

# Speaker Bios and Abstracts for Video Series

## 2024 Plant Operations Conference

**Session Title:** VDH Regulatory Update

**Speaker Name:** Daniel B. Horne, PE

**Speaker's Credentials:** Daniel B. Horne, PE is an Engineering Field Director with the Virginia Department of Health's Office of Drinking Water, serving in the Southeast Virginia service area. It's not quite true that he has been with VDH since the Dark Ages. He has represented the Department on national and state committees looking at water reuse, water desalting, and membrane technology issues for a number of years. He earned his BS (Civil Engineering) and MS (Sanitary Engineering) degrees from Virginia Tech and is a licensed professional engineer in Virginia. He is a living example of the maxim "good things happen to those who hang around long enough and put in a little effort". He is a Life Member of the Virginia Section of AWWA and is a former Chair of the Section. He is also a member of several of the other usual technical and professional societies that feature expensive reference books and cheap group insurance rates. His avocation is expressed by his seasonal job as a scoreboard operator for the Norfolk Tides, the Triple-A affiliate of the Baltimore Orioles – he recently started his twenty-first year in that capacity.

**Abstract:** VDH Regulatory Update. The presentation will primarily focus on areas of major current interest to the drinking water community, including but not limited to Per- and Poly-fluoroalkyl Substances (PFAS) and the Lead & Copper Rule Improvements.

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**Session Title:** O&M to AM (Asset Management) an operator's role in the bigger picture

**Speaker Name:** Scott Mattice

**Speaker's Credentials:** Scott Mattice

Senior Principal Business Analyst

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B.S. Business Administration University of Maine at Machias

MBA Raymond A. Mason Business School at the College of William and Mary

Class 1 Wastewater Works Operator (VA)

10+ years of experience in wastewater O&M

Experience includes:

Leadership of both Operations and Maintenance groups.

Supporting and Implementing Asset Management as an owner

Most recently:

Consulting on Utility Management, Asset Management and Operations Support

**Abstract:** Successful asset management programs require quality data for informed, data-driven decisions. However, many organizations encounter challenges with data quality and data confidence to support their asset management programs. We will discuss the critical aspects of asset management, specifically day-to-day operations, the importance of data, and the impact that operators have in achieving data quality and data confidence goals.

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**Session Title:** On-Site Hypo Generation Systems at the New Ulm and Baxter Water Treatment Plant: An Operations Focused Case Study.

**Speaker Name:** Brad Weiss

**Speaker's Credentials:** Brad Weiss, PE - Short Elliott Hendrickson. Brad Weiss is a drinking water project manager with Short Elliot Hendrickson, Inc. One of his primary goals is to help clients maximize the value of their previous investments by working with them on thoughtful and innovative rehabilitation projects. His work is focused on all things drinking water in the Mid-Atlantic region, the upper Midwest, and Texas. Brad is a registered Professional Engineer in Minnesota, Wisconsin, and Virginia. He obtained a Bachelor's of Civil Engineering from the University of Minnesota and a Master's of Environmental Engineering from Michigan Technological University.

**Abstract:** This presentation delves into the implementation of onsite sodium hypochlorite generation at the New Ulm and Baxter water treatment plants. With a spotlight on water treatment plant operators, the session navigates through the intricacies of the onsite hypochlorite generation process. Attendees will gain insights into the operational dynamics, challenges, and best practices associated with this innovative approach to water treatment. Through real-world examples and practical considerations, the presentation aims to equip operators with the knowledge and tools necessary to effectively utilize onsite hypochlorite generation for enhanced water treatment outcomes.

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**Session Title:** Operational Benefits from Chemical Feed System Replacements Done In-House

**Speaker Name:** Karlyn Owens

**Speaker's Credentials:** Karlyn Owens is a Civil Engineer with the James City Service Authority (JCSA) working on a variety of water production and distribution system projects. She is a graduate of Virginia Tech and a registered Professional Engineer in Virginia.

**Abstract:** Purpose: The purpose of this presentation is to summarize the operational benefits and lessons learned from the in-house design and construction of the replacement of four chemical feed systems at a reverse osmosis water treatment plant.

Session Description: The Five Forks Water Treatment Plant (FFWTP) is a 5 million gallon per day reverse osmosis plant owned by the James City Service Authority (JCSA). The FFWTP has four chemical feed systems: sodium hypochlorite, sodium hydroxide, zinc orthophosphate and an anti-scalant. After almost 20 years in operation, the original chemical feed systems were experiencing corrosion, chemical deposits, and leaks. JCSA recently completed the replacement of the chemical feed systems, with all of the design and construction work being done in-house. During planning and design, JCSA considered chemical compatibility, re-design of the finished water carrier loop, relocation of chemical injection lances, day tank sizing, and chemical feed metering pump operation. To minimize plant shut down, JCSA designed and built a temporary pumping skid to be able to continuously feed chemical while working on the chemical feed systems. Operational improvements to the facility include improved access to the metering pumps and injection lances, more chemical storage, additional redundancy, improved chemical compatibility, and improved pumping efficiency. This presentation will summarize how the in-house design and construction of the chemical feed systems saved money, reduced plant down time, and provided safety and

operational benefits. In addition, the presentation will identify how the project afforded staff a unique learning experience to understand the systems better and take ownership of the projects, and how better knowledge of the chemical feed systems and other lessons learned have been applicable to other sites and projects in the system.

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**Session Title:** How SURE?: SUstainability and REsiliency for Conventional Filters and Underdrain Systems

**Speaker Name:** Phil Pino

**Speaker's Credentials:** Phil Pino has a BS in Mechanical Engineering from the Rochester Institute of Technology and is the Director of Filtration Technologies at Beacon Water Technologies. He was the 2010 award winner of the ITT Geospatial Systems Silver Ring Quality Award for his work on the Green Belt project which resulted in a savings of \$80,000 and in 2006 won a General Dynamics Star Award for his work on a long-term assignment at GDATP Charlotte Operations, North Carolina.

**Abstract:** For well over a century, conventional granular media downflow filters have provided reliable, economic municipal water and wastewater treatment. Even today, this type of filtration system provides proven treatment capabilities and long-term maintenance benefits for conventional water treatment, biologically active filtration, wastewater tertiary filtration, membrane pretreatment, and denitrification. Though the process of granular media filtration is relatively well-understood, the resiliency and long-term performance of a filter may instead depend more on the filter underdrain design. As an example of longevity, the underdrain system utilized at the Metro Nashville (Tennessee) Omohundro WTP, listed on the US National Register of Historic Places, reliably operates after 90 years of service. Construction and operational details for the Omohundro WTP, Seguin TX WTP (c.1928), and other US water treatment plants, to include configuration, filtration performance, and backwash strategy, are provided.

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**Session Title:** Chloramine Disinfectant Residual Optimization and Management in Distribution Systems: Taming the Breakpoint Curve Automatically

**Speaker Name:** Brandon Isenhardt

**Speaker's Credentials:** Brandon is the Manager of Distribution Operations and Cross Connections for Loudoun Water in Northern Virginia. He started employment with Loudoun Water in 2005 shortly after graduating high school. Brandon began his career in the Line Maintenance Division repairing water distribution mains, and hydrants while also maintaining pumps, valves, and generators at water booster and storage facilities. In 2019, he and his team transitioned to the Water Operations Division where he now manages Distribution System Operations, which includes overseeing direct activities related to and the operation of pumping stations, water storage facilities, prv's/fcv's, and PAX chemical mixing systems. In the fall of 2020 Brandon added Cross Connection and Backflow responsibilities to his resume, managing proper Cross Connection practices, inspections and other related duties while enforcing Loudoun Water policies and state code/procedures.

**Abstract:** Chloramination as a disinfectant strategy in potable water systems provides benefits such as a lower potential for disinfection byproduct formation (THMs) and improved disinfectant longevity in distribution systems. The significant challenge, however, relates to the shifting chemical equilibrium between ammonia, chlorine and chloramines in utility water distribution

systems. Premature decay of chloramine compounds can release free ammonia into distribution systems and lead to nitrification, taste and odor issues as well as other complications as ammonia is consumed as a nutrient. Over chlorination, on the other hand, results in undesirable chloramine species that also result in taste and odor issues. Operational activities such as tank dumping, frequent tank cycling, chlorine “burns” in distribution systems and inefficient chlorine “boosting” in tanks and reservoirs increases utility expense due to unpredictable manpower scheduling, overtime and additional lab-work as operators struggle to meet water quality levels particularly in warm weather months. Most chloramine decay occurs post-treatment plant as water ages in pipes, reservoirs and tanks. Therefore, arresting chloramine degradation in distribution system storage proves to be the most efficient strategy in maintaining water quality and managing costs. Automatic disinfectant residual control systems (RCS) deftly manage the shifting chemical equilibrium along a reservoir’s disinfectant breakpoint curve to ensure that all free ammonia is reacted to provide an optimal level of monochloramine without overdosing chlorine which can result in the creation of undesirable di-chloramine and tri-chloramine. By combining aggressive tank mixing with precise and timely chemical reagent addition, an RCS system ensures that chlorine or monochloramine residual set-points are maintained without the need for constant and manual operator attention. Some of the largest water utilities in the country have turned to automatic RCS systems to solve their disinfectant residual issues as highlighted in a recent AWWA Partnership for Safe Water webinar. This presentation will discuss chloramine chemistry, automatic chloramine residual management and use several disinfectant residual management case studies.

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**Session Title:** Observatory Water Treatment Plant Upgrade: Operational efficiency, system resiliency.

**Speaker Name:** Daniel Campbell

**Speaker’s Credentials:** After graduating from Ferrum College in 2009 with his Bachelor’s degree in Biochemistry, Daniel followed the same path as his Dad and entered the field of municipal water treatment. In the past 14 years, he has served as; an operator, plant manager and lab director, department Supervisor and is now the water department Manager at Rivanna Water and Sewer Authority in Charlottesville, VA. Every day, Daniel leads a team of 25 highly motivated, water treatment professionals in operating five drinking water treatment plants and one groundwater system that provides wholesale potable water production services to Albemarle County Service Authority and the City of Charlottesville Department of Public Utilities. In Albemarle County, this includes the Town of Scottsville and the Crozet Community. In the City, this includes the University of Virginia. In recent years, a large part of Daniel’s job has been planning, design and incorporation of systems and infrastructure to ensure an adequate supply of excellent drinking water for decades to come. Today we will hear about how renovation elements and operational optimization efforts by he and his staff at their largest Urban Water Treatment Plant aligned to do just that.

**Abstract:** Rivanna Water and Sewer Authority (RWSA) is an independent agency providing high quality wholesale water and wastewater treatment services to Albemarle County and the City of Charlottesville. In 2020, they began a three-year \$38M extensive rehabilitation and renovation project on their 2 largest Urban WTP’s, one of those being Observatory Water Treatment Plant. The Observatory Water Treatment Plant is the oldest of the three urban plants, originally constructed in the mid-1950s. Since that time, very little has been replaced or upgraded at the facility. Until

recently, the sixty-year-old WTP has much of the original equipment that is inefficient, prone to unexpected failure, and has reached the end of its service life. In addition to providing needed equipment upgrades, the renovation increased the plant's capacity from 7.7 million gallons per day to 10 million gallons per day. Observatory's upgrade includes; transitioning from dry to liquid chemicals, a new chemical storage building with a focus on environmental and personnel safety, increased GAC filtration capacity, new chemical pumps and feed systems, reconfiguring the plants sedimentation basins with added plate settlers, a full rehab of the 5 existing filters, and modernizing the SCADA controls. This presentation will cover the operational benefits of the plant upgrade, how it provides production resiliency to meet Charlottesville and Albemarle County's projected population increase over the next fifty years, and the role Observatory's will play in RWSA's long term water resource management.

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**Session Title:** Preparing the Next Level of Future Water Operator Specialists For Our Changing Industry

**Speaker Name:** Betty Green

**Speaker's Credentials:** Betty brings over 34 years of experience to the Water Industry. Currently she is the Workforce Development Coordinator for Virginia Rural Water Association. Throughout her career, she has held various industry positions including trainer for the EPA (with emphasis on maintaining compliance with the Safe Drinking Water Act); field supervisor for Aqua Virginia; and wastewater treatment plant operator for the District of Columbia Water and Sewer Authority. As a Technical Support Manager for USA BLUEBOOK, she developed and delivered training to Water and Wastewater System Operation Specialists training programs and curriculums throughout the United States. Her consulting experience includes Operations, Maintenance and Asset Management Consultant for a total plant upgrade for Newtown Creek Water Pollution Control Plant located in Brooklyn, NY. Betty holds a B.S. in Environmental Science from Saint Paul's College and holds a Commonwealth of Virginia Wastewater Works Class II Operators License. She has been honored as Operator of the Year by the Virginia Rural Water Association and Trainer of the Year for 2023 EPA Region 1 New England Water Environment Association. On a personal note, she enjoys collecting tea pots, dolphins and owls.

**Abstract:** Within the next 2 to 5 years some water systems will be facing operator shortages within their systems due to advancement or retirement. This leaves Administration and Human Resource Specialists with the task of bringing in competent personnel to fill their vacancies. This presentation will discuss the water competency model that has been developed with competencies that are needed for future operators.

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## 2024 Education Committee Webinar

**Session Title:** Growing Your Next Water Generation: Hiring and Recruiting Successful Water Operators

**Speaker Name:** Robyn Tuck, WVWA; Marjorie King DPOR, Rob Turner, Stafford County Department of Public Utilities; Brian McReynolds, Virginia Rural Water Association

**Speaker's Credentials:** With over three decades of dedicated service at Carilion Clinic, Robyn Tuck pursued her passion for leadership training and development. Over the course of 30 years, Robyn worked to cultivate and empower leaders within the organization, fostering a culture of growth and excellence. In

2021, Robyn joined the Western Virginia Water Authority as the Manager of Training and Development, bringing her wealth of experience and expertise to a new arena. In this pivotal role, she has continued her mission of nurturing talent and driving organizational success. One of her key responsibilities has been overseeing the growth of the Registered Student Apprentice Program, further solidifying the Authority's commitment to developing the next generation of industry professionals.

Rob Turner is the Plant Manager for Stafford County Government with over 20 years in progressive roles as a water operator.

Marjorie King is responsible for managing WWWOSSP Board regulatory programs and education and compliance, in addition to managing education and compliance for the rest of the mouthful listed above.

Brian is the EPA Training Specialist for the Virginia Rural Water Association. He began his career as a Professional Engineer and through this found his passion for working with people. He became a Professional Coach with a focus deciphering and understanding diverse personalities and human communication. This forms the basis for each person to maximize their potential in whatever organization they are in. Brian is dedicated to a firm belief in the power of leadership to transform lives and organizations.

**Abstract:** This webinar will provide ideas, methods, and practices for growing the next generation of Water Industry Operators and assist management professionals in increasing operations knowledge and licensing for their staff. The aim is to provide ideas and the tools necessary to recruit staff, coach staff through the licensing process, and improve productivity. Hear from real industry professionals about their best practice solutions, what works, what doesn't, and the resources available to get more people involved and address licensed operator shortages.