

# CENTRAL STATES WATER

The Official Magazine of the Central States Water Environment Association, Inc.

## 8<sup>TH</sup> ANNUAL MIDWEST WATER INDUSTRY EXPO

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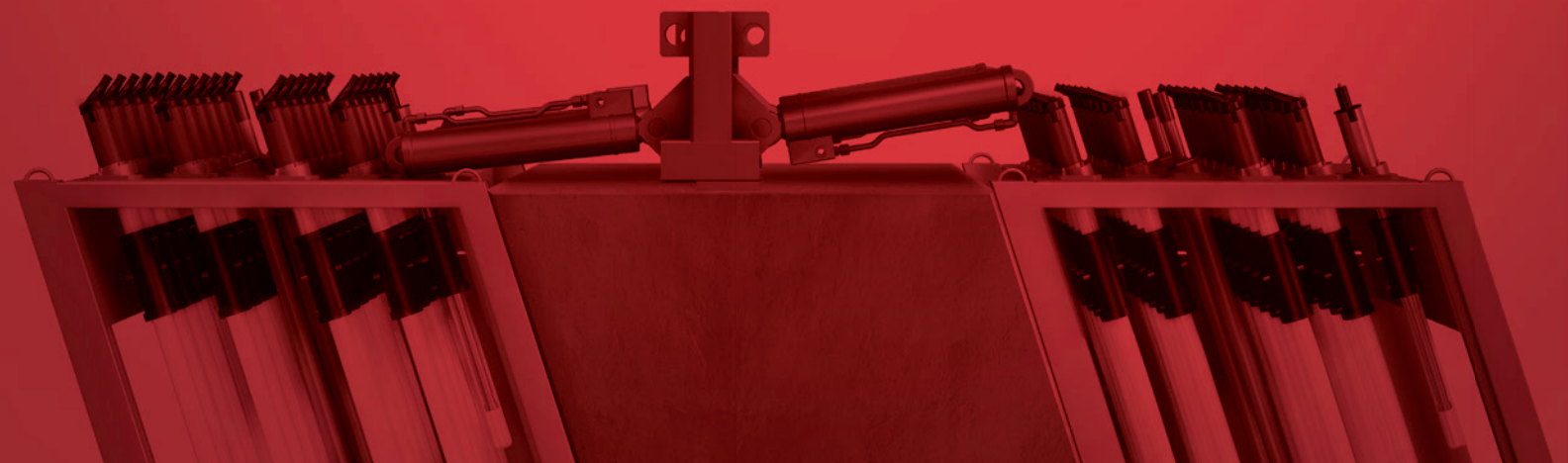
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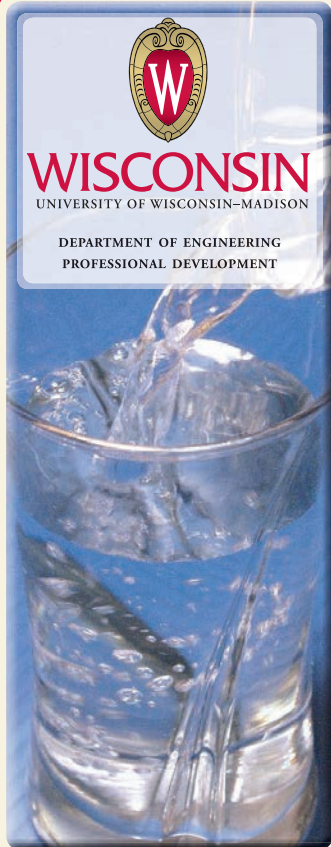
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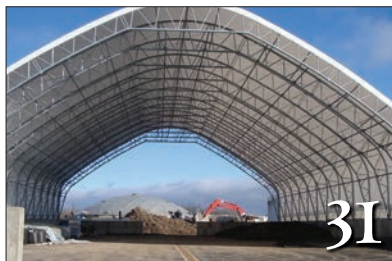
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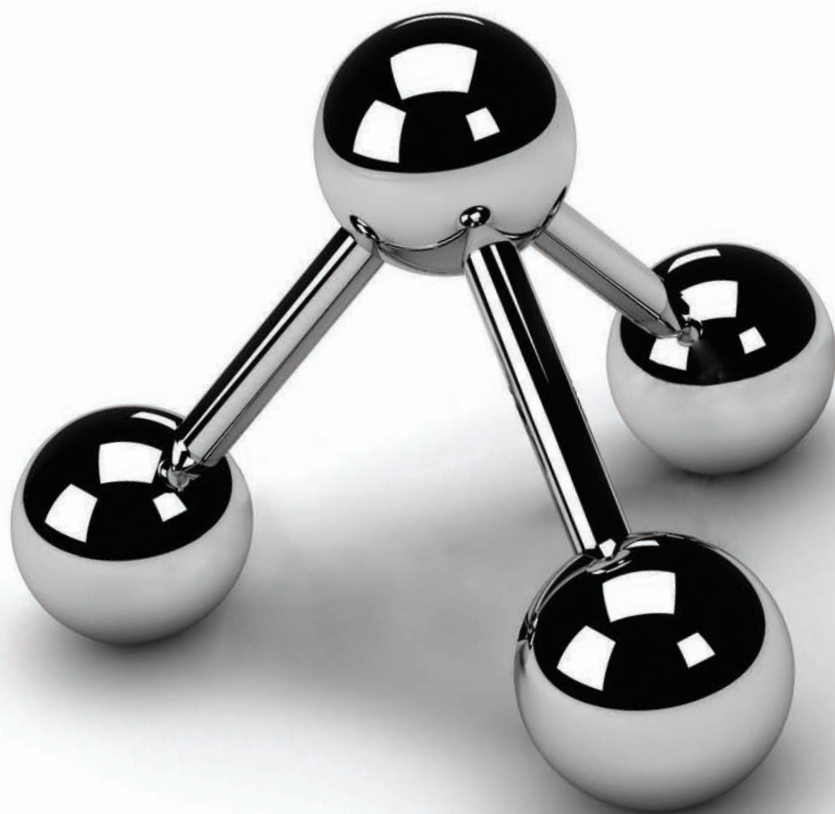
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# Mid-term Musings

By Randy Wirtz



I'm about halfway through my term as CSWEA President, so I thought I would take this opportunity to talk about a few things that are on my mind – WEFTEC, elections, CSWEA events, and the passing of a long-time friend of CSWEA.

## WEFTEC 2012

The WEFTEC event in New Orleans was sure a lot of fun as well as very educational, and I saw a lot of you down there throughout the week. We had a big turnout at the CSWEA/IWEA Welcome Reception on Sunday night at WEFTEC, which was a great kickoff for the week. Jim Huchel and Mike Holland did a fantastic job at organizing the event, and a big thanks to all of the sponsors (more than 50!) that allowed us to host such a fun event.

Both of the CSWEA WEFTEC Operations Challenge Teams did outstanding this year – the best ever according to the statistics I've seen. The CSWEA Shovelers team included the more experienced of the CSWEA operations challenge members, including: Coach Jim Miller, Captain Matt Schmidt (GBMSD, WI), Brian Skaife (Janesville, WI), Ken Bloom (Marathon City, WI), and Todd Carlson (Duluth, MN). The Shovelers placed sixth overall out of 28 teams, including a first ever first-place finish in the laboratory event and a third-place finish in the process control event.

The CSWEA Pumpers included our newer operations challenge members: Coach Jim Huchel (Crystal Lake, IL), Captain Tom Dickson (Oconomowoc,

WI), Chris Kleist (Duluth, MN), Marc Majewski (Downers Grove, IL), and Justin Pratt (Moline, IL). The Pumpers finished an impressive 16th overall including top 10 finishes in the laboratory event and the collections event. For those of you that have not been to an operations challenge before, please make it a priority to see in the future. These operators put in a lot of time before the event, and really show their skills while representing CSWEA. Congratulations Shovelers and Pumpers, and a special thanks to Jeff Mayou (Marinette, WI) for organizing both teams and for his dedication to this organization as our Professional Wastewater Operator (PWO) representative on the Executive Committee.

## Elections 2012

The long-awaited and hotly contested elections are now over, and none-too-soon for my taste. While elections certainly capture people's attention, the negative ads and mudslinging put on by both major parties are difficult to take over the long-term, and I'm glad it's over.

Speaking of the election, the Water Environment Federation, along with numerous member associations including your CSWEA, were very active over the last several months on a bi-partisan (or is it non-partisan?) campaign of our own – the Water for Jobs campaign. This effort focused on educating candidates of all political parties on the critical need for water infrastructure funding programs. The campaign made a business case for water infrastructure investment by



emphasizing the link between investment and job creation. The efforts of this campaign were successful at getting water infrastructure investment included on the election platforms of both the Democrats and Republicans, which was the initial goal. Moving forward, the goal is to continue to educate elected officials on the importance of investing in our critical water infrastructure. Go to [www.waterforjobs.org](http://www.waterforjobs.org) for more information and to get involved.

## CSWEA upcoming events

The first half of 2013 includes numerous CSWEA events that you shouldn't miss. I've outlined many of them below and please see additional information posted at [www.cswea.org/events](http://www.cswea.org/events):

- **Midwest Water Industry Expo (MWIE)** – CSWEA will jointly host the 8th Annual MWIE event with the Wisconsin Water Association at the Kalahari Resort in the Wisconsin Dells on February 5-6, 2013. This event provides an opportunity to learn about the latest advancements in treatment technology in a relaxed

Continued on page 8



Continued from page 7

environment. On the second day of the expo, the inaugural CSWEA Operations Seminar will be hosted, the focus of which will be activated sludge bulking and filamentous control strategies.

- **Young Professional (YP) Leadership Academy** – The 3rd Annual YP Leadership Academy will be held on April 1, 2013 at the Monona Terrace in Madison, WI. This event is focused on providing an excellent learning and training opportunity for our younger members, and also has a technical tie-in to the next day's Education Seminar. YPs attending both events get a significant fee discount as well as a high quality learning experience!
- **Education Seminar** – The 18th Annual Education Seminar will be held on April 2, 2013 at the Monona

Terrace in Madison, WI. This CSWEA event is widely known for its exceptional speakers and timely topics. We routinely draw attendees from all over the Midwest and beyond. This year's focus is on biosolids management, stabilization, disposal, and resource recovery. You won't want to miss this exceptional one-day event.

- **2012 Annual Conference** – The CSWEA 86th Annual Conference will be held May 14-17, 2013 at the Monona Terrace in Madison, WI. This location for the annual conference has traditionally been our best attended, and we expect that the 2013 conference will be no exception. The Local Arrangements Committee and Technical Program Committee are working hard to develop another outstanding conference that will be educational and fun, as well as a

great value to our members and other attendees.

**A sad goodbye:** Many of you know or remember Allan L. "Al" Rae, a long-time member of CSWEA and our CSWEA Secretary-Treasurer for many years, retiring from this position in 2002. He served CSWEA very effectively, and for very little pay, in the days before we had an executive director. Al passed away on November 3, 2012. While I didn't know Al personally, when I first became involved with CSWEA back in the mid-1990s, I communicated with him on several occasions as I learned the workings of the association. Al was always ready to help, and I've heard many of you speak about him in a similar manner. He will be missed by many, and our thoughts and prayers are with his wife of 60 years (Pat) and the rest of his family and loved ones. [CS](#)



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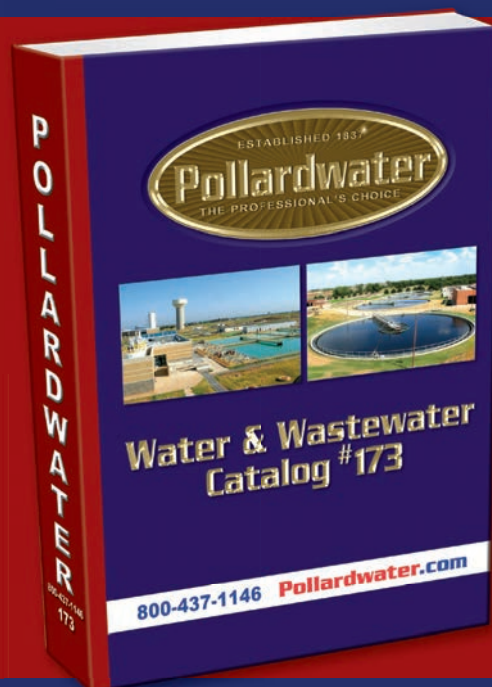


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# WEF Initiatives

By Dave Raby and Rusty Schroedel



One of the primary duties of a delegate is to attend the House of Delegates (HOD) meeting, which is held on Saturday at the start of WEFTEC. The meeting actually includes two separate houses, the members whose terms end in 2012 are formally attending the morning session, and those whose terms extend into 2013 and beyond attend the afternoon session. Incoming and outgoing members are welcome to attend the session at which they are no longer members, but cannot vote.

The morning session includes reports on several activities of the House in the last year, and some other excellent presentations. Our own Central States member Bart Jones, outgoing chair of the Committee Leadership Council, gave an exceptional presentation on member engagement. A luncheon was held to recognize Water Heroes, and since we were in New Orleans, their wastewater and water staff were recognized. The stories of their staff who often worked around the clock to help recover from Hurricane Katrina were truly inspiring. These individuals are definitely heroes.

The afternoon session starts with workgroups meeting separately to conduct one of the major activities of the house. This year, there were four workgroups.

- Strategic Planning
- Operator Outreach
- MA Sustainability
- Non-dispersibles

Dave Raby participated in the MA Sustainability Workgroup this year. The Work Group is being chaired by Duyen Tran (Arkansas WEA) and includes 23 participants. At the organizational meeting, they brainstormed areas of concern for MAs and grouped those concerns into four key areas for which they are developing sub-groups. Those four sub-groups will address engagement, financial stability, value services and strategic planning. The workgroup's first conference call meeting following WEFTEC was scheduled for November 7.

Rusty Schroedel is the chair of the Strategic Planning Workgroup. The primary task for this work group is to prepare a formalized framework for HOD strategic planning that accomplishes the HOD Vision and Mission and develops actionable items/implementation program. The group identified four areas for improvement.

- Mentoring, training and development of delegates
- Improve process of soliciting input from MAs
- Improve WEFTEC HOD Annual Meeting

- Improve workgroups

The House also has four standing committees: Budget, Nominating, Steering, and WEFMAX. Rusty has been selected to serve on the Steering Committee, and Dave has been selected to serve on the Nominating Committee. At the HOD meeting, Jenny Hartfelder moved up to be Speaker of the House with Janet Cann from Spartanburg Water elected as Speaker-Elect. One interesting item voted on at the afternoon session was the mission and vision statements approved for voting by the House by the Strategic Planning Workgroup. The statements had actually been developed, refined, and completed during last year's workgroup activities. Some interesting discussion ensued regarding some terminology in the statements but they were ultimately approved.

Three major activities in WEF are the WATER'S WORTH IT™ branding campaign, Water for Jobs, and implementation of the Strategic Direction.

WATER'S WORTH IT™ is a trend that's sweeping the nation. Two U.S. cities have embraced this public awareness campaign by making WATER'S WORTH IT month proclamations. New Orleans Mayor Mitch Landrieu and the New Orleans City Council proclaimed October as WATER'S WORTH IT month, pre-

**“Three major activities in WEF are the WATER'S WORTH IT™ branding campaign, Water for Jobs, and implementation of the Strategic Direction.”**



senting these proclamations to the Water Environment Federation during WEFTEC 2012. On Sept. 29, city officials and WEF leaders gathered at the annual WEFTEC service project, *Bogging in the Big Easy*, for a presentation ceremony. Earlier this year, the City of Norman, Okla., proclaimed July WATER'S WORTH IT month. This proclamation was issued to increase community awareness of water as a precious natural resource, declare how the things most valued by people are closely connected with water, and promote protection of water through increasing educational efforts. It encourages citizens and civic organizations "to become knowledgeable and acquaint themselves with the problems involved in maintaining safe water."

WEF has launched the Water for Jobs: Water Puts America to Work campaign. WEF is spreading the word that investing in water infrastructure is an investment in American jobs and America's future. This was done in partnership with WEF Member Associations, American Public Works Association, American Water, American Water Works Association, CH2M Hill, the National Association of Clean Water Agencies, National Association of Water Cos., United Water, Xylem Inc., and Veolia Water. The campaign makes a business case for water infrastructure investment by emphasizing the link between investment and job creation. The timing was planned with an emphasis on getting information to the public and political candidates in advance of the November elections.

WEF Executive Director Jeff Eger represented the Water Environment Federation at an event we sponsored with the National Association of Clean Water Agencies and the Association of Clean Water Administrators to celebrate the *Clean Water Act's* 40th anniversary on Monday, October 15, at the National Press Club in Washington. Jeff noted WEF members were at the forefront of CWA implementation, when innovative thinking was essential to providing the clean and safe water we enjoy today, and they'll be instrumental in building on CWA success over the next 40 years.

There is significant emphasis on focusing on the new Strategic Initiative.

The WEF Board of Trustees and staff worked throughout 2011 to evaluate all facets of WEF; give every WEF member the opportunity to provide input through surveys, focus groups, and interviews; and develop a future direction that responds to the needs of the water sector and WEF members. The planning was extremely successful due to an enthusiastic, willing, and able Board of Trustees; excellent WEF staff

leadership, especially our new Executive Director Jeff Eger; and great data from our consultant-assisted process, which involved obtaining data from our members, external stakeholders, and other nonprofit organizations. The result of our efforts is a new, bold strategic direction for WEF. You are encouraged to download the initiative to see the direction your Federation will take in the future. [CS](#)

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# Executive Director Position



In November 2011, the CSWEA Executive Committee began the process of selecting a new Executive Director following Eric Lecuyer's announcement of his resignation after a long and successful tenure. At that time, we developed a detailed request for proposals as a first step to find a new Executive Director. We received six proposals and shortlisted three individuals for interviews with the entire Executive Committee in January 2012. Following the interviews, Dan Lynch was selected as the Executive Director and has served in that role since the annual conference in May 2012. Recently, Dan has informed the Executive Committee that he wishes to resign from the Executive Director position.

As many of you know, Dan has been

deeply involved with CSWEA for many years. Dan was the Chair of the Wisconsin Section in 1993-94, and he has served on the CSWEA Executive Committee in several different capacities continuously since 1999. Dan's service to CSWEA truly cannot be overstated, and we appreciate all he has done and meant to the association for the past 30 years.

Our path forward is made simpler because of the exhaustive search conducted less than one year ago by the Executive Committee to fill the Executive Director's position. Because of these efforts, the Executive Committee decided it was in the association's best interest to move quickly to retain a new executive director. Therefore, the position was offered to, and accepted by, Mohammed

Haque. Mohammed was the other finalist (with Dan Lynch) in last year's search, and the Executive Committee has voted unanimously in favor of entering into a contract with Mohammed to become the new Executive Director of CSWEA.

Many of you, especially those from the Illinois Section, already know Mohammed and his wife, Amy. Mohammed is the District Manager of the Lakes Region Sanitary District and has been an active CSWEA and Illinois Section member for many years. Mohammed is a 7S member, Golden Manhole member, and was the original webmaster of CSWEA. He is also a leader of one of our recent new conferences sponsored by CSWEA: T-CON – The Midwest Water & Wastewater Technology Conference. Amy will assist Mohammed in the day-to-day operations of the association and State Sections, and together they will provide the significant services and responsiveness required of this position.

The transition is effective December 1, 2012. Mohammed and Amy's contact information are included below. If you have any questions or comments about this transition, please contact Randy Wirtz, CSWEA President, at 608-251-2129 ext. 1102 or [randy.wirtz@strand.com](mailto:randy.wirtz@strand.com). [CS](#)

## Mohammed Haque

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# A New Direction

Dan Lynch



**M**any of you have probably heard that I am stepping down as executive director. The only reason that I can offer you for my decision to step down is that I simply wasn't a good fit for the job. I know the association very well and I care greatly for the association, but I didn't have some of the skill sets that are needed to do this job. While I could have held onto the position, I don't think that would have been doing a service to either the association or myself.

I do want to take this opportunity to sincerely thank the Executive Committee and President Wirtz for giving me the opportunity to serve as your executive director. I also want to thank all the members for your continuous support while I held this position. It has been a great experience.


The association is fortunate to have another great individual eager to take over the duties of executive director. This individual is Mohammed Haque, and he has already impressed me in some of the things he has taken during our transition. I hope all of you show Mohammed the same support and cooperation as this organization is known for. I feel confident that the association is in very capable hands, and that it will continue to grow as a premier regional water group. Please look over Mohammed's announcement in this



*"I do want to take this opportunity to sincerely thank the Executive Committee and President Wirtz for giving me the opportunity to serve as your executive director."*

magazine, and let him know that you are all behind him.

Thank you all again for your support,

and as I have said many times before, "Let's go have some fun and do some good."  Dan

# WEFTEC 2012 CSWEA-IWEA Welcome Reception: Good Times Had By All

The 2012 WEFTEC CSWEA/IWEA Welcome Reception was a success once again. Thanks to our many sponsors and the hard work of the committee chair Jim Huchel (you were definitely missed and your contribution was not un-noticed), and all other members who worked the phones and emails to make this event a success. This year's event, held at the New Orleans Hilton Riverside, was the 17th year that CSWEA and IWEA joined to host this event. Nearly 250 members, sponsors and friends were in attendance, which is a great turnout in spite of the Packers game going on at the same time. The food seemed to be endless, with well-timed delivery and abundance. The noise level was high as friends met and made plans for the week of WEFTEC. Of course, this was all made possible by our generous sponsors, whose support allows this event to be revenue neutral and not subsidized by either association. Make a note now to plan to attend the 18th Annual Welcome Reception at WEFTEC 2013 in Chicago, October 6, 2013.

## Thank you sponsors!

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# And the Award Goes to: Again, CSWEA!



## Industrial Water Quality Achievement Award

Richard Bristow accepts the **Industrial Water Quality Achievement Award** on behalf of Rahr Malting Company, Shakopee, MN. This award acknowledges an industry that best demonstrates significant, lasting, and measurable excellence in water quality improvement or in the prevention of water quality degradation as demonstrated by innovative design and operation of an industrial wastewater, pretreatment or source prevention program. Rahr Malting has made significant improvements with SBR and membrane technology to meet stringent effluent limits, plus has an energy biomass co-generation facility partnership that saves them 120 million BTUs per hour.



## Outstanding Young Water Environment Professional Award

*Amanda Poole, Baxter & Woodman Mokena, IL*

Presented for significant contributions to the Water Environment Federation and to the wastewater collection and treatment industry. Amanda's accomplishments and contributions to WEF and CSWEA are even more amazing given the "young" criteria and limited years in the profession.

The **WEF Public Education Awards** recognize WEF members for significant accomplishments in promoting awareness and understanding of water environment issues among the general

public, through the development of and implementation of public education programs. CSWEA members won two of these awards.

## Individual Category

*Andrew Sullivan, Eden Prairie, MN*

Andrew Sullivan is passionate about water infrastructure and educating the public on the role of water infrastructure in our daily lives. Proofs of his passion are two products: a website and a documentary on water infrastructure in Minnesota (available for free in DVD; go to [www.blueprintMN.com](http://www.blueprintMN.com)). The website and documentary were Andrew's ideas and it was his leadership and action that delivered amazing products.



## Other Category

*Western Lake Superior Regional Stormwater Protection Team Duluth, MN*

The City of Duluth spearheaded a partnership of governments and groups (now 26) in 2003 to form the Regional Stormwater Protection Team (RSPT). Their mission: to protect and enhance the region's shared water resources through stormwater pollution prevention by providing coordinated educational programs and technical assistance. During this same period the city partnered with the University of MN-Duluth to create [www.LakeSuperiorStreams.org](http://www.LakeSuperiorStreams.org). Check it out! Chris Kleist was able to complete the Operations Challenge and accept the award on behalf of the WLSRP Team – and still make it to the Ops Challenge award ceremony; a winning day for Chris and CSWEA!



## WEF Safety Award

*Metropolitan Council Environmental Services – East Business Unit Twin Cities, MN*

This award recognizes entities that not only invest their resources to develop high quality safety programs and adopt them within their own culture, but also actively seek out opportunities to share



CSWEA members took home five awards at the WEFTEC '12 award ceremony.



these programs with others in the water industry for the benefit of all. Accepting on behalf of the MCES East Business Unit (comprised of four wastewater treatment facilities) is manager Patricia Oates. In addition to having a top-notch safety

program, the staff at these facilities have formed partnerships with local fire departments and participated in activities such as rescue drills, facility tours, and routine training events.[CS](#)

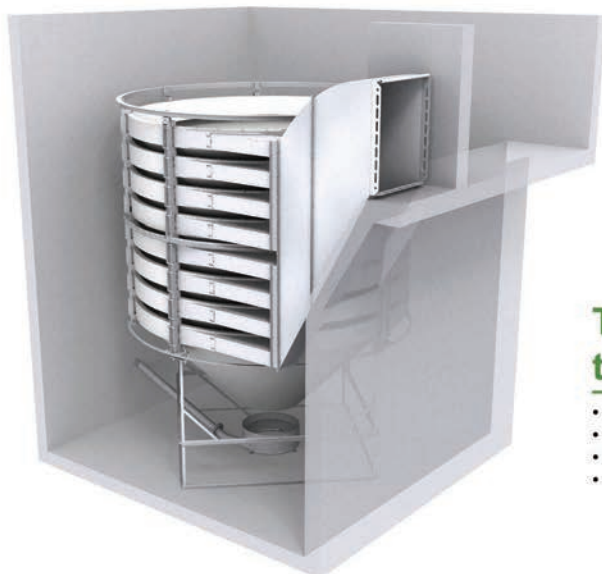


CSWEA award winners and officers gather together prior to the award ceremony.



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# CSWEA's Student Paper/ Design Competition

The University of Illinois – Urbana/Champaign continued their dominance in representing Central States at the WEF Student Paper and Design Competitions, cementing U of I's place as the elite student chapter in CSWEA (that was a gentle nudge to promote the student paper/design competition with other student chapters).

CSWEA developed the competition criteria based on WEF guideline, and student chapters were notified of the competition in early 2012. The Student Paper Competition was intended to promote the education of undergraduate and graduate students in water pollution control, water quality problems, water-related concerns, hazardous wastes issues, and other related areas to provide the opportunity for national recognition of participating students. There were two competition categories, undergraduate and graduate students. CSWEA sponsored one student to compete in the 2012 WEF Student Paper Competition. Mengye Chen, a graduate

student in Environmental Engineering at the University of Illinois – Urbana/Champaign. Mengye entered his paper titled *Advanced Oxidation Process Treatment of Membrane Filtration Concentrate Using Hydrogen Peroxide and Ultraviolet Light* in CSWEA's student paper competition and presented his paper at the paper competition held during the same time as the Leadership Conference in April of 2012. The competition judges all agreed that his paper was of the quality necessary to represent CSWEA at the WEF level, and awarded the winner. As part of winning CSWEA's student paper competition, Mengye's expenses for attending WEFTEC in New Orleans were covered by CSWEA, and he was given the chance to enter his paper in WEF's paper competition, representing CSWEA. Mengye completed the entry provisions for the WEF paper competition and presented his paper at the CSWEA Annual Conference at Pheasant Run. Not only was Mengye's paper a competitor at the WEF level, but



his paper was selected as the winner of the graduate program paper competition. Congratulations Mengye!

The Student Design Competition is intended to promote "real world and hands-on" design experience for students interested in pursuing an education and/or career in water/wastewater engineering and sciences field. There are two levels of competition, conventional wastewater design, which includes traditional wastewater design project, and environmental design, which includes contemporary engineering design topics such as sustainability, water reuse, wetland construction and Engineers Without Borders projects. The CSWEA design competition was also held during the Leadership Academy in Madison. From the competition, the team from the University of Illinois – Urbana/Champaign consisting of Kevin Weyant, Drew Bishop, Chinedu Onyejekwe, John Watson and Alyssa Sohn presenting the *Nigeria Water Project – Engineers Without Borders* was the winner of the competition to represent CSWEA at WEFTEC. The team from U of I presented the project at the CSWEA Annual Conference and completed the design competition entry package for WEF. Unfortunately, the team's hard work and exceptional presentation did not result in them being victorious. However, they did a great job and should be very proud of their accomplishment, as we are in having them represent CSWEA. [CS](#)

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# CSWEA's Student Design Team Project

Rural areas of Sub-Saharan Africa face the most acute water supply challenges in the world. Nigeria has considerable populations without basic access to safe drinking water, with over 50% of the country's population lacking coverage. The Nigerian Water Project was developed by Engineers without Borders (EWB) with the village of Adu Achi, Nigeria to implement an innovative, cost-saving gravity-fed distribution system employing groundwater from the Ajali sandstone aquifer. The village and surrounding area consists of over 10,000 people currently relying upon contaminated surface water 3km from households, on average. The lengthy dry season, inconsistent quality of nearby surface water and traditional religious beliefs regarding water bodies led groundwater to be selected as the source of supply. The main barriers to developing sustainable water provisions for the region were the lack of electricity, the depth of the aquifer, informal government structures within the community, and economic support.

Provision of adequate, consistent, and clean water supply to such a large, economically challenged population involves development of a comprehensive sustainability program. The main elements involved in supplying clean water include: (1) Water Supply Development, (2) Community Health, (3) Community Management, (4) Education and (5) Sustainability. Specific sustainability considerations were

targeted to maximize human health improvements, improve the environment, and pass on relevant concepts to the community and surrounding areas.

This project has made significant progress since it began in 2008. Research and public outreach in the United States has continued its success as implementation of project initiatives and physical infrastructure were carried out over multiple construction phases in the village of Adu Achi from 2008 to October 2011. Remote collaboration of partners, as well as community interaction led to the design and implementation of a comprehensive sustainable water system. The most appropriate solution for the community was selected depending on several different criteria, including access to resources and level of community involvement, dedication, and financial state. Power supply options including wind, solar, biofuels, and diesel generators were investigated and compared; reinforced concrete reservoirs were designed and built; a pipeline for water distribution was designed and installed, rainwater collection was researched and a community demonstration system held; surface water protection was researched, two chlorination scenarios were researched and designed; partnering was continued with the local women's center; and an economic analysis including operations, maintenance, and annuity was compared



to the community's ability to pay.

In order to ensure adequate, consistent, and clean water supply to a large, economically challenged population of over 10,000, an innovative and comprehensive program must balance (1) appropriate technical design and implementation of infrastructure elements, (2) coupled with community oversight of how this infrastructure should be built and subsequent management of the system, (3) concurrent with education programs to reduce existing gaps in technical understanding and basic sanitation practices, (4) yielding enhanced health and quality of life. Implementation and evaluation of this program has provided provide water for the Adu Achi community, which was before lacking access to a clean water source, while also serving as a basis for other similar communities to emulate similar strategies to develop and manage effective community water supplies. [CS](#)



# CSWEA's Pumpers and Shovelers Compete in Operations Challenge at WEFTEC

By Jeff Mayou

The 25th Anniversary of WEFTEC's Operations Challenge held October 1-2, 2012 at the Morial Convention Center, New Orleans, Louisiana proved to be most exciting and rewarding to the Central States WEA Shovelers and Pumpers.



The Shovelers and Pumpers entered the arena sporting Central States WEA apparel, Mardi Gras colors with proud sponsorship logos, and colorful helmets expecting to stay with the pack and hold their own and no doubt competing the best they could with the limited resources available. As each event was challenged and other teams were observed knowing only what our two teams had for raw times and limited penalties, one could only wonder where they placed.

## **BIG NEWS!**

**Shovelers** place first in the Laboratory, third in Process Control, and seventh in Collections while placing sixth overall!

**Pumpers** place ninth in Laboratory and tenth in Collections while placing sixteenth overall!

**CONGRATULATIONS** Shovelers and Pumpers – a phenomenal accomplishment.

Ten division one and 28 division two teams were judged on the best combination of precision, speed and safety. Winners were determined by a weighted point system for five events including collection systems, laboratory, process control, maintenance and safety. The events were designed to test the diverse skills required for the operation and maintenance of

wastewater treatment facilities, their collection systems and laboratories – all vital to the protection of public health and the environment.

The CSWEA team's journey began at the Madison Metropolitan Sewerage District in August 2012 where several of the team members met for the first time while others welcomed back the veterans for one of two intense practices prior to WEFTEC. Eight individuals from three states consisting of operations, lab, maintenance, industrial pretreatment, and collections specialists formed two teams representing Central States, their communities, and sponsors. Each team member was informed that they were expected to train hard, be consistent, study, and mentor the other team in an effort to be the best they can be while enjoying the camaraderie of each other.

*Todd Carson, Duluth MN (fourth year-returner, Shovelers): "I liked the way the teams worked together to find ways to save those precious seconds, the way everyone worked to help others get better and feel*

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more comfortable with what we were doing. In the past I did not see or feel this bond between the teams – it's a good thing. Jeff, you did a great job being the PWO, you will be a hard act to follow. The bond that you have given these teams is something that will not be forgotten, thank you!"

Brian Skaife, Janesville, WI (second year returner, Shovelers): "Competing at WEFTEC on a national level with all of you has been an honor. Let's have CSWEA continue to have the teams that come out of nowhere to surprise all these other teams that get more practice than us! Good work everyone, and keep in touch!"

Our teams did very well and I'm proud of them – they represented CSWEA at a caliber that surpassed expectations.

A special thank-you goes out to Madison Metropolitan Sewerage District including Paul Nehm, Rhonda Riedner, Montgomery Baker, and staff for continued support of CSWEA Operations Challenge program. [CS](#)

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#### Shovelers

Coach Jim Miller, Buffalo, MN  
Captain Matt Schmidt, Green Bay, WI  
Brian Skaife, Janesville, WI  
Ken Bloom, Marathon City, WI  
Todd Carlson, Duluth, MN

#### Pumpers

Coach Jim Huchel, Crystal Lake, IL  
Coach Jeff Mayou, Marinette, WI  
Captain Tom Dickson,  
Oconomowoc, WI  
Chris Kliet, Hermantown, MN  
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# Wisconsin's New PE Requirements

By Jon Butt, Symbiont

The following information has been prepared for Central States to summarize the new requirements for renewing professional engineer (PE) licenses in Wisconsin. This summary is not all-inclusive, but highlights the majority of the details. Each licensee should review the Wisconsin Administrative Code, Chapter A-E 13.

## THE REQUIREMENT

Beginning August 2012, all PEs will be required to acquire 30 professional development hours (PDHs) of continuing education per biennium. In addition:

- Two out of the 30 PDHs shall be in the area of professional conduct and ethics.
- Within the biennium, a minimum of 13 PDHs "shall be obtained via courses where the registrant interacts in real time in a traditional classroom setting, computer conferencing, or interactive video conference where participants are present in the same room or logged in at the same time and can communicate directly with each other and ask questions of the instructor."

The state agency responsible for administering this requirement is the Wisconsin

Department of Safety and Professional Services (DPS) (<http://drl.wi.gov/profession.asp?profid=92&locid=0>). Note that any PDHs acquired prior to August 1, 2012 will not count toward the requirement.

## HOW TO ACQUIRE PDHS FOR CONTINUING EDUCATION

A PE may obtain continuing education in one of the following ways:

1. Completing a course at a school or college of engineering accredited by the EAC/ABET.
  - a. One college semester hour = 45 PDHs if the course has tests with passing grades and provisions for additional out-of-class study requirements.
  - b. Monitoring or auditing a course that results in not having testing with passing grades would change to one class hour = 1 PDH.
2. Completing short courses, tutorials, and distance education courses offered through correspondence, DVDs, or the Internet.
3. Presenting or attending qualifying seminars, in-house courses, workshops, or professional or technical presentations

made at meetings, conventions, or conferences.

4. Teaching or instructing – limited to the initial offering or presentation.
5. Authoring published papers, articles, or books in the registrant's area of professional practice that has to be published in book form, circulated journal, or trade magazine.
  - a. 5 PDHs granted per publication.
  - b. 10 PDHs granted if publication is peer reviewed.
6. Actively participating in professional and technical societies.
  - a. 2 PDHs awarded for participation as an officer or committee member.
  - b. Maximum of 4 PDHs per biennium may be applied to the PDH requirement.
7. Attainment of a patent relevant to registrant's area of professional practice.
  - a. 10 PDHs per patent.

It is the responsibility of the PE to retain all records. Records shall be kept for the three most recent biennia. Records required include verification of attendance in the form of completion certificates. If a continuing education course awards



CEUs, the PE shall convert to PDHs as indicated in the code.

The professional engineering section of DSPS has final authority on activities, courses, credit, PDH value for courses, and other methods of earning PDHs. It is the position of DSPS that no pre-authorization will be issued. It will be the responsibility of the PE to evaluate any course, seminar, or workshop to determine if it meets the standards for PDHs which are:

1. Instruction is in an organized method of learning contributing directly to the professional competency of the registrant and pertaining to subject matters which integrally relate to the practice of the profession.
2. Is conducted by individuals who have specialized education, training, or experience and are considered qualified concerning the subject matter.
3. Fulfills pre-established goals and objectives.
4. Provides attendance verification records in form of completion certificates or other documents supporting evidence of attendance.

Chapter A-E 13 does provide the following examples of PDH qualifying activities.

1. Completing or attending courses, seminars, instruction, in-house programs, or training of engineering content related to the registrant's practice of professional engineering.
2. Attending technical or professional society meetings when an engineering topic is presented as a principal part of the program.
3. Teaching a course for the first time or teaching a course previously taught if substantial time was spent updating material.
4. Attending webinar courses where attendance is verified and program material meets the requirements.
5. Completing correspondence courses on an engineering topic where lessons are prepared and returned for correction, grading, or both, and where testing at the end of the course is required.

Central States believes that many of its technical conferences, seminars, and workshop meet the standards for PDHs, however, Central States plans to evaluate current procedures to make sure that all requirements are met. **CS**

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Currently, we are in the process of establishing the program speakers and presentations. Topics are intended to provide young professionals with information and skills that will help them develop the work skills needed to succeed and excel in their careers. Deviations from previous years will include more breakout sessions to develop and refine each individual’s leadership and networking skills. Each year will focus on different topics, which

allows attendees to benefit year after year.

Topics will include keys to employee development, how to successfully communicate with others, building team cohesiveness, building an excellent team, presentation skills, and some presentations that will relate to Education Seminar topic on the following day but have a twist for the Leadership Academy.

Registration fees are designed to be affordable, and encourage attendance at

both the Leadership Academy on Monday and the Education Seminar on Tuesday, which we believe will serve our members well by allowing some of their younger staff to attend both this program and one of the best technical one-day seminars in the country, at a reasonable rate. Keep an eye open for the early registration announcement in February.

Senior members are encouraged to challenge the younger staff to attend this

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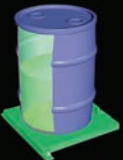
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event. The program has seen growth over the first few years, and we are anticipating additional growth for 2013. As indicated previously, the retiring Baby Boomer generation needs to develop a trusting relationship with the Generation X, Y, and Z young professionals. We rely on both young professional and senior members to show an initiative for this program, otherwise it will not be a continued success.

The conference has been attended by young professionals in consulting services, municipalities, manufacturers, and contractors. Here are a few comments from young professionals who attended a past Leadership Academy:

"The CSWEA YP Leadership Academy was a phenomenal learning and networking experience. It was great to hear advice and the experience of environmental leaders (CEOs and directors) in the Midwest. I had fun, gained invaluable advice and met a bunch of other young professionals that I will continue to network with throughout my career." Trevor Ghylin, PE, CH2M Hill.

"The environment is a passion of mine, and after the conference I realized this was the perfect industry for me to make a difference in. The people involved with CSWEA and their YP program are very knowledgeable, but more importantly they are all eager to extend a hand and share their knowledge. I wasn't too sure what to expect going into it, but the YP Leadership Academy surpassed my expectations in information and awareness of the need for young people in our profession." Andy Pakosta, Glenbard Wastewater Authority.

"The YP Leadership Academy was a great way for me as a young professional to get to know some of my peers as well as get some valuable career advice from more experienced professionals. Attending the YP Leadership Academy was a great way to start getting involved in CSWEA, and was very helpful in providing some guidance for my career in the water/wastewater industry." Mike Holland, Trotter & Associates.

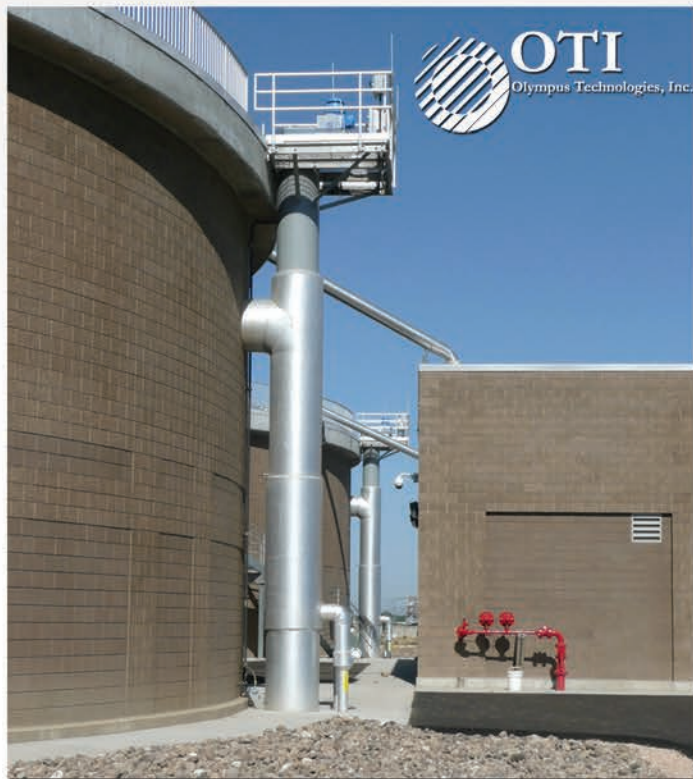
If you wish to suggest a topic or presentation and/or would like to suggest a speaker for the Leadership Academy, please contact me via email: [elynnedonohue@donohue-associates.com](mailto:elynnedonohue@donohue-associates.com). We are actively seeking presenters and suggestions to make this program valuable for our members. We hope to see a great turnout on April 1, 2013. [CS](#)



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## MARK YOUR CALENDARS for the CSWEA Education Seminar

Mark your calendars and budget for the CSWEA 18th Annual Education Seminar to be held on April 2, 2013 at Monona Terrace in Madison, WI. An exciting program focused on biosolids management and processing has been developed. This is an excellent, affordable event to learn about issues and technical advances from national and local experts. In addition, attendees will earn approximately seven (7) professional development hours (PDHs) for professional engineers and operator's license requirements. Early registration will open by February, and the registration cost will be \$195 for full registration, and \$25 for students. Speakers and topics include the following:

SPEAKER	COMPANY	TOPICS
Dr. Mohammad Abu-Orf	AECOM North American Biosolids Practice Leader (Philadelphia, PA)	Biosolids management planning, processing and use
Mr. Peter Cairney	MaxWest Environmental Solutions, Inc. (Orlando, FL)	Biosolids gasification: experience at the Sanford, FL full-scale facility
Mr. Royce Hammitt	Des Moines Metropolitan Wastewater Reclamation Authority (Des Moines, IA)	Anaerobic co-digestion implementation/management
Mr. Jay Kemp Mr. Dan Lynch	AECOM (Madison, WI) City of Janesville, WI (retired)	Co-digestion and compressed biomethane for vehicle fuel
Mr. Dana Kolpin	US Geological Survey (Iowa City, IA)	Contaminants of emerging concern: occurrence, fate, and effects related to biosolid applications
Dr. Krishna Pagilla	Illinois Institute of Technology (Chicago, IL)	Recent research results on anaerobic digester foaming and prevention
Dr. Dick Wolkowski	Extension Soil Scientist, Emritus, University of Wisconsin (Madison, WI)	Unintended consequences – avoiding nutrient over-application when using biosolids on the farm



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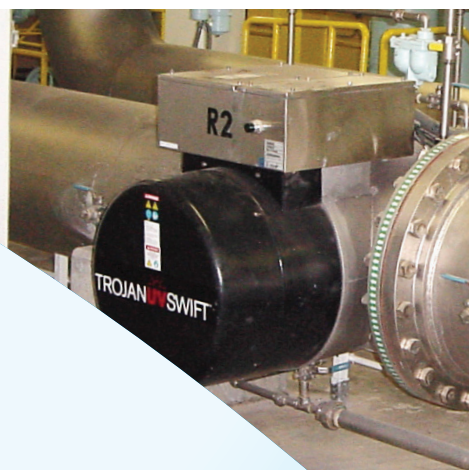
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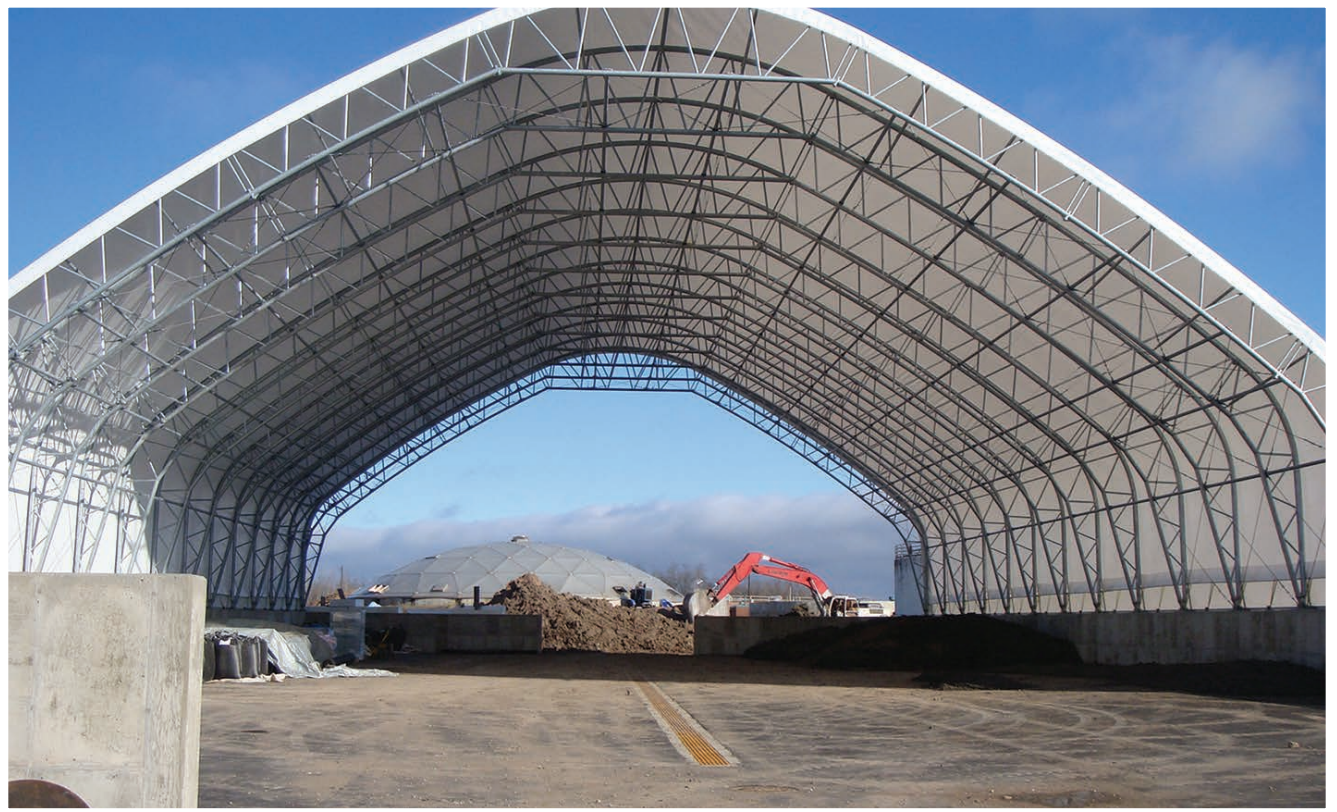
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# City of Virginia-

## A Legacy for Minnesota Water Protection

The City of Virginia, Minnesota is historically known for its mining and logging industry. Iron ore initially drew settlers to the area in the 1890s and the lumber business grew to its height in the 1920s when the population was nearly double today's 8,900 people. At one time Virginia had both the largest White Pine Mill in the world and the biggest ore producing mine (Mesaba Mountain) in the world. The area attracted celebrities such as Mae West, Roy Rogers, and WC Fields to perform in what is now the Lyric Center, a national landmark building. Along with this flourishing town, came the need to protect human health and the local waters. In 1914, Virginia built a secondary wastewater treatment facility (WWTF), a trickling filter – the second secondary treatment facility constructed in the state.

While the population declined after the last logs were milled in 1929, Virginia

continued to be a leader in protecting its waterways with advanced wastewater treatment. In the 1970s, the city completed a significant upgrade to the trickling filter system to meet effluent limits of 5 mg/L BOD, 5 mg/L TSS, and 1 mg/L total phosphorus; limits more stringent than many facilities see today in Minnesota. This upgrade, designed by Banister, Short, Elliott, Hendrickson and Associates, was a secondary activated sludge system with phosphorus removal and chemical stabilization of the solids. The initial design used lime for phosphorus removal in the primary clarifiers, followed by a recarbonation step to reduce the pH prior to secondary treatment. The phosphorus removal process was later revised to add alum prior to the secondary clarifiers. The 1970s facility also had dual media filters to ensure the city met the stringent effluent limits. Anaerobic digestion improvements

were also included in other upgrades.

In the 1980s, the receiving water was reclassified from Class 2 to 7, and the effluent limits were modified to 15 mg/L BOD, 25 mg/L TSS, with no change in the total phosphorus limit of 1 mg/L. The city continued to meet or discharge below these limits. With little growth in the area, the city did not have the pressure to upgrade the WWTF facilities for capacity reasons and was able to repair and replace equipment for many years until it was clear it was time for improvements. The plant superintendent, Michael Appelwick, worked with the city council and staff beginning in 2005 to prepare for rate increases to fund improvements. Along with the need to upgrade aging facilities was the need to meet proposed mercury effluent limits. The City of Virginia rose to this challenge, and was the first WWTF in the state to receive a TMDL



removal, as well as new laboratory space and staff areas. New aeration basins with fine-bubble diffusers replace the previous aging, overloaded aeration basin. New primary and final clarifiers have been added, along with new equipment for existing clarifiers. New chemical feed and storage facilities and four dual-media filters together address the phosphorus and mercury limits. A new UV disinfection system replaces the existing gas chlorine system.

The improvements also address biosolids. Improvements to the existing primary digester include a new heating system, new pumped mixing system, and a dual-membrane gas holder cover. A new, larger belt filter press improves sludge dewatering. A new covered sludge storage area allows the city better ability to store and manage biosolids on site.

While a lot has changed in the City of Virginia since 1914, the location of the city's wastewater treatment facility has remained. This posed challenges for constructing the new treatment components, but has also provided opportunities to reuse existing infrastructure. An existing blower building was reused for chemical feed equipment, the existing filter foundation was reused for the new dual-media filters, the previous chlorine contact tanks were reused for filter backwash/clearwell storage, and the existing digestion facilities were brought up to current fire code. Staging construction of all of these components, while also trying to reuse existing infrastructure, was a challenge. Construction has uncovered remnants from the earlier eras, and the site piping was a challenge to sort out. Through these challenges, the new pretreatment system, aeration basin, and final clarifier have been brought online recently.

The Virginia WWTF is operated and managed by Michael Appelwick of Northeast Technical Service, Inc. (NTS). Mike currently is or has been responsible for the operation of numerous water and wastewater treatment facilities in northeastern Minnesota. The mechanical WWTFs include Marble, Keewatin, Buhl, Mt. Iron, Keewatin Taconite, United Taconite, Hibbing Taconite, Duluth North Shore Sanitary District, Pike Lake Sanitary Sewer Collection System and Little Falls located in central Minnesota. Stabilization pond

grant for mercury removal and to accept their NPDES permit mercury limit without requesting a variance.

A facility plan was completed in 2009 by Short Elliott Hendrickson, Inc. (SEH) and the improvements recommended in the facility plan are under construction by Rice Lake Construction today, with substantial completion scheduled for March 2013. The improved plant is designed to meet 15 mg/L BOD, 25 mg/L TSS, 1 mg/L total phosphorus, and 1.8 ng/L mercury with a 4.3 mgd treatment capacity. The facilities are planned to handle lower phosphorus limits.

The improvements to the facility

touch on each treatment unit from the headworks to disinfection, and include sludge handling. With the last significant wastewater treatment upgrade occurring in 1987 (over 25 years ago), a large portion of the \$15-million improvement project addresses aging infrastructure and equipment. The improvements also address the new effluent limits (mercury) and capacity bottlenecks.

For the liquid process, the improvements include additional equalization volume allowing the city to better handle peak flow events. A new pretreatment building provides fine screening, influent pumping, and grit



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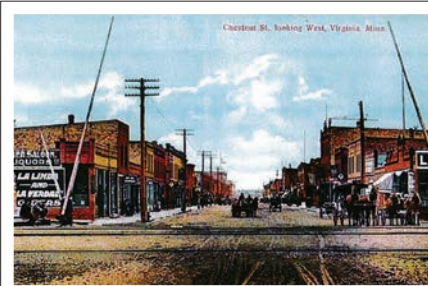
systems include Biwabik, McKinley, Iron Junction Caribou Highlands Lodge.

In the late 1970s, 1980s and 1990s Mike worked with the EPA WWTF start-up and operator training program assisting communities and engineering consultants with new WWTF start-ups. Mechanical WWTFs included Marble, Keewatin, Chisholm, Buhl, Mt. Iron, Eveleth, Orr, Gilbert, Aurora and Hoyt Lakes. Stabilization pond systems include McKinley, Iron Junction, Chisholm, Cook, Big Fork and Kettle River. Mike also has experience with a wetland treatment system followed by soil treatment at the Charles L. Sommers Wilderness Canoe Base in Ely and a Municipal Solid Waste leachate treatment system including stabilization ponds and spray irrigation with soil treatment for the Northern St. Louis County Regional Landfill. He also operates the Virginia, Biwabik and McKinley water treatment systems and has previously managed the Chisholm water treatment system. Mike was an active participant in the pilot plant studies evaluating mercury removal at the City of Virginia and Hibbing. Mike and other NTS were responsible for the operation of the pilot plants and the data analysis.

Like the City of Virginia, Mike's career serves as a legacy of protecting Minnesota's water resources. Mike entered the wastewater field in 1972 through the wastewater treatment technology program at St. Cloud Technical College. He worked for the City of Duluth during summer breaks and upon completing his degree he worked for Black & Veatch on a pilot plant study evaluating removal of asbestos-like fibers from Lake Superior drinking waters. He then worked for the

City of Virginia, Serco Laboratories, Abe W. Mathews Engineering, and started his own company, NTS.

NTS provides a variety of services with its foundation in the water and wastewater treatment industry for federal, state, township, city, and private sector entities. Mike also serves in other roles of benefit to our water resources. He currently serves as a member of the Minnesota Chamber Wild Rice/Sulfate Task Force and the MPCA Wild Rice/Sulfate Standards Development Advisory Committee. He participated and attended the MPCA Stakeholder Focus Group in Brainerd for the MPCA Strategic Plan. His excellence in operations and historic commitment to water quality protection earned him the MN Section CSWEA Operations Award in 2012. [CS](#)





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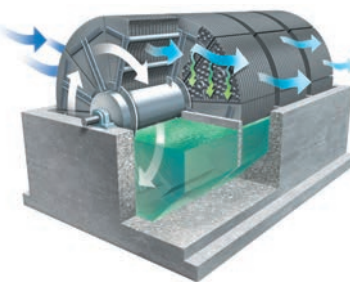


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## What's WATER'S WORTH IT and What's the Purpose?

WATER'S WORTH IT is a new campaign from the Water Environment Federation (WEF) that answers the question about how our actions, attitudes, and the things we most value are so closely connected with water.

The goal of the campaign is to raise awareness about the value and importance of water, water-related issues, and the work that water professionals do every day to provide these vital services.

Designed to be versatile and easy to use, the tagline, WATER'S WORTH IT, can be used on its own, in support of an existing program or brand, or coupled with a simple keyword to alter its impact and reach. For example, "My Effort. WATER'S WORTH IT" evokes a personal responsibility while "Your Effort" serves as a call to action and "Our Effort" represents a shared commitment to sustainable water management.

Easily customized to your needs, the campaign can help you reach any audience, in any location, about any issue.

### Why did WEF create this campaign?

WEF understands that public awareness is an integral part of fulfilling our mission and staying true to our role as a leading technical and educational water quality organization.

As WEF continues to take the lead in addressing emerging water issues, we also must work to build the public's understanding and support of water's value and importance, which is essential to furthering WEF's mission to support clean and safe water worldwide, and to the success of our members and the entire profession. It is our hope that WATER'S WORTH IT will help us do that.

### Who owns WATER'S WORTH IT?

WEF is the creator and sponsor of WATER'S WORTH IT and will be responsible for the development and management of the campaign. Although WEF will take the lead, we know that we can't carry this message alone. We need the help of everyone, from members of the water sector to the general public, to help us refine our messages, implement the campaign, and spread the word about water's worth!



### How is WATER'S WORTH IT different from other awareness campaigns?

The movement toward sustainability and green efforts over the last few years has resulted in a swarm of public outreach/educational campaigns and calls-to-action on many important issues. We sought to create a campaign that stands above the crowd and provides focus for our efforts. We believe we have achieved that with WATER'S WORTH IT.

The campaign is built around a direct approach that we feel will resonate well with all audiences. All of the messaging, visuals, and materials tie into very basic

ideas about how water is inextricably tied to our quality of life and the importance of water stewardship. You need water, and water needs you. It's that simple.

### Will WATER'S WORTH IT replace existing WEF programs like Water is Life and Infrastructure Makes It Happen™ or Work for Water?

Although the campaign can be used on its own, it is not intended as a replacement, but rather as a platform to unify existing programs, brands, and activities. WEF programs like Water is Life and Infrastructure Makes It Happen, Work for Water, and others highlight specific issues, whereas WATER'S WORTH IT focuses on the overarching theme of the value and importance of water. When used in conjunction with an existing brand/program, WATER'S WORTH IT will act as a support mechanism.

### How can I use it?

WEF has provided some general usage guidelines to protect the integrity of the campaign, but we encourage everyone who has a message to share about water to use the tagline and all related materials however you choose. This campaign has been designed to be as flexible as you need it to be. You can use it to complement an existing program, as the foundation for a new outreach campaign, or as a vehicle to raise awareness about an important issue in your community.

A key feature of the website is the Get Started page that features an online toolkit of customizable materials. The first set of materials and messaging is intended to help lay the foundation about the value and importance of water

and we hope to create a personal connection to this vital resource. We believe this increased awareness will in turn help the audience(s) and visitors to this website be more appreciative of water, receptive to a future call-to-action on a key water issue, or possibly, undergo a behavior change such as being more conservative about water usage.

In the future, we will develop materials around the core foundation areas (respect, effort, passion, health and future) as well as specific water quality issues such as infrastructure investment, stormwater, biosolids recycling, energy efficiency, and more.

We're very excited about the potential of WATER'S WORTH IT and encourage you to think about how it can be applied with your community programs and outreach efforts.

#### **Who can use the campaign?**

Anyone who has a message to share about water is encouraged to use the campaign. Although the current website and materials appear to primarily help the water sector and partners in their efforts to share this message, we consciously designed it to appeal to anyone who wants to learn more about water and how they can make a difference. We

truly believe that everyone can carry this message forward and wanted to provide a resource that can meet everyone's needs from water professionals to teachers, school children, the media, and the general public. As we move forward, we will expand the resources available to the general public and other non-water sector audiences.

#### **How is WATER'S WORTH IT different from EPA's Water Is Worth It campaign?**

Although both campaigns share a similar sounding slogan, it our understanding that EPA's Water Is Worth It campaign is primarily used for social media as well as the theme of the 40th Anniversary of the Clean Water Act. In addition, EPA's campaign will run from March 2012 through October 2012, whereas WATER'S WORTH IT is intended to be a long-running campaign that we hope will be around for many years to come!

WATER'S WORTH IT also emphasizes the "IT" which serves as a built-in call-to-action by helping to create a personal connection with water. For example, the word "IT" can be defined as an action (effort), an attitude (respect, passion), or something that we closely value (health, future). The WATER'S WORTH IT tagline

can stand on its own, or be furthered defined with any number of appropriate action words.

Most importantly, WEF and EPA have a long history of working together on various projects. We see our campaigns as being complementary rather than at cross purposes so as we move forward, WEF will explore ways to partner with EPA to help further our shared message.

#### **What are the current and future plans for the campaign?**

WATER'S WORTH IT is designed to be a long-running campaign that will evolve as needed to meet the needs of the water sector and the general public. It will be rolled out in phases with March 22, 2012 marking the official launch of the U.S. campaign. As we gain momentum, we will consider expanding the campaign to Canada and other countries. In the meantime, WEF plans to regularly add enhancements and new resources to the campaign website. Stay tuned to [www.waters-worth-it.org](http://www.waters-worth-it.org) for the latest developments.

You can be a voice for water.

WEF knows that you are vital to this effort and we encourage everyone to be a part of sharing the message about water's worth. Be as good to water as water's been to you. WATER'S WORTH IT.

### **The Water's Worth It Pledge:**

**PROVIDING CLEAN AND SAFE WATER TO EVERYONE IS IMPORTANT TO ME. I BELIEVE THAT TO ACCOMPLISH THAT GOAL WILL REQUIRE BOLD LEADERSHIP, INNOVATIVE APPROACHES, THE COLLABORATION OF MANY AND THE PASSION TO MAKE IT HAPPEN.**

**BY UNITING MY VOICE AND EFFORTS WITH OTHERS, I FEEL THAT THE WATER SECTOR CAN EXPAND OUR MISSION BEYOND PROTECTING PUBLIC HEALTH AND WELLNESS. WORKING TOGETHER WE CAN SUPPORT CLEAN AND SAFE WATER WORLDWIDE.**

Go to [www.Waters-Worth-It.org](http://www.Waters-Worth-It.org) click on the Water Needs You button and take the pledge. I did. 

– Dan Lynch, CSWEA Executive Director





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# Process Control Strategy to Ensure Nitrification and Lower Plant Sludge Yield

By Dean Falkner, On Closer Examination; Water Environment and Technology: June 2005.

## THE SHORT STORY

In 2005, WE&T published an article, "On Closer Examination," that discussed the implications on how activated sludge was grown would impact the anaerobic digester solids treatment. Key observations included that increased sludge age promoted endogenous respiration and the formation of polysaccharide capsules that allow the floc to persist during mesophilic anaerobic digestion. The floc was observed to be broken-up when the same sludge was thermophilically digested. Microphotographs were used to document what had occurred.

At Mukwonago, a plant upgrade necessitated development of a reliable process control strategy for ensuring compliance with the plants NPDES permit. We have a dual train activated sludge plant, so we were looking for something that would not take on-line monitoring equipment. We also experienced sludge storage problems in the past, so based on the article, we focused on developing a procedure that would function with the youngest activated sludge to help reduce overall sludge yields.

The process we identified was to use effluent ammonia concentrations to control the wasting process. The process is actually simple. We measure effluent grab samples for ammonia.

1. If the ammonia concentration is above 0.1 mg/l wasting is halted, until grab sample ammonia concentrations go below 0.1 mg/l.
2. If ammonia concentrations are below 0.1 mg/l wasting is performed.
3. If the ammonia concentrations are below 0.1 mg/l the next day, wasting is increased roughly 5%.

The process follows the fundamental elements for nitrification in an activated sludge plant. The microorganisms that

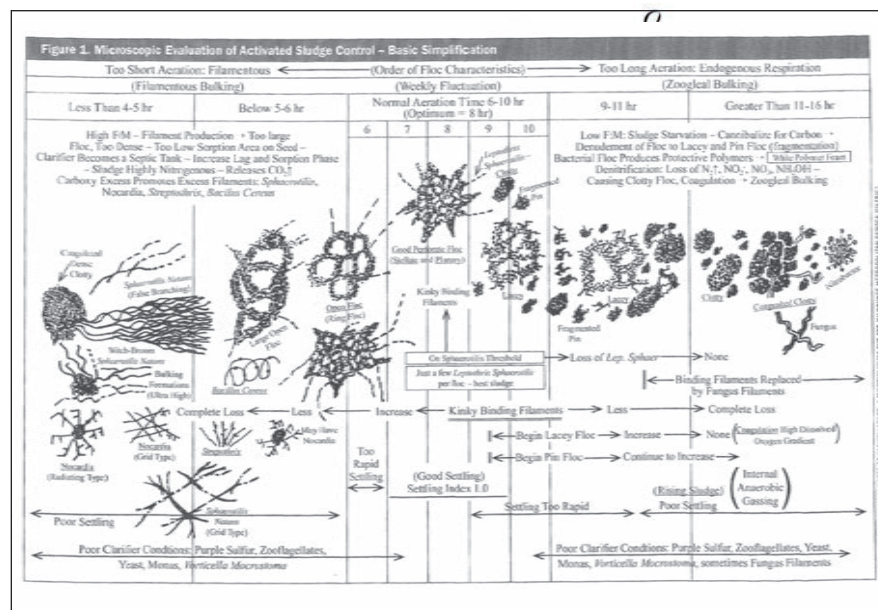


Figure 1: Microscopic evaluation of activated sludge control – basic simplification.



Figure 2: Older activated sludge with darker foam.

reduce BOD grow faster than nitrifiers. By controlling wasting on the basis of ammonia nitrogen, it's easy to "add the necessary sludge age" by just stopping wasting to meet the effluent target ammonia concentration. Conversely, if ammonia levels are low, we gradually increase wasting in the effort to push for a younger sludge. Microphotographs docu-

ment the effect on both the activated sludge and anaerobic digester sludge.

Decreasing the activated sludge floc survival in the anaerobic digester led to a decrease in the overall sludge yield, as well as the sludge dewaterability. The ability to actually dry the sludge in the drying bed, a further dramatic reduction in sludge disposal was achievable.

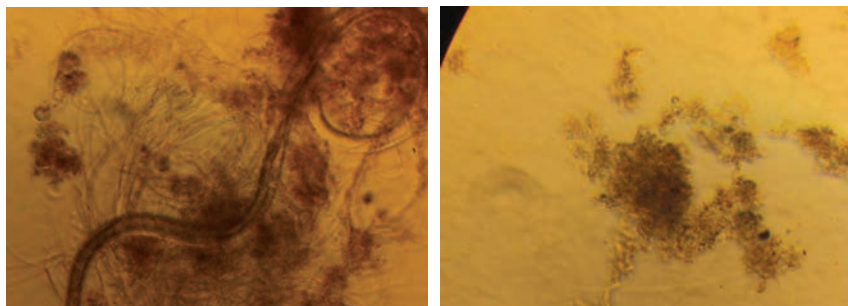


Figure 3: Photograph of older activated sludge associated with the above process conditions.

## INSIGHTS BEHIND THE PROCESS CONTROL STRATEGY

Historically, microscopic examination of wastewater is routinely focused on things like identifying filamentous organisms, identifying protozoans. The person who promoted the idea of looking at the bacterial floc and the interrelationships of the impact on activated process control was Harvey Larson. (See Fig.1)

Harvey's documents helped to demonstrate his observations over time during differing plant operation conditions. One aspect he commented on was the protective polymer production (polysaccharides), during endogenous respiration.

The observations reported in the WE&T article "On Closer Examination," highlighted the impact of very old activated sludge on anaerobic digestion. In that case, the floc observed was the dense clotty floc described by Larson in the activated sludge process. Once the anaerobic digesters were started, that floc was essentially unchanged in the digester. However, increasing the anaerobic digester temperature to the thermophilic range did result in activated sludge floc breakdown.

The earlier operation of the activated sludge process in Mukwonago relied on an older activated sludge, with the characteristic brown scummy foam. (See Fig. 2)



Figure 4: Aeration basin appearance under the new strategy, focusing on producing younger sludge.

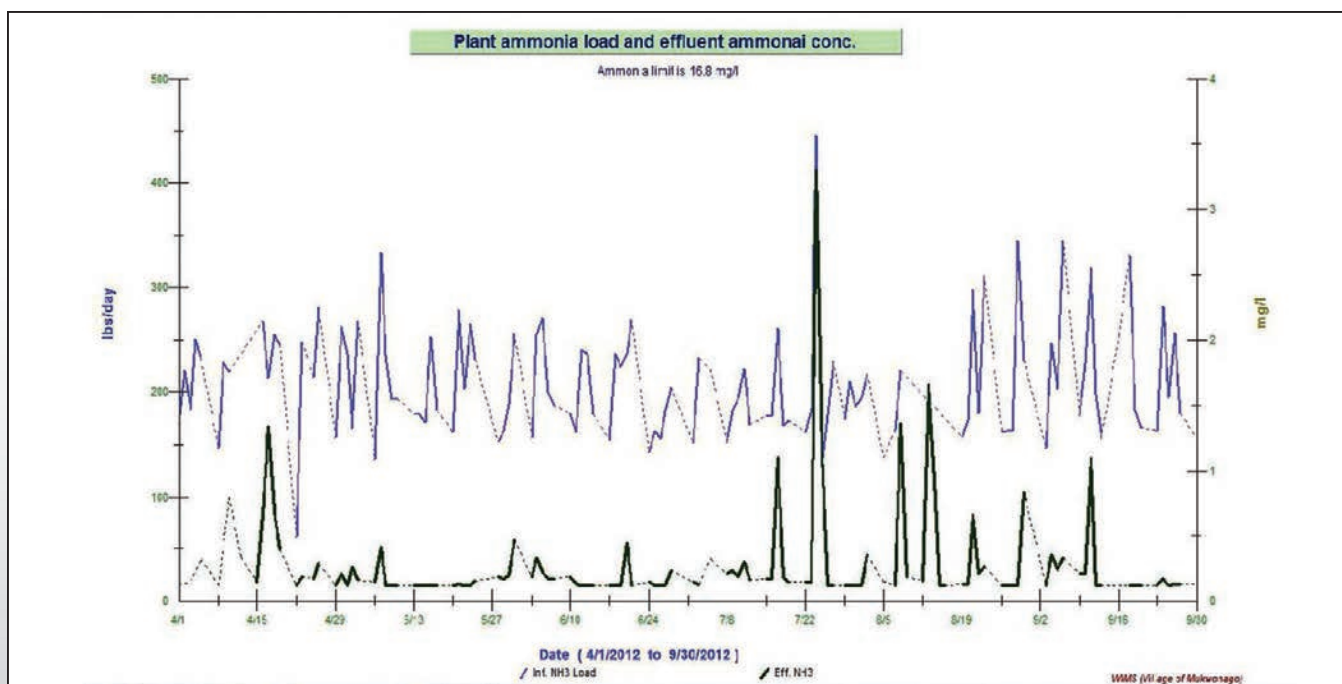


Figure 5: Plant ammonia loading and final effluent concentrations (mg/l).



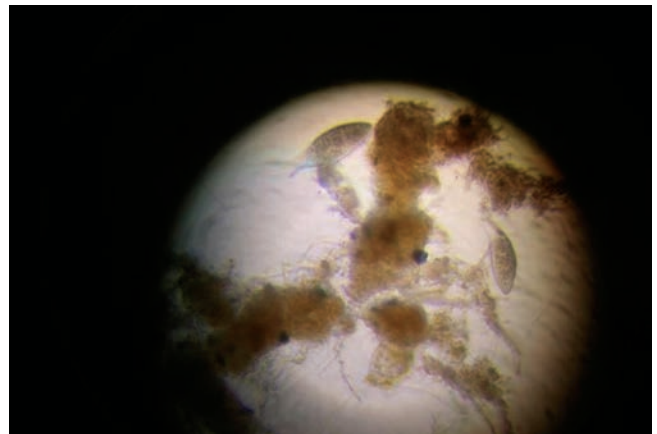
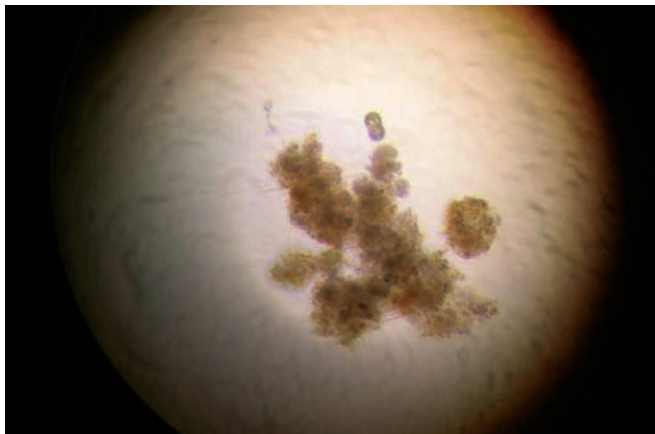


Figure 6: Floc size is larger and lacks the filaments experienced as was shown in Figure 3.

Per Larson's diagram, the floc found in the activated sludge included dense clotty floc, filaments, and even a nematode in the sample. The pictures were taken by placing a standard digital camera on the microscope ocular and taking pictures at 200X using a phase contrast microscope. (See Fig.3)

We didn't take any pictures of the anaerobic digester floc at that time. As far as our anaerobic digester sludge, it would dry to about 20% solids in the drying beds. The volume produced in the

summer season typically filled just over one sludge drying bed.

Applying the new process control practices, the aeration basins appearance was more characteristic of a conventional activated sludge plant. The bubbles are crisp and clear, with little to no evidence of the scummy bubbles routinely encountered before. *The photo was actually taken on October 9, after wasting had been limited for a few days.* (See Fig.4)

Our current process control strategy is based on taking effluent ammonia

samples in the early morning to determine the wasting. Our plant ammonia loading does vary significantly, but the process can handle the changes with little impact on the effluent. (See Fig. 5)

Given our goal for the youngest activated sludge and variable ammonia limit, the morning grab test is simple and easy. If the limit were tighter, we'd be more likely to test effluent during higher loading to determine when to stop wasting.

Going back to the microphoto-

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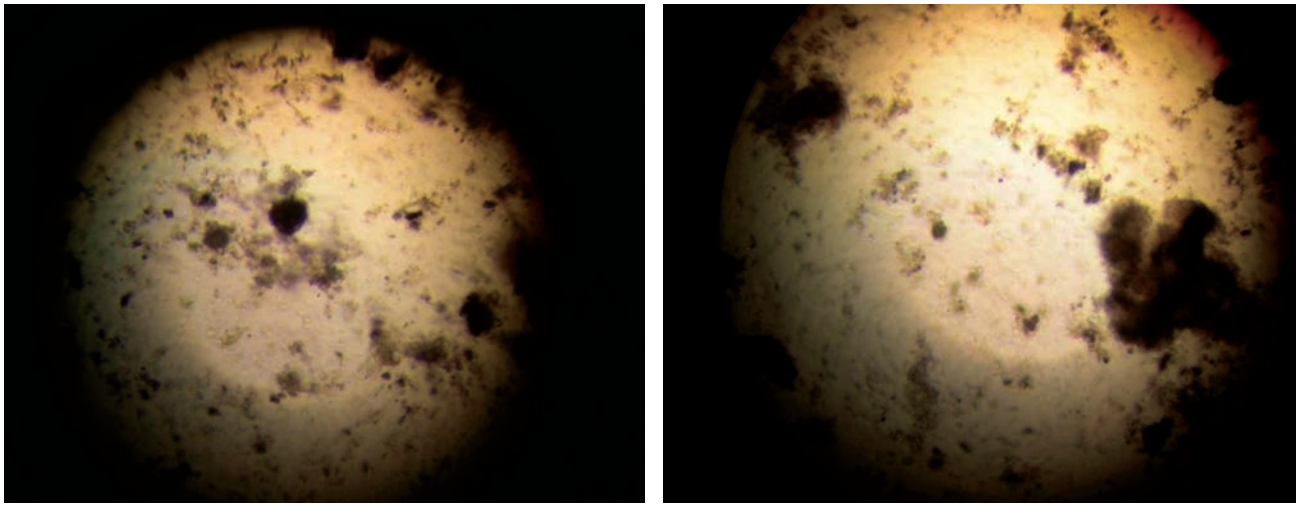


Figure 7: The anaerobic digester sludge samples have some activated sludge present, but most was broken up during the digestion process.

graphs, the activated sludge floc is larger and not dense with our process control strategy. The filaments are essentially gone and the floc structure is not dense; you can focus up and down and see that there is space between the cells. (See Fig.6)

Perhaps the most notable item is that the floc (above) is essentially broken-up going through conventional mesophilic digestion (below). Clearly there are still some floc masses, but the bulk of the solids present are very small. (See Fig.7)

The Mukwonago digester solids are treated with a polymer, prior to pumping to the sludge drying beds. The volume of sludge pumped to the drying beds has decreased in recent times, despite the fact that the plant loading has increased. (See Table1)

We've observed that these solids dewater much better than the past sludge on the beds. This improved

Table 1: Anaerobic sludge volume pumped to the drying beds

Year	January thru March	April thru July
2009	145,000	257,500
2010	150,000	297,000
2011	210,000	180,140
2012	104,225	130,080

dewaterability allowed us to also use an auger to further dry the solids to a concentration range of 70-85% solids. The final material appears like an irregularly shaped pieces of Milorganite. Another unique characteristic is that the piles of product literally allow rainwater to drain through it. (See Fig.8)

The bottom line is we've maintained compliance with our ammonia limit and

reduced the sludge mass for disposal, further saving money. The picture was taken on October 10, 2012. This is approaching the time for our fall spreading program. Historically, the drying bed pictured here would have been filled and we would have begun storing material in another drying bed with 20 +/- % sludge. This is a fraction of that volume, at around 80% solids. (See Fig.9) [CS](#)



Figure 8: Drying bed anaerobic digester sludge.



Figure 9: Total sludge for disposal.





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# Online Backflow Tracking

By Tom Staroske, General Manager-Consultant, Aqua Backflow, Inc.

Are you familiar with, or have you heard of, online (Internet-based) backflow preventer tracking? If not, it is something you may want to consider.

Let me ask you this: Do you have a stack or stacks of backflow test reports that have been submitted to you by fax or US mail? Is the stack of papers on the corner of your desk or are you simply tossing them into a box in your office?

Are you sending out notifications annually stating that backflow preventer tests are due? If you don't get a response from your first Test Due letter, are you sending out a second notice? How is your compliance?

Do you know how many backflow preventers are actually in your distribution system? Do you have an inventory of them?

Are you conducting surveys and inspections? Do you have commercial and industrial facilities that are of concern to you? Do you have any basic businesses such as car washes, restaurants, etc. that are actually considered high hazard?

Now that I've got you thinking – are you a sleepy little town with only homes and minimal or no commercial establishments? If so, your risk of contamination may not be as severe as other communities. This does not mean, however, that potential or existing hazards do not exist.

Are you an affluent community with many high-end homes and subdivisions? If so, you probably have many potential or existing cross connections and/or backflow preventers that require tracking. Chances are that you will have lawn irrigation systems, wet fire protection systems, water features, in-ground pools, and boilers with snow melt systems (in the northern states).

Are you a blue-collar community with significant manufacturing facilities? Do you have many older buildings? You may want to look into these old facilities and search for wet fire systems with no backflow protection. You may also find domestic water piping that is not NSF approved, such as black iron pipe. You want to be sure to at least contain the

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hazards to within the specific building. By this I mean, install a testable backflow preventer just after the meter.

Sleepy little town, affluent mid-sized community, or large industrialized city, you must all have a written cross connection control program in place. Here's the catch, though. Just because you have it in writing doesn't mean that you actually have a program in place. Should contamination occur, the first thing that will be looked at is your active backflow program. This includes a full history and documentation of all backflow preventers, testers, surveys, compliance notifications, and more.

So – should you buy software and set up your program the old-fashioned way by fax and US mail? NO! (Sorry, postal carriers.)

Should you buy software and implement in-house online tracking through the software? Maybe. Do so if you have sufficient funding available for the software, hardware, and staffing costs.

Should you have your in-house IT department design an online tracking program? Maybe. It can then be fully customized to your needs. Unfortunately, as IT staff and your needs change, the in-house developed program is usually only up and running a few years before it is outdated and needs revisions.

Should you outsource your program? Maybe. Do you already have too many responsibilities? Is there a lack of funding? Do you want to wash your hands

of the entire process but stay only in a supervisory position? Most Internet-based tracking companies charge little or nothing to get your program up and running. Their money is made by charging small fees to enter test data online.

Charging fees to support backflow programs is not uncommon and can be done with both in-house and outsourced programs. Many communities already have various fees associated with their programs. Online tracking simplifies this process by allowing testers to pay only one time to enter backflow data online. Most testers then pass this cost along to the owner of the backflow preventer. The theory behind this is: Why should all water users pay for a tracking program to make sure that their neighbor's backflow preventers are being tested every year?

Type "backflow tracking" into your Google browser and you will see software providers and online tracking service providers. Whichever road you choose, be sure that the firm you choose is well established and has experience with online tracking. Please ask for and check their references.

*Tom Staroske is a member of 12 AWWA sections and on the committees of numerous cross connection control organizations, is a licensed plumber for over 30 years, and certified in all facets of cross connection control testing, ordinance, and program management by the IEPA, University of Florida – TREEO, University of Wisconsin – School of Engineering, etc. CS*



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It is time once again for the Midwest Water Industry Expo. This year's expo will prove to be an exciting, fun and interactive opportunity to meet water professionals from the three state areas: Wisconsin, Minnesota and Illinois. We are now accepting vendor registrations for the 8th Annual Midwest Water Industry Expo. Floor space is limited, so register as soon as possible.

### Exhibit hours:

Tuesday, February 5:  
8:30 a.m. to 4:00 p.m.  
(Meet & Greet 4:00 to 5:00 p.m.)  
Wednesday, February 6:  
8:00 a.m. to 3:30 p.m.

### Room rates:

\$104.00/night  
(includes water park passes)

### Expo highlights

- Continental breakfast and lunch in the exhibition area on Tuesday and Wednesday.
- Exhibition area reception (Meet & Greet) on Tuesday (4:00 to 5:00 p.m.).
- 10-minute scheduled vendor talks at booths and 25-minute classroom sessions in designated rooms adjacent to the exhibit hall: both designed to enhance participation.
- Fun and friendly activities throughout the day in the exhibit hall designed to engage the crowd and provide quality interactions with your potential customers.
- Raffle prize drawings for participants on both Tuesday and Wednesday.
- WWA's Annual Distribution Conference will be held in conjunction with MWIE.
- CSWEA's New Operations Seminar will be held in conjunction with MWIE.
- Young Professional Bowling Event will again be held on Tuesday night.

### Exhibit registration

Exhibitor registration is open online at [www.wiawwa.com](http://www.wiawwa.com), early registration ends on December 31, 2012. Please register early, as space is limited.

### Attendee registration

Registration is open online at [www.wiawwa.com](http://www.wiawwa.com). Full expo registration is only \$45.00, \$30.00 each for either Tuesday or Wednesday. Guest expo registration is only \$15.00. Please register early!

### Continuing education credits

Again for 2013, it is expected that a total of four water/wastewater credit hours will be available. Once again, very cost-effective CEUs are being offered!

We are looking forward to seeing you at the expo. If you have any questions, please contact Jill Duchniak at 414-423-7000 or [jill@wiawwa.org](mailto:jill@wiawwa.org).

### Midwest Water Industry Expo Committee

**Chair:** Tom Mulcahy, CSWEA

**Vice-Chair:** Reid Snedaker, WWA

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**WWA Members:** Ross Brzycki, Marie Klasing, Laura Daniels, Dave Wasserburger and Joe Finn

[www.cswea.org](http://www.cswea.org)  
[www.wiawwa.org](http://www.wiawwa.org)

### Central States Water Environment Association Operations Seminar

Central States Water Environment Association will be hosting an activated sludge-troubleshooting workshop during the 8th annual Midwest Water & Wastewater Industry Expo on Wednesday, February 6, 2013 at the Kalahari in the WI Dells, WI. The workshop has been developed by an Ad Hoc Committee of Wastewater Operations Specialists and will feature top

experts in activated sludge troubleshooting. Featured speakers will include:

- Toni Glymph of the Metropolitan Water Reclamation District of Greater Chicago
- Jeff McDonald of the Milwaukee Metropolitan Sewerage District
- George Sprouse of the Twin Cities - Metropolitan Council Environmental Services

Following the presentations, there will be breakout sessions designed to allow the attendees to share tactical knowledge on anything pertaining to activated sludge wastewater treatment. Operators, regulators, students, and consultants are all encouraged to participate.

### Wisconsin Water Association Distribution Seminar

The Wisconsin Water Association will be hosting their 2013 Distribution Conference during the 8th Annual Midwest Water Industry Expo on Tuesday, February 5, 2013 at the Kalahari Resort and Convention Center in Wisconsin Dells, Wisconsin. Topics on the agenda for this seminar include:

- Trench spoils recycling
- Pipe lining as an alternative to pipe replacement
- Water laterals, including discussion on no lead brass, copper corrosion on laterals attached to PVC main and other related lateral topics

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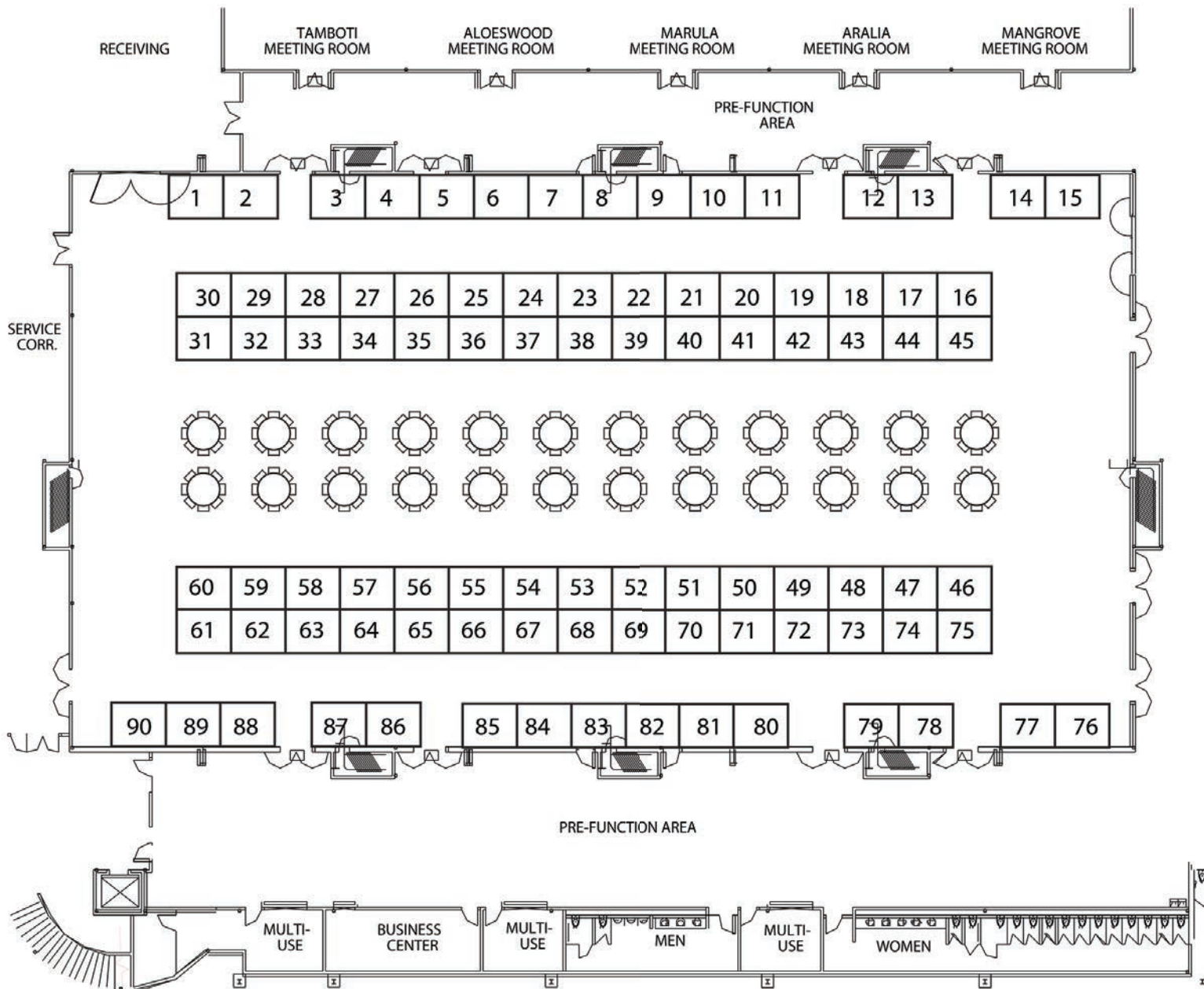
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# In Memoriam

## Allan L. Rae



Rae, Allan L. "Al" 83, of Aurora, Illinois passed away on November 3 at Countryside Care Centre. He was born on May 8, 1929 in Des Moines, Iowa to Walter Louis Rae and Gertrude Rae. His high school years were spent in Omaha, Nebraska and Milford, Iowa. He was valedictorian of his senior class in Milford, Iowa before he went to Iowa State University in Ames, Iowa. He graduated from Iowa State in engineering in 1951. He worked for an engineering firm in Ames, Iowa for two-and-a-half years before he was drafted in the army in November 1952. He was married to Pat Burton after she graduated from Iowa State in 1952.

After two years in the army, he went to work for Armco Steel Corp. from 1954 to 1969 in Lincoln, Nebraska, St. Louis, MO, and Houston, Texas. He was a registered engineer in 12 states. After Houston, he moved to Aurora where he worked for Layne Western, also for General Filter in Ames, Iowa for two years. He moved back to Aurora in 1972 to work in Chicago for Greeley and Hansen Engineers. While there, he served as president of the Illinois Society of Professional Engineers. He retired in 1993 and started his own business, and then was secretary-treasurer of Central States Water Association for 12 years until he retired completely.

He developed Parkinson's Disease and entered Countryside Care Centre late August of 2009 and was there until his death. He was preceded in death by his father in 1955 in Milwaukee, years later by his mother in Minneapolis, his brother, Russell Rae, in San Francisco, and his brother-in-law in Cedar Rapids, Iowa. Survivors are his loving wife Pat of Aurora, IL of 60 years, his sister Bonnie Rae of Minneapolis, his nephew, Rick Burton, Glen Ellyn, IL, and his great niece Dana Murphy of Naperville, IL. By his choice, he will be cremated. Contributions to American Parkinson's Disease would be greatly appreciated to help stop this horrible disease.

*Published in Beacon News on November 7, 2012*

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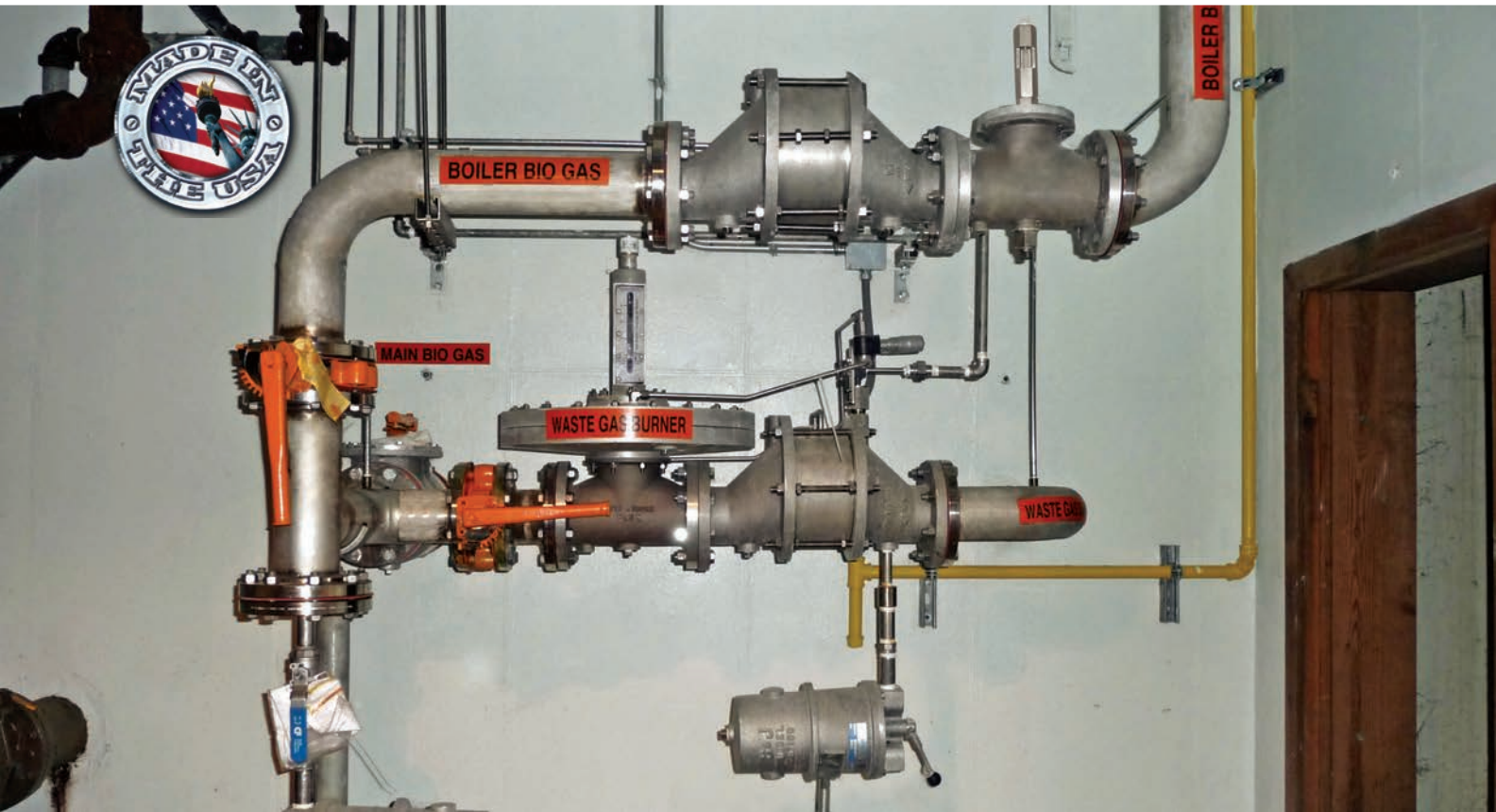
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# All In

By Rob O'Connell

The Minnesota Chapter has been busy over the past months in preparation of our 27th Annual Conference on the Environment. This year's conference was held in November at the University of Minnesota's St. Paul Campus and was themed *Compliance is a Journey*. Over 230 individuals attended this year's conference and were able to listen to presentations with topics ranging from National Air Quality Standards to Innovative Energy Recovery Efforts at Wastewater Treatment Facilities. All of us at CSWEA would like to thank the keynote speakers, sponsors, exhibitors, presenters, student contributors and moderators who donated their time to make the conference a success. A very special thanks goes out to John Friel, current past chair of the Minnesota Chapter, who coordinated the conference on behalf of MN-CSWEA. Without John's efforts, the conference undoubtedly would have not been as enjoyable and educational as it was. From all of us, thanks, John! His wife Patty also deserves our gratitude for donating her husband's time to all of us over the past couple of months. Thanks, Patty!



In Mid-September, a number of Minnesota Chapter members donated time to assist in educating local elementary school students at the Children's Water Festival at the MN State Fair. The Chapter provided students with the opportunity to perform water sample testing of local lake, river and tap water for pH, temperature, dissolved oxygen and turbidity. The students enjoyed the opportunity to get their hands wet and to better understand the water environment that they utilize for hydration and for summer fun. Thanks to all who attended and made the festival a success.

Over the next months, the MN Chapter will be busy with many events. In early December our Young professionals and student members will be joining water and wastewater students from the U of M on field trips to the MCES Blue Lake and Seneca WWTPs. This is a great opportunity for anyone to witness some of the largest plants in the state. Happy hours following

the events will be held (for sure). We are also planning for our Innovative Conference, which will be held in conjunction with the Minnesota Wastewater Operators Association. The conference will occur in February in St. Cloud. An interesting agenda is being developed.

As always, I urge all of you to get involved and to bring others along. We are only successful when we all contribute.

If you have any ideas or wish to discuss upcoming events, I can be reached at 651-292-4591 or at [robert.oconnell@tkda.com](mailto:robert.oconnell@tkda.com). CS

*"The students enjoyed the opportunity to get their hands wet and to better understand the water environment that they utilize for hydration and for summer fun."*

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# Epilogue for the Great Recession

By Mark Eddington

Whether or not your guy won, at least the 2012 election is over and I will loathe the day that Illinois ever becomes a swing state; I literally haven't listened to local radio in a month. Now I just need to make it through the holidays with my family. In all seriousness, it is a good time to reflect on the past years and to plan for success anew. Not to jinx anything, but I have recently noticed an uptick in local commercial development and hope that this phenomenon isn't limited to DeKalb, Illinois. Things are slowly improving; it appears home values have officially bottomed out, oil prices are retreating, and consumer confidence is beginning to rise. This recent uptick notwithstanding, the past several years have certainly been a long hard slog. I've seen friends and colleagues from both the public and private sectors lose their jobs, companies close their doors, and everyone trying to do more with less. We've all personally seen the negative impact and affects that the recession inflicted on us and those we know. It certainly hasn't been easy, but it is inspiring to witness people pick themselves up after being knocked down. I suppose the biggest lesson to be learned from the great recession and its aftermath is the importance of resilience. So with this, maybe we can all agree that an official epilogue for the great recession is necessary.

While the recovery of our economy is certainly not as instantaneous or as robust as any of us may want it to be, it cannot be denied. The next time I hear some economic expert use the term "double-dip recession" my ears may actually begin to bleed. The reality is that businesses and municipalities that have weathered



the storm and made it through the downturn will be positioned to take full advantage as markets slowly improve. They have hung in there, made tough choices, deferred plans, and lived to fight another day. Our grandparents' generation learned their economic lesson during the great depression of the 1930s and our generation better pay close attention to our own history lesson that we so painfully learned over the past several years.

I hope it is not wishful thinking to hope that our collective resilience does not yield to short

sighted gratification. The perspective we gained during rough times will hopefully aid not only the recovery of our economy but will also temper our exuberance when the next big bubble comes along; whether it is a rejuvenated housing market or some other type of boom. Perhaps in the spirit of looking forward, we can embrace the wave of promising technologies that have continued to evolve hastening industry to truly embrace energy independence. Maybe I'm still drunk on the new technologies on the exhibition floor at WEFTEC this year, or the idea that a sewer plant can actually produce gas and other marketable products is real. Either way, I think the idea of going all in on green has gotten through my thick skull. It is time to think big again, renew our mission to leave the environment a little better than we found it, and maximize our utilities' ability to work for our customers. So enjoy the holidays and take time to reflect and recharge. Auld lang syne.

*I hope to stand firm enough to not go backward, and yet not go forward fast enough to wreck the country's cause.*

- Abraham Lincoln 



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# Pace Setting

By Bill Oldenburg

As the last of the leaves are falling in northeast Wisconsin and we begin to settle in for our cold winter months, the Wisconsin Section is a hotbed of activity! Committee members, active volunteers, and officers have been busy conducting the business of the section and setting the pace for the section.

The Nominations Committee was activated this fall and is chaired by Jane Carlson, along with Keith Haas, and Jim Beier. Their task was to locate active members interested in the Wisconsin Section vice chair and trustee positions. Nominations for both positions have been made and will be acted upon at the Wisconsin Section Annual Business Meeting to take place one week from this writing.

I was very happy to hear that Jim Beier is back with us! In addition to being an engineer with Crane Engineering, Jim is a Lieutenant Commander in the Navy Reserve and was called to active duty at the Headquarters of the Surface Force Atlantic Fleet for 13 months. I would like to thank Jim for his service to our great county. Welcome back!

Jon Butt of Symbiont continues to lead the charge in helping the section to understand and implement the new renewal requirements from the State of Wisconsin for licensed professional engineers. The Wisconsin Section is trying to determine how we as an organization can provide professional development hours (PDHs) to satisfy PE renewal requirements at our various seminars and meetings.

Moving forward, it is up to the provider (CSWEA/Wisconsin Section) and the PE to determine if an event qualifies for PDHs, to determine how many PDHs are appropriate, and it is the



responsibility of each individual PE for documentation. Jon's article on this subject in this issue of *Central States Water* provides the details. The Wisconsin Section continues to work on the proper implementation of these new rules. Section membership will be updated as we make forward progress.

It is that time of year again to make nominations for CSWEA awards. Please take the time to consider nominating an individual or organization for the following awards: Operators Award, Collection System Award, Radebaugh Award, Industrial Environmental Achievement Award, Academic Excellence Award, Young Professional of the Year Award, and the Bill Boyle Educator of the Year Award.

I have been pleased to hear that committees are including the strategic plan as part of meeting agendas. It continues to be a standing agenda item for board meetings as well. I can't emphasize enough the importance of keeping our strategic plan in front of everyone to develop and grow in a constructive fashion and in conjunction with association level leadership. At the association level, the CSWEA strategic plan is in the process of being reviewed and updated for the first time since 2003.

Dale Doerr, chair of the Public Education & Awareness Committee, has tendered his resignation from the committee. Dale has been judging papers for the Stockholm Junior Water Prize for five years. He has played a critical role in the success of the many young students who have submitted papers, and the positive impacts of Dale and his committee will touch the next generation of leaders in the field of water and wastewater. His dedication and drive will be missed. Thank you, Dale! [CS](#)

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## JANUARY

### IL Section – Government Affairs Seminar

January 25, 2013  
Willowbrook Holiday Inn  
Willowbrook, IL  
(Date and location are tentative)

## FEBRUARY

### CSWEA – 8th Annual Midwest Water Industry Expo

February 5-6, 2013  
Kalahari Resort and Convention Center,  
Wisconsin Dells, Wisconsin

### MN Section & MWOA – Innovative Conference 2013

February 2013  
Holiday Inn, St Cloud, Minnesota

### WI Section – Government Affairs Seminar

February 28, 2013  
Marriott Madison West, Middleton, Wisconsin

### WI Section – University of Wisconsin-Platteville Student Chapter's Dinner with Professionals

February 2013  
Platteville, Wisconsin

## MARCH

### WI Section – 31st Annual Spring Biosolids Symposium

March 13, 2013  
Holiday Inn Hotel and Convention Center, Stevens Point, Wisconsin

## APRIL

### CSWEA – 3rd Annual YP Leadership Academy

April 1, 2013  
Monona Terrace, Madison Wisconsin

### CSWEA – 18th Annual Education Seminar

April 2, 2013  
Monona Terrace, Madison Wisconsin

## MAY

### CSWEA – 86th Annual Meeting

May 14-17, 2013  
Monona Terrace, Madison WI

## JUNE

### IL Section – T-CON Midwest Water & Wastewater Technology Conference

June 5, 2013  
College of Lake County, Greyslake, IL

### IL Section Collection System Seminar

June 2013  
(Specific date and venue to be determined)

### WI Section – Pretreatment Seminar

June 2013  
(Specific date and location to be determined)

### WI Section – Classic Collection System Seminar

June 2013  
Watertown, WI  
(Specific date and venue to be determined)

## JULY

### WI Section – Northwoods Collection System Seminar

July 2013  
Marshfield, WI  
(Specific date and venue to be determined)

### CSWEA – CSX/YPX '13

July 18-19, 2013  
Kalahari Resort and Convention Center  
Wisconsin Dells, WI

## AUGUST

### WI Section Management Seminar

(Specific date and venue to be determined)

## SEPTEMBER

### IL Sections Operations Seminar

(Specific date and venue to be determined)

## OCTOBER

### WEFTEC 2013

October 5-9, 2013  
McCormick Place, Chicago, IL

### CSWEA-IWEA – WEFTEC 2013 Welcome Reception

October 6, 2013  
Chicago, IL

## NOVEMBER

### MN Section – Conference on the Environment

(Specific date and venue to be determined)

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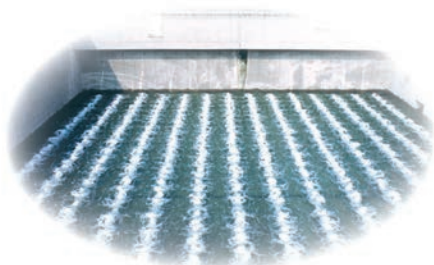


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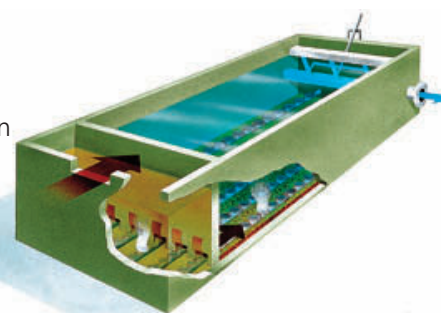


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