



# INFORMATION-EXCHANGE WEBINAR

An American Ground Water Trust program  
SOLUTIONS TO GROUNDWATER CONTAMINATION



## PFAS AND RELATED COMPOUNDS

Wednesday, June 24, 2020

MORNING SESSION 9:00 TO 12:10 – AFTERNOON SESSION 12:50 TO 4:00 (Pacific daylight time)

“110 million Americans have some PFAS in their drinking water”

(Estimate from EWG—Environmental Work Group)

What about water supplies in the Northwest? – Washington, Oregon, Idaho, British Columbia?

This program has been held in workshop format in Cincinnati, OH, Grand Rapids, MI, Sacramento, Montclair, Fresno and Bakersfield, CA, Pittsburgh, PA, Mount Laurel, NJ, Phoenix, AZ, Albuquerque, NM, Westford, MA and Tallahassee, FL.

The American Ground Water Trust (AGWT) is a 501(c)(3) non-profit education organization

### CONTINUING EDUCATION



Approved for WA Waterworks Operators - Course ID #A2899, .5 CEUs

Pending approval for WA Wastewater Operators

Applications submitted for OR and ID Water and Wastewater Operators

For CE Requirement information for this webinar, please go to our website, [www.agwt.org/events](http://www.agwt.org/events)



**“One of the most seminal public health challenges for the next decades.”**

Patrick Breyse, Director of the U.S. Centers for Disease Control's National Centre for Environmental Health, describing the contamination of drinking water supplies by AFFF firefighting foam.

Many states are confronting contamination of groundwater and surface water from so-called emerging contaminants. [The contaminants have been there a long time – it is our awareness that is emerging!] There are technical, regulatory and legal challenges for communities responding to contamination. Water providers are faced with an urgent need to deal with concerns about health issues, regulations, property values, remediation options and infrastructure costs. The webinar will provide objective information to facilitate water providers, elected officials, citizens and community leaders with policy, planning and management decisions.



Over 5,000 PFAS (per- and polyfluorinated alkyl substances) occur in the world today and many PFAS compounds transform into highly persistent perfluorinated chemicals in the environment. The compounds are connected to several cancers, liver, kidney and reproductive disorders and other health effects.

Webinar participants will learn about the chemistry background, sampling & testing protocols, treatment technologies, cost recovery options and the challenges of environmental persistence of contamination. Presenters will provide technical solutions for treatment and remediation and will discuss regulatory and legal solutions for protecting drinking water integrity and consider ways to find funding for treatment or new supply.



AGWT Events Page



AGWT Facebook



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## Webinar Itinerary



8:55am - Log-in available – code provided via e-mail to registered participants.

**Webinar morning session - 9:00 am (Pacific Daylight Time)**

**Wednesday June 24<sup>th</sup>**

### **THE DEPTH AND EXTENT OF PFAS IMPACTS ON WATER RESOURCES**

Andrew Stone, Executive Director, American Ground Water Trust, Concord, NH

### **PFAS – LESSONS FROM 15+ YEARS OF ISOTOPE-DILUTION PFAS TESTING ON THOUSANDS OF WATER, SOIL AND TISSUE SAMPLES**

Bharat Chandramouli, PhD, Product Manager and Senior Scientist, SGS AXYS Analytical Services Ltd., Sidney, BC, Canada

### **THE COMPLEX CHEMISTRY OF PFAS COMPOUNDS AND THE CHALLENGES OF THEIR ENVIRONMENTAL PERSISTENCE**

Craig Hutchings, Consultant, Integral Consulting, Inc., Olympia, WA (invited)

10-minute break

### **EQUIPMENT AND MEDIA SOLUTIONS FOR REMOVING PFAS FROM WATER**

Kelsey Hakes, Business Development Engineer, AqueoUS Vets, Redding, CA

### **USE OF ADVANCED TECHNOLOGIES TO MITIGATE THE IMPACT OF PFAS ON WATER SUPPLIES**

Dale Wynkoop, Global Director of Sales & Applications, ECT2, (Emerging Compounds Treatment Technologies), Dublin, OH

40-minute break for lunch - 12:10pm to 12:50pm

12:45pm - Log-in available for afternoon session – code provided via e-mail to registered participants

**Webinar afternoon session – 12:50pm to 4:00pm**

**Wednesday June 24<sup>th</sup>**

### **CHAIN PFAS REMOVAL WITH SINGLE-USE SELECTIVE ION EXCHANGE RESIN**

Cathy Swanson, Groundwater Remediation Specialist, Purolite Corporation, Fullerton, CA

### **COLLOIDAL ACTIVATED CARBON FOR IN SITU REMEDIATION OF PFAS: A REVIEW OF MULTIPLE CASE STUDIES**

Andrew Punsoni, Northwest District Technical Manager, REGENESIS, Portland, OR

### **CARBON AND RESIN CASE STUDIES FOR REMOVAL OF PFAS AND OTHER CONTAMINANTS FROM GROUNDWATER**

Dave Kempisty, Ph.D., P.E., Business Development Manager, Evoqua Water Technologies LLC, Colorado Springs, CO

10-minute break

### **CASE STUDY OF INVESTIGATIONS AT THE ISSAQUAH PFAS SITE**

Priscilla Tomlinson, Toxicologist, Washington State Department of Ecology, Bellevue, WA

### **POLLUTER SHOULD PAY: LITIGATION AS A MEANS TO RECOVER COSTS**

Richard Head, JD, Attorney, SL Environmental Law Group PC, San Francisco, CA

**End of Webinar – 4:00pm**





# Northwest PFAS Webinar

## Wednesday, June 24, 2020

### Registration Form



Registration and payment can be made on-line at [www.agwt.org/events](http://www.agwt.org/events)  
**Morning session (9:00am to 12:10pm) and Afternoon session (12:50pm to 4:00pm)** Pacific Daylight Time  
**Registration US \$200**

**Please send in separate registrations for each person participating in the webinar.  
 Instructions for webinar log-in will be sent on receipt of registration.**

All registrants will receive pdf copies of the PowerPoint slides used by presenters during the webinar.  
 These pdf files contain detailed information about the presentation topics and are for the personal use of webinar registrants.  
 They will be sent by e-mail the day following the webinar.

**Payment Information:**

CHECK [payable to: AGWT]     AMEX/VISA/MC/Discover     PO # \_\_\_\_\_

**AMOUNT AUTHORIZED \$** \_\_\_\_\_

Name on Card \_\_\_\_\_

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Cardholder Email \_\_\_\_\_

Company Name \_\_\_\_\_

Attendee Name \_\_\_\_\_

Attendee Email\* \_\_\_\_\_

\*The CEU verification process requires that participants are able to receive e-mails during the webinar. For participants requiring CEUs, the e-mail address listed above has to be an e-mail that can receive messages during the webinar. A requirement for CEU credit will be e-mail responses to 6 questions during the webinar.

Position/ Job Title \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_

**REGISTER ONLINE:**  
[agwt.org/events](http://agwt.org/events)

**MAIL TO:**  
 American Ground Water Trust  
 50 Pleasant Street, Suite 2  
 Concord, NH 03301-4073

**FAX:** (603) 228-6557

**TEL:** (603) 228-5444

**? QUESTIONS:**  
 (800) 423-7748  
 9:00-4:00pm (Eastern Time)

### AMERICAN GROUND WATER TRUST

The AGWT was formed in 1986 as a non-profit education organization with the mission of promoting interest and awareness in groundwater issues. The AGWT's conference, workshop, and webinar programs and educational materials:



- ◆ Communicate the environmental and economic value of groundwater
- ◆ Showcase groundwater science and technology solutions
- ◆ Increase citizen, community and decision-maker awareness
- ◆ Facilitate stakeholder participation in water resource decisions
- ◆ Promote efficient and effective groundwater management

## PRESENTER PROFESSIONAL BACKGROUND

### Northwest PFAS Webinar – June 24, 2020

#### **Andrew Stone, Executive Director, American Ground Water Trust, Concord, NH**



Andrew Stone has an MSc and a Hydrogeology Diploma from University College, London. He has experience in Africa and America as a university professor, groundwater consultant, & educator. Since 1989 he has worked in the US as a private-sector consultant, as adjunct professor and as groundwater educator, advocate and outreach specialist for the non-profit American Ground Water Trust. He has convened over 250 "information-exchange" conferences and workshops focused on groundwater issues. He has organized over 70 "Groundwater Institutes" that have trained 2,000 science teachers and educators on water resources issues and the basics of hydrology. He is a recipient of the National Ground Water Association "Oliver Award" in for his work in promoting groundwater education.

#### **Bharat Chandramouli, PhD, Product Manager and Senior Scientist, SGS AXYS Analytical Services Ltd., Sidney, BC, Canada**



Bharat Chandramouli is a senior scientist with 20+ years of experience in the occurrence, fate and transport of persistent organic pollutants and contaminants of emerging concern. He is a published author on several peer-review articles and book chapters on atmospheric chemistry, PFAS measurement, PPCP occurrence and more. At SGS AXYS, Bharat Chandramouli provides technical leadership on analytical methods and coordinates between product development, sales, management and clients to ensure that SGS AXYS services meets everyone's needs. He earned his PhD in Environmental Science and Public Health from the University of North Carolina, Chapel Hill, Masters in Environmental science and engineering from the Indian Institute of Technology, Mumbai, India and Bachelor's in Metallurgical Engineering from the Indian Institute of Technology, Chennai, India.

#### **Craig Hutchings, Consultant, Integral Consulting Inc., Olympia, WA (invited)**



Craig Hutchings is a chemist with more than 25 years of experience in environmental investigations, environmental analytical chemistry, and QA/QC. He has authored numerous SAPs and QAPPs that comply with federal or state regulatory programs and take into account unique data quality objective requirements of specific projects. Mr. Hutchings has performed and supervised gas chromatography, high performance liquid chromatography, and gas chromatography/mass spectrometry analyses for contaminants in soil, sediment, water, and tissues using EPA and various state methods. He is experienced in the evaluation and review of analytical data including outputs from inductively coupled plasma instruments and chromatograms for Aroclors, pesticides, and other compounds and has reviewed chemistry data from numerous projects involving a wide variety of analyses in air, water, soils, sediments, and tissues. He received his B.S. Degree in Environmental Studies from The Evergreen State College.

#### **Kelsey Hakes, Business Development Engineer, AqueoUS Vets, Redding, CA**



Ms. Hakes is experienced in the water treatment, environmental, and oil and gas industries. Her extensive knowledge base includes: municipal and industrial water systems, GAC and ion exchange media, process control engineering and application metallurgy. Previous positions included account management, business development, and engineering design at Evoqua Water Technologies and Control Components Inc. Ms. Hakes had direct involvement with specification and solution development, technical trainings, and aftermarket services. A graduate of the University of California Irvine, Kelsey holds both a BS in Mechanical Engineering and Material Science Engineering.

#### **Dale Wynkoop, Global Director of Sales and Applications, ECT2 (Emerging Compounds Treatment Technologies), Dublin, OH**



Dale is the Global Director of Sales and Applications of ECT2 (Emerging Compounds Treatment Technologies). ECT2 is an equipment company focused on developing and commercializing treatment technologies for emerging, difficult-to-treat contaminants. Dale's responsibilities include: Business Development, Marketing and new product development. Dale has been in the water treatment industry since 1993 and joined ECT2 in 2017 to lead the commercialization of ECT2's Synthetic Media technologies for the sustainable treatment of PFAS, 1,4-dioxane, and other emerging contaminants. He received his B.S. in Mechanical Engineering from The Ohio State University.

#### **Dave Kempisty, Ph.D., P.E., Business Development Manager, Evoqua Water Technologies LLC, Colorado Springs, CO**



Dave is a licensed engineer focusing on emerging contaminant issues and their solutions. He is a member of Evoqua's Environmental Solutions Scientific and Technical Team involved with bench- and pilot-scale testing of activated carbons, ionic exchange resins, novel adsorbents and innovative technologies. As lead editor to the 2018 book, "Perfluoroalkyl Substances in the Environment" and author to over 25 peer-reviewed papers and presentations on a variety of environmental topics, Dave provides a well-balanced perspective on today's environmental issues. Prior to Evoqua, Dave served 22 years in the United States Air Force as an environmental engineer. Dave earned his Ph.D. from the University of Colorado-Boulder in Civil and Environmental Engineering and also holds a MS from the Air Force Institute of Technology and a BS from Michigan Technological University.

#### **Catherine Swanson, Groundwater Remediation Specialist, Purolite, Fullerton, CA**



Catherine is a Chemical Engineer with water treatment background. She has worked in facility engineering, technical service, marketing, sales, and business development. Her current focus is on increasing business in the Environmental Solutions market for groundwater remediation and NPDES discharge. She is a technical resource for granular activated carbon, perchlorate, nitrate, uranium, and chrome VI treatments. Prior to joining Purolite, she was a sales engineer for Evoqua with responsibilities for groundwater remediation of inorganics like perchlorate, nitrate, chrome VI and uranium for the Western Region of the US. Previous employment in the field of chemistry and water treatment has been with Airliquide, GS Polymers and Dow Corning. She has a BS in chemical engineering from Northwestern University.

#### **Andrew Punsoni, Northwest District Technical Manager, Regenesis, Portland, OR**



Andrew is the Business Development, Product & Services Manager with extensive experience in both domestic and international work. He has presented at conferences around North America. Prior to working for Regenesis, he was employed as a Program Manager at both Cascade Environmental, LLC and Vironex Technical Services, LLC. Mr. Punsoni holds an Executive MBA from University of Washington - Michael G. Foster School of Business, Bachelor of Science Degree in Biology/Environmental Science from The Evergreen State College and Bachelor Degree in English Language and Literature from Vassar College.

**Priscilla Tomlinson, Toxicologist, Washington State Department of Ecology, Bellevue, WA**



Priscilla Tomlinson is a toxicologist who has worked in the environmental remediation industry for over 30 years. For the last five years she has worked at the Washington State Department of Ecology's Northwest Regional Office, supporting cleanup project managers on risk assessment, cleanup levels, and compliance strategies. Priscilla is a member of Ecology's team investigating sources of PFAS contamination in the drinking water supply for the City of Issaquah.

**Richard Head, JD, Of Counsel, SL Environmental Law Group PC, San Francisco, CA**



Richard focuses his practice on complex environmental contamination litigation. Before joining SL Environmental, Richard was Associate Attorney General at the New Hampshire Department of Justice. He argued more than 15 cases before the New Hampshire Supreme Court and frequently testified before the New Hampshire Legislature. He served as the Bureau Chief of the Environmental Protection Bureau and as a senior member of the legal team working on the New Hampshire MTBE litigation, including its three-month jury trial. Richard earned his B.A. from Clark University and his J.D. and M.S. in Environmental Science from Indiana University. Richard is admitted to practice in NH, the United States District Court for the District of New Hampshire and the United States Court of Appeals for the First Circuit.

# Northwest PFAS Webinar Continuing Education Requirements

## State of Washington Waterworks Operator:

Webinar attendees must be present and participate in the entire training to receive CEUs. In order to verify this, **please note all of the following requirements must be met:**

- Attendee must complete and sign the AGWT Continuing Education Form (see below)
- A question will be emailed once per hour following a presentation to verify participation. This email needs to be replied to **immediately**. Credit will not be given if you do not answer all 6 questions immediately following each session.

Upon verification of receipt of all 6 questions and completion of the AGWT Continuing Education Form, your information will be forwarded to Washington Certification Services for Water Operator credit and AGWT will issue you a Certificate of Attendance for the webinar.

## State of Washington Wastewater Operator:

Webinar attendees must be present and participate in the entire training to receive CEUs. In order to verify this, **please note all of the following requirements must be met:**

- Attendee must complete and sign the AGWT Continuing Education Form (see below)
- A question will be emailed once an hour following a presentation to verify participation. This email needs to be replied to **immediately**. Credit will not be given if you do not answer all 6 questions immediately following each session.
- An exam will be given at the end of the webinar. You will need to answer 7 of the 10 multiple choice questions correctly to earn CEUs.

Upon verification of receipt of all 6 questions, a score of 70% on your exam and completion of the AGWT Continuing Education Form, your information will be forwarded to the Washington Department of Ecology for Wastewater Operator credit and AGWT will issue you a Certificate of Attendance for the webinar.

## State of Idaho Drinking Water and Wastewater Professionals:

Per Idaho Bureau of Occupational Licenses, “continuing education courses which are relevant and approved by states of Nevada, Oregon, Montana, Utah, Wyoming and Washington are deemed approved by the Board.” As this webinar has been approved by the State of Washington for water operators and pending approval for wastewater operators, the requirements for Idaho Drinking Water and Wastewater Professionals are the same as Washington. Please see above.

## State of Oregon Drinking Water and Wastewater Operator:

Webinar attendees must be present and participate in the entire training to receive CEUs. In order to verify this, **please note all of the following requirements must be met:**

- Attendee must complete and sign the AGWT Continuing Education Form (see below)
- A question will be emailed once per hour following a presentation to verify participation. This email needs to be replied to **immediately**. Credit will not be given if you do not answer all 6 questions immediately following each session.

Upon verification of receipt of all 6 questions and completion of the AGWT Continuing Education Form, your information will be forwarded to the Oregon Environmental Services Advisory Council for Water/Wastewater Operator credit and AGWT will issue you a Certificate of Attendance for the webinar.

*Please print the AGWT Continuing Education Form below if you would like to receive continuing education credit. If you have any questions, contact AGWT at 603 228-5444 or [cheryl@aqwt.org](mailto:cheryl@aqwt.org).*



American Ground Water Trust Program



CONTINUING EDUCATION CREDITS/HOURS FORM

2020 Northwest PFAS Webinar – June 24, 2020

9:00am-12:10pm and 12:50pm-4:00pm

Name: \_\_\_\_\_

Email: \_\_\_\_\_

Type of Certificate Requested:

\_\_ Engineer State \_\_\_\_\_ License # \_\_\_\_\_

\_\_ Wastewater Operator State \_\_\_\_\_ License # \_\_\_\_\_

\_\_ Waterworks Operator State \_\_\_\_\_ License # \_\_\_\_\_

\_\_ Water Well Driller/Pump Installer State \_\_\_\_\_ License # \_\_\_\_\_

\_\_ Licensed Env./Site Professional State \_\_\_\_\_ License # \_\_\_\_\_

\_\_ Other (please specify): \_\_\_\_\_ License # \_\_\_\_\_

Morning Session (9:00am-12:10pm):

Afternoon Session (12:50pm-4:00pm):

Log-in time: \_\_\_\_\_

Log-in time: \_\_\_\_\_

Log-off time: \_\_\_\_\_

Log-off time: \_\_\_\_\_

By signing below, you attest the information above is correct:

\_\_\_\_\_  
(Attendee's Signature)

\_\_\_\_\_  
(Date)

**ALL information must be completed in order to receive a Certificate of Attendance.**

Continuing Education Credits/Hours will be issued based on approval by state authority and attendance time. This document will be kept on file per mandated by state regulations for audit purposes. Certificates of attendance will be emailed a few business days after the webinar.

For continuing education credit, complete and email this form to [cheryl@agwt](mailto:cheryl@agwt).

# CERTIFICATE OF ATTENDANCE

This is to certify that

**NAME**

**OR WATER/WASTEWATER OPERATOR LICENSE #**

participated in American Ground Water Trust's

## **Northwest PFAS Webinar**

**June 24, 2020**

**Morning Session—9:00am-12:10pm**

**Afternoon Session—12:50pm-4:00pm**

**Approved by Oregon Environmental Services Advisory Board for  
Drinking Water and Wastewater Operators  
Course #—# CEUs**

For additional information contact your association or licensing/certification agency directly with course content information to inquire if they accept this education program for your specific needs.

Andrew Stone, Executive Director

Date



**AMERICAN GROUND WATER TRUST**

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