Aerial view of NEW Water’s Green Bay Facility, Green Bay, WI

53rd Annual W.W.O.A. Conference
October 8-11
KI Convention Center, Green Bay
The Clarifier is the publication of the Wisconsin Wastewater Operators’ Association and is intended to inform and educate the membership on issues related to the treatment and control of wastewater. The Clarifier is produced five (5) times each year: February, April, June, September, and December. All members are encouraged to contribute to the mission of the Clarifier.

The Wisconsin Wastewater Operators’ Association is a non-profit organization dedicated to educating, informing, and advancing the wastewater profession. WWOA has approximately 2,000 members divided throughout six regions: Southeast, Southern, Lake Michigan, North Central, Northwest, and West Central.
Presidents Message: It’s been a challenging and fun year!

Like most Presidents before me, I can also say that the year went by fast. It has been a challenging year for the board as we were without an Executive Secretary for almost six months. The normal full time load of this position was shouldered by all on the board but the brunt was shared by Jeff Bratz, Past President. Be sure to give him a “high five” and thanks the next time you see him. Since we hired Caley Mutrie as our full time Executive Secretary/Account Manager in February she has performed as a tireless worker with exemplary skills that has kept us on track. We are well set for this year's conference thanks to her.

Now let’s talk about our 53rd conference in Green Bay. The board, as well as many other volunteers have put together a terrific venue that should provide something great for everyone. The Technical secessions and vendor exhibits Wednesday and Thursday are the “heart” of the week long events. Preceding these will be the ever popular social events Tuesday am, (Golf Outing, Sporting Clays and Bike Ride) and finishing with the “Meet and Greet” Tuesday night.

One certain highlight of the week will be our Keynote speaker, Mr. Alonzo Kelly. If you have never heard him speak before, come prepared to me motivated and challenged. Our conference concludes with the Thursday night awards banquet and social and the Operators Farewell Breakfast Friday am.

Please make plans to join us at the conference this year. You can register online and find the conference program at: www.wwoa.org.

One final thought, please consider running for a regional officer position or a state board director. I can promise you that it will help you grow, make our organization better and you will make many great friendships that will last a lifetime.

It has been my pleasure and honor to serve as your president and I look forward to my final year on the board and hopefully at a little slower pace!

Sincerely,
Jeff (Juice) Simpson
President

I have served on the board for seven years now and I can honestly say the current board members we have now are awesome! I have been constantly amazed at the unique wisdom each one brings to our organization. Everyone has different skill sets and experiences that together help us make wise and informed decisions. I would also like to say a big THANK YOU to the many Past Presidents who we have called on for help and opinions. They all seem to get wiser with age.

Don’t forget to Pre-Register for the Conference!
https://www.wwoa.org/organization/annual-conference/
NEW Water, the brand of the Green Bay Metropolitan Sewerage District - “The Perfect Storm”: How one utility is adapting to extreme weather

By: Hannah Malmberg, Public affairs & education intern, NEW Water

“Heavy Rains Impact Wastewater Treatment”
“Torrential Rain Leads to Release of Untreated Wastewater”
“Floodwaters Cause Sewage Treatment Plant to Overflow”

These are just a few headlines from around Wisconsin in the recent past, and similar events are occurring to partners in the clean water industry around the U.S. Wet weather events are hitting wastewater treatment plants hard, and with 2018 being the wettest year on record in several parts of Wisconsin, plants around the state know this impact well.

In Green Bay, extreme weather events continued into 2019. On March 14th and 15th 2019, heavy rains combined with several inches of rapid snow melt caused flooding throughout the community. The flooding was so severe it led to Governor Tony Evers declaring a state of emergency. Brown County, the county in which Green Bay lies, as a whole suffered as a result of this weather causing Brown County Executive Troy Streckenbach to issue a disaster declaration.

Storm Events of March 2019: A Case Study
NEW Water, the brand of the Green Bay Metropolitan District, also felt the impacts of this wet weather event that Treatment Leader Jacob Becken described as “the perfect storm:” Rapid thawing of snow in one-to-two days’ time, a fair amount of rain, and excessive amounts of Inflow & Infiltration (I&I).

The I&I phenomenon is more significant during extreme weather events, when excess clear water from customer communities gets into the system, takes up capacity, and threatens operations and infrastructure. I&I is impacting the entire clean water industry.

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Over the course of the March 2019 weather event, flows at NEW Water’s De Pere Facility (average of eight million gallons per day (MGD)) rose from 11.9 MGD to around 50 MGD with all six influent pumps running at max capacity for 18 hours straight. The Green Bay Facility (average 30 MGD) rose from 78 MGD to over 100 MGD with 5 million gallons being transferred from De Pere. NEW Water staff worked day and night to facilitate continuous service at both treatment plants and throughout the interceptor system.

While both facilities were pushed to the limit, the De Pere Facility in particular posed a challenge to Treatment and Operations staff. “We had to do things we had never really done before,” Becken said. Hydraulically, the plant could not handle pumping that much for that long of a period and they risked washing microorganisms out of the system, which would take weeks to recover from. The team had to stop the aeration basin blowers allowing for the microorganisms to settle into the basins until the flows came down. “We had to think long term. Sure, it’s going to be bad for a little bit -- but we have to protect the plant,” Becken said.
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Of course, what impacts the treatment plant is also impacting the interceptor system. And they had their own share of woes during this event.

Field Services opening up a siphon barrel to allow more flow capacity to NEW Water’s DePere facility

Becken and the Operations staff were in constant contact with the Field Services team throughout the night as the plant is always interested in whether they have crested in the collection system. The plant can then judge what needs to done based off of what Field Services is seeing out in the field.

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While Operators were handling the situation at the plant, Field Services Technicians were handling critical situations at two locations. The East River Lift Station (ERLS) not only had high flow alarms, but the flooding of the East River was encroaching on the lift station. While there were flood gates in the doorways, there was nothing to protect the transformers and power was at risk of being lost. With the help of Maintenance staff, along with workers from Brown County Emergency Management, Brown County Public Works, Ledgeview Public Works, Brown County Sheriff’s Office, and Wisconsin Public Service, emergency sand berms were built around the transformers. This situation was a first not only for Field Services Team Leader Duane Fish, but the entire Field Services team. “In my time here, this is the first time I’ve ever heard of water getting up close to the transformers, which are about 10 yards from the building,” he said.

While Operators were handling the situation at the plant, Field Services Technicians were handling critical situations at two locations. The East River Lift Station (ERLS) not only had high flow alarms, but the flooding of the East River was encroaching on the lift station. While there were flood gates in the doorways, there was nothing to protect the transformers and power was at risk of being lost. With the help of Maintenance staff, along with workers from Brown County Emergency Management, Brown County Public Works, Ledgeview Public Works, Brown County Sheriff’s Office, and Wisconsin Public Service, emergency sand berms were built around the transformers. This situation was a first not only for Field Services Team Leader Duane Fish, but the entire Field Services team. “In my time here, this is the first time I’ve ever heard of water getting up close to the transformers, which are about 10 yards from the building,” he said.

The East Bay Shore (EBS) system was also seeing high flow rates. The EBS system includes a series of interconnected lift stations that requires significant intervention by the Field Services team and Maintenance team at high flow rates in order to operate without overflows and backups. Four people were needed at all times at the EBS lift stations and septic haulers were called in to pump out wet wells in order to prevent sanitary sewage overflows and basement backups as the pumps couldn’t keep up with flows. The loads were then brought to the Green Bay Facility. For the future, Field Services Manager Sharon Thieszen said NEW Water is evaluating improvements to the ERLS including constructing a berm.

Furthermore, a reduction in I&I would help mitigate storm event impact. During these events, water volume flowing to NEW Water can increase upwards of five times the average – and that’s not because people are flushing their toilets five times as often. Leaky pipes in the interceptor system are coming from customer communities, with up to 80% of that coming from the homeowner pipes, according to industry statistics. Truly a wicked problem, tackling I&I will require community

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buy-in, and community partnership. NEW Water has already begun to engage customer communities in the I&I problem.

Meanwhile, Becken noted that “it appears as though the intensity of some of these storms has changed. Rainfall amounts have been happening in a shorter period of time, which almost forces a change in the way we manage certain things.”

As NEW Water looks at the long-term, understanding the different flow impacts to the facilities during rain events is critical. Becken went on to note that as NEW Water goes through a Liquids Facility planning process, peak flows will be analyzed, including how those flows trend, and how they have looked historically over the past ten years or more. “Based off of that, we’ll look at what we need to do as an organization to make sure that we can handle what’s going to come our way in the future,” Becken said. Meanwhile, Becken said he is proud of the way the NEW Water team has handled events like March’s flooding.

“Overall, I am very proud of the way we’ve all handled a lot of these big rain events recently, especially the power outages,” Becken said. “Some situations could have been terrible, and we could have been in the news big time, but we didn’t let it get to that point.”

Added Operator Mike Gardner: “I think it’s impressive that everybody is in here working extra hard, doesn’t matter what time of day it is.”

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He added that no two challenges are alike: "It’s always a learning opportunity. It seems we learn something new each time we go through these events."

"Unflushable"—wipes, fat, oil, grease, dental floss, etc.—are posing an increasing challenge for equipment. These photos depict ‘unflushables’ in NEW Water’s influent pump station wet well.

Being Prepared: NEW Water’s Proactive Approach
For Field Services, there is little that can be done to prepare for extreme weather events as they, Fish notes, are at the mercy of gravity systems and I&I. However, Field Services Technicians conduct weekly station checks to make sure pumps are in good condition. If not, the pumps are deconstructed and more often than not, “rags,” which include wipes, fats, oil, grease, dental floss and other “unflushable” material, are removed. The one-to-two week aftermath of an extreme weather event is an important time to check for “unflushables” in pumps as everything is being washed out through the system.

Additionally, cleaning and televising are used in the interceptor system to identify possible problem areas. Thieszen believes weekly station checks and maintenance are very important preventative steps to take. “If you already have a plugged pump going into a wet weather event, you are really behind,” Thieszen said.

The Treatment and Maintenance teams take several steps to prepare for extreme weather events as well. Going into a rain event, the team likes to have full redundancy at both facilities. Additional aeration basins are examined to make sure that they are ready to go and staff makes sure that two aeration basins are never down for maintenance at the same time.

Weather radar is monitored in the control room and if the storm looks as though it will be bad, the process of looking at who is on staff to help begins. With events that can happen any time of the day, knowing the crews well is an important step of this process. Knowing who is working, who is available, and who worked last is critical in managing people’s wellbeing and time to sleep during a long-lasting event.
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Knowing the structure of the plant well is also vital in an extreme weather situation. “When I first got there [in March], we were physically sprinting from one place to the next because you have to do things pretty timely, because it happened quick and you have to make sure that certain parts of the plant can take the flow,” Becken said.

When the Storms Hit: Adaptation is Key
When an extreme weather situation occurs, alarms installed at pump stations will alert NEW Water’s control room when flow levels begin to rise and the pumps are unable to keep up. The control room will contact Field Services and a minimum of two technicians, due to confined space requirements, will be sent to monitor the situation. The technicians will remain in contact with the plant and if the pumps are unable to keep up, the back-up plan is to call septic haulers to suck out of the wet wells. Both Thieszen and Fish agree that communication is vital in an extreme weather situation, not only among the Field Services team but also with the plant, back up resources in the community like septic haulers, and the NEW Water team as a whole.

Gardner said this means all hands on deck. “Whoever is here will get together and come up with a game plan,” he said. However, even with preparation, storm events like the one in March call for everyone to have to adapt quickly on their feet.

Looking to the future, NEW Water is planning to collaborate with the community to reduce I&I, to attack

Anaerobic digesters, part of NEW Water’s Resource Recovery and Electrical Energy (R2E2) project. Launched in 2018, R2E2 embraces sustainability principles to manage solids handling. The project incorporates a number of new technologies into one system: Anaerobic digestion, fluid bed incineration, and nutrient harvesting. By the end of 2018, NEW Water was producing nearly 40% of its own electricity for the Green Bay Facility, well on its way to the goal of 50%, reducing the need for purchased energy. To learn more, visit www.newwater.us/R2E2.
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the “unflushables” problem through enhanced public education and community engagement, and continue to address and mitigate risk caused by these extreme weather events.

NEW Water Executive Director Thomas W. Sigmund, P.E., praised the efforts of the staff to rally to the call whenever needed, in order to serve the community. “Our staff demonstrate dedication and commitment at every turn – and these extreme weather events are posing challenges we’ve never seen before,” Sigmund said. “I am so proud of their tireless efforts to protect our most valuable resource, water.”

NEW Water staff

The Clarifier needs you, your stories, your opinions

Do you have something to say?

Have you solved a unique problem at your plant?

Won recognition for a job well done?

Hired someone new?

Wish to share your opinion on an issue?

How about telling us about in the Clarifier?

The front cover of every issue includes the following statement:

“The Clarifier is the publication of the Wisconsin Wastewater Operator’s Association and is intended to inform and educate the membership on issues related to the treatment and control of wastewater.

All members are encouraged to contribute to the mission of the Clarifier.”

Submitting an article can be as easy as mailing a letter or sending an email. Perhaps you are not a typist or do not have access to a computer? No problem, just write your thoughts down on a piece of paper and we will do the rest.

Or give me a call and we will figure something out.

Jon Butt, Clarifier Editor
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Dear WWOA Conference Attendees:

The WWOA Board of Directors cordially invites you to the 53rd Annual WWOA Conference, October 8 through October 11, 2019. We will be returning to one of our favorite venues, the Hyatt on Main/KI Conference Center in Green Bay, WI. We have an innovative and exciting Conference Program planned for you!

Tuesday, October 8th, kicks off your conference experience with a variety of fun and informative activities to select from:

- The annual Golf Outing, Sporting Clays Event, and classic Bicycle Ride
- Two Pre-Conference Workshops providing us with practical uses for Excel at POTWs and with information on how changes to Ch. NR149 now affects our laboratory testing
- Our first networking event, the annual Meet and Greet with brats, burgers and more!

The conference will officially open on Wednesday, October 9th, with the Welcome Address from President Jeff “Juice” Simpson, followed by this year’s Keynote presentation from Alonzo Kelly, executive coach, professor, radio personality and three-time bestselling author. His high-energy presentation will inspire us as he speaks to us on the topic of “Understanding and Appreciation; How Being at Our Best Relies on Neither”. You will leave this session with a deeper and renewed appreciation for the work and contributions of each and every one of us to the industry we serve. Get ready to be inspired!

The program we have planned for you on Wednesday will continue with:

- The Conference Exhibition from 10:00 am to 5:00 pm — Your opportunity to meet the many vendors and sponsors who support our industry!
- Technical Sessions with four different tracks to choose from, scheduled from 10:45 am until 4:00 pm
- The always exciting Operators’ Competition, being held this year in the Exhibition Hall from noon until 4:30 pm
- The Exhibitors Social Hour from 4:00 pm to 5:00 pm held in the Exhibition Hall

On Thursday, October 10th, the learning and fun continues with:

- Technical Sessions over four different tracks from 8:00 am to 4:00 pm
- The Septage Compliance and Master Operator Training from 12:30 pm to 4:30 pm
- Continuation of the Conference Exhibition from 8:00 am to 11:30 am
- The Annual Operators’ Lunch and Business Meeting- Lunch: Noon - 12:30 pm, Meeting: 12:30 to 1:30 pm
- This year’s plant tour at NEW Water, Green Bay, from 1:15 pm to 4:00 pm
- Social Hour from 6:00 pm – 7:00 pm followed by the annual Awards Banquet and celebration beginning at 7:00 pm, with card playing and other games to be enjoyed throughout the evening

The conference will close on Friday morning, October 11th, with a greeting from the WWOA President at 8:30 am, and immediately followed by a presentation from our Farewell Breakfast Speaker, David J. Hart, of the Wisconsin Geological and Natural History Survey, University of Wisconsin-Madison. Mr. Hart will speak to us about the history of Wisconsin's groundwater science.

PRE-REGISTRATION FOR THE ANNUAL WWOA CONFERENCE IS STRONGLY ENCOURAGED! Online registration with the option to pay via credit card is available at www.wwoa.org.

On behalf of the WWOA Board of Directors, the Technical Program Committee, the Exhibits, Manufacturers & Consultants Committee, Local Arrangements Committee, and everyone that has worked to bring this 53rd Annual Conference together, we look forward to welcoming you to Green Bay in October!

Don Lintner
Chair, 2019 WWOA Technical Program Committee
Conference schedule at a glance

Tuesday, October 8, 2019
10:00 a.m. Shotgun Start Golf: Mid-Vallee Golf Course, De Pere, WI
10:00 a.m. Shotgun Start Sporting Clays: J&H Game Farm, Shiocton, WI
10:00 a.m. Bike Ride: Ride on Fox River Trail
2:00 p.m. – 4:00 p.m. Registration Opens: KI Lobby S. Counter (pick up pre-registration only)
1:00 p.m. – 4:00 p.m. Pre-Conference Workshops: Ballroom A3 and Ballroom A4
4:30 p.m. – 6:00 p.m. Regional Officers Meeting: Meeting Room 7
6:00 p.m. – 9:00 p.m. Meet & Greet (beer, wine, soda, cash bar): Riverview
6:00 p.m. – 8:00 p.m. Dinner buffet: WI Brats and Burgers: Riverview

Wednesday, October 9, 2019
7:00 a.m. – 5:00 p.m. Registration Opens: KI Lobby S. Counter (Scanning In and Out)
8:30 a.m. – 8:45 a.m. Welcome Address: Grand Ballroom ABC, WWOA President, Jeff Simpson
8:45 a.m. – 10:00 a.m. Keynote Address: Grand Ballroom ABC
Alonzo Kelly, Kelly Leadership Group, LLC
Understanding and Appreciation; How Being at Our Best Relies on Neither
10:00 a.m. – 5:00 p.m. Exhibitor Expo: Exhibit Hall BC
10:45 a.m. – 12:00 p.m. Technical Sessions: Ballroom A1, Ballroom A2, Ballroom A3, Ballroom A4
12:00 p.m. – 1:30 p.m. Walk Around Lunch: Exhibit Hall BC
12:00 p.m. – 4:30 p.m. Operators Competition: Exhibit Hall BC
12:30 p.m. – 4:00 p.m. Technical Sessions: Ballroom A1, Ballroom A2, Ballroom A3, Ballroom A4
3:00 p.m. – 5:00 p.m. Exhibitors Social Hour: Exhibit Hall BC

Thursday, October 10, 2019
7:00 a.m. – 4:45 p.m. Registration Opens: KI Lobby S. Counter (Scanning In and Out)
8:00 a.m. – 11:45 a.m. Technical Sessions: Ballroom A1, Ballroom A2, Ballroom A3, Ballroom A4
12:00 p.m. – 1:30 p.m. Business Meeting: Grand Ballroom D
12:30 p.m. – 4:30 p.m. Septage Compliance/Master Operator Training Technical Session: Ballroom A4
1:15 p.m. – 4:00 p.m. Plant Tour Departure: Elm Street Entrance, KI Conference Center
(Must pre-register at Registration (KI Lobby S. Counter) for bus transportation)
1:30 p.m. – 4:00 p.m. Technical Sessions: Ballroom A1, Ballroom A2, Ballroom A3, Ballroom A4
6:00 p.m. – 7:00 p.m. Social Hour: Riverview
7:00 p.m. – 11:00 p.m. Awards Banquet / Entertainment: Grand Ballroom E

Friday, October 11, 2019
7:30 a.m. – 11:00 a.m. Registration: KI Lobby S. Counter (Scanning In and Out)
8:30 a.m. – 10:30 a.m. Farewell Breakfast: Grand Ballroom ABC
Greeting: Jeff Smudde, WWOA President
Speaker: David J. Hart, Wisconsin Geological and Natural History Survey,
University of Wisconsin-Madison
A History of Wisconsin’s Groundwater Science

CURRENT YEAR (2019) NAME BADGE REQUIRED FOR ADMISSION TO ALL CONFERENCE FUNCTIONS
**2019 WWOA sporting clays**

**J&H Game Farm**

W5810 J&H Road, Shiocton WI  54170

Contacts:  Tom Stebbins 920-763-4057
           Jeff Smudde 920-851-1087

Date: Tuesday, October 8, 2019

Time:  9 A.M.  10 bird novelty shoot opens
      10:00 A.M. Main event shotgun start

Prizes: 1st, 2nd, & 3rd place team and Top Gun

Cost: $55 per shooter, WWOA Members, Manufacturers, Engineers, Suppliers, and Conference Attendees

$5 add-on Lewis Class
(Sign up and cash payment day of event only)

Includes:  12 station/50 target shoot, (bring your own shells or purchase at Club). “Cook your own steak, Texas toast, potato salad and beans.” All food included in cost.

Other services: Loaner guns available. Cash bar onsite after the shoot!

Special door prizes and novelty shoot prizes to include rifles, shotguns and more!

Door prizes and other donations appreciated!

Station sponsors needed: $50 each (includes signage).

Additional sponsor opportunities available!
Contact Tom Stebbins if interested (tstebbins@brightbelppress.com)

Payment must be received no later than Sept. 24, 2019 with names of foursome or individuals.
(Committee will assign if not in foursome).

Please RSVP early as we are limited to 80 participants.

No refunds after September October 1, 2019 unless course is closed by decision of Club Management.

---

Mail registration card and fee to:
Caley Mutrie, WWOA Association Manager
7044 S 13th Street, Oak Creek WI  53154
414-908-4950  c.mutrie@wwoa.org
2019 WWOA golf outing

Mid-Vallee golf course,
3850 Mid Valley Drive, De Pere WI 53115

Date: Tuesday, October 8, 2019
Time: 10 a.m. “Shotgun Start/18 holes
Prizes: Hole prizes and door prizes
Cost: $65 per person, WWOA Members, Manufacturers, Engineers, Suppliers and Conference Attendees. Includes: Golf with cart, 18 holes golf, hole prizes and door prizes, box lunch with two drink tickets.

Golf outing registrations, with names of foursome or individuals must be received no later than Sept. 24, 2019. (Committee will assign if not in foursome). Don't submit with TBD for others in group. Use individual names only.

Hole prize sponsorship available for $75/hole. Please contact Randy Herwig at randymail@charter.net.

No refunds after Oct. 1, 2019 unless course is closed by decision of club management. Day of event, rain checks would be issued for play, accepted through 2020 season.

Appropriate golf attire required.

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Others in Group:
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Register online with a credit card or make check payable to WWOA.

Mail registration card and fee to:
Caley Mutrie, WWOA Association Manager
7044 S 13th Street, Oak Creek WI 53154
414-908-4950 c.mutrie@wwoa.org

Waiver: In consideration of the registering for this event, I do hereby waive and release the Wisconsin Wastewater Operators’ Association and all persons and agencies connected with the WWOA from all claims for damages arising.

MEETings

Southeast WWOA
Wednesday, Sept. 18
Location: Kenosha

North Central WWOA
Thursday, Sept. 19
Location: Spencer

Register at www.wwoa.org/calendar/
2019 WWOA bicycle ride and luncheon registration form

Name: ________________________________
Address: ______________________________
City: ________________________________
State/Zip: ______________________________
Email address: _________________________
Phone number: _________________________

No. Paid $30:_________   Bike storage: Yes_____ No____

Register online with a credit card or make check payable to WWOA. Mail registration card and fee to:

Caley Mutrie, WWOA Association Manager
7044 S 13th Street, Oak Creek, WI 53154
414-908-4950 c.mutrie@wwoa.org

Ride on Fox River Trail
(Trail is asphalt-paved to Lasee Rd. From Lasee Rd. south trail surfaced with limestone screenings.)
Start/finish: St. Brendan’s Inn, 234 S Washington St.,
Green Bay WI 54301.
Lunch at Irish Pub & Restaurant

Date:   Tuesday, October 8, 2019
Time:   10a.m. Rider Meeting & Start leisurely ride 15 miles out and leisurely 15 miles back.
        (30 miles total)
Cost:   WWOA Members, Manufacturers, Engineers, Suppliers and Conference Attendees – $30.00
Cost Includes: “Continental breakfast” out of Tom’s trunk. Trail pass. Meal and drinks after ride at Irish Pub & Restaurant, 234 S Washington St.,
Green Bay WI 54301.

Registrations must be received no later than Sept. 24, 2019.
Please RSVP early.
No refunds after Oct. 1, 2019 UNLESS THERE IS INCLEMENT WEATHER.
Secure bicycle storage available in the KI Convention Center.
Contact Caley Mutrie, Association Manager, for access to secure storage.

Waiver: In consideration of the registering for this event, I do hereby waive and release the Wisconsin Wastewater Operators’ Association and all persons and agencies connected with the WWOA from all claims for damages arising from my participation in and travel to and from this event.
### Pre-Conference Workshops

**Tues., Oct. 8, 1 to 4 p.m.**

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<thead>
<tr>
<th>Time</th>
<th>Workshop #1</th>
<th>Workshop #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 2:25 p.m.</td>
<td>How Changes to Ch. NR149 Affect Your Lab Testing</td>
<td>Practical Uses for Excel at POTWs</td>
</tr>
<tr>
<td>2:25 to 2:40 p.m.</td>
<td>Break</td>
<td>Break</td>
</tr>
<tr>
<td>2:40 to 4 p.m.</td>
<td>Workshop #1 continued</td>
<td>Workshop #2 continued</td>
</tr>
<tr>
<td></td>
<td>How Changes to Ch. NR149 Affect Your Lab Testing</td>
<td>Practical Uses for Excel at POTWs</td>
</tr>
</tbody>
</table>

---

### Registration Form

**Name:** ____________________________

**Address:** ____________________________

**City:** ____________________________

**State/Zip:** ____________________________

**Phone:** ____________________________

**Employer:** ____________________________

**DNR#:** ____________________________

**Workshop #:** ____________________________

**Cost:** $45 Pre-Registration

- $55 On-Site or after Sept. 21
- No refunds issued after Oct. 1, 2019
- Includes refreshments between workshops

**Council on Environmental Quality (CECs)**

- 3 hours Municipal Waterworks
- 3 hours Wastewater
- Full workshop attendance 1-4 PM

Register online with a credit card or make check payable to WWOA.

Mail registration card and check to Caley Mutrie, WWOA Association Manager

7044 S 13th Street, Oak Creek, WI 53154-1429

414-908-4950 c.mutrie@wwoa.org
<table>
<thead>
<tr>
<th>TIME</th>
<th>SESSION A: NEW TECHNOLOGY</th>
<th>SESSION B: POP-EL-EH</th>
<th>SESSION C: OPEN</th>
<th>SESSION D: OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:45 am-11:20 am</td>
<td>Moderator: Bernie Robertson</td>
<td>Moderator: Tom Fitzwilliams</td>
<td>MAKE YOUR VISIT TO THE EXHIBIT HALL!</td>
<td>MAKE YOUR VISIT TO THE EXHIBIT HALL!</td>
</tr>
<tr>
<td>A1</td>
<td>Chintan Parikh</td>
<td>Rob Jansen</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cost-Effective MBR Treatment</td>
<td>UV Basics, Adoption,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>System to Meet ENR Limits</td>
<td>and Advancements in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:25 am-12:00 pm</td>
<td>Dr. Klaus Nickel</td>
<td>Jim Burke</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>Practical Applications for</td>
<td>Level Measurement in</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cell Lysing</td>
<td>Water Collection</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Walk Around Lunch — 12:00 pm-1:30 pm — Exhibit Hall BC**

Operators Competition — 12:00 pm-4:30 pm — Exhibit Hall BC  
CECs: 4.0 Municipal Waterworks, 4.0 Wastewater

<table>
<thead>
<tr>
<th>TIME</th>
<th>SESSION D: BIOSOLIDS</th>
<th>SESSION E: PRIMARY / GRIT REMOVAL / HEADWORKS</th>
<th>SESSION F: PHOSPHORUS</th>
<th>SESSION Q: ENERGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30 pm-2:00 pm</td>
<td>Moderator: Jeremy Cramer</td>
<td>Moderator: Sue Leith</td>
<td>Moderator: Jeff Smudde</td>
<td>Moderator: Ryan Hennessy</td>
</tr>
<tr>
<td>D1</td>
<td>Bruce Bartel, Jake Becken</td>
<td>Room: Ballroom A1</td>
<td>Room: Ballroom A2</td>
<td>Room: Ballroom A4</td>
</tr>
<tr>
<td></td>
<td>R2E2 - It’s Alive!</td>
<td>Grit - It’s Not Just for Breakfast Anymore</td>
<td>The Route to Developing a</td>
<td>Alternative Energy - Biogas Recovery</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Phosphorus Compliance Plan</td>
<td></td>
</tr>
<tr>
<td>2:05 pm-2:40 pm</td>
<td>Kyra Peach</td>
<td>Tom Foley</td>
<td>Leo Kucek</td>
<td>Kim Murdock-Timmerman</td>
</tr>
<tr>
<td>D2</td>
<td>City of Baraboo Reduces WRRF</td>
<td>Primary Sludge Grit Removal</td>
<td>Phosphorus Compliance</td>
<td>Biogas Upgrading for Vehicle fuel</td>
</tr>
<tr>
<td></td>
<td>Project Cost by Self-Performing Work</td>
<td></td>
<td>Alternatives in Wisconsin</td>
<td>and Pipeline Injection</td>
</tr>
</tbody>
</table>

**Break in Exhibit Area — 2:40 pm-2:55 pm — Exhibit Hall BC**

<table>
<thead>
<tr>
<th>TIME</th>
<th>D3</th>
<th>D4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:55 pm-3:25 pm</td>
<td>Jeremy Cramer</td>
<td>Unique Thickening and Dewatering Operations</td>
</tr>
<tr>
<td></td>
<td>Biosolids/Compost Pilot Project</td>
<td>related to Nutrient Removal Operations</td>
</tr>
<tr>
<td></td>
<td>Headworks Facilities Evaluation-Operator Driven Decision Making</td>
<td>Round Peg in a Square Hole: Manitowoc’s Novel Clarifier Replacement Project Adds System Flexibility</td>
</tr>
<tr>
<td></td>
<td>Greg Gunderson, P.E.</td>
<td>Troy Larson, Phil Severson, Mike Jaeger, Brian Helminger</td>
</tr>
<tr>
<td></td>
<td>Biological Phosphorus Removal: Energy-Saving Aeration and Mixing-Upgrade Pays Quick Dividends</td>
<td>Evaluation of High Precision In-Situ Analysis Against Benchtop lab Analyzers for Process Insight</td>
</tr>
<tr>
<td></td>
<td>Mark Stephanie, Dean Lafaure, Dylan Friss, Jim Fischer</td>
<td>Dave Rutkowski</td>
</tr>
<tr>
<td></td>
<td>Got a Minute? I Have Another Quick Generator Question</td>
<td>Joe Cantwell, Donald Hefly</td>
</tr>
<tr>
<td>ME</td>
<td>Steven Muther, P.E.</td>
<td>Energy Efficiency Starts With You</td>
</tr>
</tbody>
</table>

**Exhibitors Social Hour in the Exhibit Hall — 4:00 pm-5:00 pm — Exhibit Hall BC**
## WWOA Technical Program Schedule

**Thursday, October 10, 2019**

**CECs: 7.0 Municipal Waterworks, 7.0 Wastewater, 2.0 General Septage**

### Visit the Exhibit Hall! – 8:00 am - 11:30 am – Exhibit Hall BC

<table>
<thead>
<tr>
<th>TIME</th>
<th>SESSION G: STAFFING AND FUNDING</th>
<th>SESSION H: CORROSION INHIBITION</th>
<th>SESSION I: PHOSPHORUS TREATMENT</th>
<th>SESSION R: OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 am - 8:45 am</td>
<td>Nicole Kruschel, Brittnay Mitchell</td>
<td>James Orr</td>
<td>Matt Castillo, P.E.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can’t Digest the Cost of Your Upgrade? Consider Funding</td>
<td>Blasting and Coating of Clarifiers</td>
<td>Newly Developed Cloth Media and Innovative Pilot Testing to replace Your Tertiary Sand Filter</td>
<td></td>
</tr>
<tr>
<td>8:50 am - 9:35 pm</td>
<td>Nate Tillis, Tonia Speener</td>
<td>James Orr</td>
<td>Ben Brooks, Eric Lynne</td>
<td>MAKE YOUR VISIT TO THE EXHIBIT HALL!</td>
</tr>
<tr>
<td></td>
<td>Why You Need ‘Mix’ in Your Mixed Liquor: The Strength of Diversity in the Wastewater Industry</td>
<td>Case Study 6 Year Following Up Study of the Mississippi Siphon Chamber Rehabilitation Project</td>
<td>Sand Filter Conversion to Disc Filters for 0.075 mg/L TP</td>
<td></td>
</tr>
</tbody>
</table>

### Break in Exhibit Area – 9:35 am - 10:00 am – Exhibit Hall BC

<table>
<thead>
<tr>
<th>TIME</th>
<th>SESSION J: INTERCEPTOR CLEANING / MAINTENANCE</th>
<th>SESSION K: VARIANCE / RATES</th>
<th>SESSION L: TROUBLESHOOTING</th>
<th>SESSION S: OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 am - 10:50 am</td>
<td>Jerry Foelmi, P.E.</td>
<td>Amy Garbe, Laura Dietrich</td>
<td>Ryan Hennessy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How Far Do You Go to Get Gravity Flow</td>
<td>Regulations- Pollutant Variances</td>
<td>Inhibition vs. Toxicity in Wastewater</td>
<td></td>
</tr>
<tr>
<td>10:55 am - 11:45 am</td>
<td>Mark Grabowski, Bruce Ward</td>
<td>Tom Fitzwilliams</td>
<td>Troy Larson, Sharon Thieszen, Tom Steinbach, Randy Oliphant</td>
<td>MAKE YOUR VISIT TO THE EXHIBIT HALL!</td>
</tr>
<tr>
<td></td>
<td>Methods and Techniques for Cleaning and Maintaining Off-Read Sewers Using In-House Crews</td>
<td></td>
<td>Tricks of the Trade</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operators’ Luncheon – 12:00 pm – Grand Ballroom D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WWOA Business Meeting – 12:30 pm – Grand Ballroom D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plant Tour Buses depart at 1:15 pm from the Elm Street Entrance, KI Conference Center</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### WWOA Technical Program Schedule

**Thursday, October 10, 2019, Continued...**

**CECs:** 7.0 Municipal Waterworks, 7.0 Wastewater, 2.0 General Septage  
**Special Session T Only:** 4.0 Septage Compliance

Visit the Exhibit Hall! – 8:00 am – 11:30 am – Exhibit Hall BC

<table>
<thead>
<tr>
<th>TIME</th>
<th>SESSION M: COLLECTION SYSTEMS</th>
<th>SESSION N: LAGOONS</th>
<th>SESSION O: TECHNOLOGY</th>
<th>SESSION T: SEPTAGE COMPLIANCE &amp; MASTER OPERATOR TRAINING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30 pm-2:15 pm</td>
<td>Moderate: Randy Langer</td>
<td>Room: Ballroom A1</td>
<td>Moderate: Jeff Simpson</td>
<td>Room: Ballroom A2</td>
</tr>
<tr>
<td></td>
<td>Thomas Nagle, P.E.</td>
<td>Sewer Lateral Rehab Solves CSO Problems. A Lesson in Public Relations and Community Buy-in</td>
<td>Travis Anderson</td>
<td>Evaluating Lagoon Upgrades for Increasingly Stringent Effluent Limits</td>
</tr>
<tr>
<td>2:20 pm-3:05 pm</td>
<td>Steve Bruskiewicz</td>
<td>Stop Age Discrimination in Pipe Replacement Strategies</td>
<td>James Martin</td>
<td>Optimizing Lagoon Based Treatment Systems to Meet More Stringent BOD, TSS, and Ammonia Limits</td>
</tr>
<tr>
<td></td>
<td>Ryan Yentz, Randy Langer</td>
<td>CIPP Lining: Tips, Tricks and Lessons Learned for the Collection System Owner</td>
<td>Nick Janus</td>
<td>Upgrading for Cold-Climate Nutrient Removal</td>
</tr>
<tr>
<td>3:15 pm-4:00 pm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Social Hour – 6:00 pm – Riverview  
Awards Banquet – 7:00 pm – Grand Ballroom E

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### WWOA Technical Program Schedule

**Friday, October 11, 2019**  
**CECs:** 2.0 Municipal Waterworks, 2.0 Wastewater

**Operators Farewell Breakfast**  
8:30 am-10:30 am  
Grand Ballroom ABC  
Scan In & Scan Out at the Registration Desk at K1 Lobby S. Counter

Moderator: WWOA President Jeff Smudde

Presenter: David J. Hart, Wisconsin Geological and Natural History Survey, University of Wisconsin-Madison  
*A History of Wisconsin’s Groundwater Science*

**CONCLUSION OF CONFERENCE**
Meet keynote speaker Alonzo Kelly

A dynamic Executive Coach, Professor, 3x Best Selling Author, and Radio Host, Alonzo Kelly has gained international and global attention as a premier consultant and strategist. Alonzo is recognized as one the nation’s leading experts on leadership development, strategic thinking, planning, and acting which results in individual and organizational goal achievement.

He has appeared on America’s Premier Experts which airs on major networks across the country including ABC, NBC, CBS, and FOX. Alonzo has served over 1,000 individuals through personal and professional development, delivered training to a plethora of Fortune 500 Companies, College and Universities, Institutions of Higher Learning, Foreign Countries, nonprofit organizations, and is consistently retained to be the keynote speaker at large and small events across the country.

He holds a bachelor’s in Accounting, three master’s degrees (Public Administration, Human Resource & Labor Relations, Business Administration), and is nearing completion of a PhD in Multidisciplinary Human Services. He is also currently in the process of obtaining his Doctorate in Business Administration.

Find more at www.alonzokelly.com

Mark Your Calendars for 2020!

WISCONSIN WASTEWATER OPERATORS’ ASSOCIATION
54th Annual Conference

Kalahari Resort & Conference Center
Wisconsin Dells, WI

October 20—October 23, 2020

2019 Hotel reservations open on Monday, October 14, 2019
Hotel reservation information will be on the WWOA website under Annual Conference.

CURRENT YEAR NAME BADGE REQUIRED FOR ADMISSION TO ALL CONFERENCE FUNCTIONS
2019 WWOA Officers and Board of Directors

President: Jeff ‘Juice’ Simpson
President Elect: Jeff Smudde
Vice President: Don Lintner
Past President: Jeff Bratz
Director (2019): Jeremy Cramer
Director (2019): Ryan Hennessy
Director (2019): Sue Leith
Director (2020): Rick Mealy
Director (2020): Joshua Voigt

2019 Technical Program Committee

Chair: Don Lintner

Committee Members:
Jake Becken, Jeremy Cramer, Tom Fitzwilliams, Ryan Hennessy, Troy Larson,
Sue Leith, Lyle Lutz, Rick Mealy, Jeff Montpas, Bernie Robertson, Jeff Simpson,
Jeff Smudde, Sharon Thieszen, Nate Tillis, Josh Voigt

Exhibits, Manufacturers & Consultants Committee

Chair: Tom Mulcahy  Co-Chair: Carol Strackbein

Committee Members:
Dave Dodge, Kevin Freber, Kelly Zimmer

2019 Local Arrangement Committee

Co-Chairs: Bruce Bartel, Jake Becken, Jeff Smudde
### Credit Card Information

- **VISA**
- **MasterCard**
- **Discover**
- **American Express**

(Circle one of the above)

Name on Card: ________________________________

Card No.: ________________________________

Expiration Date: ________________________________

Don't forget to include your **WDNR Certification #** if you require CEC's for attending the WWOA Conference. We will be scanning barcodes on conference badges for CEC attendance verification. CEC's will be given for wastewater, septage, and water.

We will also be giving PDH certificates for those PE's that require them. You will have to check in at the Registration Office at the Conference in order to receive them.

### WWOA 53rd Annual Conference Registration

**October 8 - 11, 2019 – Green Bay, WI**

Registration Form (fill out one registration form for each person attending) Please print clearly.

Name (Last, First, M.I.) ________________________________ Email Address: ________________________________

Employer/Firm Name (if Manufacturer or Consultant): ________________________________

Mailing Address: ________________________________

Phone: ________________________________ Position/Title: ________________________________ WDNR Certification #: ________________________________

Regional Affiliation (circle one): SE  NW  SO  LM  NC  WC  Member Number: ________________________________

Member Affiliation: Municipal  Consultant  Industrial Operator  Manufacturer/Sales  Educator  Septage Operator  DNR/EPA  Student

#### Pre-Registration (On or Before September 24, 2019)

<table>
<thead>
<tr>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>WWOA Member - Full Conference</td>
<td>$110.00</td>
</tr>
<tr>
<td>WWOA Member - Wednesday Only (includes Walk Around Lunch)</td>
<td>$85.00</td>
</tr>
<tr>
<td>WWOA Member - Thursday Only</td>
<td>$65.00</td>
</tr>
<tr>
<td>Non-Member - Full Conference</td>
<td>$165.00</td>
</tr>
<tr>
<td>Non-Member - Wednesday Only (includes Walk Around Lunch)</td>
<td>$125.00</td>
</tr>
<tr>
<td>Non-Member - Thursday Only</td>
<td>$105.00</td>
</tr>
<tr>
<td>Non-Member plus WWOA Membership (see form following page) (Pre-Registration only)</td>
<td>$150.00</td>
</tr>
<tr>
<td>Retiree - Full Conference (Must be at least 60 years old &amp; retired from wastewater industry)</td>
<td>$65.00</td>
</tr>
<tr>
<td>Student - Full Conference (Must send copy of valid student ID)</td>
<td>$55.00</td>
</tr>
<tr>
<td>Student - Wednesday Only (Must send copy of valid student ID) (includes Walk Around Lunch)</td>
<td>$35.00</td>
</tr>
<tr>
<td>Student - Thursday Only (Must send copy of valid student ID)</td>
<td>$25.00</td>
</tr>
</tbody>
</table>

#### On Site Registration (After September 24, 2019)

<table>
<thead>
<tr>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>WWOA Member - Full Conference</td>
<td>$170.00</td>
</tr>
<tr>
<td>WWOA Member - Wednesday Only (includes Walk Around Lunch)</td>
<td>$145.00</td>
</tr>
<tr>
<td>WWOA Member - Thursday Only</td>
<td>$125.00</td>
</tr>
<tr>
<td>Non-Member - Full Conference</td>
<td>$225.00</td>
</tr>
<tr>
<td>Non-Member - Wednesday Only (includes Walk Around Lunch)</td>
<td>$185.00</td>
</tr>
<tr>
<td>Non-Member - Thursday Only</td>
<td>$165.00</td>
</tr>
<tr>
<td>Retiree - Full Conference (Must be at least 60 years old &amp; retired from wastewater industry)</td>
<td>$80.00</td>
</tr>
<tr>
<td>Student - Full Conference (Must provide copy of valid student ID)</td>
<td>$70.00</td>
</tr>
<tr>
<td>Student - Wednesday Only (Must provide copy of valid student ID) includes Walk Around Lunch</td>
<td>$50.00</td>
</tr>
<tr>
<td>Student - Thursday Only (Must provide copy of valid student ID)</td>
<td>$40.00</td>
</tr>
</tbody>
</table>

**SUB-TOTAL**

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**REGISTRATION FORM CONTINUED ON NEXT PAGE**

**NO REFUNDS WILL BE ISSUED AFTER OCTOBER 1, 2019**
REGISTRATION FORM CONTINUED

Additional Functions

<table>
<thead>
<tr>
<th>Service</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle Outing (Please include separate registration form)</td>
<td>$30.00</td>
</tr>
<tr>
<td>Golf Outing (Please include separate registration form)</td>
<td>$65.00</td>
</tr>
<tr>
<td>Sporting Clays (Please include separate registration form)</td>
<td>$55.00</td>
</tr>
<tr>
<td>Pre-Conference Workshop (Please include separate registration form, enter fee here)</td>
<td>$45.00</td>
</tr>
<tr>
<td>Pre-Conference Workshop (After September 14, 2019 and on-site, Please include separate registration form, enter fee here)</td>
<td>$55.00</td>
</tr>
<tr>
<td>Meet &amp; Greet - Tuesday (Please check if planning to attend) NO CHARGE</td>
<td># attending</td>
</tr>
</tbody>
</table>
| *Operators Business Lunch:  
  Circle Meal Choice: Herb-Grilled Chicken — OR — Vegetarian Option — Chef’s Choice | $25.00 |
| Social Hour - Wednesday (Courtesy of Manufacturers & Consultants) (free to all paid attendees) | No Charge |
| *Awards Banquet  
  Circle Meal Choice: 6 oz Sirloin Steak/mushroom & Garlic demi glace — OR — Napoleon Glaze Chicken/mustard jus — OR — 5 oz Grilled Salmon w/orange butter cream sauce — OR — Vegetarian — Chef’s Choice | $40.00 |
| Farewell Breakfast (Included in registration; Please note no. of tickets needed) NO CHARGE | # attending |

WWOA Dues — Two Years Renewal (If Applicable)

<table>
<thead>
<tr>
<th>Membership Type</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>$50 Regular Membership</td>
<td></td>
</tr>
<tr>
<td>$40 Lifetime Members (25 Year Members)</td>
<td></td>
</tr>
</tbody>
</table>

(Include M & C Registration of $150.00 if applicable)

TOTAL ENCLOSED $

NO REFUNDS WILL BE ISSUED AFTER OCTOBER 1, 2019

Manufacturers & Consultants Registration and Payment Information on next page

New Membership Option (Registration/Membership Package)

This package is available to non-members only and is available through pre-registration only.

Package includes: Conference registration and a two-year membership in WWOA for $160.00. You must fill out the Membership Application section AND the Conference Registration section. Take advantage of this opportunity to add a WWOA Membership — save $5.00 when compared to non-membership registration and save on registration for next year.

New Membership Application Form

Name (Last, First, M.I.): ________________________________
Email Address: ________________________________
Employer: ________________________________ Company Name: ________________________________
Mailing Address: ________________________________
Phone: ________________________________ Position/Title: ________________________________ DNR Certification #: ________________________________
Regional Affiliation: SE NW Southern LM NC WC
Member Affiliation: Municipal Consultant Industrial Operator Manufacturer/Sales Educator Septage Operator DNR/EPA Student:

This applicant is recommended by:
Member Name: ________________________________
City: ________________________________ State: __________

Send Membership Application along with Conference Registration
Manufacturers & Consultants Registration

Sponsorship Fee (In Addition to Conference Registration)

All Manufacturing, Consultant Firms, Sales Firms, Exhibitors, and Contract Operation Firms NOT exhibiting at the Annual Conference must pay the Sponsorship Fee (one fee per firm).

Exhibit Fee (Sponsorship Fee Included)

On or Before August 3, 2019 – 8’ x 10’
(One conference registration fee included)

Starting August 4, 2019 – 8’ x 10’
(One conference registration fee included)

NO REFUNDS WILL BE ISSUED AFTER OCTOBER 1, 2019

Booth Description

8’ X 10’ space, piped and draped, one 8’ skirted table and two chairs, identification sign, and one 110v outlet. Additional electrical connections or supplies may be ordered from the Exhibiting Set-Up Company. Please note that the exhibit hall will be carpeted. All exhibitors will receive a separate set-up packet from the Exhibiting Set-Up Company.

Insurance

It is agreed that in no case will WWOA or its officers or directors be responsible for any loss, theft, damage by fire or water, or injury to any person or article as a direct result of their participation in the show.

Liability

Each booth operator assumes responsibility for the space leased during the conference and will keep it free from hazards to persons on the premises. WWOA will not be responsible for any injury that may occur to booth operators, their associates or employees.

Exhibiting Schedule

Exhibit Set-Up
Tuesday, Oct. 8 - 8:00 AM to 6:00 PM
Wednesday, Oct. 9 - 6:00 AM to 8:30 AM
All exhibits must be set up by 9:00 AM on Wednesday

Show Hours
Wednesday, Oct. 9 - 10:00 AM to 5:00 PM
Thursday, Oct. 10 - 8:00 AM to 11:30 AM

Exhibit Teardown
Thursday, Oct. 10 - Not before 11:30 AM
All exhibits must be removed from the exhibit hall by 5:00 PM Thursday

Mail registration form(s) and fees to:

Caley Mutrie
WWOA Association Manager
7044 S 13th Street
Oak Creek, WI 53154-1429
Phone: (414) 908-9450 / c.mutrie@wwoa.org

Enter credit card information in box at top of registration form
Make checks payable to: WWOA
On-line registration available at www.wwoa.org
WDNR Continuing Educational Credits (CEC) Procedures – WWOA Conference

WWOA has implemented the following procedure to comply with the WDNR electronic CEC tracking system requirements. In order for those WWOA Conference attendees to receive their required CECs, the following program will be in place for this year’s conference. It is imperative that everyone that has a DNR Operators Certification Number includes it on their registration (no matter how they register – either on-line or by mail-in registration form). If you do NOT know your number, you can find it by going to the DNR website and look it up:  
You can find your number and training history here. All of the Certified Operators in attendance will have a special barcode, based on their DNR Operator number, added to their badge for scanning purposes. They will be the only attendees with barcodes.

In order to receive CECs for the Conference, everyone with a barcode on their badge will have to scan in and out on Wednesday, Thursday, and Friday. All barcode scanning will be done at the WWOA Conference Registration Office. There will be special lines set up for scanning purposes. Everyone going on the plant tour will have to check in and out with the WWOA person taking attendance on the bus. You must register for the plant tour bus at the WWOA Conference Registration office in advance. Bus sign up is on first come basis.

NOTE: We will only scan one badge per person. You must bring your own badge to the Registration office for scanning. We will NOT scan multiple badges presented by one person.

The WWOA Registration Office will be open the following hours during the convention:

<table>
<thead>
<tr>
<th>Date</th>
<th>Times</th>
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<tbody>
<tr>
<td>Tuesday, October 8, 2019</td>
<td>2:00 pm to 4:00 pm (pick up registration packets only) WWOA Conference Registration office is located at KI Lobby S. Counter.</td>
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Exhibitor packets will be available in their booths starting on Tuesday morning. However, any Exhibitor that has a barcode on their badge must scan in and out at the Registration Office to receive their CECs.

<table>
<thead>
<tr>
<th>Date</th>
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<tr>
<td>Wednesday, October 9, 2019</td>
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<td>Registration and Pick Up Registration Packets</td>
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<td>Scan In and Out for CEC Hours</td>
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<tbody>
<tr>
<td>Thursday, October 10, 2019</td>
<td>7:00 am to 4:45 pm</td>
</tr>
<tr>
<td></td>
<td>Registration and Pick up Registration Packets</td>
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<td></td>
<td>Scan In and Out for CEC Hours</td>
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DO NOT FORGET TO CHECK OUT WITH THE WWOA PERSON TAKING ATTENDANCE ON THE BUS TOUR

<table>
<thead>
<tr>
<th>Date</th>
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<tbody>
<tr>
<td>Friday, October 11, 2019</td>
<td>7:00 am to 11:00 am/Registration office</td>
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<td>Scan In and Out for CEC Hours</td>
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On-site Registration for the Pre-Conference Seminars will be at the Registration office located at KI Lobby S. Counter.

Everyone that signed up for the Pre-Conference Seminars, check in and check out will be handled outside of the Ballroom A3 and Ballroom A4 seminar rooms. These rooms are immediately adjacent to one another.

Every participant will receive CECs based upon their scan in and out times. If you scan out early, you will only receive CECs for the time that you are in attendance at the WWOA Conference. There will be signs placed throughout the facilities reminding everyone to scan in and out. Ultimately, this will be the responsibility of each attendee to do so.

Everyone that requires Professional Development Hours (PDHs), please check in at the Registration Office.
CONFERENCE FACILITY LAYOUT/ROOM LOCATIONS
KI Convention Center—East

HYATT REGENCY GREEN BAY
333 Main Street
Green Bay, Wisconsin 54301 USA
T  +1 920 432 1234
F  +1920 432 0700
greenbay.regency.hyatt.com
CONFERECE FACILITY LAYOUT/ROOM LOCATIONS

KI Convention Center—West

HYATT REGENCY GREEN BAY
333 Main Street
Green Bay, Wisconsin 54301 USA
T  +1  920 432 1234
F  +1920 432 0700
greenbay.regency.hyatt.com
### Wisconsin Wastewater Operators Association Annual Conference, October 8 - 11, 2019

**Hyatt on Main/KI Center**
333 Main Street
Green Bay WI 54301

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Reservation Phone #</th>
<th>Email &amp; website, or General Reservation Instructions</th>
<th>Rates</th>
<th>Release Date</th>
<th>Group Code</th>
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<tr>
<td><strong>Hyatt on Main</strong>*</td>
<td>333 Main Street</td>
<td>920-432-1234</td>
<td>Call 920-432-1234</td>
<td>Single/Double $110 King $130</td>
<td>9/25/2019</td>
<td>WI Wastewater Operators</td>
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<td>Green Bay WI 54301</td>
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<td></td>
<td>Triple $140 Quadruple $160</td>
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<tr>
<td><strong>Hampton Inn and Suites</strong>*</td>
<td>201 Main Street</td>
<td>920-437-5900</td>
<td>Call hotel directly at 920-437-5900 for room reservations</td>
<td>Standard King &amp; Double Queen $144</td>
<td>9/10/2019</td>
<td>WI Wastewater Operators</td>
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<tr>
<td><strong>Holiday Inn Green Bay Stadium</strong></td>
<td>2785 Ramada Way</td>
<td>1-800-HOLIDAY or 920-569-4248</td>
<td>Call 1-800-HOLIDAY</td>
<td>Run of the House $119</td>
<td>9/8/2019</td>
<td>WWW</td>
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<td>Green Bay WI 54304</td>
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<tr>
<td><strong>Tundra Lodge Resort &amp; Waterpark</strong></td>
<td>865 Lombardi Ave</td>
<td>1-877-886-3725</td>
<td>Call 1-877-886-3725</td>
<td>Double Queen Suite $99</td>
<td>9/20/2019</td>
<td>Wisconsin Wastewater Operators Association</td>
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<tr>
<td><strong>Radisson Hotel &amp; Conference Center</strong></td>
<td>2040 Airport Road</td>
<td>920-494-7300</td>
<td>Call hotel directly at 1-800-333-333 or 920-494-7300 for room reservations</td>
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<td>9/17/2019</td>
<td>Wisconsin Wastewater Works Operators</td>
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* Hyatt On Main is the host hotel directly connected to the KI Center
# Hampton Inn & Suites is also attached to the KI Center
Troubleshooting Corner Volume X11: Chloride Compliance – Variances & Pollutant Minimization Plans

By: Greg Gunderson, PE, ENV SP, MSA Professional Services, Inc.

The issue of WPDES permit compliance with chloride limits is nothing very new. In recent years however, a greater number of reissued WPDS permits contain with chloride limits that require the permittee to request a variance. It has many people wondering – are there new, more strict rules related to chloride that I should be aware of? What do I need to do to get a variance limit for chloride? The goal of this article is to describe the regulation of chloride in wastewater and variance process.

Regulatory History

As with all permit limits, the genesis of chloride regulation primarily dates back to the Clean Water Act (CWA) of 1972 (and major amendment in 1977). Section 304(a) requires the EPA to publish water quality criteria (WQC) that accurately reflect the latest scientific knowledge on the effect the presence of pollutants have in any body of water. This gives the EPA a system for ongoing study of pollutants and their effects on surface waters, groundwater, and the aquatic environment.

In the case of chloride, various scientific studies throughout the 1970s and 1980s indicated that, at higher concentrations, chloride adversely affects the life and reproduction of various freshwater plants and animals. Subsequently, in 1988, the EPA published Water Quality Criteria (WQC) for Chloride (EPA 440/5-88-001). The States, as administrators of the Clean Water Act, utilize the federal WQC as guidance to develop water quality standards (WQS) specific to their state and implement enforceable effluent limitations.

Through the 1990s, the State of Wisconsin conducted additional studies to determine appropriate WQS for chloride. Rule development occurred in the late 1990s and became effective in February 2000. The established acute toxicity criteria for chloride is 757 mg/L, and the chronic toxicity criteria is 395 mg/L (NR105.06). At the time of permit reissuance, these criteria are utilized to calculate potential daily (acute) and weekly (chronic) effluent limitations. The DNR calculates a 4-day P99 concentration based upon historical data and compares that to the acute and chronic toxicity criteria to determine if effluent chloride limits are necessary. In general, the weekly (chronic) limit is the limit of concern.

At the same time the WQS rules were enacted, a variance process was established as part of NR106. Chloride is mostly present in the form of a dissolved anion, therefore traditional secondary treatment does not reduce the chloride concentration in wastewater. Reverse Osmosis (RO), or a similar type membrane tertiary treatment, is necessary - and extremely costly. In addition to the significant capital and operating cost for RO or similar treatment, these systems produce a significant amount of concentrated reject water that requires disposal. Because it was widely recognized that wastewater treatment to reduce chloride concentrations is not economically feasible, the DNR established a process for obtaining a chloride variance. As a requirement of the variance, the permittee must implement source reduction efforts to minimize the discharge of chloride. This is commonly known as a Pollutant Minimization Plan (PMP). More on PMPs later…

Recent Regulatory Updates

For the most part, the regulations surrounding chloride have not changed in Wisconsin since 2000. However, in 2015 the EPA finalized updates to the WQS regulations (40 CRF 131). The updated rules outline a more comprehensive regulatory structure for variances to WQS, including a requirement that the conditions of the variance result in progress towards attaining the water quality criteria and the intended use for the water body. A new term defined in the updated regulations is “Highest Attainable Condition” (HAC). In plain terms, the EPA (and DNR) are asking permittees that receive a variance to conduct a ‘good faith’ effort to reduce the pollutant in question using feasible and affordable resources. As part of the variance process, it is necessary to identify, implement, document, and report all source reduction efforts during the term of the permit. Therefore, a well-developed and implemented Pollutant Minimization Plan (PMP) is essential.

Pollutant Minimization Plan (PMP)

When a permittee receives a chloride variance, they are required to implement the source reduction measures identified through the approved Pollutant Minimization Plan (PMP). A compliance schedule included in your permit will typically require annual reporting on the implementation and effectiveness of the PMP.

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In development of a PMP, it is important to understand the DNR's expectations. Wisconsin Administrative Code NR 106.90 describes a three-tiered system of source reduction measures in ascending order of effort and costs. The DNR issued a general guidance document in 2014 entitled DNR's Recommendation for PMPs and SRMs for Arsenic, Chloride, Copper, and Mercury Variances. The guidance provides an additional resource. Following is a summary of a three-step process for developing and implementing chloride PMPs. PMP implementation will not follow Steps 1 through 3 in a chronological fashion. The process requires continual adjustment and adaptation of the approach through the course of the permit term. For example, there is no single source of chloride in the wastewater collection system. Therefore, you will likely return to Step 1 multiple times as more information is gathered and as you gain more understanding of your specific situation. Multiple sampling events at multiple points in the collection system may be necessary to document progress in source reduction. The goal of your PMP is to meet the water quality standard and therefore avoid the need for a chloride variance in the next permit term. However, because significant source reduction is often difficult, this condition may not be attainable.

Step 1 – Identify, Quantify, & Educate
The difficulty with source reduction of chlorides is that there are many sources of chloride in the collection system. It is important to inventory the potential sources thoroughly. It is likely that chlorides are being contributed by various residential, commercial, industrial, and public sources. If a chloride limit has been established, it means there are sources of wastewater that contain higher chloride concentrations than typical domestic wastewater.

If the local groundwater has a high hardness, which is typical of many parts of Wisconsin, it is very likely that many of the homes utilize ion exchange water softening. Madison Metropolitan Sewage District (MMSD) identified that nearly 60% of the chloride load to the wastewater treatment facility was from residential sources (Chloride Compliance Study – Nine Springs Wastewater Treatment Plant, AECOM, 2015). Consider distributing a questionnaire as a bill stuffer to inventory the quantity, age, and type of residential softeners. You can also take the opportunity to distribute an informational bulletin to educate residents about chloride production from water softening and the potential cost savings as a result of more less frequent regeneration, and encourage tune-ups or
replacement of old softeners to reduce the frequency of regeneration. A number of residents likely use a timer-based system. These older types of softeners regenerate based on a set timer regardless of the water demand or actual hardness of the treated water. This can result in significantly more salt usage, and therefore, brine discharge to the sewer system.

Identifying and quantifying chloride discharge from commercial and industrial users is likely easier than residential users. The list of users will likely be far shorter, and have defined discharge points to the sewer system. Some industries utilize salt directly in their processes, such as dairy and vegetable processors, and any industry using softened cooling water or wash water. Investigate the largest water users first, as they may provide the biggest opportunities for source minimization.

A paper survey of industrial and commercial customers, along with some knowledge of the nature of their business, is typically sufficient to identify sources of chloride. Otherwise, it may be necessary to initiate a sampling program; however, it could prove difficult to find appropriate sampling locations. The duration of sampling might also be challenging if the largest source of chloride is from intermittent softener regeneration or some other batch discharge of wastewater.

Operators should also look to their own water treatment facilities to identify chloride contributions. Many municipalities utilize centralized ion exchange softening systems for hardness and/or radium reduction. In addition, as phosphorus limits have decreased, the use of chemical coagulants at WWTs has increased. Two common chemicals utilized are ferric chloride and polyaluminum chlorides (PACs). The chemical reaction has the intended effect of precipitating phosphorus, but also releases chloride ions.

Road salt can also be a source of chloride in wastewater. Historically road salt was inexpensive, and an excellent way to provide safer roads for motorists in the winter. Essentially, cheap insurance for your community. However, more is not necessarily better, and the cost of road salt is on the rise. Excessive use of road salt will result in high chloride concentrations in runoffs. Water wells can be impacted by road salt, resulting in elevated sodium and chloride levels in the water supply and resulting in higher chloride levels in wastewater. A more direct source can result where runoff with high chloride concentration enters a leaky sanitary sewer system as inflow and infiltration.

Step 2 – Optimize & Encourage Improvements
The next action item is to take the data and information gathered and work with the identified contributors to optimize operations and/or replacement of older softening systems. In parallel, you would continue sampling, perhaps on a more frequent basis than required in the WPDES permit, to monitor the effectiveness of changes.

For residential systems, consider working with local plumbers and softener suppliers to initiate a softener tune-up program. You may wish to provide funding to complete the inspections. A MMSD pilot study found a 27% chloride mass reduction from residential softeners after optimization efforts (The Reduction of Influent Chloride to Wastewater Treatment Plants by the Optimization of Residential Water Softeners, MMSD, 2015). The softener suppliers can work directly with residents to inspect and make adjustments. During these inspections, it is likely that they will encounter systems that are past their useful life, and recommend replacement. In the same MMSD study, replacement of softeners to a higher efficiency, demand-based system resulted in a 47% reduction in chloride mass discharge from the softener. The key to an effective softener replacement program is providing the necessary public education regarding the cost savings that will be achieved through reduced salt use.

For commercial/industrial users, it may be worthwhile to have conversations regarding water softening practices. The customer should consider whether they are softening water more than necessary for their process. Simple changes like reducing the frequency of regeneration or increasing the portion of water that bypasses the softener can result in significant reductions in chloride discharged to the sewer system and reduced volume of wastewater. These users may have a greater financial incentive to limit salt usage, and the financial resources to implement efficient softening systems. Replacement of old ion exchange resin can result in reduced salt use as the length between regenerations is increased. There are newer ion exchange resins on the market that require less salt to complete the regeneration. It is becoming more common for industries that soften a large amount of water to recycle the portion of the brine produced near the end of the rinse cycle for use in the next regeneration. Industries that are large water users, such as food processing facilities, may be able to identify reduction in brine waste streams. Customers that soften water for a single-pass cooling water system may be able to recycle cooling water or even upgrade to a closed-loop system. Equalization of brine discharge to produce a low rate of discharge over several days might also be an effective means

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of reducing the chloride concentration in the wastewater reaching the treatment plant. Each industry is different, so there may be additional optimization and minimization activities available.

The same opportunities that exist in the commercial/industrial sector for reduced chloride production, through modifications to softener operation or replacement of softener equipment, also exist for municipalities that utilize ion exchange softening. The potential to reduce chloride in the influent to the wastewater treatment plant is another incentive for increasing collection system inflow and infiltration reduction efforts.

Similarly, improving your road salt program is a great opportunity to reduce chloride production due to the control you have on the program. Road salt application methods and technology have made great advancements in recent years. Historically, rock salt application was a reactive measure to ice and snow on roadways. However, many Federal, State, and even County roadways proactively utilize brine spray application. This method has proven to be more effective and a significant reduction in salt usage. You could evaluate the possibility of expanding the use of brine spray on municipal roads. In addition, training for how to operate an efficient road salt program is becoming more prevalent. I would encourage you to find a course near you. There is even a certification program and other training resources offered by the WI Salt Wise Partnership, which is a collection of stakeholders from Dane County (www.wisaltwise.com).

Step 3 – Ordinances & Require Improvements
The final step is the most drastic approach, enacting ordinances or user agreements with large water users to limit the chloride concentration (or mass) in wastewater, and/or to require replacement of inefficient equipment. Wisconsin Administrative Code NR106.92 and NR211.40 specifically give municipalities the authority to regulate the discharge of chlorides from all classes of users. For residential users, this would consist of requiring all softeners installed on new construction be high-efficiency units with a minimum efficiency rating (e.g. 4,000 grains of hardness removed per pound of salt used). You may go further and require all existing residents replace timer-based or older systems by a certain date. Some municipalities have developed rebate programs to incentivize residents further. Beyond addressing the softening unit, you may wish to restrict which fixtures in the home can utilize soft water. For instance, prohibit exterior faucets and hose bibs from receiving soft water, and therefore reduce the frequency of softener regeneration.

For larger individual industrial/commercial users, you could consider modifying or creating a wastewater service agreement with an established maximum effluent chloride concentration and/or mass. This type of program would likely require a sampling station on the customer's property for regular composite sampling.

Implementing the actions in Step 3 can be difficult as regulation-based approaches may create a significant financial burden on customers. It is advisable to implement the strategies discussed in Steps 1 and 2 before moving into step 3.

Summary
Due to the 2015 rule changes by EPA establishing a Highest Attainable Condition criteria for variances to effluent wastewater limits, obtaining a chloride variance requires implementation of an ongoing Pollutant Minimization Plan to reduce sources of chloride in wastewater. The most common source of elevated concentrations of chloride is
continued from page 41

the wastewater brine produced during regeneration of ion exchange water softeners. Source reduction therefore needs to include working with residential customers to promote more efficient softener equipment and operation. The Wastewater Utility will also need to work with individual commercial and industrial customers to identify cost-effective ways to reduce the volume of high-chloride wastewater or reduce the concentration of chloride reaching the wastewater treatment plant through flow equalization. The chloride variance will include a requirement for annual reports to document chloride source reduction measures and the effectiveness of those measures.

Greg Gunderson, PE, ENV SP, is a Wastewater Team Leader for MSA Professional Services, Inc. He and his team regularly partner with municipalities on all aspects of wastewater treatment facilities including planning, design, construction, commissioning, operations, funding, and permit compliance.

MSA Professional Services, Inc. (MSA) is a 100% employee-owned, full-service multidisciplinary consulting firm serving clients throughout the U.S. Based in 14 offices across Illinois, Iowa, Minnesota and Wisconsin, MSA partners with clients to help solve today's complex and multi-faceted challenges and specializes in the sustainable development of communities. When you work with MSA, it's more than a project. It's a commitment. For more information, visit msa-ps.com.

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**Biosolids and training committee reports**

**August 2, 2019**

**ATTN: WWOA Board of Directors**

Biosolids Committee Items:

1) Currently everything is on pace. Activity to increase for preparation into the fall months.

2) Ryan H. will be available to assist but term expiring for WWOA board. A new committee lead from WWOA will be needed.

Training Committee Items:

1) The Green Bay microbiology class was a huge success. We filled the room to capacity and the WWOA obtained a net profit of over $400.

2) The Eau Claire microbiology class was rescheduled for September 5th due to getting a late start for registrations (miscommunication from AEG startup). Currently turn-out is low for this. We will likely send another e-blast out and see where things are at a couple weeks out.

3) All of the DNR exam classes went well.

4) Ryan H. will be available to assist but term expiring from WWOA board. A new committee lead from WWOA will be needed.

5) Opened the clarifier article up to guests if they submit anything. MSA is going to contribute an article on chlorides, what the DNR is looking for- testing and variances etc.
   a. Open to other board members reaching out to people who may have good things to contribute that are specifically relevant to the majority of our members/ will continue to sprinkle in some wastewater process control/microbiology articles as well.
   i. Someone with good insight on PFAS may be a good current article (pros and cons etc.)

Best regards,

Ryan Hennessy

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**Save the Date!**

**Midwest Water and Wastewater Operator Expo**

**Feb. 4 and 5, 2020**

**Kalahari Resort**
Lake Mills hosts May 21 Southern WWOA meeting

Steve Wilke, the City Manager for Lake Mills, welcomed everyone and talked about Lake Mills and what it has to offer. Currently there are 17 ongoing projects in the city of Lake Mills. The city also has great places around town for food and is now focusing on tourism with the lake.

The first speaker was Michael Atkins from Westech. Westech is an employee owned company based out of Utah with locations all over the country. Michael discussed the importance of head works equipment for the rest of the plant processes and the improved cleanliness. The focus of his presentation was on more popular equipment options for small and midsized wastewater treatment facilities.

Mike Zelinsky from Flygt gave an overview of different mixers and reducing power consumption at the Nine Springs wastewater plant. He talked about why wastewater plants mix and applications where mixing is beneficial followed by the importance of mixer positioning in a tank and how it influences bulk flow during mixing. He ended the presentation with discussing adaptive mixing and how it can be utilized to save on energy expenses.

The next speaker was Trevor Ghylin from Microbe detectives. He provided a history of microbiology and how we came to understand them which lead to him discussing DNA testing to identify bacteria. This can be utilized to identify if you have BioP microbes to treat wastewater. Trevor went over case studies utilizing Milwaukee Met and other plants. The use of DNA testing offers up O&M savings with chemical and energy usage by understanding the microbes.

Ryan Hennessy from Midwest Contract Operations continued with the topic of microbiology and the benefit of understanding the microbes. Correct identification of the microbes is important otherwise you could lead plant operations down the incorrect path. He talked about observing filaments in the floc under a microscope and when it is common to see them. Ryan also talked about the differences of microscopes and which are better for microbe identification.

Southern District Business Meeting
The Southern District meeting was called to order at 11:29
Meeting minutes were approved for the winter meeting in Green Lake. The treasurer’s report was given by Marc Zimmerman and approved.

- The 2020 secretary for Southern District is Alex Krause from Fond du Lac.
- The District is still looking for host for a 2020 winter meeting host community or industry.
- Please send in submissions for operator of the year and any scholarship applications. Ripon meeting will be hosted at Green Lake Conference Center.
- There was a vote on the allocation of Southern District funds to help sponsor the WEFTEC buses that Mulcahy Shaw coordinates ($1000). Vote: passed
- A plaque was given to Lake Mills for hosting the meeting
- We are still looking for competition teams for 2019
- June Collection systems seminar in Watertown
- Northwoods collection seminar in July in Marshfield
- WWOA state organization: 3 WWOA scholarships available and $5000 NCL scholarship. Aug 2nd deadline for September clarifier, only $50 for WWOA membership.
- Looking for a Koby Crabtree award recipient as well as a recipient for the George F Bernauer and Service awards. Send in nominations.

Business meeting adjourned at 11:42am. Thank you to Mulcahy Shaw for providing refreshments and all other vendors for attending.

DNR Update
Amy Garbe is taking over Jack Saltes’s position at the DNR. You can still contact Amy if you have any compliance issues until they find a new person. The TMDL was approved and the DNR is still looking at it. Get your CMAR done by June 30. CMOM, review O6&M and procedures for notification.

Operators John and Richard from Lake Mills accept a plaque from Southern District Chair, Cody, for hosting the meeting

Stephen Dagovitz from Kaeser discussed the differences in compressors and blowers and which ones are more energy efficient. Maintenance, turndown, operating range, and manufacturers service capabilities all need to be considered when determining whether to install the equipment or not. Plants also need to look at the ability to rebuild, purchase price, and warranty. Stephen also talked about different blower packages, their components, and benefits of them.

Kevin Hopkins provided an overview of the Lake Mills WWTP upset during winter and spring of 2014. The plant experienced poor settling of sludge and foaming on the oxidation ditches. First they reviewed the operations and lab data. Then they added bio augmentation products, increased alum, performed ATP testing, broke up frozen biomass in oxidation ditches, increased cleaning of chlorine contact tank, distributed fliers, drained and cleaned the oxidation ditches, and installed continuous pH monitoring. They also investigated the industrial and commercial dischargers. 25 facilities were investigated and staff interviewed. The focus was on 3 locations, and they issued or reissued discharge permits. Some facilities were also required to install discharge monitoring and reporting programs. Plant has since stabilized with fewer plant upsets than previously.

June application due for permit reissuance at the end of the year.

Stephen Dagovitz from Kaeser talks about energy efficient blowers and compressors

Kevin Hopkins giving a presentation on the Lake Mills wastewater plant upset

The meeting concluded with a tour of the Lake Mills WWTP at 308 N CP Avenue, Lake Mills 53551.
NEW Water, Green Bay hosts May 23 Lake Michigan meeting

The May 23rd Lake Michigan District meeting at the NEW Water WWTP was another great meeting with over 65 operators, along with 7 equipment and process vendors. A special thanks to Mulcahy Shaw Water for sponsoring the treats during the breaks.

The first presentation of the day was given by Sarah Bartlett of NEW Water, who spoke on the Ambient Monitoring Program. Sarah started off by explaining the regional water quality issues like PCBs, excess nutrients, sediment runoff, dead zones, and harmful algal blooms. Sarah then went on to describe the Aquatic Monitoring Program, including the use of water quality monitoring stations. Next, Sarah gave an overview of the collaborative research regarding Cyanobacteria. Lastly, Sarah explained how sea prisms are used as a means to measure and monitor Cyanobacteria and reviewed graphs of the recently gathered data.

Next on the agenda was Brian Helminger from the Heart of the Valley (HOV) WWTF. Brian's presentation was titled Water Quality Trading at Heart of the Valley Metropolitan Sewerage District. Brian began the presentation by giving an overview of the HOV WWTF and member communities that discharge to facility. Brian then went on to explain HOV's new draft permit and TMDL implications for phosphorus and total suspended solids. After that, Brian walked through the three TSS treatment alternatives and the associated costs of each alternative. Brian discussed how Outagamie County and the Fox Wolf Watershed Alliance approached HOVMSD with the idea to construct...
Brian Helminger finished his presentation by discussing the pros and cons of water quality trading.

Holly Blazer called the WWOA-LMD business meeting to order. Last quarter’s minutes and treasurer’s report were approved.

The next item on the agenda was the WDNR update by Roy Van Gheem. First off, for the DNR update, scores from the May 1st Operator Certification exams are in the process of being sent out, and the scores should be received Memorial Day.

The second item was that applications for the August 7th Operator Certification exams should be available 4-5 weeks prior to the exam, but the deadline to register is July 5th.

The third item is that there have been recent staffing changes within the DNR. Nicole Krueger, who was the wastewater engineer for Shawano, Oconto, and Marinette Counties, is moving to a new position in the DNR at the Milwaukee office. In addition, Mallory Palmer, who was the Statewide Operator Certification Coordinator, has left the DNR to pursue another opportunity.

The fourth item is that the DNR is currently reviewing and addressing the comments received and will be submitting the TMDL to the EPA for approval in the next few months. The fifth DNR update item was a reminder that its CMAR time again and the due date to submit is June 30th.

Following the DNR update, Josh Voigt gave the WWOA Board of Director’s update.

The third presentation of the day was by Erin Houghton of NEW Water. Erin’s presentation was titled Adaptive Management from Pilot to Permit. Erin showed a graph that summarized the environmental degradation and recovery of the Lower Fox River (LFR) over time. Erin then went into describing the sources of phosphorus and sediment that makes it way to the LFR Basin. Next, Erin explained the how the amount of land used for growing crops and the types of crops changed over time. After that, Erin gave an over view of the Silver Creek Pilot Project and the ins and outs of the different best management practices. Erin ended her presentation by explaining the watershed goals for 2019 and next steps for the full scale watershed program.

The last presentation of the day was by Bruce Bartel and Jake Becken of NEW Water. Bruce and Jake’s presentation was about the Resource Recovery & Electrical Energy (R2E2) project. Bruce started off by talking about how NEW Water is made up of two separate wastewater treatment faculties, which treats a combined average flow of 38 million gallons per day from a 285 square mile service area, consisting of 15 municipalities. Jake then starting talking about how a solids handling upgrade was needed, due to aging infrastructure, environment regulations, and increased capacity needs.

Jake explained how the most cost-effective solution was to pump the solids from the De Pere facility to the Green Bay facility and just upgrade the solids treatment process at the Green Bay facility. Jake then discussed how the equipment and systems were upgraded/added with the R2E2 project. Next, Jake talked about the operational and project challenges encountered during construction. Lastly, Jake finished the presentation by detailing the benefits of the R2E2 project and the recent success of biogas production.

A guided plant tour of the R2E2 project followed Bruce and Jake’s presentation.

The next meeting date is August 15th, 2019 at the Marinette WWTP. Thanks to the NEW Water staff for hosting the meeting.

Minutes submitted by Josh Steffeck, Lake Michigan District Secretary/Treasurer
2019 WWOA Board of Directors nominations
Submit your nominations today!

WWOA is looking for YOU!

Have you been thinking about becoming more involved in the WWOA and not sure how to go about it?

Nominations are now being taken for the WWOA Board of Directors. Fill out the Board of Directors Nomination form and join us in working with an outstanding group of people and a great Association. The form is also available on the WWOA website at: https://www.wwoa.org/organization/directors-and-chairs/.

**WWOA Nomination Form**

Positions elected at the WWOA Annual Conference: Vice President, Director Positions (2-year terms for Director Position)

Complete the following form and submit it along with a photo as soon as possible to WWOA headquarters via mail or email at the address provided below. If more room is needed, please add additional sheets as needed.

Name: _______________________________________Home address: __________________________________________

Occupation: ____________________________________Employer: _____________________________________________

Education: _________________________________Organizational Experience: _______________________________

WWOA Affiliation: ______________________________Date Joined: _______________

Offices Held & When: ________________________________________________________________________________

Committees Served & When: ____________________________________________________________________________

Regional Affiliation: ___________________________________________

Regional Positions Served: ______________________________________________________________________________

What do you see as the future of the WWOA? ________________

__________________________________________________

How do you feel this could be accomplished? ________________

__________________________________________________

Other qualifications for WWOA office: __________________________________________________________________

__________________________________________________

I wish to place my name into nomination for the office of: __________________________________________________________________

__________________________________________________

Other comments: __________________________________________________________________

__________________________________________________

Committees you are interested in to serve on:

- Promotions
- Membership/Director
- Scholarship
- Government Affairs
- Publicity
- Permanent Arrangements
- Awards
- Regional Coordinator
- Clarifier
- Operator Training
- Library
- Operator Competition

Mail to: Jeff Bratz, Past President and Nominations Chair

WWOA, 7044 S 13th Street, Oak Creek WI 53154

wrcsd@tds.net

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WWOA PROPOSED MISSION/ALIGNMENT VISION

Vision:
Elevating and Advancing Water Professionals

Mission:
Fostering an environment that promotes the teaching and sharing of knowledge within the water industry.

How we do this:
The fact that we have an organization divided into six regions in our state that water professional can join for a very nominal membership fee.
Each region has multiple meetings each year in different locations.
WWOA offers many teaching and training events each year.

Core Values:
Provide education, innovation, collaboration, promotion, and connection within the water industry.

How we do this:
Training events sponsored by WWOA, colleges and regulatory agencies.
WWOA website
The “Clarifier” publication
Annual awards for members
Partnership with Central States Water Environment Association(CSWEA)

Strategic Priorities

Core Goal – Pillar | As Measured by
---|---
Service | Providing our members with the proper resources and training
Professionalism | Maintaining the integrity of the water profession and to fulfill the needs of our members
Collaborate | Leveraging the collective knowledge and experience of the membership while helping to advance the water industry
Connect | Bringing people together in the water industry
Passion | Believing in what we do to protect public health and to promote continuous improvement in the water industry

Guiding Principle/Objective
To ensure that the WWOA organization is always in alignment and leads the profession it serves.

How we do this:
The WWOA is overseen by a Board of Directors elected by members
WWOA is recognized as a “leader” in our industry

We need your input on our “Proposed” Mission/Alignment Vision. We would like to finalized this by the business meeting at this year's conference in October. Please submit your input/comments to me at: j.simpson@craneengineering.net and also Caley Mutrie our Association Manager, Caley Mutrie, c.mutrie@wwoa.org.

Sincerely, Jeff “Juice” Simpson
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