Manager
Clintonville Wastewater Utility

Imagine getting a call from the police dispatcher on a Friday night with the news that there was raw sewerage all over the main highway that leads into our city. Or, what about a call that someone's basement had backed up due to a lift station not starting. And it's the mayor's basement! Or last but not least, a sewer backup that flooded a convenience store closing it for 4 days to the tune of \$25,000.00. All of those events actually happened to us, due to excessive grease discharged into our sanitary sewer system.

Making these events even more difficult on our Utility was the fact that the property owners blamed us for not cleaning our sewer system enough. The truth is we do clean our sewers on a regular basis, and we have the paperwork to prove it. The problem was that the businesses did not have adequate grease removal facilities, or they were not maintaining them properly.

To remedy our excess grease challenge, we as a Utility chose to enforce our Sewer Use Ordinance. Facilities that had inadequate grease removal structures, commonly called grease traps, were required to install them. Our County Sanitarian was very helpful in this process. He was a convincing voice that business owners were willing to listen to.

Once we got the grease removal devices in place we also generated a simple program to assure us that the devices were being cleaned on a timely basis. At the beginning of each year an inspection of the facility is made by Utility personnel. Each facility is given a spreadsheet/poster that is to be hung in plain view in their kitchen area. Each time the grease removal device is cleaned it must be recorded on that spreadsheet/poster. The spreadsheet/poster is reviewed annually with the business owner or manager. In the event that maintenance has not been performed then enforcement action can be taken according to our local ordinance. Thankfully, our

business owners have cooperated fully with this program and no enforcement has had to be taken. They are appreciative that the program is simple. They also respond positively when we tell them that their actions have made a difference in our system.

Annual grease inspections coupled with annual sewer main cleaning has been very successful in Clintonville. Since this program was implemented we have not suffered a single backup due to excess grease. We have also seen a measurable reduction in filamentous growth in our oxidation ditch. That reduction has lowered effluent BOD5 and TSS results. Lower results are good for the environment, and yields savings in our NR101 fees.

Excess grease can give an operator nightmares. Consistent annual inspections and cleaning have given us many good nights of sleep.

ATTENTION OPERATORS:

VFD APPLICATION SEMINAR

- THEORY OF VFD OPERATION
- VFD COMPONENTS
- FEATURES & CAPABILITIES
- APPLICATIONS FOR THE WWTP
- WISCONSIN CASE STUDIES
- DNR CREDITS

COMING SOON TO A CITY NEAR YOU!

GREEN BAY	TOMAH	MADISON
March 23	March 24	March 25

Watch the mail for your invitation or call:

WILLIAM/REID LTD LLC. & DANFOSS

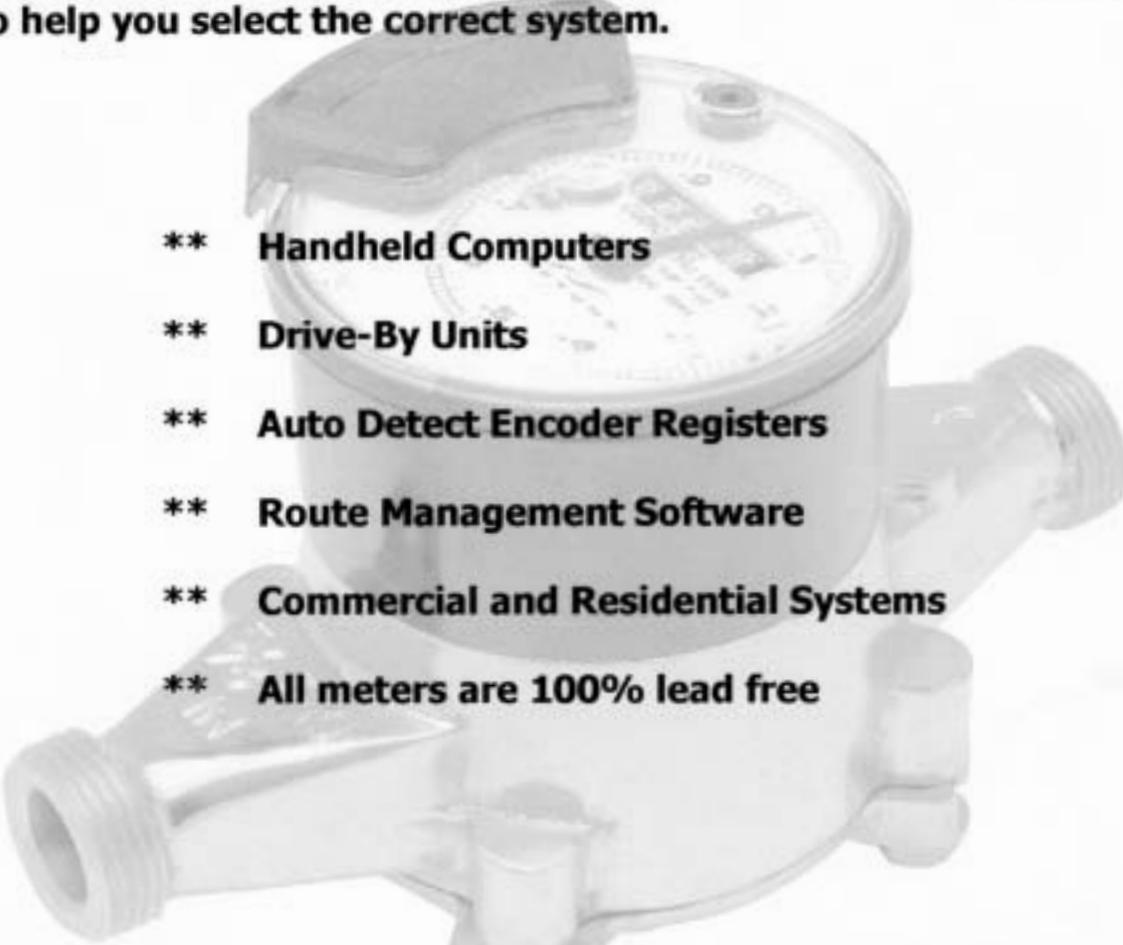
888.272.1722

www.williamreidltd.com



Davies/Northern Water Works Supply

With more than 35 years experience in the water meter industry, Davies/Northern Water Works Supply has the skill and knowledge to help you select the correct system.

- 
- ** Handheld Computers**
 - ** Drive-By Units**
 - ** Auto Detect Encoder Registers**
 - ** Route Management Software**
 - ** Commercial and Residential Systems**
 - ** All meters are 100% lead free**

Contact your local Davies/Northern Water Works Supply representative to learn which solution is right for you.

Ian Coburn
Municipal Sales
Iowa, South Dakota
612-845-7570

Kim Foster
Meter Systems Mgr.
Iowa, South Dakota, Wisconsin
630-842-2696

Sham Anderson
Municipal Sales
Wisconsin
651-341-4871

www.davies-northern.com

Lake Michigan District Meeting

November 6, 2003

Oshkosh, WI



Roy Laviollette presenting award to Laurie Myelle

The November 6, 2003 LMD meeting was held at the Oshkosh Hilton Garden Inn. At 8:45 a.m. Chairman Roy LaViolette called the meeting to order. Vice Chairman Bruce Bartel presented a plaque to the WWOA-Lake Michigan District Operator of the Year, Brian Helminger, from the Shawano Sanitary District. Brian thanked everyone for the award especially his co-workers. He stressed that it was everyone at his plant working together that allowed him to be selected as Operator of the Year. Chairman LaViolette then presented current Secretary/Treasurer Laurie Myelle with a plaque in appreciation for her work over the past year. Laurie stated that she was very appreciative of the plaque and was going to miss working with the WWOA-LMD because it was a very pleasant experience.

Randy Herwig, WWOA President, was present at the meeting. Chairman LaViolette introduced Randy as well as WWOA Vice-President, Tom Kruzick. Randy pointed out that information on the re-write of NR 149 was available. A meeting will be held on November 20, 2003 to finalize the re-write. Then the document goes to final discussions, public comment and finally to the DNR Board. Don't wait to make comments on the proposed changes. Tom Kruzick mentioned that the 2004 WWOA Annual Conference was supposed to be held in Stevens Point. However, WWOA has negotiated out of that contract and the 2004 annual conference will now be held at the Kalahari in Wisconsin Dells. We may go back to

Stevens Point in 2007 or 2008 for the annual conference.

The Secretary's and Treasurer's reports were read. A motion was made to approve both reports. Motion was seconded and approved. Secretary/Treasurer Myelle thanked Winnebago Liquid Waste, Appleton Control Systems, and Strand Engineering for providing the refreshments for today's meeting.

Vice Chairman, Bruce Bartel, announced that one of the two WWOA-LMD Operator Competition Teams entered this year won the Operator's Competition. The La Goon Squad consisting of: Bill Ciske, Kevin Skogman, Frank Bonney, and Pete Dombrowski took 1st place in the Operator's Competition.

Nominations for Secretary/Treasurer were opened. Kevin Skogman from HOV MSD nominated Dawn Jandrey also from HOV MSD. Bruce Bartel seconded

Applied Technologies provides a Full Spectrum of Wastewater Engineering Services



Wastewater Management
Collection Systems

Biosolids Management
Operational Assistance

 **Applied Technologies**

Engineers - Architects

16815 West Wisconsin Avenue
Brookfield, WI 53005
Telephone (262) 784-7690
Fax (262) 784-6847

300 North Milwaukee Avenue, Suite E
Lake Villa, Illinois 60046
Telephone (847) 265-7325
Fax (847) 265-7327

www.ati-ae.com

Isco has Reliable Solutions for your Water Monitoring Problems!



On-site
cooling --
without ice!

Glacier™ Transportable Refrigerated Samplers

- ▶ Compact size, lightweight design
- ▶ Operates on 12 volt DC or AC line power
- ▶ Superior refrigerator cooling system
- ▶ Easy to transport & set up



New!

Isco 2151 Portable Flow Meter

- ▶ Intrinsically Safe (CSA approved for Class 1, Div. 1 environments)
- ▶ Powered by 2 standard alkaline batteries
- ▶ Large Memory & Long Battery Life
- ▶ Great for I&I, CSO and SSO studies



UniMag™ Flow Meters

- ▶ Unprecedented Warranty (10 years - flow tube, 5 years - sensors, 2 years - electronics)
- ▶ No Liner Required
- ▶ Field Replaceable Sensors
- ▶ Class 1, Div. 2 rated for Hazardous Locations
- ▶ Carbon Steel or PVC designs available

For sales, service, consulting, or leasing information, call

ISCO
www.isco.com

Mulcahy/Shaw Water, Inc.

10144 N. Port Washington Road
Mequon, WI 53092
Phone: (262) 241-1199
Fax: (262) 241-4997
e-mail: info@mulcahyshaw.com

the motion. Motion was approved and Dawn Jandrey will take over the Secretary/Treasurer position after today's meeting.

Chairman LaViolette introduced Richard Wollangk, Oshkosh City Manager. Richard welcomed the group to the Oshkosh area.

Chairman LaViolette then introduced Kevin Skogman, newly elected Vice Chairman who will be taking over Bruce Bartel's duties as Vice Chairman when Bruce takes over the Chairman's duties.

Jeff Haack mentioned the NR149 lab certification code. He stated that the ammonia standards are now in the hands of the legislature and may be law as soon as next March or April.

There being no more old business we moved on to new business.

Tom Tewes from the DNR said they are cleaning out the offices in Madison. There are approximately 8 boxes of old EPA manuals that are available to anyone who would like them.

Arlin Monfils from Wisconsin Valves & Automation, Inc. made the first presentation of the day. He talked about electric actuator retrofitting including rising stem actuators. Greg Beck and Charlie Catlin from Appleton Control Systems in conjunction with Terry Thorne from Toshiba gave the next technical presentation. They talked about belt tensioner retrofitting and how Appleton Control Systems helped Toshiba with this new technology. Jim Kleinschmidt from Strand Associates, Inc. followed with information on industrial dischargers and pretreatment. The final presentation of the day was made by Tom Foltz from Strand Associates. Tom talked about standby electrical generation before the group adjourned to tour the Oshkosh wastewater treatment plant.

Respectfully submitted,

Laurie A. Myelle
Secretary/Treasurer



2003 Hosts - Dave & Sally Goetsch, Eau Claire WI

2003 OPERATORS RIDE INVADES NORTHWESTERN WISCONSIN

The 2003 Operators Ride was held from July 24th through 27th this year, and was hosted by Dave and Sally Goetsch from their home in Eau Claire. As usual, they hosted the Thursday night get-together and cookout at their house. They were sure to do two things before they scheduled the cookout! First, they bought a house on a street that is so short and small that they thought no one could find it. But as is the case in these things, the group showed up en-mass right on schedule anyway. Secondly, they told their new neighbors that they were having a riding club garden party. Their neighbors were a little bit more than concerned when about thirty motorcycles of various size, description, nationality, and decibel level began pulling in.

The group met outside the hotel and 27 bikes left promptly at 8:30 Friday morning with the destination known only to the fearless leader. After roaring down a country road and making a U-turn in a bewildered farmer's yard, the group wasn't too sure that it was known to him either.

Charmed by the hilly countryside and wildlife (both live & flattened roadside), the group proceeded to Buena Vista State Park, overlooking the locks on the Mississippi River. This breezy, scenic stop was appreciated on a hot day. The lunch stop in Waumandee was even more appreciated, since the HABs were able to enjoy a cooling libation with their meal.



John Leonhard A Day Away From The Office

A short hop from Waumandee was the impressive Arcadia War Memorial Park with memorials to virtually every war this country has been involved in, including the World Trade Center attack. You could not walk around that place without feeling a deep sense of gratitude to all those who have put their lives on the line to preserve the freedom that we enjoy every day.

With the skies threatening rain, the group headed back to the hotel. Leader Dave Goetsch seriously jeopardized his chances of ever being accepted into the HABs by speeding up when rains threatened. (HABs slow down in rain, so they don't have to shower when they get to the hotel.)

A few hardy souls gathered around the pool after dinner, and were forced to compete for space with dozens of screaming adolescents.

The group gathered bright and early Saturday morning with rain threatening again. Dave Goetsch, limiting his chance at HAB membership, showed up IN HIS CAR! to see if the group wanted to ride in the rain. (Not a good move, Dave!)

The ride proceeded along back roads, through a completely buttoned-up Cornell (through forewarning or a very good civil defense plan), and breaking at Bloomer for lunch at the Main Street Café. Continuing on to Chippewa Falls, the highlight of the day was a tour of the Leinenkugel Brewery. The fleet of foot took the tour while the HABs stayed in the hospitality room to peruse merchandise and

sample the brew. Most diligently observed the 2 glass limit but it was a verrrrry loooooong bar, with at least six bartenders, and who's counting?

The group returned to the hotel in small bunches and prepared for the evening's festivities. There was a very good banquet, the annual Reidy awards, and the annual joke-fest. Following this, the HABs joined by reinforcements exacted their revenge on the throngs of adolescents and took control of the pool. The rest of the evening was spent in & around the pool and without an invitation from an armed officer of the law to cool it down or to leave the area.

Sunday morning the riders met to say their goodbyes. All agreed it had been a great time with a return to our safe riding record and despite a decline in riders and lack of visits from local authorities. We'll have to try harder next year, won't we?

Plans are under way for the 2004 ride, originating out of Wabeno, WI on July 22, 2004. More info to follow in future Clarifiers.

Wastewater Treatment

Collection Systems

Sludge Management

Industrial Flow Monitoring



Robert E. Lee & Associates, Inc.

Engineering, Surveying, and Environmental Services

4664 Golden Pond Park Court

Oneida, WI 54155

(STH '29' @ CTH 'FF')

Phone: 920-662-9641

Fax: 920-662-9141

800-986-6338

Visit our Website: www.releeinc.com

E-mail us: rel@releeinc.com

WISCONSIN WASTEWATER OPERATORS' ASSOCIATION, INC.
Statement of Revenue
Cash Basis Ending August 31, 2003

Acc. Number	REVENUE	CURRENT REVENUE
42010	Membership Dues	\$32,720.00
42020	Co-Sponsored Seminars	\$3,911.47
42030	WWOA Seminars	\$1,095.00
42040	Operators Competition	\$100.00
42050	CLARIFIER Advertising	\$22,205.00
42060	Annual Conference	\$50,473.00
42070	Exhibits	\$17,230.00
42080	Interest	\$1,879.01
42090	Promotional	\$1,974.00
42100	Miscellaneous	\$66.44
42110	Regional Charter Fees	\$300.00
42120	Regional Insurance	\$198.90
42130	Web-Site	\$5,800.00
42140	Pre- Conference	\$1,090.00
	Total Cash Receipts	\$139,042.82

Statement of Expenditure
Cash Basis Ending August 31, 2003

Acc. Number	EXPENDITURES	CUR. EXPENDITURES
51000	Office	\$28,731.14
52000	Board of Directors	\$7,809.63
53000	WWOA Seminars	\$1,380.33
54000	CLARIFIER	\$21,282.34
55010	Nominations Committee	\$0.00
55020	Membership	\$3,157.06
55030	Directory	\$7,226.00
55035	Career Development	\$350.00
55040	Publicity Committee	\$120.00
55050	Historical	\$1,459.89
55060	Governmental Affairs	\$0.00
55070	Resolution Committee	\$0.00
55080	By-Laws Committee	\$0.00
55090	Awards	\$1,009.36
55100	Permanent Arrangements	\$2,164.57
55110	Permanent Programs	\$0.00
55120	Scholarship	\$1,500.00
55130	Liaison Committee	\$201.44
55140	Regional Coordinator	\$253.84
55150	Tuition Aid	\$77.00
55160	National Operations Competition	\$0.00
55165	Miscellaneous	\$0.00
56000	Annual Conference	\$57,835.54
56350	Pre- Conference	\$887.01
57000	Web - Site	\$3,530.17
58000	Exhibits	\$9,510.67
59000	Promotional Items	\$3,630.90
	Total Expenditures	\$152,116.89
	Excess Revenue (Excess Expenditures)	(\$13,074.07)

WISCONSIN WASTEWATER OPERATORS ASSOCIATION, INC.
Balance Sheet
Cash Basis Ending August 31, 2003

Acc. Number	ESCROW ACCOUNT TRANSACTION	
43000	Escrow Accounts Increases	\$31,476.21
61000	Escrow Accounts Decreases	\$30,856.02
	Escrow Accounts (Decreases)/Increases	\$620.19
	Cash on Hand, August 31, 2002	\$110,724.43
	Excess Revenue (Excess Expenditures)	-\$13,074.07
	Escrow Accounts (Decreases)/Increases	\$620.19
	Cash on Hand, August 31, 2002	\$98,270.55
	Cash in Bank, Checking Account	\$715.85
	Money Market Account	\$17,069.93
	Certificate of Deposit Account	\$80,484.77
	Total Assets	\$98,270.55
	LIABILITIES AND FUND BALANCE	
LIABILITIES	FUND BALANCE	
	Reserved (Escrow Accounts)	\$14,656.07
	Unassigned	\$83,614.48
	Total Fund Balance	\$98,270.55

Reserve Escrow Accounts
Cash Basis Ending August 31, 2003

	RESERVED FUND (Escrow Accounts)	
	Southern Region	\$732.65
	Southeast Region	\$448.50
	Lake Michigan Region	\$655.11
	West Central Region	\$492.68
	North Central Region	\$1,543.39
	Northwest Region	\$271.33
	Manufacturers & Consultants	\$7,294.22
	Golf Outing	\$19.21
	Governmental Affairs	\$0.00
	WWEA	\$698.97
	Sludge Symposium	\$2,500.01
	Total Reserved Funds	\$14,656.07

Richard D. McKee

Richard D. McKee
Executive Secretary

Remembrance

As we begin a new year and look forward to the challenges awaiting us, it's probably also a good time to look back. One of the saddest reflections is the memory of people that have passed away in the past year. Among those that we will miss:

Vern Handrick - La Vern (Vern) Handrick of Minoqua passed away October 1, 2003. Vern began his career in wastewater treatment in 1977, when the Lakeland Sanitary District hired him. He was promoted to superintendent in 1979, a post he held until his retirement in 1995. Vern was a member of WWOA since 1981, and he served on the Board of Directors from 1989 to 1992.

Roger Kapellen - Roger Kapellen of rural Chilton died on December 10, 2003. Roger worked for the City of New Holstein Utilities for 33 years. He was superintendent of the wastewater treatment plant before retiring in 1999. Roger was a member of WWOA since 1972. He was named LMD Operator of the Year in 1976.

Ken Maki - Kenneth Vernon Maki of Lake Saint Louis, Missouri, died on December 3, 2003. Ken was an environmental engineer and owner of Municipal Services. He was also the manager of the Peruque Creek Watershed project. Though no longer an active member of WWOA, many members of this organization remember him for his teaching and technical assistance on wastewater operations, for which he received a Service Award from WWOA in 1982.

Tom Rein - Tom Rein of Merrill passed away on December 28, 2002. Tom had been employed at the City of Merrill Wastewater Treatment Plant for 24 years. He was the Head Operator since 1997 and a member of WWOA since 1981.

Jim Zillmer - James Zillmer of Columbus, also passed away in 2003. His career in wastewater management included various stints as WWTP Operator, Director of Public Works and WWTP

Superintendent for the City of Mayville, the Village of Theresa, and until his passing, the City of Columbus. Jim was a member of WWOA since 1988.

There are undoubtedly more that deserve mention. This short list comes from WWOA members that had passed the news along to us.

Our sincere condolences to the families, friends and co-workers of the deceased. Take comfort in knowing that the world is somehow a better place because of them.

FOR SALE

The Village of Benton has the following Lab equipment for sale:

Corning MP-1 Mega Pure glass still. Makes 1.4 liter/hr of type II distilled water. Some tubing is not included. 1 replacement heating element included. Lists new for \$1595.00 plus \$360 for replacement element. Asking \$1100.00 OBO.

NAPCO 8000DSE Autoclave. This model includes a slow exhaust option to allow for sterilization of liquids. Only six years old and used seldom, lists new for \$3395.00. Asking \$2000.00 OBO.

Millipore Dry Bath Incubator. Holds up to forty-eight 47mm petri dishes. Has five temperature settings (30°, 35°, 37°, 41°, & 44.5 °C). Only six years old. Lists new for \$1255.00. Asking \$900.00 OBO.

Fischer Scientific Under Counter BOD Incubator. Temperature range from -10°C to +60°C with a consistency of ±0.2°C. Also has digital temperature readout to 0.1°C. Only six years old. Lists new for \$2755.00. Asking \$2000.00 OBO.

Please contact the Village of Benton at 608/759-3030.



A WISCONSIN Company Since 1956!

MILWAUKEE SOUTH

11111 W. Hayes Ave. • Milwaukee, WI 53227
(414) 541-1327 • 1-800-242-1255

MILWAUKEE NORTH

7233 N. 51st Blvd. • Milwaukee, WI 53223
(414) 357-7111 • 1-800-533-7113

MILWAUKEE DOWNTOWN

2601 W. Clybourn St. • Milwaukee, WI 53233
(414) 342-0573 • 1-877-355-2145

KENOSHA

5826 46th St. • Kenosha, WI 53142
(414) 652-6890 • 1-800-638-3448

MADISON

901 Walsh Rd. • Madison, WI 53714
(608) 249-6476 • 1-800-521-2331

OSHKOSH

3480 Jackson St. • Oshkosh, WI 54901
(920) 231-3501 • 1-800-451-4551

WAUSAU

5207 Westfair Ave. • Weston, WI 54476
(715) 359-6111 • 1-800-537-3778

GREEN BAY

1654 Morrow St. • Green Bay, WI 54302
(920) 432-8697 • 1-800-242-5626

WAUKESHA

1505 Arcadian Ave. • Waukesha, WI 53186
(262) 544-9747 • 1-877-370-6326

RACINE

2151 SE. Frontage Rd. • Sturtevant, WI 53177
(262) 886-1682 • 1-877-373-7857

APPLETON

5663 Neubert Rd. • Appleton, WI 54913
(920) 757-1901 • 1-877-373-7815

EAU CLAIRE

7840 Partridge Rd. • Eau Claire, WI 54703
(715) 874-4100 • 1-877-371-9635

www.lincolncontractorsupply.com



Godwin Dri-Prime Pumps

Godwin's Dri-Prime Pumps have proven to be the pump of choice for all sorts of temporary and permanent applications. Rugged and reliable, the Dri-Prime features such things as automatic self-priming to 28 feet, dry-running capabilities, solids handling and high discharge heads.



For More Information Contact the LCS Branch Nearest You or Our Godwin Specialist:

Gerry Faleo (920) 585-4110 or (888) 600-9407



Industry Alliance



IN CONTROL

Successful Operations through Process Control

Birthday Parties



By Jack Saltes, Wastewater Operations Engineer,
Department of Natural Resources

In activated sludge, having too few or too many birthdays is not a good thing. Problems of old age can be "unsettling" for many of the bugs and they know exactly "weir" to go. Youngsters can have a tough time "settling down" too!

Sludge age is defined as "a measure of the length of time a particle of suspended solids is retained in the activated sludge process, expressed in days. " (WEF MOP-11). We also use the term Solids Retention Time (SRT) used for the amount of time solids are in your system. The effectiveness of the activated sludge process, and the settleability, depends on the amount of activated sludge solids in the system and the health of the organisms that are a part of the solids. (Sacramento Training Manual, Volume 2, 5th Edition, 2002). Sludge age is one of the process control methods treatment plant operators use by maintaining a certain solids level in the plant for optimum treatment. Operational problems will result if too few or too many candles burn on top of your activated sludge birthday cake. Cake sludge and foam (in the wrong places) will be the frosting you do not want!

Sludge age is often a recommended method for process control because suspended solids are relatively easy to measure. Sludge age is simply the amount of solids in your system divided by the amount of solids leaving.

Sludge Age = Total Suspended Solids in the Activated Sludge Process ÷ Total Suspended Solids Removed (Wasted) from the Process

Operators usually calculate the total suspended solids in their system one of three ways: (1) MLSS or MLVSS just in the aeration basin, (2) suspended solids in the aeration basin and the final clarifier, and (3) suspended solids in the aeration basin and the final clarifier sludge blanket. Whatever method you use be consistent. Suspended solids leaving the system are those solids wasted by you and those leaving in the final effluent. With very high quality effluents, the TSS leaving in the effluent is often negligible and not considered in the calculation. The sludge age calculation for just the suspended solids in the aeration basin (assumes a minimal sludge blanket in the final clarifier) is thus:

$$\text{Sludge Age (days)} = \frac{(\text{MLSS or MLVSS in mg/l}) \times (\text{Volume of the Aeration Basin in MG}) \times (8.34)}{(\text{WAS concentration in mg/L}) \times (\text{WAS flow rate in MGD}) \times 8.34}$$

Solids leave your system one of two ways, by themselves or by you! By you is the preferred method. Too many birthdays and they die - and out they go, literally! Hopefully you decide how many birthday candles there are by the amount of sludge wasting you do. Wasting activated sludge regularly, preferably daily, has an important effect on the sludge age of your plant and is one of the most important process control steps you do.

You and your specific plant conditions and process objectives determine the best SRT or sludge age for your plant. Conventional activated sludge plants may run at a sludge age of 2-10 days while an extended aeration plant runs best at older sludge ages, perhaps 15-30 days. Your experience with different sludge ages and final effluent quality is the best guide to how many candles to keep on the cake. Your plant will "act its age", hopefully to your satisfaction. So party on, watch those candles, and activated sludge life will be a cakewalk. Now go blow out some candles and make that wish!

WWOA Southern District Meeting Minutes August 13, 2003

William Ross, Mayor of Monroe, welcomed the group. Mr. Ross gave the group a brief history of the City of Monroe in regards to cheese production in the area and other attractions in the City.

The first presenter was Bill Ericson of Applied Technologies. Bill gave a talk on a case study of toxicity at the Monroe WWTP. Bill gave an overview of the Monroe treatment processes and a chronology of the City of Monroe's whole effluent toxicity problems. After eliminating many possible sources of their toxicity test failures, the effort to discover the source led the City of Monroe and Applied Technologies to a local printing plant. After much testing the source of the problem was tentatively identified as carbonless ink capsules. The printer was required to pretreat to eliminate the capsules and the problem went away.

The next speaker was Pat Sullivan from the Clean Water Fund. She gave a presentation on funding sources for drinking water and wastewater projects. She gave a brief analysis of different funding sources and how to access each source and who is eligible. She also discussed CMOM and the lack of funding for this.

Amy Tutwiler an attorney for The Municipal Environmental Group then gave a talk on what MEG is and what it does for its members. Its membership includes over 80 municipalities of all sizes. She then gave an overview of various regulatory impacts on WWTP's including ammonia limits, chloride variances and target values, proposed mercury rules, biosolids issues and the impact of proposed PCB rules. Amy alerted the audience to the possible impact of phosphorus loading limits on ag lands as it relates to spreading biosolids. Amy said further information could be accessed at atutwiler@andersonkent.com.

A business meeting was then held. State WWOA officers were welcomed. Election for district officer was held with Todd Fischer of Richland Center elected Secretary/Treasurer and Joe Solowitz from Monroe as alternate. Jerry Elfering, Director of Public Works for the City of Monroe, was presented

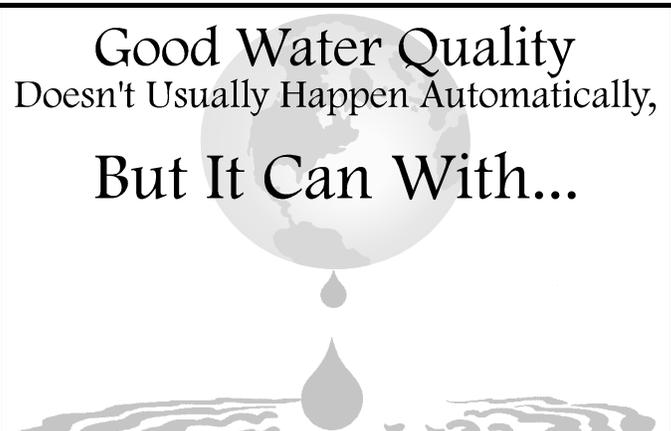
with a certificate of appreciation.

Karla Thompson of Virchow Krause gave a presentation on sewer audits. Karla discussed rate structures and revenue requirements. Requirements consist of O/M, replacement funds, debt service and capital requirements. She described methods of setting fair rates. She recommended a rate review every two years and to review the sewer use ordinance and user charge system at that time.

Jack Saltes of WDNR gave the DNR update. Jack went over NR 208/CMR changes and time schedule.

A tour of the Badger State Ethanol Facility followed the meeting. Of the 76 people in attendance at the meeting, about 45 took the tour led by Jerry Kramer of Badger State. The tour was extremely interesting and informative.

Good Water Quality
Doesn't Usually Happen Automatically,
But It Can With...



Automation

Improve water quality and save costs at the same time?
Now you can with SCADA!
Call now for information on a fast "return on investment"
and a no-cost SCADA presentation.

LANG

Associates, Inc.

"The SCADA People"

Consulting engineers serving municipalities and civil engineers throughout the Midwest.

Wausau (715) 845-1333 • Green Bay (920) 468-6808 • Madison (608) 238-3424

Have You Been Out to wwoa.org Lately?

The WWOA web site has seen some significant changes in 2003. The most noticeable change is definitely the appearance of the home page along with the handy navigation bars found on every page. If it has been awhile since you last toured wwoa.org, take a few moments and check it out! You will be amazed at the vast assortment of wastewater industry information available 24/7.

Take for example the **Archived Clarifier Section**. Were you aware that; for some time now, we have been archiving previous issues of the Clarifier magazine on-line at wwoa.org? This great section started this past summer and currently has the last five, complete Clarifier editions posted. Yes, the complete Clarifier, now posted on-line for your review and reference. Archived issues are offered for viewing in two different file types; pdf or DjVu format. The pdf reader and DjVu viewer are both downloadable free-of-charge through the Clarifier section.

One section we are also intent on building upon is the web site's **WWOA History Page**. Here is where we need the membership's help! The Web Site Committee is looking for historical materials that will present an accurate portrayal of how the organization started and the various changes occurring over the years. This historical information can also include items such as: old newspaper clippings, letters, photos of regional meetings and from the annual Conferences. Bring us your ideas and we will take it from there. How many members actually know that the WWOA had its origins back in the late 1930's?

Have you checked out the **Wastewater Related Links Section** lately? Here you will find quick links to dozens of regulatory, educational, wastewater organization and state wastewater facility sites. Have an idea for other links to post? Contact any of the Web Site Committee members and share your thoughts.

The **WWOA Mail List** has around 200 subscribers at this particular time. **That is just over 10% of our membership. Are you one of the 90% who is missing this great membership benefit?** Not yet a subscriber to the mail list? Subscribe on-line and become a participant in the discussions now! If you are already a subscriber you have seen first hand the tremendous amount of dialogue exchange shared across the mail list. The mail list is a great way to ask for and reply w/ information on a wide range of wastewater topics.

If you are like many of us, we often find ourselves giving plant tours and presentations. This is particularly true of younger adults such as school groups, science clubs and the Boys & Girls Scouts. The **Public Education Page** contains some really great ideas on how to explain and demonstrate the basics of water pollution control & treatment. There are six interesting and informative science experiments that students and teachers may find useful. In addition, there are several links to various public education sites and available materials these particular sites can provide to our membership.

O.K. - So how many of you find yourselves working through the monthly **Brain Teasers** found on the WWOA Home Page? WWOA Board Director Kay Marshall continues to provide monthly questions and answers to test your wastewater savvy. Find out how much you really do know (or how much you have forgotten) by trying your luck at the monthly challenge questions. New questions are posted monthly, as are the answers to the previous months questions.

WWOA Web Site Committee

PROTECT YOUR ASSETS

Fiberglass Domes need maintenance just like any other piece of equipment at your plant.

DO YOUR DOMES SPARKLE OR SHINE?

Sparkle could mean exposed glass fibers -
Mother Nature taking her toll.

I specialize in the resurfacing of domes.

I have over 150 completed units,
more than 100 of them in Wisconsin.

Other fiberglass services available.
Call or write today for information and/or
estimates for your projects.

FIBERGLASS LAMINATORS

4894 Maple St. St. Paul, MN 55126

John Rysgaard Jr 651-484-1908

New Area Code

Everywhere You Are



From Pretreatment

to Reuse

We're more than just "Your Wastewater Specialists"

We are dedicated people that take your business serious by making considerations beyond the treatment challenges of today. Our vast experience in product design and system integration allows us to provide customized solutions for any application. From conventional lagoon and flow-through treatment to the most advanced in membrane technology and cloth media filtration, Aqua-Aerobic can meet your specific needs.

You'll find us today, tomorrow and in the future.

Aqua-Aerobic is everywhere... **Everywhere You Are**

For more information, visit our website at:
www.aqua-aerobic.com/anywhereur

For Further Information Contact:

Mulcahy/Shaw Water, Inc.
 10144 North Port Washington Road
 Mequon, Wisconsin 53092
 Phone: 262/241-1199
 Fax: 262/241-4997
 Website: www.mulcahyshaw.com
 E-Mail: info@mulcahyshaw.com

Aqua Controls



- System Control Panels
- Local Control Panels
- Supervisory Control and Data Acquisition (SCADA) Systems

Aqua-Aerobic designs, configures and manufactures each Control and SCADA system individually, according to a plant's specific control requirements.



Aeration & Mixing

Aqua-Jet® Aerators

Surface mechanical aerators for municipal and industrial applications. Units are available in 1-150 HP with optional Inblers™ Series, 5-year no-maintenance motors for select sizes.



Aqua Diffusers

High efficiency tube or disc diffusers are offered in retrievable or fixed configurations. Complete systems including blowers are available.

AquaDDM® Mixers

Direct drive mixers provide exceptional mixing and are ideal for anaerobic applications. Units available in 3-75 HP with optional Inblers™ Series, 5-year no-maintenance motors for select sizes.

MixAir® Aeration System

Utilizes the AquaDDM® mixer in combination with any of several aeration sources, including diffusers, or Aqua-Jet® surface aerators. This system provides a full range of aeration control without compromising mixing. Complete systems including blowers and controls available.

Biological Processes

AquaSBR® Sequencing Batch Reactors

An advanced sludge system that utilizes a batch process, capable of treating a wide range of domestic and industrial wastewater at flows ranging from a few thousand gallons to millions of gallons per day. Biological nutrient removal easily achieved in a single basin.

Aqua MSBR® Modified SBR

This multi-stage process combines the continuous flow activated sludge process with batch reactor technology. Suitable for large-flow applications and biological nutrient removal.



Filtration

AquaDisk® and AquaDrum™

Cloth Media Filters



Filtration systems which utilize cloth as the primary filter media. Available in a disk configuration (AquaDisk®) or the smaller flow, a drum configuration (AquaDrum™).

Both are designed to treat a variety of tertiary applications and are proven to produce reuse quality effluent.

AquaABF® Traveling Bridge Filters

A continuous rapid-rate downflow filter used in a variety of municipal and industrial water and wastewater applications.



AquaMB Process™

Multiple Barrier Membrane Systems
 Combines biological process with cloth media filtration and membranes. The AquaMB Process™ offers lower life-cycle costs over conventional membrane treatment methods with comparable effluent quality. This system is ideal for reuse, TSM, crypto, Giardia and turbidity removal applications.



Fundamentals of a Preventative Maintenance Program

The goal of a preventative maintenance program should be to minimize the Life Cycle Cost of assets. Do you need a computer to effectively conduct a Preventative Maintenance Program? It depends! How many different assets do you have to maintain? Can you keep a separate file on each asset? If you are maintaining a small plant with only a few items of equipment, a manual paper system may be acceptable. However, if in the same small system you are given the responsibility of maintaining the collection system with manholes, service lines and laterals, a computerized system will most likely be required if you are to efficiently manage the asset information and maintenance.

The time expenditure invested in the development and daily record keeping with a maintenance system must be considered part of the maintenance cost. With a manual paper based maintenance recording system, the Life Cycle Cost of assets increases with the amount of time spent record keeping and filing. If you have the luxury of a low cost administrative assistant, record keeping costs are reduced. Computerized maintenance management is the most cost-effective solution for most utilities.

Seven basic steps to implementing a computer based maintenance program include:

1. Develop a **list of locations**, process areas and equipment types for your facilities. These conventions will make the system much easier to work with as you setup your program.
2. Prepare a **list of the assets** to be maintained and develop a tag name list for these assets. A naming convention such as XXX_YYYYYY will aid in the future use of the system. XXX represent a location (example: L11_ = Lift Station 11). YYYYYY represents the equipment type and unit number (example: L11_PMP1= Lift Station 11 Pump 1). **Hint!** Use the same convention in your plant SCADA and data management applications.
3. Establish a **list of maintenance tasks** and material requirements for each equipment type and identify the appropriate maintenance frequency. Some maintenance is best scheduled based on actual use (i.e. oil changes and lubrication), while other tasks should be based



**THE AUGER DAWG
CAN SHRINK YOUR
SLUDGE, TOO!**

ARE YOU PAYING
TO HAUL & DISPOSE OF WATER?
IF YOU HAVE 20% T.S. SLUDGE NOW,
DRYING IT WITH AN AUGER DAWG TO 75% T.S.,
REPRESENTS A 80% REDUCTION IN THE AMOUNT
OF WATER YOU ARE PAYING TO GET RID OF.

WHETHER YOU USE SAND BEDS OR PRESSES, THE G-30 AUGER DAWG
CAN SAVE YOU TIME, SPACE AND MONEY! CALL MIDWEST AUGER-
AERATOR TODAY FOR MORE INFORMATION, JOB STUDIES AND A FREE
VIDEO SHOWING THE AUGER DAWG IN ACTION.

MIDWEST AUGER-AERATOR
PONTIAC, IL
"HOME OF THE AUGER DAWG"



HEY, HONEY,
I SHRUNK THE
SLUDGE!

1-800-THE-DAWG

on a fixed calendar schedule. Good judgment must be used in scheduling task frequency. Over maintaining equipment wastes limited resources.

4. **Assign PM tasks to the assets** creating work orders and set a schedule for those tasks in the program. Add appropriate safety (hazardous area instructions and lockout/tagout) instructions to the work order.
5. Locate and **reference equipment manuals** on the work order form.
6. Develop a managed **inventory** of required materials and a list of suppliers.
7. **Monitor the program's effectiveness** on a frequent basis and make required improvements. **Most effective PM programs take one to three years to fully develop.** As a facility ages and equipment is upgraded or replaced, assets will need to be retired and new assets added.

The most important factor in making your program a success is commitment. Lack of commitment sinks more maintenance management programs than anything else. One staff member should be designated to lead the project. Adequate time must be allowed for both setup and use. All staff members must realize the importance of keeping good records.

Maintenance records will be crucial in the future when ISO 14001 standards are made a standard requirement for utility operations.

Additional issues to consider when selecting a computerized program include: Are reports in a format you can use? Can user or vendor easily modify reports? Are files in an open database format? How much data input will the program require and who will be doing data entry?

For additional information about Preventative and Predictive Maintenance Solutions, contact IntelliSys Information Systems. Contact info: (800 347-9977) or www.intellisys-is.com.

Why have so many of your friends picked **OPS Systems** for their reporting, maintenance & data management?

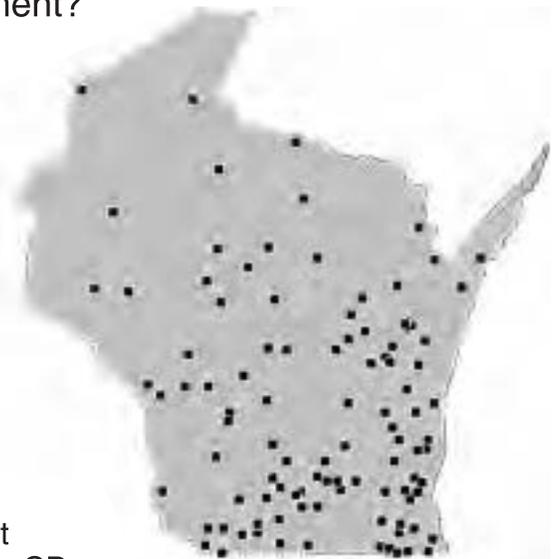
Because it's EASY!

OPS software is the easiest to set up, learn, and use. With **OPS 32** you will be entering data, producing reports and graphs all on the first day. **JOB Cal** maintenance software automatically builds a calendar that shows you what needs to be done, what's coming up and what's overdue.

DMR's are no problem. It's quick and easy!
- John Zatopa, Rhinelander WWTP

OPS Systems is Wisconsin's and the nation's best selling software for plant operations. For a free evaluation CD or to arrange a demonstration, call our rep:

Dorner Company - Milwaukee - 414-355-8685
or E-Mail to Sales@DornerDoes.com



OPS
SYSTEMS

Operations & Maintenance Software that's easy to use!

WISCONSIN WASTEWATER OPERATORS' ASSOCIATION, INC.**Board of Directors Meeting****Monday, October 20, 2003 and Tuesday, October 21, 2003****Kalahari Resort and Convention Center, Wisconsin Dells, Wisconsin**

President Neis called the meeting to order at 1:05 PM October 20, 2003. All Board members were present.

Also present were Gil Hantzsch, chairperson of Local Arrangements, and Kim Wollner, chairperson of the golf outing and the Spouse Program.

The minutes of the August 20, 2003 Board meeting were reviewed. Nennig made a motion to approve the minutes as presented. Herwig seconded the motion. Motion carried.

McKee presented the Financial Statement for Board approval. McKee reported as of August 31, 2003 we have \$139,042.82 in revenues and \$152,116.89 in expenditures with excess expenditures over revenues totaling \$14,074.07. After a discussion, Herwig made a motion to approve the Financial Statement as presented. Marshall seconded the motion. Motion carried.

McKee presented vouchers 203 - 227 and 1 - 28 for Board approval. After a brief discussion Herwig made a motion to approve the vouchers as presented. Tholen seconded the motion. Motion carried.

COMMITTEE REPORTS

NOMINATIONS - Tholen reported to the Board Tim Nennig has been nominated for the position of President-Elect and Tom Kruzick has been nominated for the position of Vice-President. Tholen has received two nominations for Directors, Kay Marshall and Pete Conine.

PROMOTIONS - Bond provided the Board with an inventory list of promotional items. Bond stated we have approximately \$5,213.00 worth of merchandise on hand. All of the items are at least 2 years old. No new merchandise has been purchased in 2003.

Bond made some recommendations for 2004: Sell older items at a reduced rate to minimize our inventory at hand, donate oldest items to the districts for distribution to their members, give consideration to restocking items with the wolf logo, develop a new logo for 2004, update website to include all inventory and update website order forms.

MEMBERSHIP - Conine stated we have 1962 members; this includes active members, lifetime members and

retired members.

SCHOLARSHIP - Conine reported the Scholarship Committee received two scholarship applications for the 2003/2004 academic school year. Both applicants requested consideration for the \$1000.00 4-year award. No applications for the \$500.00 2-year degree awards were received. Only one of the applications qualified.

Conine commented we have received two requests for tuition aid this year.

EXECUTIVE COMMITTEE - No report.

CLARIFIER - President Neis reported for Dan Busch. Busch sent out printing quotes to three printers. Busch provided the board with a price comparison of the three printers.

Busch feels Sun Printing is the best choice to serve the printing needs of WWOA. Busch, along with Jean Van Sistine are very comfortable working with the staff at Sun Printing. Their customer service is above par and they continue to support us in our efforts to become more proficient with Quark Express.

Busch's recommendation is to stay with Sun Printing for an additional year and give the CLARIFIER staff time to prepare for a successful transfer of printers in the future.

After a discussion, Herwig made a motion to stay with Sun Printing. Kruzick seconded the motion. Motion carried.

CAREER DEVELOPMENT - No report.

AWARDS - Herwig provided the Board with a list of award recipients and presenters.

A motion was made by Tholen to grant an Honorary Membership to Vern Handrick and to refer it to the general membership for approval at the Annual Business Meeting. Also, a Certificate of Appreciation be given to Micki Handrick. Herwig seconded the motion. Motion carried.

A motion was made by Herwig to grant Leo Templeton an Honorary Membership and to refer it to the general membership for approval at the Annual Business Meeting.

Kruzick seconded the motion. Motion carried.

OPERATOR TRAINING - Thalke stated the Operator Training Committee provided two different courses in three different venues providing regional training opportunities for our members. On June 12, Sussex hosted the Trouble Shooting Motors and Controls Seminar.

Kruzick commented the Operator Training Committee has again in conjunction with UW- Madison of Soil Science, offered a one-day seminar entitled, "Soil Management consideration for Wastewater Treatment Plant Operators". The two seminars were held in Oshkosh and Chippewa Falls.

DIRECTORY - No report.

PUBLICITY - Marshall reported letters have been sent to the media contacts concerning the upcoming conference. Marshall also called and e-mailed people who might have contacts with any local media sources to request they call and ask them to please cover our conference.

REGIONAL COORDINATOR - Marshall provided the Board with the meeting agenda for the Regional Officers

Meeting and a copy of the Regional Officers Newsletter.

GOVERNMENT AFFAIRS - Herwig informed the Board since January 2002 the NR 149 RAC has been working on re-writing the Lab Certification code. The committee has one more meeting scheduled for November 20, 2003 to complete the RAC initial input to this effort. After the Code has been sent to the DNR Board for review, there will be a public comment period before adoption.

The Government Affairs Seminar committee met October 3, 2003 at Strand Associates to plan the 2004 seminar. The seminar is scheduled for February 26, 2004.

LIAISON - No report.

WEB SITE - Nennig commented the Web Site Committee has done an outstanding job this past year in maintaining the exceptional web site that we share as wastewater professionals.

Webmaster Thompson and the Committee did an outstanding job with their choices and direction on the home page upgrade. The new home page has the look of a professionally designed site.

Engineering
Solutions

262.542.5733

www.ruekert-mielke.com

Serving Wisconsin communities for over 50 years



Ruekert·Mielke

engineering solutions for a working world

Partner with the experts of
Ruekert/Mielke for all of
your wastewater needs.

Wastewater treatment

Pumping stations

Wet weather storage facilities

Instrumentation & Controls

Intermunicipal agreements

Funding assistance

The Searchable Vendor Database has dropped from a one-time high of 75 to the current number of 61. We need to find ways to promote the use of this database.

TECHNICAL PROGRAM - Nennig informed the Board the preparations for the Conference are complete. With the exception of one presentation change and two moderator changes, the Program remains the same as laid down last February by the Technical Program Committee.

EXHIBIT COMMITTEE - Herwig reported for Strackbein. We have sold a total of 90 booths this year. We could have sold quite a few more booths, but because of the limited space at the Kalahari, the booths sold out quickly. Strackbein provided the Board with a list of Exhibitors and their assigned exhibit space.

OPERATOR COMPETITION - Thalke stated seven teams would be competing this year. The Lake Michigan Region and the Southeastern Region put together two teams. The other teams are from the West Central Region, Southern Region, and North Central Region.

Four Events are planned this year, Laboratory, Mechanical, Process Control, and the Safety Event.

LOCAL ARRANGEMENTS - Gil Hantzsch informed the Board the volunteers for the registration and security have been arranged. The busing arrangements have been finalized and contracts have been signed.

SPOUSE PROGRAM - Kim Wollner commented the bus on Thursday would leave at the main entrance of the hotel including the shuttle for the Wisconsin Ducks on Wednesday.

GOLF OUTING - Kim Wollner stated we have 120 attendees registered for the golf outing.

PERMANENT ARRANGEMENTS - McKee informed the Board the Committee will be meeting with the Marriott in Middleton to look at their facility.

PERMANENT PROGRAM - No report.

RESOLUTIONS AND BYLAWS - No report.

HISTORICAL - No report.

MANUFACTURERS & CONSULTANTS - No report.

Persistence Pays

When the funding agencies told the Johnsburg Sanitary District they were ineligible for assistance, Foth & Van Dyke knew something was up. Real-life and the data were out of sync. With Foth & Van Dyke's help and persistence, accurate financial data was developed and the District obtained funding assistance for a much-needed wastewater system. Call Foth & Van Dyke when you need a partner who knows that persistence pays.



Foth & Van Dyke
consultants • engineers • scientists

Personally Committed To Your Success

1-800-236-8690

www.foth.com

*Johnsburg Sanitary District President Franz Schmitz (right)
with Foth & Van Dyke Project Manager Steve Marman*



OTHERS - The one-day registration was brought to the Boards attention. After a brief discussion, President Neis directed McKee to put this on the December agenda for futher discussion.

Bond made a motion to accept the committee reports as presented. Tholen seconded the motion. Motion carried.

OLD BUSINESS

SPONSORSHIP POLICY - Conine provided the Board with a revised sponsorship and endorsement policy. Conine stated after reviewing the current endorsement policy he found it to contain adequate language for those seminars that are fully sponsored by WWOA and sister organizations. It also contains adequate language for those seminars that are fully sponsored by private companies. Where it lacked specific language was for those instances where both WWOA and private companies would sponsor the seminar. Conine revised it to include partial sponsorship by both WWOA and private companies. After a discussion, Marshall made a motion to approve the modifications to the WWOA sponsorship and endorsement policy. Kruzick seconded the motion. Motion carried.

NEW BUSINESS

REVIEW AND APPROVAL OF THE ANNUAL BUSINESS MEETING - McKee provided the board with copies of the agenda for the Annual Business Meeting for their review. After a brief discussion and a few changes were made, Herwig made a motion to approve the Annual Business Meeting Agenda with the changes. Thalke seconded the motion. Motion carried.

Judy Tholen thanked the Board members and she has enjoyed working with the Board.

There being no further business Herwig made a motion to adjourn. Conine seconded the motion. Motion carried.

The Board meeting adjourned at 9:20 AM on Tuesday, October 21, 2003.

Respectfully submitted,

Richard D. McKee
Executive Secretary

I want a laboratory that causes me no anxiety, saves me money, has superior client service and has a great reputation based on continuous performance.

Don't You?

You can save money, save time and lower your stress level, by using Northern Lake Service for the analysis of your wastewater, biosolids and drinking water. We've been providing reliable service to water and wastewater plants for over 30 years. You'll be happy with our level of service.

Call Andy or Tracy in our Client Services Department for more information or a quotation for your testing requirements.



NORTHERN LAKE SERVICE, INC.

Analytical Laboratory and Environmental Services

400 North Lake Avenue • Crandon, WI 54520-1298

Tel: 800-278-1254 • Fax: 715-478-3060

Email: salesnls@northernlakeservice.com

WISCONSIN WASTEWATER OPERATORS' ASSOCIATION INC.**Board of Directors Meeting****Wednesday, August 20, 2003****Kalahari Resort, Wisconsin Dells, WI**

President Neis called the meeting to order at 10:05 AM Wednesday, August 20, 2003. All Board members were present except Judy Tholen who arrived later.

Also present were Gil Hantzsch, chairperson of Local Arrangements and Kim Wollner, chairperson of the Spouse Program and the Golf Outing. Troy Larson from Strand Associates was also present.

The minutes of the April 24 and April 25 Board meeting were reviewed. After a brief discussion, Nennig noted a clarification needed to be made pertaining to the Spouse Program. Herwig made a motion to approve the minutes with the clarification to the Spouse Program. Kruzick seconded the motion. Motion carried.

McKee presented the Financial Statement for Board approval. McKee reported as of August 1, 2003 we have \$134,091.40 in revenues and \$136,442.81 in expenditures with excess expenditures over revenues totaling \$2,351.41. After a discussion, Nennig made a motion to approve the Financial Statement as presented. Marshall seconded the motion. Motion carried.

McKee presented the vouchers 149 - 201 for Board approval. After a discussion, Herwig made a motion to approve the vouchers as presented. Tholen seconded the motion. Motion carried.

COMMITTEE REPORTS

PERMANENT ARRANGEMENTS - No report.

AWARDS - Herwig reported he has received nominations from all the Regions for Operator of the Year Awards. He has received nominees for the Bernauer, Koby Crabtree and Service Awards. Herwig made a motion to approve the awards providing all nominees qualify. Bond seconded the motion. Motion carried.

TECHNICAL PROGRAM - Nennig provided the Board with a final copy of the Technical Program Schedule including the Pre-Conference Workshops. Nennig also provided the Board with a list of AV needs.

CONFERENCE SIGNAGE - Troy Larson discussed with the Board the needed signage for the Conference.

REVIEW OF THE FUNCTION SHEETS WITH HOTEL - The Board met with the hotel staff to review the function sheets for the Conference. After a discussion, a few changes needed to be made.

LOCAL ARRANGEMENTS - Gil Hantzsch stated the tours are set for Christmas Mountain and Wisconsin Dells-Lake Delton wastewater treatment facilities. There will be sign up sheets for the tours in the registration area.

SPOUSE PROGRAM - Kim Wollner informed the Board they are working on the gift baskets and the tours are set. We are just waiting to see approximately how many people sign up for the program.

GOLF OUTING - Kim Wollner asked for some direction from the board pertaining to door prizes and signage for the golf outing.

EXHIBIT COMMITTEE - President Neis reported for Carol Strackbein. The Exhibit Committee will meet the end of August to assign booth spaces to the exhibitors. It is our primary goal to make sure we do not put companies that compete with each other in the same area. We also have to make sure we give people who have supported the organization and the people who have sent in their registrations early good booth locations. It normally takes our committee up to four hours to complete the process.

The Manufacturers and Consultants Committee will sponsor ½ of the box lunches, the social hour, ½ of the busing costs and ½ of the coffee breaks. The Exhibitors will sponsor a reception in the booth area at 4:00 PM



ABS

COST-EFFECTIVE PUMPING

OFFERING THE MOST COMPLETE RANGE OF WATER & WASTE WATER PRODUCTS IN THE MARKET

KNOWLEDGE TO KEEP YOUR PROCESS FLOWING

Crane Engineering Sales, Inc. offers cost effective solutions for municipal and industrial water and wastewater treatment.

A full range of submersible pumps, aerators, mixers, agitators, and aeration blowers, unmatched in the industry.



- ¥AFP - Submersible Sewage Pumps
- ¥ SCABA[®] - Top & Side Entry Agitators
- ¥ FlowBooster[®] - Submersible Flow Boosters
- ¥ ECOMIX[®] - Submersible Propeller Mixers
- ¥ NOPON[®] - Aeration Membrane Diffusers
- ¥ O.K.I. - Submersible Aerators
- ¥ HST INTEGRAL[®] - High Efficiency Turbo Aeration Blowers



Contact Crane Engineering Sales, Inc. today:

Environmental Division
Phone 920/733-4425
Fax 920/733-0050

on Wednesday after the Technical Sessions have ended. The Manufacturers and Consultants will supply up to \$1,000.00 toward a scholarship for a deserving student selected by the Scholarship Committee.

OPERATOR COMPETITION - Thalke commented that two Regions have met the challenge of organizing more than one team. The Lake Michigan Region and the Southeastern region put together two teams. A big thanks to the Regional Officers who made this possible. Hopefully we have six or more teams this year.

Thalke informed the Board signage recognizing the vendors for their support of the Operators Competition will be displayed in the area of the Competition and a sign can be displayed at the vendors booth indicating that particular vendor helped support this years competition. Thalke suggested that the nametags should indicate if the individual is a Judge or Competitor giving that person a little notoriety throughout the Conference. A discussion pursued. McKee will order ribbons that will say judge or participant.

OTHERS - Conine stated he received two scholarship applications. Julia Lintner, attending University of Wisconsin-Madison majoring in Botany, and Michael MacKinnon attending University of Wisconsin-Platteville majoring in Civil Engineering. A discussion pursued. Herwig made a motion to award the \$1000.00 Scholarship to Michael MacKinnon. Thalke seconded the motion. Motion carried.

Conine made a motion to accept the scholarship application from Julia Lintner. Marshall seconded the motion. A discussion pursued regarding her qualifications. President Neis asked for a roll call vote. It was the unanimous decision of the Board not to approve the scholarship application for Julia Lintner on the basis that botany is not wastewater related. Conine will notify the applicants regarding the Boards decision.

Conine reported he received two applications for Tuition Aid Reimbursement from Dale Doerr and Ron Altmann. Dale Doerr is requesting reimbursement for a course he will be attending in Human Resources and Organizational Behavior. A discussion pursued.

Kruzick made a motion to deny the request on the grounds that it is not wastewater related. Marshall seconded the motion. Motion carried.

Ron Altmann is requesting reimbursement for a course he will be attending titled, "Increasing Wastewater Efficiency". Kruzick made a motion to approve reimbursement for Ron Altmann for this course. Nennig seconded the motion. Motion carried.

Conine will notify the applicants regarding the Boards decision.

Herwig made a motion to accept the committee reports as presented. Kruzick seconded the motion. Motion carried.

OLD BUSINESS

OTHERS - Conine provided the Board with a draft copy of the Sponsorship Policy. President Neis instructed the Board to review the policy and we will discuss this at the October Board meeting.

NEW BUSINESS

OTHERS - McKee informed the Board he was contacted by a gentleman from Minnesota regarding the possibility of developing a wastewater course that possibly could be offered in Eau Claire or Menomonie. This would be a joint effort between Minnesota and Wisconsin. A discussion pursued. McKee will contact the person and refer him to Kay Marshall.

There being no further business, Kruzick made a motion to adjourn. Marshall seconded the motion. Motion carried.

President Neis adjourned the meeting at 4:00 PM on Wednesday, August 20, 2003.

Respectfully submitted,

Richard D. McKee
Executive Secretary

FLYGT



“SERVICE IS OUR COMMITMENT”

Call Flygt for all your pumping needs.

- ***SERVICE***
- ***SALES***
- ***RENTAL***
- ***RETROFIT***

Flygt provides experienced skilled technicians to take care of you 24 hours a day. With our Mobile Field Service Trucks and Equipment, we can provide on-site preventative, corrective and start up services. You will receive top quality, professional service and only factory direct genuine Flygt parts.

We're just a phone call away.

FIELD SERVICE
PAGER 414-515-5500
MOBILE 414-573-6743

Flygt



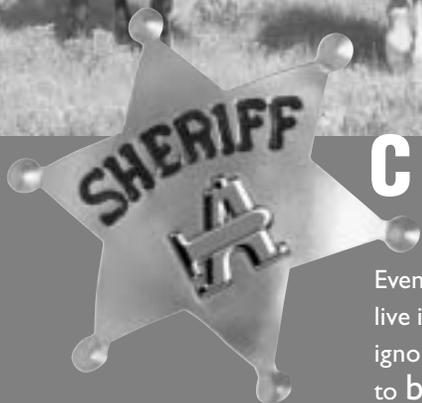
ITT Industries
Engineered for life

WWOA REGIONAL OFFICERS 2003 – 2004

WWOA REGIONAL OFFICERS 2003 – 2004				
Lake Michigan	Chairmen	Vice Chairmen	Secretary /Treasurer	
	Bruce Bartel Green Bay MSD 2231 N. Quincy St Green Bay WI 54302 W: 920 438-1327 bbartel@gbmsd.org	Kevin Skogman Heart of the Valley MSD 801 Thilmany Road Kaukauna WI 54130 W: 920 766-5731 jskogman@new.rr.com	Dawn Jandrey Heart of the Valley MSD 801 Thilmany Road Kaukauna WI 54130 W: 920 766-5731 dawn.jandrey@hvmsd.org	
North Central	Chairmen	Vice Chairmen	Secretary /Treasurer	
	Ken Bloom Marathon WW Utility 104 Chestnut Street Marathon WI 54448 W: 715 443-2223 mcwwtp@dwave.net	Jeremy Cramer Stevens Point WWTP 301 Bliss Avenue Stevens Point WI 54481 W: 715 345-5262 jrcramer@dwave.net	Tom Zager Wisconsin Rapids WWTP 2540 1 st Street South Wisconsin Rapids WI 54494 W: 715 421-8287 wrwwater@wctc.net	
Northwest	Chairmen	Vice Chairmen	Secretary	Treasurer
	Craig Walkey Cooper Engineering 310 W. South St. Rice Lake WI 54868 W: 715 234-7008 Cwalkey@cooperengineering.net	Mike LaRose Rice Lake Utilities 1112 S. Wisconsin Ave Rice Lake WI 54868 W: 715 234-7004 rlww@chibardun.net	Wally Thom Rice Lake Utilities 1112 S. Wisconsin Ave Rice Lake WI 54868 W: 715 234-7004 Wallythom@hotmail.com	Mike Romsos City of Barron WWTP 307 E. LaSalle Avenue Barron WI 54812 W: 715 537-3747 ironmjr@yahoo.com
Southern	Chairmen	Vice Chairmen	Secretary	Treasurer
	Bonnie Pundsack Seneca Foods Corporation 229 W. Waupun St. Oakfield WI 53065 W: 920 583-3039 bpundsack@senecafoods.com	Mike Meyer Applied Technology 27995 Long Valley Lane Richland Center WI 53581 W: 262 784-7690 mjmeyer@ati-ac.com	Joe Solawetz, City of Monroe 1110-18th Ave. Monroe WI 53566 W: 608 329-2590 wwtp@cityofmonroe.org	Todd Fischer, City of Richland Center P.O. Box 312 Richland Center WI 53581 W: 608 647-3915 rcwwrc@mwt.net
Southeast	Chairmen	Vice Chairmen	Secretary	Treasurer
	Kris Gauger Lyons San. District #2 Post Office Box 237 Lyons, WI 53148 W: 262 763-4627 lyonsdt2@execpc.com	Kerry Gloss City of Kenosha Water Utility 4401 Green Bay Road Kenosha, WI 53144 W: 262 653-4349 kerry.gloss@kenoshawater.org	Kathy Kamin William/Reid Ltd.LLC Post Office Box 397 Germantown, WI 53022 W: 262 255-5420 kathy@williamreidltd.com	Jeff Deitsch Jackson WWTP W194 N16658 Eagle Drive Jackson, WI 53037 W: 262 677-9001 x28 VOJutilitiesupt@hnet.net
West Central	Chairmen	Vice Chairmen	Secretary	
	Greg Engeset 130 N Chestnut, Ellsworth, WI. 54011 W: 715 273-4742 greg@villageofellsworth.org	Dennis Holtz 156 East First Street, New Richmond, WI W: 715 246-2726 dholtz@wppisys.org	Rick Weikel Black River Falls WWTP 509 Filmore St. Black River Falls, WI 54615 W: 715 284-2913	



WHEN GOOD PUMPS GO BAD



C A L L L W A L L E N

Eventually, even the best pumps go bad. Wastewater pumps live in harsh and unforgiving environments. They are often ignored and abused. It is the kind of lifestyle that leads to **breakdowns**.

When it happens, call L.W. Allen. We will ride to your rescue. Our team of experienced factory-trained technicians will quickly **arrest your pump** problems. We will carefully inspect, service and troubleshoot virtually any wastewater pump. We can rehabilitate the worst cases. In extreme situations, we can replace them.

Do not try reforming bad pumps yourself. When good pumps go bad, call L.W. Allen.



L.W. ALLEN, INC.

(800) 362-7266

Wisconsin Wastewater Operators' Association 2004 Annual Convention Reservation Form
October 26-29, 2004

INSTRUCTIONS

Reservations can be made by faxing this form or calling in directly.

Please print clearly!

PHONE: 608-254-5466

FAX: 608-254-6116

GUEST INFORMATION

Arrival Date: Departure Date:

First Name: MI Last Name:

Company

Address

City/State/Zip Code

Daytime Phone: Evening Phone:

Email Address:

DEADLINE: September 30, 2004

Reservations must be made by this date to guarantee convention rates.

CONFIRMATIONS

You will receive your confirmation from the hotel within 7 days of receipt of your reservation.

HOTEL SELECTION- One form per room.

Please fill out completely by ranking your preferences, 1 being your first choice.

The Kalahari has a limited amount of rooms available at the conference rate and reservation requests will be honored on a 1st come 1st basis. Overflow hotels may be used to accommodate all reservation requests.

Kalahari Resort

\$99.00 per night Hut Room

(Two Queen sized beds, full bath and deck or patio, includes up to 4 Waterpark passes)

Tax Rates and Special Requests

All rates are subject to 11% tax

(subject to change).

Special requests cannot be guaranteed, however the Resort will do their best to accommodate all requests.

Kalahari Resort

\$109 per night per Lodge Room

(King bedroom, living room with fireplace and full sized pullout couch, full kitchen and deck or patio, includes up to 2 waterpark passes)

List all room occupants (Indicate if child):

CANCELLATION POLICIES

- Cancellations made within 72 hours of the arrival date will not be refunded the first night deposit amount.
Hotel will charge \$25.00 cancellation for all reservations canceled before 72 hours of the date of arrival.
All cancellations and changes must be made directly with the hotel.

Blank lines for listing room occupants.

Check here if you require special services Non-Smoking Request
Special Requests

DEPOSIT INFORMATION

All reservation requests must be accompanied by a credit card. Credit card will be charged for an amount equal to one nights room charges plus appropriate tax amount at the time the reservation is made. In lieu of a credit card, a signed purchase order for the total amount of the stay may accompany reservation requests.

Visa MasterCard Discover American Express Purchase Order

Guarantees

Card Number Name on Credit Card

Cardholders Signature Expiration Date

I hereby authorize the participating hotels to process a charge the cost of one night to my credit card for my room deposit. I also agree to abide by the cancellation policy as stated above and authorize the hotel to charge any cancellation fee based on these policies.

Soft Starters

- Compact
- Integral Bypass Relay
- Independent Ramp-up/Ramp Down

VFDs

- Versatile
- Cascade Control
- Sleep Mode
- Plain Text Programming

Silver Lake SD, Plover, Medford, Lake Geneva, Fox Lake, Ephraim, Oshkosh, Burlington, Northern Moraine Utilities, Baraboo, Egg Harbor, Berlin, Milwaukee, MSD-Jones Island, Milwaukee MSD-South Shore, South Milwaukee, Waukesha, WalCoMet, Weyauwega, Dodgeville, Berlin, Genoa City, Marion, Mayville, Rib Mountain, Sheboygan, Milton, Virgona, Belgium, Deerfield, Fox Lake Correctional, Genoa City, Gogebic-Iron, L'Anse, Markesan, Milton, Pell Lake, Union Grove, Fontana-Walworth, Silver Lake SD, Plover, Medford, Lake Geneva, Fox Lake, Ephraim, Oshkosh, Burlington, Northern Moraine Utilities, Baraboo, Egg Harbor, Berlin, Milwaukee, MSD-Jones Island, Milwaukee MSD-South Shore, South Milwaukee, Waukesha, WalCoMet, Weyauwega, Dodgeville, Berlin, Genoa City, Marion, Mayville, Rib Mountain, Sheboygan, Milton, Virgona, Belgium, Deerfield, Fox Lake Correctional, Genoa City, Gogebic-Iron, L'Anse, Markesan, Milton, Pell Lake, Union Grove, Fontana-Walworth, Silver Lake SD, Plover, Medford, Lake

CONTROL

DO YOU HAVE IT?

Analyzers

- Ammonia
- Phosphorous
- Nitrate
- pH
- ORP

DO Sensors

- Minimal Maintenance
- No Membranes or Electrolytes To Replace In The Field
- In-Air Calibration

OUR CUSTOMERS DO!



For more information, contact:

WILLIAM/REID LTD, LLC.
888.272.1722
www.williamreidltd.com



The Clarifier

416 Herman Street
Arena, WI 53503

CHANGE SERVICE REQUESTED

PRSRT STD
U.S. POSTAGE
PAID
PERMIT # 600
WAUSAU, WI 54403

WISCONSIN WASTEWATER OPERATORS' ASSOCIATION, INC. 2003 - 2004 OFFICIAL DIRECTORY

Randy Herwig, President
Lodi WPCF
130 S. Main St.
Lodi WI 53555
Work 608 592-3247
Fax 608 592-3271
Home 608 592-7017
rherwig@wppisys.org

Tim Nennig, President Elect
Grafton Water & Wastewater
P.O. Box 144
Grafton WI 53024
Work 262 375-5330
Fax 262 375-6938
Home 262 377-4756
timnenn1@execpc.com

Tom Kruzick, Vice President
Oshkosh WWTP
233 Campbell Road
Oshkosh WI. 54901-3488
Work 920 232-5365
Fax 920 232-5366
Home 920 725-0897
tkruzick@ci.oshkosh.wi.us

Dale Neis, Past President
1045 Northpark Court
P.O. Box 512
Dickeyville, WI. 53808
Work 608 568-3151
Fax 608 568-7237
Home 608 568-3436
neisguy@pcii.net

John Bond, Director (04)
Roberts WWTP
107 East Maple Street
Roberts WI 54023
Work 715 749-3175
Fax 715 749-3889
Home 715 796-5263
rbtswwtp@presenter.com

Pete Conine, Director (05)
Waukesha Wastewater Treatment
600 Sentry Drive
Waukesha WI. 53186
Work 262 524-3626
Fax 262 524-3632
Home 262 650-6298
pconine@ci.waukesha.wi.us

Kay Marshall, Director (05)
SEH
1701 W. Knapp St. Suite B
Rice Lake WI 54868-1350
Work: 715 236-4018
Fax 715 234-4069
Home: 715 790-1418
kmarshall@sehinc.com

Jim Schreiber, Director (05)
City of Hudson WWTP
505 Third St.
Hudson WI 54016
Work 715 386-4769
Fax 715 377-1458
Home 715 749-3431
jschreiber@ci.hudson.wi.us

Jim Thalke, Director (04)
Sussex Regional WPCF
N64W23760 Main Street
Sussex WI 53089
Work 262 246-5184
Fax 262 246-4915
Home 262 246-0921
jtallke@cs.com

Richard McKee, Exec. Secretary
WWOA
416 Herman Street
Arena, WI 53503
Home 608 753-9362
Fax 608 753-9363
Work 608 795-0024
rdmckee@charter.net

2004 Convention Contacts

Local Arrangements
Gil Hantzsch - 608 356-2771

Technical Program
Tom Kruzick - 920 232-5365

Guest Program
Gil Hantzsch - 608 356-2771

Clarifier Staff

Jean Van Sistine 920 438-1057
Dan Busch 920 438-1101
Jeff Haack 920 492-5811

GBMSD
P.O. Box 19015
Green Bay WI 54307-9015