



THE **WATER** NEWS

Volume 60 | No. 1 | Spring 2024

SOURCE



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See [page 14](#)



Annual PA-AWWA Technical Conference

See [page 17](#)

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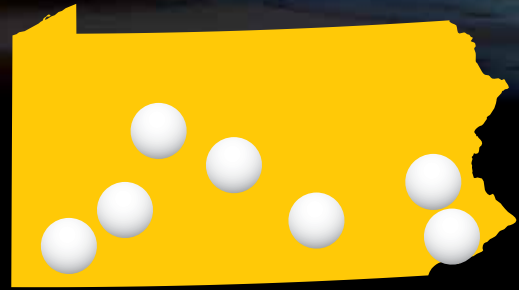




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FEATURES

Another Cyber-Attack Hits the Water Industry – This Time an Industry Giant	23
WUC Submits Comments on National Primary Drinking Water Regulations for Lead and Copper Improvements	27
Revised Lead and Copper Rule: Testing at Schools and Child-Care Facilities	30
Are You CMMS-Ready? Keys to Successful Implementation	34
Managing Cyanotoxins in Public Drinking Water Systems	39
1st Phase of the Moon... Improving Moon Township Water Treatment Plants	41
Aqua Pennsylvania Invests in Shenandoah’s Future	43
Partnership for Safe Water	44



DEPARTMENTS & NEWS UPDATES

Chair’s Message	6
Executive Director’s Message	8
New Members Report	10
Water For People Events	12
PA-AWWA Technical Conference	17
Advertiser Information and Services	46

The Water News Source is published quarterly by the Pennsylvania Section of the American Water Works Association. The purpose is to inform members, local and state officials, and elected representatives about water supply issues in Pennsylvania.

The ideas, opinions, concepts, procedures, etc., expressed in this publication are those of individual authors and not necessarily those of the PA-AWWA Section, its officers, general membership, or the editor. The Section maintains the right to edit all articles for clarity and space. Individuals or organizations are encouraged to submit suggestions, ideas, articles, and items for the calendar of events. Please submit as a Word file and email to melanie@paawwa.org.

Deadline to submit articles for the next newsletter is: May 3, 2024



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Zach Martin
Chair

Working to Better Our Water and World

This new year is exciting as the Pennsylvania Section continues to rally around our PA-AWWA 2.0 transformation. I am pleased to start this conference edition with a report to you on our continued progress in the pursuit of giving you, our members, the best that we can offer as an organization.

Our vision statement is simple – **A better world through better water.** This is quite a challenge for any one of us to impact. Together though, as a large membership of water utility professionals, this vision becomes achievable, allowing us move the needle. Our team at the Section level is working to facilitate excellent opportunities in our councils and committees for individual contributors to unite and improve our industry, and our world together.

Several significant regulatory changes affect our utilities in 2024. The Pennsylvania Section has prepared for this and is proud to unveil our conference as the place to be this year! Your Chair-Elect and Conference Committee Chairman, Chip Bilger, and the team have put together a phenomenal schedule, showcasing a strong roster of experts to provide you with the knowledge and tools to excel in 2024 and enter 2025 in compliance for your stakeholders.

Our Exhibition Hall will be the center of all major events at our conference. Conference attendees will participate in our opening session, business luncheon, awards ceremony, keynote address, while all meals will be distributed by our vendors, service providers, and sponsoring organizations in the Exhibition Hall. We will facilitate greatness through collaboration and networking opportunities this year in Lancaster.



As you have read in previous issues, we have been able to offer three-month trial memberships through a national AWWA organization membership drive. Our Board was not satisfied with this and engaged nationally for a bigger opportunity for our utilities and membership in Pennsylvania. I am pleased to announce that starting immediately, the Pennsylvania Section is offering six-month free trial memberships to the AWWA. This is a pilot only available from our Section. Please leave this edition out by the coffee pot and encourage your colleagues to join us and see how we can spark growth and development in their careers. We are hopeful that your organizations and employers will consider sending new and tenured professionals to our events this year with some savings along the way. This free membership trial will allow for attendance at member rates to district events this spring, and extend through our section and national conferences all the way to our fall district events. This will also allow for a more complete experience for prospective members and allow for our membership to truly welcome and engage them in our organization. Please help me spread the word about this opportunity!

We will continue the work to better our water and world together. Our organization relies on volunteerism to do so. Our Section will be starting our search for our next Director to succeed Dan Preston in 2025 who will represent us at the national level for a period of three years. We are also working to fill our ballots for the business meetings in each district and the section this spring. Please reach out to find out more about opportunities. I enjoy speaking about the opportunities in the AWWA! Thank you for your continued “feedforward” and support. It remains my pleasure to serve you as Chair, and I will see you soon at the conference! 🍷

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The PA Section closed the main office last summer and moved its operation to Harrisburg. We also moved a Toshiba copier which was less than two years into a four-year lease.

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Melanie Greene
Executive Director

Connect Your Career with PA-AWWA Success

The PA Section has hit the ground running in 2024! Head to our website to check out the Spring District conferences. The Northwest Spring 2024 Conference currently leads this year's slate of District events and is scheduled for April 4. The Southeast 2024 Spring Conference returns to the Penn State Great Valley venue on April 12, while the Southwest 2024 Spring Conference will also take place on April 12 – each with its own interesting new courses scheduled.

Operator exams are now posted on the website where you can register online. Our Education/Technical Committee is in the process of updating courses and developing new ones as well. We hope to offer several training opportunities this year.

“

I hope you will enjoy the conference and the opportunities it allows to meet and network with water industry colleagues. You will also meet the many volunteers that support the PA-AWWA through their efforts and leadership.

”

Our Annual Conference is set for May 13-15, 2024 at the Lancaster County Convention Center. Not only do we have a great venue, but a full agenda full of training, exhibits and activities. Remember, this is my team's first crack at a PA-AWWA Conference and we want to hit it out of the park!

I hope you will enjoy the conference and the opportunities it allows to meet and network with water industry colleagues. You will also meet the many volunteers that support the PA-AWWA through their efforts and leadership.

Volunteers give their time with a sense of purpose to better our water industry in Pennsylvania, and we need input from operators, utilities, and service providers. Each group brings a different perspective in leading PA-AWWA into the future. The time commitment is flexible and can be as little as a few hours a month. In return, you may:

- Find connections with other professionals and industry leaders;
- Showcase your skills through developing new programs or training opportunities;
- Improve leadership skills in committees or board positions.

Connect your professional advancement with the success of PA-AWWA. It starts with joining a committee or district as a volunteer. If you have a particular interest or idea, or if you don't already know someone in PA-AWWA, please contact me. I'll be happy to connect you with the right person. 🍷

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4. Technical information for **water fluoridation additives and operations**



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Welcome New Members!

Jeffrey Bye
 Jason Hillaert
 Josh Allen
 Brad Pferdehirt
 Joseph Fugelo
 William Teodecki
 Gautam Patwardhan
 Steven Lettko
 Kyra Boston
 Joseph Younes
 John Krantz

Brett Steers
 Fred Gaffney
 April Shepard
 Douglas Brown
 Karl Thomann
 Lauri Halderson
 Arthur Brown
 Richard Lopez
 Rachael Friedman
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 Jackie Mawalla
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 Abdoulaye Alio
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 Marc Digregorio
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 Erin Signorella
 Joshua Barrell

Blaine Bergey
 James Sieracki
 Tyler Clemens
 George Sarapa
 Thomas Dobson
 Ian Hundley
 Brandon Hensyl
 Ronald Natoli
 Gina Ashman
 Madelin Amato
 Kate Anorve-Andress

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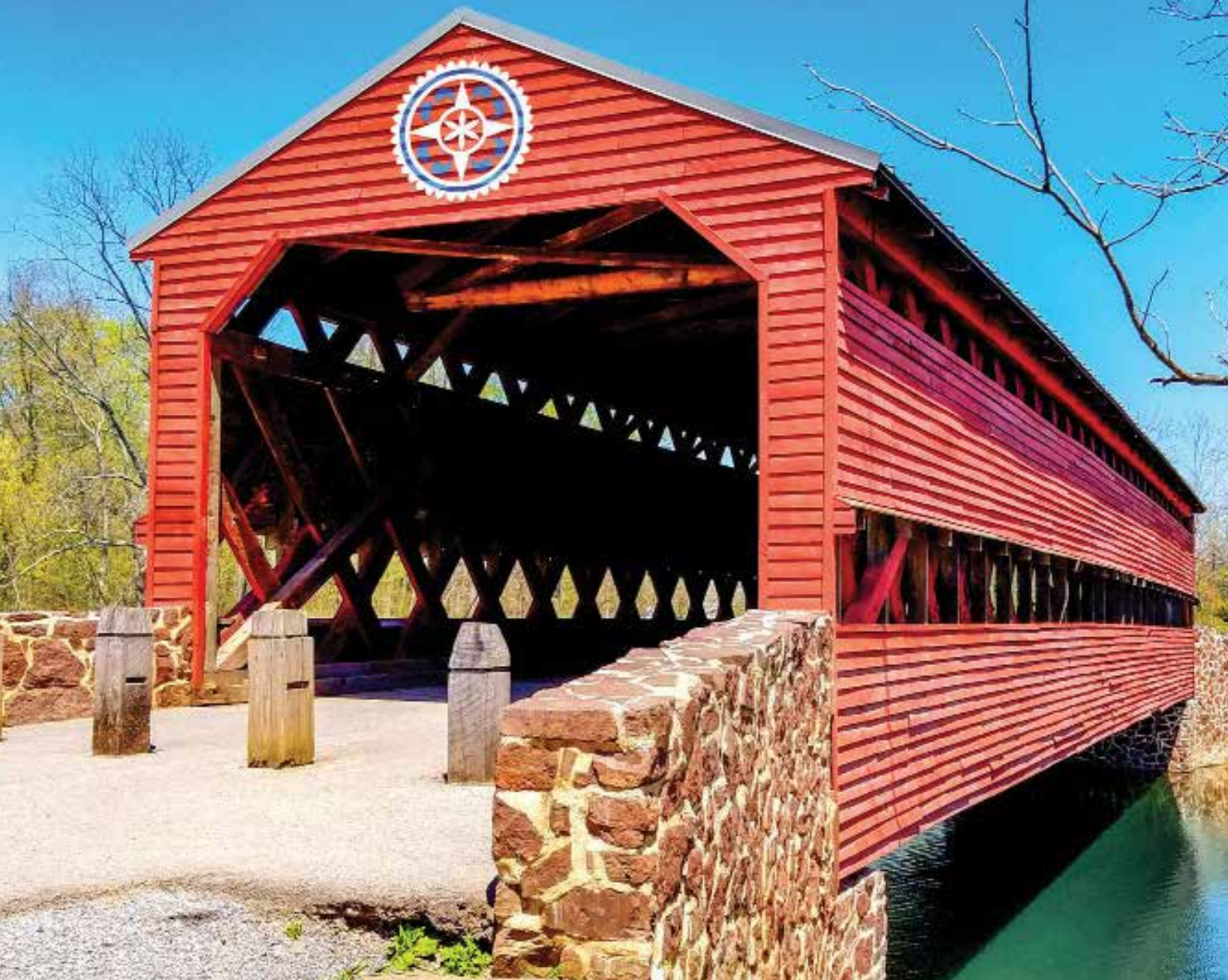
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Water For People Events

May

Silent Auction at PA AWWA Conference in Lancaster

July 20

Water For People Night at PNC Park
Philadelphia Phillies vs. Pittsburgh Pirates
Pittsburgh, PA

August 16

Water For People Night at Citizens Bank Park Nationals
Seattle Mariners vs. Pittsburgh Pirates
Philadelphia, PA

October 28

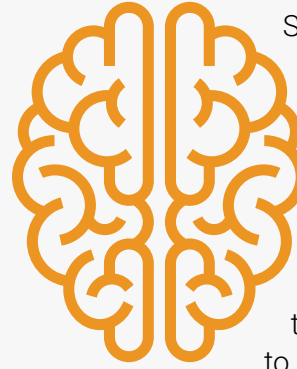
PA AWWA – Water For People Golf
North Hills Country Club, Glenside, PA

November 7

PA AWWA Water For People Gala hosted by Stone Hill
William Penn Inn, Gwynedd, PA

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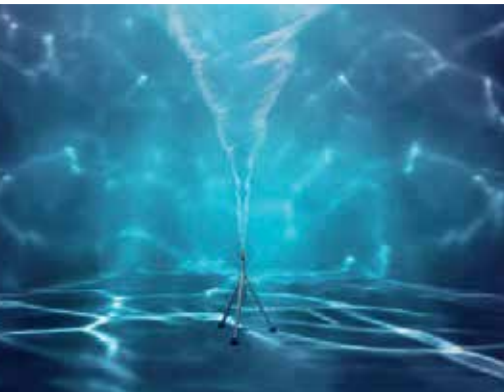
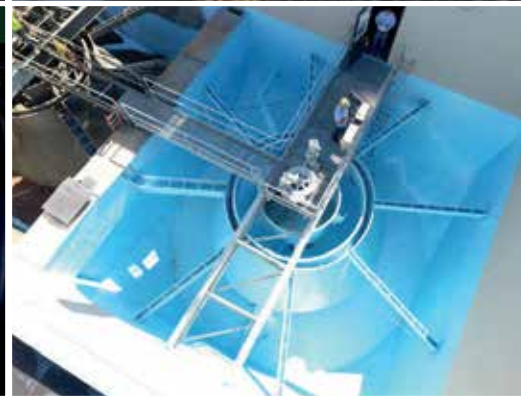


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Annual PA-AWWA Technical Conference

AGENDA

subject to change*

EXPO INFO

Check out some highlights below!

Monday, May 13

10:00am - 4:00pm	Annual Golf Tournament Four Seasons Golf Course
4:00pm - 6:00pm	Registration
6:00pm - 8:00pm	NEW Welcome Kick-off Reception in Expo Hall

LOAD-IN / LOAD-OUT

NEW for 2024!
Exhibitor setup scheduled for
MONDAY, May 13 from 12:00pm -
5:30pm

Exhibitor breakdown scheduled for
Wednesday, May 15 from 3:00pm -
5:00pm

Tuesday, May 14

7:00am - 5:00pm	Registration
7:00am - 7:00pm	Exhibit Hall & Water For People (WFP) Silent Auction Opens
7:00am	Coffee & Beverage Station
7:00am - 8:00am	NEW All-Attendee Breakfast with Exhibitors
8:00am - 9:00am	President's Welcome - Visiting Officers/Annual Business Meeting
8:30am - 11:30am	OPERATOR SESSIONS
9:00am - 12:00pm	DBIA Behind the Scenes Tour
9:45am - 10:00am	AM Break with Exhibitors - NEW RAFFLE DRAWING!
10:00am - 12:00pm	TECHNICAL SESSIONS
12:00pm - 1:30pm	NEW All-Attendee Lunch with Exhibitors
12:00pm - 1:30pm	NEW Keynote Address & Awards at the Main Stage in Expo Hall
1:30pm - 4:45pm	OPERATOR SESSIONS
1:30pm - 4:45pm	TECHNICAL SESSIONS
3:00pm - 3:30pm	PM Break with Exhibitors - NEW RAFFLE DRAWING!
1:00pm - 5:00pm	Fresh Ideas Poster Contest in Expo Hall
3:00pm - 5:00pm	Vendor Spotlight
3:00pm - 6:00pm	Water Taste Test - People's Choice
4:30pm - 5:30pm	Hydrant Hysteria
5:00pm - 7:00pm	Exhibit Hall Networking Event
5:15pm	Announcement of Poster Contest Winner
5:30pm - 7:00pm	Tank Building Contest
5:45pm - 6:30pm	Celebrity Panel of Judges determine Best Tasting Water
7:00pm	Dinner on Own
7:00pm - 10:00pm	DBIA Sponsored Networking Event - <i>Offsite Location TBA</i>

EXTENDED EXHIBIT HOURS

Monday, May 13: 6:00pm - 8:00pm

Tuesday, May 14: 7:00am - 7:00pm

Wednesday, May 15: 7:00am - 3:00pm

MEAL TIMES

Tuesday, May 14

- Breakfast at 7:00am
- AM Break at 9:45am
- Lunch at 12:00pm
- PM Break at 3:00pm

Wednesday, May 15

- Breakfast at 7:00am
- AM Break at 9:00am
- Lunch at 12:00pm
- PM Break at 2:30pm

Wednesday, May 15

7:00am - 1:00pm	Registration Desk	1:30pm - 4:15pm	TECHNICAL SESSIONS
7:00am - 3:00pm	Exhibit Hall & Silent Auction Opens	2:30PM -3:00pm	PM Break with Exhibitors - RAFFLE DRAWING
7:00am	Coffee & Beverage Station	3:00pm	Vendor Tear-down
7:00am - 8:30am	All-Attendee Breakfast with Exhibitors	5:00pm	Event Conclusion
7:00am - 8:00am	Prayer Breakfast		
8:00am - 11:30am	DBIA Tech Sessions		
8:30am	Operator Certification Exam		
8:30am - 11:45am	OPERATOR SESSIONS		
8:30am - 11:30am	TECHNICAL SESSIONS		
9:00am - 11:30am	AM Break with Exhibitors - NEW RAFFLE DRAWING!		
12:00pm - 1:30pm	Lunch		



KEY ATTRACTIONS IN LANCASTER

Discover Lancaster Visitors Center

The Lancaster Visitors Center is an essential resource for tourists and locals alike, providing information about attractions, events, dining, and accommodations in Lancaster, Pennsylvania. It is conveniently situated just off Route 30, making it easily accessible for visitors coming into Lancaster.

Lancaster Marriott

The Lancaster Marriott at Penn Square is a well-known hotel in the heart of downtown Lancaster, Pennsylvania and will be home to the 76th Annual PA-AWWA Technical Conference. The hotel is situated in the heart of downtown Lancaster, offering convenient access to shops, restaurants, theaters, and historic attractions.

Amish Farm and House

The Amish Farm and House is a popular attraction in Lancaster, Pennsylvania, offering visitors a glimpse into the lifestyle and traditions of the Amish community. It is conveniently situated in the heart of Pennsylvania Dutch Country, just a short drive from downtown Lancaster.

Lancaster Central Market

Lancaster's Central Market is one of the oldest farmers' markets in the United States, having been established 1730. It has a rich history dating back to the 18th century and is a vibrant hub for local vendors, artisans, and shoppers. It was originally located on Centre Square in downtown Lancaster.

President James Buchanan's Wheatland

"Wheatland" was the beloved home of James Buchanan, the 15th President of the United States. Located in Lancaster, Pennsylvania, Wheatland is a historic site that offers a glimpse into the life and times of President Buchanan. The house was built in 1828 by William Jenkins, a local lawyer and gentleman farmer. James Buchanan purchased Wheatland in 1848, during his tenure as a U.S. Senator. He bought the property as a place to retire from his political career and to focus on his law practice. 🏡







OPERATOR SESSIONS

TUESDAY, MAY 14, 2024		
TIME	OPERATOR SESSION #1	OPERATOR SESSION #2
8:30 A.M. - 9:45 A.M.	Building a Distribution Workshop, LB Water #6570LB	HACH Process Instrumentation Verification CI#7126
9:45 A.M. - 10:00 A.M.	Break	Break
10:00 A.M. - 11:30 A.M.	Building a Distribution Workshop, LB Water #6570LB	HACH Process Instrumentation Verification CI#7126
TIME	OPERATOR SESSION #3	OPERATOR SESSION #4
1:30 P.M. - 3:00 P.M.	Asset Management & Asset Maintenance for Water Systems (DW), Nick Rapagnani, #9330	HACH Process Instrumentation Verification CI#7126
3:00 P.M. - 3:15 P.M.	Break	Break
3:15 P.M. - 4:45 P.M.	Asset Management & Asset Maintenance for Water Systems (DW), Nick Rapagnani, #9330	HACH Process Instrumentation Verification CI#7126
EXAM PREP WILL TAKE PLACE ON TUESDAY, MAY 14 FROM 1:30 P.M. – EOD IN HICKORY		
WEDNESDAY, MAY 15, 2024		
TIME	OPERATOR SESSION #5	OPERATOR SESSION #6
8:30 A.M. - TBD	Operator Exam	Coagulation 101 Jim DeWolfe – PRWA
9:45 A.M. - 10:00 A.M.	Break	
10:00 A.M. - 11:45 A.M.		Coagulation 101 Jim DeWolfe – PRWA

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TECHNICAL SESSIONS

TUESDAY, MAY 14, 2024		
	TRACK #1 – REGULATORY	TRACK #2 – TREATMENT
9:45 A.M. - 10:00 A.M.	Break	Break
10:00 A.M. - 10:30 A.M.	Update on New Regulations for LCRR/LCRI – Dennis O'Connor, EPA	Using Sand for Ultra Filtration UF – Chris Evans, PSI Process
10:30 A.M. - 11:00 A.M.	Update on New Limits for PFAS – Ruby Stanmyer, EPA	Addressing Very High Color Concentrations from an Upland Water Source with Coagulant Modifications – Peter Lusardi, CET
11:00 A.M. - 11:30 A.M.		Fixing the White Box a Practical Guide to Filter Upgrades – Kelly Kowalski, American Water
11:30 A.M. - 12:00 P.M.	PA Legislative Update – Erik Ross, Milliron & Goodman, Serena DiMagno, SSM	Telemetry in the Internet Age – D. Jeremy Cherelli, Keystone Engineering
12:00 P.M. - 1:30 P.M.	EXHIBIT HALL LUNCH – 12:00-1:30 P.M. IN EXHIBIT HALL	
1:30 P.M. - 2:00 P.M.	Scaling the Mountain of Lead – Understanding Pipe Scaling Analysis to Minimize Lead Corrosion – John Civardi, Mott McDonald	Reframing the Conversation Around Emerging Contaminants – Katie Porter, Brown and Caldwell
2:00 P.M. - 2:30 P.M.	Cybersecurity Requirements – Are You Protected and Ready to Comply with AWIA – Patty Kay Wisniewski and Chris Wanamaker, EPA	Taking Your Data to the Next Level, How to Best Model Full-Scale PFAS Removal with GAC – Adam Redding, Calgon Carbon
		PFAS Treatment Design 102 - Beyond the Basics – Jon Reuther, Brown and Caldwell
P.M. BREAK – 3:00-3:30 P.M. IN EXHIBIT HALL		
3:30 P.M. - 4:00 P.M.	PA Legislative Update – Erik Ross, Milliron & Goodman, Serena DiMagno, SSM	What's in Your GAC – Advancements in Reducing the Impact of Arsenic and pH – Derek Harzinski, Mott McDonald
4:00 P.M. - 4:30 P.M.	Finding Funding in 2024, What's Right for Your Project, Tori Morgan, Entech Engineering	PFAS Planning, Simulation Compliance and Hydraulic Modeling – Jinghua Xiao, Circular Water Solutions LLC

WEDNESDAY, MAY 15, 2024		
	TRACK #1 – MANAGEMENT	TRACK #2 – PFAS
8:30 A.M. - 9:00 A.M.	Recruiting Strategies for Millennials & Generation Z – Heath Edelman, Thaddeus Stevens College	PFAS Integrating Treatment with Existing Treatment Process – Lori Kappen, Gannett Fleming
9:00 A.M. - 9:30 A.M.	Dialogue with Young Professionals on Recruitment Engagement and Retention – Sarah Folk, Gannett Fleming	Let's Break Down Forever Chemicals, Insights from a Design-Build Approach to Provide PFAS Treatment – Daniel H. Jeon, Gannett Fleming
9:30 A.M. - 10:00 A.M.		Case Study PFAS Removal with GAC – Andrew Crew, Gannett Fleming
EXHIBIT HALL LUNCH – 12:00-1:30 P.M. IN EXHIBIT HALL		
	TRACK #1 – MANAGEMENT	TRACK #2 - DISTRIBUTION
1:30 P.M. - 2:00 P.M.	Developing a Utility Laboratory Community of Operations Plans – John Consolvo, Philadelphia Water Department	City of Lancaster Water System Improvements for Transmission and Storage System Resiliency – Matthew Warfel, ARRO Consulting, Benjamin Perwien, City of Lancaster Water Bureau
2:00 P.M. - 2:30 P.M.	Enhance the Affordability of Your Water Rates without Compromising on Safety and Reliability – Phil Sapone, Raftelis	Year 1 of Lead Service Line Programs, Reflections and Revelations – Mike Brown, Gannett Fleming
P.M. BREAK – 3:00-3:30 P.M. IN EXHIBIT HALL		
3:00 P.M. - 3:30 P.M.	The Evolution of the Successful Asset Management Plan – Patrick Caulfield, Schuylkill County Municipal Authority	Active Water Loss Mangement via Cellular Technology – John Brutz, 540 Technology
3:30 P.M. - 4:00 P.M.	Utilities ERPs and Exercise, Sharing Real-World Experiences – This will be an interactive session; bring your systems along for this exercise – Patt Kay Wisniewski, EPA,	Kansas River Bridge Water Main Transmission Crossing Rehabilitation – George Gerz, Raedlinger Primus Line, Inc.
4:00 P.M. - 4:30P.M.		1 or 100: Managing Your Non-Water Storage Tanks – Frank Sidari, Pittsburgh Water and Sewer Authority, Frank Sidari



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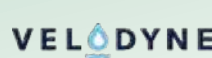
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ANOTHER CYBER-ATTACK HITS THE WATER INDUSTRY – THIS TIME AN INDUSTRY GIANT

By Michael D. Klein

The cyber-attack on the Municipal Water Authority of Aliquippa captured international attention in 2023 for various reasons, notably because the hacking of one of its booster stations was linked to an Iranian-supported group called Cyber Av3ngers. Additionally, the apparent objective of the attack was to dissuade the purchase and utilization of Israeli-manufactured equipment, which was the primary target of the cyber-attack on Aliquippa. The attack raised many concerns among federal and state regulators of the water industry, as well as among the U.S. water industry itself. Could this attack mean that the water industry could be vulnerable to wide-scale attacks in times of geopolitical conflicts? If Iran could accomplish this, then what about China and Russia? Some shrugged off the Aliquippa cyber-attack as only an attack on a small water system which could not be replicated against much larger systems.

Well, the naysayers may be having second thoughts now that a giant of the industry has been hacked. On January 19, 2024, Veolia issued a notice on its website regarding a hacking incident. Veolia has 8,500 water and wastewater facilities around the world, and more than 550 in North America. The notice stated in part, "Last week, a ransomware attack incident affected some software applications and systems in a portion of Veolia North America's Municipal Water Division. Our IT and Security incident Teams were quickly mobilized, and we are actively cooperating with law enforcement and other third parties to investigate and address this incident."

The notice further stated, "This incident seems to have been confined to our internal back-end systems at Veolia North

America, and there is no evidence to suggest it affected our water or wastewater operations."

SecurityWeek reported on the Veolia ransomware cyber-attack in a January 24, 2024 article, and in the same article reported on a ransomware attack on Southern Water, a large water and wastewater system in southern England. In that attack, hackers threatened to release hacked personal information if Southern Water refused to pay the requested ransom. The hacking of water systems is happening on a global scale by international perpetrators who indiscriminately target water systems of all sizes. This is a significant problem that can only be solved by a substantial collaboration of regulators, water systems, national and international security agencies, and governments. The perpetrators must be sought out and punished accordingly. Public water systems should avail themselves of the services of cybersecurity professionals, and the multiple training and education programs being presented on a regular basis.

3M AND DUPONT CLASS ACTIONS PFAS SETTLEMENT

Public water systems in Pennsylvania should have received notices of the two class action settlements reached in the Aqueous Film-Forming Foam (AFFF) Multi-District Liability Litigation. According to the website devoted to settlements entered into in the AFFF multi-district litigation no. 2873 (MDL), the settlements have received preliminary approval from the United States District Court for the District of South Carolina. As of the date of this article, final approval had not yet been issued.

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The two groups of settling defendants are the 3M Company (3M) and multiple companies collectively known as "Dupont". As reported on the website, **the two settlements are designed to resolve claims for PFAS contamination in public water systems drinking water.** Both proposed settlements are still subject to final approval by the presiding MDL Judge of the United States District Court for the District of South Carolina.

The settlements reached by 3M and Dupont are for up to \$12.5 billion and

\$1.185 billion, respectively. Public water systems had the option to opt out of the class action. The deadlines to opt out of the settlements have passed. Any water system that submitted a request to opt out of the 3M settlement could have withdrawn its request on or before February 2, 2024. Anyone water system that submitted a request to opt out of the Dupont settlement could have withdrawn its request on or before March 1, 2024.

For public water systems that did not opt out, they must file their Phase One claims

in the Dupont class action within 60 days of the date of final approval of the Dupont class action. They then have until June 30, 2026, to file their Phase Two claims. For public water systems that did not opt out, they must file their Phase One claims within 60 days of the date of final approval of the 3M class action. They then have until July 31, 2026, to file their Phase Two claims.

Regardless of whether a public water system files a claim form or receives any distribution under the settlement, unless the public water system timely opted out, it will be bound by the settlement and any judgment or other final disposition related to the settlement, including the release set forth in the settlement agreement, and will be precluded from pursuing claims against 3M separately and/or Dupont, if those claims are within the scope of the release.

A Phase One class member is a class member that had a PFAS substance detection in one or more water sources as of the date of the settlement (June 22, 2023). A Phase Two Class member is a class member that did not have a PFAS detection in one or more water sources as of the date of the settlement (June 22, 2023). Further information regarding the class actions and their claims requirements, including baseline testing, can be found at the following link www.pfaswatersettlement.com.



About the Author

Michael D. Klein is a Senior Counsel in the Harrisburg, PA, and Washington D.C. offices of Cozen O'Connor.

He practices in the areas of utility and environmental law. He can be reached at mklein@cozen.com and 717-703-5903.

This column is intended to be a discussion of legal issues in the water industry. It is not intended to be legal advice, or to establish any attorney-client relationships. Before making any legal decisions regarding anything discussed in this column you should always consult with an attorney.

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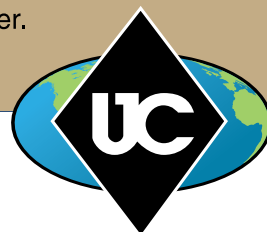
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WUC Submits Comments on National Primary Drinking Water Regulations for Lead and Copper Improvements

By Erik A. Ross

On February 5, 2024, the Water Utility Council (WUC) of the PA-Section, American Water Works Association (AWWA) submitted written comments on the U.S. Environmental Protection Agency's (EPA) proposed Lead and Copper Rule Improvements (LCRI). The WUC includes representatives from the National Association of Water Companies, Pennsylvania Chapter; Pennsylvania Municipal Authorities Association; Pennsylvania Rural Water Association; and Water Works Operators' Association of Pennsylvania.

Background

EPA is proposing revisions to the National Primary Drinking Water Regulations (NPDWR) for lead and copper under the authority of the *Safe Drinking Water Act* (SDWA), which would require water systems to replace lead service lines, remove the lead trigger level, reduce the lead action level to 0.010 mg/L, and strengthen tap sampling procedures, among other changes that would improve public health protection and simplify the rule relative to the 2021 Lead and Copper Rule Revisions (LCRR).

The proposed LCRI offers improvements across various additional areas, including corrosion control treatment, public education and consumer awareness, requirements for small systems, and sampling in schools and childcare facilities. In addition, the proposed LCRI aims to address potential disproportionate impacts of lead in drinking water in communities, including through proposed lead service line replacement and public education, among other areas of the proposed rule.

Summary of WUC Comments

The proposed LCRI contains several positive developments that the WUC strongly supports, particularly the EPA's decision to continue the use of a treatment technique-based primary standard for lead and copper. The WUC also supports the decision to make service line replacement a separate requirement from triggered actions following a lead action level exceedance.

When finalizing the LCRI, EPA can revise the current proposal so that it enhances the protection of public health, builds confidence in the regulation of

water systems, and allows for efficient oversight and enforcement. The WUC believes that the drinking water industry and the public at large will be best served by a lead and copper regulation that is practical to implement and legally sound. It is also important for a final rule to be feasible for public water systems and states to implement, which is essential to achieving the shared goal of reducing the risk of lead from drinking water. The WUC also remains concerned with the shifting and uncertain legal requirements, which can cause community water systems to spend their limited resources inefficiently.

Given the substantial changes proposed in the LCRI, the WUC respectfully requested the EPA to postpone the compliance dates for the LCRR. Today, water systems must assume that the LCRR is a binding regulation and must spend resources to focus on complying with that rule's October 2024 and January 2025 milestones, regardless of EPA's new proposal. Until EPA changes the federal regulation that water systems must comply with, local resources should be spent on complying with



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the LCRR rather than toward compliance with the LCRI.

In addition, the WUC has concerns that there are elements of the proposed LCRI that violate the Safe Drinking Water Act (SDWA) and Administrative Procedure Act (APA) and will not withstand legal scrutiny in the courts. If these and other considerations are not addressed in the final rule, water systems will be faced with more uncertainty going forward. The WUC's comments pointed out several issues that the WUC believes that EPA

must address in finalizing the LCRI, but the most critical issues include:

1. The proposed LCRI inaccurately equates community water systems having "access" to private property with a system having "control" over the service line on private property as described in the SDWA.
2. The proposed LCRI asserts without demonstration in the record that the rule is feasible as proposed. Specifically, the WUC identifies the following as examples:

- a. Replacing all lead and galvanized requiring replacement service lines within 10 years without substantial and currently unavailable federal subsidies; and,
- b. Lowering the lead action level to 10 ug/L, while also substantially altering the dataset on which the lead action level exceedance is determined.

The WUC agrees that water systems, communities, states, and the federal government should be striving to fully remove all lead service lines in their entirety and that water systems should be actively managing the corrosivity of the water they distribute. However, the regulatory requirements aimed at reaching those goals must be reliably achievable. Timeframes for required actions must be possible within the resources reasonably available to water systems, and complying with this regulation should not negatively impact the time and resources required to address other high priority risks and system improvements.

Finally, the WUC hopes that its comments will assist EPA as it formulates a final LCRI that achieves additional risk reduction while recognizing the additional challenges facing water systems, including per- and polyfluoroalkyl substances (PFAS), cybersecurity, climate change and aging infrastructure.

The WUC comments can be found at <https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0036>.

Moreover, the WUC expressed its support and associated itself with the more substantive comments and legal analysis submitted separately by the American Water Works Association (AWWA).

Please be assured that we will keep you apprised of this proposed rulemaking as it moves through the federal regulatory review process. 🌟

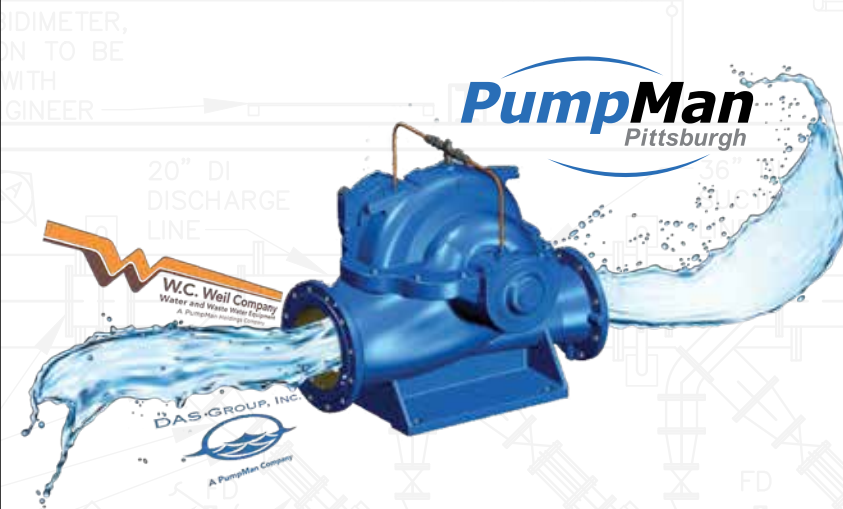


About the Author:

Erik A. Ross is a Senior Associate at Milliron Goodman, and a regular contributor to *The Water News Source*.

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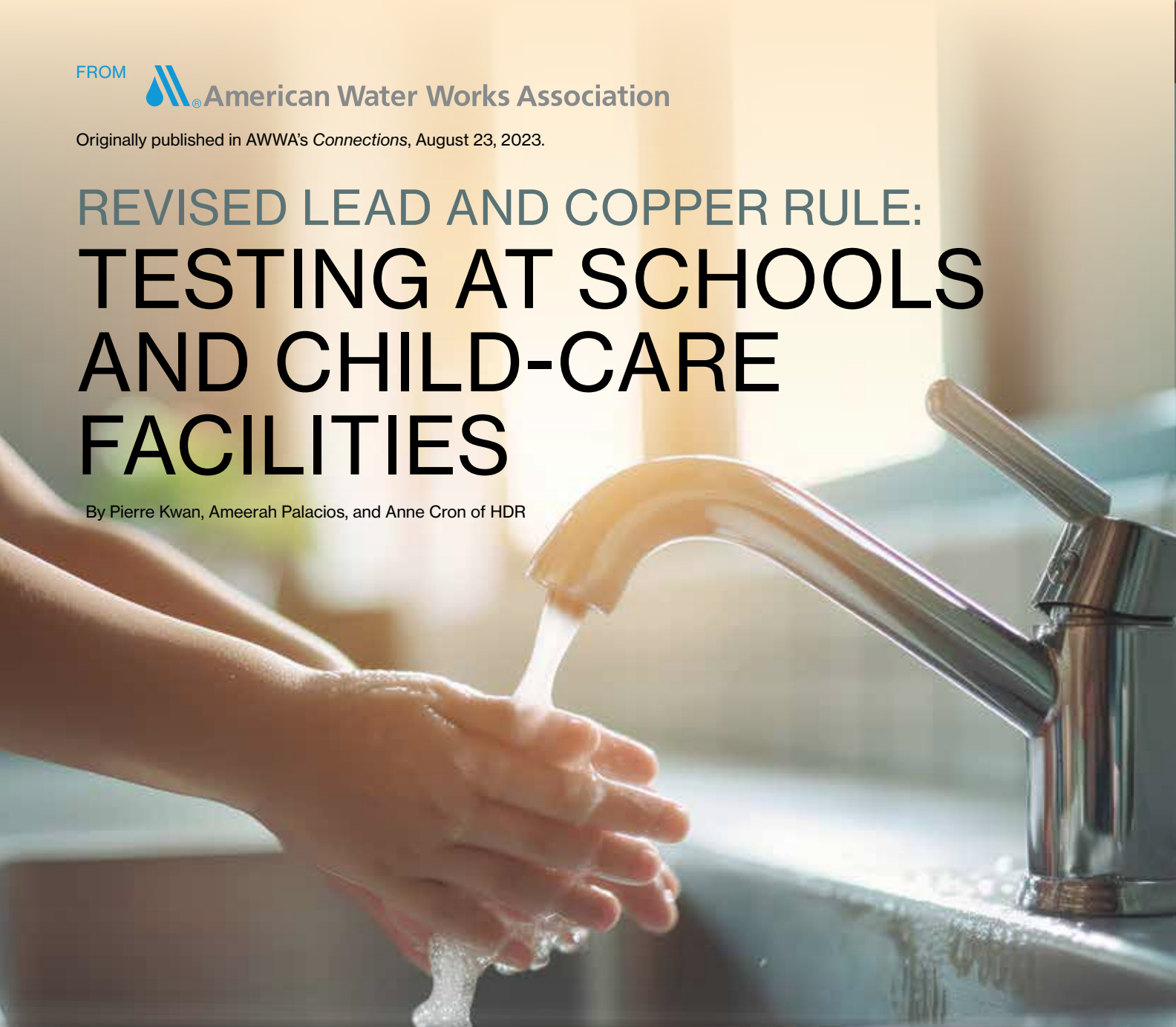
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Originally published in AWWA's *Connections*, August 23, 2023.

REVISED LEAD AND COPPER RULE: TESTING AT SCHOOLS AND CHILD-CARE FACILITIES

By Pierre Kwan, Ameerah Palacios, and Anne Cron of HDR



This article was written for the American Water Works Association (AWWA) to provide guidance on implementing certain requirements of the Revised Lead and Copper Rule by October 2024.

Learn more in a video (<https://bitly.ws/32wDE>) conversation with Ameerah Palacios.

Additional information is available in AWWA's Lead Communications Guide and Toolkit (<https://bitly.ws/32wDP>).

As schools begin returning to session, water utilities across the United States are busy preparing for fall 2024 when the U.S. Environmental Protection Agency's Lead and Copper Rule Revisions (LCRR) will require a new level of communication and cooperation with schools and child-care providers.

School districts can be great partners, providing utilities a way to tell their water story through public education and inspiring a new generation who may one day be water operators. But schools operate very differently than many government agencies – from their funding sources to staffing

and overall culture. Getting ready to be LCRR compliant means water systems must pay special attention to the needs of school districts and how to best collaborate with them.

Water utilities are required to provide schools and child-care facilities with a copy of EPA's Training, Testing and Taking Action (3Ts) for Reducing Lead in Drinking Water in Schools and Child Care Facilities, as part of the LCRR sampling process. Utilities must sample at least 20% of elementary schools and 20% of child-care facilities in their service areas for the following five years. During this time, utilities must also sample at secondary schools (upon a school's request) and are required to collect at

least five samples for each school and two samples for each child-care facility. After this five-year period, water utilities will only be required to sample at any of these groups upon request.

Exempt from sampling are facilities that were built or had all plumbing replaced after January 1, 2014. A key difference between school and child-care facility sampling and residential sampling is the sample volume. Schools and child-care facilities require 250 milliliters (ml) in volume and have a stagnation period of eight to 18 hours. Additional follow-up sampling is also 250 ml.

This task can feel daunting, no matter the size of a utility service area. Below are some tips to help.

Begin reaching out now to school, childcare contacts

So how do you find the right contact information for schools and licensed child-care facilities? You have options. Your state Department of Education can provide you with a list of public and private schools, which both fall under the LCRR. The licensing or rating agency for a child-care facility may be the Department of Health at the local or state level.

Another point of licensure for child-care facilities is the agency that issues occupancy permits – the Department of Health and municipal occupancy permit agency are both potential sources for up-to-date contact information about licensed child-care facilities. This is particularly important because there are different environments for these types of

entities, including a small business, nonprofit, or faith-based institution or school.

Start by reaching out to facility leadership like principals, child-care directors and other administrators to share basic information about upcoming testing. These leaders may direct you to central administrators for approvals or other support. Keep in mind that an entire school district may serve multiple municipalities and have more than one utility serving their system. Working first with building-level administrators establishes direct connections to the schools you will be testing.

Establish Protocols for Fountain and Faucet Repairs, Replacements

Utilities can work with schools and licensed child-care facilities to establish protocols for decommissioning sites within a building that contain sampling exceedances. If a sample reveals lead, a school can temporarily shut off the faucet or bubbler until a long-term solution is implemented. Such solutions can include installing point-of-use filters, removing the water outlet and any associated piping, or replacing a portion of the plumbing with newer lead-free materials.

Consider meeting with child-care facility owners to help them budget for these solutions ahead of time in support of the repairs their business will need.

Top 5 Ways Utilities Can Be Prepared to Work with Schools and Licensed Child-Care Facilities on LCRR Sampling and Notification Requirements



Make administrators and leaders aware of the sampling requirements



Workshop the logistics of water fountain and faucet repairs and replacements



Create templated notifications for empathetic, transparent and clear communication



Assist with determining funding sources and helping with grants



Plan ahead for potential policy needs with schools, municipal councils and state legislatures

Be Empathetic When Communicating with Families

Keep in mind that parents and guardians do not often differentiate their children’s ages when it comes to health concerns – so while secondary school testing is optional, a parent or guardian may not respond as expected to this clear LCRR guidance.

Utilities can be prepared for hurdles like this by:

- Acknowledging concerns and listening;
- Sharing relevant fact sheets and information in simple, easy-to-understand language, since technical information can cause speculation and fear;
- Considering a water help line or landing page to answer questions.

Families with school-aged children may not only be understandably cautious but also have a strong network that can help or hurt a utility’s reputation in times of crisis. Empathetic, transparent and clear communication methods help utilities manage expectations and provide parents and guardians with information they need to be confident their children are safe.

Have Funding Conversations and Form Partnerships

Schools are often beholden to state and federal funding sources with little room for surprises – even when that surprise is safe drinking water. Recognizing this challenge for schools and providing out-of-the-box solutions to school administrators can help keep students safe without taking funding away from the classroom.

Consider having conversations with school and licensed child-care facility administrators about grant support and identification. Explore whether a school could include service line, faucet and fountain infrastructure in upcoming capital investment programs or bond referendums. Finally, help school and child-care personnel investigate area foundations that can partner with them. Consider setting up a plumbing apprenticeship that could reduce costs while also invest in the classroom.

Consider Policy Implications for Local School Districts

Some LCRR sampling requirements may trigger policy creation needs for school districts. Reaching out to school boards early, before testing is implemented, will make things more efficient should problems arise. Each school district has different policies and procedures in place. Some schools may have requirements like the ratio of drinking fountains to students or plumbing codes with a current set of testing standards. Keep in mind that school boards require multiple readings of new policies before they can be implemented, so if current policies are in place that make testing or remediation more difficult, getting in front of the issue will help everyone involved.

There are many ways to partner with educators and school administrators to effectively develop a plan for LCRR sampling and testing notifications. By reaching out now to schools and licensed child-care leaders in your service area, you can begin conversations that eventually turn points of contact into LCRR partnerships. ♡


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Are You CMMS-Ready? Keys to Successful Implementation

By Felicia James, Technology Subcommittee Chair, and Jennifer Suttles,
Asset Management Committee Vice-Chair

In recent years, there has been a growing awareness of the importance of asset management. Utilities are recognizing that acquiring high-quality asset condition and performance data, identifying potential vulnerabilities, and prioritizing timely maintenance are crucial for operational success. Consequently, an increasing number of utilities are investing in a computerized maintenance management system (CMMS).

According to a 2020 survey (<https://bitly.ws/3enHY>) conducted by the American Water Works Association (AWWA), 67% of respondents had

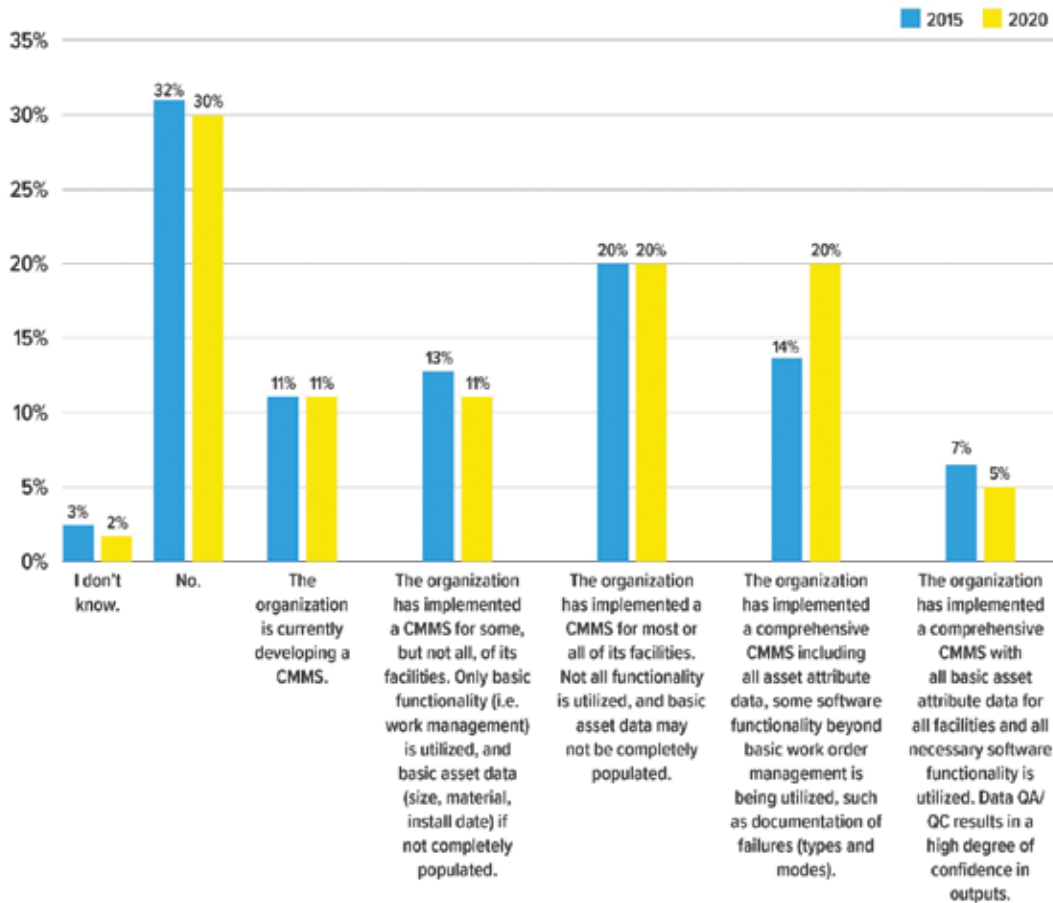
procured a CMMS for their utility. However, only 25% had a fully developed, comprehensive CMMS in place. The remaining 42% were at various stages of CMMS development or implementation. This measure of maturity was compared to an identical survey conducted in 2015, revealing that CMMS maturity had seen minimal change over the elapsed five-year period. In 2015, 44% of utilities surveyed were in the process of CMMS implementation. These findings are representative of the industry as a whole. The similarities between the 2015 and 2020 data demonstrate a general lack of

widespread understanding regarding the key elements for successful CMMS implementation.

The road to full CMMS maturity is a long and winding evolution. Often, CMMS implementation involves multiple launches, sometimes with the same software, other times with a new CMMS altogether. The AWWA Asset Management Committee's Technology Subcommittee is actively working to build a foundation for effective CMMS implementation. This article aims to provide guidance on the preparatory steps necessary to facilitate a more



SURVEY QUESTION: DOES THE ORGANIZATION UTILIZE A COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEM?



Note 1: Reproduced from the AWWA Level of Progress in Utility Asset Management Survey Results, 2023, Figure 22, p. 26

Note 2: Sample size = 437

seamless and sustainable CMMS implementation process.

Proactive Change Management – Don't Throw the Baby out with the Bathwater!

Even the best CMMS software can fail without full understanding and support from all stakeholders. Maintenance technicians in the field and at the plants play a crucial role in populating the CMMS repository. If data entry is cumbersome, if technicians lack a proper understanding of the purpose behind the data collection, or if training is not done to ensure consistency, the resulting data set drawn from inspections and work orders will be of little value. Unfortunately, such shortcomings often result in a utility scrapping the software in favor of an alternative.

Without proper training, the new CMMS is prone to failure. When considering why a utility isn't getting the intended value from its CMMS, it is essential to scrutinize the implemented work processes, and their impact on data collection. It may be necessary to scrap the bad data (the bathwater), but not necessarily the CMMS (your baby!).

When implementing a CMMS, there are a few key change management strategies to take into consideration. First, it is crucial for staff to be fully informed about the reasons for implementing a new CMMS. Clarity on this level is especially important for those affected by the change, as they will need to understand the rationale behind it. Common reasons for CMMS implementation include better organization, establishing clear procedures for efficient work

management, and transitioning to a proactive maintenance approach. Being able to clearly articulate the desired outcomes is a fundamental first step.

Second, any changes to existing work processes should be clearly defined. Consider how a new CMMS might change the nature of employees' jobs. Having a comprehensive understanding of both the current and desired work processes is key when communicating anticipated changes. It is likely there will be both advantages and disadvantages associated with workflow changes. Open discussions about the changes, the expected benefits, and why the pros outweigh the cons, can help alleviate any concerns among staff members.

Third, outline the implementation approach for the new CMMS and what steps it will take to succeed. It is



helpful for people to have a game plan and setting some expectations about the effort level and expected timeline to reach the goals as defined will be valuable. Additionally, it is important to establish clear milestones with a focus on performance tracking. Making progress visible to all stakeholders and users helps maintain engagement and keeps all invested parties informed as to what changes or adjustments are needed as the process unfolds.

Well-Organized Asset Register – Begin with the End in Mind

A work management system is an organized way to schedule work. A CMMS is a work management system, but so much more. It is intended to provide an historical context for your assets and systems. Consider the metrics that are important to your organization as you develop your asset register. Do you need to summarize maintenance costs by plant, by unit process, for all of water treatment, for the entire utility? Will you want to evaluate failure modes for all actuators across the utility? Will you want to compare proactive/corrective maintenance ratios for different processes? A robust asset register will have a hierarchy of assets, and will maintain consistent naming conventions for similar assets. More information on these two requirements is provided below.

A CMMS that allows for a data structure built around systems and unit processes is optimal for water and wastewater utilities. CMMS applications tailored to building management typically are not appropriate for capturing plant or piping assets. An asset hierarchy should be structured in a parent-child relationship, such that assets may be rolled up easily to a higher level. Ideally, staff should be able to easily summarize historical data from the individual asset level all the way to the enterprise level. This means that costs, failure rates, downtime, etc. can be easily expressed for an asset, assembly, unit process, system, etc. There is not a set number of levels to which an asset hierarchy must adhere. Generally, the hierarchy structure follows the format: System → Process → Sub-Process₁ → Sub-Process₂ → Sub-Process_n → Asset → Component.

The depth of this hierarchy depends on complexity of each system.

An example hierarchy for a wastewater treatment facility might be organized as: Wastewater Treatment → South Plant → Aeration System → Blower Assembly → Blower #1 → Oil Lube Cooling System → Oil Pump. The level of detail in any hierarchy should reflect the utility's management objectives, beginning with the end goal in mind. Populating assets in this hierarchical structure is important to enable users to easily understand cost of maintenance, performance, and modes of failure, not only for the asset, but also for the unit process, and the system as a whole.

In addition to establishing a clear hierarchy, maintaining consistency when naming assets will allow apples-to-apples comparisons across facilities and systems. For instance, if a utility is experiencing failures on metering pumps across various plants and systems (including water plants and wastewater plants), identifying the patterns in those failures becomes difficult if metering pumps use different names for the same pump category across plants. When developing naming conventions, it is essential to develop a system that is conducive to filtering by name. Using multiple names for the same type of asset will not only frustrate staff, it will likely result in gathering incomplete information.

Right-Sized Solutions – A Case Study from a 'Smedium' Utility in Texas

In the case of CMMS, one size truly does not fit all. There is a wide range of solutions available, from the most basic to the most advanced. Understanding the business needs of a specific utility is key in selecting the right CMMS. The following case study is an example of a small-to-medium-sized utility finding the right CMMS solution.

The Schertz-Seguin Local Government Corporation (SSLGC) is jointly owned by the cities of Schertz and Seguin in Texas and serves as the primary water source for the combined population of 73,500 residents. Established as a wholesale water supply system, SSLGC provides water to four neighboring systems in addition to the two cities. Although SSLGC

has thousands of customers, it does not maintain individual service connections. It serves as a wholesale water provider with six municipal customers. The system operates a water treatment plant in Gonzales County with two trains: one which serves the aggregate system fed by SSLGC's well field, and another which serves the San Antonio Water System. The San Antonio Water System treatment train has its own well field source at the Gonzales water treatment plant. SSLGC is in the process of building another water treatment plant and well field in nearby Guadalupe County. When completed, SSLGC will have two water treatment plants with adjoining well fields, a booster pump station and approximately 45 miles of transmission pipelines. The SSLGC staff is 18 members strong.

Compared to other water utilities, SSLGC manages a smaller number of assets because they do not operate distribution assets. However, the application of asset management principles remains the same as for larger-scale operations. SSLGC identified the need to acquire and implement an asset management system to properly maintain the well field equipment and all other equipment in the system. SSLGC staff met with various asset management system vendors and considered everything from basic work order management system vendors to full-scale industry leaders. SSLGC's highest priorities during this assessment process included a number of factors such as work order management, GIS compatibility, reporting capabilities, flexible asset types/management, and cost. SSLGC is not large enough to be cost effective for some of the mainstream systems in the market, nor did it need all the features which they offered. After several demos and vendor presentations, SSLGC found a solution that met all their criteria and began the implementation process.

Drawing on experience, SSLGC understood that having the right implementation team was just as important as software selection. To this end, SSLGC hired a dedicated employee to take ownership of system maintenance and collaborated with its consultants and the vendor on the implementation plan.



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MANAGING CYANOTOXINS IN PUBLIC DRINKING WATER SYSTEMS

Cyanobacteria, formerly referred to as blue-green algae, are found naturally in lakes, rivers, ponds and other surface waters.

When certain conditions exist, such as in warm water containing an abundance of nutrients, they can rapidly form harmful algal blooms (HABs). Some HABs are capable of producing toxins, called cyanotoxins, which can pose health risks to humans and animals through drinking water and recreational water exposure. Additionally, HABs can create taste and odor problems in drinking water, which do not have adverse human health impacts but can create an earthy and musty taste and smell.

Conventional water treatment (consisting of coagulation, sedimentation, filtration, and chlorination) can generally remove intact cyanobacterial cells and low levels of cyanotoxins from source waters. However, water systems may face challenges in providing drinking water during a severe bloom event when there are high levels of cyanobacteria and cyanotoxins in source waters.

With proactive planning, diligent operations and maintenance, and active management, public water systems can reduce the risks of cyanotoxins breaking through the treatment process and occurring in finished drinking water.

Causes of Cyanobacterial Blooms

Both physical and chemical factors contribute to the formation and persistence of cyanobacterial blooms in freshwater systems, including:

- light availability;
- water temperature;
- alteration of water flow;
- vertical mixing;
- pH changes;
- nutrient loading (both nitrogen and phosphorus); and,
- trace metals

Because of the interplay of these factors, there may be large temporal fluctuations in the levels of cyanobacteria and their toxins in predominating species that occur largely on seasonal time scales. Specifically, the ratio of nitrogen to phosphorus, organic matter availability, temperature, and light attenuation, likely play an interactive role in determining corresponding HAB composition and toxin production.

How Human Activities Increase the Occurrence of Cyanobacterial Blooms

There is widespread agreement within the scientific community that the incidence of HABs is increasing both in the U.S. and worldwide. This recent increase in the occurrence of HABs has been attributed to increasing anthropogenic activities and their interaction with factors known to contribute to the growth of cyanobacterial blooms. Point sources (which may include discharges from municipal and industrial wastewater treatment plants, concentrated animal feeding operations (CAFOs), Municipal Separate Storm Sewer Systems (MS4s), stormwater associated with industrial activity, and other) and non-point sources (which may

include diffuse runoff from agricultural fields, roads and stormwater), may be high in nitrogen and phosphorus and can promote or cause excessive fertilization (eutrophication) of both flowing and non-flowing waters.

Species of Cyanobacteria that Produces Toxins

Cyanotoxins can be produced by a wide variety of planktonic cyanobacteria. Some of the most commonly occurring genera are *Microcystis*, *Dolichospermum* (previously *Anabaena*), and *Planktothrix*.

Microcystis is the most common bloom-forming genus, and is almost always toxic. *Microcystis* blooms resemble a greenish, thick, paint-like (sometimes granular) material that accumulates along shores. Scums that dry on the shores of lakes may contain high concentrations of microcystin for several months, allowing toxins to dissolve in the water even when the cells are no longer alive or after a recently collapsed bloom.

Species of the filamentous genus *Dolichospermum* form slimy summer blooms on the surface of eutrophic lakes and reservoirs. *Dolichospermum* blooms may develop quickly and resemble green paint. In less eutrophic waters, some species also form colonies, which are large dark dots in water samples and on filters after filtration.

Planktothrix agardhii forms long, slender, straight filaments that usually remain separate but form dense surface scums. Its presence may be revealed by a

strong earthy odor and the filaments are easily detected visually in a water sample.

The Most Commonly Found Cyanotoxins in the U.S.

The most commonly found cyanotoxins in the U.S. are microcystins, cylindrospermopsin, anatoxins and saxitoxins.

Microcystins

Microcystins are produced by *Dolichospermum*, *Fischerella*, *Gloeotrichia*, *Nodularia*, *Nostoc*, *Oscillatoria*, members of *Microcystis*,

and *Planktothrix*. Microcystins are the most widespread cyanobacterial toxins and can bioaccumulate in common aquatic vertebrates and invertebrates such as fish, mussels, and zooplankton. Microcystins primarily affect the liver (hepatotoxin), but can also affect the kidney and reproductive system. While there is evidence of an association between liver and colorectal cancers in humans and microcystins exposure and some evidence that microcystin-LR is a tumor promoter in mechanistic studies, EPA determined that there is inadequate information to assess carcinogenic

potential of microcystins in humans due to the limitations in the few available human studies (i.e., potential co-exposure to other contaminants) and lack of long-term animal studies evaluating cancer following oral exposure.

Cylindrospermopsin

Cylindrospermopsin is usually produced by *Raphidiopsis* (previously *Cylindrospermopsis*), *raciborskii* (*C. raciborskii*), *Aphanizomenon flos-aquae*, *Aphanizomenon gracile*, *Aphanizomenon ovalisporum*, *Umezakia natans*, *Dolichospermum bergii*, *Dolichospermum lapponica*, *Dolichospermum planctonica*, *Lyngbya wollei*, *Raphidiopsis curvata*, and *Raphidiopsis mediterranea*. The primary toxic effects of this toxin are damage to the liver and kidney. Following EPA Guidelines for Carcinogen Risk Assessment, there is inadequate information to assess carcinogenic potential of cylindrospermopsin.

Anatoxins

Anatoxins bind to neuronal nicotinic acetylcholine receptors affecting the central nervous system (neurotoxins). There are multiple variants, including anatoxin-a, homoanatoxin-a, and anatoxin-a(s). These toxins are mainly associated with the cyanobacterial genera *Chrysochloris* (*Aphanizomenon ovalisporum*, *Cuspidothrix*, *Raphidiopsis* (previously *Cylindrospermopsis*), *Cylindrospermum*, *Dolichospermum*, *Microcystis*, *Oscillatoria*, *Planktothrix*, *Phormidium*, *Dolichospermum flos-aquae*, *A. lemmermannii* *Raphidiopsis mediterranea* (strain of *Raphidiopsis raciborskii*), *Tychonema* and *Woronichinia*. There is no information available on the carcinogenicity of anatoxin-a in humans or animals or on potential carcinogenic precursor effects.

Saxitoxins

Saxitoxins are representative of a large toxin family referred to as the Paralytic Shellfish Poisoning (PSP) toxins. When toxigenic marine dinoflagellates are consumed by shellfish, toxins concentrate and are delivered to consumers of the shellfish. These toxins have been reported also in freshwater cyanobacteria, including *Aphanizomenon flos-aquae*, *Dolichospermum circinalis*, *Lyngbya wollei*, *Planktothrix spp.* and a Brazilian isolate of *Raphidiopsis raciborskii*.

Source: epa.gov

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1st Phase of the Moon... Improving Moon Township Water Treatment Plants

The Moon Township Municipal Authority (MTMA) supplies water to nearly all of the 27,000 residents and businesses of Moon Township in Allegheny County in southwest Pennsylvania. The service area also includes Pittsburgh International Airport, Robert Morris University, and three military bases. MTMA takes pride in its stewardship of the water system as a community asset, excellent customer service, and some of the lowest water rates in the region. In recent years, the Authority has built an in-house team capable of managing and constructing at least part of every major project.

Originally constructed in the mid-1960s, the Fern Hollow Water Treatment Plant (FHWTP) receives a blend of raw water from the Ohio River, and a groundwater wellfield which includes a “Ranney” radial collector well. The plant utilized a parallel, two-train process with pre-contact, flocculation, primary and secondary sedimentation ahead of sand/GAC filters with individual effluent UV reactors, hypochlorite disinfection, and high service pumping.

FHWTP operates at an average daily production of around 3 MGD with a maximum daily production of 4 MGD. Planning projections speculate that the average daily demand will approach 4 MGD with peak demands approaching 6 MGD in the next 10 years. If realized, future demand will exceed the currently permitted 5.18 MGD production capacity. In consideration of the anticipated future peak demand, it was decided that all upgrades to the plant would be designed to be expandable to handle a future 6.48 MGD production flow.

The first phase of the project was developed upon completion of an evaluation of the existing concrete sedimentation basins. The basins had been repaired in the past but were again starting to show signs of deterioration consistent with 50-plus years of continuous service.

Rather than pursuing a short-term rehabilitation or an extensive replacement project, the Authority and KLH Engineers developed a plan to construct new tanks inside of the old tanks, utilizing the existing tank walls and floor as formwork for new cast-in-place, reinforced concrete tanks.



Originally constructed in the mid-1960s, the Fern Hollow Water Treatment Plant (FHWTP) receives a blend of raw water from the Ohio River, and a groundwater wellfield which includes a “Ranney” radial collector well.



The new walls and floors function as a standalone tank structure with the existing walls remaining to facilitate constructability while reducing costs associated with demolition and concrete formwork. The approach allowed construction to be completed while maintaining plant operations for most of the project.

The existing pre-contact tank was converted into a flow distribution box with

new reinforced concrete walls and floor poured within the existing structure. Flow to the parallel treatment trains is split by weirs designed to individually convey the 6.48 MGD peak with fiberglass slide plates provided for flow isolation.

The existing parallel train basins received reinforced concrete floors and walls divided to function as flocculation chambers and sedimentation basins.

The flocculation chambers are further divided with stainless steel baffles, with variable speed mixers in each segment. Coagulant injection points are provided in a staggered arrangement for operational flexibility.

Each sedimentation basin is equipped with four inlet diffusers to reduce flow velocities. Meurer Research Inc. (MRI) plate settlers are installed to provide sufficient detention times for each train to treat up to 4 MGD. Sludge removal is accomplished using chain and flight collectors.

Working closely with KLH throughout the process, MTMA procured and installed all mechanical equipment and pipework, with an outside contractor utilized for the cast-in-place, reinforced concrete work only. Construction was sequenced in such a manner that the plant was able to maintain one train in service for most of the project. Upon completion of the first side, there was a shutdown of a few weeks required to complete piping changes to re-route flow to the new process. Interconnections with neighboring water systems supplemented demand as needed.

Upon completion of the project, MTMA contracted with Legacy Building Solutions to cover the entire basin (sedimentation and flocculation zones) with a tension fabric structure. This final touch is very popular with operators and protects the process and concrete basins from adverse environmental effects.

In conjunction with the Sedimentation Basin project, MTMA also procured and installed ETS-UV Technologies reactors to replace the individual filter effluent (not validated) ultraviolet disinfection equipment. The new reactors are installed in a parallel arrangement as a final step in the treatment process.

Since completion of the Phase I sedimentation basin project, MTMA and KLH have constructed a new redundant raw water transmission pipeline and completed renewal of the Ranney well. Preparations are currently underway for expansion of filtration, clearwell, and high service pumping capacity to faithfully serve customers in Moon Township and surrounding areas for the foreseeable future. 🌙



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AQUA PENNSYLVANIA INVESTS IN SHENANDOAH'S FUTURE

By Stephen J. Draus, P.E., Area Manager, Aqua Pennsylvania

Reliable water systems are critical for the wellbeing of community members and the environment. Achieving consistent operational reliability requires dedication to infrastructure improvements, proper maintenance, and a well-trained workforce. At Aqua Pennsylvania, we recognize the tremendous importance of investing in infrastructure, with a special focus on aging water systems, since water quality and dependability inevitably decrease with time.

In 2023, we purchased the Municipal Authority of the Borough of Shenandoah (MABS) water system, where many of the pipelines date back to the 19th century (the useful life of a pipe typically spans 50 to 70 years). At the time of purchase, the aging system was experiencing frequent outages and main leaks. Water loss was estimated at 60%.

We worked closely with the borough's leadership to evaluate the needs of the old water system, drawing upon our 135-year history of partnering with local governments to improve infrastructure. After careful consideration, we identified a need of more than \$20 million to update MABS' system over the next decade, with \$10 million dedicated to replacing water mains. Costs will continue to evolve as we learn more about the system.

At Aqua, our customers are our number one priority. Replacing aging water main decreases service interruptions and improves the quality of life for customers, while enabling system-wide cost savings by increasing reliability, reducing water loss, and improving water quality, operational efficiency and environmental performance.



Since taking over operations in July 2023, we've successfully put our plan into action. We've enhanced customer safety and increased water conservation efforts by replacing 37 inoperable fire hydrants, instituting regular leak detection, and repairing multiple leaks and breaks throughout the system. Our team also updated MABS' Risk Management Plan and implemented safety improvements at its water treatment plant, including replacing emergency lighting. Further, we provided staff with training on our standard safety procedures.

Within the first month of ownership, we replaced all customer meters resulting in more accurate and consistent customer billing. We also made multiple critical repairs to enhance efficiency and support the plant's operations, repairing its chemical feed system and upgrading lighting and equipment in its lab. Additional key improvements allow the system to comply with Pennsylvania Department of Environmental Protection (DEP) regulations, including \$200,000 in required maintenance work at MABS'



four dams and the purchase of necessary equipment including new flow and turbidity meters, a new sampling station and upgraded chlorine analyzers.

With notable upgrades underway, we're evaluating the facilities in Shenandoah as part of our future infrastructure improvements program, keeping a steady focus on enhancing safety and efficiency, and supporting improved operations while providing best-in-class customer service. Importantly, we plan to begin soon to replace all existing problematic water mains in the Shenandoah system. As we expand on our efforts, customers will continue to experience the life-changing benefits of streamlined system operations and the consistent availability of clean, safe, reliable water.

Aqua Pennsylvania provides water and wastewater service to approximately 1.5 million people in 32 counties throughout the Commonwealth of Pennsylvania. Visit AquaWater.com for more information or follow @MyAquaWater on Facebook or Twitter. ♡



AQUA PENNSYLVANIA – UWCHLAN DISTRIBUTION SYSTEM – PHASE III DIRECTORS AWARD RECIPIENT

The PA Partnership for Safe Water & PA DEP Representatives proudly announce that the Aqua PA – Uwchlan System has been honored with the Phase III Director’s Award under the Distribution Program for its commitment to optimizing water quality. Aqua now joins an elite group, being only one of two utilities in the Commonwealth of PA to achieve this distinction. Special recognition will take place at our Partnership Awards Ceremony during the PA-AWWA State Conference in Lancaster in May and at ACE24.

The Distribution Director’s Award is bestowed on a utility that aligns its objectives with the Partnership program, outlining endeavors to enhance its operations in a comprehensive report. This report is scrutinized by a panel of experts within the national AWWA group. Attainment of the award hinges on demonstrating satisfactory voluntary performance and adoption of optimization practices.

AQUA PA: 35,518 POPULATION, 16,600 SERVICE CONNECTIONS

“We are honored to receive the Director’s Award for our Uwchlan Distribution System, which joins all 11 of Aqua Pennsylvania’s surface water treatment plants that are actively participating in the Partnership programs. We started our distribution partnership journey in 2020 and it’s helped us improve several internal processes and distribution SOPs to impact our Uwchlan system and all

of Aqua Pennsylvania’s systems across the 32 counties we serve. As we continue to improve our approach to distribution optimization, we will be relying on the Partnership framework for its valuable guidance and assessment tools.”

ABOUT THE PFSW UTILITY PROGRAM

Partnership for Safe Water is a voluntary utility program focused on improving the quality and safety of water delivered to customers of community water systems by optimizing operations in both treatment and distribution efforts.

The Partnership Phase III process involves using self-assessment methods to move forward with optimization strategies to maintain the water quality in the water distribution system and identify areas for improvement.

The report submitted was evaluated by a Program Effectiveness Assessment Committee (PEAC) team consisting of utility peers based upon an established Partnership protocol. The PEAC reviewers found that an overall comprehensive and honest approach was made to self-assess the Uwchlan Distribution System.

The review team appreciates the effort the Bryn Mawr Utility put into the development of the report and the candid, objective approach taken to identify areas for improvement, which is the main focus of the Phase III Self-Assessment.

The Partnership for Safe Water program and staff are ready to help your utility to shine. Stop by our booth at the PA-AWWA Annual Conference to learn more.

DOWNTOWN MUNICIPAL WATER AUTHORITY – PRESIDENT’S AWARD

We are also delighted to announce that the Downingtown Municipal Water Authority received the President’s Award in the treatment program. They now become the 18th utility in Pennsylvania to achieve that status. The President’s phase is the intermediate step between the Phase III and Phase IV Excellence phases.

Downingtown will be formally recognized for its achievement at the state and national conferences this year.

Congratulations to the staff at Downingtown for their continued efforts at treatment optimization and on the receipt of this recognition.

CALL FOR NEW PFSW MEMBERS

The PA AWWA section is actively soliciting new members to the Partnership Groundwater, Treatment and/or Distribution programs. The program outlines specific steps a utility follows to critique their existing policies and procedures and also guides them towards possible areas to review for enhancement. Utility subscribers to the treatment program that complete the self-assessment process have reduced their filter effluent turbidity by an average of over 60%. Employees of members demonstrate a sense of purpose and a personal and team commitment to achieving the highest standards of water quality and distribution system operation. If you are interested in becoming a member, please contact Paul Zielinski at paulzielinski@comcast.net, or at 717-645-2636. 📞



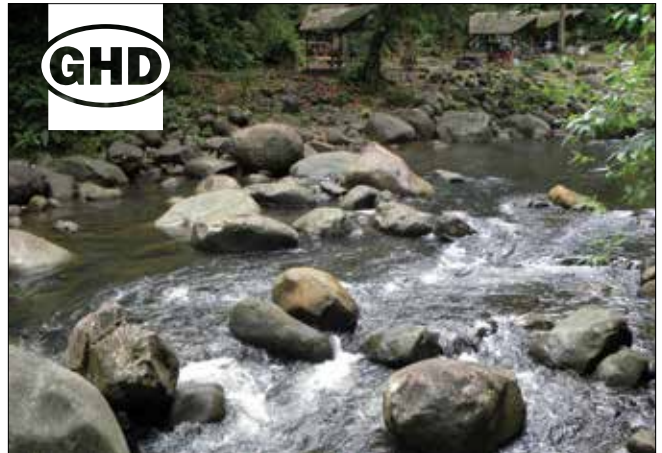
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