

EPA's Office of Research and Development and Office of Water invite you to a **free webinar**



## UV Disinfection Systems – Treatment of Ground Water for Small/Medium-Sized Water Utilities

A certificate for one continuing education contact hour will be offered for this webinar

Tuesday, September 29, 2015  
2:00 to 3:00 pm EST\*

\*Optional Q&A session  
from 3:00 to 3:30 pm EST

### UV Disinfection – A Treatment Option for Small- and Medium-Sized Systems for SDWA Compliance

Recent research, technology advancements, and new drinking water regulations have brought significant attention to UV disinfection as an option for microbial treatment for small- and medium-sized public water systems (PWSs). UV disinfection is an effective treatment for the inactivation of *Cryptosporidium* in treatment of surface water supplies. Surface water systems that are required to provide additional *Cryptosporidium* treatment based on the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) may choose UV disinfection as a strategy to meet treatment requirements. The majority of PWSs (>90%) serve ground water and the majority (>90%) of ground water systems serve less than 3,300 people. The Ground Water Rule requires treatment for viruses for ground water sources found to be vulnerable to fecal contamination. UV disinfection can provide effective virus treatment and appropriately sized UV disinfection systems for small water systems have become more available. To ensure effective treatment is being provided, validation of the UV doses provided and monitoring of operational measures to ensure effective treatment are needed.

**Presented by Michael J. Finn, P.E. – EPA's Office of Ground Water and Drinking Water (OGWDW).** Michael is an Environmental Engineer with the OGWDW Drinking Water Protection Branch. He joined EPA in 2001 to work on the development of the LT2ESWTR, the Stage 2 Disinfectants and Disinfection Byproducts Rule and the Ground Water Rule and the related guidance documents. Michael is currently working with states and PWSs on the implementation of those rules, microbial water treatment issues, alternative treatment technologies and water availability and water efficiency in PWSs. Prior to coming to EPA, he was with the California drinking water program as a field engineer in the San Francisco Bay area. Michael holds a B.S. in Environmental Resources Engineering from Humboldt State University.

### Evaluation of an Innovative Approach to Validation of UV Reactors for Disinfection in Drinking Water Systems

UV disinfection is an effective process for inactivating many microbial pathogens found in source waters with the potential as stand-alone treatment or in combination with other disinfectants. EPA provided guidance on the validation of UV reactors nearly a decade ago; however, there remains no standard approach for validating UV reactors to meet a 4-log (99.99%) inactivation of viruses. Because of lessons learned over the years, validation practices have been modified and changes in operation and monitoring of UV systems need to be addressed. A particular challenge for medium-pressure UV is the monitoring of low-wavelength germicidal contributions for appropriate crediting of disinfection under varying reactor conditions of quartz sleeve fouling, lamp aging, and changes in UV absorbance of the water over time. This presentation will discuss EPA's evaluation, in partnership with state and industry collaborators, of new approaches for validating UV reactors to meet ground water and surface water pathogen inactivation, including viruses for low-pressure and medium-pressure UV systems.

**Presented by Jeffrey Adams – EPA's Office of Research and Development (ORD).** Jeff is an environmental engineer with ORD's National Risk Management Research Laboratory, Water Supply and Water Resources Division. Over the last decade he managed EPA's Environmental Technology Verification Drinking Water Systems Center, which conducted studies evaluating the performance and sustainability of water treatment and monitoring technologies, including filtration processes, membrane separation, adsorptive media, UV and disinfection processes, and advanced oxidation technologies. Jeff has managed, authored, and co-authored numerous technical articles and has served on American Water Works Association (AWWA) technical committees and AWWA Research Foundation project advisory committees. He currently serves as the assistance agreement manager for EPA-supported Water Research Foundation and Water Environment Research Foundation research studies. He received a M.S. and B.S. in Civil/Environmental Engineering from the University of Cincinnati.

**Webinar Registration:** <https://attendee.gotowebinar.com/register/7950813040781959937>

#### Who should attend?

State primacy agencies, tribes, community planners, technical assistance providers, academia, and water systems interested in issues facing community water systems and solutions to help solve them.

In 2015, EPA's Office of Research and Development and Office of Water will host monthly webinars to discuss challenges and treatment solutions for small drinking water and wastewater systems.



## EPA 2015 Monthly Webinar Series: Challenges and Treatment Solutions for Small Drinking Water and Wastewater Systems

All webinars will take place from  
2:00 to 3:00 pm EST

January 27	Arsenic Treatment Technologies (COMPLETE)
February 24	Innovative Biological Treatment for Small Water Systems: Ammonia, Nitrites, and Nitrates (COMPLETE)
March 31	Small Water System Alternatives: Media and Membrane Filtration for Small Communities and Households (COMPLETE)
April 28	Understanding End Water Quality in Hospitals and Other Large Buildings (COMPLETE)
May 26	Current Water Treatment and Distribution System Optimization for Cyanotoxins (COMPLETE)
June 30	Biological and Microbial Aspects of Septic System Pollution (COMPLETE)
July 28	Corrosion Control for Drinking Water Systems (COMPLETE)
August 18	Distribution Operation Options for Small Systems to Address DBPs (COMPLETE)
September 29	UV Disinfections Systems – Treatment of Ground Water for Small/Medium-Sized Water Utilities
October 27	Decentralized High-Rate Wastewater Treatment of Peak Wet Weather Flows
November 24	Treatability Databases, Cost Models, and Other Tools for Water Systems
December 15	Reduction of Lead in Drinking Water

**Upcoming webinar registration and past webinar recordings:**

<http://www2.epa.gov/water-research/2015-small-systems-webinar-series>

*(Certificates of completion cannot be given for viewing webinar recordings.)*