Buckeye Bulletin

Ohio Water Environment Association | Volume 85:1 | Issue 1 2012

City of Xenia - Little Miami River Restoration Project
page 24

2012 Operations Challenge
April 17 - Allen County
Page 18

2012 Conference Preview
June 19 - 21 in Aurora, Ohio
pages 29-40

Ohio Water Environment Association

Preserving & Enhancing Ohio's Water Environment

www.ohiowea.org

Government Affairs Workshop
March 1, 2012
The Conference Center at NorthPointe
Register at *www.ohiowea.org*
Earn up to 6 Contact Hours - page 16

Village of Ohio City WWTP
page 46

For further information on submitting articles or advertising, please contact our organization at:

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Contact Hour Information: OWEA training is submitted for contact hour approval. Free Webinars are not submitted for contact hour approval at this time.

Check out OWEA's website *ohiowea.org* for a complete listing of OWEA approved training.

Article Deadlines: 1st day of January, April, July, and October

Publication Dates: Spring, Summer, Fall, and Winter

Photo Requirements: Please contact the OWEA office regarding photo requirements for covers and articles.

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Inside this Issue

FEATURES

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Individual subscriptions included with association membership.

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Get Involved

Join a Committee Today

The Ohio Water Environment Association has 25+ committees with focus on various aspects of the water quality field and association operations.

OWEA needs your skill, experience, and energy. Contact OWEA at ***info@ohiowea.org*** or the chair of a committee that interests you for more information.

OWEA ASSOCIATION NEWS

WEFMAX Meetings

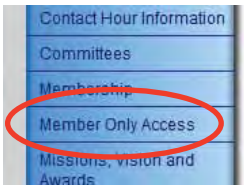
WEFMAX means WEF Member Association (MA) Exchange. WEFMAX is a WEF annual program offering Member Association leaders an opportunity to attend one of four meetings each year that provides a forum to learn what is new from WEF and provides sessions for ongoing exchange of MA information. Your OWEA Executive Committee members and Executive Manager will be attending WEFMAX meetings in Arizona, Arkansas, Maryland, or Indiana to learn how to better serve the OWEA membership.

Winter Intern Stephanie Kellish

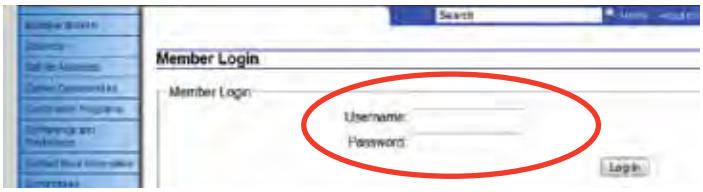
Stephanie Kellish is serving an internship at the Ohio Water Environment Association during winter quarter. Majoring in English at The Ohio State University, she hopes to go into scientific and technical writing after graduating with a bachelor's degree this spring.

Member Access and Coursework Attendance Report

OWEA/WEF members can take advantage of member only features of the association website. Go to *www.ohiowea.org* and navigate to Member Only Access



If you need your user name and password, contact OWEA



Once you are logged in, you can register for OWEA and Section events. If you log in before you register, your event registration record is automatically linked to your member record. (The OWEA office will administratively link your event registration record to your member record if you have not logged in prior to registering.)

You will also be able to access your OWEA coursework report. Contact hour information was recorded in the database for all OWEA state events in 2011. Beginning in 2012, Section and Committee meetings contact hours will be recorded in the system. Ohio EPA will accept a printout of this Coursework Report for license renewal. You will still receive a contact hour receipt at events and OWEA will retain a copy.

If you have attended OWEA events but are not a member, we can issue you a temporary user name and password to access your coursework report. Of course, we encourage you to join the Ohio Water Environment Association so you can take advantage of full member benefits, as well as become part of the Ohio association known for its concern and care of Ohio's water environment.

2012 Calendar of Events

February 2012

16 SEOWEA Section Meeting
23 NESOWEA Industrial Wastes Seminar

March 2012

1 OWEA Government Affairs Workshop
8 SWOWEA Section Meeting
13 OWEA Executive Committee Meeting
14 NWOWEA Section Meeting
29 NESOWEA Section Meeting

April 2012

3 SW LAC Meeting
5 OWEA Watershed Workshop
14 NESOWEA Certification Review
17 2012 Operations Challenge
17 OWEA Hands-On Operator Training Day
26 NESOWEA Watershed Seminar
26 SEOWEA Section Meeting

May 2012

10 OWEA Collection Systems Workshop
15 OWEA Executive Committee Meeting
16 NWOWEA Section Meeting/Golf Outing
24 NESOWEA Annual Business/Section Meeting
24 SEOWEA Section Meeting

June 2012

17 OWEA Executive Committee Meeting
18 OWEA Golf Outing
19-21 2012 OWEA Annual Conference

July 2012

19 SW LAC Meeting

August 2012

3 NWOWEA Section Meeting

September 2012

October 2012

1-3 WEFTEC in New Orleans
24-25 OWEA Plant Operations/Laboratory Analysts Workshop

Please send all calendar updates to *info@ohiowea.org*. Your event will be noted in the Buckeye Bulletin and on OWEA's online calendar at *www.ohiowea.org.*

President's Message

Douglas Clark
OWEA President

As the holidays are behind us and the New Year begins, it is time to reflect on the past and see how we can improve our future. I feel it is important in this message to review and reflect on how far we have come, and yet, how far we need to go to continue to make OWEA become "the place to go" for information, training, and a total resource for the wastewater industry in Ohio.

OWEA has always provided quality training in the past, from the section level to the state level and everything in between. That, with your help, will continue be the standard, and as we all know standards are meant to be improved upon. The venue in the past (state sponsored training), while adequate, was just that - adequate. Last year OWEA selected a new venue at the Conference Center at NorthPointe and we have received overwhelmingly positive comments on this change. The Executive Committee has heard this loud and clear and this is now the new benchmark for venues.

While OWEA has tracked contact hours in the past and done a pretty good job of it, we all know that it was an arduous task at best. With that, OWEA invested in a contact hour tracking mechanism that allows you, our most valuable resource, easier access to all of your information on training events you have attended and a "click and print" report for license renewal. This contact hour tracking system rolled out last year only for state organized training in an effort to ensure ease of use and quality of tracking. In January 2012, the contact hour tracking systems will be utilized for OWEA training at any level; again this happened because we heard from you.

I cite just two examples (there are many) of things we have done fairly well, and yet we continue to improve upon. An area where OWEA has not done well is outreach to other organizations, regulators, and legislatures.

We, as an organization, have been a sleeping giant for too long. We are an association of nearly 2,000 members whose purpose is to protect our waters, from the Great Lakes to the Gulf of Mexico. We are a group who represents every facet of our industry, from initial design to final discharge and everything in-between, that is utilized to ensure it is of the highest quality. OWEA, by default, represents every NPDES holder and citizen in the State of Ohio. We have been slow to reach out to other organizations and agencies to become part of the solution for a holistic approach to affordable water quality and the regulations needed to ensure the safety of our water for both wastewater and drinking water. As such, we are making a conscious effort to change that.

A memorandum of understanding has been signed by OWEA to hold a joint conference with the Ohio Section of the American Water Works Association in 2014. Let's face it; drinking water and wastewater used to be miles apart on regulations and technology. Every day we grow closer to each other, and it makes sense both economically and intellectually, to have a conference where we can keep up-to-date on new technology and training dealing with water.

Since June 2009, OWEA has had a Memorandum of Understanding (MOU) with the USEPA National Risk Management Research Laboratory in Cincinnati Ohio. This MOU was entered into for the sole purpose of exchanging technical information related to our joint research needs and findings in wastewater and storm water. This is good, but we need to go further and reach out to our state and local regulators and governing bodies to be a part of the regulatory process to ensure both job growth and water quality.

On December 19, 2011 OWEA was asked to participate in an Ohio EPA workgroup for Point Source/Urban. This too is good, and OWEA did what we do best; we asked you, our most valuable resource to help out. By December 30, 2011 (during prime holiday time off) 75% of our participants were ready and willing!

I have always found it interesting that during section and state meetings that regulators and the regulated sit across from each other and hold good conversations, yet as agencies and organizations we rarely, if ever, communicate with each other. Why is that? Aren't we still the same people with the same goals? We are slowly trying to change that mentality. On December 2, 2011, as President of OWEA, I contacted Governor Kasich's office to request the Directors (or their representative) of the Ohio Environmental Protection Agency, the Ohio Department of Natural Resources, the Ohio Department of Health, and the Ohio Department of Agriculture meet with the OWEA Executive Officers. My vision of this introductory meeting is to allow all of us a chance to meet each other, get a sense of everyone's internal visions/goals and hold an informal roundtable discussion on how we may possibly help each other achieve those goals. It would be my hope that this may be a gateway to an annual/semi-annual meeting of this type. There currently are no specific issues other than agencies and organizations getting to know each other and exploring ways to collaboratively find solutions to water quality issues in Ohio. I am very pleased to announce they have accepted our invitation and we are scheduling a date and time.

Yes, this may appear to be a small step, but we all know you need to crawl, and then walk, before you can run. All of this is being done to make OWEA a stronger, more relevant organization, which allows us to provide more resources to not only our members but to our communities as well. We have crawled quite well and are pretty good at walking; we need you to help us learn to run!

Doug Clark, OWEA President
douglas.clark@bgohio.org
WPC Superintendant, City of Bowling Green

TO FRACK OR NOT TO FRACK?

by Dale E. Kocarek, P.E., BCEE, OWEA Past President

Friends and readers alike, know that I choose my titles and topic sentences with care. I feel that the title and/or topic sentence is where a reader's interest is won or lost. I learned the value of a well chosen title or topic sentence from the great nineteenth century British author Charles Dickens. Who can forget the opening lines of ***A Christmas Carol*** from December 1843 that begins . . .

"Marley was dead: There is no doubt whatever about that. The register of his burial was signed by the clergyman, the clerk, the undertaker, and the chief mourner. Scrooge signed it: and Scrooge's name was good upon change, for anything he chose to put his hand to. Old Marley was as dead as a door-nail."

A Lesson from Shakespeare

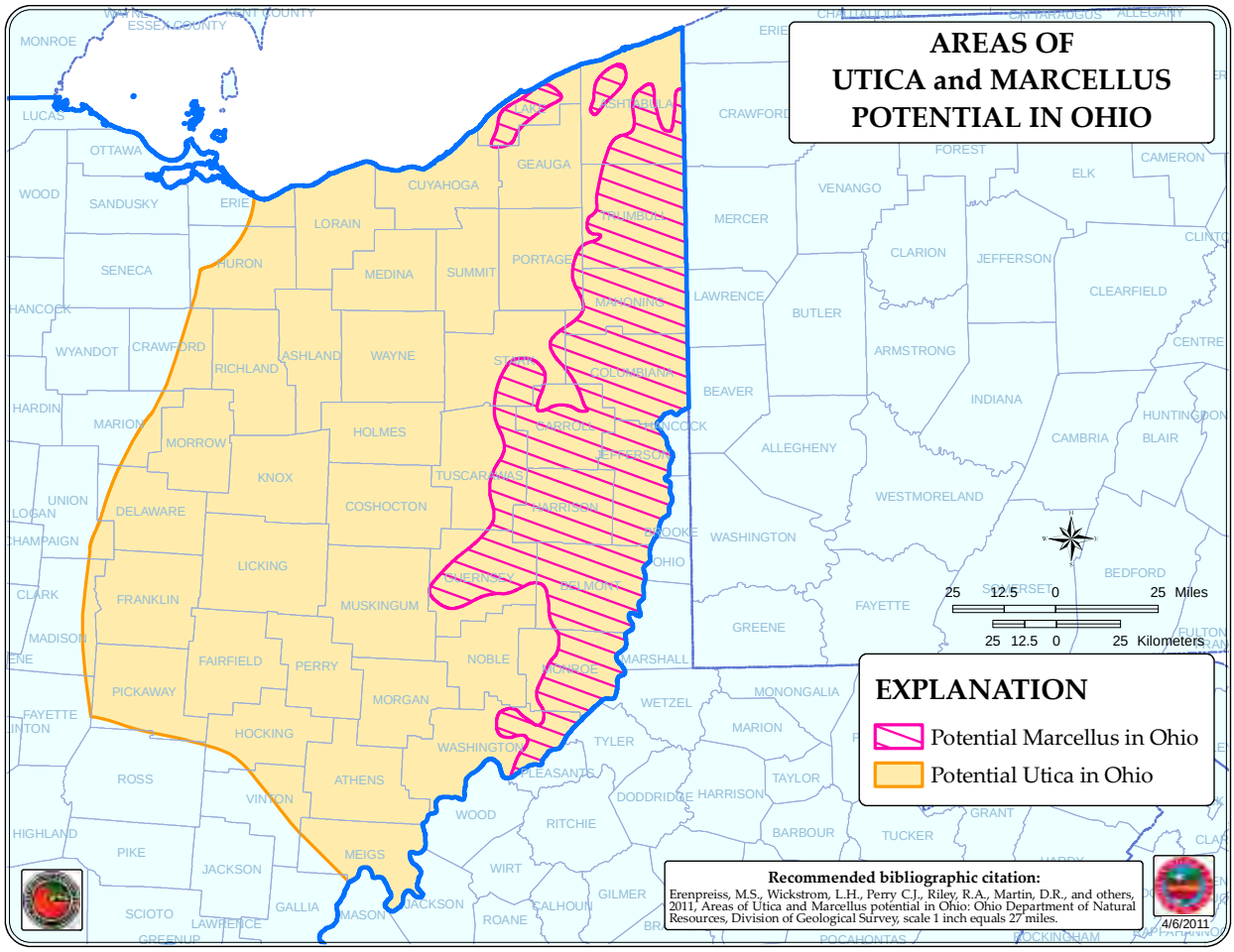
However, instead of Dickens, for this particular column, I am inspired by another English author and playwright, William Shakespeare, and in particular his longest and most popular play *Hamlet*. Throughout my life I have gained an appreciation for the English Bard in his ability to understand human nature and teach life lessons better than any author, living or dead, with the exception of the Holy Bible. Please note that I do not reference Shakespeare's *Hamlet* by accident. What is appealing is underlying themes of regret and agony over actions taken, and if those actions were worth it in the end.

What is Fracking?

I cannot recall any subject in recent history that has drawn more controversy than the discussion on fracking. Rarely before has our industry encountered something as potentially transformative to the fabric of American society as the potential production of natural gas from Ohio, Pennsylvania, New York, and West Virginia by withdrawing natural gas from deep shale layers from the Utica (Ohio), and Marcellus (other states) formations. But, of course, with anything this promising are associated negatives.

From Wikipedia, the free encyclopedia, hydraulic fracturing - or fracking - *"is the propagation of fractures in a rock layer caused by the presence of a pressurized fluid."* The purpose of the process is to extract natural gas from deep shale formations; the most prominent in Ohio is the Utica formation.

If one reflects on possible benefits from the extraction of natural gas from deep shale formations, these include a number of much needed benefits including job creation and rebuilding tax bases of communities punished by the great recession. On a national level, domestic production of natural gas helps the United States take the direction to reduce reliance on oil from the Middle East for the first time since President Nixon's declaration for energy independence in 1973. Given that national energy consumption and unit cost continue to rise, the "energy battle" is not being won.



Unfortunately, technologies such as wind power and solar energy are not sufficient to fill this growing chasm of energy demand versus supply, and electric automobiles are two decades away from drawing significant market share from the gasoline engine.

However, I would be remiss if I did not point out that the environmental community and others have voiced concerns on possible groundwater contamination due to chemicals used in the hydraulic fracturing process, and the possible adverse impact of total dissolved solids from brine waters on receiving streams. Thankfully, USEPA has taken up a study on ground water related pollution, and the City of Warren (Ohio) has been studying the impact of total dissolved solids on surface streams in Northeast Ohio. This will be discussed in the upcoming Government Affairs Workshop on March 1, 2012. In addition, OWEA has offered to assist in this study by engaging a group of subject matter experts. Another question that has developed over the last few weeks, prompting the Ohio Department of Natural Resources to take notice, is if the discharge practices behind brine disposal may have triggered earthquakes in Northeast Ohio. This developed into a national story over the Christmas holiday season over a period of just a few days.

There is another issue related to this discussion pertaining to the disposal of brine wastewater, which could also emerge as having far reaching consequences to our industry. This pertains to proposed reductions to the total dissolved solids (TDS) in streams from 1,500 mg/l to 700-800 mg/l. Specific concentration limits are under evaluation by the Ohio EPA, including identification of specific ions including bromide and chloride. If the TDS limits are reduced for public owned treatment works (POTWs), this will be a "game changer" for some communities, which are home to food and beverage industries that use reverse osmosis process as part of its manufacturing. Of specific concern will be impacts to communities that already discharge background concentrations of 400-700 mg/l to their receiving streams from public owned treatment works (POTWs). Lowering the TDS limit further below 1,500 mg/l may leave little headroom in some NPDES permits to accommodate specialized industries.

Disclaimer

Before I go any further, it is not my intent to use this forum to debate the pros and cons of hydraulic fracturing, nor is it the position of OWEA to take "sides" in this discussion for or against. You can read about this topic in newspapers and from true experts in the oil and gas industry and make up your own minds. But, OWEA wishes to put forth a science based, objective story on this issue, and on this, there is much to say.

Moving Forward with Optimism

While I recognize there are many challenges with the practice of hydraulic fracking, I believe that with great potential comes great invention. While we may not have all answers to vexing questions at the present time, I am confident that with American ingenuity they will come. Think back to the year 1870, at the beginning of the age of *positive humanism,* and how far we have advanced since that time. The span between 1870 and 1920 was a period of unprecedented growth in America and around the world. A few examples from this period include developments in the following areas:

- Advances in public sanitation through Pasteur and Lister: 1880-1900
- The development of electric light and power distribution, Edison and Westinghouse: 1870-1900
- Nuclear power, the Curies, Plank, Einstein, and many others: 1890-1910
- Biological Wastewater Treatment, Ardern and Locket: 1914

While our society is in another, and arguably more complex era, several things remain the same. Each of the scientific evolutions noted above was preceded by sound research, and success was built on prior failure. Few will disagree that through patience and adherence to a sound based scientific process, society in America and the world has benefited from advances during this period.

The Scientific Method

According to Frank Wolfs of the University of Rochester, the scientific method has four principal steps:

1. Observation and description of a phenomenon or group of phenomena.
2. Formulation of a hypothesis to explain the phenomena.
3. Use of the hypothesis to predict the existence of other phenomena, or to predict quantitatively the results of new observations.
4. Performance of experimental tests of the predictions by several independent experimenters and properly performed experiments.

Unfortunately many of today's challenges are attributable to an overabundance of naysayers and a lack of rational problem solvers. Worse yet, many want instant results and answers. But what is most disturbing is that so many are willing to put a spin on a story at the expense of the scientific process.

As part of moving forward, I advocate a process that evaluates new and promising technologies as part of a plan of environmental sustainability, taking into account the risks, rewards, and devising appropriate measures for environmental protection for water resources against other socioeconomic needs including job creating, tax revenue stability, and developing a sustainable source of energy in conjunction with a flexible national energy program. In this manner, development will be built on a three legged stool of the "triple bottom line."

Deriving a lesson from my past as a research assistant at the Ohio State University, I present the following as a philosophical approach for issues such as fracking to be evaluated:

1. Understand that we will always be on a learning curve. As a modern society we must have the courage to acknowledge what we know, acknowledge what we don't know, and most importantly, know the difference!
2. Embrace the scientific method as the foundation of sound policy making. Such an approach assigns risks and rewards, where appropriate safeguards can be enacted in accordance with the "triple bottom line."
3. Understand that it takes time to work through the scientific process, so it is important to be patient. Many of the scientific inventions of the 19th Century came to fruition in several decades. People in the past understood this.

Above all else, it is important to not rush to summary judgment.

4. Confront key environmental concerns as critical issues to be dealt with in a sound and rational way. They should not be understated, but not overblown either. By taking this approach, we can have confidence that we will eventually end up with the correct answers and a true solution.

An Opportunity for OWEA

Over the past few years, and most recently as President, I have felt that OWEA has missed opportunities to fully engage in important discussions of the day, leaving critical debate to other worthy organizations. This is a shame, because through our nearly 1,800 members, we have an immense amount of talent and knowledge that can be used to help address the challenges of our generation. In the future, I want to see OWEA take a more active role in key discussions. I have seen how WEF engages on Capitol Hill, and I am convinced that we can and we must do better!

The King's Ghost

In conclusion, I believe that our industry and even our country are at a unique crossroads. The practice of fracking as a means to provide untold energy reserves holds many benefits and challenges to overcome. We must not be afraid to apply the correct blend of patience and adherence to the scientific method and the foundation for prudent decision making. The discovery and mining of natural gas resources is too important to ignore, and too important to give up on. All new technologies come with challenges, and how we address these challenges will be how history will judge us in the end. It is only in this manner can we encounter the Ghost of Hamlet's father and explain ourselves without feelings of regret.

Dale E. Kocarek, PE, BCEE

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OWEA Past President
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Career Opportunities

The Career Opportunities page is the most visited page on OWEA's website.

- **No charge for job seekers.**
- **No charge to post a position** if you or a fellow employee are an OWEA/WEF member.
- **$115 for a 30 day posting** if not a member.
- **$115 for a Professional Membership**
  We encourage you to join OWEA and reap all the benefits of membership. Same price as a posting!

Visit *www.ohiowea.org* and select Career Opportunities or contact OWEA *(614.488.5800 or info@ohiowea.org).*

OWEA's 2012 Specialty Workshop Schedule

Government Affairs Workshop
March 1, 2012

Watershed Workshop
April 5, 2012

Collection Systems Workshop
May 10, 2012

Plant Operations/Laboratory Analysts Workshop
October 24-25, 2012

Biosolids Workshop
December 6, 2012

Visit ***ohiowea.org*** for more information and registration

NESOWEA

Ed Haller, President

The Northeast Section concluded 2011 with a Section Meeting hosted by the Alliance WWTP on November 10. There were 96 in attendance. Tours of the Alliance WWTP and the Alliance Water Treatment were provided for a total of 1.5 contact hours. Attendees went to the Alliance Senior Center for a lunch including roast beef and stuffed shells. Technical sessions following lunch provided attendees an additional 2.5 contact hours. The technical sessions included the History of the Alliance WWTP, A Feasibility Study for Combined Sludge Dewatering, Watershed Contamination Solutions, UV Oxidation, and Security in Wastewater. I would like to thank Joe Amabelli and his staff for hosting this event and allowing us to tour the Alliance facilities.

In 2012, the NESOWEA Scholarship Program is continuing to see improvement. Our goal is to encourage greater understanding and appreciation for the excellent environmental work being done. This year, applicants will be required to research and write a paper on an environmentally related topic. Complete details are provided at our website *www.nesowea.org*. The scope of the scholarship program is being expanded this year to include trade school tuition. Also, as some of our membership is going back to school, members may also apply for the scholarship. In 2011 the NESOWEA was able to provide a total of $3500 in scholarship and honorable mention awards to the children of five NESOWEA members. This is only possible because of the generous support of our section members through 50/50 raffle ticket sales and our BioMass-ter's Golf Fundraiser.

Upcoming NESOWEA Section Events include:

2/23	Industrial Waste Seminar	Richfield Days Inn
3/29	March Section Meeting	Geneva
4/26	Watershed Seminar	Furnace Run Park, Richfield
5/24	May Section Meeting	Orrville

On behalf of the NESOWEA Executive Committee I invite you to join us at any or all of our upcoming section events. Be sure to let any one of us know what we can do to better meet the needs of our membership.

Ed Haller, *hallere@neorsd.org*

Lance Willard, Vice President
Mary Ann Driscoll, Secretary
Art Kimpton, Treasurer
Denise Seman, 3rd Yr EC
Tom Voldrich, 2nd Yr EC
Paul Solanics, 1st Yr EC
Ted Baker, State Delegate
Mike Welke, Past President

(top two) NESOWEA Tour of Alliance WWTP

(bottom) Technical session at NESOWEA November Alliance Meeting

Next NESOWEA Section Meeting - March 29, 2012 in Geneva

BY THE NUMBERS: OWEA Sections - Number of OWEA/WEF Members per Section/Counties in Section			
Northwest - 269 Members	**Northeast - 614 Members**	**Southwest - 514 Members**	**Southeast - 403 Members**
Allen, Auglaize, Crawford, Defiance, Erie, Fulton, Hancock, Hardin, Henry, Huron, Lucas, Marion, Mercer, Ottowa, Paulding, Putnam, Sandusky, Seneca, Van Wert, Williams, Wood, and Wyandot Counties.	Ashland, Ashtabula, Columbiana, Cuyahoga, Geauga, Holmes, Knox, Lake, Lorain, Mahoning, Medina, Morrow, Portage, Richland, Stark, Summit, Trumbull, and Wayne Counties.	Adams, Brown, Butler, Champaign, Clark, Clermont, Clinton, Darke, Fayette, Greene, Hamilton, Highland, Logan, Madison, Miami, Montgomery, Preble, Shelby, Union, and Warren Counties.	Athens, Belmont, Carroll, Coshocton, Delaware, Fairfield, Franklin, Galia, Guernsey, Harrison, Hocking, Jackson, Jefferson, Lawrence, Licking, Meigs, Monroe, Morgan, Muskingum, Noble, Perry, Pickaway, Pike, Ross, Sciota, Tuscarawas, Vinton, and Washington Counties.

NWOWEA

Tom Horn, President

NWOWEA held its October Section Meeting in Hicksville, Ohio on October 26, 2011. The meeting was attended by a total of 74 people including 59 members. A special thanks to Mayor Larry Haver, Village Administrator Kent Miller, and WWTP Superintendent Ron Daniels for hosting the event and providing plant tours. The Village of Hicksville hosted the meeting at their Village Park Hall, which was a great venue for the technical sessions and business meeting.

During the meeting Section Award Winners were recognized along with our Past President Kim Riddell.

The following Award Winners were recognized:

- Jeff Bassitt, Allen County Sanitary – Max Phillips Award
- Earl Bargerstock, City of Fremont – Kathleen Cook Award
- Andy Patterson, Village of North Baltimore – Moe Swaisgood Award

A total of 4 contact hours was available for attendees between the Hicksville WWTP Plant Tour and technical sessions. I would like to thank our presenters for our October meeting. The time and efforts of Lynette Hablitzel (OEPA NW District), Tom Harcarik (OEPA 401 Permits), Isaiah LaRue (Smith and Loveless), Amy Staley (Alloway), and Neil Pry (IFM) are greatly appreciated and made our Fall Meeting a success.

Future Section Executive Committee and Section Meetings are planned. Our March Meeting is scheduled for March 14th in Swanton and will be the first meeting where the NW Section utilizes the badge and scanner system for attendee tracking. Our Section Golf Outing / Meeting is scheduled for May 16th in Pemberville.

Be sure to contact any of the NW Executive Committee with any questions or interests you may have in NWOWEA!

Tom Horn, *thorn@ifmenviro.com*

(top) Earl Bargerstock, 2011 Kathleen Cook Award Winner
(middle) Jeff Bassitt, 2011 Max Phillips Award Winner
(bottom) Kim Riddell received NW Past President plaque

Next NWOWEA Section Meeting - March 14, 2012 in Swanton

SEOWEA

Bryan Curry, President

The Southeast Section is already planning for all the 2012 section meetings. February will be our Industrial Meeting at the Owens Corning Technical Center in Granville and the main plant in Newark. The April meeting will focus on Operations/Collections at the Jackson Pike WWTP in Columbus. Our annual awards meeting will be held in May at the Lancaster WWTP with Biosolids being the main topic.

Treasurer Fred Smith has already started recruiting individuals for Science Fair judging that takes place each year in March at the District level. Our section is responsible for six districts, generally with two judges for each district. I would like to thank all those judging this year and all that have volunteered in the past. If you have never been involved with judging science fair entries, it is a great experience and you may just learn a thing or two.

I would like to take the opportunity to thank the OWEA state office for their efforts in contact hour tracking and Judi Henrich for the web page. The online registration and payment for meetings has significantly helped with accounting and meeting preparations.

I hope to see all those in the Southeast Section at one of our section meetings and the OWEA annual conference. May we all have a good year and lots of success.

Bryan Curry, *bcurry@newarkohio.net*

Next SEOWEA Section Meeting - February 16, 2012 in Newark

SWOWEA

Dan Martin, President

The Southwest Section is excited to announce two member appreciation benefits coming this spring.

- The first is half-price admission to our March 8, 2012 section meeting in Yellow Springs for WEF members. Our extremely affordable $20 rate will only be $10 for WEF members who pre-register through *www.ohiowea.org*.
- We already waive section meeting fees for any new member with a paid application. Our second benefit builds on this by waiving the May, 2012 section meeting fees to any sponsor of a new member. The May meeting will be at MSDGC Sycamore Creek. We are further extending this benefit to anyone who sponsored a new member throughout 2011 up until the meeting date in May, 2012. There is a position on WEF's application form for new members to list a sponsor's name and membership number. Your new member does not need to attend the event.

Please take advantage of these valuable incentives and take an opportunity to pass on the benefits that WEF membership offers!

The 2012 U.S. presidential campaign process is in full swing. Likewise, our focus is turning towards the election of a new SWOWEA Executive Committee this spring. Please send the names of any worthy nominees to our Nominations Committee chair: Jeff Olsen, *jeff.olsen@hdrinc.com*.

The Southwest Plant Operations Committee continues to shine. 73 operators attended Operator Education Day at the offices of Montgomery County Water Services. Our attendees again beat the state passing rates in every category.

(SW Ed Day Attendees / State):

- Wastewater Class I 56% / 38%
- Wastewater Class II & III 47% / 44%,
- Collections I & II 75% / 61%.

If you're preparing for an operator certification exam, then don't go it alone! We can help and at $10 (which covers the cost of a pizza lunch) you can't afford to pass this up. Additionally, the Plant Operations Committee organized our November 17th Section Meeting which is our Plant Operations Seminar. 132 attendees were treated to technical sessions, exhibits, and a great meal. Hats off to Dave Wilson and his outstanding committee.

The Southwest Industrial Waste Committee welcomed 115 attendees at the Industrial Waste Seminar at the Oasis in Cincinnati on January 19th. Attendees had the opportunity to see exhibits, technical sessions, and enjoy a great meal. We also honored an industry in Southwest Ohio with the Karl G. Voelkel Industry Award for outstanding contributions in waste minimization, pollution prevention, environmental compliance, and environmental stewardship. Watch for details in the next Buckeye Bulletin.

As mentioned above, our March 8th section meeting will be in Yellow Springs. Special thanks to the Lab Analyst Committee for organizing the technical sessions for this meeting.

(top) Jeff Olsen receives the Past President's plaque from Dan Martin
(middle) November 2011 Plant Operations & Section Meeting
(bottom) SWOWEA Past Presidents at December 2011 Section Luncheon

I'd like to close with a brief highlight on WEF's new initiative: Water's Worth It. My President's message in the Southwest Section "Wave" newsletter this past fall accentuated the importance of our profession and the unsung nature of what we do. Please consider visiting WEF's website for this initiative: *http://www.wef.org/waterworthit/*. WEF wants our input on how to craft a message to the public that will help them see the importance of what we do. If we don't broadcast our message clearly then other interest groups may use that vacuum to paint a different picture for us.

Dan Martin, SWOWEA, *dmartin@raconsultantsllc.com*

Next SWOWEA Section Meeting - March 8, 2012 in Yellow Springs

YOUNG PROFESSIONALS COMMITTEE

by Kris Ruggles and Nick Bucurel, Co-Chairs

Young Professional Award

The Young Professionals (YP) Committee is pleased to announce the 2012 Young Professionals Award winners:

- Northeast Section: Vito Cimino and Michael Ritoss, (MWH) *"Easterly Tunnel Dewatering Pump Station"*
- Southwest Section: Mark Strahota and William Martin, (Hazen and Sawyer), *"Nitrate Analyzers, Supplemental Carbon Addition, and Treatment Plant Modeling Improves Nitrogen Removal at an Enhanced BNR Facility"*
- Northwest Section: Josh Wehring (City of Fremont), *"A Young Professional's Wastewater Career"*

YP Award winners receive free admission to the OWEA Annual Conference in June and at least one night free stay at The Bertram Inn and Conference Center in Aurora during the Conference. Congratulations to the winners, and thanks to all who participated!

Watershed 101 Workshop

One of the major initiatives of the YP Committee is to conduct a Watershed 101 – Back to Basics Workshop. This workshop will provide a great opportunity for YPs to strategize and manage a technical workshop from concept to completion. The workshop is scheduled for April 5, 2012 in at the Ohio Union on the campus of The Ohio State University, will be open to the entire OWEA membership interested in watershed management topics, and will cover watersheds from many perspectives. The key topics that many have expressed interest in include impacts of changing water quality standards, challenges and municipality experiences in implementing watershed management, best management practices, green infrastructure approaches to stormwater management, and understanding funding mechanisms that support watershed management projects. Workshop announcement and registration will be sent via email in February. Please contact Anil Tangirala - Chair, OWEA Watershed Committee (*anil.tangirala@stantec.com*, 614.844.4016) or Nick Bucurel (*nick.bucurel@arcadis-us.com*, 216.912.2141) for any ideas, questions, or details.

Notable Happenings

- The Southwest YPs had a successful event on January 9th that included a site visit and presentation for a stream restoration project in Mason, Ohio. Special thanks to the City of Mason for providing a pizza lunch to all attendees!
- The Southeast Section is looking for a volunteer to lead the Young Professionals committee. If you are interested in getting your feet wet in OWEA, this is a great opportunity to meet new people from around the state, develop leadership skills, and learn more about how OWEA works. If you are interested or would like more information, contact Brandon Fox (bfox@co.fairfield.oh.us or 614.322.5200).

Contact your Section YP representative to become more involved in the Young Professionals Committee:

NW - Walter Ariss, *walter.ariss@epa.state.oh.us*
NE - Ashley Williston, *awilliston@ctconsultants.com*
SW - Kelly Kuhbander, *kelly.kuhbander@strand.com*
SW - Ian Laseke, *ian.laseke@cincinnati-oh.gov*
SE - Brandon Fox, *bfox@co.fairfield.oh.us*

Special thanks to all the committee volunteers who make the YP committee successful! As always, if you have any suggestions or questions, please contact:

Nick Bucurel
216.912.2141
nick.bucurel@arcadis-us.com

Kris Ruggles
614.835.0460
kris.ruggles@strand.com

2012 Watershed Workshop

April 5, 2012

at OSU's Ohio Union

Full Day Workshop - Registration $50

Don't Miss Out On Important News

Update Your Membership Profile

Keep OWEA informed of your current mail and email address so you receive timely communications regarding upcoming events, important news affecting water environment issues, and your copy of the Buckeye Bulletin.

Please check your member profile by logging into the member only access area at *www.ohiowea.org*, calling OWEA at 614.488.5800, or emailing *info@ohiowea.org.*

LABORATORY ANALYST COMMITTEE

by Chairs Eva Hatvani and Denise Seman

Hello everyone! Happy New Year! Hope you had a nice holiday. We are in the final stages of completing the renewals for the Voluntary Wastewater Analyst Certificates. Renewal forms can be found on the OWEA website. Please send it in as soon as possible to keep your certificate current.

The committee will start planning for their participation in the Operations Challenge Event, which will be held on April 17th in Allen County. We'd really like to see some new teams this year to challenge the existing champs. How about an all lab team?

We will also start planning for the joint Plant Operations/LAC Joint Workshop which will be held October 24th & 25th. Based on your input, we will try to accommodate recommendations made at the last meeting. You requested more information on the following topics: BOD, QA/QC, DMRQA, low level Hg, lab audits, nitrate-nitrites, hexavalent chrome, phosphorus, and ammonia. Some of these topics were just presented. If scheduling allows us to, we will try to focus on the areas that you thought needed to be addressed more in detail. If you have any other ideas or would like to be a speaker at next year's workshop, please send us an email. Please remember to use the new email address for any communication with the State Lab Committee or WW Lab Analyst Certification. The email address is *oweastatelac@yahoo.com*.

Follow Lab Munkee on Facebook and Twitter for upcoming events, and possibly some new games/ challenges as we approach the state events. (@LabMunkee)

OWEA Wastewater Analyst Exam

Exams will be given on Friday, April 27, 2012 and Friday, October 26, 2012. The application deadlines are Friday, March 16, 2012 and Friday, September 14, 2012. Please use the application form on the OWEA Website.

Congratulations to the following individuals for passing the exams given in October 2011.

Class I	Class II	Class III
Mark Colvin	*Lindsay Mosovsky*	*Achal Garg*
James Davis		
Anthony Hintze		
Jonathan Newman		
Eric Wilson		

Renewal of Certificates for 2012-2013

The current certificates were valid until December 31, 2011. There is a one-month grace period to complete the renewals. Renewals are on a two-year cycle. If you did not get one, you may not have notified us about a relocation, retirement, or other situation. Forms can be downloaded from *www.ohiowea.org*. Please email any changes of information to *oweastatelac@yahoo.com*. The cost will remain at $25.00.

NOTE: Print applications from *www.ohiowea.org*, as the mailing address has changed to the OWEA Office. Do not use any old applications.

Southwest LAC - Roger Rardain and Jim Davis

The SW LAC has the following meetings scheduled for 2012. Please contact Roger Rardain or Jim Davis for more information about the meetings.

- Thursday, February 2nd – Hosted by: TestAmerica Laboratories, 4738 Gateway Circle, Dayton, OH
- Tuesday, April 3rd – Hosted by: Montgomery County Environmental Services, 1850 Spaulding Road, Kettering, OH
- Thursday, July 19th – YSI, 1700/1725 Brannum Lane, Yellow Springs, OH
- Thursday, October 11th – City of Sidney WWTP, 420 Folkerth Avenue, Sidney, OH

To inquire about being added to our e-mail list or to get information about attending, hosting, sponsoring, or presenting at a future LAC meeting, please contact:

Roger Rardain, City of Fairborn
937.754.3075, roger.rardain@ci.fairborn.oh.us

Jim Davis, Montgomery County Water Services
937.496.7051, *davisji@mcohio.org*

Committee Members:
Lynette Hodnicki, City of Fairfield
Lori Kyle, Greene County
Linda Moubray, City of Fairfield
Ron Paulick, TestAmerica
Teresa Shinkle, Greene County
Karen Tenore, City of Dayton
Violet Fanning, TestAmerica

Northeast LAC- Kathy Richards & Beverly Hoffman

The Northeast Section ended its training events of 2011 with a session on October 21 in lovely Orrville, hosted by Ken Lott of the Orrville WWTP, and a special treat was also provided by Smith's Dairy. The meeting was well attended and the topics covered were *"Ammonia Analysis by Ion Selective Electrode"* and *"Control Charts for the Laboratory,"* each was approved for one contact hour.

Our next meeting is tentatively set for March in Streetsboro. Specific venue and topics are yet to be determined. Watch for more information at *www.ohiowea.org* or *www.nesowea.org* or ask to be added to our email list. As always, if you have suggestions or would like to volunteer your facility and/or talents, please contact either Bev Hoffman at *NESOWEALAC@gmail.com* or Kathy Richards at *KRichards@AkronOhio.gov*.

While you are visiting these websites, please consider responding to the NESOWEA LAC questionnaire. The information we compile will go a long way towards building a networking database that will enable analysts and operators to better connect with each other and share experiences and support. If you would like to be added to our NES membership directory and receive automatic email updates for training events and other news, please send your contact

LAB CERTIFICATION EXAMS

Spring exam date: Friday, April 27, 2012
Application Deadline: Friday, March 16, 2012

Fall exam date: Friday, October 26, 2012
Application Deadline: Friday, September 14, 2012

Print applications from the OWEA website as the mailing address has changed to the OWEA Office.

information to Beverly Hoffman at *NESOWEALAC@gmail.com*. All our training events are free and open to everyone, regardless of which section you may call home.

We are actively seeking venues, topics and speakers for our LAC section meetings. If you have suggestions or would like to volunteer yourself or a "special coworker," please get in touch with any of the NES committee members:

Beverly Hoffman	*nesowealac@gmail.com*
Kathy Richards	*krichards@akronohio.gov*
Dale Holmes	*daleh@mclw.com*
Lisa Feigle	*lisaf@gcdwr.org*
Amy Starkey	*ajstarkey@co.stark.oh.us*
Marie Simon	*marie@northcoastlabs.net*
Melanie Rangel	*mrangel@lakecountyohio.org*

Southeast LAC- Melodi Clark

The next meeting is tentatively scheduled for February. Speakers and topics will be announced in the near future. Please let us know if you would like to be a presenter or would like a particular topic to be presented. Check your section's newsletter or contact Melodi Clark for any future meetings.

Committee Contact Information

State Chairs
Eva Hatvani, 440.846.8220, *oweastatelac@yahoo.com*
Denise Seman, 330.742.8820, *dseman@cityofyoungstownoh.com*

Northeast Chairs
Kathy Richards, 330.928.1164, *nesowealac@gmail.com*
Beverly Hoffman, 440.446.4228, *nesowealac@gmail.com*

Northwest Chair
Kevin Hughes, 419.488.5440, *watertreatment@tiffinohio.gov*

Southwest Chairs
Roger Rardain, 937.754.3075, *roger.rardain@ci.fairborn.oh.us*
Jim Davis, 937.496.7051, *davisji@mcohio.org*

Southeast Chair
Melodi Clark, 614.645.1239, *mlclark@columbus.gov*

NE LAC - Bev thanks Ken Lott for hosting.

NE LAC - Bev thanks Rick for presenting

NE LAC attendees pay rapt attendtion to the technical sessions

Find OWEA on your favorite social network

2012 Government Affairs Workshop

Earn up to 6 Contact Hours

Register online at ***www.ohiowea.org***

7:30-8:00	**Registration, Continental Breakfast** **Visit with Exhibitors**
8:00-8:15	Welcome and Opening Remarks *- Dale Kocarek P.E., BCEE, Committee Chair* *- Doug Clark, OWEA President*
8:15-9:00	Ohio EPA Update *- Scott J. Nally, Ohio EPA Director*
9:00-9:45	Ohio EPA Division of Surface Water Update *- George Elmaraghy P.E.,* *DSW Chief Ohio EPA*
9:45-10:00	**Break in Exhibit Area**
10:00-10:45	Storm Water Issues: Legal Update *- Ted Boggs, Vorys, Sater, Seymour and Pease LLP*
10:45-11:30	2012 Nutrient Regulation Update *- Guy Jamesson P.E., BCEE,* *Malcolm Pirnie/ARCADIS*
11:30-12:45	**Lunch Buffet in Conference Dining Room** **Visit with Exhibitors**
12:45-1:30	Ohio EPA's Compliance Assurance through Enforcement Program *- Brian Cook, Ohio EPA Chief Legal Counsel*
1:30-2:15	Research on Impacts from Hydraulic Fracturing on Drinking Water Resources *- Chris Impellitteri Ph.D., Chief, Water Quality Mgmt Branch, USEPA Cincinnati, OH*
2:15-2:30	**Break in Exhibit Area**
2:30-3:15	OEPA Permitting Issues: WTP Waste vs. WWTP Limits *- Mark Stump P.E., Ohio EPA*
3:15-4:00	CSO Long Term Control Plan Revisited Based on USEPA Integrated Planning Approach *- Tom Ungar P.E., MWH* *- Gary Sheely, City of Lima* -
4:00-4:30	**Closing Remarks** *- Tim Williams, WEF GAC (invited)* *- Dale Kocarek P.E., BCEE, Committe Chair*

Exhibitor Opportunities Available

March 1, 2012

The Conference Center at NorthPointe
9243 Columbus Pike
Lewis Center, Ohio 43035
866.233.9393

Register online at ***www.ohiowea.org***
or by phone at 614.488.5800

Sponsored By Stantec

Registration Fee		
☐ OWEA/WEF Member *(or with new membership added)*	$125	
☐ Nonmember	$175	
☐ Member plus Exhibit Table *(or with new membership added)*	$300	
☐ Nonmember plus Exhibit Table	$400	
☐ Add Professional Membership	$115	
☐ Add PWO Membership	$ 66	
☐ Add Young Prof Membership	$ 61	
Total Due		

Enter OWEA/WEF #

☐ **I have read & agree to the OWEA refund policy**

Badge Name:

Company:

Address:

Email:

Phone:

Method of Payment

☐ Check #

☐ P. O. #

☐ Credit Card - you will be emailed a secure link to enter your credit card payment or you may call the OWEA office with your credit card number.

GOVERNMENT AFFAIRS COMMITTEE

by Dale E. Kocarek, PE, BCEE, Chair

On December 2nd, OWEA's Government Affairs Committee met at the OWEA office to discuss the 2012 workshop and the direction of the committee as whole in an effort to provide additional benefits to WEF/OWEA membership. The Committee reviewed and discussed presentation abstracts received for the 2012 workshop, and we believe that we will have a well-rounded program that will be of interest to our members and our larger community of utility professionals.

The 2012 workshop will be held on March 1st at the Conference at North Pointe, located at 9243 Columbus Pike (southeast corner of US 23 and SR 750) in Lewis Center, Delaware County. Headline speakers for the workshop include Ohio EPA Director Scott J. Nally, Ohio EPA Division of Surface Water Chief George Elmaraghy, and Ted Boggs, of Vorys, Sater, Seymour and Pease LLP.

2012 Government Affairs Workshop
Featured Speakers (l-r):
Scott J. Nally, Director Ohio EPA
George Elmaraghy, DSW Chief Ohio EPA
Ted Boggs, Vorys, Sater, Seymour and Pease LLP

The Committee also discussed its future direction and what additional benefit/value it could bring to the WEF/OWEA members. As a result of discussion, the Committee decided to develop a survey that will be emailed to the OWEA membership in the future asking for opinions and ideas of where the committee could improve and what direction it should take. Please look for it in the near future.

Dale E. Kocarek, PE, BCEE
614.486.4383
dale.kocarek@stantec.com

Government Affairs Committee (l-r) David Haywood, Dianne Sumego, Sheree Gossett-Johnson, Brenda VanCleave, John Owen, and Dale Koarek

Lodging for Government Affairs Workshop

The Conference Center at NorthPointe is upgrading their guest rooms and their remodeling schedule has impacted lodging for the Government Affairs Workshop. The CCNP has arranged for OWEA to receive the same rate ($109) at the new Holiday Inn Express and Suites at Polaris.

Holiday Inn Express and Suites
670 Orion Pl
Columbus, OH 43240
614.781.6100

AWARDS COMMITTEE

Mark Livengood, Chair

The Awards Committee met on January 4, 2012 to review the nominees brought forward by OWEA's Sections. These nominees have displayed excellence in their area of expertise in the water environment field. The committee reviewed all nominees and selected the recipients for this year's Ohio Water Environment Association and Water Environment Federation awards. The decisions were often difficult and the voting results close due to the many talented and hard-working individuals represented on the ballot.

Be sure to attend the 2012 Awards Breakfast on Tuesday, June 19 to learn who this year's winners will be.

OWEA AWARDS
F.D. Dean Stewart Award
L. T. Tom Hagerty Award
PWO Award
Lab Analyst Award
J. W. Ellms Award
F. H. Waring Award
Public Service Award
Collections Award
Engineering Excellence Award
Lifetime Engineering Award
W. D. Sheets Award
Facility Image Award
Larry Moon Award

WEF AWARDS
Laboratory Analyst Excellence Award
William D. Hatfield Award
Sidney Bedell Award
George W. Burke Award

Visit *http://www.ohiowea.org/awards.php* to learn more about these OWEA and WEF awards and to view a list of past winners.

Mark Livengood
livengoodm@mcohio.org

Awards Committee (front l-r) Michelle Sharp, Deb Houdeshell, Mark Livengood (back l-r) Dale Kocarek, Richard Claus, Elizabeth Wick, and Mike Frommer

Hands-On Operator Training Day

held in conjunction with
OWEA's 2012 Operations Challenge

- Earn up to 5 Contact Hours
- Network with other operations professionals
- Morning training sessions (2.5 CH)
- Afternoon hands-on practice sessions (2.5 CH)
- Includes lunch and Operations Challenge Award Ceremony
- All for just $50.00

The morning session will include 2.5 contact hours in a classroom setting and the afternoon will include up to an additional 2.5 contact hours in a hands-on setting. For those of you not ready yet to be part of a team, or you need up to 5 contact hours, come to the Hands-On Operator Training Day to watch and learn. Contact hours, good food and the opportunity to network with other operations professionals all for the low price of $50.

In between contact hours, attendees will be able to watch the Ops Challenge teams that are competing for a free trip to the national WEFTEC event in New Orleans in the fall!

For more info, contact Kim Riddell, Chairperson
kim@go-smith.com, 419.234.4507

Tuesday, April 17, 2012

Allen County
Sanitary Engineering Department
3230 N. Cole St
Lima, Ohio 45801

Thank you to Allen County providing their facility for both events!

Hands-On Operator Training Day Schedule

Morning Session - 2.5 Contact Hours

8:30-9:00	**Registration**
9:00-9:30	Laboratory Training Session
9:30-11:30	Emergency Pump Maintenance
10:00-10:30	Collection Systems Televising
10:30-10:45	Break
10:45-11:45	Small Plant Operations
11:45-12:30	**Lunch - included**

Afternoon Session - 2.5 Contact Hours

12:30-4:30	Five (5) half hour hands-on training sessions where attendees can put into practice what you learned in the morning sessions. Groups will be made up of 8-10 persons.
12:30-4:30	*In between Contact Hours you will be able to watch Operations Challenge teams compete to see which team will earn the right to represent Ohio at the national WEFTEC event in New Orleans in October 2012.*
4:30-5:00	Award Ceremony

Register Online at *ohiowea.org*
or by calling 614.488.5800.

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Northeast Section OWEA
Northwest Section OWEA
Southeast Section OWEA
Southwest Section OWEA

2012 Operations Challenge - Excellence in Wastewater Operations

Team Members Earn up to 12 Contact Hours

Compete to represent OWEA in New Orleans at WEFTEC October 2012



Kim Riddell
kim@go-smith.com

Mark Livengood
livengoodm@mcohio.org

The holidays occupy a large part of the calendar year between WEFTEC and New Year's. However, the Board of Trustees, the House of Delegates, and the WEF staff have been busy working on multiple projects, the largest of which is the development and implementation of WEF's new Strategic Plan, which is scheduled for roll-out in Spring 2012. Mark and I will be providing continual updates and likely a presentation or two on how this new Strategic Plan will effect OWEA and our membership.

During WEFTEC11 in Los Angeles, the House of Delegates (HOD) met and formed separate workgroups to discuss strategies and actions centering on three key areas: WEF and HOD Strategic Plan Implementation, Operator Outreach, and Member Association to Member Association (MA to MA) Relationships. Mark and I are both serving on the Strategic Plan Workgroup and here is an update on the work done to date:

1. WEF's Board of Trustees (BOT) is scheduled to roll-out a revised WEF Strategic Business Plan in mid-January, 2012. The HOD needs to be ready to react to the Strategic Business Plan, embrace it, and develop actions how the HOD will ensure acceptance and implementation by the MAs and members.
2. Approximately 25 HOD members serve on the HOD Strategic Plan (SP) workgroup. Conference calls were conducted in December 2011 and January 2012 to discuss ideas and reach consensus.
3. The HOD SP workgroup is centering its energy to provide substantial avenues of information that should be considered by WEF to inform the MAs and members of the new SP. Basic consensus has been reached on the following:
   - the message needs to be transmitted face-to-face as much as possible;
   - use of well-developed electronic media presentations should be considered;
   - WEF should develop a standardized release format for MA publication use and MA web page use;
   - SP roll-out should be targeted during WEFMAX meetings, WEF conferences and MA annual meetings; and
   - HOD members and WEF BOT members attending meetings will be leaders in communicating the new SP.

The new WEF Strategic Business Plan will ultimately require changes in how the Board of Trustees and House of Delegates perform their federation-based tasks. The workgroup will continue to work through the core decisions and HOD members will be available to assist MAs in the SP implementation.

Look for timely emails with information detailing the new SP launch and how you can help in its success.

Representatives from the following groups involved with operators: House of Delegates' Operator Outreach Work Group, Plant Operations and Maintenance Committee, Professional Development Committee, Operations Challenge, and Collection Systems Committee's Utility Group have been actively participating in the Operator Initiative Workgroup since WEFTEC 2011. Our own Dianne Sumego (WEF Delegate at Large) is leading this workgroup for the upcoming year. The main goals of this workgroup are to:

- Develop a repository of operator training programs developed by MAs that can be housed online and utilized by other,
- Develop a mechanism through which WEF can enhance MA training materials and make them available to all MAs, and
- Develop recommendations for how the HOD Operator Initiative Workgroup can work with other important groups (Professional Development Committee, Plant Operations and Maintenance Committee, etc.) to stay up-to-date on what each entity is working on, combine efforts to maximize productivity in operator education, and furthering operations and collections as a profession.

These are just a few of the highlights from the active workgroups and Mark and I will provide continual updates on the progress of the active workgroups throughout the upcoming year.

In addition, Mark and I would like to congratulate the OWEA Biosolids Committee for their recent, very successful workshop in Columbus! It was yet another shining example of why plant and collections system operators should become members of OWEA and WEF. Congrats for a job well done gang! I look forward to another successful year of OWEA workshops with record-breaking attendance!

As always, if you have any questions or comments pertaining to WEF activities, please contact Mark or I and we would be happy to discuss them with you.

RESIDUALS COMMITTEE

by Jamie Gellner, Chair

The OWEA Residuals Management Committee continues to remain active monitoring issues related to biosolids management and seeking opportunities to serve the membership of OWEA. A few updates on our traditional focus areas:

- Farm Science Review – The 2012 Farm Science Review will be held September 18th - 20th. It's never too early to plan to become involved! The Residuals Committee provides manpower and educational materials on the benefits of biosolids land application at the OWEA-sponsored booth. A large number of attendees typically visit the booth. Promotional items are normally given away as an enticement to visit the booth and learn about biosolids. We will definitely continue to use the "wheel of trivia" to spur conversation, curiosity, and hopefully a little "BS" . . . in a good way – HA!
- Biosolids Workshop – The 2011 workshop was held on December 8th in Columbus. We had a record number of attendees – 148! A special thanks goes out to the speakers who shared their time and talents and to Steven Reese for organizing the workshop and for "MCing" the event. Also, thanks to Judi for her efforts in coordinating this successful event. The 2012 workshop is scheduled for December 6, 2012. If you have an idea or topic you would like to present, please let me know. It will be tough to top the last workshop, but we're aiming high for this year!

This year, we will be continuing to work on additional items, including the following:

- Exploring new venues for booth / information / PR – Members are exploring other events where we can showcase the information that we normally present at the Farm Science Review. If you have any ideas related to good locations for a display or information related to biosolids, please let me know.
- Verify member list / update contacts – If you haven't received any correspondence from me lately and were previously on the committee email list, this probably means that we need to update your information. Drop me an email if you'd like to be included on our mailing list or if your contact information has recently changed.
- Reach out to neighbor associations – We are in the process of reaching out to our neighboring associations in Indiana and Michigan. We hope to continue our dialogue with these groups and find ways to work together to provide information on biosolids issues. Thanks to Rob Smith (Arcadis / Malcolm Pirnie) for his continued efforts on this initiative.
- Alternate locations for our Residuals Committee Meetings – We are exploring the possibility of hosting our meetings at a venue other than Olentangy (no offense to the facility or staff). We are investigating different plants at which we can host our meetings and have a short facility tour. If you have any ideas related to this, please let me know.
- Review / discussion of P management requirements under revised land application regulations – As a committee, we are exploring ways to constructively evaluate and review the requirements for management of phosphorus in land-applied biosolids. The revised regulations that will go into effect with new changes have caused a host of concerns and debates. These concerns are focused on the lack of distinction in the types / mobility / availability of different forms of P, particularly in biosolids. As a committee, we will strive to objectively review and discuss and continue to inform you, the OWEA membership, on the latest issues.

Our meeting schedule for this year is as follows:

1. February 14, 2012
2. April 10, 2012
3. July 10, 2012
4. October 9, 2012

We would love your involvement throughout the year. The Residuals Management Committee is focused on serving the OWEA membership through education, promotion of effective biosolids management, technical information on biosolids, and interface with OEPA on regulatory issues. We always welcome new membership and we would love to have you at our next meeting. If you are interested in getting involved or if you have any questions about the committee, please contact me.

Jamie Gellner
513.317.0337, *jgellner@hazenandsawyer.com*

Picture Yourself Behind the Podium

The Ohio Water Environment Association holds 4-5 Specialty Workshops and an Annual Conference with an extensive technical program each year. Share your experiences, successes, and lessons learned at one of OWEA's Specialty Workshops or the Annual Conference as we work together to provide technical education and training for Ohio water quality professionals who clean water and return it safely to the environment.

Speakers receive discounted event registration rates.

Visit *http://www.ohiowea.org/call_for_abstracts.php* for more info.

ROLL CALL

Alan H. Vicory, Jr., PE, BCEE, longtime executive director of the Ohio River Valley Water Sanitation Commission (ORSANCO), has joined Stantec as a Principal in the firm's Cincinnati, Ohio office. Vicory is a recognized national and international leader on water quality and water resource management issues. At Stantec he will lead regulatory interface, watershed planning, and water quality initiatives throughout the region.

Vicory is a licensed professional engineer in Ohio and Virginia. He is board certified in the area of water and wastewater by the American Academy of Environmental Engineers (AAEE). He is a past president of the Academy and the Association of Clean Water Administrators (formerly the Association of State and Interstate Water Pollution Control Administrators). Among his current leadership positions, Vicory serves as chairman of the Cincinnati-based Water Technology Innovation Cluster. Vicory has published and presented widely on issues related to water quality and water resources management.

Tom Poffenbarger, PE, of Ohio EPA's Northwest District Office was recently promoted to the position of Compliance Supervisor. Tom has been employed in the Division of Surface Water at the NWDO for over 15 years. He has a Bachelor of Science degree in Civil and Environmental Engineering from Youngstown State University. He is a registered Professional Engineer and a licensed Class III operator.

Stuart F. Bruny, PE, has been appointed to the Ohio River Valley Water Sanitation Commission (ORSANCO) by Ohio Governor John R. Kasich. His term began January 10.

Mr. Bruny, a registered engineer, retired from the Ohio Environmental Protection Agency in 2003, after more than 30 years of service. He served as Chief of the Southeast District Office (Logan) for 13 years. He also served as Chief of the Northeast District Office (Twinsburg) and Chief of the Division of Public Drinking Water (Columbus). He is a member of the Ohio Water Environment Association (Past President), Water Environment Federation and Ohio Environmental Health Association. Mr. Bruny has also served ORSANCO as a Federal Commissioner, appointed by President George Bush in 2003. He was elected Chairman of ORSANCO by fellow Commissioners for 2007/08.

ORSANCO, headquartered in Cincinnati, Ohio is the water pollution control agency for the Ohio River and its tributaries. Member states include Illinois, Indiana, Kentucky, Ohio, Pennsylvania, New York, West Virginia and Virginia. The federal government is also represented.

OWEA Members may submit brief announcements with photo to **info@ohiowea.org** *for publication in the Buckeye Bulletin. Please include your OWEA/WEF member number. All requests subject to editorial review.*

UTILITY ENHANCEMENT UPDATES

by John Newsome, Chair

The Utilities Enhancement Committee strives to provide relevant information to utility owners as it relates to regulatory updates, technology enhancements, and improvements performed by other utilities throughout the state. Going forward in 2012, the Committee will continue its efforts to provide webinar series on topics of interest to utility owners.

For 2012, some of the topics which we are examining for future webinars include Green Infrastructure, Biosolids, and Energy Initiatives. We are anticipating the first webinar will take place in March of this year. If you or your employer have done anything that you have found to be beneficial to your utility, please share with the Committee for a potential webinar topic. In addition, suggestions for future webinars that may be relevant to utility owners are always welcomed. Please send an email to either Scott or me with your ideas.

Contact hours are not offered for the webinars due to the complexity of participation. PDH's are at the participants discretion. That being said, GOOD and FREE training is a PRICELESS VALUE!

We are looking to expand the committee in 2012! We need more municipalities involved with our efforts as we attempt to expand the role of the committee in 2012. If you work for a municipality/ utility and would be interested in joining the Committee, please send an email to Scott or me at the email addresses below.

The Committee wishes all of you a prosperous 2012!

Utilities Enhancement Committee contacts:
Chair: John Newsome, City of Columbus
jgnewsome@columbus.gov

Vice Chair: Scott Holmes, City of Dayton
scott.holmes@daytonohio.gov

2012 Free Lunchtime Webinars Series

Watch for upcoming dates of OWEA's webinar series:

Green Infrastructure

Biosolids

Energy Initiatives

WATER FOR PEOPLE

by Doug Borkosky, Co-Chair

Priorities. Intentions. Resolutions. Goals. Organization. These are words often utilized in the early weeks of January. At the risk of being cliché or stereotypical, let's take a look backward and then look forward.

Looking Backward:

The table below summarizes the Water For People fundraising efforts from 2011.

OWEA members donated $575 through the OSU/Michigan Football Game Raffle. Although the game may not have turned out the way most of us would have preferred, the donations were certainly well executed! OWEA Member Chris Whitt from Delta, Ohio was the winner of the tickets! We want to give a special thanks to our colleagues in AWWA for including us in the fundraiser.

Water For People (the national organization) has repeatedly issued its appreciation for the efforts the OWEA (and AWWA) members have made in 2011 and in years past. As a state, the Ohio Water Professionals are amongst the elite fundraisers for Water For People. That effort and success is a product of individuals and teams—gathered together by geography, professional association, and by long time friendships—all dedicated to making a difference to people they will never meet.

We would be remiss if our review of 2011 did not specifically note the obvious: The premiere fundraising effort, including a golf outing and sporting clays shoot, held in Southwest Ohio. Employees of Cincinnati MSD, Greater Cincinnati Water Works, CH2MHill, Brown & Caldwell, and several other partners all contributed to these successful events. A **special thanks** is owed to Biju George for his inspiration and leadership as the visionary/catalyst. If you interact with any of these firms or individuals, please give them a pat on the back or a handshake to congratulate them on yet another outstanding effort.

Looking Forward . . .

Do you remember those words mentioned earlier? Priorities. Resolutions. Goals. Organization. Intentions. Do they put you on guard? Do they worry you? Do you embrace them?

Although we are now a month or so removed from the New Year's celebration, hopefully you can hearken back to the "clean slate" and "optimism" you may have felt as 2011 became 2012. If so, please consider your role in supporting Water For People in 2012. As OWEA, we will need the following for our 2012 Water For People fundraising efforts:

- Ideas for Unique Fundraisers
- Donations for a Silent Auction at Annual Conference
- Continued Support at the Section Level
- Volunteers for Staffing Tables and Events
- Personal Donations

In addition, we need your verbal support. Point out to others opportunities to participate and contribute to Water For People. Remind each other of the blessings we enjoy of readily accessible clean water and sanitation facilities. Look for opportunities to be an ambassador as well as a fundraiser.

Sound lofty? Of course it is! Being a professional is about doing what it takes to step out and step up so that you do what needs to be done in a way worthy of respect and honor. Please consider helping out with Water For People fundraising in 2012! Give Dale Kocarek or Doug Borkosky a call or email if interested.

Hosts/Sponsors for the Cincinnati Area Golf Outing

- GCWW
- MSD
- CH2MHill
- Rjngroup
- RA Consultants
- Kokosing Construction
- Smoot Construction
- Sullivan Environmental Technologies

Sponsors/Coordinators of the Cincinnati Area Sporting Clay Shoot

- Brown & Caldwell
- Manufacturers Represenatives Inc. (MRI)

Doug Borkosky, Co-Chair
doug@hlbaker.com

Dale Kocarek, Co-Chair
dale.kocarek@stantec.com

New hand-washing basins at Chimwankhunda Primary School near Blantyre, Malawi, make it convenient for students to wash their hands after using the toilet. The sinks are part of a toilet rehabilitation project Water For People supported at the school. WFP Photo

THANK YOU 2011 WATER FOR PEOPLE CONTRIBUTORS!

Group	Event	Donation
Northwest Section OWEA	May Golf Outing	$ 320
5S Society	5S Donation to WFP	$ 500
Weatherford Engineering Chemistry	Donated Golf Winnings to WFP	$ 200
OWEA Conference	Raffle Proceeds – Gift Basket/Kalahari Certificates	$ 705
Northwest Section OWEA	Donation from NWOWEA	$ 150
Northeast Section OWEA	NE Golf Outing July 11 for WFP	$ 1,225
Northwest Section OWEA	Oct. Section Meeting Fundraiser (50/50)	$ 80
Lab Analyst Committee	Donation from a Member to WFP	$150
Cincinnati Water/Wastewater Professionals	Golf Outing & Sporting Clay Shoot	$17,000

Learn more about **Water For People** at ***www.waterforpeople.org***

RESTORATION OF THE LITTLE MIAMI RIVER AT XENIA FORD ROAD WASTEWATER PLANT

by Jason A. Tincu, Heather L. Dardinger, and Kirsten Risch

The City of Xenia implements over $750,000 in grant funding to complete stream restoration for benefit of local infrastructure and the Little Miami River.

The City of Xenia recently completed the Little Miami River Restoration Project at the Ford Road Wastewater Treatment Plant (WWTP). Funded by a combination of stimulus funding and a grant from the Ohio EPA, the stream restoration project is anticipated to provide important benefits to both the City of Xenia infrastructure at the Ford Road WWTP and the Little Miami River ecosystem.

The objective of the restoration was to address severe bank erosion and instability along a 1,600-foot stretch of the Little Miami River upstream and downstream of the Ford Road WWTP outfall. The project entailed grading and stabilization of the stream banks, along with native plantings. The project is expected to significantly improve habitat and water quality and reduce the sediment load to the river. In addition to the inherent environmental benefits, the City was able to protect the Ford Road WWTP outfall against the ongoing stream bank erosion and potential future loss of the structure. Preservation of the site will be provided through an environmental covenant and conservation easement, which were provided in-kind by the City to satisfy the local match requirements for the state grants. ***No City monies were expended on the project.***

Restoration techniques included bank grading and stabilization, and establishment of vegetated riparian buffers. Bank stabilization methods included grading, placement of biodegradable erosion control materials and a cellular confinement system (CCS), as well as brush layering and tree/root wad revetment to protect the banks against further erosion:

- Root wad revetment entails the placement of tree root masses, known as "root wads" into the stream bank in order to deflect water away from the bank and create fish habitat
- Brush layering is a technique which combines layers of live, dormant woody cuttings with soil to revegetate and stabilize the stream banks
- Cellular confinement systems are engineered, high strength networks of interconnected cells that confine and stabilize soils

The riparian buffer was restored and planted with native, non-invasive species. Invasive control activities were completed in order to first remove any invasive species such as amur and Japanese honeysuckle (Lonicera maackii and Lonicera japonica). All disturbed areas were then seeded with native riparian seed mixes. Shrub and tree species used included red maple (Acer rubrum), silver maple (Acer saccharinum), swamp white oak (Quercus bicolor), shagbark hickory (Carya orata), and Eastern cottonwood (Populus deltoides).

In order to implement the stream restoration project, Xenia received a total of $778,500 in funding via a grant from the Ohio EPA Section 319(h) Nonpoint Source Program and ARRA funding from the Ohio Water Pollution Control Loan Fund (WPCLF). The project was completed in concert with facility improvements at the wastewater plant which are funded through a loan from the Ohio WPCLF. Collectively, these efforts are part of the City's overall commitment toward improving water quality in the Little Miami River, which is designated as a State and National Scenic River, an Outstanding State Water, and Exceptional Warmwater Habitat.

In 1987, the federal Clean Water Act amendments created a national program to control nonpoint source pollution, established under Section 319 of the Clean Water Act (33 U.S.C 1329). Ohio EPA is the designated water quality agency responsible for administering the Ohio 319 program. Since 1990, Ohio EPA has annually applied for, received, and distributed Section 319 grant funds to correct NPS-caused water quality impairment to Ohio's surface water resources. Section 319(h) implementation grant funding is targeted to Ohio waters where NPS pollution is a significant cause of aquatic life use impairments. The cornerstone of Ohio's 319 program is working with watershed groups and others who are implementing locally developed watershed management plans and restoring surface waters impaired by NPS pollution.

Prior to restoration

During restoration

The restoration efforts have resulted in significantly improved habitat and water quality in the project area. Specifically, the project has resulted in 1,600 linear feet of stream bank stabilization, 990 trees and live stakes planted, 23.5 acres placed in protective environmental covenant or easements, an increase in the Qualitative Habitat Evaluation Index (QHEI) score for the stream from 59 to 70, and an annual load reduction of 1,840 tons of sediment in the LMR.

The restoration area will be preserved in perpetuity via an environmental covenant and a conservation easement. This will ensure that the project area is permanently protected by prohibiting certain activities or land uses within the designated areas. While the project design is intended to require minimal maintenance, the project area will be monitored annually by the City. Maintenance will be limited to the control of invasive vegetation, repair of significant erosion, and removal of debris, as needed.

"City staff worked diligently to secure grant dollars for this unique, dual-benefit project that protects City infrastructure and enhances environmental conditions in the stream."

Jason A. Tincu
Utilities Manager,
City of Xenia

Heather L. Dardinger
Project Environmental Scientist,
ARCADIS

Kristen Risch
Senior Restoration Specialist
Coldwater Consulting, LLC

More information about the project is available online at *http://www.ci.xenia.oh.us/city-services/city-departments/public-service/waste-water-division/grant-funded-watershed-restoration-projects.html*.

After restoration

WELCOME NEW MEMBERS

who joined OWEA

from October to December 2011

Sandra Ashba
Tim Back
Joseph J. Baer
Earl Bargerstock
Cosmo A. Bertino
Amanda Bossart
Anthony James Coleman
Debra Crain
Ryan Curtis
Rick Day
Christoph S. Decker
Tim DeHart
Greg Doherty
Jean Engohang-Ndong
Seth M. Featherston
Christ Gaul
Glen Hacker
Robin Halperin
Ronald F. Herrmann
Thomas P. Hinson
Alison Hudson
Shamus Hurley
Mike Klingler
Patrick A. Kneip
Doug Kotnik
Josh Kubitza
Vivek Lal
Adam Leimeister
Eric Macmichael
Craig William Mescher
Vic Quinones
Laura T. Raish
Todd Raish
Stephen Renner
Michael Ritossa
Humberto J. Sanchez
Jon Schoen
Scott Sheppeard
Susan Lynn Stanford
Preston Triggs
Anthony J. Wade
Robert Ward
Jarrod D. Yost

Thank you for joining the Ohio Water Environment Association. We welcome your contribution to preserving and enhancing Ohio's water quality environment.

THE OHIO WATER ENVIRONMENT ASSOCIATION

PRESENTS

OWEA 2012

Make a Pass at Going Green...

... Looking Towards the Future

Register Now!

JUNE 18 – 21, 2012

Earn up to 13 Contact Hours

Networking Events

GOLF OUTING — **MONDAY**

Monday at Grantwood C.C., Solon, Ohio

MOVIE NIGHT — **MONDAY NIGHT**

BUSINESS MEETING & AWARDS BREAKFAST — **TUESDAY**

EXHIBIT EXPO & TECHNICAL SESSION — **TUESDAY**

70+ exhibitors; vendor technical sessions

PLANT TOUR — **TUESDAY**

MEET & GREET — **TUESDAY NIGHT**

Networking while you roll the dice

TECHNICAL SESSIONS — **WEDNESDAY & THURSDAY**

Wednesday: 40 technical sessions / 5 concurrent tracks

Thursday: 20 technical sessions / 5 concurrent tracks

ANNUAL BANQUET — **WEDNESDAY NIGHT**

WEF Awards, 5S Inductions, Passing of the Gavel and more…

May 25 – Last Day for Early Bird Registration and Special Lodging Rates

AT THE BERTRAM INN & CONFERENCE CENTER – AURORA

600 NORTH AURORA ROAD | AURORA, OHIO 44202 | 877.995.0200

the Bertram Inn & Conference Center

Hosted by OWEA's Northeast Section. For information, contact:

Ted Baker	Terry Gellner	Ohio Water Environmental Association
440.829.8405	440.530.2275	614.488.5800
kingsnu@aol.com	tgellner@ctconsultants.com	info@ohiowea.org

Hear Ye! Hear Ye! Hear Ye!
Call to Water Environment Professionals

Requested is the presence of all individuals, young and old, front line operators, administrators, manufacturers, engineers and technical personnel at the 86th Ohio Water Environment Association Annual State Conference for the purpose of education, information exchange, networking, problem solving, and bettering our industry.

The conference will provide the Arena to exchange information, gain new knowledge, network, and share experiences with fellow colleagues.

The focus of this conference information exchange is alternative and optimization of energy usage whereby the industry we create will become "greener" and the carbon footprint smaller in the future.

Therefore, all professionals are to assemble at the Bertram Conference Center in Aurora, Ohio beginning June 18, 2012 and ending June 21, 2012 to accomplish this important task.

Follow us on Twitter and Facebook! **#OWEA_2012** **OWEA_2012**

An Important Message from our Conference Committee Co-Chairs

Dear Colleagues,

We extend an invitation to all operators, manufacturers, consultants, administrators and technical people to participate in this upcoming annual conference. The core program consists of events to network with fellow colleagues, over 60 technical sessions to share and expand our knowledge, exhibits and plant tours for hands-on education, award presentations to recognize those deserving, and a business meeting that all are invited to attend. Activities vary in nature, going from one extreme to the other including a golf scramble, a movie, technical sessions, a casino night, a banquet, and activities for spouses.

Bring your spouse, send your staff, and encourage professionals of all ages to attend one day or the full conference. Various attendance durations are available on the registration form.

Join us and the conference committee, who has worked very hard and diligently to strive towards making this conference the greatest water environment activity in the State. In advance, we want to thank our conference committee for their endless dedication, our sponsors for their support and our professionals for attending and making this another successful conference.

Sincerely,

Ted Baker *Terry Gellner*

2012 Annual Conference Committee Co-Chairs
Ted Baker, *kingsnu@aol.com*
Terry Gellner, *tgellner@ctconsultants.com*

What's New this Year?

- Single day registration has been added for technical sessions, including lunch, to reach out to front line operators and/or communities with restricted budgets
- Technical Sessions by Exhibitors are included concurrent with the Exhibitors' hall activities
- The OWEA Business meeting has been located and formatted to encourage membership attendance.
- A Movie Night for socializing has been added on Monday for those arriving early or playing golf – complete with theater seating, popcorn, and drinks.
- 5S induction ceremony has been returned to the Banquet

SCHEDULE

SUNDAY, JUNE 17 – THURSDAY, JUNE 21

SUNDAY, JUNE 17

6:30 p	-	9:00 p	Executive Committee Meeting

MONDAY, JUNE 18

10:00 a	-	6:00 p	Golf Outing – Grantwood Golf Course
4:00 p	-	7:00 p	Registration – The Bertram Inn Atrium
5:00 p	-	9:00 p	Exhibitor Setup
7:30 p	-	10:00 p	Movie Night – Caddyshack in the Amphitheater

TUESDAY, JUNE 19

7:00 a	-	5:00 p	Registration – The Bertram Inn Atrium
7:00 a	-	10:00 a	Exhibitor Setup
8:30 a	-	9:30 a	Annual Business Meeting
9:30 a	-	11:30 a	Awards Breakfast
9:30 a	-	11:30 a	Exhibitor Breakfast
11:30 a	-	5:00 p	Exhibit Expo Open
12:00 a	-	4:00 p	Spouse/Guest Program
12:00 a	-	4:00 p	Exhibits and Plant Tour
12:00 a	-	4:00 p	Exhibitor Technical Sessions
12:30 p	-	2:30 p	Lunch in the Exhibit Hall
4:00 p	-	5:00 p	Exhibitor Reception
5:00 p	-	6:00 p	Exhibitor Tear Down
6:00 p	-	10:30 p	Meet & Greet

WEDNESDAY, JUNE 20

7:00 a	-	5:00 p	Registration – The Bertram Inn Atrium
7:00 a	-	9:00 a	Continental Breakfast
8:00 a	-	11:45 a	Technical Sessions (5 Concurrent Sessions)
10:00 a	-	4:30 p	Spouse/Guest Program
11:45 a	-	1:00 p	Lunch
11:45 a	-	1:00 p	President's Lunch (by Invitation)
1:00 p	-	4:45 p	Technical Sessions (5 Concurrent Sessions)
6:00 p	-	7:00 p	Social Hour
7:00 p	-	9:30 p	Annual Banquet – 5S Induction
9:30 p	-	10:30 p	After Banquet – Drinks, Desserts and Music

THURSDAY, JUNE 21

7:00 a	-	11:00 a	Registration – The Bertram Inn Atrium
7:00 a	-	9:00 a	Continental Breakfast
7:00 a	-	8:00 a	5S Breakfast
8:00 a	-	11:45 a	Technical Sessions (5 Concurrent Sessions)

Register online
www.ohiowea.org

2012 ATTENDANCE FEES

Early Registration – By May 25th

Full Conference Member	$275
Full Conference Nonmember	$375
Retired Member Full Conference	$150
Tues. only Member – Full Day	$145
Tues. only Nonmember – Full Day	$195
Weds. only Member – Full Day	$145
Weds. only Nonmember – Full Day	$195
Student	$50
Spouse/Guest Program	$160

Late Registration – After May 25th

Full Conference Member	$325
Full Conference Nonmember	$425
Retired Member Full Conference	$200
Tues. only Member – Full Day	$170
Tues. only Nonmember – Full Day	$220
Weds. only Member – Full Day	$170
Weds. only Nonmember – Full Day	$220
Student	$75
Spouse/Guest Program	$210

Technical Program Registration*

Tues. only (includes Exhibits, Plant Tour, Technical Sessions & Lunch)	$25
Weds. only (includes Technical Sessions and Lunch)	$45
Thurs. only	$25

** Single Day Registration Only*

Exhibitor Registration

Includes One Full Conference Registration

Exhibit Booth Member	$700
Exhibit Booth Nonmember	$850
Tuesday Exhibitor Presentation	$200
Booth & Presentation Member	$825
Booth & Presentation Nonmember	$975
Extra Booth Attendant	$50

Presentation must be approved by Conference Committee

Other Registration items

Awards Breakfast Ticket	$25
Meet & Greet Ticket	$90
Banquet Ticket	$75

WEDNESDAY, JUNE 20 – AM TECHNICAL SESSIONS – 5 TRACKS

GREEN / INNOVATIVE / SUSTAINABILITY			
8:00	8:45	**Leveraging Energy Audits to Effect Long Term Energy Savings and Cultural Changes**	Rich Atoulikian & Kimberly Kennedy
9:00	9:45	**The Challenge of Integrating Sustainability Concepts into Decision-Making is Overcome Through the Use of Sustainable Return on Investment**	Christopher Behr
10:00	10:45	**Warren's Hydroelectric Project: Turning Wastewater to Electricity**	Deborah Houdeshell & Tom Angelo
11:00	11:45	**Energy Audits and Case Studies in Wastewater Treatment**	Sam Morgan & Terry Gellner
OPERATIONS			
8:00	8:45	**Designing & Operating the Wastewater Treatment Plant of the Future Will Require a Paradigm Shift**	Samuel Jeyanayagam
9:00	9:45	**Full Scale Testing to Demonstrate Anaerobic Selector Effect for Low Strength Wastewater**	Eric Wahlberg & Bob Hrusovsky
10:00	10:45	**Development of Process Models for Planning, Design, AND Operations**	Curtis Courter
11:00	11:45	**Implementing Compressible Media Filtration for Springfield's Wet Weather Management Program**	Bob O'Bryan & Tim Weaver
COLLECTIONS			
8:00	8:45	**Basics Mechanisms of Corrosion and Corrosion Control for Water and Wastewater Systems**	Graham Bell
9:00	9:45	**Clean Your Pipes, Einstein! Why Cleaning Your Sewers Provides Substantial Returns**	John P. Schroeder & C. Timothy Fallara
10:00	10:45	**Progressive Solutions for a Historic Watershed**	Dave Russell & Cliff Shrive
11:00	11:45	**Continuous Calibration Promises Significant Savings in Meeting Wet Weather Compliance Requirements**	Anil Tangirala, C. Timothy Fallara, Limei Yang, & Dale Kocarek
RESIDUALS			
8:00	8:45	**Class A Biosolids Produced with Closed Alkaline Process**	Eric Wanstrom
9:00	9:45	**Innovative Techniques for Handling High Phosphorus and Solids Loading Within an Enhanced Nutrient Removal**	Edward Talbot
10:00	10:45	**Arkea: A Green Technology for Wastewater Treatment, Residuals Management, and Pathogen Reduction**	Michael Gerardi & Steve Owens
11:00	11:45	**MBR Activated Sludge Truths: The Real Information Concerning the O&M Associated with MBR Activated Sludge**	Ashley Williston & Terry Gellner
LABORATORY			
8:00	8:45	**Choosing a Contract Laboratory**	Kathy Richards
9:00	9:45	**Chlorophyll Analysis**	Christen Wood
10:00	10:45	**The Automation of Solid Phase Extraction (SPE) for Method 1664**	Joe Boyd
11:00	11:45	**Bioassay 101: Everything You Need to Know About Bioassay Testing**	Courtney Van Voorhis

Technical sessions subject to change – refer to OWEA website for changes

Register online at *www.ohiowea.org*

WEDNESDAY, JUNE 20 – PM TECHNICAL SESSIONS – 5 TRACKS

GREEN / INNOVATIVE / SUSTAINABILITY			
1:00	1:45	**Rebuilding Neighborhoods Using Green Infrastructure**	David Clark
2:00	2:45	**Is Green Infrastructure Really the Answer? It Depends on the Question**	Josh Reinicke & Marc Lehmann
3:00	3:45	**The Application of UV Oxidation for Treating Wastewater to Drinking Water Standards for Sustainable Water Reuse Applications**	Terry Keep
4:00	4:45	**Aeration System Optimization Can Offer the Greatest Long-Term Costs and Carbon Footprint Savings**	Rich Atoulikian
NUTRIENT REMOVAL			
1:00	1:45	**Nutrient Removal - Adapting the Approach for High Influent TP and Fixed-Film Treatment**	William Meinert & Richard Reed
2:00	2:45	**Paradigm Shift in Phosphorus Removal From WWTPs**	Steven Reese & Jamie Gellner
3:00	3:45	**Phosphorus Removal - Chemical Versus Biological Methods**	Mark Greene
4:00	4:45	**Nitrate Analyzers, Supplemental Carbon Addition and Treatment Plant Modeling Improves Nitrogen Removal**	Mark Strahota & William Martin
COLLECTIONS CASE STUDIES			
1:00	1:45	**Indianapolis Deep Tunnel Surge Analysis: Debugging Future Operational Issues in the Present**	Karen Ridgeway & Chris Ranck
2:00	2:45	**Effective SSO Elimination - "Indian Lake is a Beautiful Place"... AGAIN...**	'Mac' McCauley & Keith Radick
3:00	3:45	**Step-wise Approach to Piqua's SSO Removal**	Jeff Macomber
4:00	4:45	**Constructed Wetlands: How a Small City Saved BIG Bucks on Its CSO Program**	Mark Harrison & Lenin Kasthuri
RESIDUALS DEWATERING			
1:00	1:45	**Dewatering Case Study of Rotary Fan Press Verses Screw Press**	Kyle Novak & Tim Pringle
2:00	2:45	**Understanding the Capability of Solar Sludge Drying for Large Treatment Facilities**	Michael Hill
3:00	3:45	**Evaluation of Dewatering Technologies for 4 WWTP Nutrient Reduction Projects: BFP, Centrifuge, Rotary Fan Press, and Inclined Screw Press**	Edward Talbot
4:00	4:45	**3 Years Experience with the Urbana Microwave Sludge Drying System**	Dave Stewart
MANAGEMENT			
1:00	1:45	**Survival Skills For Supervisors: 7 Personal Behaviors to Help Supervisors**	Robert Hollis
2:00	2:45	**Separating the Forest From the Trees: The Use of GIS Decision Tools to Make Asset Decisions**	Marc Lehmann & Rod Moeller
3:00	3:45	**Decentralized Treatment of Sewage Water**	Rakesh Govind
4:00	4:45	**Using Alternative Delivery for Municipal Water & Wastewater Projects in 2012**	Dennis Tinkler

Technical sessions subject to change – refer to OWEA website for changes

Register online at *www.ohiowea.org*

THURSDAY, JUNE 21 – AM TECHNICAL SESSIONS – 5 TRACKS

GOVERNMENT AFFAIRS			
8:00	8:45	**The Benefits of Meeting with Washington D.C.: A Fly-In with AWWA, WEF and OWEA**	Dale Kocarek
9:00	9:45	**The New Direction of OWEA's Government Affairs Committee**	Dale Kocarek
10:00	10:45	**Indianapolis Consent Decree Amendment #2: Technical Basis for Regulatory Agreement**	Chris Ranck
11:00	11:45	**OEPA Regulatory Update**	TBA
POTPOURRI			
8:00	8:45	**Landfill Leachate Pretreatment Process Evaluation & Pilot Study**	Richard Claus & Dan Miklos
9:00	9:45	**Performance & Economic Improvement in Vapor Adsorbers Using Structured Activated Carbon Media**	Paula Walmet & John Perry
10:00	10:45	**Benefits of Hydraulic Model Development at MSDGC WWTPs**	Richard Claus & Tom Kutcher
11:00	11:45	**The 3 Cs – Climate / Carbon / Credits in Wastewater Treatment: How communities can benefit from green projects**	Terry Gellner
CSO			
8:00	8:45	**Using a Sustainable Watershed-Based Approach for CSO Control in the Doan Brook Watershed**	Stephanie Glossner & Kellie Rotunno
9:00	9:45	**Innovative Design for CSO Control & Treatment**	Kurt Giberson & Saad Ghalib
10:00	10:45	**Defiance CSO Program: Cost Effective Sewer Separation & Private Property Strategies (Part 1)**	Michael Frommer & Mark Lehnert
11:00	11:45	**Defiance CSO Program: Cost Effective Sewer Separation & Private Property Strategies (Part 2)**	Michael Frommer & Mark Lehnert
COLLECTIONS			
8:00	8:45	**Corrosive Technologies to Assess Condition of Force Mains**	James Lary
9:00	9:45	**Minimizing Objectivity in the Assessment of Pipes, Manholes and Laterals**	Brandon Conley
10:00	10:45	**Effective Development & Analysis of Alternative Strategies for Sanitary Sewer System Improvements**	Derek Wride & Mandeera Wagle
11:00	11:45	**Old Pipe / Renewed Pipe - How New Technology Enhances the Rehabilitation of a 140-Year-Old Sewer**	Chuck Wilson & Sean FitzGerald
STORM WATER			
8:00	8:45	**LID Developers and Builders Perspective of SWM**	Neil Myers
9:00	9:45	**Lessons Learned in Developing an Inventory of Storm Sewer Systems**	Tom Brankamp
10:00	10:45	**The Use of Scent Trained Canines for Illicit Discharge Detection**	Scott & Karen Reynolds
11:00	11:45	**Performance Evaluation of Blue Roofs to Mitigate CSO Impacts**	Sri Rangarajan, William Leo, Nitin Katiyar & Kevin Fitzpatrick

Technical sessions subject to change – refer to OWEA website for changes

Register online at *www.ohiowea.org*

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CONFERENCE COMMITTEE THANK YOU

Thank you to the following firms for allowing volunteer time from your employees:
Baker & Associates, Bissnuss, CT Consultants, Hazen & Sawyer, RW Armstrong, ARCADIS
HR Gray, and The City of Warren

HELP IS ALWAYS APPRECIATED!

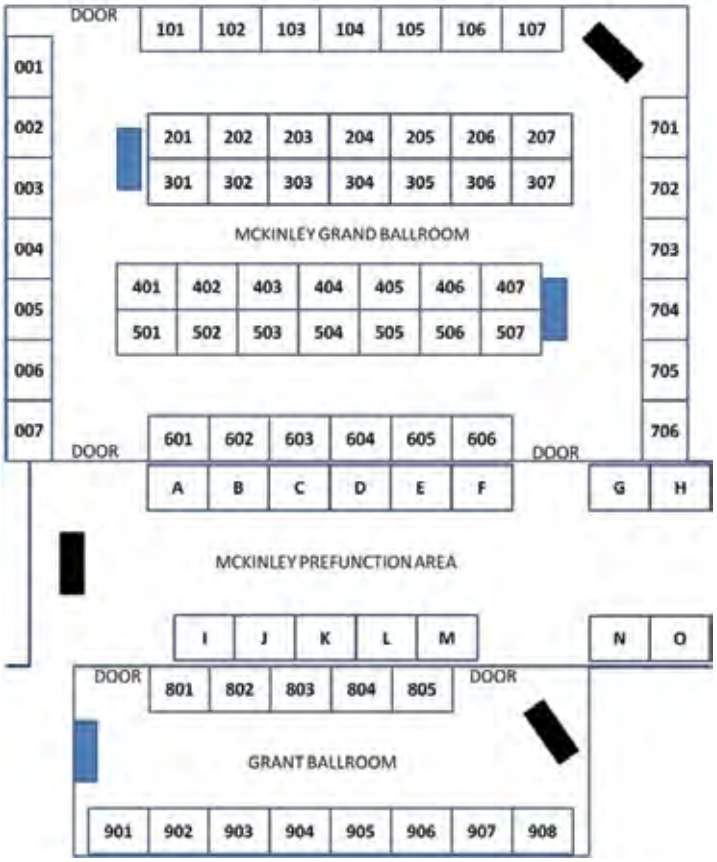
The success of any conference is dependent on the volunteers who contribute their time and effort to help with various activities to support the conference committee. Once again we ask for assistance from all interested in taking an hour or so from your conference experience to be part to the group that makes it happen. If interested in helping, contact OWEA at info@ohiowea.org or 614-488-5800, or Conference Co-Chairs Ted Baker (kingsnu@aol.com) and Terry Gellner (tgellner@ctconsultants.com). Details and online volunteer forms are available at www.ohiowea.org/2012_annual_conference.php.

Volunteer Activities for the 2012 Conference include but are not limited to the following:

- **Pit Boss Assistants** – Tuesday Evening
- **Registration Assistants** – Time slots available Monday – Thursday
- **Golf Volunteers** – Monday
- **Movie Night Assistants** – Monday Evening
- **On-Site Plant Tours Monitors** – Tuesday
- **Exhibit Hall Assistants** – Tuesday
- **Exhibitor Technical Session Moderators** – Tuesday
- **Technical Session Moderators** – Wednesday and Thursday
- **Technical Sessions Monitors** – Tuesday, Wednesday and Thursday
- **Ticket Takers** – Tuesday and Wednesday

EXHIBIT EXPO

TUESDAY, JUNE 20
11:30 A.M. – 5:00 P.M.



EXHIBITOR REGISTRATION

Includes One Full Conference Registration

Exhibit Booth Member	$700
Exhibit Booth Nonmember	$850
Tuesday Exhibitor Presentation	$200
Booth & Presentation Member	$825
Booth & Presentation Nonmember	$975
Extra Booth Attendant	$50

Presentation must be approved for contact hours

Expo open Tuesday, June 19 from 11:30a – 5:00p
Lunch served between 12:30p – 2:30p in the Exhibit Hall

Register online
www.ohiowea.org

For more information or to register:
Ken Rogozinski
440.871.8394
krogozinski@bissnussinc.com

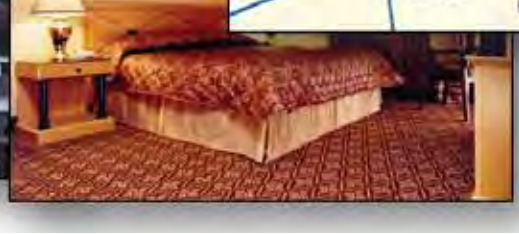
CONFERENCE VENUE

TUESDAY, JUNE 19 – THURSDAY, JUNE 21

OWEA room rates available from Sun, June 17 through Thurs, June 21. Make your reservation via the link at *www.ohiowea.org* or by calling the Bertram Inn at 877.995.0200
Cutoff date for reservations is May 25th

Room Options:

King Room	$109
Double Room	$109



OWEA 2012 GOLF EVENT

GRANTWOOD GOLF COURSE

MONDAY, JUNE 18

10 A.M. SHOTGUN START

Where:
Grantwood Golf Course
38855 Aurora Road
Solon, OH 44139
(440)248-4646

Times:
8:30 a.m. Registration
8:30 a.m. Driving Range Open
10:00 a.m. Shotgun Start

Format:
128 Golfers (32 Foursomes)
Four Person Scramble

GREAT GOLF AND A LOT MORE

Grantwood Golf Course is a wonderful 18-hole golf course for players of all skill levels. A spacious green belt area that consists of an 18-hole golf course with a large clubhouse, which includes a snack bar, pro-shop, meeting rooms, a banquet facility, and a large shelter house.

Families of golfers can use the Timberlake Recreation Park, located adjacent to Grantwood Golf Course. Timberlake Recreation Park is a natural park with a large fishing lake, two shelter houses and numerous outdoor grills for picnics and outdoor gatherings.

The Grantwood Golf experience has been rated by Golf Magazine as one of the **"Top Five Courses You Can Play In Cleveland Under $50"**.

$300 per Foursome includes: Golf Cart, Range, Lunch, Dinner, Beverages and Prizes

OWEA ANNUAL BUSINESS MEETING

TUESDAY, JUNE 19
8:30 A.M.

All are invited to attend and participate in the OWEA Annual Business Meeting to experience your officers in action. Agenda items include financial reports, organizational news, committee news and Section activities. The Annual Business Meeting will be held one hour before and in the atrium just outside the entrance doors to the Awards Breakfast. Casino Dinero Tokens will be given to those arriving and attending the meeting.

AWARDS BREAKFAST

TUESDAY, JUNE 19
9:30 A.M.

Immediately following the OWEA Annual Business Meeting you can move right in to the Ohio Water Environment Association Awards Breakfast. The breakfast will be held on Tuesday June 19 at 9:30 am in the ballroom next to the atrium. Following a delicious breakfast, the OWEA awards will be presented for dedication and exemplary efforts in our industry. Following the awards presentation will be the Crystal Crucible and Golden Manhole winners. 5S inductions will be at the banquet on Wednesday.

MEET AND GREET

TUESDAY, JUNE 19
6:00 P.M. – 10:30 P.M.

The more conference events you attend, the more Casino Dinero Tokens you receive. Bring them to the Casino Night and transfer the Casino Dinero Tokens to Casino Cash. How's your Craps, Card Playing and Number Picking? Increase your Casino Cash to earn more chances at winning grand prizes, or bid on prize auctions throughout the evening. Settle with friends in the Sport Book, enjoy live sporting events, and wager on your expected outcome. Enjoy the ambiance of being in Vegas with beverages and food served throughout the evening.

The conference casino will have 3 gaming rooms and one sports book. Enjoy food, beverages, music, and prizes galore as you network, sharing wisdom and experiences with fellow colleagues.

Don't Miss It!

Show Tickets

Dinner Tickets

Casino Night

Table Games

Sports Book

Prizes Every 15 minutes

Grand Prize Drawings at the End

Grand Prizes - At Least Three 3-Day or More Get-Away Packages

iPads, Cameras & Other Electronic Devices

Sporting Events Tickets

ANNUAL BANQUET

WEDNESDAY, JUNE 20
SOCIAL & BANQUET: 6 P.M. – 9:30 P.M.
DRINKS, DESSERTS, & MUSIC: 9:30 P.M. – 10:30 P.M.

The Annual Banquet will be held on Wednesday, June 20, 2012. The activities will include a one-hour social event as conference attendees congregate and enjoy a favorite beverage and appetizers in preparation for the Banquet Dinner.

Banquet doors will open at 6:45 pm for all to find a seat, celebrate and reminisce about the preceding days of the conference. The dinner will include the presenting of WEF Awards by the representative from WEF, the 5S inductions, and the passing of the Ohio Water Environment Association gavel from outgoing President Doug Clark to incoming President Tom Angelo.

CORDELL SAMUELS

2011-2012 WEF PRESIDENT-ELECT

Cordell W. Samuels is the 2011-2012 President-Elect of the Water Environment Federation (WEF). He has been a long-time friend of many Ohio WEA executive committee members. Cordell enjoys having fun, so we are especially looking forward to having him with us in June.

Cordell is the Plant Superintendent for the Duffin Creek WPCP in the Regional Municipality of Durham in Ontario, Canada. In that capacity, he manages one of the largest wastewater treatment plants in Ontario. Prior to his current position, Cordell worked in the City of Toronto for 22 years.

Cordell has been a WEF member since 1994 and served on the Federation's House of Delegates and several WEF committees. He has been an active member of both the Water Environment Association of Ontario (WEAO) and the Canadian Water and Wastewater Association (CWWA), serving as President of the Water Environment Association of Ontario in 2005.

A member of the Select Society of Sanitary Sludge Shovelers; Cordell has received a number of WEF awards including the Hatfield Award in 1996, and the Arthur Sidney Bedell Award in 2008. He holds Class IV Wastewater Treatment and Collection Systems Licenses in the Province of Ontario. Cordell has received the Higher National Diploma in Mechanical Engineering (H.N.D. Mech. Eng.) from Leeds Metropolitan University in Leeds, Yorkshire, England.

2012 SPOUSE/GUEST PROGRAM

TUESDAY AND WEDNESDAY JUNE 19TH & 20TH

TUESDAY AFTERNOON – GLASS FUSING, WINE TASTING AND AURORA FARMS

Spirit of Clay owners Kathy and Kelly will be providing a hands-on program in **Glass Fusing**. You will learn to make sun catchers, wind chimes, and even jewelry, all of which will be fired and returned by Thursday so you can take your artwork home. After you have had a chance to create your masterpiece, The Bertram Inn will be providing a light lunch and **Wine Tasting** for your afternoon pleasure. You can then sit and catch up with friends or jump on one of our shuttles to **Aurora Farms** for a late afternoon shopping excursion.

WEDNESDAY – A DAY OF EXPLORING EVERYTHING CHAGRIN FALLS HAS TO OFFER

Today we will board our private shuttle to **Chagrin Falls**, Ohio. While there we will have plenty of time to explore the many unique shops that Chagrin Falls has to offer. We will have a private area for us to enjoy **lunch "by the falls"**. Then it is off to explore more of what Chagrin Falls has to offer, including an afternoon **Tea Party**. Kathleen at the Village Herb Shop will be teaching us how to make our own teas with products all grown right here in Ohio. After we have all had a chance to make our special recipe we will be able to sample them at our private Tea Party which will include locally made finger desserts and pastries.

Just $160 per guest if registered by May 25th ($210 after May 25th)

TUESDAY, JUNE 19				WEDNESDAY, JUNE 20			
9:30 a	–	11:30 a	Awards Breakfast	7:00 a	–	9:00 a	Continental Breakfast
12:00 p	–	4:30 p	Spouse/Guest Program	9:00 a	–	4:30 p	Spouse/Guest Program
6:00 p	–	10:30 p	Meet & Greet	6:00 p	–	10:30 p	Social and Banquet

MAKE A PASS AT GOING GREEN... LOOKING TOWARDS THE FUTURE

JUNE 18 – 21, 2012 – THE BERTRAM INN & CONFERENCE CENTER, AURORA

OWEA 2012 ANNUAL CONFERENCE AND EXPO ATTENDEE AND GOLF REGISTRATION

REGISTER ONLINE AT OHIOWEA.ORG

First Name *(for name badge)*	Last Name	
Company Name		Title
Address		
City	State	Zip
Email	Tel #	
OWEA/WEF# *(req for member rate)*	Spouse/Guest Name *(if attending)*	

Conference Registration	Registration Type	By May 25	After May 25	Row Total
Full Conference includes: All Technical Sessions, Exhibit Expo, Awards Breakfast, Meet & Greet, Wed. Lunch, Annual Banquet	Full Conference Member	$275 ❑	$325 ❑	
	Full Conference Nonmember	$375 ❑	$425 ❑	
	Full Conference Retired *(not working)*	$150 ❑	$200 ❑	
	Full Conference Student *(ID Req'd)*	$50 ❑	$75 ❑	
Tue Only includes: Exhibit Expo, Awards Breakfast, Meet & Greet	Tuesday Only Member	$145 ❑	$170 ❑	
	Tuesday Only Nonmember	$195 ❑	$220 ❑	
Wed Only includes: Technical Sessions, Lunch, Annual Banquet	Wednesday Only Member	$145 ❑	$170 ❑	
	Wednesday Only Nonmember	$195 ❑	$220 ❑	
Includes: Awards Breakfast, Meet & Greet, Annual Banquet, Spouse Program	Spouse/Guest Program	$160 ❑	$210 ❑	
Single Day Technical Program Only	Tuesday Only - Exhibits, Plant Tour, Technical Sessions, Lunch	$25 ❑		
	Wednesday Only - Technical Sessions and Lunch	$45 ❑		
	Thursday Only	$25 ❑		
	Extra Awards Breakfast Ticket(s)	_____ x $25 each		
	Extra Meet & Greet Ticket(s)	_____ x $90 each		
	Extra Annual Banquet Ticket(s)	_____ x $75 each		

OWEA Golf Outing Monday, June 18 at Grantwood Country Club, Solon, Ohio			
Includes: Golf Cart, Range, Lunch, Dinner, Beverages, Prizes and Events. 8:30am Registration, 10am Shotgun Start, 4-person Scramble. Prizes for Long Drive, Pin Shots, and Course Winners. Grantwood CC	# Team(s) of four golfers	_____ x $300 each	
	# Individual golfers	_____ x $75 each	
	Print golfers names:		
	-------- *LIMIT 32 TEAMS* --------		
		TOTAL AMOUNT DUE	

Tickets will be taken for the events below
Please check which events you plan to attend

In Full & Tue. Registration	In Full & Wed. Registration
❑ Awards Breakfast	❑ Wednesday Lunch
❑ Meet & Greet	❑ Annual Banquet

Hosted by OWEA's Northeast Section

Conference Co-Chairs

Ted Baker
440.829.8405
kingsnu@aol.com

Terry Gellner
440.530.2275
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Golf Co-Chairs

Debbie Houdeshell
330.322.2567
dhoudeshell@hazenandsawyer.com

Mike Welke
330.841.2591
mwelke@warren.org

FORM OF PAYMENT

❑ CHECK # ❑ P.O. #

❑ CREDIT CARD – you will be emailed a secure link to enter your credit card payment, or you may call the OWEA office with your credit card number

❑ I have read & agree to the OWEA refund policy

OWEA
1890 Northwest Blvd, Suite 210
Columbus, OH 43212

T: 614.488.5800 F: 614.488.5801 E: info@ohiowea.org

OWEA Refund Policy

- Cancellations within 72 hours of the conference or no-shows the day of the conference will be billed in full and will not receive a refund.
- Any Cancellation 72 or more hours prior to the conference will receive a 65% refund minus any credit card processing fees.
- Any Cancellation 7 days or more prior to the conference will receive a full refund minus any credit card processing fees.

FLEXIBILITY IS ONLY ONE ADVANTAGE OF OUR CLOSED LOOP REACTOR PROCESS

We have more than 45 years of experience in oxidation ditch technology and more than 2000 installations. Lakeside's CLR process offers a variety of wastewater treatment options, including several operational modes, nitrogen and phosphorus removal, and an adaptable configuration, providing maximum flexibility with consistently high quality effluent. The CLR process is simple to operate and can be configured in several shapes, including the conventional racetrack, folded U-shape or concentric multichannel designs. Lakeside's staff delivers full service from initial concept through construction to plant operation. The result: reliable results with minimal operator attention and maintenance. When performance counts, count on the industry leader for more than 80 years!

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Laura Tegethoff, Owner – *LauraT@360water.com*
Jim Grunenwald, Associate – *jimg@go-smith.com*
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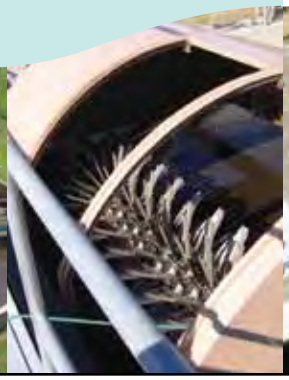

CLR Process Components

- Magna Rotors
- Velocity Control Baffles
- Rotor Covers
- Level Control Weirs
- E.A. Aerotor
- Process Monitoring and Control Systems

THE VILLAGE OF OHIO CITY WASTEWATER TREATMENT PLANT

by Daniel Miller, P.E., Director of Wastewater; Joseph Hotz, P.E., Vice President; Paul Fletcher, Project Engineer; Doug Brookhart, Operations Specialist, Jones & Henry Engineers, Ltd. and Jeff Krugh, Administrator and Jeff Smith, Operator, Village of Ohio City

The Village of Ohio City is located in Liberty Township in the southern part of Van Wert County. As of the census of 2000, there were 784 people residing in the village. The population has been stable over the last 10 years.

The Village of Ohio City's new wastewater treatment plant

The original wastewater treatment plant, constructed in 1968, had an average daily flow of 120,000 gallons per day (gpd), a design capacity of 150,000 gpd and a peak flow of 350,000 gpd. Treatment consisted of a Spiragester for primary settlement and solids stabilization, one rock media trickling filter, one final clarifier and chlorination followed later by dechlorination. Thickened sludge from the Spiragester was transferred to drying beds. The treatment plant had overall removals for TSS, BOD and ammonia of 81%, 85% and 67% respectively. The plant discharges to Prairie Ditch, a tributary of Little Auglaize River.

A number of upgrades to the collection system were made between 1993 and 2001. However, although these upgrades were completed fairly recently, there were high flows during wet weather, and ongoing I/I issues.

By 2005, the average daily flow was 130,000 gpd and peak daily flow had increased to almost 620,000 gpd, which consisted of 350,000 gpd treated flow and 270,000 gpd through the plant bypass.

The WWTP has been missing its effluent limits on both BOD and ammonia as far back as 2003 and has also had some more recent failures on total suspended solids (TSS). 30 day limits were 2.3 mg/l ammonia (summer) and 6.0 mg/l ammonia (winter), 10 mg/l BOD and 20 mg/l TSS. In addition, with the equipment being almost 40 years old, it was becoming difficult to maintain. With one of each process unit, there was also no redundancy.

With the renewal of the NPDES Permit in 2007, the Village hired a local consultant (Mote & Associates) to address modifications required to the WWTP to allow it to consistently meet the permitted levels for BOD and ammonia.

In March 2007, Mote & Associates hired Jones & Henry Engineers to provide engineering services. Jones & Henry developed a preliminary WWTP Expansion report. The report proposed demolition of the pump station, clarifier, trickling filter and Spiragester tank and construction of a new WWTP on a 5 acre site the Village owned adjacent to the existing plant. The existing chlorination tank and outfall structure were to be left in place. Demolition would include removal of the equipment and demolishing the structures to below grade. The area would then be re-graded and seeded.

Funding for the new plant project involved three sources. The sources included a $500,000 CDBG grant, a $500,000 OPWC grant, a $1,000,000 OPWC loan and a $1,500,000 WPCLF loan.

Three extended aeration process configurations were considered. All configurations were reviewed as a complete installed system with pumping, screening, disinfection, and sludge stabilization included in the construction and operational costs.

The first configuration was a packaged extended aeration system - with the carbonaceous and nitrifying stages in series - and final clarifiers.

The second configuration was a continuous sequential batch reactor (SBR). SBR is a fill and draw system with flow equalization, aeration, and settlement all occurring in the same tank.

Original wastewater treatment plant, showing pump station in foreground and Spiragester and trickling filter in background.

Aerial photograph of original wastewater treatment plant, showing pump station, Spiragester, trickling filter, clarifier, chlorine contact tank and sludge drying beds.

View from above Orbal, showing aeration rotor covers.

The third configuration considered was an oxidation ditch / clarifier combination. Oxidation ditches can typically handle peak: average flow ratios of up to 5:1. Aeration in the ditches is typically by surface aeration using brushes or rotors. Owing to the simple external mechanisms, oxidation ditches require low maintenance and minimal operator attention. Oxidation ditch technology can be simple for BOD and ammonia removal or become more complex should denitrification and biological phosphorous removal be required. For Ohio City, the system had two ditches operating in parallel followed by two clarifiers. A common sludge pumping system would be used.

Life cycle cost analysis done over a 20 year period using 5 percent interest found the three configurations to be extremely close in terms of Net Present Worth (NPW). The option with the lowest NPW was the oxidation ditch, which had the highest project installation costs but the lowest labor and maintenance / replacement costs. The oxidation ditch also was the most secure in terms of permit limits under storm flow conditions. This is the treatment option that was proposed to the Village.

Early on in the detailed design stage of the project, it was proposed that the two oxidation ditch system be modified to a single 'Orbal' type ditch (Siemens) with two rings, with which they would be able to use their SmartBNR system to cope with storm flows. SmartBNR has two modes of operation depending on influent flows. For high flows, the system would operate in Storm Flow Mode, which diverts return sludge flows to hold solids within the activated sludge system and prevent solids loss from the clarifiers.

The Orbal design was originally a simple two channel design which made no allowance for future permit modifications, in particular the addition of a denitrification requirement which would require an anoxic tank. The Orbal design was therefore modified, adding a simple stirred tank connected to the outer channel, which could be used for mixing incoming wastewater and return sludge at this stage and as an anoxic tank in the future.

In addition to the oxidation ditches, the project also included replacement of the lift station that was removed, screening prior to treatment, UV disinfection and aerobic digestion for stabilization of waste sludges. The existing sludge drying beds were to remain.

Flows now gravitate to a new submersible pump station at the wastewater treatment plant, where they are pumped to treatment. Supernatant and drainage also flow through the new pump station.

Construction of the UV disinfection channel with the existing chlorine contact tank in the background.

A mechanical fine screen is located in a channel above the anoxic tank. The screen and washwater supply is insulated and trace heated. Raw sewage flow is pumped to this channel and screened sewage drops through a hole in the screen channel floor into the anoxic tank; the return sludge is pumped directly into the anoxic tank. From the anoxic tank, flows proceed into the Orbal for biological treatment. Selection of whether flows pass to the inner or outer channel of the Orbal is made by valves.

Flows are fed to the outer Orbal channel most of the time. Flows run around the outer channel and pass through a submerged orifice to the inner channel. Both channels have surface aeration which operates as required. From the inner channel, aerated wastewater passes through an adjustable sluice gate and over a weir and is piped to the clarifiers. The adjustable gate allows the depth of liquid in the Orbal to be altered, which in turn alters the depth of submergence of the aerators and the amount of oxygen transferred.

Clarifiers are concrete with bridge supported mechanisms to push the settling sludges to the center of the tank. Sludges are withdrawn to a common return and waste sludge pump station. A timed valve arrangement either returns sludge to the Orbal or wastes sludge to the aerobic digesters to be stabilized.

Clarified effluent passes forward for disinfection through a UV disinfection system. The chlorine contact tank was taken out of service and a new channel constructed for the UV lamps. The existing final effluent v-notch flow measurement weir was modified to be able to measure larger flows. The original outfall pipe remains.

Waste sludges are stabilized in new aerobic digesters. Two new tanks with new supernatant decant telescoping valves, blowers, piping, and diffusers were installed as part of the project.

Once stable, sludges are pumped to either existing sludge drying beds – from where they can be transferred to new sludge storage – or direct to tanker for transport off-site for land application.

Drainage from the drying beds and sludge storage, as well as supernatant decanted from the aerobic digesters, are routed back to the raw wastewater pump station.

The final part of the contract was construction of a service building to accommodate laboratory and office space, a restroom, an electrical room for the controls and motor control center, and a garage.

continued on page 48

New sludge storage area

Jones & Henry Engineers also assisted the Village with start-up of the new treatment plant. The plant was started up on July 5, 2011. On that day, aeration channels and clarifiers were filled with final effluent from the Village's existing trickling filter plant. On July 6th, a piping change was made at the inlet to the old treatment plant allowing raw sewage to begin flowing to the new raw sewage pumping station.

During the day, a local hauler brought in 20,000 gallons of return sludge from the Van Wert Wastewater Treatment Plant which is located ten miles north of Ohio City. Prior inspection of the Van Wert return sludge revealed a stable activated sludge with no filaments and a very good history of ammonia, and cBOD removal.

Within two days of the start-up, cBOD, TSS and ammonia removals were occurring and just over a week after start-up, laboratory results indicated effluent from the Orbal contained 5.2 mg/L cBOD, 2.8 mg/L TSS and 0.5 mg/L ammonia.

The build-up of mixed liquor suspended solids concentration in the outer and inner aeration channels took some time based upon daily flows of 110,000 gpm and raw sewage cBOD concentrations of 100 – 200 mg/l. Within three weeks MLSS values were over 2000 mg/l.

As months went by, the Village experienced increased flows during rain events. Figure 1 shows a graph of rainfall and daily flow for the month of October 2011.

The staff learned to operate the treatment plant in "storm mode" during rain events. Under this mode, the RAS is directed to the outer channel while raw sewage is sent to the inner channel, creating a contact stabilization type process during a rain event.

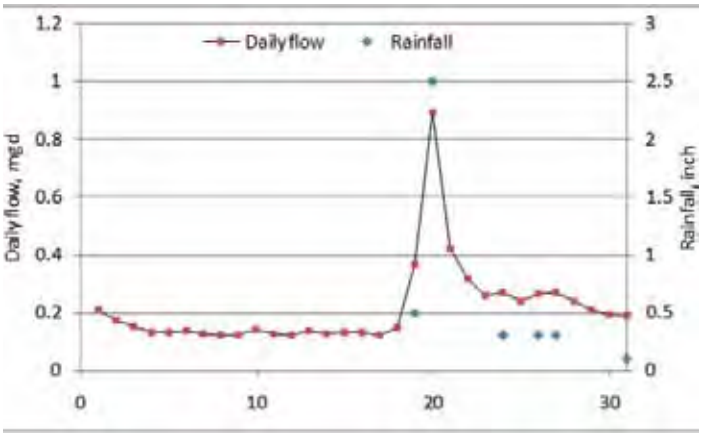

Figure 1 - Rainfall and Daily Flow for October 2011

The "storm mode" process 'anchors' the RAS and prevents a wash-out of biological mass while at the same time the treatment efficiency is not diminished. When flows exceed 250,000 gallons per day, the operator converts the plant into contact stabilization. The change to "storm mode" is a simple matter of changing four plug valves. When daily flows return to below 250,000 gpd the plant is changed back to normal operation.

The plant has easily handled peak flows events and in November handled a 930,000 gpd event.

Jones & Henry Engineers, Ltd.
Daniel Miller, P.E., Director of Wastewater
Joseph Hotz, P.E., Vice President
Paul Fletcher, Project Engineer
Doug Brookhart, Operations Specialist

Village of Ohio City
Jeff Krugh, Administrator
Jeff Smith, Operator

WHAT YOU NEED TO KNOW ABOUT AEROBIC DIGESTION

by Jim Scisson

Project Need and Background

People think I'm an aerobic digestion expert, and I was an author on the latest EPA solids handling manual, so I'll give you a boiled-down (not sleep-inducing) version of what I think you should do.

What Is Aerobic Digestion?

Aerobic digestion is dieting. Waste activated sludge is put in a reactor and aerated. The organisms run out of food and die, and the cells lyse, providing food for some of the remaining organisms. There is nitrification going on too, and hopefully, denitrification as well. The chemical formulas for all of this are:

Destruction of biomass in aerobic digestion

$$H_7O_2N + 5O_2 \Rightarrow 4CO_2 + H_2O + NH_4HCO_3$$

Nitrification of released ammonia-nitrogen

$$NH_4^+ + 2O_2 \Rightarrow NO_3^- + 2H^+ + H_2O$$

Complete nitrification

$$C_5H_7O_2N + 7O_2 \Rightarrow 5CO_2 + 3H_2O + HNO_3$$

With partial nitrification

$$2\ C_5H_7O_2N + 12O_2 \Rightarrow 10CO_2 + 5H_2O + NH_4^+ + NO_3^-$$

Denitrification using nitrate nitrogen as electron acceptor

$$C_5H_7O_2N + 4NO_3^- + H_2O \Rightarrow NH_4^+ + 5HCO_3^- + 2N_2$$

With complete nitrification and denitrification

$$C_5H_7O_2N + 5.75O_2 \Rightarrow 5CO_2 + 0.5N_2 + 3.5H_2O$$

Biomass gets turned into carbon dioxide and water. Ammonia gets turned into nitrate and hydrogen ion. Nitrate gets turned into nitrogen and oxygen and half of the hydrogen ions are taken up into hydroxide.

How to Design a Digester

A digester should not be a wide spot in the pipe where sludge is pumped and retained for a pre-determined period of time. Rather, an aerobic digestion system is a process performed in a reactor, and should be treated as such. As was mentioned above, aerobic digestion incorporates a wide array or reactions, which ultimately reduce the volatile mass of and destroy pathogenic bacteria.

How Big Should It Be?

Manual of Practice 11, Volume III 1990, provides a good explanation of the aerobic digestion process, and is an excellent reference. One of the most fundamental points to acknowledge is that aerobic digestion is temperature sensitive, and the higher the temperature, the faster the process reactions will occur. The critical point is that volatile solids reduction requires a requisite amount of temperature x- time to achieve the necessary objective. For example in order to achieve the required Class B level of reduction at 38% volatile solids reduction, a temperature-time combination of 900 and 1200 degree-days (centigrade) is required. If the temperature is higher, the time is lower, and conversely if the temperature is lower, the time to achieve the same level of performance is greater. Specifically, at 20 degrees C, 45 to 60 days of time is required, and at 15 degrees C, 60 to 90 days of time is required. It should also be noted that under temperatures less than 10 degrees C, the digestion process slows so much that little volatile solids destruction occurs.

How Many Stages Should It Have?

I suggest three stages. Two stages gets you a 25% reduction in solids retention time (SRT) and three stages lets you take one tank out of service for cleaning or maintenance without adversely affecting your operation. It should be designed so that you can feed waste activated sludge (WAS) into any section either as thin WAS or thickened WAS.

Should It Have Covers?

In places where it gets cold, one tank or more should have a cover for heat retention. NOTE: In the summertime a covered tank will auto heat, stink and foam up (not good). You need to be able to take part of the cover off, or have lots of hatches, or use the covered tank as the third stage or liquid storage.

What Kind of Diffusers Should I Use?

You can use either fine bubble or coarse bubble diffusers. Both have different qualities and limitations. See the section below on how thick your sludge should be.

Figure 2. Coarse Bubble Diffusers

Figure 3. Fine Bubble Diffusers

What Kind of Blower Should I Use?

Every book you read says you must use positive displacement (PD) blowers for aerobic digesters, and cannot use centrifugal blowers. I disagree. Centrifugal blowers can be used, and can supply multiple tanks. All the operator has to do is use the air flow control valve on the drop header to each tank, and pinch back the tank with the lowest level so all the air does not flow into that tank. Why use centrifugals? They are more efficient than PD blowers and much quieter. The PD blower manufacturers are now offering PD blowers with variable frequency drives (VFD) for speed control and nice enclosures to get the noise level down to 70 dB or even less.

In addition to air flow control valves, each tank drop should have a flow meter. Why? BECAUSE IF YOU CAN'T MEASURE IT YOU CAN'T CONTROL IT!

continued on page 50

How Do I Thicken the Sludge?

There are several methods for thickening the sludge, including:

Figure 4. PD Blower in Noise Suppressing Enclosure

- Supernating. If possible you should get an SBR decanter for supernating instead of a telescoping valve. It will save a lot of time and allow a cleaner supernatant to be decanted. Another option is to tie a submersible pump to an inner tube and float it in the digester on a long hose and electrical cord. Supernating usually thickens the sludge up to 2.5%. Your results may vary.
- Belt thickeners and drum thickeners. Mechanical thickeners can thicken the sludge up to 10% or more if you want to use high doses of polymer. Not a good idea. Your aeration system will not handle more than 3 or 4 % solids (more on this later) and you will end up with a putrid, quivering mess. Limit your thickening to about 5% TS out of the machine.
- Membrane thickeners (MBT). This is the most elegant way to thicken aerobic digester solids, especially if you do it as a recuperative thickener. What is a recuperative thickener? It's one where you pump thin sludge from your digester to the thickener, usually at about 200 gpm. The membrane underflow pumps are set to pull out a small amount of permeate – as little as 10-15 gpm, but maybe as much as 25-50 gpm depending upon the capacity. This thickens the sludge up a little, and it falls by gravity back into a digester. You run the MBT until you get it as thick as you want it (usually 3 to 3.5% TS). What's so elegant about this? You don't have to pay much attention to it. You turn the system on and it can run for days before it needs attention. In addition, you don't have to worry about phosphorus recycle as you do from supernating. When you supernate a bio-P sludge, you can get phosphorus concentrations as high as 70 mg/L, which will ruin your day when it recycles to the aeration tank. The permeate can be discharged to the plant effluent.

Figure 5. An MBT

Sludge Thickness

Sludge thickness affects oxygen transfer efficiency. Oxygen transfer is less efficient as the sludge gets thicker. The point where process air exceeds mixing air is about 3% TS for fine bubble diffusers, and about 4% TS for coarse bubble diffusers. I'll show you all the boring calculations another time because this article is getting long. Trust me.

Tank Height

Some people advocate building really tall tanks (22') for improved oxygen transfer efficiency. This is true, but the increased pressure on the diffuser at the tank bottom requires extra energy. With cheap energy, it's a wash. With expensive energy, it costs you more to have a deep tank than a conventional tank.

Liquid Storage

LIQUID STORAGE DOES NOT NEED TO BE AERATED! Once you have stabilized it, you do not need to keep aerating it, If you do, you just make pH problems for yourself by nitrification, and if you get it really thick, you blow the stink up in the air.

To recap, the digester should:

- Be a reactor, not just a wide spot in the tank
- Have 45 days SRT in 3 switchable stages
- Have storage separate from a reactor
- Not make the sludge too thick
- MBTs are great
- Not aerate liquid storage.

Process Control

Now for some process control information. You can improve your digestion and save a lot of energy by following a few simple rules.

Most digesters nitrify. Nitrification makes acid and reduces the pH. pH depression can get as low as 3.5, which then pickles all the organisms and you have a pretty dead digester except for some yeasts.

pH can be restored by turning off the air and allowing it to denitrify. Denitrification is slower than nitrification, so, for best results, you should turn the air off for twice the time you aerate it. In real world terms, this means you can turn the blowers off when you leave for the day at the end of the day shift, and turn them back on in the morning. You will then track your pH to see if that is effective. When it's hot out you will have to run the blowers longer. That's why you have timers on your blowers. Pay attention to what's happening and make changes as needed. You will end up with a sludge that dewaters/decants better and save energy.

Indicators

Dissolved Oxygen (DO)

An aerobic digester should be aerobic part of the time. How much time will vary from plant to plant. In general, you should have a DO above 0 at least 33% of the time.

Oxidation-Reduction Potential (ORP)

To know more about the conditions inside the tank, an ORP meter is better than a DO meter, because the ORP meter sort of tells you how far below zero DO the tank is. ORP tells you how and when to cycle the air flow to get good affect. In a digester that is cycling between nitrifying and denitrifying conditions, the ORP will probably cycle between on ORP of +100 and -200 mV.

pH

pH is slow to change. It may be that you need to look at other values to control your operation.

Ammonia

Nitrification destroys ammonia, meaning you have aerobic conditions. Septic conditions create ammonia, as it evolves out of protein destruction. Since you are most likely testing your effluent, you can test your digester too. You'll have to figure out for yourself what ammonia values are too high, but 125 mg/L is a place to start.

Alkalinity

Alkalinity is a measure of the sludge buffering capacity. Depending upon conditions, alkalinity will range from 0 (too low) to 700 or more (too high). Adjust your air accordingly.

Total Solids

If you are thickening your sludge, especially with a mechanical thickener, you need to watch your solids and make sure they do not get too thick, unless you are going to unaerated storage.

Odors

Your nose will tell you when something is wrong. It's up to you to fix it.

It can be that easy if you are not so stubborn as to do it differently and are not afraid to make adjustments to your system.

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Conveyor Systems
Belt Press Parts
Flow Meters

What if you knew a killer was stalking your home or facility? A silent, deadly killer that could steal away your family or employee's lives without any warning. Wouldn't you do something about it? A worker using a powered saw to cut a hole in a storm drain box was overexposed to carbon monoxide from the saw and had to be taken to a hospital for treatment. This could have been prevented with proper training and monitoring.

Carbon monoxide (CO) is an odorless, colorless gas that can cause sudden illness and death. CO is found in combustion fumes, such as those produced by cars and trucks, small gasoline engines, stoves, lanterns, burning charcoal and wood, gas ranges, and heating systems. CO gas can build up in enclosed spaces such as garages, sheds, or porches.

Carbon monoxide interferes with the proper delivery of oxygen in the blood to the rest of the body. When you inhale high concentrations of this deadly gas, it can displace the oxygen in your bloodstream. The most common symptoms of CO poisoning are headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. At high levels, it can cause loss of consciousness and death. Since symptoms mimic other illnesses, it can be difficult to diagnose. People who are sleeping can die from CO poisoning before ever experiencing symptoms. Approximately 1,000 people die each year as a result of CO poisoning.

There are a few simple precautions that can be taken to prevent CO poisoning:

- Make sure all combustion appliances are installed according to the manufacturer's specifications and are properly maintained.
- Have your heating system, water heater, and any other gas, oil, or coal-burning appliance serviced by a qualified technician every year.
- Keep flues open when fireplaces are in use. Never use an unvented stove or fireplace.
- Do not heat your home with a gas range or oven.
- Generators, charcoal grills, and camp stoves should not be used inside your home or building.
- Never run a car or truck inside an attached garage, even if you leave the garage door open.
- Install a battery-operated CO detector in your home. Check and replace the battery each spring and fall.

- Test your detector regularly. Plan what your family will do if the detector sounds. If the alarm ever sounds, leave your home and then call 911.

Remember, CO can be deadly! If your detector sounds get fresh air immediately. Open the doors or windows. If you can, turn off the combustion device and get outside. Most fire departments have meters to test for CO and can set up ventilation systems. Seek medical care and be sure to tell the physician that you suspect carbon monoxide poisoning.

Ed Nutter
Safety Committee Chair
enutter@newarkohio.net

In Ohio, there were 139 unintentional, non-fire related deaths from carbon monoxide poisoning between 1999 and 2004. Ohio had the fourth-highest number of deaths in the country, accounting for 5.3 percent of the carbon monoxide deaths occurring in the U.S. (www.odh.ohio.gov)

Additional information available at:
http://www.cdc.gov/co/
http://www.osha.gov/SLTC/healthguidelines/carbonmonoxide/recognition.html

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NUTRIENT REMOVAL WITHOUT FACILITY UPGRADES

by Grant Weaver, PE, ABC Grade IV Wastewater Operator

Wastewater treatment facilities can often be made to remove nitrogen by changing the way existing equipment is operated, without facility upgrades. The same goes for phosphorus.

Creating nutrient removal habitats in existing tanks not only saves millions of dollars in avoided construction, it provides more sustainable treatment by avoiding the carbon footprint associated with new construction.

Connecticut's ten year old Nitrogen Credit Exchange program has spawned innovation. Many of the state's municipal wastewater treatment plants are effectively removing nitrogen without facility upgrades. Instead of investing in new equipment that is expensive to build, operate, and maintain, a number of cities and towns are producing effluents with total-Nitrogen concentrations under 6 mg/L by operating existing equipment differently. Without upgrades, plants in Connecticut and elsewhere are removing total-Phosphorus to 0.5 mg/L and less.

Forty-six of the 80 domestic wastewater treatment plants in Connecticut's Nitrogen Credit Exchange program have been upgraded for nitrogen removal. The results: effluent total-N averages 6 mg/L for the upgraded plants, 62% less than what the facilities discharged prior to the upgrades. The cost of the upgrades: $865 million, of which $283 million was spent on nitrogen removal equipment. In Connecticut, the cost of nitrogen removal has averaged $6.15 million per treatment plant, with an average of $18.8 million per entire plant upgrade.

Twelve of the 34 plants not upgraded have achieved the same results. On average, with an effluent total-N averaging under 6 mg/L, one dozen facilities comply with their 2014 nitrogen limits (or, very nearly so). Instead of relying on multi-million dollar facility upgrades to remove nitrogen, these eleven municipalities made changes in O&M practices to reduce nitrogen by 63% from their late 1990's levels. Not only are the optimized facilities getting the same level of treatment as upgraded facilities, more often than not the process changes are providing ongoing O&M savings.

Optimizing existing treatment plants requires an applied understanding of science. The biochemistry that drives nitrogen removal can be complicated. When understood, and when coupled with hands-on operational experience, plant professionals can – as is happening in Connecticut – oftentimes get their old plants to effectively remove nitrogen. This is done by establishing optimal habitats for the removal of ammonia-nitrogen (nitrification) and a different habitat for the removal of nitrate-nitrogen (denitrification).

Improving phosphorus removal requires the establishment of an anaerobic habitat followed by an aerobic habitat. Anaerobic fermentation can occur in the main stream by the creation of a pre-anaerobic tank or a side stream anaerobic stream can be used for fermentation; examples include septage receiving station, gravity thickener, and sludge storage facilities.

Examples of O&M changes made to improve nitrogen and/or phosphorus removal follow:

Farmington, Connecticut. For nitrate-nitrogen removal, the BOD loading on the mechanically aerated aeration tanks were increased by minimizing flow to the roughing filters. The mechanical aerators in the aeration tanks are cycled to create alternating aerobic and anoxic conditions. Contact: Bill Kaminski or Andy Stachowiak at (860) 675-2545.

Groton City, Connecticut. For nitrate-nitrogen removal, baffles fabricated by a local sail maker were installed in the parallel plug flow aeration tanks. Air was turned off in the pre-anoxic segments. A mechanically operated internal recycle valve was installed on the aeration drain line; its operation is controlled by in-tank nitrate analyzers. DO probes control the on/off cycling of the aeration blowers. Contact: Kevin Cini at (860) 446-4000.

Killingly, Connecticut. For nitrate-nitrogen removal, the second of two parallel aeration tanks was placed in service. The air in the first pass of each plug-flow aeration tank was turned off. Blower operations are controlled by DO probes connected to SCADA. RAS is co-mixed and returned to the bio-tower that precedes aeration. ORP probes are used to monitor and maintain anoxic conditions. As a side benefit, this practice has reduced total-Phosphorus to 0.2 mg/L – without chemicals. Contact: Glen Tatro at (860) 779-5392.

Montague, Massachusetts. For ammonia-nitrogen removal, the mixed liquor suspended solids (MLSS) concentration has been increased to 5500 mg/L. For nitrate-nitrogen removal, the two parallel aeration tanks are alternatively operated with and without aeration. The RAS (return activated sludge) is pumped into the tank with air off. For phosphorus removal, flow from the gravity thickener is conveyed to the aeration tanks. Contact: Bob Trombley or John Little at (413) 773-8865.

Mystic, Connecticut. For improved nitrogen removal, aeration tank blowers are cycled on and off. RAS (return activated sludge) is recycled during air-off cycles. Contact: Glen Tatro at (860) 779-5392.

New Hampshire. For phosphorus removal, a 5 MGD municipal wastewater treatment plant established a mixed pre-anaerobic tank by turning off aeration in the first cell of the aeration tanks. PAC (poly-aluminum chloride) is dosed to the secondary clarifier inlet splitter box to remove the remaining soluble phosphorus. An in-line ortho-phosphate meter tracks effluent ortho-P. Effluent phosphorus averages 0.16 mg/L. Contact: Grant Weaver at (860) 444-0866.

Plainfield North, Connecticut. For nitrogen removal, the mechanical mixers in the parallel aeration tanks are cycled on and off to create alternating aerobic and anoxic conditions. Portable DO/ORP monitors with data recorders track conditions 24/7. Contact: Jeff Young or Mike Hurley at (860) 564-3335.

Plainfield Village, Connecticut. For ammonia-nitrogen removal, mixed liquor concentration was increased to 2400 mg/L. For nitrate-nitrogen removal, a surplus of WAS (waste activated sludge) is sent to the gravity thickener. The anoxic conditions in the gravity thickener remove nitrate and the mixed liquor overflows the tank and is returned to the aeration tank as RAS (return activated sludge). The volatile fatty acids released from the gravity thickener aid in biological phosphorus removal. Effluent total-P is averaging 0.5 mg/L without chemical addition. Contact: Jeff Young or Jay Young at (860) 564-3335.

continued on page 57

	Nitrogen Discharged (lbs/day)			% Less Nitrogen	Cost of Upgrade	
	Base	Current	2014 limit		Total Upgrade	Nitrogen Related
East Windsor WPCF	163	20	59	88%	$10,000,000	$1,000,000
Jewett City WPCF	42	5	15	88%	$10,000,000	$1,500,000
Cheshire WPCF	281	38	103	86%	$5,775,000	$5,775,000
Simsbury WPCF	293	43	107	85%	$21,231,000	$4,044,000
Westport WPCF	238	36	87	85%	$37,531,000	$8,653,000
New Canaan WPCF	175	29	64	83%	$14,000,000	$1,235,000
Newtown WPCF	115	19	42	83%	$12,000,000	$1,058,000
Branford WPCF	526	99	192	81%	$21,542,000	$3,158,000
Meriden WPCF	1230	241	449	80%	$42,455,000	$32,517,000
Stamford WPCF	2536	497	926	80%	$100,723,000	$63,000,000
Suffield WPCF	122	25	45	80%	$4,075,000	$3,370,000
Thomaston WPCF	114	25	42	78%	$9,313,000	$1,164,000
Ledyard WPCF	20	5	7	75%	$3,500,000	$3,500,000
New Hartford WPCF	12	3	3	75%	$10,000,000	$1,000,000
Stratford WPCF	974	245	356	75%	$54,800,000	$10,916,000
Milford Housatonic WPCF	844	238	307	72%	$35,550,000	$10,688,000
New London WPCF	1057	293	386	72%	$3,069,000	$2,889,000
Fairfield WPCF	1113	325	406	71%	$45,251,000	$16,746,000
Waterbury WPCF	2766	802	1049	71%	$120,000,000	$17,359,000
Norwalk WPCF	1967	600	718	69%	$57,100,000	$6,638,000
Bridgeport West WPCF	2852	915	1041	68%	$2,375,000	$2,375,000
Derby WPCF	195	63	71	68%	$2,763,000	$2,763,000
Enfield WPCF	763	248	278	67%	$2,390,000	$2,390,000
Portland WPCF	86	28	31	67%	$5,200,000	$1,047,000
Greenwich WPCF	1313	458	479	65%	$500,000	$500,000
New Haven East WPCF	4294	1494	1568	65%	$8,200,000	$8,200,000
Plainville WPCF	277	97	101	65%	$22,931,076	$4,815,525
Southington WPCF	557	194	204	65%	$13,000,000	$13,000,000
Bridgeport East WPCF	991	357	362	64%	$2,090,000	$2,090,000
Seymour WPCF	167	62	61	63%	$9,800,000	$250,000
Winsted WPCF	175	64	64	63%	$1,100,000	$1,100,000
North Haven WPCF	433	164	158	62%	$1,000,000	$1,000,000
Milford Beaver Brook WPCF	258	101	94	61%	$12,700,000	$2,613,000
Shelton WPCF	290	113	106	61%	$21,642,000	$4,293,000
East Hartford WPCF	801	366	292	54%	$1,965,000	$1,965,000
Ridgefield South St. WPCF	80	38	29	53%	$200,000	$200,000
UConn WPCF	120	56	44	53%	$12,000,000	$1,058,000
Windsor Locks WPCF	180	87	66	52%	$2,349,000	$1,841,000
Danbury WPCF	1211	597	442	51%	$5,000,000	$5,000,000
Bristol WPCF	1091	560	398	49%	$584,000	$584,000
Litchfield WPCF	64	35	24	45%	$4,000,000	$1,000,000
Hartford WPCF	6512	3841	2377	41%	$40,489,000	$6,900,000
Groton Town WPCF	420	260	153	38%	$16,551,000	$4,842,000
Wallingford WPCF	737	456	269	38%	$2,276,000	$2,276,000
West Haven WPCF	967	612	353	37%	$55,750,000	$13,950,000
East Hampton WPCF	148	117	54	21%	$690,000	$690,000
Total	**39,570**	**14,971**	**14,482**	**62%**	**$865,460,076**	**$282,952,525**

The first step in getting facilities not designed for nitrogen removal to effectively remove nitrogen is to optimize the conversion of ammonia-nitrogen to nitrate-nitrogen. Doing so requires an understanding of the obstacles. Among them: hydraulic retention time, sludge age, dissolved oxygen (DO) concentration, and alkalinity. To learn more, technical guidance is available at *http://thewaterplanetcompany.com/wastewater_science.htm.*

Ammonia removing bacteria reproduce far slower than conventional bacteria. In activated sludge facilities, it is usually necessary to operate with a high mixed liquor concentration in order to give the ammonia removing bacteria time to grow. Trickling filters are typically operated in series so that the first unit removes the majority of the BOD and the second trickling filter becomes populated with the slower growing nitrifying bacteria. To remove ammonia, an abundance of oxygen is required, but oftentimes nowhere near what some textbooks state. When alkalinity is a factor, it may be necessary to establish denitrification in order to optimize nitrification; one-half of the alkalinity consumed during the conversion of ammonia to nitrate is returned when nitrate is converted to nitrogen gas.

Nitrate is converted to nitrogen gas (denitrification) in either a separate low oxygen environment or in tankage that is cycled in and out of oxygen-rich (aerobic) and oxygen-poor (anoxic) conditions. Pushing the anoxic zone into anaerobic conditions and operating it as a fermenter will create volatile fatty acids, an excellent food source for nitrate removal and, not incidentally, a terrific energy source for biological phosphorus removal. More information can be found at the company's web site *http://thewaterplanetcompany.com/wastewater_science.htm*.

Effective nitrogen removal requires more operator attention than conventional treatment. The ideal monitoring arrangement includes in-line DO, oxygen reduction potential (ORP), nitrate, and ammonia analyzers with daily testing for alkalinity. For phosphorus removal, an in-line ortho-phosphorus analyzer is invaluable.

Recognizing that the "ideal" is rarely attainable, alternatives are available. We have had successfully operated many a facility by monitoring the process daily with nitrite-nitrate, ammonia, and alkalinity test strips.

In establishing habitats for improved nitrogen removal, plant operators benefit from lower O&M expenses and – generally – a healthier, more resilient treatment process. After altering processes to improve nitrogen (and/or phosphorus), plant personnel usually find new ways to handle process upsets. For example, shutting off aeration and reducing return sludge pumping rates during storm surges in order to prevent solids washout. Among the day-to-day benefits, the higher mixed liquor reduces the quantity of sludge that needs to be removed. The creation of low-oxygen environments reduces electrical demand and the need for supplemental alkalinity.

The three keys to optimization are: (i) an understanding of the science, (ii) timely information, and (iii) experimentation. Most facilities have a sweet spot; a sometimes elusive optimal operating condition that takes a good amount of trial and error to locate and maintain. Treatment facilities that approach nutrient removal as a team create a workplace that can be rewarding for all involved.

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OHIO'S NUTRIENT REDUCTION STRATEGY

by Dan Dudley
Ohio EPA, Division of Surface Water, Standards & Technical Support Section

Nutrient pollution is a major water quality problem in Ohio and throughout the nation. While efforts to control nutrient enrichment over the past 30 years yielded some positive results, current evidence shows the need to develop newer solutions and hone the focus on existing strategies to effectively reduce nutrients in our waterways.

Approximately 48 percent of Ohio's watersheds are degraded by nutrient loading from phosphorus and nitrogen and severe algal blooms are damaging the health of Lake Erie and some inland lakes. U.S. EPA has asked states to develop state nutrient reduction plans because states are in the best position to collaborate and find effective solutions.

When the Clean Water Act was adopted in 1972, the focus was put on point source pollution –pollutants coming out of a pipe. Much has been done to reduce impacts from these sources, but more is needed.

Ohio EPA will focus on both point source and nonpoint source pollution while continuing to develop the Ohio Nutrient Reduction Plan. The goal is to restore and maintain the intended uses established for waterways, including water supply, recreation and aquatic life. The development and adoption of nutrient standards under the Clean Water Act is important in this process.

Ohio's Plan

Under the nutrient reduction strategy being developed in Ohio, a target goal will be set for waterways to be considered clean. The strategy will include a renewed emphasis on nutrient removal from point sources and a conceptual framework that identifies actions to accelerate progress in reducing nutrients from nonpoint sources.

Ohio EPA will work with businesses and communities to clean nutrient stressors from waterways by finding the best avenues to reduce these loads within five to 10 years. Strategies will be based on feedback from citizens, industry, stakeholders and affected communities. At the same time, the Ohio Department of Agriculture (ODA) will work with the agriculture community to develop similar phosphorus reduction strategies.

Ohio EPA, ODA and the Ohio Department of Natural Resources (ODNR) will continue to work together, meeting with stakeholder and work groups to determine concepts and develop recommendations. The draft nutrient reduction strategy was submitted to U.S. EPA as a framework that will be used to develop specific implementation strategies to reduce nitrogen and phosphorus levels.

Municipal Concerns

Every municipality in Ohio is potentially affected by the nutrient strategy because phosphorus is usually the limiting nutrient in fresh water systems. In addition, high levels of phosphorus are present in domestic sewage. The strategy describes how a current or potential nutrient problem is confirmed, and would set discharge permit limits designed to restore good water quality.

Where there is a water quality problem, Ohio EPA will work with each community to help them comply with more stringent phosphorus discharge limits. Cities and counties will be given the opportunity to phase in added treatment or engage in water quality trading.

Business Concerns

Business and industry will be affected to varying degrees depending on industry type. Agricultural producers are not directly regulated, but as sources of nitrogen and phosphorus, they have an important role in helping to reduce the delivery of nutrients to Ohio's waterways.

Only a handful of point source industrial sectors discharge significant levels of phosphorus, such as food processing and electroplating facilities. Industries discharging lesser amounts of phosphorus in process wastewaters may still be impacted, but to a lesser degree. In the storm water program, facilities that handle bulk fertilizer may be a significant potential runoff source and would need to implement best management practices and perhaps adhere to limits on runoff.

Analyses

Considering the millions of dollars already spent responding to the symptoms of nutrient enrichment, costs could soon outweigh the expense of controlling nutrients at their sources.

Some activities, such as fixing combined sewer overflows, are very costly. Agricultural producers often operate with narrow profit margins and variable crop prices, which can make adopting some environmentally beneficial practices a burden. The costs cannot be overlooked, especially in the current economic climate.

While many projects will be spread over many years to make them affordable, some initiatives can be done rapidly and with minimal cost. This includes education and outreach to homeowners and the agricultural community to inform them about best management practices that could be done at low or no cost.

Nutrient issues did not become a problem overnight and they will not disappear quickly. It will take everyone working together to restore Ohio's waters and protect our water resources for future generations.

The Framework

The draft framework of the nutrient reduction plan is intended as a starting point for a multi-year, multi-faceted effort to reduce nutrient pollution in Ohio's surface waters. The goal is to find a cost-effective means to reduce the delivery of nutrients present in point source effluents and nonpoint source runoff.

Ohio will use a five-point approach:

1. improve storm water management practices;
2. enhance regulatory practices;
3. expand public outreach and education efforts;
4. improve land use practices; and
5. improve stream habitat management.

Specific steps to address nutrient sources in the strategy include:

- continue to implement programs to control or eliminate combined sewer overflows;
- adopt nutrient water quality standards by applying a weight of evidence approach;

- reduce phosphorus concentration in discharges from municipal wastewater treatment plants;
- implement manure management plans for additional Ohio livestock farms;
- implement responsible commercial fertilizer practices to reduce nutrient loads on agricultural fields;
- install conservation practices that reduce the rate and amount of runoff from agricultural fields;
- implement whole-farm conservation planning to protect water resources as part of best management practices;
- educate property owners to use phosphorus-free fertilizers and eliminate runoff from lawns and gardens;
- educate property owners about home septic system maintenance;
- control storm water runoff from construction and industrial sites; and
- address municipal storm water discharges from the municipal separate storm sewer systems (MS4) program.

Nutrient Management Model

Ohio EPA plans to follow an established nutrient management model and use the work product of several ongoing workgroups in Ohio to discuss nutrients and their impacts on Ohio's waterways. They include:

- Lake Erie Phosphorus Task Force – The task force was established in 2007 and included experts from academia, government agencies, agri-business and other stakeholders.
- Lake Erie Phosphorus Task Force Phase II – The task force will convene in February 2012 under provisions and funding from U.S. EPA. A similar group of stakeholders will focus on the means of implementing practices that reduce the delivery of dissolved reactive phosphorus to Lake Erie. Their final grant report will be due in the spring 2014.
- The Directors' Agricultural Nutrients and Water Quality Working Group – The group, established by the directors of Ohio EPA, Ohio Department of Agriculture (ODA) and Ohio Department of Natural Resources (ODNR), was convened in August 2011 and is comprised of a wide base of interest groups. They are charged with recommending how to reduce nutrients that reach surface waters from agricultural production practices. The directors are scheduled to take recommendations to Governor Kasich in February 2012.
- The Point Source Urban Work Group.

Continued Leadership

Ohio EPA plans to review the recommendations from these workgroups and integrate them into the draft framework. Keeping stakeholders and state partners involved in the process of continually updating the nutrient reduction strategy for Ohio will be essential to the success of the process. The panel could be chartered and continue to act as a broad-based advisory group to Ohio EPA.

For More Information
Visit the Division of Surface Water *www.epa.ohio.gov/dsw*
Contact Dan Dudley, 614.644.2876, *dan.dudley@epa.ohio.gov*

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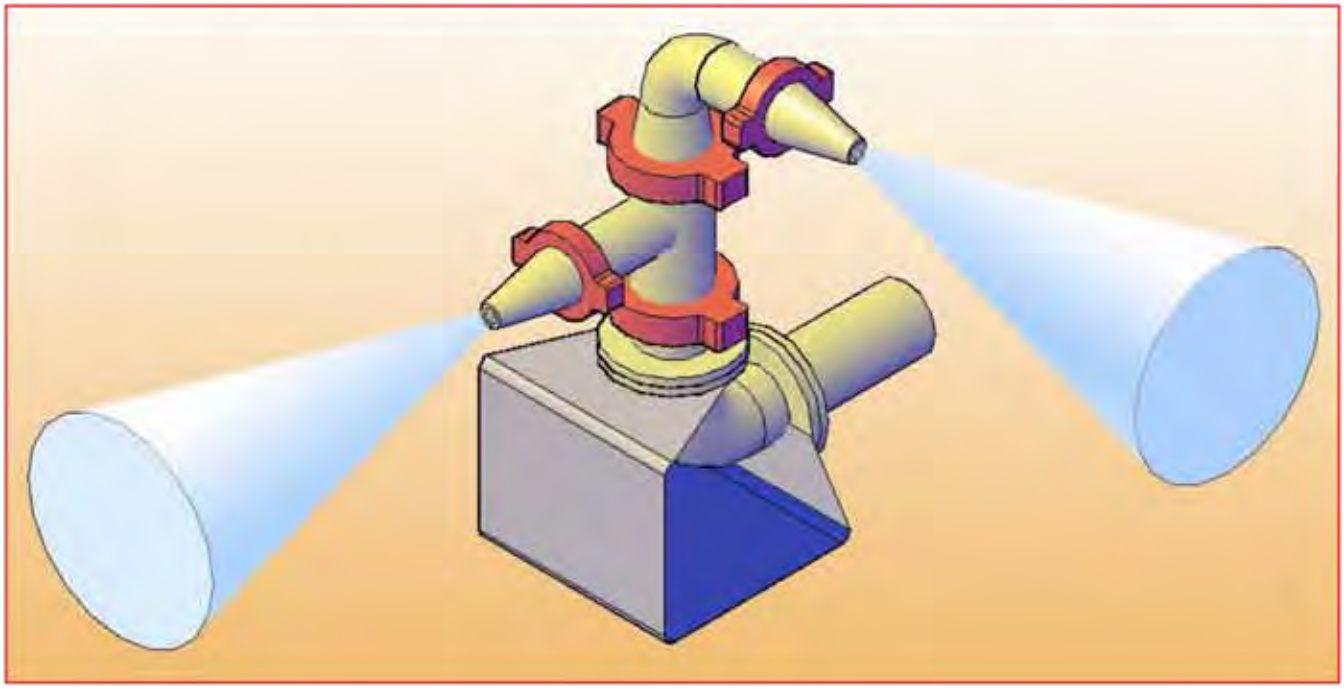

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