Prioritizing Risks: Putting PFAS into Context

US Conference of Mayors, Water Council
Chad Seidel, Ph.D., P.E.
President, Corona Environmental Consulting, LLC
October 14, 2022
Safe Drinking Water Act

“meaningful opportunity for health risk reduction”
Addressing risks that matter most

1. What’s there?

2. What’s the concern?

3. What can be done about it?
What’s the concern?

- **Unknown, unregulated risk**: Unidentified DBPs, chemicals, microbes, PFAS
- **Known, unregulated risk**: PFAS, chlorate, CCL contaminants, nitrosamines
- **Known, regulated risk**: Arsenic, Nitrate, TTHMs, etc. 
  *Cryptosporidium, Giardia, etc.*
What’s the concern?

Not having water...

• Infrastructure failure
• Workforce limitations
• Natural disasters
  • Drought
  • Wildfires
  • Flooding
What can be done about it?

Feeding the Building Plumbing Microbiome: The Importance of Synthetic Polymeric Materials for Biofilm Formation and Management - Scientific Figure on ResearchGate. Available from: https://www.researchgate.net/figure/Drinking-water-from-source-to-tap-highlighting-key-differences-between-the-main_fig1_342435101
So, what’s the risk?

• Relative health risk: toxicity data and occurrence data
• Putting PFAS into context
Does regulating per- and polyfluoroalkyl substances represent a meaningful opportunity for health risk reduction?

Katherine Alfredo | Chad Seidel | Amlan Ghosh

1Department of Civil and Environmental Engineering, University of South Florida, Tampa, Florida, USA
2Corona Environmental Consulting, Louisville, Colorado, USA
3Corona Environmental Consulting, Lewisville, Texas, USA

Correspondence
Katherine Alfredo, Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, 33620, USA.
Email: kalfredo@usf.edu

Guest Editor: Thomas F. Speth
Associate Guest Editor: Andrea Leeson

Abstract
US Environmental Protection Agency’s drinking water contaminant regulations must meet a qualitative “meaningful opportunity” threshold in health risk reduction. Using our Relative Health Indicator (RHI) metric, we quantify the ranges of potential health risk reductions that could be achieved from state and federal per- and polyfluoroalkyl substances regulatory levels (proposed or finalized) and compare them with previous regulatory determinations of other contaminants to create a quantifiable, comparable scale of “meaningful opportunity” justifications. If perfluorooctanoic acid (PFOA) and perfluoroctyl sulfonate (PFOS) were present in 100% of water systems, contaminant concentrations of 227 ng/L PFOS and 2295 ng/L PFOA would be needed to exceed the minimum threshold of percent population RHI (PopRHI) to justify “meaningful opportunity,” based on the current regulatory levels of uranium; these concentrations exceed any levels being proposed. Using this comparison...
Does regulating per- and polyfluoroalkyl substances represent a meaningful opportunity for health risk reduction?

Katherine Alfredo | Chad Seidel | Amlan Ghosh
WHO Guidelines for Drinking Water Quality (9/29/2022)

USEPA Interim Health Advisories (6/15/2022)

PFOA (ppt): 100
PFOS (ppt): 100

0.004
0.02
Is regulating PFAS a meaningful opportunity?
What’s the Priority?

- Limited funding and competing priorities
- Prioritizing risks to be efficient with our limited funding and achieve the greatest health benefit
California’s water supply goes beyond the current drought

A sign warns about lower water levels near the entrance to Castaic Lake. The Metropolitan Water District of Southern California hosted a media availability on Wednesday, April 27, 2022, after imposing restrictions that will limit outdoor watering to one day per week for roughly 6 million people. (Photo by Dean Musgrove, Los Angeles Daily News/SCNG)

By CRAIG MILLER and PAUL HELLIKER
PUBLISHED: June 18, 2022 at 7:00 a.m. | UPDATED: June 18, 2022 at 7:00 a.m.
America’s Water Infrastructure Needs Help

www.wateradvisory.org
Questions?

Chad Seidel, Ph.D., P.E.
President
303.887.1853
cseidel@coronaenv.com
www.coronaenv.com
Twitter: @chadseidel

www.wateradvisory.org
Twitter: @wateradvisory