Buckeye Bulletin

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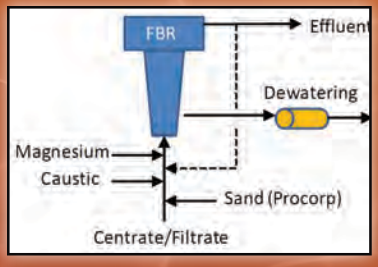

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Preserving & Enhancing Ohio's Water Environment

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Disclaimer
The *Buckeye Bulletin (BB)* is the official publication of the Ohio Water Environment Association, Inc., a not-for-profit corporation founded in 1926, dedicated to the improvement of water quality in Ohio and the continuing education of water professionals. It is one of the top five member associations of the Water Environment Federation.

The ideas, opinions, concepts, and procedures expressed in this publication are those of the individual authors and not necessarily those of the Ohio Water Environment Association, its officers, general membership, or staff.

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Photos in this issue provided by: Joe Bates (Cover - Village of Yellow Springs), Mike Welke, WikiCommons, OWEA Section and Committee photographers, 2012 Conference Committee, article contributors, and Judi Henrich *(list not all inclusive).*

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

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Get Involved

Join a Committee Today

The Ohio Water Environment Association has 25 committees which 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

OWEA at Small Towns, Big Futures Conference

The Ohio Water Environment Association will staff an information booth at RCAP's Small Towns, Big Futures Conference on August 14 & 15. We'll share the message of WATER'S WORTH IT and highlight OWEA's upcoming training events.

OWEA Summer Intern

If you attended OWEA's Annual Conference, you had a chance to meet OWEA's Summer Intern, Caleb Muller. Caleb has been an outstanding intern and was a great help at the conference, especially in assisting with computer and technical issues.

Caleb Muller is a senior at Marietta College, with a major in information systems and a minor in leadership. He plans to join the Peace Corps after graduation and then go on to a career in information technology.

City of Mason Receives OWEA Facility Image Award

President-Elect Dan Sullivan presented the 2012 Facility Image Award to the Mayor and Council of Mason. *(l-r) Director Keith Collins, Mayor David F. Nichols, OWEA President-Elect Dan Sullivan, and Vice Mayor Victor Kidd.*

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).*

August 2012
8 OWEA Executive Commitee Meeting
17 SWOWEA LAC Meeting
30 Free Lunchtime Webinar - Biosolids Series

September 2012
7 Water for People Shooting Clays and Wine Tasting
8 NESOWEA 2012 Clambake
12 OWEA Mega Meeting
20 Collections Hands-On Workshop (SE)
20 SWOWEA Section Meeting
27 Free Lunchtime Webinar - Biosolids Series
29-30 WEFTEC in New Orleans
30 Ohio Mixer at WEFTEC

October 2012
1-3 WEFTEC in New Orleans
4 Collections Hands-On Workshop (NW)
8 Water for People Golf Outing
10 OWEA State E-Workshop
11 SWOWEA/NWOWEA LAC Meeting
18 Collections Hands-On Workshop (NE)
19 SWOWEA Operator Education Day
22 Collections Hands-On Workshop (SW)
24-25 OWEA Plant Operations/Laboratory Analysts Workshop

November 2012
1 Free Lunchtime Webinar - Biosolids Series
7 OWEA Executive Commitee Meeting
15 SWOWEA Section Meeting & Plant Operations Seminar

December 2012
6 Biosolids Workshop
19 OWEA State E-Workshop

January 2013
9 OWEA Executive Committee Meeting

February 2013
6 OWEA State E-Workshop

March 2013
7 Government Affairs Workshop
20 OWEA Executive Committee Meeting

April 2013
4 Watershed Workshop
17 OWEA State E-Workshop

May 2013
1 OWEA Executive Committee Meeting
9 Collections Workshop

June 2013
16 OWEA Executive Committee Meeting
17 OWEA Golf Event
18-20 OWEA Annual Conference

For full details and event registration, visit OWEA's online calendar at *www.ohiowea.org*

Please send all calendar updates to *info@ohiowea.org*.

President's Message

Tom Angelo
OWEA President

I hope this issue of the Buckeye Bulletin finds you basking in what has truly been a wonderful summer. Before discussing plans for this year, I must first applaud Ted Baker and Terry Gellner for organizing a very successful and well received State Conference. Later in this issue there is a full review, but I wanted to mention some of the high points based on OWEA's survey. The movie night on Monday was well received by many and provided a very different opportunity than from past conferences. The 1 day allocated for vendors and YP presentations was liked by most attendees and vendors. The 5 technical tracks given on both Wednesday AND Thursday were a great success and allowed for many members to attend for one day instead of the whole conference. This allowed for many "front line" members to enjoy a state conference, where in the past they were not able to attend. The 45 minute tech session with a 15 minute break in between was a GREAT success. And while a few people complained about the Annual Business Meeting being held earlier than usual and held in a "hallway," it was the most attended business meeting by our members in recent history – which was the whole intent of the changes. Finally, while it was not the first time our Meet & Greet was a "Vegas Night Theme," this year's "Casino Night" was the hit of the conference! For all that attended the event, I would like to personally thank you for helping make YOUR annual conference such a great success.

I was very brief in my acceptance speech at this year's annual banquet because I wanted to talk to all of our members and knew that this article in the Buckeye Bulletin would allow that to happen. The annual attendance of the conference banquet every year is approximately 200 members. While we exceeded the average this year at 218 members, that is not a significant portion of our 1,900 member organization. So allow me to address you . . . our member.

I am looking forward to a very exciting year for OWEA. A number of projects that were initiated in the last couple of years are finally beginning to mature. The one thing I have learned in all my years serving on OWEA's executive committees, both section and state, is that nothing happens quickly. OWEA is a "very large ship" moving in the "environmental" ocean and it will take much energy to steer her in another direction. This, of course, will create waves. Some of that "new direction" steering was initiated by Past Presidents Dale Kocarek (2010-2011) and Doug Clark (2011-2012), and while the fruition of their efforts are beginning to be, and will continue to be, realized over this year, it was their leadership that allowed it to occur.

Some of the efforts that were initiated dealt with internal management of our organization and more recent efforts are targeted at increasing the relevancy of OWEA as a recognized water quality leader. We are the best kept secret of organized water quality professionals in Ohio and we can blame nobody but ourselves for this. From the section level to the state, we are very good at educating ourselves. But we are terrible at educating the community as a whole. We are an organization that includes some of the best water quality minds in Ohio. Our members include seasoned utility plant operators, mechanics, lab technicians, engineers, regulators, manufacturers' representatives, and academic leaders. Combined, we represent the greatest resource Ohio has for issues concerning water quality. Yet our advice and opinion is rarely sought from media, legislators, regulators, and concerned citizens. Past President Doug Clark initiated steps to increase our relevancy earlier this year by reaching out to the State of Ohio's directors of Ohio EPA, Department of Health, Department of Natural Resourses, and Department of Agricultural. This initial step was positive and resulted in OWEA becoming one of the organizations that receives advance drafts of proposed rules and regulations for comment. This has already allowed OWEA to review and respond to draft rules as is evidenced later in this issue by an open letter from OPEA Director, Scott Nally, concerning Senate Bill 294.

To advance this initial step, my goal this year is to improve on OWEA's response capabilities regarding proposed rules and regulations. To this end, I have asked our Government Affairs Committee (GAC) Chair, Dale Kocarek, to reorganize the GAC in a manner that will facilitate the ability to quickly review proposed rules from a technical viewpoint and draft responses/comments for OWEA to submit. I am happy to report that this is already in place in the form of a Technical Sub-Committee that is chaired by Past President Dianne Sumego and can see it only improving over time. I also asked that a new Vice Chair position be created that would form the "Organizational Face" of OWEA for meetings with State Legislators. This "Legislative Liaison Committee" will be comprised of OWEA past presidents and to facilitate this, our immediate Past President Doug Clark will be our first Vice Chair. I spoke with a number of our past presidents (PPs) during the State Conference and received a resounding response from them to being involved. I wanted PPs for this committee because of the depth of experience on a state level they bring as seasoned water quality leaders.

The purpose of this committee will be to educate those elected individuals who are charged with the responsibility of creating the laws that our membership must abide by. Why is this important, you may ask? As I have already stated, OWEA has a membership of approximately 1,900 professionals, many of whom work for governmental bodies. This means that OWEA members collectively represent and provide services for approximately 10 million Ohioans, 458 communities, 79 counties, and 8 major metropolitan areas. This is a large percentage of Ohioans that our members are charged with ensuring water quality and this charge can become expensive. As rules are promulgated, the GAC Technical Sub-Committee will evaluate them for technical and economic feasibility and how the rules would impact our membership. Depending on this review, OWEA will educate the necessary individuals and provide comments on the draft rule. The Legislative Liaison Committee will become involved as needed to speak concerning these manners to responsible authors of

the bill. With our members representing as many Ohioans as we do, it is time for OWEA to speak as one voice on these issues. This will also be used to an individual member's advantage – call it value added membership. If a member has an issue such as plant operation, public image, rate increase challenges for passage, or regulatory challenges, the goal is to have that issue brought to the Government Affairs Committee for evaluation. Based on the evaluation, OWEA will support the member in an educational manner as needed.

As we provide this education and offer opinion on proposed rules, we need to make the public aware of what we do as an organization. To this end, I have asked Cindy Jacobsen, our Publicity Chair, to begin establishing relationships with members of the news media in all major cities in Ohio. To assist her in this task, I ask that our members provide contact information to Cindy or Judi regarding any members of the media that they may be associated within their own community. The goal is to make OWEA a household name by providing regular news briefs. If we do not speak concerning water quality issues to the community at large and make them aware of our existence, we will not be as effective as an organization as we should be.

Another initiative for which I will be advocating this year is Utility Membership. This is already available in other states and should be considered for Ohio. I have asked Debbie Houdeshell and Keith Riley (Membership Co-Chairs), and Mark Livengood (WEF Delegate) to evaluate the programs in other states and propose a solution for Ohio. This program will allow a facility to pay for a number of memberships that can be concurrently used by their staff as they see fit. As an example, Warren may pay for a total of 10 memberships and they will be shared by all 57 employees of the facility. Warren could send 10 employees to any OWEA sponsored event and select which employees would attend at member rates. This program can really benefit some of our larger organizations and is worth considering. A draft review of the existing programs is scheduled for the August 8, 2012 Executive Committee Meeting and I am anticipating great discussion of this topic.

Finally, I am attempting to create an atmosphere that will allow us, as an organization, to better prepare for the challenges of the future. I have scheduled meeting dates this year called "State E-Workshops." The State E-Workshops are for any State Executive Committee member, State Chair, and Section President/Vice President. It will be basically brain-storming sessions where the section chairs and state chairs can become more involved on a state wide level. This will be used for planning, mentoring, and networking. The meetings will not be mandatory and will not directly involve a State Executive Committee agenda or be for voting. Workshop locations will be announced. The first one will be in Columbus but I would like to try to rotate around the state to the larger communities and encourage their leadership to join in on the workshop. The workshops will foster a stronger relationship between state leaders and section leaders and also allow for participation from the larger communities' POTW leaders, whom I will invite to attend.

In closing, it is an honor to serve this organization as President this year and I look forward to many great opportunities for education, networking, fellowship, and advancing water quality awareness to members and non-members. The strength of any organization is measured by the commitment and dedication of its members and to that end, OWEA remains strong.

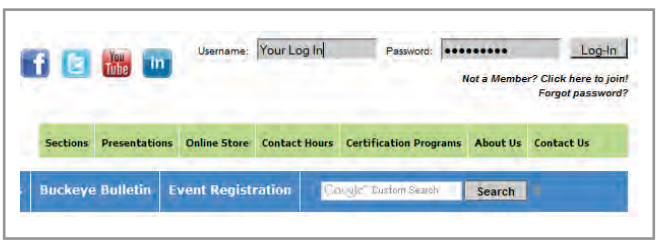
Sincerely,

Tom Angelo, OWEA President
tangelo@warren.org
Director, City of Warren WPC

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.

To check your member profile: calling OWEA at 614.488.5800, email *info@ohiowea.org,* or log into the member area at *www.ohiowea.org (upper right hand corner).*



2012-2013 OWEA Meeting Calendar:

Executive Committee Meetings
August 8, 2012 - 10 a.m. at OWEA Office
November 7, 2012 - 10 a.m. at OWEA Office
January 9, 2013 - 10 a.m. at OWEA Office
March 20, 2013 - 10 a.m. at OWEA Office
May 1, 2013 - 10 a.m. at OWEA Office
June 16, 2013 - TBA at Great Wolf Conference Center

OWEA Mega Meeting
September 12, 2012 - 10 a.m. at Olentangy ECC

OWEA State E-Workshops
October 10, 2012 - 10 a.m. at OWEA Office
December 19, 2012 - 10 a.m. Location TBA
February 6, 2013 - 10 a.m. Location TBA
April 17, 2013 - 10 a.m. Location TBA

WEF Delegates' Report, WEF GAC

Kim Riddell

Summer is half over and fall is on the way . . . and with fall comes WEFTEC! WEFTEC will be held September 30th through October 3rd this year in New Orleans, LA. Mark and I will be heading out a day early and attending the WEF House of Delegates meetings on Saturday. That is when we will get to pick our new workgroups for the 2012-2013 year. They haven't announced the groups yet, but we expect strategic planning and operator initiatives to continue to be important issues within WEF next year and you can bet we'll be staying involved.

Please go to *www.weftec.org* to make plans for joining us in New Orleans this fall! It is sure to be a great time and the expo is sure to be even bigger and better again this year. Don't miss out on attending this fun and very educational event in the Big Easy!

Kim Riddell, Senior WEF Delegate, *kim@go-smith.com*

Mark Livengood

This year's WEFMAX (WEF Member Association Exchange) meetings wrapped up in May. Four meetings took place this year, and many of the OWEA Executive Committee members attended one of them. Ted Baker attended the meeting in Sedona, AZ. Judi Henrich attended the meeting in Baltimore, MD, and the following EC members attended the WEFMAX in Indianapolis, IN: Doug Clark, Dale Kocarek, Dan Sullivan, Mark Livengood, and Elizabeth Wick.

WEFMAXs were designed for allowing MA leaders direct face-to-face learning with WEF leaders and WEF staff. Attending from WEF at the Indiana meeting were Executive Director Jeff Eger and Sandra Ralston, WEF Vice President. House of Delegate (HOD) members met during a 2 hour session to learn and discuss in detail WEF Strategic Direction. The Strategic Direction centers on three primary objectives: Drive Innovation in the Water Sector; Enrich the Expertise of Global Water Professionals; and Increase Awareness of the Value of Water. An important key component of the Strategic Direction is WEF's recently launched "Water's Worth It" campaign. Check out www.watersworthit.org for more details.

The afternoon of Day 1 provided for time for MA representatives to discuss targeted WEF and MA issues. Included in these were "Succession Planning and Volunteer Training" and "Influencing Public Policy." Doug Clark, President of OWEA, tag-teamed with California WEA representative Hugh Logan, highlighting recent communication initiatives between OWEA and Ohio EPA, Ohio Dept. of Agriculture, and Ohio Dept. of Health.

Day 2 provided two more MA dialog sessions. How MAs develop new training programs and how MAs become financially stable were the two topics.

On a personal note, WEFMAX meetings provide real-time access and up-to-date information for WEF members from WEF leaders. WEF is a large and complex operation. Knowing how WEF staff, House of Delegates and Board of Trustees members must interact and communicate is a critical must-do. I have learned how to better interact with others from across our nation. While WEFTEC conferences are unique and provide a world-wide perspective on our industry, WEFMAX meetings have provided for me a re-energization, reminding me why I like being a WEF and OWEA member. It's the great people that are part of our industry. The Indianapolis event was the 8th such event I have had the pleasure of attending.

With WEF's 30,000 world-wide membership, and Ohio's 1,800 members included, Ohio and "WE" can do great things.

Mark Livengood, Junior WEF Delegate, *livengoodm@mcohio.org*

WEF ENCOURAGES WATER INFRASTRUCTURE INVESTMENT DISCUSSION

by Amanda J. Waters, WEF Government Affairs Counsel

Investment and Innovation in Water Infrastructure creates jobs and should be a priority for the next President and Congress.

Today, our nation faces a crossroads similar to one we successfully navigated forty years ago. In October, we will celebrate the 40th anniversary of the US Clean Water Act. This landmark legislation was approved with bi-partisan support, and we have made remarkable progress toward the law's goal of restoring our nation's lakes, rivers, and streams. There is a growing consensus, however, that unless we significantly increase our investment in water infrastructure, we risk a reversal of this progress.

In November, we will choose a new Congress and decide who will serve as President for the next four years. When these leaders take office in January, they will have many challenges to address.

One significant challenge everyone agrees on is how to bolster the economy and create jobs. Some might argue that water quality and water infrastructure should be a lower priority until we get our economic problems under control. But this is a false choice. The fact is, investment in our water infrastructure creates jobs - jobs directly tied to the construction of water facilities, jobs that are created when these new facilities spark investment and redevelopment in waterfronts, business parks, and other areas, and jobs that are created when spending on water infrastructure drives research and innovation leading to new technologies that can be used in the US and around the world. For our nation to return to economic prosperity, the American people and American businesses large and small need a safe and reliable water infrastructure system.

As the 2012 election campaign unfolds between now and November, voters should ask their Candidates - for local and state office, for Congress, and even for President - Do you understand the true value of water? What will you do to increase investment in water infrastructure?

WEFTEC 2012 - New Orleans

Sunday, September 30, 2012
6:00 - 7:30 p.m.
Jefferson Ballroom - 3rd Floor
Hilton New Orleans Riverside

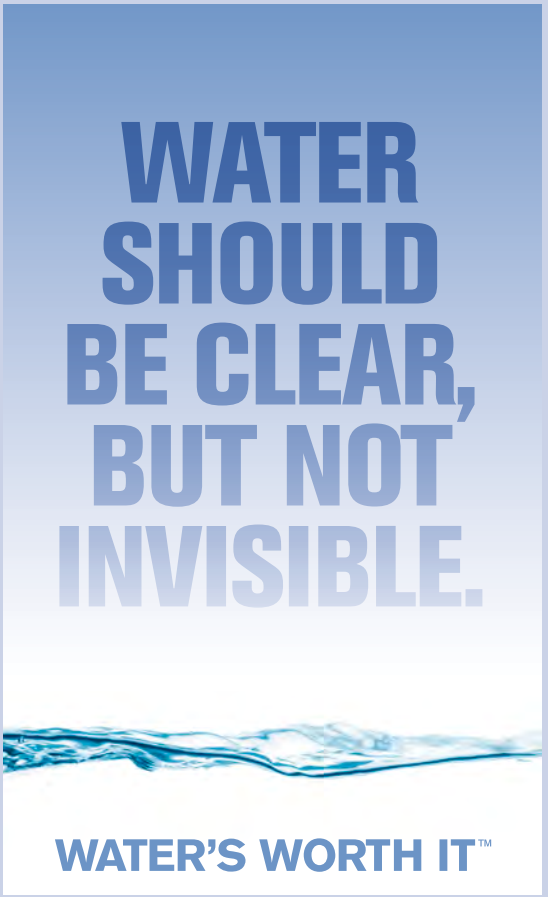
weftec 2012
NEW ORLEANS, LOUISIANA

WEF in cooperation with many of our Member Associations is launching an aggressive outreach effort to get water infrastructure investment discussed on par with other essential infrastructure this election season. This will be closely coordinated with the Water's Worth It messaging campaign and will utilize the branding and materials already developed to the greatest extent possible.

Ohio is a crucial battleground state for the presidential election and, therefore, provides numerous opportunities for engagement. This is a non-partisan issue and we encourage you to attend meetings, rallies and events for any and all political candidates. You can also help by writing letters to the editor, reaching out to campaign offices, communicating with your state legislators and Congress, and using social media to convey our message during the Presidential and Vice-Presidential debates.

We need your help, your input and your voice to make this happen. Together we can give water infrastructure the attention it deserves.

Amanda J. Waters, Government Affairs Counsel
awaters@wef.org



NEOWEA

Lance Willard, President

NESOWEA President, Lance Willard, has been the Superintendent at the City of Columbiana's Wastewater Treatment Plant, Sewer Collections, and Stormwater Systems since 2001. He also worked as a Wastewater Operator at the City of Newton Falls for 4 years. Lance holds a Class IV Wastewater license and Class III Water license. He earned his M.S. and B.S. in Biology at Youngstown State University. He is a 4th Year Doctoral Student at Argosy University, Organizational Leadership E.ED, in the School of Business. Lance has enjoyed helping with the Northeast Section's wastewater review sessions since 2002.

Lance is very excited about the upcoming year. The section just held the Bio-Masster's golf outing. The event is held in an effort to raise money for Water for People and the NE Section's Scholarship Fund. The section would like to thank all of the sponsors, golfers, and volunteers for helping to make the event a success. Great food and fun will be had by all at the upcoming clambake to be held on September 8th. You are welcome to register online for this event.

The section will hold three section meetings, scheduled for November, March, and May. The new Supervisory Seminar was a great success last year so the section plans on holding it again this October. The Operations Seminar will be held on January 24, 2013 and the Industrial Waste Seminar will be held on February 21, 2013. Last year, both of these meetings were a great success with well over 200 attendees at each of the events. There will also be Laboratory seminars, Industrial Pretreatment workshops and a Watershed workshop, which can all be found on our website at *www.nesowea.org*.

The goals for the Northeast Section this year are to make an assertive effort to increase our WEF memberships for the section. We also plan to reach out to the young operators and engineers throughout the section. So if you know of a young professional who is not involved and wants to be, please direct them to our Young Professional Committee Chair, Ashley Williston, at *awilliston@ctconsultants.com*.

Lance also wants to welcome Kathy Richards as the newest member of the Executive Committee. Lastly, and perhaps most importantly, Lance would like to personally thank all the municipalities, companies, and engineering firms for supporting the OWEA. Our success is dependent upon your support and the encouragement you give your employees to be a part of our section as members and volunteers.

Currently, Lance is working with a great Executive Committee made possible by the NEORSD, City of Columbiana, Pelton Environmental, R.W. Armstrong, City of Youngstown, CT Consultants, City of Solon, City of Akron, and Baker and Associates, so Thank You.

Lance Willard, *columbianawwtp@sbcglobal.net*

SEOWEA

Tyler Linton, President

Hello fellow members. I am excited to serve you as President of SEOWEA for 2012. I joined the section in 2004 and have been actively involved as a member of the Executive Committee (EC) since 2006. Over that time period, I have seen great advancement in how the section operates and communicates, thanks to the dedication and hard work of all our past presidents, and, dedication and commitment of our current EC. I am particularly excited to continue the streamlining and modernizing of our communications to members, as well as efficient planning of section meetings and other section responsibilities.

One primary goal as President is to continue to engage and seek active participation by our young professionals from all facets of the water quality industry, including the academic student civil engineering and related water/wastewater communities. Another goal is to continue on our path to provide forums for easy transfer and dissemination of information and knowledge about our water quality profession in a friendly and encouraging environment, and to make our collective participation in that process significant and highly relevant for personal and professional growth. Finally, to be as effective as possible in those endeavors, we must rely on timely planning and good organization to ensure that we capitalize on all available local and regional talent and expertise (whether government regulator, municipal wastewater treatment plant operator, engineer, or water quality consultant).

What can I tell you about me? I am a Principal Research Scientist for Great Lakes Environmental Center, Inc. – Columbus, Ohio operation. I have over 14 years experience managing and performing water-quality related work, with expertise in water quality criteria development and NPDES compliance assistance. Recent projects have included derivation and revision of national water quality criteria and other chemical toxicity benchmarks for traditional and emerging contaminants, Clean Water Act evaluation of Oregon water quality standards, assisting with the development of an NPDES permitting framework for vessel (commercial and fishing) discharges, conducting biological evaluations on USEPA water quality criteria for assessing effects on Federally-listed aquatic and aquatic-dependent species, and site-specific studies for the determination of water quality criteria (e.g., water effect ratios). I have conducted numerous laboratory-based investigations addressing the acute and chronic effects of chemical and biological pollutants to early life stages of fishes, and my research background includes work on both freshwater and saltwater organisms with an emphasis on the physico-chemical factors (i.e., temperature, salinity) affecting chemical toxicity. I have a Ph.D. in Zoology and Physiology from McMaster University in Hamilton, Ontario, Canada; served on the Program Committee and Surface Water Quality and Ecology Subcommittee of WEF from 2008 to 2011; am currently Regional Chapter Committee Co-Chair of the Society of Environmental Toxicology and Chemistry (SETAC); and, the SE Section Delegate to OWEA. I am also the happy and humble husband of a lovely wife (Amy) of 21 years and proud father of two boys aged almost 12 (Karl) and 10 (Joshua).

I look forward to this year of service as President of SEOWEA to you and to our parent organization, OWEA.

Tyler Linton, *tlinton@glec.com*

NWOWEA

Brad Lowery, President

Hello fellow OWEA members. I am very happy to have the opportunity to serve as the President of the Northwest Section of the OWEA this year. I want to give a heartfelt thanks to our outgoing President, Tom Horn, for his service to our organization and for his help in my transitioning to this position. I also want to recognize another fellow northwest section member, outgoing OWEA president, Doug Clark. Thanks to Doug for all of his work this past year. I welcome Roberta Acosta to the executive committee as our new Secretary. I have really enjoyed getting to know all of the Northwest Section Executive Committee members since serving as the Section Secretary in 2009. The Northwest Section has an outstanding group of people in its leadership positions and I will do my best to maintain their high standards this year.

I am a Northwest Ohio native. I am a professional engineer and I attended the University of Toledo for both my bachelor's and master's degrees in Civil Engineering. I currently work as a Project Manager at Jones & Henry Engineers in Toledo where I have been employed since 1996. Jones & Henry provided my first exposure to OWEA and I have been privileged to work with people at Jones & Henry who have also served in OWEA leadership at the section and state levels. I thank them for supporting me in my service to OWEA.

I have always felt that OWEA provides a great value to its membership. The 2012 Conference, and really all of the organization's events, reinforces that feeling. It is a great place to network and keep up to date with new technology, regulations, and the good work your fellow professionals are doing. I am proud to be a part of this organization and to be able to help continue its work into the future. One thing that I have noticed since becoming a member of OWEA, and particularly since becoming involved in the Northwest Section leadership, is that this organization cares about its members. Meetings and discussions I have been involved in since becoming part of the leadership typically concern how we can provide more value to our membership and sponsors and I think that OWEA's commitment to our members shows. I encourage all OWEA members, and especially Northwest members, to get involved in the organization. If you are already involved, encourage someone else to get involved. That's how I got here!

I currently reside in Toledo and am blessed by my wonderful and patient wife, Lynn, and our three boys, Spencer (12), Jacob (10), and William (7). Outside of our 'day job' activities we are members of Our Lady of Perpetual Help Parish in Toledo and I am a member of our Parish Festival Committee and the School Advisory Council and my wife is also active in many roles at the parish. Our hobbies include providing funding and transportation to support our children's sports and extracurricular activities and wondering where the day went. But we would not have it any other way.

I look forward to a great Spouses and Friends August meeting at Put In Bay and I will be busy preparing for our October, March, and May section meetings in the near future. Check the OWEA website for meeting announcements. I hope to see you at our future Northwest Section events.

Brad Lowery, *blowery@jheng.com*

Are You Active in Your Section? OWEA Sections provide low cost training, valuable networking events, and the opportunity to work closely with fellow water quality colleagues. Take advantage of section events to meet people in your region who may have experienced problems common to your area and can offer viable solutions to your water quality issues. Some of the best learning offered through OWEA is the peer-to-peer relationships that develop through the Ohio Water Environment Association's network of professionals. Contact the president of your section to learn how to become involved.

SWOWEA

Barb Wagner, President

On behalf of the Southwest Section, let me say THANK YOU to past president, Dan Martin, for the amazing job he has done, not only as president, but every step of the way as he proceeded through the chairs of the executive committee. He was always a quiet force with a great vision and dedication to the organization. That is a hard act to follow!

My name is Barb Wagner and I am the 2012-13 Southwest Section president. I have been with the City of Cincinnati Metropolitan Sewer District since 1984. I began as a Plant Operator at MSD's largest plant, the Mill Creek Treatment Plant. Since then, I spent time in several sections of the Wastewater Treatment division including the machine shop, a process improvement group, and in the operations of several of MSD's wastewater treatment plants. Along the way, I received an Associate's Degree from Cincinnati State in Environmental Engineering Technologies and an OEPA Class IV Wastewater Operator certificate. I first became involved with OWEA and the SW section in 1994 as an Operation's Challenge competitor on the MSD team, the Cincinnati Power Flushers. (No doubt, you've heard of us.) After winning the state competition and competing on the national level several times, it was time to move on. From there I became involved in the Southwest Plant Operations Committee, eventually chaired that committee, and joined the OWEA Plant Operations Committee. I joined the Southwest Executive Committee in 2007.

This year, we hope to get the section's policies and procedures online. We will also be looking at new ways to increase membership, increase involvement, and show the value of the organization. Join us September 20 at the Cincinnati Zoo for our next section meeting! You can also find us at *www.swowea.org*! Check out this website to learn about upcoming events, committee activity, and contact hour information. It is a great resource for the membership!

I look forward to an exciting year filled with networking, environmental education, budget friendly contact hours and good food! All this culminating with the OWEA Annual Conference in the Southwest Section at the Great Wolf Lodge in Mason!

Barb Wagner, *barb.wagner@cincinnati-oh.gov*

LABORATORY ANALYSTS COMMITTEE

by Eva Hatvani and Denise Seman, Co-Chairs

Hello Everyone! We hope you are enjoying your summer. And we hope you enjoyed the conference if you were able to attend.

We are still in the planning stages of the joint Plant Operations/ LAC Workshop which will be held October 24th & 25th. The lab sessions will be on Thursday, October 25. Based on your input, we will try to accommodate recommendations made at the last meeting. If you have any other ideas or would like to be a speaker at next year's workshop, please send us an email. Don't forget 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*)

Wastewater Analyst Exams

The next Wastewater Analyst Exam will be given on Friday, October 26, 2012. The application deadline is Friday, September 14, 2012. Please use the application form on the OWEA Website.

Congratulations

Congratulations to the following individuals for passing the exams given in April 2012.

Class I	Class IV
Katharine Bechtel	Ted Marten
Joseph Berling	
Herbert Cotton	
Mark Hobler	
Michelle McKeen	
Kristi Senek	
Paul Skerl	
Keith Stowers	
Justin Waid	
Todd Ward	

Renewal of Certificates for 2012-2013

The current certificates are valid until December 31, 2013. If you did not renew, your certificate is no longer valid. If you need to renew, please fill out the form found on the OWEA website and submit to the main OWEA office with your payment.

If you have moved or retired please let us know of any changes in your contact information. Please email any changes of information to *oweastatelac@yahoo.com*.

NOTE: Print renewal forms from the OWEA website. Do not use any old renewal forms.

SW LAC – Roger Rardain and Jim Davis

On April 3, 2012, the SW Section Laboratory Analysis Committee held a meeting at the Montgomery County Environmental Services, 1850 Spaulding Road, Kettering, Ohio 45432. Sixty six (66) people from 30 organizations attended.

Technical sessions included the following presentations:

- DMRQA The Easy Way - Tom Widera, ERA
- DMRQA 32 Update - Steve Roberts, OEPA
- Facility and Lab Tour - Montgomery County Western Regional

6 contact hours were approved. Lunch was provided by ERA.

SW LAC Meetings.

Summer 2012 LAC Meeting

July 19, 2012 – Hosted By: YSI, Inc., 1700/1725 Brannum Lane, Yellow Springs, Ohio, 45387. Approval for 4.75 contact hours is pending. 73 people attended this meeting.

Fall 2012 LAC Meeting

October 11, 2012 – Hosted By: City of Sidney WWTP, 420 Folkerth Avenue, Sidney, OH 45365. Planning is in progress for 2.75 contact hours. This meeting is also being planned as a joint meeting with the NW Section LAC.

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

NE LAC – Beverly Hoffman

Hello everyone! I won't comment on the weather, because the last time someone did we were jinxed, and sure as I'm sitting here writing this message, if I comment on it, we will see bad weather for weeks. I don't want to be responsible for that.

I hope everyone who made it to the OWEA Annual Conference in June had a good time and took away some valuable information. I did not make it due to a previous commitment. (missed everyone)

We are offering a FREE training session at NEORSD on August 17th from 12:30 PM – 3:00 PM. NEORSD is located at 4747 E. 49th Street in Cuyahoga Heights. The topics will be Oil and Grease by IR and Phosphorus. As always, please pre-register online at *www.nesowea.org* or *www.ohiowea.org*.

I would also like to welcome Jennifer Vydra from EnviroScience to our group. I met with her on June 15th. She is fairly new to the EnviroScience company and she would like to get involved with our NESOWEA LAC.

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 information to me (Beverly Hoffman) at *NESOWEALAC@gmail.com*. All of 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*
Dale Holmes *daleh@mclw.com*
Lisa Feigle *lisaf@gcdwr.org*
Amy Starkey *ajstarkey@co.stark.oh.us*
Marie Simon *marie@northcoastlabs.net*
Melanie Rangel *marangel@lakecountyohio.org*

SE LAC – Melodi Clark

The Southeast Section has had a very productive year. Our enrollment is consistently increasing which is wonderful.

We have had two meetings this year; one at the City of Newark and our most recent one was at the State of Ohio EPA lab. We had a great turnout and the EPA was wonderful with all of the information.

We are looking at having two more meetings before the end of the year. The next meeting is tentatively set for the end of July or the beginning of August and the location will hopefully be in Marietta with Thermo Scientific hosting the meeting. Please come and join the fun. I am having a great time with all of the activities that are occurring around the OWEA and would love to see more people attending our meetings.

Melodi Clark, *mlclark@columbus.gov*

LAB CERTIFICATION EXAM

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.

NW LAC- Kevin Hughes – Bridget Shiets

The NW Section held a meeting on July 31 at Fort Ball Pizza in Tiffin. Three topics presented were:

- "Basic Microbiology" presented by Dan McElhatten
- "An Introduction to Ohio General Lab Criteria Audit" presented by Steve Roberts OEPA
- "MDLs and QC" presented by Marcy Bolek of Alloway

Steve Roberts gave insight to the importance of accurate data, ensuring data reported is defensible and requirements are known. He also address red flag issues. Attendees received 3 contact hours and enjoyed a buffet lunch.

The NW Section is also compiling a member directory. If you would like to be included, please send your contact information to *wwtplab@cityofbellevue.com.* This member directory will be used for future meetings and networking with local lab analysts.

Committee Contact Information

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

Northeast Chair
Beverly Hoffman, 440.446.4228, *nesowealac@gmail.com*

Northwest Chair
Kevin Hughes, 419.488.5440, *watertreatment@tiffinohio.gov*
Bridgit Shiets, 419.483,7514, *wwtplab@cityofbellevue.com*

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*

CONGRATULATIONS!

We would like to congratulate the following inductees for their induction into the Crystal Crucible Society Class 2012.

(Pictured l-r)
Dr. William Pfeiffer – Retired (Ginosko Laboratories, Inc.)
Samuel Ludwick – City of Warren
Matthew Cox – City of Bowling Green

(Not Pictured)
Wanda Harney – MSD of Greater Cincinnati
Tanna Rhoads – Jackson Pike WWTP, Columbus

Find OWEA on your favorite social network

GOVERNMENT AFFAIRS COMMITTEE

by Dale E. Kocarek, PE, BCEE, Chair

Over the last two years, President Tom Angelo, Past President Doug Clark, and I have had many conversations about the potential role of the OWEA Government Affairs Committee (GAC) and what we feel is a lack of awareness of OWEA and a growing feeling of concern that we are not viewed by the outside world – including some of our colleagues – as relevant. OWEA has taken initial strides to improve our reputation to the outside world and be recognized for the dedicated group of professionals that we are. We pledge to continue on a path of outreach for the upcoming year.

One of the goals and objectives of the Ohio Water Environment Association for the coming year is to be a more active participant and voice in outreach and communication with other organizations that share our common cause of "clean water" and science-based regulation. The Government Affairs Committee will play a big role in the way the organization develops and delivers this message. I was approached by the Water Environment Federation's Government Affairs Committee to use our voice to help WEF propel WEF's message of Clean Water to the two candidates for President of the United States. In as much as Ohio is considered by WEF to be a critical win state for both candidates, WEF feels that the time is right for us to help amplify key messages held dear by our respective organizations. These include:

- Water is a resource essential for life itself. Without an abundant supply of clean water, life as we know it would not exist. WEF's message of WATER'S WORTH IT speaks to this critical truth.
- The infrastructure to support the treatment and distribution of clean water, and the collection and treatment of wastewater, needs to be recognized as essential and become more appreciated in America than it has been. Much more has been said about our highways, even though they do not directly impact human health in nearly the same way as water and sewerage systems do. To some degree, this is understandable as most of our critical infrastructure associated with water and wastewater is "out of sight and out of mind." Yet, the work that we do is no less spectacular than many other great public works projects.
- As we move forward, there is a need for greater public awareness from citizens and elected officials alike faced with the responsibility and cost for planning, design, construction, commissioning, operation of our sewerage utilities, and staffing them with highly trained and qualified individuals. If this is not difficult enough, rate payers and community leaders are faced with similar challenges from water and storm water utilities as those sectors also usher in a new generation of requirements. To help communities address critical and competing needs in an era of diminishing federal funding in a depressed economy, USEPA has introduced a new concept called "Integrated Planning." The purpose of Integrated Planning is that it sets forth a framework that helps communities sort out competing needs, obligations, and costs associated with sanitary sewage, drinking water, and storm water. The OWEA Government Affairs Workshop in March 2013 will feature one or more topics on Integrated Planning.
- As I learned firsthand during my Fly In experience to meet with members of Congress in March of this year, the federal government is broke. New programs for funding infrastructure must be considered "budget neutral," or not increasing the federal deficit. The WIFIA (Water Infrastructure Finance and Innovation Authority) Bill sponsored by Representative Bob Gibbs in Ohio would offer such a solution, which would support the existing SRF (State Revolving Fund) program, not add to the federal deficit, and would realistically help communities address critical needs for construction and repair of "water" infrastructure.

As I close, I wanted to mention the survey that we initiated regarding the Government Affairs Committee. Due to a low initial response received between April 12 and May 25, 2012, the OWEA GAC is looking to continue its member survey into fall of 2012. We are looking for your help to assist us in identifying what we can do to allow us to serve you, our organization, and our industry better. Please look for the survey to be reissued in the near future. The brief survey should only take a few minutes to complete.

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

OWEA'S OHIO SCIENCE DAY AWARD WINNERS

Selected May 5, 2012
at The Ohio State University

2012 JUDGES

John Rogers, CH2M Hill
David Stewart, CDM Smith
Jim Demboski, Env. Design Group
Judi Henrich, OWEA

Ohio Stockholm Junior Water Prize Winner
Ms. Rachel E. Yurchisin, Grade 11
Padua Franciscan, Parma, Ohio
The Rocky River Watershed:
A Tale of Two Branches

$1000 Scholarship
Ms. Leah Minor, Grade 11
Upper Arlington High School
The Impact of Varying the Ratio of Trace Minerals on the Growth Rate of Cyanobacteria

RESIDUALS COMMITTEE

by Jamie Gellner, Chair

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

- **Farm Science Review** – This year's Farm Science Review will be held September 18th through September 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 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 I'm aiming high for this year!

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

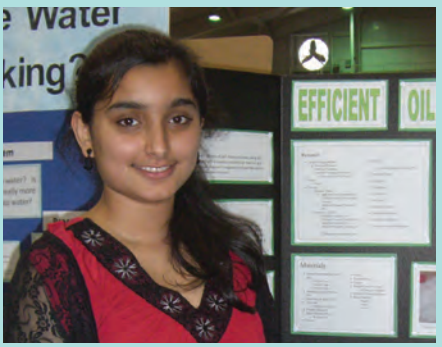
- **Exploring new venues for booth / information / PR** – Members are exploring other events where we can showcase the information that we normally present at the Farm Science Review. If you have any ideas related to good locations for a display or information related to biosolids, please let me know.
- **Reach out to neighbor associations** – We are continuing our dialogue with our equivalent member committees in Indiana and Michigan to find ways to work together to provide information on biosolids issues. Recently, we provided content ideas for the quarterly newsletters of each of the committees. Thanks to Rob Smith for his continued efforts on this initiative and to Steven Reese and Rob for their efforts in providing content for the other states.
- **Alternate locations for our Residuals Committee Meetings** – We have started scheduling our quarterly meetings at new locations in and around the Columbus area. As many of you know, we held our meetings exclusively at the Olentangy Environmental Control Center for many years (and thanks to the staff there for their continued hospitality). In February, we held a meeting at Olentangy, followed by a site tour of the biosolids processing facility (thanks to the Olentangy staff for this tour). In April, we held our meeting at Jackson Pike WWTP in Columbus and had a biosolids facility tour after the meeting (thanks to Gary Hickman and his staff for hosting). In the future, we will also explore getting contact hours for the tours. If you have any ideas for possible venues for future meetings, 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 the remainder of this year is as follows:

1. August 14, 2012
2. October 9, 2012
3. Biosolids Workshop – December 6, 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 invite you to attend 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*



$500 Award
Ms. Sanika Barve, Grade 11
William Mason High School, Mason
Efficient Oil Spill Cleanup

$300 Award
Ms. Pauline Cappel, Grade 12
Sycamore High School, Cincinnati
DNA Barcoding Used to Identify Water Quality Organisms

$200 Award
Mr. Humza Bashir, Grade 10
Springfield High School
Does the Use of Salicylic Acid in Buck Creek Inhibit Algae Growth?

PLANT OPERATIONS AND MAINTENANCE COMMITTEE REPORT

by Kim Riddell and Jim Borton, Co-Chairs

The Plant Operations Committee's primary focus in the past and coming year is the Plant Operation's Seminar held in September and the Operations Challenge held in April.

Approximately 168 wastewater professionals ranging from front line operations staff and management to representatives from consulting firms attended this seminar. Conference attendees were treated to presentations from Ohio's own plant operations, engineering and safety experts, Ohio EPA staff as well as nationally renowned operations experts like Dr. Sam Jeyanayagam, Eric Wahlberg, Jamie Gellner, Tom Angelo, Steve Samuels, Doug Clark, and Elizabeth Wick. This conference for several years has been in partnership with the Safety and Laboratory Analysts Committees and continues to be a successful, informative, fun and lively event.

While the development of the 2011 seminar/conference took a significant amount of time early in the OWEA 2011-2012 year, the majority of the committee's time has been devoted to this year's upcoming version of the conference and the Operations Challenge held in April. This year's Plant Operations/Lab Analyst/Safety Seminar will be held on Wednesday and Thursday, October 24th and 25th. NOTE the date changes due to WEFTEC being earlier this year. There are state and nationally recognized experts on the agenda again, so look for the flyer in August, and plan on attending or sending your employees to hear the likes of Woodie Murihead, Julian Sandino, Jamie Gellner, Tom Kutcher, Jason Tincu, and many more! Don't worry, there are plenty of topics for the Operations, Laboratory and/or Safety Professional(s), we didn't skimp on any of them.

For the price and for what is included; up to 13 contact hours, two continental breakfasts, two lunches, an excellent dinner, breaks and a social hour, this seminar continues to be the best bang for the buck for earning your contact hours without breaking the training budget! But don't take the Plant Ops Committee's word for it, come see for yourself and find out what you have been missing! We plan on seeing you there!

The Plant Operations Committee also has the responsibility of coordinating the annual Operations Challenge. It should be noted that this contest does not work without partnership from the Laboratory Analyst, Safety, and Collections System committee members along with many dedicated individuals. The Executive Committee has agreed to continue to fund the full trip to New Orleans, up to $7000 per team for the two winning teams in Ohio. This is accomplished fully through the generous contributions of OWEA's sponsors, especially OVIVO, Smith Environmental, and the NE, SE, SW, and NW sections who contributed directly to the Operations Challenge in support of the operations professionals comprising the teams.

On April 16th the Ohio Operations Challenge/Hands-On Operator Education Day was held at the Allen County Sanitary Engineer's Office. Participants in the Operator Education Day could earn up to 5 contact hours and have some fun doing so without sitting in a classroom all day. In addition, the non-team attendees could take some time watching the competitive Operations Challenge teams and root their favorite team to victory. This format, according to those in attendance, again appeared to be successful in its fourth year and will be considered again for 2013. In total, 3 competitive teams and 59 individuals registered and participated in the day.

The three Ohio teams were from Bowling Green, Miamisburg and Ohio EPA-NWDO. At the end of the day, OEPA-NWDO had won Division I and the overall Process Control events. Bowling Green took the Division II title while taking individual event trophies in Collections, Maintenance, Laboratory, and Safety. Teams, organizers, and judges can agree that it was an excellent opportunity to learn new things, improve teamwork and make some new acquaintances throughout the state.

As a committee, we are continuing to challenge treatment plant managers to find a team within their ranks (managers can play too) or combine with another utility and show up in 2013 to compete. The committee is even challenging the OWEA State and Section Executive Committees and other OEPA offices to form teams as has been done in previous years. Rumor has it that OWEA President Angelo is threatening to use his "executive powers" to form some teams too.

Existing teams are more than willing to help new teams get started, and team members don't all have to work for the same employer; contact Kim Riddell at *kim@go-smith.com* or Jim Borton at *james.borton@ch2m.com* for a list of potential team members nearest you. Remember, participating team members are eligible to earn up to 12 contact hours, and at the going rate, the contact hours are some of the cheapest around when comparing dollars/hour.

Current members of the committee are: Dave Wilson (SW), Joe Tillison (NW), Steve Elliott (SE), Kim Riddell (Co-Chair), Barb Wagner, Gary Hickman, Tom Kutcher, Bill Hill and myself. Other individuals acting on behalf of their committees might as well be listed as Plant Operations Committee members as the partnerships between the committees run deep: Jim Graham and Mike Welke (Safety), and Eva Hatvani, Denise Seman, and Nancy Taylor (Lab Analyst). Of course, we are still looking for more members, so contact one of the section reps or myself for more information.

Kim Riddell, *kim@go-smith.com*
Jim Borton, *james.borton@ch2m.com*

Registration Coming Soon!

Plant Operations/Laboratory Analysts Workshop

October 24-25, 2012

The Conference Center at NorthPointe

Information and Registration at
www.ohiowea.org

SMALL SYSTEMS COMMITTEE REPORT

by Roberta Acosta, Chair

The Small Systems Committee held its regular meeting on June 19, 2012 at the OWEA Annual Conference. Two new members have joined the committee. Much of the discussion focused on training needs for Class A and Class I operators and their lack of involvement in OWEA. It was decided that the committee should coordinate training and outreach efforts to these individuals with the Ohio EPA and the OWEA Sections. Some of the training topics discussed include navigating the NPDES, loading calculations, safety, how to take a proper grab sample, and tools of the trade. The goal is to develop half hour trainings to be delivered in conjunction with Section events that can be done at a local level and provide an opportunity for networking with OWEA members. The first block of training is expected to be ready late winter.

We are always looking for members, particularly Village or County administrators and operators. If you are interested in working with the Small Systems Committee, contact:

Roberta Acosta
419.724.4155, *rjacosta@wsos.org*

YOUNG PROFESSIONAL/WATERSHED COMMITTEE UPDATE

The YP/Watershed Chairs held a conference call to discuss the plans for a 2013 Watershed Workshop. The 2012 Workshop was a success. Tentative plans are in place to hold the 2013 Watershed Workshop on Thursday, April 4, 2013 at the Ohio Union, on the campus of Ohio State University.

If you are interested in presenting a watershed topic at this workshop, contact:

Anil Tangirala, Watershed Chair
anil.tangirala@stantec.com

Nick Bucurel, YP Co-Chair
nbucurel@brwncald.com

Kris Ruggles, YP Co-Chair
kris.ruggles@strand.com

SAFETY COMMITTEE REPORT

by James Graham, Co-Chair

At Work or At Play Let Safety Lead The Way.

First and foremost I would like to extend my personal thanks to Ed Nutter for his years of dedication and service as the OWEA State Safety Chair, and for mentoring me to help fill his shoes.

I would like to talk about the importance of safety, not only at work, but in everything you do. How many people practice safe procedures at work, but let things "slide" at home? I used to be one of those people who practiced safe work habits at work, if only because the safety coordinator would catch me if I didn't. My habits at home were completely different until I grew up a little, had a few close calls, and decided that, if I wanted to be able to work to support my family for the next twenty some years, I was going to have to start taking this "safety" thing a little more seriously.

Safety is a necessary evil to most people in the same ways that it used to be to me, but it isn't really as difficult as it seems. Sure, it is a pain to drag all of the safety equipment out that is needed for a job or go back to grab a piece of equipment in order to finish the job safely. But if you start making it a point to work safely, before you know it, your safe habits will replace the old bad habits and it will become much easier to work safely.

You can start by making a safety checklist of items that you will need in order to do the job safely. Talk with your co-workers and get their input on things that you can do to make the job go smoother and more safely. Look at the safety guidelines that your employer has, look at safety guidelines that are offered by OSHA, then combine the two for a safety plan that works best for you. Try to involve family and friends in "safe" habits whenever possible. Once you have a safety plan established, start implementing that safety plan, not only at work, but at home and in everything you do. These things combined will help to make working and playing safely a whole lot easier.

Until the next time, be safe.

James Graham, Safety Co-Chair
jgraham@bgohio.org

Mike Welke, Safety Co-Chair
mwelke@warren.org

WATER FOR PEOPLE

by Doug Borkosky, Co-Chair

Have you ever been around a community when they find out that their newly drilled well is going to yield significantly more water than they had expected? Or, have you seen the Antiques Roadshow moments when the appraiser reveals to the owner of the dusty old antique that it is worth much more than they had dreamed?

That's how we felt as the Water For People fund-raising totals came in at June's OWEA Annual Conference! It seemed like our expectations were surpassed at every turn.

Thank you!

In round numbers, here's how we ended up:

- Golf Outing Donations at Registration: $632
- Matching Donation by Ted Baker: $632
- Par 3 Charity Hole: $655
- Meet & Greet Casino Night Auctions: $2750
- Silent Auction: $2210

That's about $6900! Then, the 5S Society decided to donate another $600 to bring the total for the 2012 OWEA Annual Conference to $7500.

$7500 THANK YOU!

Special thanks to:

- 2012 Annual Conference Committee (especially Ted, Terry, Debbie, and Tom)
- Donors to the Silent Auction (see donors below)
- Volunteers at the several events (especially golf and silent auction)
- Pat Tebbe, NWDO OEPA, for her help with the Silent Auction while at the conference.

Finally, Dale and I would like to say a special thanks to Ms. Alicia Adams of Stantec. Alicia stepped up in the four weeks before the conference and helped bring the Silent Auction to fruition. You'll likely be seeing Alicia involved in future Water For People events as well.

Thank you!

(Get my point yet?)

Final note: Keep your eyes open for upcoming Water For People events in Southwest Ohio, at the Ohio AWWA Conference, and at the Five Cities Conference in October.

Doug Borkosky, Co-Chair
doug@hlbaker.com

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

Water for People Events

Hosted by Southwest Ohio Water Professionals

- Sporting Clays & Wine Tasting
  September 7, 2012
  Contact: Brian Mumy
  bmumy@brwncald.com, 513.719.6031
- Golf Outing
  October 8, 2012
  Contact: Don Cuthbert
  don.cuthbert@ch2m.com, 513.587.7129
- Water for People Dinner Event
  Date TBD
  Contact: Chris Weber
  Chris.weber@arcadis-us.com, 513.985.8013

Check OWEA's online calendar for more details:
www.ohiowea.org

New sanitation facility in India.
(Eileen Lambert, WFP Photo)

Global Water Poverty Calls for a Game Changer

World population is expected to reach 9 billion by 2050. Already, 783 million people lack access to safe drinking water and 2.5 billion lack adequate sanitation facilities.

With today's urgency to solve safe water issues, there is too much emphasis on immediate reactions and short-term fixes. Sustainable water and sanitation solutions require time, creativity, and innovation. Let's work together to build a lasting future.

Join Water For People in championing a new movement.
Visit ***www.waterforpeople.org/everyone/*** for more information.

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- Range of models, sizes and options
- Proven high-efficiency and reliable performance
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Filtration

- OptiFiber® family of pile cloth media is designed for specific applications
- Disk and diamond configurations with automatic PLC based controls
- Small footprint
- Low cost of ownership

Biological Processes

Batch Processes

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- Low cost of ownership

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- Time-managed, sequential aeration
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UTILITY ENHANCEMENT UPDATE

by John Newsome, Chair

The Utilities Enhancement Committee has wrapped up its series on Green Infrastructure. For those that may have missed the series, past webinars can be found at *www.ohiowea.org*. We had a great turnout for this series and hope members benefited from these sessions discussing the program outlook of the cities and areas surrounding Philadelphia, Cleveland, Cincinnati, and Milwaukee. The committee, again, would like to thank Philadelphia Water Department, NEORSD, MSD of Cincinnati, and Milwaukee MSD for a great series of presentations.

Our next series, beginning this month, will be on the topic of biosolids. The first presenter will be Trudy Johnston from Material Matters. This first presentation will occur on Thursday, August 30th, at noon. A notification email will be coming very soon.

OWEA currently offers water quality related webinars at no charge to our members and guests as a public service towards the common goal of clean water. At this time, OWEA does not offer contact hours for these webinars. PDH hours are at the discretion of individual participants. For more information, contact OWEA at *info@ohiowea.org*.

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. The Committee will continue in its efforts to provide webinar series on topics of interest to utility owners.

The committee welcomes four new members:

John Rogers, CH2M Hill, *john.rogers2@CH2M.com*
Tom Brankamp, Strand Associates, *tom.brankamp@strand.com*
Dale Kocarek, Stantec, *dale.kocarek@stantec.com*
Brandon Fetzer, City of Van Wert, *fetzers23@yahoo.com*

Chair: John Newsome, City of Columbus
jgnewsome@columbus.gov

Vice Chair: Jamie Gellner, Hazen and Sawyer
jgellner@hazenandsawyer.com

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

COLLECTION SYSTEMS UPDATE

by Bill Horst, Chair

The Collection Systems Committee will offer four 2012 Collection Hands-On Workshops in four locations around Ohio this fall. Don't miss this excellent opportunity to earn contact hours and learn hands-on from the experts.

Chair: Bill Horst, Montgomery County
horstb@mcohio.org

2012 Hands-on Collection Workshops
Focus: Water in Basements

Register Online at ***www.ohiowea.org***

4 Contact Hours - $20 (includes lunch)

Coming to a Section near you!

Thursday, September 20, 2012
SE Location: Newark
Contact: Gary Hickman, *glhickman@columbus.gov*

Thursday, October 4, 2012
NW Location: Allen County
Contact: Kevin Aller, *kaller@cityofsylvania.com*

Thursday, October 18, 2012
NE Location: NEORSD
Contact: Don Gallimore, *dgallimore@does.summitoh.net*

Monday, October 22, 2012
SW Location: Fairfield
Contact: Tim Pringle, *tpringle@hazenandsawyer.com*

Workshop Agenda

8:15	Opening Remarks/Welcome/Administrative Issues
8:30	Basement Backups - Case Studies
9:30	Low Pressure Pumping Systems
10:30	T-Liner for Lateral Lining
11:30	Lunch
1:00	Backflow Preventers - Types, Installation and O&M
1:30	Video Inspection of Laterals
2:00	Closing Remarks/Form A's/Thank You

5S MINUTES

Ohio 5S Meeting, June 21, 2012

The meeting was called to order by Mark Livengood at 7:00 a.m. at the Bertram Inn and Conference Center, Aurora. Members were asked to check their personal contact information on roster sheets. Names of those who attended appear at the end of these minutes. Mark thanked Jones & Henry for their generous support in sponsoring the 5S Breakfast. Cordell Samuels, WEF President-Elect, was thanked for attending our conference on behalf of WEF.

A motion and second to approve the minutes of the 2011 breakfast occurred. Motion carried.

A total of $1,052.00 was collected from the new inductees (counted post-meeting and deposited in bank on 6/26/12).

The 2012 inductees approached the front of the room. Welcome to the following 5S members: **Kim Riddell** (NW); **Dave Frank** (NE); **Barb Swafford** (SW); **Paul Matrka** (SE); and **Dennis Meek** (At-Large). Plaques were presented to each. A pin and Ohio 5S jacket were also presented to **Cordell Samuels**, WEF President-Elect, during the Wednesday induction ceremony.

2013 inductors were announced. **Kim Riddell** (NW); **Dave Frank** (NE); **Barb Swafford** (SW); and **Paul Matrka** (SE).

A member motioned and the motion was seconded to authorize OWEA 5S to donate $600 to Water for People. Motion carried. Livengood will coordinate with OWEA for donation to be sent.

Livengood stated that there is approximately $4,100 in 5S funds held by OWEA prior to the WFP donation, payment for new jackets, and the 2012 deposit.

Discussion was held on investigating adding an Ohio-unique emblem to the 5S pin. Livengood will coordinate with Ted Baker to research options and costs.

Attendees at the June 21, 2012 Ohio 5S Breakfast were: Darin Wise, Jim Borton, Mike Stinehelfer, Doug Clark, Dan Johnson, Paul Matrka, Ron Bell, Steve Wordelman, Stu Bruny, Leon Smith, Tracy Mills, Mark Livengood, Doug Brookhart, Dennis Meek, Gary W. Johnson, Gary Hickman, Dave Frank, Tom Kutcher, Bill Hill, Jim Johnson, Jane Winkler, Kathy Cook, Elizabeth Wick, Dail Hollopeter, Frank D'Ambrosia, Al Rupp, Dale Kocarek, Mike Frommer, Kim Riddell, Tom Angelo, and Deb Houdeshell.

Meeting adjourned at 7:40 AM.

Mark Livengood, Grand Integrator and Effluent Recorder
livengoodm@mcohio.org

(l-r) Kim Riddell (NW), Dennis Meek (At-Large), Dave Frank (NE), Paul Matrka (SE), and Cordell Samuels (WEF). (not pictured) Barb Swafford (SW)

ROLL CALL

Alan H. Vicory, Jr., a principal with Stantec's Cincinnati, Ohio office, presented testimony before a US Congress subcommittee in support of a new Environmental Protection Agency (EPA) plan intended to give local communities more flexibility in managing and financing their water resources.

Vicory was invited to appear before the House Subcommittee on Transportation and Infrastructure, speaking in his role as Vice Chairman of the Water Environment Federation (WEF).

Vicory voiced WEF's position that the new framework represents a "common-sense approach to water program management through planning that is locally-driven, flexible, and voluntary and encourages innovative solutions such as green infrastructure to address current challenges to water quality and supply."

Vicory's remarks reflect his own view. He explains, "Drawing on my thirty plus years of experience as a regulator, prior to joining Stantec, I consider this policy and the flexibility it is designed to provide to be almost unprecedented. I look forward to working with communities to determine if the new Integrated Planning framework is appropriate and advantageous for them."

Vicory is a recognized national leader on water quality and water resource management issues. At Stantec, he leads regulatory interface, watershed planning, and water quality initiatives throughout the region. Prior to joining Stantec, Vicory was the executive director of the Ohio River Valley Water Sanitation Commission (ORSANCO), an eight-state agency established to control and abate water pollution in the Ohio Basin.

Mike Maringer joins anaerobic digestion company, *quasar energy group* (Cleveland, OH), as the Manager of Municipal Development. Maringer spent more than 20 years at the Campbell Soup Company as the Manager of Services & Utilities, and continues to hold positions as Trustee for the Operator Training Committee of Ohio, representing the Northwest Ohio Wastewater Professionals. He is also currently a Technical Specialist at Industrial Fluid Management, a Wastewater Treatment Operations Advisor at ALGAL Scientific and an Adjunct Professor at Cincinnati State Technical & Community College.

Maringer's education includes a Bachelor of Science in Natural Systems/ Hydro-Geology from Defiance College and the Management Program for Water & Wastewater Treatment Operations at Michigan State University. He is one of only eight individuals in the state of Ohio who holds a Class IV certification as an Operator in both Water Treatment and Wastewater Treatment. Reach Mike Maringer at *mmaringer@quasarenergygroup.com* or 216.986.9999 x131.

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.*

WELCOME NEW MEMBERS

who joined OWEA from April to June 2012

Dan Arthur
Victoria Berry
Matt S. Brownson
Michael Capozella
Ben Clinger
Robert D. Cogley
Daniel Coley
Alex Compston
Jonathan Cooper
James Decker
Jason E. Dew
Mick Dollenmayer
Tony D. Dove
David J. Festi
Brandon Fetzer
Melanie Gamez
Joe Gentle
Paul Griesmer
Wes Hall
Craig Higbie
Megan Marie Hochstedler
Robert J. Hornic
Michael S. Hunter
David P. Jandes
Jim Jenkins
Vikram Kapoor
Michael Katz
Justin B. Keener
Stephen P. Koontz
Shawn Loew
Thomas R. Marshall
Barney L. McCombs
Randy McDaniel
Kathleen McDonough
Brian McGannon
Joe Mellon
Steve Mitchell
Afaf Musa
Nick Myers
Jeff Nelson
Brent Richard Neubauer
Bob O'Connor
Christopher Allen Oser
Brian Joseph Papa
Jeffrey A. Proctor
Gregory Rhoades
Michael Root
Thomas Slabe
Mike L. Smith
Amy L. Still
Ray Stokes
Adam Tabbouche
Lindsay Tippin
Jerry Ussher
Jason Verderber
David Wendell
Limei Yang
Tyler Andrew York

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

Share the Water Knowledge - Sponsor a New Member

How long have you been a member of the Ohio Water Environment Association/Water Environment Federation? Do you value being part Ohio's premier water quality organization? Encourage a co-worker or young professional to join the OWEA community of professionals, increase their water quality knowledge, and grow their network of fellow professionals. Need help or membership materials sent to a prospect? Contact OWEA at 614.488.5800 or info@ohiowea.org and we will be happy to send out a prospective membership package.

PASSINGS

Glenn Eugene "Gene" Meek passed away on Saturday June 9, 2012 after a valiant fight against Parkinson disease. Glenn was born on March 22, 1943 in Coshocton, Ohio to Kenneth and Geneva Meek. In 1961, he graduated from Coshocton High School and on September 21, 1963 he married June Marie Russell. As President of E&I Corporation for 36 years, Glenn was intimately involved in the founding and development of the company and continued to do so during his fight with Parkinson disease. He personally made many contributions to our industry, not only from a business perspective, but also with a personal touch for each and every colleague and client. Glenn was a member of OWEA/WEF, joining in 1984.

Glenn also served on the board of the Central Ohio Parkinson Society and found GE Meek Family Cruise-In for Parkinson's. Among his many interests were woodworking, cars, and NASCAR racing. He was a cherished husband, father, Papa, brother, and friend to many. In addition to his parents, Glenn was preceded in death by his sister, Marilyn Jones.

Picture Yourself Behind the Podium

Interested in presenting at an OWEA educational event?

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Your WEF Membership Is Worth One Contact Hour

You can use this number during your renewal process:

OEPA-B398593-X 1 Hour
Professional Membership in WEF, AWWA, or ORWA

The course approval number can only be used one time per renewal. It cannot be used twice to renew one certificate, regardless of the number of individual memberships held in any professional organizations.

You must include a copy of the membership card with the renewal application.

WHY OWEA IS GREAT

by Dale E. Kocarek, P.E., BCEE, OWEA Past President 2010-2011

Dear Friends,

One unique aspect of the Ohio Water Environment Association (OWEA) is that we start our new year after the annual conference, which is the second half of June. Like the Chinese New Year, the actual day varies. In 2012 our new year began on June 20, 2012.

One thing I have learned from my time as an officer in OWEA is how much our members appreciate brevity, so you should be pleased that this column will be shorter than usual. This year is the beginning of my sixth for the Kocarek Korner, which began as the Southeast Delegate's Report in the Southeast Section Point Source in 2006. OWEA's current president Tom Angelo recruited my report to fill a void in Issue 4 for the Buckeye Bulletin in 2007. Since that time, my column has appeared in every issue. I credit Tom for the clever title, the *"Kocarek Korner,"* and having the insight to see that my writings could fill a void in our organization.

Given that I am no longer on the OWEA Board, I wanted to take a brief moment and offer my appreciation to you for allowing me to be a part of this organization for the past 16 years – first on the Southeast Section Board and then on the OWEA State Board. While the past 16 years seemed like a long time in some ways, time passed too quickly. But, in reflecting back, I would describe it as a labor of love. During this time I developed a deep abiding admiration and respect for our organization and the Water Environment Federation (WEF) and its members. Furthermore, I have seen OWEA evolve from a good organization to a great one!

In borrowing from the late night talk show host, David Letterman, and his popular Top Ten lists, I have listed my top ten reasons why OWEA is great:

Working backwards from 10

10. OWEA is a place where operators, managers, engineers, lab analysts, environmental scientists, attorneys, vendors and regulators meet in a warm congenial setting to share information and learn from each other. Our members get to know each other in a friendly setting, which gives us the opportunity to build relationships through a diverse pool of talent. Through these relationships, we learn to work together effectively. The benefits that this provides cannot be easily described. The participation of the talented professionals from the Ohio EPA has been an incredible benefit to OWEA and allows the regulated community to understand and solve problems in an expedient, practical and efficient manner.
9. WEF and its member association, OWEA, offer education programs that reach out to all levels and interests from the GED to the PhD. In addition to offering a full menu of training options, we work together to host events with USEPA and WEF. A good example of this is the WEF/USEPA Disinfection Conference in Cincinnati, which OWEA helped with in April 2011. Working with WEF and USEPA to select papers and recruit monitors and moderators was one of my crowning accomplishments as OWEA President.
8. OWEA offers many convenient locations where training can occur. Persons needing to obtain last minute contact hours or continuing education credits do not have to look further than one of our many section meetings or workshops. While some travel may be required, overnight travel is often not needed.
7. OWEA posts jobs on its *Careers* page at *www.ohiowea.org*. This site logs more "hits" than our other links, attesting to its value.
6. OWEA committees form the basis for our own internal "think tank" and organize and run our workshops, conferences and other outreach efforts to the public and sister organizations. Committees allow members the opportunity to volunteer and engage fully, often without extensive commitments of time. OWEA committees are committed to continuous improvement and positive engagement in the world around us. What better testimony can be offered at the end of one's career than a life spent in the pursuit of productive, meaningful and important work!
5. OWEA is not a static organization. We are open minded and committed to change. We love hearing from you and take your comments seriously.
4. "No cost" webinars offered by our Utilities Enhancement Committee are world class. They are so well done that they have been noticed by WEF. Look for many more great webinars from this vital committee!
3. I formed friendships through OWEA and have observed many plant managers and superintendents help each other through an informal network akin to the Grange system, which advanced knowledge of agriculture in America during the 19th Century.
2. OWEA remains a viable community thriving in an era where social interaction is disappearing. While social media and remote webinar training will continue to grow in popularity, OWEA understands that human interaction is an essential part of the human equation and formation of authentic relationships. Through its system of sections and one day workshops, burdens of travel are reduced to a minimum.
1. OWEA is great because of you, our valued members! As I have said when I was OWEA President, you help protect our society from pestilence and disease. Next to the widespread manufacture and distribution of penicillin in 1943, advances in treatment technology and the dedication of our remarkable professionals and public officials to the protection of our water resources at reasonable cost, is one of the greatest human achievements that the world has ever known.

My best wishes to you for success, good health, and happiness in the coming year!

Dale E. Kocarek, PE, BCEE, *dale.kocarek@stantec.com*
Stantec Consulting Services, Inc.

OHIO EPA WASTEWATER LAB INSPECTIONS USING THE GENERAL LAB CRITERIA

by Elizabeth Wick, P.E., Ohio EPA, NWDO

The NPDES permit program depends on the quality of data submitted by permit holders as well as the quality of data collected by Ohio EPA. If unreliable data is used to make decisions, unanticipated outcomes may result. The following situations illustrate the importance of accurate data:

- NPDES permit limits are based on a plant's monitoring data. Ideally, five years of facility monitoring data is used to perform modeling to determine the Projected Effluent Quality (PEQ). Together with data about the existing quality of the receiving stream and the water quality standards that apply to that stream, the PEQ is used to determine if final effluent limits for a particular pollutant will be required in the NPDES permit. NPDES permit limits are usually in effect for five years, so it is in the best interest of the facility and Ohio EPA that these calculations use accurate data.
- A permitted entity demonstrates compliance through the analytical data submitted monthly to Ohio EPA. When a facility violates final effluent limits, the facility is subject to enforcement which can include monetary penalties and/or plant upgrades. These can add up to substantial amounts of money.
- Facility data is also used during the design phase of wastewater treatment plant (WWTP) upgrades. If the facility data is defensible, it will provide a solid foundation for the design decisions.
- U.S. EPA uses monitoring data to generate reports which are published on public access sites. They also base enforcement decisions on facility monitoring data.

Checklist Helps Ensure Defensible Data

Given the overwhelming importance of accurate data to the NPDES permit program, Ohio EPA is focusing more attention on WWTP laboratories. The Division of Surface Water developed an inspection protocol for WWTP labs that is easy for inspectors to use and helps lab analysts document that their data is defensible. The new General Lab Criteria (GLC) are set up as a condensed checklist that can be used as a reference by the lab analyst as well as the Ohio EPA inspector. These criteria are not requiring anything new; the requirements have always been part of NPDES permits. The GLC simply focus more attention on existing requirements.

Since 2010, these criteria have been incorporated into Ohio EPA's regular compliance inspections. They are designed to identify red flags, which are items that call into question the defensibility of data produced by the lab. They identify such things as lack of documentation that correct methods are being used for the analysis, lack of standard operating procedures (SOPs), lack of documentation for instrument calibration, and failure to perform quality assurance practices.

The criteria were developed after benchmarking with other states and U.S. EPA. The Code of Federal Regulations (40 CFR 136) is the reference source for the most recent list of approved methods. From there, Standard Methods for the Examination of Water and Wastewater (aka: Standard Methods) is referenced. The criteria will be updated as the methods are updated.

Inspection Process

The criteria focus on the equipment associated with eight commonly analyzed parameters:

- ammonia,
- pH,
- chlorine residual,
- dissolved oxygen,
- $CBOD_5/BOD_5$,
- fecal coliform,
- suspended solids, and
- E. coli.

Inspectors will first ask which of the eight parameters are analyzed on site. Then she will ask to see the written SOPs for all analyses performed. (Keep in mind that the NPDES permit requires SOPs and quality control documentation for all analyses done for permit purposes.) If the lab has no written SOPs, then the inspector will review the documentation for the equipment associated with as many of the eight parameters as there is time. If the lab has written SOPs, then at a minimum, the inspector will select one of the eight analyses and ask to see the written SOP for that analysis. The supporting lab equipment for the selected analysis will be reviewed using the GLC checklist. The inspector is not checking to see if

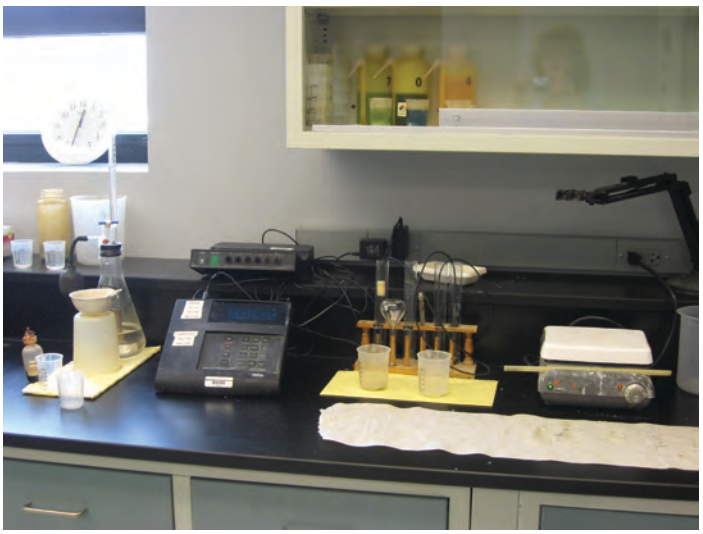
continued on page 26

A clean lab with adequate bench top space.

analytical methods and calculations are correct; he is only looking for adequate documentation. Analytical methods and calculations are verified by Ohio EPA's lab staff in Columbus.

The equipment that could be evaluated during the inspection includes:

- balance,
- drying oven,
- pH meter,
- dissolved oxygen meter,
- chlorine meter,
- hot water bath,
- desiccator,
- ammonia meter,
- incubator,
- refrigerator, and
- autoclave/steam sterilizer.



Proper calibration of meters is one of the keys to defensible data.

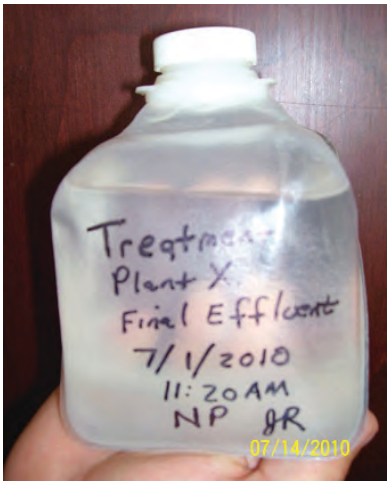
The detailed GLC checklist can be found at *www.epa.ohio.gov/portals/35/permits/Lab_Review_Form.pdf*

Proper documentation of equipment calibration and maintenance is the main focus. Each piece of equipment should have a separate logbook where documentation for all activities related to that piece of equipment is recorded. Without proper documentation, the defensibility of the data cannot be verified.

Sample Collection and Handling

Sample collection and handling is not equipment, but the correct collection and handling of a sample is critical in determining what is being discharged to the receiving stream. Even if sampling methods are correct, if documentation of the sample collection and handling is not complete, the validity of the analytical results can be called into question.

SOPs should be in place that cover, at a minimum, proper sample labeling, chain of custody procedures, sample preservation, how to make a composite sample from a series of grab samples, how often to gather equipment blanks, cleaning glassware, and maintaining an equipment log book for the sampler. The equipment logbook should document activities such as defrosting refrigeration units, changing sampler tubes, and calibration of sampler pumps.

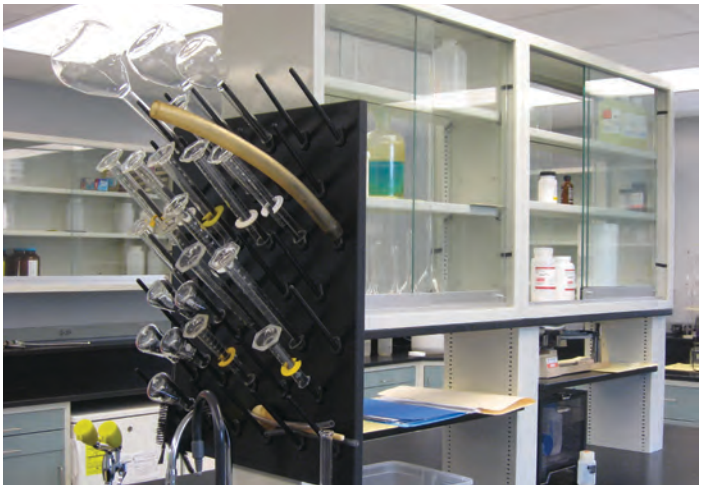


An example of a proper label on a sample container.

Another important part of data defensibility is sample chain of custody. Chain of custody forms should be used with your contract lab as well as with an in-house lab. Chain of custody documents the security of the sample from collection through analysis. If a facility has a staff of one or if the person collecting the sample is ALWAYS the person performing the analysis, then this practice should be documented in the SOP for the analysis. At that point, a statement on the bench sheet stating that the sample collection and analysis are in compliance with SOP123 is adequate. This statement should include a space for the initials of the person who performed the sampling and analysis. Regardless, each sample taken needs to have the date and time of the sample collection recorded.

The bench sheets are the first thing inspected if falsification of data is suspected. In order for these to be defensible, they must contain the date, analyst's initials, calibration information, and equations, calculations, notes, units and results for each parameter analyzed. In addition, they should be written in ink with corrections made by writing a single line through an error that is initialed and dated.

SOPs specific to your plant must be developed for all analyses, sample receiving protocol, glassware washing, MDL procedures (where applicable), and calibrations. They typically contain a title, the procedure, the scope and application, the apparatus and materials, the reagents, interferences, calculations, corrective actions, and quality control procedures. U.S. EPA has a guidance document for preparing SOPs (document no. EPA/600/B-07/001 April 2007) that may be helpful.



A written Standard Operating Procedure for glassware should be available in every lab.

Common Red Flags

The most common red flags identified at WWTP labs include no written SOPs, no instrument logbooks, no calibration documentation, no or incomplete chain of custody forms, no NIST thermometer calibration, and the wrong thermometer for the intended use. If the initial lab inspection identifies red flags, Ohio EPA will evaluate the severity of the deficiency and allow an appropriate amount of time for corrections to be made. However, if deficiencies are severe enough that the data cannot be supported, the permit holder may have to consider using AE, "analytical data not valid," on the discharge monitoring report until the deficiency is corrected. Note that the AE code is considered a frequency violation, so correction of the deficiency should occur as soon as possible. If the follow up inspections show that corrections have not been made, Ohio EPA may pursue enforcement action.

Unexpired chemicals in the lab.

There could be ramifications for the Operator of Record. As required by the Ohio Administrative Code, certified operators are required to perform their duties in a responsible and professional manner consistent with standard operating procedures and best management practices. Certified operators who do lab analyses are expected to ensure adequate laboratory controls and appropriate quality assurance procedures. In addition, the Operator or Record is pinning a certification statement each month on the discharge monitoring report that says he believes the submitted information is true, accurate and complete. The goal of the GLC is to ensure that labs are able to provide documentation to back up this assertion.

Elizabeth Wick
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You Can Become a Buckeye Bulletin Author

At the 2012 Annual Conference, a plea was made for Buckeye Bulletin articles. The Ohio Water Environment Association has a great magazine that belongs to the membership. If you present at a workshop or section meeting, consider turning your presentation into an article for the Buckeye Bulletin. Each section has a representative who is a champion for the Buckeye Bulletin. If that person approaches you to request an article, consider it a compliment!

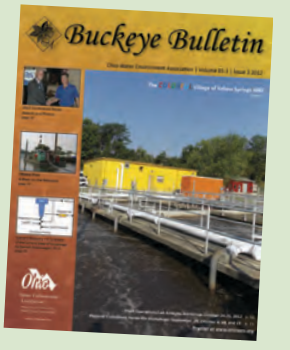
If you implemented a change in operations or installed new equipment at your plant that improved operations, increased efficiency, or saved energy, consider writing a Buckeye Bulletin article about it.

If you are a past president of OWEA, we want to hear from you! We are considering a Past President's Corner where you can share your lessons learned, experience, philosophies, and opinions about topics that affect our members.

The OWEA staff edits submissions and produces the magazine layout. The OWEA Publications Committee provides the final round of editing and quality review prior to publication. Any grammar errors should be caught by this team.

General Guidelines

- Articles should be 1500-2000 words with descriptive photos. Please check for space availability if your article is longer.
- Attach photos/graphics as separate image files.
- Images should be submitted as jpg or tif files in the highest resolution possible, original camera files if available.
- Captions should be sent in an email or word doc, brief, and referenced to image.
- Reference past Buckeye Bulletins for sample article sizes and format. Past Buckeye Bulletins are now posted online at *http://www.ohiowea.org/buckeye_bulletin.php.*
- Articles submitted in Word with minimal formatting are best.
- Preferred texts - New Roman or Arial 12
- You may submit an abstract to make sure your article would be an appropriate subject for the Buckeye Bulletin.
- Accepted articles will be included as space is available in upcoming publications.



If your article focuses on a specific process or area of the water quality field, it would be deemed a "technical" or "feature" article. Technical and feature articles can't be disguised product pitches or advertorials for a particular service or company. Plant profile articles are coordinated by each section, so contact the Publications Committee representative in your section for article schedule.

If you have any questions, please contact:
Elizabeth Wick, Publications Chair, *elizabeth.wick@epa.state.oh.us*
Judi Henrich, OWEA Executive Manager, *judihenrich@ohiowea.org*

OTTAWA RIVER, TOLEDO - A RIVER ON THE REBOUND

by Cherie A. Blair, Maumee RAP Coordinator, Ohio EPA

The Ottawa River in Toledo, Ohio, has been infamously known for its historical legacy of contamination and ill effects to Maumee Bay and Lake Erie's Western Basin.

Like many urban streams, it suffered the filling in of its low-lying areas and floodplains with municipal and industrial waste. Not only was the Ottawa River filled in, it was the recipient of industrial discharge, sewage and was channelized, or in some areas, completely rerouted for highway development.

The overall misuse and abuse of this waterway during the industrialization of Toledo, before environmental awareness and regulation, left the Ottawa heavily polluted with PCBs and heavy metals amongst other contaminants, making this stream nearly devoid of life. Fish that were able to survive were greatly contaminated. In some cases, if a fish was removed from the Ottawa, it was illegal to put it back due to the high level of contamination found in its body.

The Ottawa River is just an average Northwest Ohio stream. It is 41 miles long with a drainage basin of 178 square miles. It begins in northeastern Fulton County, Ohio, where the river is known as Tenmile Creek and has a northern branch in Lenawee and Monroe counties in Michigan. It runs through mostly agricultural land as is makes its way in an easterly direction through the suburban residential areas of the City of Sylvania and Village of Ottawa Hills. It flows on into the City of Toledo, through Washington Township, Ohio, into Erie Township, Mich., where the mouth empties in North Maumee Bay, Lake Erie.

The whole watershed did not succumb to the negative pressures of industrial development. The area that was most impacted was the lower nine miles. This segment of the Ottawa River was lined with a hodgepodge of nearly two dozen landfills and industrial sites, many contiguous to one another.

The severe contamination of the lower nine miles of the Ottawa River has been compounded by the existence of lacustuary conditions. A lacustuary is defined as a transition zone in a river that flows into a large freshwater lake and is continuously affected by the water levels in the lake. As Lake Erie is pushed into the river with a northeast wind, it can appear to flow 'backward' or upstream.

Due to the Ottawa River being affected by the levels of Lake Erie, the extent of contamination from the two-mile stretch of wall-to-wall sites including leaking landfills, old industrial residues, and the contamination from combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs) was more than just downstream. This lake (seiche) effect moved the contamination both upstream and downstream from its sources.

This segment of the Ottawa River is neither swimmable nor fishable according to the Ohio Department of Health due to PCB (polychlorinated biphenyl) levels. The highest PCB concentration found in Ottawa River sediment was 1,142 ppm, near River Mile (RM) 5.9. PCB levels in the Unnamed Tributary (now known as Fraleigh Creek) were reported at 1750 ppm, with spikes as high as 74,000 ppm.

Body composite sampling in fish collected in this segment of the river in 1986 showed 12.0 ppm PCB in largemouth bass and 25.4 ppm PCB in carp. Consequently, the Ohio Department of Health issued a contact and fish consumption advisory on eating any species of fish caught in the lower 17 miles of the Ottawa River.

This is not to say the rest of the watershed doesn't have impacts. In 2011, the Ohio Environmental Protection Agency (Ohio EPA) conducted an assessment of most of the Ottawa River, except the lower 9 miles. Preliminary data is showing improvements in this upper portion watershed; however impacts related to nutrient enrichment and habitat alterations remain. A report on this assessment is expected in spring 2013.

The Rebound

In the late 1980s and early 1990s, the severity of the condition of the Ottawa River was becoming clear. Many planning, assessment, and source control projects have been conducted by private and public sector stakeholders. Remediation of the sediment has been conducted to reduce risks and reduce export of contaminants to Lake Erie. Habitat restoration projects are being developed and implemented.

The Ottawa River is a valuable natural resource to the Toledo area and many stakeholders will benefit from its restoration. Below are some of the activities that are helping this river to rebound.

Sediment Cleanup

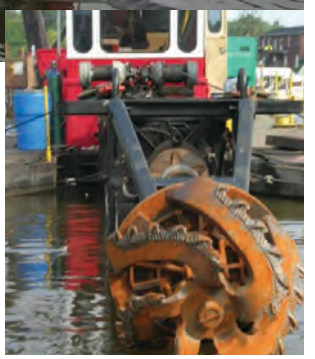
Ottawa River has become one of the Great Lakes region's biggest examples of how much more costly it is to clean up pollution than to prevent it.

The Ottawa has played host to one of the U.S. Environmental Protection Agency's largest Great Lakes Legacy Act projects. Nearly 300,000 tons of contaminated sediment were removed at a cost of $47 million. This project was accomplished in partnership with the Ottawa River Group (ORG); an unincorporated group of entities including private businesses and a municipality.

This project targeted the removal of approximately 250,000 cubic yards of sediment contaminated with PCBs, metals and PAHs (polycyclic aromatic hydrocarbons) from the lower 8.8 miles of the river.

In the winter of 2009, the project commenced with the excavation of approximately 6,500 cubic yards of contaminated sediments from Sibley Creek (a tributary of Ottawa River).

This was followed in January 2010 by the construction of a separatory liner cell system within the City of Toledo's Hoffman Road Landfill. In spring 2010, a pipeline was constructed for the transport of dredged sediments for dewatering in geotextile tubes and subsequent sediment disposal in the landfill. More than 500



million gallons of water removed during sediment dewatering was treated and discharged into the Ottawa River. Hydraulic dredging of approximately 242,000 cubic yards of impacted sediments was completed in fall 2010.

As a result of the cleanup, more than 7,500 pounds of PCBs, 80,000 pounds of PAHs, and more than 1 million pounds of heavy metals were removed from the river. This sediment contamination was a key contributor to the "do not eat" fish advisory and the "no contact" water advisory that are currently in place for this segment of the Ottawa River.

Human Health Advisories

The State of Ohio issues advisories for its citizens using the best environmental science, providing accurate health information, and taking public health actions to prevent harmful exposures and disease related to toxic substances. In fulfilling this duty, the Ohio Department of Health issued fish consumption and contact advisories for the lower portion of the Ottawa River in 1991.

Contact Advisory

The "DO NOT TOUCH" contact advisory was placed for the lower 17 miles of the Ottawa River in April 1991, as part of Ohio Department of Health's efforts to protect public health. This contact advisory was put in place after sampling conducted in 1986 and 1990 by Ohio EPA found high levels of PCBs in fish and sediment in the lower eight miles of the river, especially in an Unnamed Tributary (now known as Fraleigh Creek) at RM 5.9 near the Dura Avenue and Stickney Road landfills and in the river from RM 5.5-5.6. Industrial sites and the landfills downstream of the Interstate 475 bridge near the northern I-75/I-475 interchange (RM 8.6) were identified as the sources of the PCBs.

In February 2011, the Ohio Department of Health rescinded the contact advisory from RM 8.6 to 17. However, the no contact advisory remains in place for the lower 8.6 miles of the river (the area where the sediment remediation took place). Ohio EPA expects to re-evaluate the sediments in this area in the coming years which officials hope will lead to the removal of the contact advisory for the lower portion of the Ottawa River.

Consumption Advisory

The "DO NOT EAT" fish consumption advisory was also issued for the lower 17 miles of the Ottawa River in April 1991. The 1991 press release stated, "PCBs were also found in a variety of fish

Removal of warning sign

sampled from the Ottawa River and the advisory includes all fish in this section of the river. Some fish may have concentrations of PCBs significantly greater than . . . the action level established by the U.S. Food and Drug Administration."

Ohio Department of Health now partners with Ohio EPA and the Ohio Department of Natural Resources to develop consumption advisories for fish caught in Ohio. Ohio EPA sampled the fish in the Ottawa River upstream of RM 8.9 in 2011. Based on the results from this sampling, the "do not eat" any fish advisory for the Ottawa was changed on Feb. 29, 2012 to:

- Main Street in Sylvania (RM 20) to Secor Road at University of Toledo (RM 11.6)
  - Common Carp, one meal per month
- Secor Road at University of Toledo (RM 11.6) to Auburn Avenue (RM 8.9)
  - Common Carp, Do Not Eat
- Auburn Avenue (RM 8.9) to Lake Erie
  - All species, Do Not Eat

The "do not eat" advisory remains in place from Auburn Avenue to the mouth of the Ottawa at Lake Erie due to PCB contamination. During the 2014 sampling season, Ohio EPA expects to measure the remaining PCB contamination and to evaluate the effectiveness of the 2010 sediment cleanup project in reducing PCB concentrations in fish tissue during the 2014 season.

Restoration of Habitat

With millions of dollars in U.S. EPA Great Lakes Legacy Act (GLLA)-funded sediment cleanup and restoration recently invested in the lower Ottawa River watershed, there is an increased focus on the restoration of the natural resources of this watershed. By addressing cleanup and habitat issues, restoration of this watershed may be expedited. Below are a few of the active habitat and stream restoration projects in the Ottawa River watershed.

University of Toledo

The President's Commission on the River at the University of Toledo (UT) is undertaking a habitat restoration project for the 3,700 feet of the Ottawa River on the main campus of the university. This project is

continued on page 30

being funded through the Stranahan Foundation, Ohio EPA 319(h) Nonpoint Source Pollution Control program and the U.S. Fish and Wildlife Service in collaboration with the Toledo Metropolitan Area Council of Governments and U.S. Army Corps of Engineers. The overall intent of the project is to enhance the natural habitat within the Ottawa River on the main campus and contribute to overall improvement efforts underway along the river.

Restoration efforts are aimed at enhancing current stream and stream bank conditions, stabilization efforts and the critical issue of aquatic habitat loss which have been identified as significant environmental concerns for the river on the UT main campus.

Stream restoration will incorporate in-stream structures to restore a more natural stream channel and bank and to avoid erosion while maintaining flood control. The stream channel will be restored to incorporate stream function and design principles including riffle and pool structures, and low flow concentration and erosion control features, as needed. Bank shape and stability will be assessed and addressed as in-stream elements are constructed.

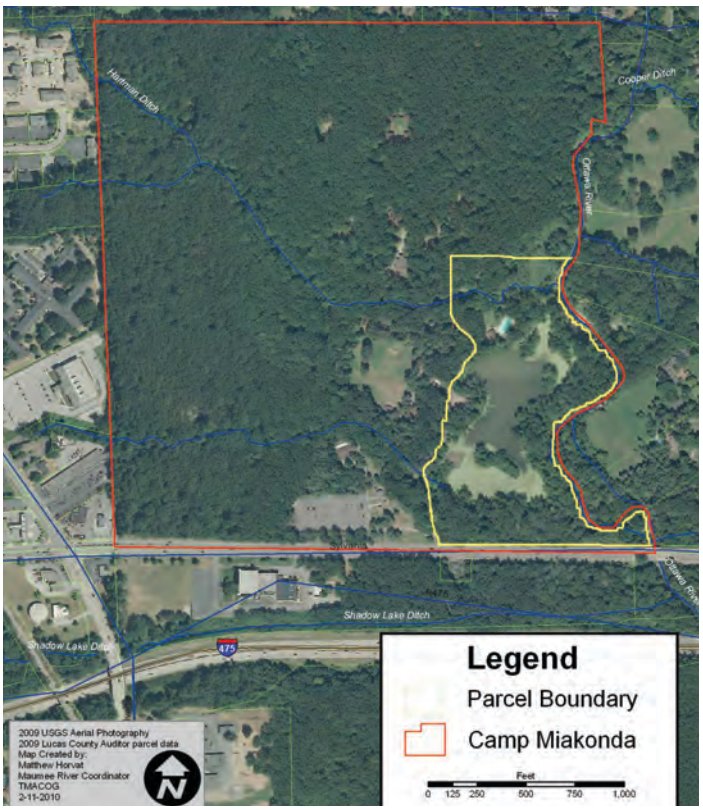
Bioengineering techniques will be utilized to protect infrastructure as this is a very urban and visible area. Additional work will focus on stream and slope vegetation and replanting of native plants.

This project will serve as a demonstration of the possibilities available for restoration in a very altered and modified urban river system.

Several restoration elements will be constructed on-site starting in August 2012; the remaining elements and completion of the full restoration of the in-stream and banks is expected in August 2013.

Camp Miakonda

Partners for Clean Streams (PCS) was awarded a Great Lakes Restoration Initiative (GLRI) grant to restore stream habitat, reduce erosion, enhance wetlands and improve upland habitat along the upper Ottawa River.



The project at Camp Miakonda will restore at least 10 acres of wetland, 30 acres of upland habitat and 1,200 linear feet of bank stabilization along the Ottawa River, directly improving Lake Erie's Western Basin.

Along with the Boy Scouts of America, PCS has partnered with the Army Corps of Engineers on a Habitat Restoration Master Plan. Final designs are complete and permits have been obtained.

This restoration project will:

- Significantly reduce sediment loading from eroding stream banks;
- Maximize the diversity of plant communities, both wetland and upland;
- Improve habitat for migrating waterfowl, songbirds, and other wildlife;
- Benefit Ottawa River water quality by utilizing wetlands to capture sediments; and,
- Create more flood storage and nutrient retention capacity.

This past March, the first step of the project was taken with selective tree removal in accordance with the tree clearing restriction in PCS's nationwide permits. Camp Miakonda is considered native habitat for the Indiana bat, an endangered species, which puts a restriction between the months of April and October for tree removal. Selective tree removal took place along the main drive as well as the northern wetlands, once home to the tree-top cabins at camp. This stage of the project was completed March 31, 2012.

PCS will be spending this summer with a team of volunteers collecting native seeds, harvesting willows, and creating bat boxes to provide habitat and protection for the Indiana bat. The main construction for this project is expected during fall 2012.

In the Ottawa River watershed, "Camp Miakonda is the largest remaining undeveloped, unprotected tract of the Oak Openings ecosystem, a sandy-soiled oak savanna that once covered a large area of Lucas County." (David Patch, Toledo Blade, Nov. 18, 2009)

The 157-acre Boy Scout camp is situated in the Oak Openings Region of the Maumee Area of Concern (AOC) directly along one of the major waterways to enter North Maumee Bay. It is a green gem nestled within a rapidly developing urban and suburban community. It is not often that a willing landowner with a sizable historic property steps forward to protect and restore that property to enhance wildlife habitat and water quality of the region.

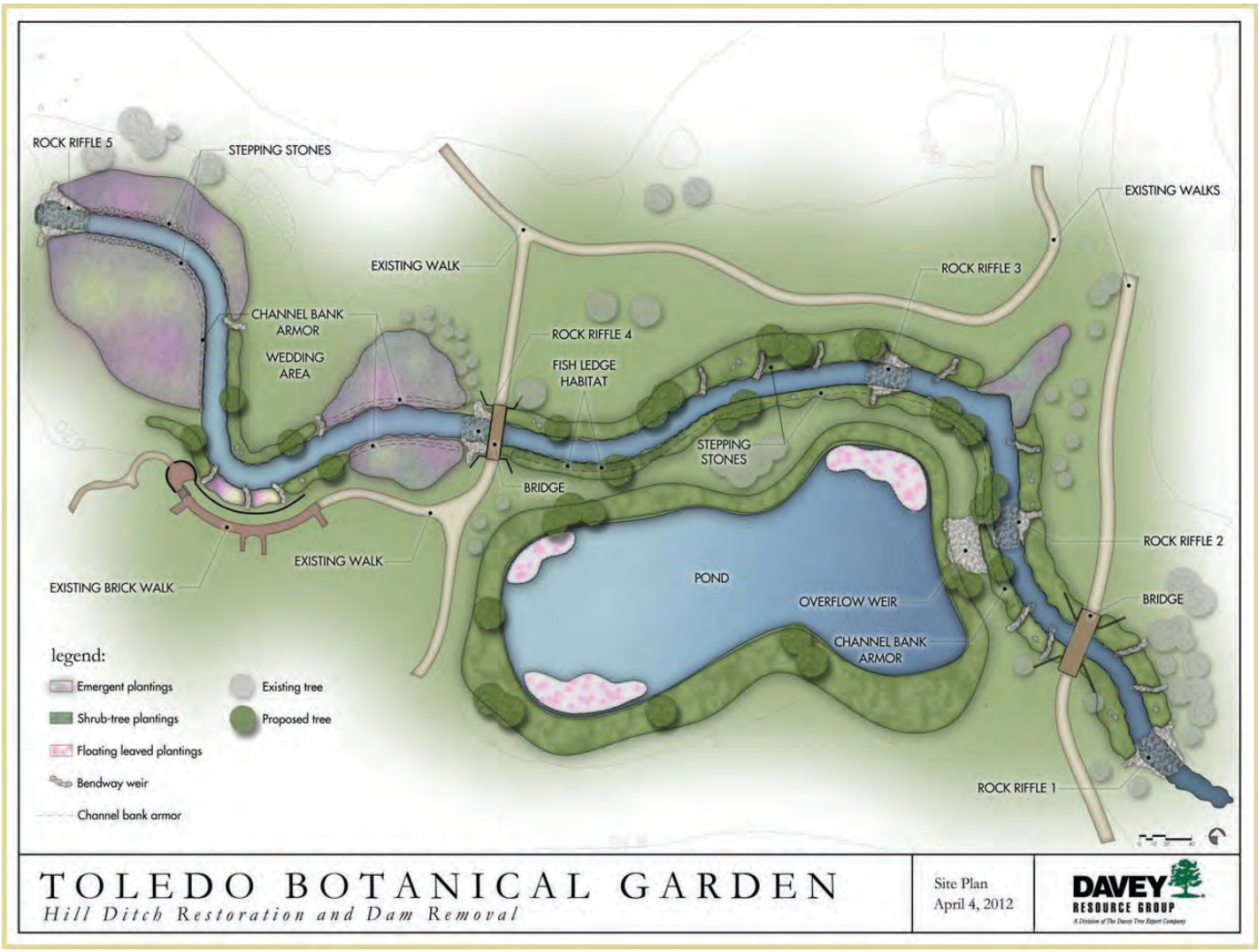
Toledo Botanical Garden

Toledo Botanical Garden (TBG) is a 60 acre public garden visited by more than 120,000 people annually. It is located in Toledo in the Ottawa River watershed within the Maumee AOC.

Hill Ditch is a perennial stream that flows west to east through the center of the TBG.

Crosby Lakes are two man-made lakes within TBG that were created through the installation of two dams in 1988. The initial constructed depths of the upper and lower lakes ranged from 6 to 15 feet.

Over the 20 years since their construction, the lakes have trapped an estimated 28,000 cubic yards of sediment. Many of the areas in the upper lake have filled in to become islands where invasive plant species have established themselves. In the lower lake, many areas



have filled in and the banks are eroding and slumping into the lake.

TBG was successful in receiving an Ohio EPA 319(h) Nonpoint Source Pollution Control grant in 2011 to implement the Crosby Lakes and Hill Ditch Restoration Project. The objectives are to:

- Improve the biological & chemical water quality
- Restore a natural stream channel
- Expand and/or enhance wetlands
- Enhance portions of Crosby Lake
- Create a sustainable system

The restoration plan proposes construction of a sinuous channel for Hill Ditch by creating a series of berms that partially isolate portions of the lower and upper ponds from the new stream channel. Rock riffles and fish habitat structures are planned.

In order to minimize sediment accumulation in the adjacent wetlands and the remaining lower pond, berms must be constructed high enough so that sediments carried by the stream do not spill over into the pond during high water events.

The restoration plan also proposes reinforcing the berms with features, such as visitor accessible stone pathways, many species of densely planted native vegetation, and Bendway Weirs, which add structure and habitat to the stream and direct the fastest flows towards the middle of the new stream channel.

By doing this, erosional forces along the outer bends of the new stream bank will be minimized, stabilizing the position of the stream channel. This will help to achieve the overall goal of creating a stream channel that can provide a diversity of habitat for aquatic organisms while remaining stable over a very long period of time with minimal maintenance by TBG.

The preliminary plan also calls for enhancing the adjacent areas in the upper pond by creating a series of high quality floating-leaved, emergent, and scrub/shrub wetland systems that contain native plants. In the lower pond, plans include adding a variety of depths for open water and interspersing them with stands of native floating-leaved and emergent vegetation. Construction of this project is expected from fall 2012 through spring 2013.

The contamination of the Ottawa River has touched the lives of thousands of people who live near the Ottawa River as well as the millions who live, work, and vacation along Lake Erie, not to mention the hundreds of thousands of people who receive their drinking water from Lake Erie.

Years of dedication and hard work by citizens, non-profit organizations and government agencies are helping this river rebound from being a watershed that was once labeled one of the worst in Ohio.

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WATERSHED EFFORTS INTENDED TO SHOW ECONOMICS THAT BENEFIT EVERYONE

by Cindy Brookes, Sandusky River Watershed Specialist

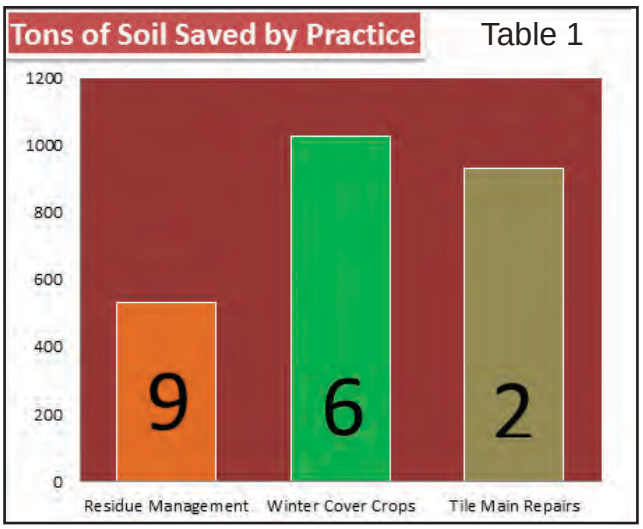
In the fall of 2011, the Sandusky River Watershed Coalition was awarded and began a grant in the Sandusky River – Tiffin sub-watershed titled *"Making Sense Out of Soil $aving$,"* in which landowners installing Best Management Practices are paid based on the amount of soil they save, rather than a flat incentive payment. The Best Management Practices the Coalition have focused on include traditional practices such as:

- Winter Cover Crops Plantings
- Conservation Cropping - practices which alter tillage or crop rotations for the benefit of soil savings,
- Waterway Repairs - on waterways that are no longer considered agricultural acreage
- Streambank Stabilization.
- Tile Main Blowout Repairs or Replacements - a new practice to address a mounting problem within the Northwest Ohio area.

While the first year and a half yielded fewer applications than anticipated by the grant goals, the amount of soil savings realized has been outstanding. The goal of the grant was to provide a total soil savings of 66,000 tons of soil for the life of the practices installed and, after the first year, a total of 47,029.8 tons of soil savings was realized for the life of the 31 practices, which have a life expectancy of 1 to 20 or more years depending on the practice. Savings by the type of practices installed are shown in Table 1 (right) with the number of applicants participating inside the bars.

So, what's the big deal? Thinking of this in economic terms, as the grant was intended, the $33,126 in grant monies spent on practices will calculate out to much more in savings for all of us. As taxpayers, we pay for the dredging of Sandusky Bay to maintain shipping channels. Assuming that 10% of those sediments would make it all the way to Sandusky Bay, the cost to dredge 4,703 tons of soil from Sandusky Bay, at the average annual cost of $18.51 per ton, would cost taxpayers a total of $87,053, which would result in a savings of $53,927. Consider the savings based on the total load of sediment being approximately 250,000 tons annually. When considering the goals of any watershed organization, savings available by this manner of BMP could benefit us all.

Additionally, the City of Fremont, which is the first water intake upstream of this sub-watershed, spends approximately $193 to remove a ton of soil from their drinking water. Again, if 10% of these sediments were to make it to the City's intake, a total of $907,679 would be spent on removal. The savings of spending $33,126 on BMPs would be nearly $874,533 and, over a twenty year period, would go a long way to helping pay for the new upground reservoir that will be going online later this year.



A 'before' photo of one section of a tile main repair that will be corrected by this grant program.

The Grant Kick-off Meeting shows a tile main repair project, which was assisted by grant funding, and will provide a savings of approximately 97 tons of soil per year once repaired.

While most of the effort of this grant has been focused on soil saving, the reduction in runoff from these practices should not be discounted. Any time soil is saved by holding it in place, surface runoff is reduced, which helps to reduce the loss of nutrients as well as reduce the amount of agricultural stormwater.

The most important thing the Sandusky River Watershed Coalition wants everyone to realize is that, no matter who you are or where you live, conservation practices can save you and others money. While they may not be directly seen in your pocket, the indirect savings as a member of the American society can be tremendous.

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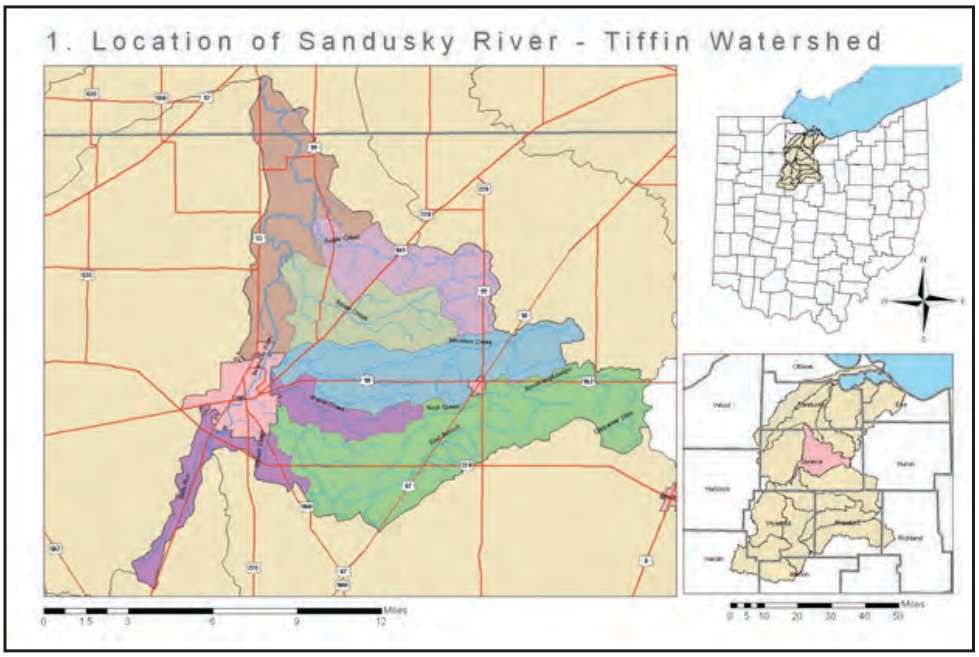

Map of the Sandusky River – Tiffin subwatershed with a subset showing its location within the Sandusky River Watershed.

MINUTES OF THE 2012 OWEA ANNUAL BUSINESS MEETING

The 87th Annual Meeting - June 19, 2012 *The Bertram Inn and Conference Center, Aurora, Ohio*

President Clark called the meeting to order at 8:30 am.

Items for approval were the 2011 Annual Business Meeting minutes. Jane Winkler, Secretary-Treasurer, reported that the minutes were published in the Fall 2011 issue of the Buckeye Bulletin. Copies of the minutes and Treasurer's report were available. Tom Angelo made a motion to approve the minutes, with a second by Gary Johnson. Motion carried. Jane Winkler gave the Treasurer's report. A motion to approve the report was made by Tom Angelo and seconded by Ted Baker. The motion passed.

Reports

Section reports were given. Ed Haller gave the Northeast Section report; Tom Horn reported for the Northwest Section; Bryan Curry represented the Southeast Section, and Barb Wagner, representing Dan Martin, presented the Southwest Section report. Written reports were submitted for the official minutes. Each outgoing section president was presented a certificate of appreciation for their service by President Clark.

The WEF delegate report was given by Kim Riddell.

WEF President-Elect, Cordell Samuels, offered greetings from WEF. Cordell commented on WEF's financial and membership status, strategic planning progress, and collaboration with other entities.

Standing/Ad hoc committee reports - Committee chairs were permitted to give brief updates on their committee's activities. Written reports were submitted for the minutes.

Items for Voting

Nominations and elections - Mark Livengood presented the following names for the 2012-2013 officer positions: President - Tom Angelo, President Elect - Dan Sullivan, Secretary/Treasurer - Jane Winkler, and Vice President - Mike Frommer. Doug Clark will serve on the Executive Committee as Past President. Denise Seman made a motion to accept the nominations as presented, seconded by Gary Johnson. Motion carried.

OWEA had received letters of support from the Southeast Section for the appointment of Mike Frommer to the position of Vice-President and Tyler Linton as SE Delegate to OWEA.

Announcements

None submitted.

A moment of silence was held for deceased members.

President Clark adjourned the meeting at 9:10 am.

Submitted by Jane Winkler, Secretary/Treasurer

2012 Conference Farewell Herald

One last reminisce of the 2012 annual conference. Days spent together with fellow colleagues and memories that will last until the next annual conference.

- The executive committee arrived Sunday late afternoon and started the evening with the final meeting to make sure all was in place before the start of conference events.
- Thirty-four foursomes teed off Monday morning at the Solon Grantwood golf course for a day of fun and sport. The course condition was good, the weather was great and all enjoyed the beginning festivity of the conference. The outing ended with a barbecue and raffling of prizes.
- As usual, conference registration was congested as golfers made way to the conference venue and others arrived in anticipation of the following days. The evening was christened by the conference's first "movie night" held in the Bertram auditorium for all to enjoy the classic movie, "Caddy Shack." Popcorn, candy, and beverages were enjoyed during the movie.
- Tuesday morning was started with the OWEA Annual Business Meeting, which had record membership attendance of well over 100 people. The Awards Breakfast immediately followed and, as usual, provided a celebration recognizing operators, engineers, management, government, and service of the OWEA membership. Congratulations to the award winners.
- Seventy-five exhibitors were greeted by an enthusiastic membership interested in learning about the products and services they could offer. Included with the afternoon activities were presentations by the Y-P's and exhibitors' presentations or a trip to the City of Solon WWTP. The exhibitors were pleased by the attendance. The attendees needed to be asked to leave when the hall closed at 5:00 pm.
- Meet & Greet – a highlight activity of each conference, again demonstrated to be a favorite of all. The evening was filled with food at carving tables, three rooms of gaming tables offered popular games of chance, and a lounge area in the sports book where one could enjoy the evening baseball game. With music, food, and prizes galore raffled for gamers' winning tokens, the attendants mingled and played their favorite games. All enjoyed the delightful evening from beginning to end as it was entertaining and festive. Four lucky people walked away with the grand prize give away trips.
- Wednesday began and ended with the five concurrent tracks of technical sessions provided by professionals volunteering to share their knowledge. Others, eager to learn, were in attendance for the presentations and networking during the breaks. Incoming president, Tom Angelo, and his committee of Keith Riley and Debbie Houdeshell are to be thanked for the technical program. Most of all, a thank you to those willing to take the time and put their experience in a format that can be shared with the rest of us.
- Wednesday evening's Annual Banquet began with a speech from WEF President-Elect, Cordell Samuels, and the presentation of WEF awards to OWEA's deserving member recipients. Following a delicious dinner was a brief summary of the year by outgoing president, Doug Clark, and an equally short welcome to the coming year by incoming president, Tom Angelo. Formal activities concluded with desserts, beverages, and an evening of dancing and music.
- Thursday morning again brought the end to the conference similar to many others; however five concurrent tracks of technical sessions were available to provide a variety of educational opportunities. Again, all sessions were well attended and the crowd began to dissipate.

By noon, the hall was empty of people but the memories still linger until another herald is proclaimed to disseminate knowledge to our industry. These things we must return to regularly to nurture, enhance, and better the industry we hold close and endear our livelihood.

To the members who traveled to the conference, we extend our thanks for making this year's conference as special as each one is. Those who volunteered time to help make the conference; we thank you and appreciate your time and efforts. If you were unable to attend the conference, then we encourage you to make an effort to attend in the future. You were missed. Mark your calendars for June 18-20, 2013 and anticipate another great gathering for the betterment of our environment and each of us individually who attend.

Respectfully,

2012 Annual Conference Co-Chairs
Ted Baker
Terry Gellner

2012 Committee
Tom Angelo
Jim Cooper
Mary Ann Driscoll
Deb Houdeshell
Tom Merritt
Keith Riley
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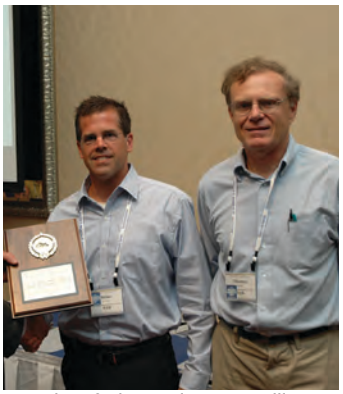

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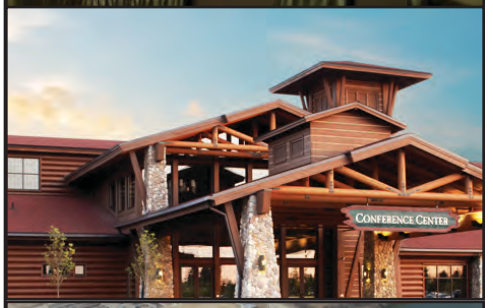

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THE VILLAGE OF YELLOW SPRINGS WATER RECLAMATION FACILITY
THE MOST COLORFUL EXPERIENCE IN WASTEWATER

by John Eastman, P.E., Senior Environmental Engineer, LJB Inc.
and Joe Bates, Yellow Springs Superintendent of Water and Wastewater Treatment

The Village of Yellow Springs is a widely known, vibrantly alive, socially aware community with a 2010 population of 3,487 located in Miami Township in the northern part of Greene County. This eclectic village borders on the 1000-acre Glen Helen Nature Preserve, which connects to John Bryan State Park and Clifton Gorge. The Little Miami River, Ohio's first State and National Scenic River, traverses these magnificent natural areas.

The Yellow Springs wastewater treatment plant, originally constructed in 1964 and last upgraded in 1988, sits above Glen Helen on the south end of the village. The facility discharges to Yellow Springs Creek, which flows through Glen Helen and empties into the Little Miami River about one half mile downstream. Engineering for the treatment plant upgrades started in 2008 in response to Ohio EPA requirements for eliminating unacceptable NPDES permit violations, particularly for ammonia-nitrogen, and in anticipation of a new permit requirement for phosphorus removal. Additional concerns with aging equipment and insufficient sludge provided further impetus for the project. With completion of the current upgrades, Yellow Springs has proudly renamed its wastewater treatment plant as the Yellow Springs Water Reclamation Facility (YS WRF) in honor of the vastly improved effluent quality.

In May 2008, LJB Inc. was hired to evaluate the existing plant and determine what improvements would be needed. Project objectives included 1) eliminating NPDES permit violations, 2) complying with anticipated new requirements for phosphorus removal, 3) replacing aging equipment, and 4) increasing operational flexibility and reliability. The final task was to accomplish these objectives cost effectively without increasing staffing requirements.

In 2008, the aging 0.60 mgd treatment plant consisted of influent screening, aerated grit chamber, influent Parshall flume, extended aeration activated sludge process with four parallel flow rectangular basins (500,000 gallons total volume), dual 50-foot clarifiers, chlorination, dechlorination, effluent flow measurement, and aerobic sludge digestion.

Village of Yellow Springs WRF entrance sign

It was quickly apparent that excessive flow caused by high Inflow and Infiltration (I/I) during storm events was the major underlying cause of permit violations. From January 2007 through May 2008, there were six occasions in which the inflow exceeded the design peak hourly flow of 3.8 mgd for the secondary clarifiers; the largest reported flow was 6.5 mgd. Mixed liquor solids were commonly lost from the clarifiers during storm events, leading to high suspended solids and BOD in the effluent. However, the biggest problem was the loss of nitrifying bacteria, which led to ammonia violations until the nitrifying population could be re-established.

Aerial photo by Joe Bates with credit to pilot, Jim Sweeney

This problem with washout of mixed liquor solids was exacerbated by a major deficiency in the original design of the return sludge lines. There was only one sludge suction line serving both clarifiers, which used Tow-Bro suction headers for the return sludge system. This deficiency caused heavy imbalances in sludge removal and contributed so greatly to mixed liquor solids loss that the operator would typically have only one clarifier on-line. This problem was so significant that a special project was immediately created in 2008 to install a second parallel sludge suction line so that each clarifier could have its own independent controlled sludge withdrawal rate without waiting for the remainder of the project to be designed and built.

The major strategy to deal with high I/I was to build a 2.4 million gallon Overflow Basin to hold the excess flows until storm peaks had passed. A slide gate located in a diversion box on the influent sewer creates a controlled orifice restricting flow into the WRF. Excess wastewater

Headworks building

Garage, aeration tanks, and administration building

overtops a side weir and flows by gravity to the Overflow Basin. After the storm peak passes, the basin contents are pumped back to the head of the WRF. By installing this Overflow Basin, Yellow Springs was able to maintain an average daily design flow of 0.60 mgd and peak design flow of 3.8 mgd for the remaining system upgrades. This strategy allowed maximum use of existing structures and significantly reduced construction costs for other improvements.

Other WRF improvements included:

- Demolition of most of the existing headworks and installation of a new front rake screen with ¼-inch openings and vortex grit chamber with grit washer in an entirely new headworks building, which replaced a former structure that could charitably be called a "shed."
- New influent Parshall flume to replace the former unit that was very inaccurate, especially at high flows due to hydraulic deficiencies.
- Conversion of the extended aeration activated sludge system to a biological phosphorous removal system by modifying the existing aeration tanks to create the anaerobic, anoxic and aerobic zones necessary for the process.
- Modification of the inlet and outlet piping for the aeration basins so that series flow through the basins can be implemented, allowing for greater operational flexibility.
- Addition of electrically operated gates to automatically move the WRF into "storm mode" during high flow conditions which allows for storage of mixed liquor solids in the front end of the biological system and reduces solids loadings to the clarifiers.
- Installation of density current baffles in the clarifiers to improve the flow capacity and efficiency of the clarifiers. As a side project, Yellow Springs completely rebuilt one 20-year old clarifier rake and drive mechanism and will be redoing the other clarifier in the near future.
- Improvements to the chlorination and dechlorination systems.
- Improvements to the aerobic sludge digesters to improve decanting ability and allow operation of Sequencing Facultative Digesters™ that will increase solids destruction, reduce air requirements, and increase filterability, all of which will reduce operating costs.
- Addition of a covered storage facility for dewatered sludge prior to land application. This facility significantly improves the operator's ability to waste sludge and maintain mixed liquor solids in the proper range. Previously, excess liquid sludge had to be stored in off-line aeration tanks or as excessively high MLSS.

continued on page 48

Clarifier

Chlorine contact tank

- Installation of chemical phosphorus removal capability for low volume, high-phosphorus side streams primarily from digester decanting and sludge dewatering operations. This side stream phosphorus treatment system reduces the phosphorus load on the biological system improving reliability.
- Installation of a non-potable water system using WRF effluent for the grit system, dechlorination, general WRF wash-down needs, and overflow basin irrigation when needed to maintain good grass cover.
- Addition of variable frequency drives on the aeration tank blowers saving energy costs.
- Installation of an emergency generator where previously there had been no back-up power.
- Improved instrumentation throughout the WRF including dissolved oxygen sensors in the aeration tanks, oxidation-reduction potential (ORP) sensors in the anaerobic and anoxic zones of the bio-phos system, and both pH sensors and ORP sensors in the digesters. Level sensors are used for multiple purposes throughout the WRF.
- Completely new SCADA system to monitor the newly installed instrumentation and automatically control many WRF processes. Previously, all systems were manually operated. The SCADA system is accessible off-site, allowing operators to monitor alarm conditions and make emergency adjustments remotely. This capability helped prevent a need to increase staffing.

Construction was done under three contracts: 1) the parallel sludge line project awarded to LeVan's Excavating Inc. of West Liberty, OH for $62,400; 2) the general construction contract awarded to Kirk Brothers of Alveda, OH for $1,773,000; and 3) an electrical contract awarded to DeBra-Kuempel of Cincinnati, OH for $633,000. Including change orders totaling less than 2.8%, the total construction cost was just under $2,539,000. Construction was complete in mid 2011.

Yellow Springs received funding for the WRF improvements from three primary sources in addition to its own funds: 1) a grant of $1.121 million from the Ohio Public Works Commission; 2) a principal reduction grant of $750,000 from the federal ARRA program (federal stimulus funding), and 3) a loan from the Ohio EPA Water Pollution Control Loan Fund (WPCLF) that covered the balance of overall project costs not paid directly from village funds. Yellow Springs was also fortunate that the debt load from the 1988 project was ending just as the new debt was being incurred. Therefore, the new debt payments did not require an increase in sewer rates, already among the highest in the area.

When a part of the project was completed, it was put in service as quickly as possible. For example, the Overflow Basin was completed just in time for the start of a record rain fall in the spring of 2011. It worked perfectly to prevent hydraulically overloading the plant. "We also used the new sludge storage pad extensively during that spring, because the fields were too wet to get equipment on" said Superintendent Joe Bates.

According to Joe, "The results of this upgrade have been fantastic. The effluent quality is so much improved, especially during high flow events with utilizing the Overflow Basin. The effluent is crystal clear. We are consistently seeing BDL on effluent CBOD, NH3 N and TSS." However, achieving consistent phosphorous removal has been a bit of a challenge since start-up. In the past, this plant has been very forgiving when it came to high MLSS concentrations, but now you really need to maintain a much more consistent MLSS to get the proper Bio-Phosphorous removal.

Operator Brad Ault commented, "At times, the construction was a bit overwhelming. But the new improvements have made the plant much more operator friendly." And recent hire, Richard Stockton, reports, "The new equipment and layout make the plant convenient and efficient."

"I cannot say enough good things about our new SCADA system," enthused Superintendent Bates. "Once we got the bugs worked out, SCADA has been great! We now have future plans to tie our water towers and drinking water treatment plant into the SCADA system located at the WRF." The Yellow Springs WRF is much "greener" than ever before, not only in the electrical efficiencies added during the upgade, but also in the high quality of effluent that we are putting back into the environment.

So, why is the Yellow Springs Water Reclamation Facility the most **colorful** experience in wastewater? Because Superintendent, Joe Bates, has painted every building a unique color! When people come to visit or tour the plant, the first thing they ask is "What is up with all the colors?" If you have ever visited downtown Yellow Springs, you will see where the inspiration came from. "I tell

Transfer switch and generator

SCADA system

Joe Bates, Superintendent; Brad Ault, Operator II Water & Wastewater; and Richard Stockton, Operator I Water & Wastewater plus descriptive parking lot signs.

visitors that the idea is that their visual senses are so overwhelmed that they do not smell anything from the plant. But that doesn't always work!" OEPA representatives have told us that most communities try to "hide" their wastewater treatment plants; this is the most colorful one that they have seen.

It started with the two colors, yellow and pencil yellow, found in the Yellow Springs logo. We then chose red and orange for the more hazardous areas such as the headworks and chlorine buildings. From there it was like a tie-dyed shirt. Later we found it had a practical function. Plant personnel can refer visitors, delivery vehicles and tradesmen to specific buildings with no confusion. "Meet me at the red building" is immediately clear to anyone entering the facility, whereas saying "headworks building" wouldn't mean much to a visitor. It could even have added safety benefits, especially in larger plants, with a person in need of help. You can direct emergency response personnel more efficiently to the sick or injured person. "Hey, other trades are color coded: electrical, plumbing, etc. Why not wastewater treatment? Let's start a new trend!" said Joe, eyeing a new future for the industry.

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INTRODUCTION TO OHIO EPA DIRECTOR SCOTT J. NALLY'S LETTER

In February of this year, Doug Clark, OWEA Past President, initiated a meeting with the directors of various State of Ohio agencies in an effort to introduce OWEA to them and extend an invitation to have OWEA review and assist the agencies as needed. The senior officers of OWEA met with the Directors of OEPA, ODOH, ODNR, and Agriculture. This meeting resulted in OWEA becoming one of the early reviewers of future proposed regulation. As a result of this meeting, OWEA was asked to review and comment on draft SB 294. This review was accomplished and OWEA endorsed the passage of SB 294.

The Government Affairs Committee will continue to evaluate proposed rules that have the potential to affect water quality and our membership. The goal of this process is to allow the combined skill, knowledge, and experience of our diverse membership to be utilized in the formation of state regulation. This evaluation will result in a recommendation that will allow for the education of any and all parties that such rules may effect.

One of the goals and objectives of the Ohio Water Environment Association for the coming year is to be a more active participant and voice in outreach and communication with other organizations that share our common cause of "clean water" and science based regulation. To this end, it is our pleasure to publish Director Scott Nally's article on SB 294. In doing so, we achieve a dual purpose. First, we communicate essential information to our members in a timely manner, so "you know what we know, when we know it." Second, through the spirit of cooperative engagement, OWEA is hoping to foster and build positive relationships with other organizations involved in our common work of protecting "clean water."

In his article, Director Scott Nally advocates a position shared by OWEA, which is to foster an environment that encourages the development of common sense solutions to enhance environmental protection. Through his efforts, Director Nally and the Ohio EPA are working to develop solutions that are effective and expedient, and at the same time help businesses meet regulatory requirements in a timely and cost effective manner. Through this approach, the Agency is working to take a position that balances the need for environmental protection with economic needs of the State of Ohio.

OWEA Executive Committee

COMMON SENSE SOLUTIONS ENHANCE ENVIRONMENTAL PROTECTION

by Scott J. Nally, Ohio EPA Director

As director of the Ohio Environmental Protection Agency, I am proud that we have a 40-year history of success. Ohio's air, land and water are significantly cleaner as a result of environmental regulations, applied technology innovations and a greater emphasis by business to meet their obligations. Because environmental improvement often involves significant investments, it is critical that our regulations make sense.

If there are barriers that keep us from being efficient and prevent us from using common sense, we need to break those down. That's why I'm excited about the recent passage of legislation that gives job creators and environmental leaders more common sense solutions.

I share Governor John R. Kasich's enthusiasm about the tremendous opportunities for economic growth in Ohio. To further efforts to make Ohio a leader in environmental and business assistance, Gov. Kasich recently signed Senate Bill 294 into law. Here are a few key provisions:

Expanded Compliance Assistance – For many years, Ohio EPA has only been able to help small businesses comply with environmental requirements, and Ohio law provided confidentiality to only those seeking help with air issues. That means no information gathered by our compliance assistance program is used for enforcement purposes. SB 294 provides that comfort to businesses of all sizes and for all environmental programs. Importantly, the bill has safeguards to prevent companies with egregious compliance problems from using the law as a shield.

Expedited Gas Tank Cleanups – Those who seek to clean up property that contains underground gasoline storage tanks along with other contamination now only have to deal with one regulatory agency. This will expedite cleanups and provide a clear path forward to allow blighted property to be developed.

Expanded Testing Opportunities for Certified Operators – Operators of drinking water and wastewater treatment plants must be certified by the State. Previously, Ohio EPA offered the exam twice a year in Columbus. Now, testing will be offered online or at numerous locations across the state, including private entities, making testing more accessible.

Enhanced Wetland Development – Anyone authorized to impact wetlands and streams in Ohio must mitigate the loss of those resources. In the past, on-site mitigation or mitigation banking were the only options. Thanks to SB 294, a new "in-lieu fee" removes the burden of mitigation from the applicant -- who may not have the expertise or right land conditions -- and puts it in the hands of wetland professionals. This should result in more successful wetland mitigation projects. This legislation adds a third tool in the tool belt.

Ohio Environmental Protection Agency

Ohio's environmental quality is moving in the right direction. The changes in SB 294 help move the regulatory environment in the right direction as well. As always, we expect businesses to fully comply with laws and regulations that protect Ohio's air, land, and water. Working together for common sense changes, we'll continue to make progress and make Ohio a great place to live.

NUTRIENT RECOVERY – A SYNTHESIS OF THE CURRENT STATE OF KNOWLEDGE

by Samuel Jeyanayagam, Ph.D., P.E., BCEE, Vice President/Senior Principal Technologist, CH2M HILL

THE CASE FOR NUTRIENT RECOVERY

Phosphorus (P) and nitrogen (N) are essential elements of all life forms with no substitutes. In addition, they are also used in detergents, crop protection chemicals, pharmaceuticals, and many other products. However, human activity is radically changing the global phosphorus and nitrogen balances and wastewater management can be a significant opportunity for intervention.

Phosphorus is extracted from natural deposits called phosphate rock, found mostly in China, Morocco, USA, and South Africa. Increasing demand for phosphorus triggered by rapid population growth has resulted in the mining of phosphate rock at a rate faster than geologic cycles can replenish it. Hence, it is a "non-renewable" element. At the present rate of consumption, high quality P reserves are predicted to be depleted in about 100 years.

While nitrogen is abundant in our atmosphere as nitrogen gas (approximately 78% by volume), it is not usable by living organisms and must first be converted to reactive nitrogen (e.g. ammonia-nitrogen). Conversion of nitrogen gas to reactive nitrogen through natural processes such as lightning and nitrogen fixation by legumes are not adequate to sustain life. Prompted by rapidly increasing demand for nitrogen fertilizer, Fritz Haber and Carl Bosch of Germany developed the Haber – Bosch process for producing ammonia from atmospheric nitrogen. Today, it is the most economical and principal method of producing ammonia. However, the Haber – Bosch process is associated with significant energy demand and greenhouse gas emission. This high energy chemical is inefficient. For example, approximately 80 to 90 percent of the reactive N used in food production is lost to the environment, and all reactive N contained in combusted fuel enters the environment.

Some of the key drivers and barriers for nutrient recovery are listed in Table 1.

Table 1: Key Drivers and Barriers for Nutrient Recovery

Drivers favoring nutrient recovery:

- An integral component of sustainable WWTP of the future (together energy recovery & water reuse.)
- Offsets phosphorus depletion and nitrogen loss
- Minimizes struvite scaling in WWTP equipment and piping
- Reduces recycle loads resulting in stable mainstream nutrient removal
- Lowers air requirements for nitrification
- Reduces chemical solids production by eliminating sidestream chemical phosphorus removal
- Lowers land application cost in areas where application rates are controlled by biosolids phosphorus content
- Generates a marketable and environmentally acceptable end-product (struvite)
- Likely offset O&M cost for product recovery and potentially result in acceptable payback period
- May be mandated by future regulations as in Sweden

Barriers to adopting nutrient recovery:

- Unfavorable economics and long payback period
- Competing priorities
- Lack of regulatory drivers
- Lack of knowledge regarding pros and cons of nutrient recovery
- Prefer to be followers rather than leaders in implementing emerging technologies
- Lack of adequate full scale experience
- Averse to adding new processes
- Staffing constraints
- Vague and unclear timeline with respect to phosphorus depletion
- Lack of long term vision. Master planning beyond the traditional 20-year horizon is often needed to justify nutrient recovery

Technology Review

As shown in Figure 1, there are several potential streams within a typical wastewater treatment plant where phosphorus and nitrogen can be recovered. These streams include waste activated sludge, centrate or filtrate, final effluent, and incinerator ash. Following anaerobic digestion, 8.5 percent of the plant influent nitrogen will remain in the digested sludge and 11.5 percent will end up in the recycle stream from sludge dewatering (Phillips et al., 2011). In the case of enhanced biological phosphorus removal, the return streams following anaerobic digestion contain approximately 50 percent of the phosphorus. Because of the substantial nitrogen and phosphorus loads, the recycle stream from dewatering of anaerobically-digested sludge has been the major focus of nutrient recovery efforts.

A number of technologies are available for recovering nutrients with chemical precipitation and adsorption as the predominant extraction mechanisms. Brief descriptions of some approaches used or evaluated in North America are presented below.

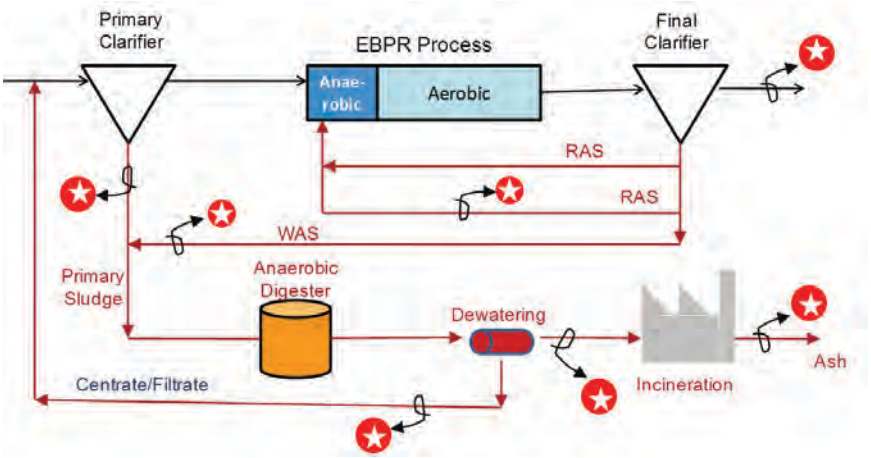

Figure 1: Potential Locations for Recovering Nutrients

PhoStrip®

The PhoStrip® process (Figure 2), developed in the 1970s for phosphorus removal, entails directing a portion of the return activated sludge (RAS) to an anaerobic stripper to release phosphorus to the liquid phase. The phosphorus-rich water is treated with lime to recover calcium phosphate. This strategy is typically implemented in an EBPR process, which generates sludge with excess phosphorus. A readily biodegradable organic source such as acetic acid is added to the anaerobic stripper to trigger phosphorus release. Several full scale facilities use the PhoStrip® process to meet phosphorus limits. These include plants in Germany (Darmstadt) and Austria (Hofkirchen, Schalchen, and Wallang). In the US, the process is utilized by the Truckee Meadows WRP, Reno, Nevada. The original design of the Little Patuxent Water Reclamation Plant in Maryland included the PhoStrip® configuration.

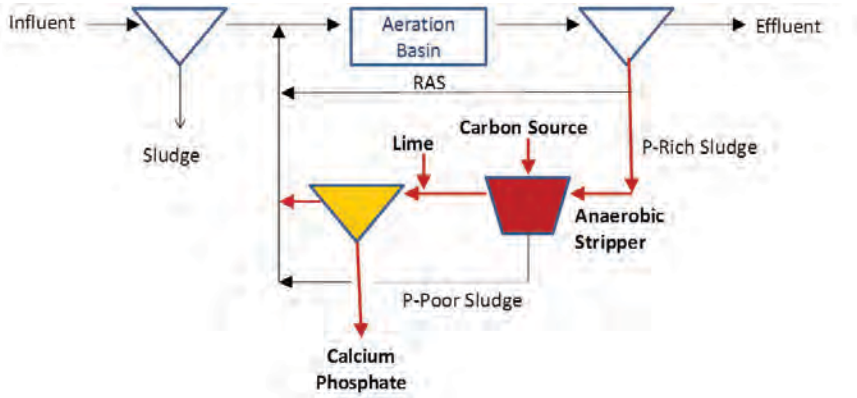

Figure 2: PhoStrip® Process Schematic

Struvite Recovery

A review of literature reveals that struvite (magnesium ammonia phosphate [MAP]) was observed in digested sludge supernatant lines as early as 1939. Plants converting to biological nutrient removal continue to experience operation and maintenance problems with struvite scaling. Key factors that affect struvite formation include the availability of the three major ions in a molar ratio of 1:1:1 of Mg^{+2}:NH_4^+:PO_4^{3-} and optimal pH in the range of 8 to 10. Recent efforts have focused on recovering struvite under controlled conditions. This provides the dual benefits of minimizing unintended struvite scaling and recovering a clean fertilizer containing nitrogen and phosphorus.

A generic process flow diagram is shown in Figure 3. Typically, a chemical feed of magnesium chloride is needed to provide magnesium which is usually the limiting element, as well as caustic to achieve alkaline pH conditions. Following chemical addition, the filtrate or centrate enters a fluidized bed reactor (FBR), which is the heart of the process where struvite crystals are formed. Product is withdrawn periodically from the FBR, dewatered, dried, and stored. The FBR effluent is returned to the main stream process. The struvite end-product has commercially-desirable formulation of phosphate-P (12.7%) and ammonia-N (5.7%). It is a slow release fertilizer and dissolves slowly over a nine-month period.

continued on page 56

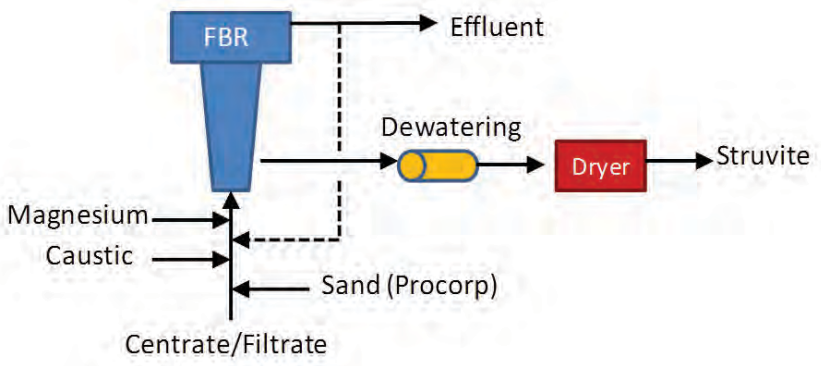

Figure 3: Generic Process Schematic

Currently, three suppliers market struvite recovery systems in North America using proprietary FBRs. Key features of the available technologies are compared in Table 2 together with facility locations. The locations presented are for the systems applied to municipal or industrial treatment facilities.

Table 2: Struvite Recovery Systems Available in North America

Technology	Feed Stream	External Inputs	Location
Ostara	Centrate/Filtrate	$MgCl_2$, NaOH	Operational • Edmonton Gold Bar, AB • York, PA Under Design/Construction • Thames Water, UK
Ostara (WASSTRIP)	WAS or Centrate/ Filtrate	$MgCl_2$, NaOH	Operational • Durham, OR • Nansemond, HRSD, VA Under Design/Construction • Rock Creek, OR • Saskatoon, SK • Madison, WI
Multiform Harvest	Centrate/Filtrate	$MgCl_2$, NaOH	Under Construction • Boise, ID • Yakima, WA
Procorp	Centrate/Filtrate	$MgCl_2$, $Mg(OH)_2$, NaOH, Sand	Operational • 2 Industrial facilities in North America • Several in Europe & Japan

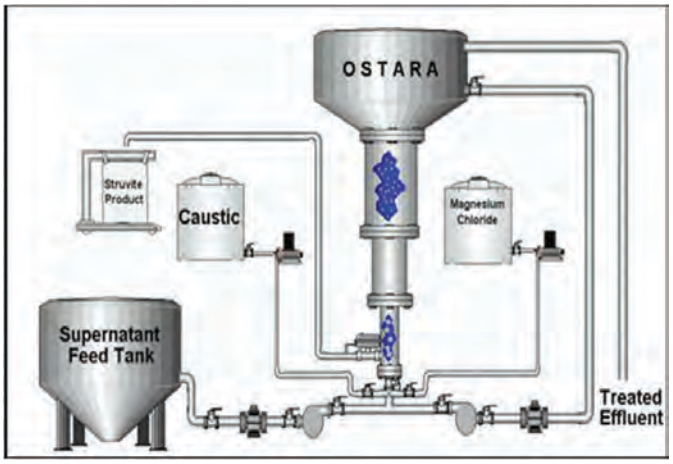

Figure 4: Ostara Struvite Recovery Process (Ostara)

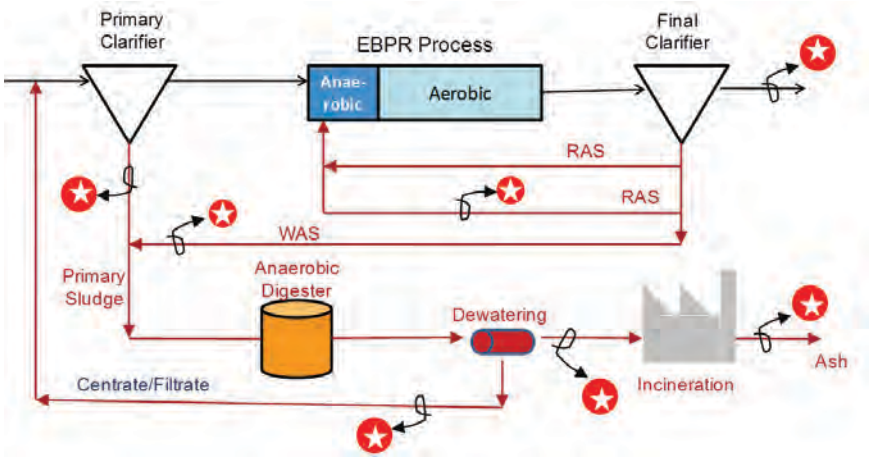

Figure 5: WASSTRIP® Struvite Recovery Process (Ostara)

Ostara

In the Ostara system, the nutrient-rich centrate/ filtrate flows up through a fluidized bed of preformed fine particles of struvite granules, which serve as seeds for pellet growth. As shown in Figure 4, the technology also includes an internal recycle from the top of the bed back to the reactor feed area at the bottom. Ostara takes responsibility for marketing the final product. The resulting revenue to the utility may in some cases off-set the operating cost of the struvite recovery system.

A recent modification of the Ostara process is the WASSTRIP® configuration (Figure 5), which entails anaerobic stripping of the phosphorus from WAS followed by thickening and struvite harvesting from the centrate. The main advantage of this approach is that phosphorus is removed prior to digestion thereby minimizing the potential for struvite scaling upstream of dewatering.

Multiform Harvest

The struvite recovery system provided by Multiform Harvest is similar in concept to Ostara. However, it does not involve an internal recycle (Figure 6). This technology was originally developed for treating swine wastewater and has been adapted for treating dairy wastewater. Multiform Harvest's marketing strategy entails blending the struvite product prior to marketing. The utility has the option of sharing the cost and revenue of the marketing efforts.

Procorp

Procorp uses the Crystalactor® technology developed in Europe and is offered there by the DHV Group. Like the Ostara process, it uses a fluidized bed reactor. However, the reactor is a cylindrical vessel (Figure 7), offering little or no change in up-flow velocity, which must remain adequate to levitate particles large enough to suit the market needs. Very small particles are not retained and the reactor must be seeded with an external source of heavy material such as sand (40 – 50 mesh). While Procorp does not participate in marketing the end product, it can assist in identifying market outlets in the local community.

Adsorption Technology

In addition to struvite precipitation, phosphate can also be captured by adsorption. The Asahi Kasei Chemical Corporation of Japan has introduced an adsorbent resin of metal oxide and polymer that is highly selective for phosphate than competing ions commonly found in municipal wastewaters (deBarbadillo et al., 2011). As illustrated in Figure 8, the phosphorus recovery strategy comprises three stages. In the adsorption stage, filtered final effluent is fed through a column charged with the adsorbent and phosphorus is removed. In the desorption stage, an alkaline solution is passed through the column and the phosphate ions are desorbed. In the recovery stage, desorbed phosphate ions are separated from the desorbing agent by adding lime, which recovers phosphorus as calcium phosphate. The alkaline solution can then be used again in the desorption stage. This adsorption technology achieves very low effluent phosphorus concentrations.

Ammonia Recovery Technology

A significant fraction of the influent nitrogen is found as ammonia in the centrate or filtrate stream following anaerobic digestion. The Ammonia Recovery Process (ARP) marketed by ThermoEnergy is a two-step process that combines flash vacuum distillation with ion exchange to remove ammonia. As illustrated in Figure 9, centrate/filtrate undergoes pH adjustment to shift the ammonium-ammonia equilibrium towards ammonia gas formation. Following pretreatment to remove contaminants, vacuum (flash) distillation is used to capture the ammonia that would readily volatilize. The effluent stream with reduced ammonia nitrogen content (approximately 300 ppm or less) is treated by ion exchange, which selectively adsorbs the ammonia. The adsorption columns are regenerated using either brine or sulfuric acid. The spent ammonia-laden regeneration solution is stripped of ammonia to produce a commercial-grade solution of ammonium sulfate. The ARP scheme is presently under consideration in New York City.

Another technology which recovers ammonia from dewatering centrate/filtrate as ammonium sulphate is AmRHEX, which is under development in Ontario by 3XR Inc. This system utilizes a rotating contactor of proprietary media to facilitate volatilization of the ammonia in the centrate/filtrate compartment of the reactor with subsequent scrubbing from the gas phase in an acidic compartment to form ammonium sulphate.

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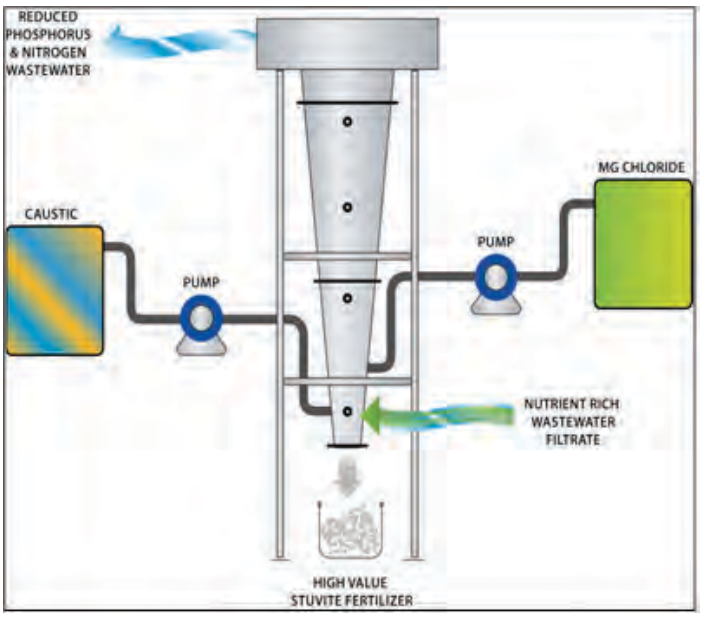

Figure 6: Multiform Harvest Struvite Recovery Process (Multiform Harvest)

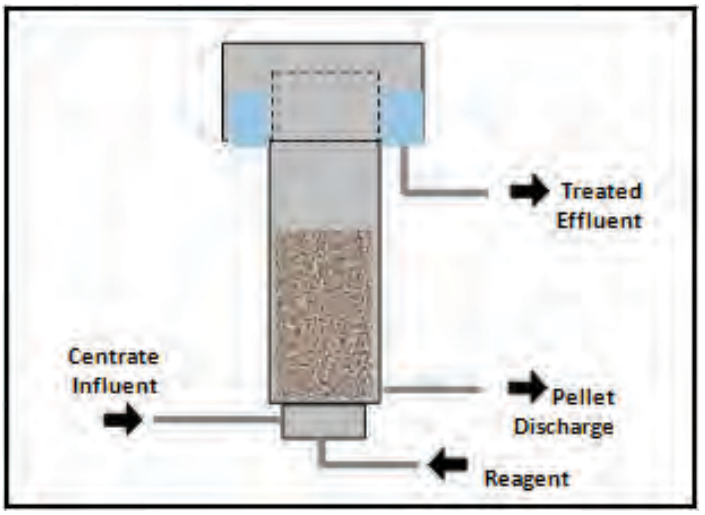

Figure 7: Crystalactor® Struvite Recovery Process (Procorp)

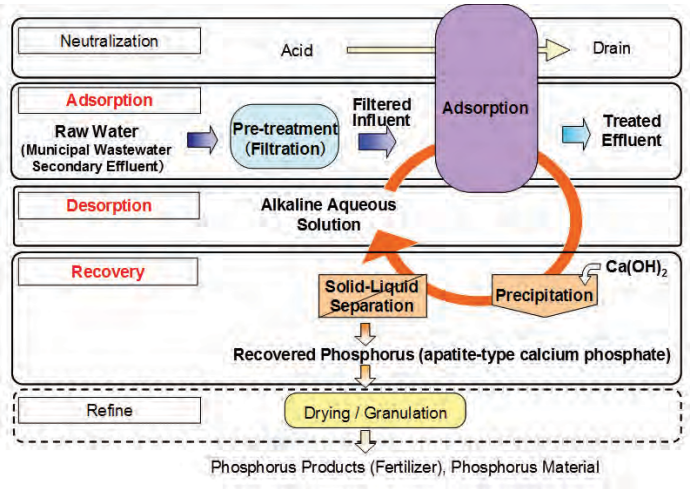

Figure 8: Asahi Kasei Adsorption Process (deBarbadillo, 2011)

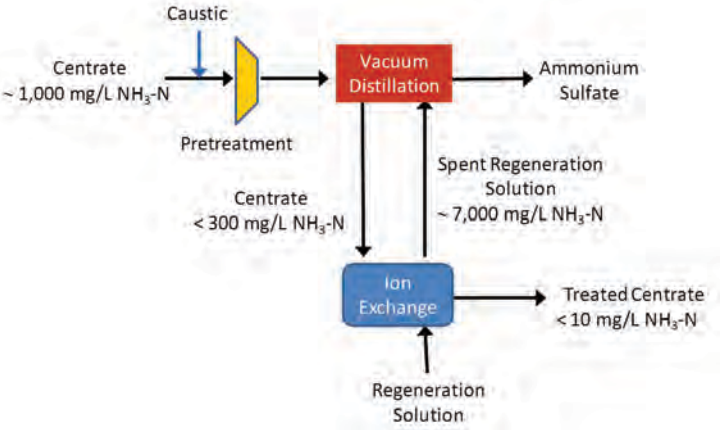

Figure 9: Simplified ARP Schematic (ThermoEnergy)

Other Nutrient Recovery Strategies

Several other nutrient recovery approaches are in various stages of development. A few examples are summarized in Table 3. The table shows that these technologies recover nitrogen and phosphorus in various chemical forms.

Table 3: Other Nutrient Recovery Technologies *

Technology	Origin	Feed Stream	Chemicals Used	End Product
KREPO	Sweden	Centrate	H_2SO_4, NaOH, Fe	$FePO_4$
Kemicond	Sweden	Centrate	H_2SO_4, NaOH, H_2O_2	$FePO_4$
Seaborne	Germany	Centrate	H_2SO_4, NaOH, $Mg(OH)_2$	Struvite
NuReSys	Germany	Anaerobic effluent	NaOH, $MgCl_2$	Struvite
PHOSPAQ	Netherlands	Centrate	MgO	Struvite
Rem-Nut	Italy	Effluent	NaOH, $MgCl_2$	Struvite
Phosnix	Japan	Centrate	$Mg(OH)_2$, NaOH	
P-Roc	Germany	Centrate	Tobermorite (Ca source from industrial waste)	$Ca_3(PO_4)_2$
BioCon	Denmark	Incinerator ash	H_2SO_4	H_3PO_4
SEPHOS	Germany	Incinerator ash	H_2SO_4, NaOH, Lime	$AlPO_4$, $Ca_3(PO_4)_2$
SUSAN	Europe	Incinerator ash	H_2SO_4, NaOH, $Mg(OH)_2$	Fertilizer product

** Adapted from WERF, 2008.*

CONCLUSION

The wastewater treatment plant of the future must continue to remain true to its core principles of public health and environmental protection. However, our practices must evolve to cope with the realities of the 21st century, including rapid population growth and urbanization, diminishing natural resources, and climate change. These pressures are forcing our global society from a comfortable position of abundant resources to a stressful position of scarcity. Already, our industry is undergoing a paradigm shift and beginning to view wastewater as a valuable resource. Nutrient recovery is currently being explored as a component of a sustainable wastewater treatment plant of the future.

However, it should be noted that nutrient recovery from wastewater in itself will not offset a significant portion of the global nitrogen and phosphorus demand. It can, however, be combined with other strategies to make a difference. These other strategies may include reducing nutrient loss through improved agricultural practices, urine separation and direct use as liquid fertilizer (urine represents less than one percent of the raw sewage but contains more than 70 percent of the nitrogen and 60 percent of the phosphorus), encouraging diets containing less nutrient-intensive foods, and harvesting nutrients from livestock waste, represents a much higher nutrient pool than human waste.

Samuel Jeyanayagam, Ph.D., P.E., BCEE
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Did you know?

- Every day, 2 million tons of human waste are disposed of in water courses.
- In developing countries, 70 percent of industrial wastes are dumped untreated into waters where they pollute the usable water supply.
- Half of the world's wetlands have been lost since 1900.
- The total volume of water on Earth is about 1.4 billion km^3.
- The volume of freshwater resources is around 35 million km^3, or about 2.5 percent of the total volume.
- The world's six billion people are appropriating 54 percent of all the accessible freshwater contained in rivers, lakes and underground aquifers.
- The UN suggests that each person needs 20-50 litres of water a day to ensure their basic needs for drinking, cooking and cleaning.
- The daily drinking water requirement per person is 2-4 litres, but it takes 2 000 to 5 000 litres of water to produce one person's daily food.

Source: unwater.org. Visit unwater.org for a wealth of water related statistics. UN-Water is not an organization or an agency. It is the United Nations coordination mechanism for all water-related issues. UN-Water activities and programmes are therefore implemented by its members, with the support of its partners.

Correction: **MSD Environmental Services** was incorrectly listed as MSD Engineering Services, Inc. in the May 2012 Advertiser Index.
MSD Environmental Services is interested in working *with* engineering firms. They are not an engineering firm.

LESSONS LEARNED IN ENHANCED BIOLOGICAL PHOSPHORUS REMOVAL AT THE VILLAGE OF VERSAILLES WATER RECLAMATION FACILITY

by Alan Smith, P.E., and Jim Gagnon, P.E., CH2M HILL

Introduction

Versailles, Ohio is a small, prosperous community of some 2,700 people located in Darke County, adjacent to the Indiana border in the Stillwater River Basin. Its motto (People-Pride-Progress) is a testament to its hard-working citizens, the pride they have in their schools and local government, and the progress it has made through effective leadership. Since Versailles completed its most recent water reclamation facility upgrade and expansion in 2010 (see Figure 1), it has made tremendous strides in the elimination of effluent blending and compliance with newly imposed effluent total phosphorus limits. This article explores the latter subject and shares operational lessons that have been learned along the way.

Figure 1: Versailles, OH Water Reclamation Facility

Background and Perspective

Phosphorus has been and continues to be regarded as a "limiting nutrient" for aquatic plant growth in Ohio's rivers and streams. The presumption is that limiting in-stream phosphorus will result in reduced aquatic plant growth and corresponding reductions of in-stream nitrogen and carbon. Consequently, the Stillwater River Basin 2009 TMDL Report selected total phosphorus (TP) as a key parameter.

For the Village of Versailles, the 2009 TMDL Report recommended point source discharge controls to reduce the in-stream TP concentration from 0.17 mg/L (2004 TMDL Report) to 0.05 mg/L. This came as a result of Swamp Creek - the Village's water reclamation facility's receiving stream - being classified as an exceptional warm water habitat stream and the facility being located at the headwaters of the Stillwater River. Table 1 summarizes the currently permitted TP load (2.84 kg/day) and the 2009 TMDL TP load allocation (0.71 kg/day) that would, in the future, require Versailles to remove an additional 75 percent of the currently permitted load.

The 2009 Village of Versailles WWRF Expansion and Upgrade was based on a permitted effluent discharge of 1.0 mg/L TP (2.84 kg/day TP at the design average flow of 0.75 mgd).

Parameter	Season	2009 TP Load Allocation 1
Total Phosphorus		
	Winter	1.06 kg/day (0.37 mg/L)
	Spring	0.76 kg/day (0.27 mg/L)
	Summer	0.51 kg/day (0.18 mg/L)
	Autumn	0.53 kg/day (0.19 mg/L)
	Average	**0.71 kg/day (0.25 mg/L)**
	Currently Permitted TP Load	**2.84 kg/day (1.0 mg/L)**
1 Concentrations are based on design average flow of 0.75 mgd.		

Table 1: Stillwater River 2009 TMDL - Total Phosphorus Load Allocation to Village of Versailles

Unit Process Sequence

The plant upgrade and expansion to a design average flow of 0.75 MGD included the design of a dual wet well pumping station to manage dry and wet weather flows. Dry weather flow up to 4.5 MGD is pumped to static fine screens and conveyed by gravity to treatment. Excess wet weather flows that exceed the dry weather pump capacity overflow to the excess flow wet well. The excess flow is pumped through dedicated static screens en route to equalization and storage facilities that formerly served as the plant's activated sludge system. Stored flow is eventually pumped and treated.

The screened flow receives biological treatment within an oxidation ditch activated sludge system. The ditch has dedicated anaerobic, anoxic and aerobic zones, each designed to provide a vital treatment function (details to follow). Mixed liquor passes through a flow splitter structure and is conveyed to two clarifiers, each having a side water depth of 15 feet. Clarified effluent is disinfected using an ultraviolet light system that was designed for clarified effluent as well as overflow from the equalization basins.

Excess activated sludge solids are aerobically digested and land-applied to local agricultural fields in accordance with the Village's approved sludge management plan.

Let the Data Show . . .

Since the new secondary treatment facilities incorporating biological nutrient removal were placed into service in August 2010, the total phosphorus present in the plant effluent has progressively decreased. Table 2 (next page 57) summarizes the performance of the Versailles WRF for the period indicated. The data indicates that the facility is maintaining a consistently high effluent quality.

The influent cBOD5: TP ratio of 27:1 (with 20% of the influent cBOD5 removed across the fine screens) is favorable to biological TP removal, although this was further evaluated to ensure that an adequate supply of readily biodegradable carbon is available in

Parameter	Mean Load (lbs/day)	Mean Conc (mg/L) 1
cBOD5	12.8	3.2
TSS	17.6	4.4
TKN	4.4	1.1
NH4-N	<0.4	<0.1
NOx-N	20.8	5.2
pH (S.U.)	-----	7.4
D.O.	-----	7.1
1 Concentrations are based on an average flow of 0.48 mgd during the period.		

Table 2: Summary of Plant Effluent Characteristics - Village of Versailles Water Reclamation Facility (January 2011 - May 2012)

the anaerobic zones. The average TP concentration in the plant effluent since startup has improved from 3.26 mg/L (2010) to 2.36 mg/L (2011) to 0.86 mg/L (2012 through May).

EBPR Basics: Cultivation and Selection

Enhanced biological phosphorus removal (EBPR) relies on accumulating phosphorus within the cells of specialized microorganisms and physically removing the microorganisms with waste activated sludge. The microorganisms are collectively called Phosphorus Accumulating Organisms (PAOs). The EBPR cycle is analogous to the charging and discharging of a car battery. Under anaerobic conditions with an ample supply of carbon (e.g., cBOD5), the EBPR battery is discharged with phosphorus being released, while under aerobic conditions, the EBPR battery is re-charged by the uptake of phosphorus into the cells of the microorganisms.

While PAOs are present in all activated sludge systems, they are unable to mediate the EBPR process until the necessary environmental conditions are imposed. Carefully designed alternating anaerobic-aerobic environments and adequate supply of readily biodegradable carbon in the anaerobic zone provide the necessary cultivation and selection pressure for the PAOs to proliferate.

EBPR Lessons Learned at Versailles

The following list illustrates what the authors believe are the most critical observations of the new treatment process at the Village's facility. Although other observations can and have been made, the following were found to be the most effective in optimizing the EBPR process.

1. Provide multiple, well-mixed anaerobic zones for contacting return activated sludge (which contains the PAOs) and incoming raw wastewater (which contains the readily biodegradable carbon) or a single compartment that is properly baffled to limit substrate dispersion. Versailles utilizes two walled off compartments in series that successfully operate at an anaerobic SRT of 1.4 days and HRT of 1.5 hours and mitigate short-circuiting of the mixed liquor through the anaerobic zones (see Figure 2).
2. Control the activated sludge system using the solids retention time (SRT) approach - as opposed to maintaining a target MLSS, for example - and operate the system at the "right" SRT that balances nitrification and EBPR. The Village's facility operates in the range of 10-20 days, and performance is generally improved at the lower end of the range.

Figure 2: Anaerobic Zones for EBPR

3. Minimize the nitrate and dissolved oxygen in the return activated sludge stream, which can inhibit EBPR activity. Any nitrate introduced to the anaerobic zone via the return activated sludge stream can be denitrified in this zone and compete for and reduce the supply of biodegradable organic substrate for EBPR. Any dissolved oxygen present in the RAS will turn part of the anaerobic zone to an aerobic zone, thereby reducing the anaerobic volume, resulting in reduced anaerobic SRT and HRT.
4. Maximize de-nitrification in the oxidation ditch through tight control of the dissolved oxygen (DO) concentration. Utilize aerators that have variable frequency drives, controlled via a programmable logic controller using a DO set point. By limiting the DO set point in the aerobic zone to less than 1.0 mg/L, near zero DO conditions result in the anoxic zone, promoting de-nitrification and lowering NOx-N concentration.
5. Keep clarifier sludge blankets to a minimum to limit the secondary release of phosphorus. This is especially critical for deep clarifiers that have longer hydraulic detention times.
6. Understand that the aerobic digestion of sludge solids is another activated sludge system, but with a limited food supply that must be managed like the oxidation ditch activated sludge system. Ensure that this TP-rich decant is re-introduced into the aerobic zone of treatment, in small volumes at frequent intervals.
7. Install an oxidation-reduction potential (ORP) probe in the aerobic digester and observe patterns in the concentration of TP in the decant as a function of ORP. Strongly negative ORP is an indicator that anaerobic conditions have developed, which promote TP release.
8. Maintain vigilant observation of EBPR during sustained wet weather flow conditions, which tend to admit unwanted dissolved oxygen and reduce the quantity of readily biodegradable organic substrate delivered to the anaerobic zones.
9. Maintain a record of activated sludge control parameters. Graph the data and establish practical control limits to ensure that the parameters being controlled (SRT, TP, etc) are in fact being controlled.

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Figure 3 shows control of the SRT using a 7-day moving average (7DMA) technique. The 7DMA technique is a good indicator of trends because it dampens daily variations. The dashed line is the target SRT for the period. Figure 3 demonstrates the inverse relationship of WAS on the 7DMA SRT. Also, in spite of the large volume of decant released on May 2 and 12, the phosphorus limit was not exceeded because a chemical assist was fed to the mixed liquor upstream of final clarification at that time.

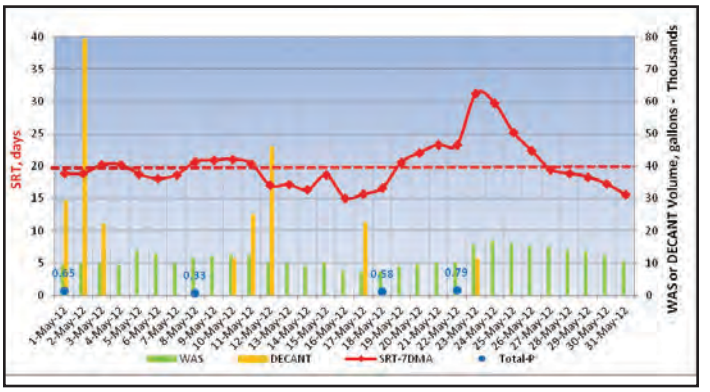

Figure 3: Activated Sludge Process Control – May 2012

10. Excursions in effluent TP can occur, so plan for them by installing a chemical assist, such as liquid alum, and apply to the mixed liquor stream upstream of clarification in a well-mixed location (additional chemical feed points are desirable for optimization) when excursions occur.
11. Invest in quality control instrumentation to ensure that EBPR is functioning properly each and every day. A portable colorimeter that accurately measures ortho-phosphate is a good choice, or use dedicated on-line instrumentation if the operating budget permits.
12. Develop and implement a *"TP Compliance Strategy"* in the form of a flow chart or similar means that provides standard operating procedures to collect the essential data and a prescriptive yet flexible set of instructions to control the activated sludge system based on daily information from the laboratory and from the field.

Conclusion

The goal of this article is to share lessons learned in EBPR operation at the Versailles Water Reclamation Facility. EBPR technology is not new, but its application in Ohio is relatively new with the advent of nutrient control initiatives. This new frontier requires the operators of such facilities to effectively manage their facilities. Although EBPR entails several complex and competing reactions, operating a well designed system is not overly difficult. Operators can leverage their existing knowledge of the activated sludge process to understand the factors that impact the EBPR process, and designers should provide operational flexibility and include operating staff during the design phase. The hope is that these lessons-learned will inspire operators and designers to think of these facilities as full-scale, living laboratories in which learning takes place, ideas are born, and new discoveries are made and shared.

Acknowledgements

The authors wish to acknowledge the efforts of the Village of Versailles staff (Randy Gump, Village Administrator; Dane Nagel, Utilities Superintendent; and Mark Voissard, Water/Wastewater Plant Manager) and Steve Singer of Singer Environmental, Inc., whose work during the start-up and operation of the treatment facilities led to achievement of the phosphorus removal goals.

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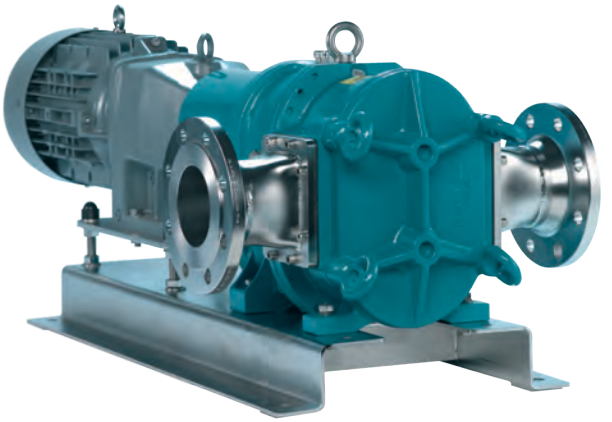

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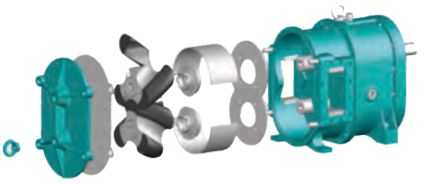

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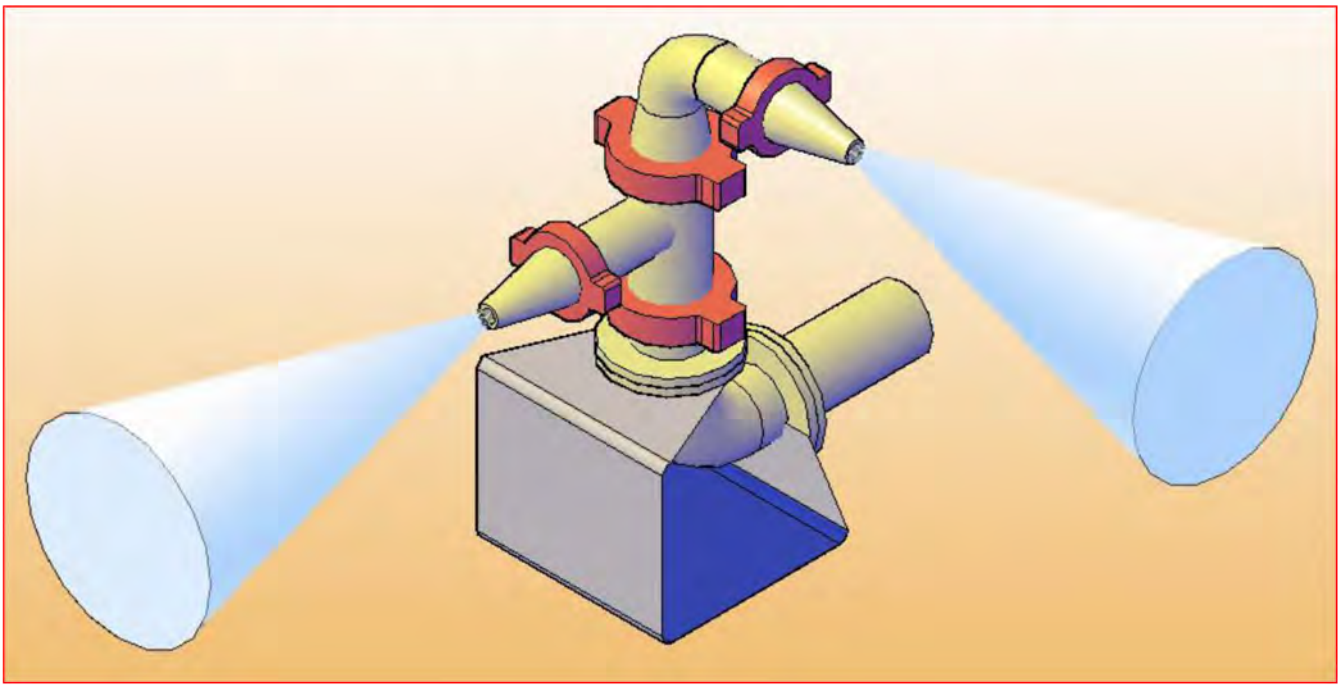

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