

Covering PFAS Technical Sessions at the AWWA Virtual Summit
Wednesday, February 10 and Thursday, February 11, 2021



Dina Drennan, PhD, Environmental Scientist

Coauthors: Jennifer Hooper, Linda Lee, Mahsa Modiri-Gharehveran, Charles Schaefer

Assessing Poly- and Perfluoroalkyl Substance Release from Finished Biosolids

The overall goal of this work is to assess Poly- and Perfluoroalkyl Substance (PFAS) release from finished biosolids. Specifically, release will be examined as a function of PFAS loading in the finished biosolids, the post-digestion processing of the biosolids, and the age of the biosolids (freshly produced vs. field-aged). The project will focus on developing quantitative guidance for implementation, data interpretation, and process control.

Wednesday, February 10 at 10:00 AM (MST)
PFAS Tracks – PFAS in Water Supplies



Katja Amstaetter, PhD, Senior Consultant

Coauthors: John Frangos, Melissa Harclerode

How Contamination by PFAS in Biosolids Led to Regulatory Standards and Risk Assessment Processes in Germany - A Review

A specific case of PFAS contamination caused by biosolid application triggered the development of regulatory standards in Germany. When elevated PFAS levels in a river system were revealed, immediate actions were taken to ensure drinking water abstraction from the river, being the main source in the area, was safe again. Technical measures were taken, and an initial risk assessment was completed to establish guide values for health protection. Eleven years later, the guide values were updated based on new toxicological data. Meanwhile, results of human biomonitoring studies also led to guide values for human blood levels. This presentation will provide a summary on this specific case and the resulting legislative developments in Germany.

Wednesday, February 10 at 10:00 AM (MST)
PFAS Tracks – Regulatory Landscape and Communicating Risk



Heather Lanza, Risk Assessor/Toxicologist

Coauthors: John Frangos, Antti Mikkonen

Evaluation of International Approaches to PFAS Risk Assessments and Implications on Outcomes and Risk Management Decisions

This presentation will provide an overview of approaches adopted in publicly available PFAS human health risk assessments. The analytical capabilities currently far exceed our understanding of toxicological potential for the broader class of PFAS, introducing significant uncertainty in risk assessment development. Consideration will be given to data adopted in the available risk assessments, and in particular, how or if PFAS were handled in the risk estimates or sensitivity analyses where guidance is not available. Inconsistency in risk assessment approaches for PFAS may have implications on the outcomes of the risk assessments, and therefore have implications on risk management options considered or employed at a particular site.

Wednesday, February 10 at 1:20 PM (MST)
PFAS Tracks – PFAS Toxicology and Hazards



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Antti Mikkonen, Environmental Health Scientist and Risk Assessor

Coauthors: Michael Roberts, John Frangos

Evaluating the Why of Widely Disparate PFAS Guideline Values

Health based guideline values (HBGV) and exposure criteria for PFAS are constantly evolving. Agencies (federal and/or state level) review guidelines periodically and update when necessary or appropriate. Updates do not always occur at the same time or use the same information. This can lead to a large degree of variability in guideline values around the world, and sometimes even between federal and state level guidelines. This presentation provides a review of HBGV and drinking water criteria derivations, and highlights some of the differences in the assumptions and methods used to arrive at these values.

**Wednesday, February 10 at 1:40 PM (MST)
 PFAS Tracks – PFAS Toxicology and Hazards**



Dora Chiang, PhD, PE, Remediation/PFAS Practice Leader

Addressing Technical and Communication Challenges

This program is designed as an interactive discussion amongst leading experts from the legal, water utility, and engineering/technical sectors on the evolving legal landscape of PFAS in 2021. In addition to discussing the changing regulatory aspects of PFAS and related legal impacts, discussion topics will also include cost recovery, legal claims, and both operational and communication facets of successfully navigating the complex terrain that PFAS has become.

**Wednesday, February 10 at 1:20 PM (MST)
 PFAS Tracks – Navigating the Legal Landscape of PFAS for Water Utilities in 2021: Challenges & Opportunities**



Jihyon Im, PE, Environmental Engineer, Water Treatment, and Alan G. LeBlanc, PE, BCEE, Vice President, Discipline Leader – Drinking Water Treatment

Coauthor: Michaela Bogosh

Advancing the Practice – Insights from Four PFAS Treatment System Implementations

Marked by the advent of EPA’s 2016 health advisory level of 70 parts per trillion, PFAS have become contaminants of concern as rapidly and prominently as perhaps any contaminants in the past decade. While PFAS removal from drinking water has been accurately described as a “young” or “new” area of practice, the authors assert that the practice is maturing. Massachusetts’ “sum of six PFAS

compounds shall not exceed 20 nanograms per liter” criterion is arguably one of the most stringent in the United States. Presenting the full-scale implementation, commissioning, and operation of four distinct PFAS systems in Massachusetts, this paper provides a roadmap for water suppliers facing similar challenges.

**Thursday, February 11 at 12:30 PM (MST)
 PFAS Tracks – PFAS Treatment and Technology Implementation – Lessons Learned**



Water Partnership with **CDM Smith**