One **Water**

Joint Newsletter- December 2024

Brought to you by:

December 2024

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What Do the **Colors Mean?**

Green	Blue	Blue/Green
Content from MeWEA	Content from MWUA	MWUA & MeWEA content

Exciting News!

Our Newsletter is Going Digital!

We're thrilled to announce that our newsletter is transitioning to a digital format! Moving from a .pdf version, published just three times a year, to an electronic newsletter, will allow us to connect with you more frequently and keep you informed with timely updates, industry news, and important association information.

Here's what you can look forward to with our new format:

1. More Timely Updates: Instead of waiting months for new content, you'll receive fresh, relevant information directly to your inbox more often. This helps us keep you better informed on current events, upcoming training, industry news, and policy updates that matter to you.
2. Convenience and Accessibility: With a digital format, you can access our newsletter anytime, anywhere. Whether you're at your desk or on your mobile device, the latest news from our associations will be just a click away.
3. Engagement and Feedback Opportunities: The digital format allows us to integrate interactive elements, making it easier for you to respond to surveys, register for events, and provide feedback—all within the email!
4. Improved Content Focus: With frequent updates, we'll be able to provide shorter, more focused articles that are quick to read and to the point.

Thank you for embracing this change with us as we work to serve you even better. We expect to send our first digital newsletter in February.

Message from MeWEA President

MeWEA hosted one of the most successful conferences to date! Thank you to all our volunteers, sponsors, exhibitors, and attendees for the support for this huge success! We also had the most well-attended golf tournament and perfect weather for golfing.

I've been honored to serve as the President this year, and with the experienced and dedicated executive team and committee chairs, we've done some incredible things:

(cont'd on next page)

Sharing the value of water - continued our public outreach efforts through various channels - highlighted in various news stories this year!

Advocacy - continued state and national legislative advocacy and outreach about the challenges and opportunities of the water industry.

Financial sustainability - through various strategic planning sessions, we coordinated funding efforts and created a roadmap for our future. This led to the decision to move contracted services on a two-year contract to the Maine Municipal Association. We are working diligently with all parties to ensure a smooth transition. We also will continue our strong collaboration with MWUA in the coming years.

WEFTEC Ops Challenge Team - we're proud to have sent the Maine team to WEFtec this year! Thank you to our volunteers and team on their fundraising efforts to make this initiative a reality.

Looking forward to all the things MeWEA will accomplish in 2025. You are in great hands with Terry Tucker as your next President and all the superb folks who make this organization exceptional!

Emily Cole-Prescott
MeWEA President

Message from **MWUA's President**

Greetings MWUA Members,

It's hard to believe, but the warm summer months are far behind us and cooler, crisp air has arrived. After a busy spring and summer, it's important to pause and reflect on all the great work that has happened around the state. Water utilities have had a busy year replacing aging water mains and building/upgrading treatment and storage facilities, all while working diligently to complete LCR Service Line Inventories, ahead of the EPA October 2024 deadline. Despite the heavy workload, our water utilities in Maine continue to provide reliable, high quality water service to Maine towns and cities. Water utilities are closely knit together with the communities they serve. We all see challenges around the country with respect to drinking water quality and quantity, and it has never been more apparent that our service to Mainers is critical to community resilience, growth, and most importantly public health.

Each member of our Association should feel proud of the impact they have on the lives of their customers, who are also their friends, family and neighbors. The importance of what we do everyday points to our need for a strong Maine Water Utilities Association, allowing us to share knowledge, resources, and remain effective in educating key stakeholders to positively influence outcomes that favor Maine water systems and customers.

The Association has had a productive 2024, which is the direct result of tremendous volunteerism. Board members, committee members, vendors, and so many others have leaned into shaping MWUA's direction for years to come. Our "Listening Sessions" in Brewer, Portland, and Houlton provided the Board of Directors and Executive Director valuable input related to what our members value in the Association, as well as areas of improvement in serving the membership. Thank you to all who took the time to participate in these sessions. The information gathered in these meetings provided the framework for MWUA's Strategic Plan, which was recently presented at the October Bi-Monthly meeting. The Strategic Plan is also posted on the MWUA website. If you have any questions, please reach out to Nicki Pellenz or any Board member.

This December, we celebrate the 50-year anniversary of the federal Safe Drinking Water Act, the primary federal law in the US, ensuring safe drinking water for the public. I invite each of you to join us in celebrating the 50-year mark at Brunswick-Topsham Water District, following our Bi-Monthly business meeting. It's a time to reflect on how far we've come as a country and a state in providing a service essential to human life. I look forwarding to celebrating with you all!

Sincerely,

Mike, President MWUA

Events Calendar

Upcoming events scheduled over the next few months are below.

January 26-29, 2025 NEWEA Annual Conference;

February 5-6, 2025 MWUA's 99th Annual Conference

Job Openings

Sanford Sewage District	Wastewater Operator Apprentice / Wastewater Plant Operator in Training
NEIWPCC	Environmental Analyst - Rule Specialist
Portsmouth	Assistant Chief Plant Operator
Maine DEP	Environmental Specialist III
Kittery	Treatment Plant Operator
LAWPCA	Truck Driver/Mechanic
City of Gardiner	Wastewater Operator

For the latest job postings, also check out the MeWEA Facebook page and the following: MeWEA, MWUA, NEWEA, NE Biosolids and WEF Career Center

Upcoming Trainings

- **Lets Talk About PFAS** - December 18, 2024; 8:00a-10:00a; 2 W/WW
- **Principals & Practices of Distribution Preparatory Course** - January 7, 9, 14, 16, 23; 8:00a – 3:30p; W
- **Choosing Pipe for the Job** - January 24, 2025 (Virtual) - 8:00a - 10:00p - 2 W/WW
- **Corrosion Inside & Out** - February, 18 2025 (Virtual) - 8:00a - 10:00p - 2 W/WW
- **PUC Reports 101** - March 13, 2025 (Virtual) - 9:00a - 11:00p - 2 W
- **Confined Space** - March 25, 2025 (In-person) - 8:00a - 3:30p - 6 W/WW
- **Water Main Extensions** - April 8, 2025 (Virtual) - 9:00a - 11:00p 2 W

Please check the links below for the most up-to-date trainings available:

JETCC Remote Learning Catalog

MWUA Sponsored Training

NEIWPCC -JETCC Remote Learning Catalog

KEY ACRONYMS

WW – Technical Credit Hours (TCH) qualifying for wastewater credit hours

W - TCH qualify for water credit hours approved by Board of Licensed Water System Operators (BLWSO)

QUIZ TIME Water Professionals

1. Bacteria growth rate doubles for each _____°C temperature rise.
a. 5 b. 10
c. 2 d. 20

2. Which of the following parameters indicated the clarity of water?
a. Turbidity b. Hardness
c. pH d. Alkalinity

3. Of the following devices, which can detect flow in the distribution system?
a. Pitot meter b.. Pressure Gauge
c. Flow Meter d. Sight Glass

4. Of the following, where would be the best location to install a fire hydrant?
a. On shoulder of the road b. Inside a pump house
c. Near street intersections d. In the bushes

5. If a hydrant is taken out-of-service, who must be notified?
a. Local residents b. Local fire department
c. Drinking water program d. Local health department

Answers
1. b.
2. a.
3. c.
4. c.
5. b.

QUIZ TIME Wastewater Professionals

1. Of the following, which is the guideline velocity for grit removal?
a. 5.0 fps b. 1.0 fps
c. 2.0 fps d. 10.0 fps

2. What type of material accumulates on screens mostly?
a. Inorganic b. Grit
c. Nano d. Organic

3. What does FOG stand for in association with primary clarifiers?
a. Fat, oil, grease b.. Failure of Gauge
c. Thick cloudy water droplets suspended near the ground d. Free obtained grit

4. True or false, activated carbon is non-selective in the removal of odor contaminants?
a. True b. False

5. Which type of material is grit most often?
a. Inorganic b. Fat
c. Organic d. Grease

Answers
1. b.
2. d.
3. a.
4. a.
5. a.

TECHNOLOGY CORNER

Using Beer Yeast to Filter Lead from Water

We are all aware of the health effects from ingesting lead and its action level of 15 parts per billion and public health goal of 0 parts per billion as a drinking water contaminant. Many systems currently use accepted treatment technologies to make sure that the water consumers are drinking tests below the above action level designated by the US EPA for lead. Some of these technologies include corrosion inhibitors, aeration, and more.

Recently, scientists and researchers have repurposed beer yeast to filter lead from drinking water. This innovative technology utilizes biosorption to remove lead and even other heavy metals from water even when they are at concentrations below 1 part per billion. This yeast filter uses yeast encapsulated in hydrogels. The yeast absorbs the lead, while the hydrogels allow for the removal of the now lead-contaminated yeast from the water. Some advantages to this new yeast filter are that discarded beer yeast from breweries can be repurposed and used instead of going directly to waste and beer yeast is biodegradable, benign, and biobased. What will they think of next?

Cutting Edge Solutions of Nanotechnologies

Water purification and filtration involve the manipulation of materials at the molecular or atomic level. Nanofiltration is no different. While it can be costly, nanofiltration is extremely effective in removing various contaminants from water while allowing the filtered water to pass through. It has shown beneficial applications in both the water and wastewater sectors aiding in the removal of micropollutants that are otherwise difficult or impossible to remove.

The nanomaterials market is projected to significantly expand between now and 2031 which could lead to further research and development of highly effective and efficient filtration devices for removing contaminants including but not limited to bacteria, viruses, heavy metals, and organic compounds. Keep your eye on the latest and greatest nanotechnologies coming down the pipes.

Innovation for Decentralized Water Systems

Decentralized water systems allow many communities to operate and maintain their own water resources and can be more cost effective than systems where infrastructure has been centralized. These systems are utilized most often by rural and/or remote communities where access to safe drinking water is limited. Some of these systems are even able to operate by receiving power from renewable energy sources. These systems have been successful in setting up microgrid systems by linking solar panels, batteries, and smart water distribution networks and are able to ensure safe drinking water for their community. More often than not, these decentralized water systems are relying on UV disinfection and activated carbon filtration to treat the water and system designs are increasingly flexible in that they can fit most applications. Have you considered renewable energy and/or developing a microgrid to operate your system?

The Future of Water Meters & Water Quality Monitoring

As metering technology advances, we are witness to new and innovative ways of monitoring your water system becoming more and more available. Turbidity monitoring is critical to ensure that adequate water quality is achieved/maintained. This is because turbidity is a key indicator of contamination risks such as bacteria, pathogens, and particulate matter that could be harmful to consumer health. New smart meters are being developed to monitor the turbidity of the water being delivered to consumers.

In addition to ensuring adequate water quality, these new meters with turbidity monitoring will aid in consumer confidence and allow for real time water quality monitoring within the distribution system. What will the metering professionals think of next?

Colleague Corner

Marc Barnard, *Superintendent*
Calais Water Department

Marc Barnard has been employed in the water industry for a total of 21 years by Olver Associates, an engineering company of Winterport, hired by the city of Calais to operate its water system. Of those 21 years, he spent 17 working as a water operator. For the most recent 4 years, Marc has been the Superintendent of the Calais Water Department (CWD). Marc's challenge at CWD has been the replacement of the system's aging infrastructure, as well as, looking for additional grants/funding for the replacement of its cast iron lines from the late 1880s.

Colleague Corner (cont'd)

Marc said that he has always been thankful for the guys that he has worked with over the years. "You know you have a good working relationship when you can count on the guys at 3:00 am on a 15-degree night to show up for a repair that you know will be a nightmare." He also mentioned that working for Olver Associates for the past 21 years has been great. When asked what he's most proud of in his life, Marc responded, "There are many things to be proud of but, hands down that would be my wife!"

Jordan (Jody) McColman, *Director of Telephone and Water Utility Industries Maine Public Utilities Commission*

Jody McColman's career at the Maine Public Utilities Commission (MPUC) began more than 15 years ago. In 2009, he held the position of Staff Attorney assigned to telecom matters. Over the course of time, Jody has held various positions at the MPUC including Senior Staff Attorney.

His appointment as the PUC's Deputy General Counsel occurred in 2021 and he most recently became Director of Telephone and Water Utility Industries this year. Currently, Jody and his team are involved in two major issues, preserving Maine's 207 area code and focusing on engagement with small consumer-owned water utilities to help them navigate the regulatory process. In his "spare time", Jody is involved in acting in local professional theaters, locally produced films, as well as authoring several short plays that have been produced in festivals across America. He enjoys living in Portland where city life offers the arts, culture, and fine restaurants. Possessing a good sense of humor Jody stated, "I'm a lawyer, so I'm required to play golf!"

◆

Force Maine Takes on the Wastewater Olympics

Imagine the wastewater Olympics – that's the Operations Challenge, and Force Maine just competed on the national stage at WEFTEC in New Orleans! This competition pits four-person teams against each other in a series of timed events that test their skills in various aspects of wastewater operations.

Force Maine '24 has had an exciting journey, overcoming some challenges and welcoming new members along the way. I joined the team in 2021, stepping into an open position to help keep the team viable. Darren Lauletta from York Sewer District, who joined the team last year, returned this year. He helped us qualify for WEFTEC and has been instrumental in reaching out to potential sponsors, bringing his seemingly boundless energy to the team.

Over the winter, Matt Szuter from Saco Water Resource Recovery Department, a returning competitor with essential Lab experience, sustained an injury that prevented him from competing. Despite this, Matt stayed with the team as a coach and helped improve our performance. Around that time, Chris Cline, Superintendent at Yarmouth Wastewater, expressed interest in attending some practices to learn more about the Operations Challenge. When we asked (begged) Chris to join as a competitor, he did—and his contributions helped us qualify for WEFTEC at the NEWEA Spring Qualifier in Rhode Island. Chris's networking and dedication to Force Maine also secured several sponsorships that helped with team expenses.

Dan Munsey from the Brunswick Sewer District, an eight-year veteran with expertise in Safety and Collection systems, also competed in Rhode Island and contributed to our journey to WEFTEC. As WEFTEC approached, Dan had new opportunities in his life that made competing difficult. He was able to attend as a second coach, bringing his WEFTEC judging experience and support to the team.

Nick Textor from Bangor Water Quality Management happened to cross paths with the team at the MEWEA Fall Conference at Sunday River. Nick expressed serious interest in joining, so we took advantage of his enthusiasm, outgoing personality, and calm demeanor by installing him as a competitor just two weeks before WEFTEC. Finally, a big shout-out goes to Rob Pontau, General Manager at Brunswick Sewer District and former competitor. Rob has been, and continues to be, crucial to the continuation of Force Maine. He recruits, schedules, arranges travel, handles finances, and provides encouragement and practice space. Thanks, Rob!

While we did not bring home any hardware from WEFTEC, we delivered a solid performance, exceeding our scores in every event from the Spring Qualifier!

(cont'd on next page)

Force Maine Takes on the Wastewater Olympics

Our team significantly improved our Process Control score! This success has energized the team and generated excitement for the future.

The camaraderie among Operations Challenge competitors is truly special. We've formed friendships with teams throughout New England and beyond. I remember after a particularly tough Collections event, a competitor from another team came over and offered encouragement and tips for improvement. That's the spirit of this competition – we push each other to excel, but we're always there to support each other. At WEFTEC, with 56 other teams, everyone felt included and respected. Conversations with people from different places were common, and while subpar performances in events can be disappointing, by the end of it all, there were hugs, fist bumps, and smiles.

Our experience in New Orleans was so impactful to me that when I saw the Aurora Borealis the other night, I felt like it was the afterglow of an experience that I will never forget.

If any of this sounds intriguing, please reach out to Rob Pontau, rpontau@bsewer.org or any team member. You can also send an email to forcemaine@gmail.com. We'll do our best to get you hooked on Ops Challenge.

Lastly, I want to acknowledge and praise the many, many people involved in MEWEA and NEWEA who volunteer their time and expertise, enabling Ops Challenge competitors to come together in a fun environment to grow both professionally and personally.

> "The camaraderie among Operations Challenge competitors is truly special."

FEATURED WATER SYSTEM

Calais
bridging culture, commerce and community

Calais, Maine was first settled in 1779 during the American Revolutionary War. Later, it was incorporated as a city in 1850. During this time, the Milltown Aqueduct Company was incorporated for the purpose of repairing, rebuilding, and regulating the use of their existing aqueduct for those interested in acquiring water for domestic uses. Through the years, the company's name and ownership changed until being incorporated as the Calais Water Company on March 18, 1886. During this period, surface water was pumped from the St. Croix River. Then in 1917, the name changed again to the Calais water and Power Company where it supplied water to Calais, Maine and St. Stephen, New Brunswick. This company operated for many years. After a century of sharing water supplies with Canada, the City of Calais acquired the water side of the company in the 1980s. For a time, Calais purchased its water from St. Stephen Water Department in Canada. Subsequently, Calais obtained two wells and began supplying water to its own customers in 2003 as the Calais Water Department (CWD).

Calais is the largest municipality (by population) in Washington County. The CWD treatment facility is located on Water Street in Calais. This groundwater system's water sources are two gravel-packed wells, one at a depth of 47' and the other at 46.5' deep, producing 200 GPM and 300 GPM respectively. The water mains flow from the wells to the filtration plant where the raw water is pre-chlorinated with sodium hypochlorite to oxidize iron in the water prior to filtration. Also prior to filtration, a polymer is added to assist in the removal of iron via the filters. Next, water passes through 2 Pureflow rapid sand filters where iron and manganese are removed. After filtration, the water is post-chlorinated with sodium hypochlorite for disinfection purposes. Finally, prior to leaving the plant, a polyphosphate blend is added to the water as a method of corrosion control. The finished water then travels to the reservoir, a 1.5 MG holding tank. The system had a pumping average of 85 MG in 2023. CWD maintains approximately 20 miles of water main with 384 hydrants, serving 2,733 customers via 1,093 service connections.

Today, Calais Water is a department of the City of Calais. Olver Associates, an engineering company in Winterport, Maine, was contracted by the City to manage the day-to-day operations of their water system. This system is operated by 3 employees who have a total combined 31 years of service. Marc Barnard is CWD's Superintendent. According to Mark, "We have a great team!"

Additionally, Marc is pleased that each employee is cross trained in one another's job functions, always supporting continuity of operations.

As Superintendent, Marc understands the importance of good customer service and relations allowing them to successfully operate the City of Calais' water department. He said, "Good customer service helps keep the trust in your water in the eyes of the customers." He also understands how difficult it can be dealing with an unhappy customer as you are taking "the brunt of the complaint" from someone who's angry. He goes on to say, "it's always best to keep calm and professional. Keeping this frame of mind will make your job easier in time." The CWD team also assists their customers with leak audits for the utility's water conservation and in Marc's opinion, "most importantly for the customers in order to lower their water bill for the next quarter."

An ongoing challenge of CWD is trying to maintain the water quality as there's an iron staining issue with customers who have old cast iron lines. Marc and his crew have been attempting to mitigate this obstacle by replacing the worst water lines, including initiating both spring and fall flushing for the last 22 years. This process helps, but further flushing of dead-end lines is completed according to customer complaints. Seemingly, the iron staining issue has been improving with time and CWD's team's ongoing efforts.

CWD Treatment Facility

CWD 1.5 MG Reservoir

CWD Team

Presently, CWD is working on a project to install a backup generator for their filter plant after having received a grant to support this project. The groundwork for this project recently began. Following this venture, they'll begin a water line replacement project in 2025. They expect to replace roughly 2,700' of 12" cast iron line. This project will aid in better water quality for the consumers of CWD.

The City of Calais and its inhabitants should be pleased with the dedication and hard work of Marc Barnard and his team who are responsible for supplying safe and reliable drinking and firefighting water to the city and its residents! Thanks to Marc for the information and pictures that he provided for the writing of this article!

Team EJP provides high-quality products and services for water, wastewater, stormwater, erosion control, and smart utility solutions. Our 24-hour emergency service line ensures that EJP customers receive assistance when they need it most. Trust the experts, contact Team EJP.

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MANAGEMENT
Candidate School

By: Peter Zaykoski

Eighteen students graduated from Management Candidate School on Thursday, September 19th at the MEWEA Fall Convention. Graduates represented communities from York to Houlton. This year's program was hosted by Yarmouth Wastewater and held at the Yarmouth Public Safety Building.

Beginning last November, students met once a month to learn about management topics ranging from personnel management, supervisory skills, labor relations, budgeting, and engineering basics. The program includes student presentations, job shadowing, and completion of Sacramento State University's "Manage for Success" correspondence course.

Management Candidate School is a program of the Maine Joint Environmental Training Coordinating Committee, which is managed by NEIWPCC. The program operates with support from the Maine Department of Environmental Protection, Maine Department of Health and Human Services, Maine Water Environment Association, and Maine Water Utilities Association.

Front: *Yarissa Ortiz-Vidal, PhD, Rockland Pollution Control Facility*

First row (left to right): *Nicholas Textor, Bangor WWTF; Matthew Lincoln, Houlton Water Co.; Zachariah Mein, York Water District; Brandon Elwell, Brunswick Sewer District; Jordan Steves, York Sewer District; David McNally, Lewiston-Auburn Clean Water Authority; Brett Goodrich, Maine DEP; Matthew Deroches, Rumford-Mexico Sewerage District; Tyler Barrall, Bangor WWTF.*

Back row (left to right): *Brian Ahlquist, Mechanic Falls Sanitary District; Weston Alley, Boothbay Region Water District; Dave Robinson, Greater Augusta Utility District; Zacary Perkins, Bath Water Pollution Control Facility; Jeff Mitchell, Yarmouth Water Pollution Control Facility; Travis Dyer, Maine Water Co.; Steve Carpenter, Wells Sanitary District; Jeremy Court, Biddeford WWTF.*

NO EXCUSES

By: Rob Pontau
Article Originally printed in the Friends of Merrymeeting Bay, Fall 2024 Newsletter

At approximately 5:15 am on August 19, the fire suppression system in Hangar 4 at the former Brunswick Naval Air Station (BNAS) accidentally deployed about 51,000 gallons of PFAS-contaminated fire-fighting foam. Shortly thereafter the entire 90,000 square feet of hangar floor was filled with the aqueous film forming foam (AFFF) 4-5' high. Or 405,000 cubic feet! This is said to be the sixth largest PFAS release in US history and was a mix of 1,450 gallons of PFAS-laden firefighting concentrate plus 50,000 gallons of water it was automatically mixed with as rapidly sprayed from the pressurized system.

Within hours, the AFFF had entered surface waters which largely drain southeast through a chain of ponds (previously dredged of contaminants by the Navy) to Merriconeag Stream which flows into Mare Brook and out to Harpswell Cove, home to a thriving shellfish industry-both wild harvest and aquaculture. The AFFF also entered the sewer system from whence it flowed to the Brunswick Sewer District (BSD) Plant and, untreated for PFAS, directly into the tidal Androscoggin River and Merrymeeting Bay.

PFAS foam was all over the Hangar 4 and Pond A vicinity, coming up through the sewer manholes and being vacuumed up on the tarmac by Clean Harbors under DEP supervision.

FOMB volunteers were on site by midday, photographing the emergency, both spill areas we could see, and response efforts. Besides cleanup, a focus of the DEP was rapid testing in hopes of establishing baseline data. Thanks to member support, this is an area where FOMB could contribute in a major way since on our own and in

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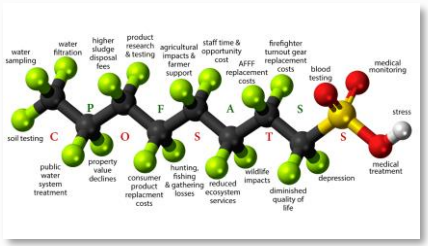
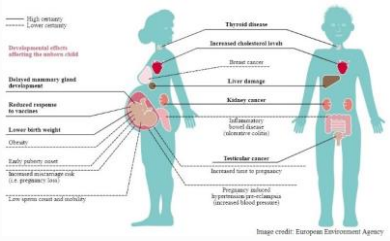
cooperation with the Brunswick Sewer District, Brunswick Area Citizens for a Safe Environment (BACSE) and the Military Toxics Project, we have been monitoring PFAS in and around the former base as well as in the broader lower watershed, for several years. We met with Chris Hooper, DEP's Director of Spill Response, telling him about our data and work and helped familiarize him with the lay of the land in and around the base and then followed up later, emailing him extensive baseline data. His response the next day was appreciative: "It was great to talk with you yesterday. Thanks so much for these results I'll forward them on to out Tech Services people who manage our testing and results right away this morning. This will be very helpful." FOMB's research continues to inform our advocacy as well as assist various agencies in their work.

Per- and polyfluoroalkyl substances (PFAS) are a large, complex group of synthetic chemicals that have been used in consumer products around the world since about the 1950s. They are ingredients in various everyday products. For example, PFAS are used to keep food from sticking to packaging or cookware, make clothes and carpets resistant to stains, and create firefighting foam that is more effective. PFAS molecules have a chain of linked carbon and fluorine atoms. Because the carbon-fluorine bond is one of the strongest, these chemicals do not degrade easily in the environment. (National Institute of Environmental Health Sciences). *



These rugged carbon-fluorine chains have earned the name "forever chemicals" and have long half-lives. I like to call them "everywhere chemicals" because of their worldwide presence. There are somewhere between 14,000-16,000 of these PFAS chemicals in use and only a very few have been regulated by the Environmental Protection Agency (EPA) or Maine Department of Environmental Protection (DEP),

only six for drinking water and none for surface waters. Human health effects that we know of include thyroid disease, kidney, breast and testicular cancers, liver damage, increased cholesterol levels and delayed mammary gland development. PFAS chemicals are considered persistent organic pollutants (POPS) and endocrine disrupters.



The Navy still owns Hangar 4 whereas they have already transferred Hangar 6, (closest to the now-contaminated Jordan Avenue Brunswick well field and site of ongoing PFAS leakage that FOMB has brought to the attention of all parties) to the Midcoast Regional Redevelopment Authority (MRRA),

a legislative chartered quasi-governmental entity. Since the Hangar 4 spill, and before our press time, the Navy has removed remnant legacy AFFF from Hangar 4. Hangar 6 under MRRA's authority, remains a ticking, leaking time bomb and since at the north end of the former base, most likely to influence Brunswick's water supply and the Androscoggin River.

PFAS exposure over a long period of time can cause cancer and other illnesses that decrease quality of life or death. For PFOA and PFOS, two of the many compounds, EPA has set non-enforceable health-based goals for drinking water of zero. This reflects the latest science showing there is no level of exposure to these two PFAS without risk of health impacts. This is called a Maximum Contaminant Level Goal (MCLG).

For PFNA, PFHxS, and HFPO-DA (GenX Chemicals), EPA is setting MCLGs of 10 parts per trillion (ppt). https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas In Maine, the six regulated PFAS contaminants are: perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorohexane sulfonic acid (PFHxS), perfluorononanoic acid (PFNA), perfluoroheptanoic acid (PFHpA) and perfluorodecanoic acid (PFDA). An interim standard of 20 parts-per-trillion for the six PFAS (alone or in combination) is in effect. A rule-making process is currently taking place in order to establish PFAS Maximum Contaminant Levels in Maine.

For comparison- our July 29 sampling of the Hangar 6 BSD pump station levels for these chemicals was: PFOA-303 ppt; PFOS-20,600 ppt; PFHxS-57 ppt; PFNA-49 ppt; PFHpA-89 ppt and PFDA-82 ppt for a total of 21,180 ppt. This said, PFAS levels dilute very quickly in water so ambient water testing, rather than for screening or known hot spots, is of limited value versus testing in organisms to document real world bioaccumulations in the environmental food chains.

Why with minimal air traffic and storage at the current Brunswick Executive Airport is there still PFAS fire suppression foam? In 2021 (updated in 2022), the Department of Air Force issued a memo calling for the change from AFFF to water dispersal systems in all but special circumstances. The Sunset Order for AFFF was based on their study results from Army, Navy, Air Force and Defense Logistics Agency facilities and was shocking (emphasis added below):

The Assistant Secretary of the Air Force for Energy, Installations, and Environment led a joint effort across the Departments of the Air Force (DAF), Army, and Navy along with the Defense Logistics Agency to assess risks with respect to replacing fluorinated Aqueous Film Forming Foam (AFFF) fire suppression systems (FSS) in Department of Defense Facilities (DoD) facilities.

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After reviewing 32 years of historical data and 15 years of safety mishap data, the assessment team did not find a single instance where a hangar fuel related fire resulted in the loss of an aircraft or life. The only aircraft fuel related fire in the past 32 years in the DoD was suppressed by a water deluge system.

In contrast, the historical data shows a trend of inadvertent activations of foam systems across the DoD of one in every two months (84 mishaps over past 15 years). The mishap cost associated with these events was in excess of 24.5 million dollars and contact with chemicals in the foam have caused one death, injured 21 people and damaged more than 120 aircraft. Considering the findings of this risk-informed analysis and the high cost of converting, maintaining, and clean-up of accidental discharges of foam systems, effective immediately, all DAF hangars and similar facilities equipped with foam FSS will be categorized as Tier 2 Fire Protection Facilities unless specifically approved for Tier 1 designation. Tier 2 facilities will use an automatic water sprinkler system consistent with the attached guidance in lieu of foam FSS.

With even the military now changed over from PFAS based foam suppression systems, there is simply no excuse for its presence on the former BNAS (or any other former military installation transferred to civilian use). MRRA and the Navy must be held accountable for PFAS and other legacy contamination at Brunswick Landing / Brunswick Executive Airport/BNAS, much of which remains a Superfund site, a fact many tenants are probably not aware of.

** NIEHS offers a publicly available, searchable database of published scientific papers about PFAS. Filters provide ability to create a specific query of this database: NIEHS-supported Publications on Per-and Polyfluoroalkyl Substance.*

"Every American deserves to be able to turn on their water tap or faucet and be able to drink clean water."
President Joe Biden

MWUA: 2024 October Bi-Monthly Meeting Recap

Maine Water Utilities Association held their October Bi-Monthly Meeting in Belfast on October 10th.

Frank Short, the superintendent of Belfast Water District, welcomed the attendees to Belfast and discussed the district's operations and challenges and mentioned that the district serves approximately 5,000 people with two wells, one capable of pumping 1,200 gallons a minute and the other 600 gallons a minute.

BUSINESS MEETING:

Strategic Planning, Training, and Financial Updates

Mike Cummons, MWUA President, led a discussion about the organization's strategic planning, expressing gratitude to members who participated in listening sessions. He highlighted the development of a strategic plan focused on training, communication and visibility, and finances. The plan aims to improve these areas and build a reserve for unforeseen expenses. Mike also announced the revival of the Public Awareness Committee and encouraged more frequent strategic planning sessions.

Budget, Training, and Legislative Engagement

Nicki Pellenz, MWUA Executive Director, discussed the budget and the need for a more nuanced approach to financial reporting. She emphasized the importance of building out our training offerings and the potential for reaching out to consultants to provide training. Nicki also mentioned the need for a change in the TaP committee, suggesting the formation of subgroups for different tasks.

Roger Crouse, Legislative Committee Chair, highlighted the importance of building relationships with local legislators.

Amy LaChance, Director Maine Drinking Water Program, provided an update on the Drinking Water Program and the State Revolving Fund, mentioning the recent attention on PFAS and the need for transparency in funding. Amy also discussed the impact of the new regulations of per- and polyfluoroalkyl substances (PFAS) and the changes in the Federal regulations, including the requirement for two samples 5 to 7 months apart. She encouraged systems to submit their lead line inventory, even if it is all unknown, and expressed concern about the cost of regular testing for non-PFAS systems.

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MWUA: 2024 October Bi-Monthly Meeting Recap (cont'd)

New Director Introduction and Utility Meetings
Jody McColman, the new Director of Telephone and Water Utility Industries at the Maine Public Utilities Commission, introduced himself and expressed his openness to addressing any concerns or questions from utilities; including his willingness to visit utilities to discuss their systems. Christina Trufant, the Public Engagement Liaison, shared information about ongoing meetings between water utilities and the fire marshal's office to discuss overlapping issues and plan accordingly.

TECHNICAL PRESENTATION & PANEL DISCUSSION:

Addressing Water Utility Rate Disparities and Solutions
Bill Harwood, Maine's Public Advocate, discussed that increasing water rates disproportionately impact low-income households. He proposed exploring creative solutions through the Water Ratepayer Assistance Project and introduced Dave Fox, an expert on financial rates and affordability. Dave provided an update on his work with Bill's team. Dave emphasized that water affordability issues in Maine stem from poverty rather than high bills. He noted that increasing rates funds necessary infrastructure projects and water utilities must maintain trust by reinvesting in their infrastructure.

Water Infrastructure Maintenance and Affordability Challenges
Dave further discussed the financial burden of water infrastructure maintenance and the need for reinvestment. He acknowledged challenges in providing relief to low-income customers and explained different rate structures, introducing the concept of customer assistance programs, funded through rates, which provide discounts to low-income customers. Dave emphasized the importance of data collection and analysis for implementing customer assistance programs and discussed the challenges of determining the right amount of relief for customers. Lastly, he reviewed the challenges of aligning rate structures with affordability and cost of service, and the shift in rate design methodologies to focus on community and utility priorities.

Water Assistance Program and Affordability Strategies
The panel discussed the development of a statewide needs model, which would require significant investment and the importance of understanding the needs under different frameworks and parameters, and concluded with a discussion about utilities being more proactive about asset management and financial planning. They also discussed communication to educate rate payers about the water industry and acknowledged the lack of understanding about the water industry among the public and stressed the importance of educating them.

Balancing Interests and Affordability in Utilities
Stephani Morancie discussed the role of the Public Utilities Commission (PUC) in balancing the interests of utilities and ratepayers. She expressed support for local control and the idea of discussing affordability more often in the industry.

The meeting also touched on the topic of affordability and the potential for a statewide or federally funded system. The panelists discussed the trend of utilities moving towards more aggressive tiering of fixed charges and implementing block rate structures. They also discussed the potential for restructuring charges, looking at alternative fees for fire protection, and considering standalone irrigation rates. The conversation also highlighted the challenges of rate design and the potential for customer relations problems.

Discussing Low-Income Customer Assistance Programs
Bill Harwood proposed a program to assist low-income customers with their water bills, suggesting utilizing data from the Department of Health and Human Services to identify eligible customers. He mentioned the possibility of automatic enrollment for those enrolled in social welfare programs.

There was a discussion highlighting helping small utilities understand disconnection processes and payment arrangements for struggling customers.

At the conclusion of the panel discussion, Bill concurred there are challenges faced by the water utilities industry, particularly in terms of affordability and infrastructure maintenance and suggested that a statewide regulated program through the Public Utilities Commission could provide more flexibility in designing solutions. He also highlighted the importance of customer education and outreach in creating a sustainable program, with Dave noting that such programs could lead to improved collections and more people paying their bills.

KEY TAKEAWAYS

- Water rates are increasing faster than inflation, creating affordability challenges for low-income customers
- Maine utilities have varying approaches to affordability; some offer payment plans or adjust rates
- There's debate over implementing statewide customer assistance programs vs. local/utility-specific solutions
- Administrative burden and funding sources are key concerns for any potential assistance programs

Water Affordability Overview

- Water bills have increased 225% over 25 years vs 100% for median income
- ~10-15% of Maine households pay >2% of income for water
- Average annual water bill in Maine is $428, in line with nearby states
- Smaller utilities (<10,000 population) tend to have higher affordability burdens

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MWUA: 2024 October Bi-Monthly Meeting Recap (cont'd)

Current Approaches to Affordability

- Maine had a temporary $4.7M statewide assistance program
- Customer outreach and education are important for program

Potential Assistance Program Considerations

- Income verification and enrollment processes need to be streamlined
- Funding sources debated - ratepayer funded vs. external funding
- Administrative burden on small utilities is a major concern
- Balancing revenue stability with affordability is challenging

MWUA: 2024 June Bi-Monthly Meeting Recap

Maine Water Utilities Association held their June Bi-Monthly Meeting in Houlton on June 13th. The event was a success, kicking off with a round of golf at the beautiful Mars Hill Country Club, followed by a lively Meet & Greet at the Houlton Elks Lodge the evening before the meeting. The venue provided a great opportunity for members to connect in a relaxed setting, with live music and bowling, before diving into business the following day. A special shout-out to our Meet & Greet sponsors EJ Prescott and J. McLaughlin Construction.

The technical program featured a session led by Paul Van Savage, Director of Human Resources at EJ Prescott. Paul shared the best practices that the EJP Human Resources team employs to recruit and retain top talent. He emphasized the importance of effective onboarding processes and interview techniques, noting that the average cost of finding, onboarding, and training a new employee is nearly $4,000. As Paul highlighted, investing in employee retention is far more cost-effective than the expense of bringing a new hire up to speed.

MWUA ANNUAL SUMMER OUTING RECAP

On August 8th, the Maine Water Utilities Association held its Annual Summer Outing at Cumberland Fairgrounds. The day kicked off with a Technical Session on enhancing GPS collection and the MWUA Technology Committee created a hands-on scavenger hunt using GPS equipment. Following the technical session, Travis Jones of Olver Associates, coordinated an exciting cornhole tournament and attendees competed for the coveted cornhole championship belts. Congratulations go out to Logan Soule and Steve Bechard for crushing a field full of opponents. A surf and turf lunch was served, including an ice cream dessert social provided by Wright-Pierce. The 50/50 raffle raised funds for the Scholarship Committee, and they raised enough for a scholarship between the Summer Outing and Golf Tournament - thanks to everyone who took a shot at winning the cash! The desired and fashionable "red jacket" was awarded to Rick Anair for his tireless help with the annual MWUA Golf Tournament. We rely on sponsorships to help defray the cost of the Summer Outing and we want to send a special thank you to our sponsors for supporting this great event:

- Team EJ Prescott
- Seaboard Drilling
- Ferguson Waterworks
- Tensile Water
- Wright-Pierce
- Ti-Sales
- FW Webb Company
- Core & Main
- CN Wood Co
- Hayes Group
- Statewide Aquastore

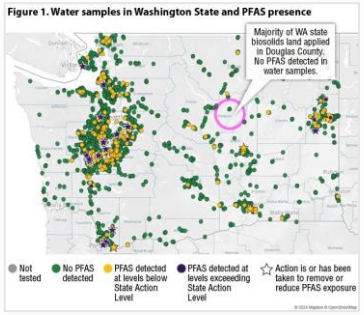
Connections: Why there is More to the PFAS Story

By: Sally Brown

Note: this article is reprinted from New York Times & BioCycle, full article is available here: Connections: Why There Is More To The PFAS Story | BioCycle

The New York Times (NYT) is continuing its reporting on PFAS and sewage, and BioCycle is continuing its analysis and response (see Part I). The latest installment was published September 21 (Tabuchi, 2024). The take home message once again is that sewage is poison, and it is being spread everywhere.. You read the article and conclude that banning the biosolids is the way to get rid of PFAS once and for all.

While there are some true statements buried in the piece, it starts with a big whoopsie. The reporter notes that sludge is spread on millions of acres of farmland each year, citing a 2018 national biosolids management study. Actually, while there are about 2.7 million acres permitted to receive biosolids, there are only 182,000 acres where biosolids are actually applied, which reflects how much biosolids touches soil. This is a much smaller number that clearly is too low to qualify as everywhere — and nowhere near enough to be the root of the problem we are now facing. This reality is illustrated in Figure 1.



Graphic courtesy Washington State Department of Health

The NYT article focuses on a family farm in Maine. The family eats beef from the organic family farm that, you guessed it, had toxic sludge applied years back. Likely as a result, the kids have elevated PFAS in their blood. This is a terrible thing to happen to anyone. No argument there. The argument is in how to best reduce PFAS exposure for everyone, including this family.

Getting to the Source

Realize that there simply is a tiny minority of biosolids with enough PFAS to pose a concern, and everyone has PFAS in their bodies already. This is the case whether or not they have ever been near a wastewater treatment plant or a pile of biosolids. This is true even if they live in a state where all biosolids are burned (talking about you, Connecticut). This is the case even if they eat only organic food. It is not only in our (U.S.) blood. A recent study that sampled corpses in Spain found PFAS in brain, lungs, kidneys and bones. Granted, the concentrations of the two prohibited compounds (PFOA and PFAS) in our blood have gone down since their use has been phased out, but it isn't like our blood is as pristine as rainwater. Come to think of it, the rainwater has PFAS in it too. Clearly the problem goes way beyond a few water reclamation facilities.

No one, not even people that like and use biosolids, want forever chemicals coursing through their blood. Pointing the finger at the toilet or treatment plant is missing the point. Understanding the varied sources of PFAS and the varied ways we are exposed to them is the way to understand the extent of this crisis and to find a way out of it.

Bottom line: Our PFAS exposure is not that simple.

There are a few facts that the NYT's second article gets right. The family that is the focus of the article was exposed to PFAS through historic uses of now prohibited compounds. The high concentrations of PFAS, likely PFOA and PFOS on the family farm, were from legacy uses of amendments. The family is in Maine, and Maine is ground zero for sludge and PFAS. That is because the primary source of PFAS in Maine was papermill sludge from producing coated paper, primarily for food packaging. At least one of these mills discharged into a municipal wastewater treatment plant. What has happened to this family and to the other 60 farms in Maine that have been impacted is awful. We absolutely should work to identify farms that have been impacted by chemicals that were used in the past.

Another part of the NYT article that rings true is the acknowledgement that these forever chemicals, the ones still being made, are "widely used in nonstick cookware, raincoats, firefighting gear and other products." The reporter also says that the government suggests that the most common routes of exposure are likely eating foods and drinking water that are contaminated. Note here that the vast majority of contaminated foods and drinking water have not been anywhere near biosolids or wastewater. Think airports and military bases. Because PFAS are everywhere and in everything (a gross generalization that isn't too far off) it is difficult to ascertain exactly what the most important sources of PFAS are. The exceptions are cases, like the family in the NYT article, where there is a clear point source. Thankfully those cases, at least those associated with biosolids, are the rare exception. For the bulk of us, it is a question of teasing out which of the many potential sources are the most important.

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Connections: Why there is More to the PFAS Story (cont'd)

Pathways Of Exposure

A way to start is by going over how that PFAS lurking in various places in your house can potentially enter your body and perhaps cause you harm. These are the ways that PFAS has a chance of being absorbed:

- **Inhalation**: Breathing in particles that contain PFAS, such as household dust.
- **Ingestion**: Eating or drinking liquids or solids that contain PFAS. Food and water are the obvious culprits here. Also realize that you may unintentionally eat some of the paper that your sandwich came wrapped in.
- **Dermal adsorption**: Touching something that contains PFAS and having the PFAS absorbed through your skin. Different types of cosmetics would fit into this category.

Of all of these, the water category is the most direct. People drink water at home. They use water to cook with. Water is a main ingredient in both coffee and tea. In addition to drinking water, water also comes into contact with your skin. Every time you take a shower or a bath you come in contact with water— hopefully nice and hot water but still water even if it is low pressure and tepid. Water as an exposure pathway is one that you experience multiple times a day, every day. You also typically are exposed to the same water day after day except for maybe that Alaska cruise vacation or that VRBO at the ski resort.

Nonstick Pan

Here I am getting at something that I alluded to earlier in this column. For the PFAS in any particular medium — be it your nonstick pan or your lipstick — the frequency of exposure is critical. Here is another point that the NYT article got right. The family at the focus of the piece ate beef each week from the same farm with the high historic PFAS contamination. A single, high PFAS source that was a regular exposure pathway. If you use your Teflon pan for every meal and eat most meals at home, it will be a much more likely source of PFAS to your system than if you leave it in the cabinet and eat takeout.

Stain-Resistant Carpet

If you're like my friend Leslie's mother, who wouldn't take out the garbage without a full face of makeup, that makeup may be a likely source of exposure. For me, who still has the original tube of lipstick that I bought in my twenties (Cherries in the Snow), that exposure route is much less significant. My pet-resistant carpet is likely my primary source.

Drinking Water

Water is also a strong example as a number of communities have drinking water high in PFAS. These locations can serve as case studies. One paper I read measured PFAS in breast milk for mothers in Uppsala, Sweden where the drinking water had been contaminated from use of fire-fighting foam (Miaz et al., 2020). With a predominant source of exposure, it makes it much easier to understand how much PFAS we absorb and how long it stays in our bodies.

Household Dust

PFAS in dust can make it through your skin. Apparently, applying moisturizer serves as a barrier, according to researchers.

Other exposure pathways aren't so obvious. Take household dust for example. It can be inhaled or ingested. Those are clear pathways for the PFAS in your dust to get into you. Can PFAS also work its way through your skin? Does that depend on which of the many versions of PFAS you are talking about? Another study looked at dust and cosmetics to see if the PFAS in dust could be absorbed through your skin and if what you put on your skin had an impact. To do this, the authors developed a laboratory test to mimic skin using manufactured sweat. It turns out that PFAS in dust can make it through your skin. Apparently, applying moisturizer not only keeps your skin young looking, it serves as a barrier for PFAS (Ragnarsdóttir, et al., 2023).

This discussion has likely made you a bit jumpy. You may be dusting as you read it, with that almost forgotten COVID mask on your face. You may have ordered a new set of iron pans and put the nonstick in the giveaway pile. In addition to the disservice the NYT series has done to municipal biosolids, they have also done a big disservice to people in general. While this latest article has a few true points, they are lost in the sensationalist reporting. Responsible journalism would make it clear that we are all victims of PFAS, that it is a complicated issue and that the one, clear way to reduce the hazards associated with these chemicals is to stop using them in seemingly every product known to man.

Sally Brown, BioCycle Senior Adviser, is a Research Professor at the University of Washington in the College of the Environment.

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Climate Change Resiliency

Protecting water and wastewater infrastructure in Maine.

The rate of sea level rise is increasing, and studies forecast that the intensity, duration, and frequency of extreme storm events will continue to become more damaging to water and wastewater infrastructure across Maine. Many Mainers experienced these effects during the recent storms in December and January. Well established public infrastructure is being impacted and these impacts are likely to increase over time. Recently, many communities have embarked on initiatives to evaluate likely impacts to their infrastructure and drinking water supply sources and identify strategies for adapting.

Wright-Pierce has long focused on adaptation solutions that are attainable and backed by sound engineering. We routinely assist community leaders in evaluating the impacts of high intensity storm events, worsening flooding, coastal hazards (sea level rise, storm surges, loss of power), and other impacts to critical infrastructure and drinking water sources. We identify alternatives and provide design and construction engineering services to implement recommended improvements and adaptation measures.

Obtaining funding for the improvement of these valuable assets, specifically projects with climate adaptation considerations, is a major challenge for communities.

Wright-Pierce's experience with funding sources such as FEMA, MIAF, Clean Water SRF, USDA Rural Development, CDBG, EDA, NBRC, and the Community Resilience Partnership helped us to serve Maine communities and secure over $53M in grant funding in the state from 2021 to 2023.

In the 2022 round of Maine Infrastructure Adaptation Funds, Governor Janet Mills' administration awarded $20M of funding for municipal investments to protect vital infrastructure from the effects of climate change. Wright-Pierce worked with our clients to secure over half of the available funds. These communities were fortunate to have completed planning studies to identify climate change impacts and were prepared to quickly mobilize for this funding opportunity to aid in the advancement of their projects.

Wright-Pierce is helping lead the way for municipalities in Maine and beyond to help address the daunting task of climate change. Our team of engineers and strategic funding specialists invest time and resources to stay informed to advise our clients. Contact us at 888-621-8156 for more information. **Contact us at 888-621-8156 for more information.**

Climate change impacts municipalities from York County to Aroostook County and is an important consideration in the design of critical infrastructure.

PFAS Exposure Pathways

Biosolids, Household Dust and Consumer Products

Per- and polyfluoroalkyl substances (PFAS) are synthetic chemicals found in various consumer products, household items, industrial processes, and even biosolids used in agriculture. The exposure pathways to PFAS are generally classified into multiple categories, including:

- Biosolids (sewage sludge): These are organic materials resulting from the treatment of domestic sewage, often used as fertilizers in agriculture. PFAS from wastewater can accumulate in biosolids, which, when applied to soils, can expose populations to PFAS through the environment (e.g., contaminated water, food grown in these soils).
- Household dust: PFAS are present in many household items like carpets, furniture, and electronics. These chemicals can accumulate in dust particles, which are inhaled or ingested by people in homes.
- Consumer products: Many everyday products, such as non-stick cookware, stain-resistant fabrics, makeup, and food packaging, contain PFAS. Exposure occurs through skin contact, ingestion, or inhalation.

Concentrations

- Concentrations in biosolids typically range from several ng/g to several hundred ng/g, depending on the type of wastewater treatment and the source of PFAS entering the plant.
- Household dust concentrations can vary widely depending on the specific PFAS compound and the home's characteristics (e.g., age, materials used). The range is often between 0.1 ng/g and several hundred ng/g of dust, with certain longer-chain PFAS compounds (like PFOS and PFOA) being more prevalent.
- Consumer products have a much higher level of pfas concentration. Here are just a few examples:
    - Studies have found PFAS concentrations in treated fabrics ranging from 100 ng/g to over 10,000 ng/g. For example, jackets or fabrics marketed as "water-repellent" or "stain-resistant" often contain PFAS coatings.
    - PFAS are not typically measured in the cookware itself but can be released under certain conditions, such as high heat or wear. Studies have shown that damaged non-stick coatings can leach PFAS, although new regulations are leading to shifts toward alternatives.
    - Studies have found PFAS concentrations in food packaging ranging from 1 ng/g to several hundred ng/g. For example, microwave popcorn bags and burger wrappers often have higher PFAS concentrations due to the grease-proofing chemicals used.
    - The concentration of PFAS in personal care products can vary, but levels between 10 ng/g and 1000 ng/g have been reported in products like foundation and sunscreen. PFAS can also be found in dental floss, with one study showing concentrations between 10 ng/g to several hundred ng/g.
    - Concentrations in firefighting foam can range from milligrams per liter (mg/L) to grams per liter (g/L) depending on the type and formulation.
    - Concentrations in stain-resistant treatments can range from 1000 ng/g to over 10,000 ng/g, depending on the product. For example, carpets treated with Scotchgard, or other similar chemicals often contain high levels of PFAS.
    - The concentrations of PFAS in cleaning products can vary widely, but levels of 100 ng/g to several thousand ng/g have been reported for certain products.
    - Fluorinated ski waxes can contain PFAS concentrations ranging from thousands to tens of thousands of ng/g, especially in high-performance products.

Exposure Estimates

While there is no definitive nationwide estimate of the exact number of people exposed to PFAS via biosolids compared to household dust and consumer products, researchers have made the following general observations:

1. Biosolids as a pathway:
    - Agricultural exposure: There are approximately 900 million acres of agricultural land in the United States. Each year the United States generates 7-8 million dry tons of Biosolids from wastewater treatment. Roughly 50% of these biosolids (~3.5-4 million dry tons) are applied to agricultural fields in several U.S. states. That represents 0.1-0.2% of all agricultural land in the United States. This practice mainly exposes those farm workers and a very small percentage of the rural populations, though the potential for broader population exposure does exist via contaminated food and water sources.
    - PFAS contamination of water supplies, especially drinking water, due to legacy biosolid application has been a growing concern. Communities downstream from biosolid-treated lands can be exposed through drinking water, affecting millions of people in the U.S.

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PFAS Exposure Pathways (cont'd)

2. Household dust and consumer products as pathways:

- Widespread exposure: PFAS are nearly ubiquitous in households across the U.S., particularly due to their presence in common products like non-stick cookware, stain-resistant fabrics, and certain packaging.
- Household dust exposure is nearly universal, as most homes have products that can release PFAS into the environment. In one study, PFAS were found in over 95% of dust samples collected from U.S. households.
- Consumer products expose individuals across all demographics and regions. Because these products are so widespread, virtually everyone in the U.S. has some level of exposure. Studies have found measurable levels of PFAS in the blood of over 98% of the U.S. population.

Comparison

Biosolids exposure affects specific communities, particularly those in agricultural or rural areas where biosolids are applied to land. The number of people exposed to PFAS through this pathway is likely in the millions but is smaller in comparison to household and product-based exposure pathways.

Household dust and consumer products represent a much broader and more ubiquitous exposure pathway, impacting virtually all Americans (~330 million). PFAS are nearly unavoidable due to their widespread use in consumer products, making this the dominant pathway for the general population's exposure.

In summary, while biosolids contribute to PFAS exposure for certain communities, the vast majority of the U.S. population is more likely exposed to PFAS through household dust and consumer products which have substantially higher concentrations of PFAS.

MWUA's Annual Golf Tournament

On Wednesday, August 7th, the Maine Water Utilities Association hosted its annual golf tournament at the beautiful Val Halla Golf Course in Cumberland, Maine. The event brought together professionals from across the industry for a day filled with friendly competition, camaraderie, and fun.

Despite the early morning clouds, the weather turned out to be near perfect. By midday, participants enjoyed sunny skies with a light breeze, ideal conditions for an 18-hole, round of golf. The course, well-maintained and challenging, provided the perfect setting for both seasoned golfers and beginners alike.

One of the highlights of the day was the exceptional food. Burgers and hot dogs were served "at the turn" and a BBQ award luncheon was catered by Rachel's On The Green. Participants were treated to a delicious spread that kept everyone fueled and ready for the tournament.

Check out our website, mwua.org, for photos of the event.

Tournament Results:

NET:

3rd Place Net: EJP Lockhart
2nd Place Net: MRWA
1st Place Net: Sensus

GROSS:

3rd Place Gross: DN Tanks/MWC
2nd Place Gross: EJP Burdin
1st Place Gross: EJP Pelkey

Closest to the Pin (Hole #3): Mike McCarthy
Men's Longest Drive: Tyler Doyon
Women's Longest Drive: Lucie Hannigan
Putting Contest Winner: Zach Chaput
Highest Scoring Team: Sawdey Solution Service

Congratulations to all the winners and a big thank you to our sponsors and participants for making the day a great success.

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- Northern Data Systems
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- Sensus
- Team EJP
- Team QWP
- Team SEP
- Team UP
- The Sherwin-Williams Co
- Tighe & Bond
- Ti-SALES
- Wright Pierce

MWUA's Annual Golf Tournament (cont'd)

LUNCHEON SPONSOR – BBQ

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- FOOD AT THE TURN
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- DRINK CART
- AMERICAN CONCRETE

GOODIE BAGS PROVIDED BY MACHIAS SAVINGS BANK, with snacks donated by:

- FRITO LAY
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GOLF TEAMS

- AE Hodsdon Engineers
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- Azelis/Monson
- Bangor Water District
- DN Tanks/MWC
- Ferguson Waterworks
- Jolly Team
- KKW – Johnston
- KKW – Richardson
- Machias Savings – Durr
- Machias Savings – Hannigan
- McWane Ductile
- MRWA
- Neptune
- Nicki's Better Half & Friends
- Portland Water District
- Sawdey Solution Services
- Sebago Technics
- SENSUS
- Sherwin
- Team EJP - Burdin
- Team EJP - Chadwick
- Team EJP - Lockhart
- Team EJP - Pelkey
- Team EJP - Pomerleau
- The Maine Water Company
- The Sherwin-Williams Company
- Ti-SALES
- VEGA
- Wright and Wrong
- Wright-Pierce – Campbell
- Wright-Pierce – Lacombe
- Yarmouth Water District

Thank you to all sponsors, volunteers and golfers for your support we were able to support the Scholarship Committee with a $1,000 donation. We look forward to another fantastic tournament next year!

MEWEA Public Relations Committee Update

The Public Relations Committee has been hard at work this year on a number of media initiatives in collaboration with Black Fly Media. The main focuses have been to inform the public, legislators, and other members of the clean water industry on key issues and potential solutions, including the state of the biosolids landscape and impending crisis in Maine, looming workforce concerns in our industry, the impact of climate resiliency on future infrastructure, and the implications of new federal PFAS limits in drinking water. The Committee has also worked to highlight several local stories from MEWEA members to highlight the positives of the critical work that is done every day in our industry. Below is a summary of media placements from the committee's efforts to date this year.

Media Hits to Date (2024):

Veterans / Water Workforce

- Wastewater Digest
- Waterworld
- WGME
- WPFO
- Wide distribution on Newsbreak
- Kennebec Water
- Wastewater Digest

Juniper Ridge Op-Ed

- Press Herald
- Bangor Daily News

Public Works Podcast

- Phil Tucker & Amanda Smith

New Drinking Water PFAS Limits

- Portland Press Herald

Press Release on Biosolids Study Results

- Wastewater Digest
- News Center Maine (Article)
- News Center Maine (Video)
- CBS 13 News
- CBS 13 News (Article)
- Fox 23 Maine
- Verrill Law

Coastal Climate Resiliency at WWTFs

- Bangor Daily News

MEWEA informed this story and provided all assets to the reporter, but reference to MEWEA was ultimately cut

Biddeford Pool Pilots Green Technology to Save Money and Take Climate Action

- Portland Press Herald
- Wastewater Digest

Managing Your Water Source and Adapting to Changes

18th Annual Drinking Water Protection Seminar

Hosted by the Maine Water Utilities Association, Water Resources Committee

On September 11th, the Water Resources Committee of Maine Water Utilities Association hosted its 18th Annual Drinking Water Protection Seminar at the Augusta Civic Center. The event, titled "Managing Your Water Source and Adapting to Changes," covered the impacts of climate change on water quality and source protection.

Key sessions included discussions on adapting to weather impacts, the resilience of Maine's lakes, the importance of collaborating to protect Sebago Lake and the evolution of the Greater Augusta Utility District's water supply.

Same Source Water, Changing Water Quality, Adapting to Weather Impacts:

Anne Malefant and Al LeBlanc, from CDM Smith, discussed the numerous ways that the changing climate is impacting efficient and effective drinking water treatment, especially during intense rainstorms and warming water. The presentation included a variety of case studies throughout New England and the United States to illustrate the challenges faced by public water utilities.

Protecting Sebago Lake: Presence, Collaboration and Partnerships:

Chad Thompson, Source Water Protection Coordinator at Portland Water District, emphasized the importance of protecting Sebago Lake, a key water source for the region, which is the water supply for 20% of the state's population. It is one of the state's most popular multi-use lakes and protecting it is both an art and a science. With very little authority and immense responsibility, a key part of the Portland Water District' source protection program is building relationships and working with regulators and stakeholders to identify opportunities for lake protection that benefit all parties. With a lake as large and multifaceted as Sebago, it's largely through relationships, partnerships and influence that the most meaningful source protection happens.

Maine Lakes in the Era of Climate Warming:

Scott Williams, Limnologist, has more than five decades of experience in assessing and protecting the health of Maine's lakes. He reviewed the threats that climate warming poses to Maine's lakes, the changes that have already been documented and what will likely occur in the future. He reviewed measures that can be taken to make our lakes more resilient to the effects of a warming climate.

The Evolution of GAUD's Drinking Water Supply:

Andy Begin, Assistant General Manager/Chief Engineer of Greater Augusta Utility District (GAUD) discussed the history of GAUD's drinking water dating back to the 1870s when it was the privately held Augusta Water Company. Today, GAUD serves around 5,700 customers with a current daily demand of 1.6 million gallons.

Attendees had a full day discussing the challenges faced by public water utilities due to climate change; emphasizing the need to adapt and manage water quality, including the importance of partnerships, communication, and collaboration in addressing water quality challenges and promoting conservation efforts.

"Water is life, conserve it."

Water & Wastewater Professionals Appreciation Day

It was a warm day overall, ideal for an outdoor event like the Water and Wastewater Professionals Appreciation Day at the Portland Sea Dogs on June 22nd. Maine Water Utilities Association and Maine Water Environment Association partnered to honor the men and women in the water industry, celebrating their hard work and commitment to clean and safe water. With the help of Slugger and our Water Drop, this event brought together professionals from across Maine to enjoy a fun day and barbecue at the ballpark with their families and colleagues.

(cont'd on next page)

Water & Wastewater Professionals Appreciation Day (cont'd)

Exercising Your Emergency Response Plan

What are the bumps in the night that keep you awake? From natural to manmade hazards there are many things that could pose a threat to the successful operation of a water utility. Planning and training have been identified as best practices for ensuring the adequate and successful operation of any water utility.

Training is key to building resiliency in water systems. An effective and safe response to emergencies depends on the successful implementation of a system's plans and/or procedures. When new plans and procedures are adopted/updated, staff should be trained. Additionally, topics should be revisited routinely, so that staff are prepared and armed with the latest and most useful information available. Will your staff be prepared for the next bump in the night?

Excavators are an essential piece of heavy equipment at most water and wastewater utilities. That being said, oftentimes they are overlooked when determining equipment needs and upgrades. Is your excavator up to the challenges posed by modern water/wastewater projects?

Project managers can and should evaluate their needs against their excavator and its capabilities. Some key areas to consider include:

- Digging Depth & Removal Per Day – Time and energy is money. Can your excavator operate efficiently: digging deep enough, fitting within the space confinements, and be cost effective at moving materials (e.g., cost of dirt removal per yard)?
- Age & Total Operating Hours – Is it time to perform maintenance and/or replace your excavator?
- Energy Source – Most excavators are diesel powered, but newer machines are usually more fuel efficient and some have zero-emission capabilities.
- Reliability – Time and energy is money. Breakdowns can slow progress and be expensive to fix.
- Excavator Type:
    - Wheeled Excavator – Are efficient on roadways but have a decreased digging depth compared to track mounted models.
    - Track Mounted Excavator – Are rugged, durable, and can be used in most applications.
    - Vacuum Excavator – Is non-destructive, safer, can be used in tight spaces.

When was the last time you evaluated your excavator? Is it still up to par with your system's needs?

Getting Involved & Being Prepared – MWUA Announces Four Regional Tabletop Exercises

Maine Water Utilities Association is pleased to announce that they will be coordinating and conducting four regional tabletop exercises around Maine. We'd like to give a big shout out to the Maine DWP for supporting us in our efforts to build resiliency in Maine's water infrastructure/ water systems! With their generous sponsorship, we are able to provide these exercises free of charge! The four regions that have been determined are the Southern Maine region, the Western Maine region, the Central Maine region, and the Northern Maine region.

Currently, these tabletops are still in the planning phases, so if you are interested in helping/participating, please reach out to Dan Bahun at dan@tomswatersolutions.com or 207-239-4021.

Visit Us Online!

Make sure to check MWUA and MeWEA regularly. We continually post up to date and relevant information on events and topics that change daily.

Visit MeWEA.org

Visit MWUA.org

In Summary...

Don't have a lot of time?

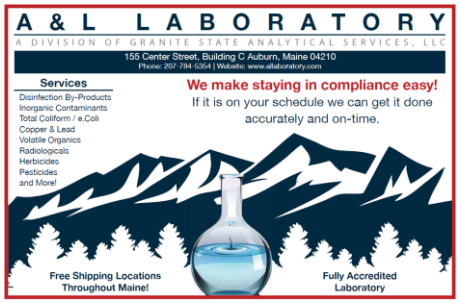
Below is a summary of some of the main topics in this issue:

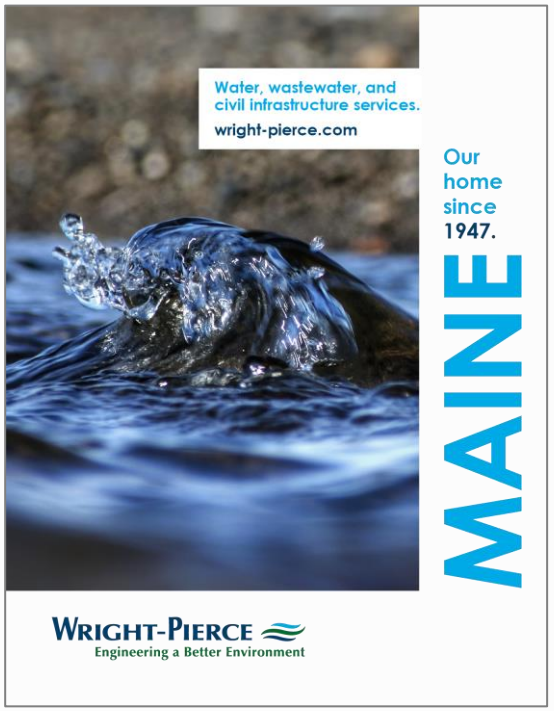
- Have you heard we are going digital?
- Learn more about our featured community water system here
- Wishing it were summer? Check out the article on the recap on MWUA's Summer Outing

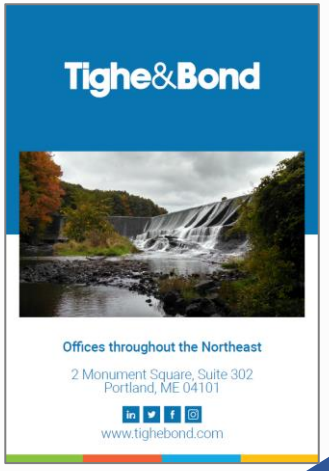
Thanks for taking the time to read our newsletter. If you have any comments or suggestions, feel free to let us know. We'd love to hear from you!

Thank you to
Our Partners

Many of the initiatives we have are possible because of supporting partners like the ones featured here. Let's support them back!







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