

OE-3: 2019-04

September 2019

## Per- and Polyfluoroalkyl Substances (PFAS) Awareness

### PURPOSE

This Operating Experience Level 3 (OE-3) document provides information about emerging contaminants referred to as per- and polyfluoroalkyl substances (PFAS). PFAS is a class of Safe Drinking Water Act (SDWA) contaminants.

In May 2016, the Environmental Protection Agency (EPA) issued a new drinking water Lifetime Health Advisory (LHA) for two types of PFAS chemicals: perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). The new drinking water LHA is 70 parts per trillion (ppt) for PFOS and PFOA, individually or combined. There are more than 3,000 man-made fluorinated organic compounds. For context, one ppt is equivalent to one drop of water in 20 Olympic-sized swimming pools.

### BACKGROUND

PFAS are manufactured fluorinated organic chemicals commonly used in household items such as non-stick cookware, clothing, shoes, furniture, and carpets. PFAS chemicals are also used in firefighting, most notably in Aqueous Film Forming foam (AFFF), a firefighting agent used to suppress fuel fires. AFFF contains both PFOS and PFOA and has been extensively used by firefighters in training and equipment testing.

The understanding of potential drinking water impacts from PFAS has significantly increased over the past decade. This class of chemicals started to get publicity in 2001 and 2002 due to water contamination from the Washington

Works Plant located outside of Parkersburg, West Virginia. A class-action lawsuit against DuPont due to water contamination generated additional publicity. In 2006, DuPont, along with other manufacturers such as 3M, agreed to principally phase out the production of PFOA and PFOS.

### REGULATORY STATUS

Currently, PFAS is undergoing extensive regulatory scrutiny by Federal, State, and public-interest organizations.

Although there is not yet Federal regulation of these compounds, many states have introduced and/or established more stringent health advisory limits for individual compounds.

[Third Unregulated Contaminant Monitoring Rule \(UCMR3\)](#): Due to escalating concerns, six PFAS compounds were included in EPA's final UCMR3 in May 2012. This inclusion triggered monitoring at major water systems between January 2013 and December 2015. As typical for the UCMRs, EPA regularly released the UCMR3 monitoring data to the public, starting in late 2013.

[EPA's 2009 Provisional and 2016 Revised Health Advisories \(HAs\)](#): In 2009, EPA established provisional HAs for PFOS at 200 ppt and PFOA at 400 ppt. These two numbers served as the benchmark during the UCMR3 monitoring period, which found relatively few exceedances of PFOS and PFOA.

In May 2016, EPA released revised HAs for the sum of PFOA and PFOS at 70 ppt. This numerical reduction significantly increased the number of water systems impacted.

## DISCUSSION

In February 2019, the EPA developed the PFAS Action Plan outlining steps the agency is taking to address PFAS and to protect public health. Commitments by EPA in the Action Plan include:

- Proposing a regulatory determination for PFOA and PFOS by the end of 2019.
- Determining if a SDWA regulation is appropriate for a broader class of PFAS.
- Including a larger group of PFAS in UCMR5.
- Working through its regulatory development process for listing PFOA and PFOS as Comprehensive Environmental Response, Compensation, and Liability Act hazardous substances.
- Continuing to use its authority under Toxic Substances Control Act to review new PFAS and issuing supplemental proposed Significant New Use Rules.
- Finalizing the toxicity assessments for two additional PFAS (Perfluorobutanesulfonic acid and GenX) in 2019.
- Developing draft toxicity assessments for several additional compounds in 2020.
- Developing guidance to facilitate cleanup of contaminated groundwater.
- Developing new tools to characterize PFAS in the environment and materials to communicate about PFAS.

## CONSIDERATIONS FOR DOE SITES

Brookhaven National Laboratory has detected PFAS in some on-site potable water wells and groundwater, and is working with its State regulator and community stakeholders to address the issue. Other DOE sites have been approached with PFAS questions by EPA or State regulators; additional sites are likely to receive similar inquiries.

To maintain a proactive approach to potential EPA or State regulatory guidelines, DOE sites are strongly encouraged to consider the following questions:

1. Is your site currently involved in an effort or activity performing sampling, analysis, tracking, or monitoring of PFAS or PFAS related substances at the site?
2. Did/does your site have manufacturing, waste management, industrial, and/or chemical processes that may generate and potentially release PFAS to the environment?
3. Do you have a fire fighting facility, fire department, or fire training on site and, if so, have they ever discharged AFFF? This includes system testing, drills, maintenance, site exercises, and fire system flushing.
4. Is AFFF currently used at the site? Does your site track AFFF usage and storage quantities of AFFF, and, if disposed or removed, can you track it to its final location?
5. Do you provide drinking water from an on-site source such as a river, stream, lake, reservoir, or well? If so, do you sample and test for PFAS?

While there is no current requirement to do so, it is recommended that DOE sites consider identifying the current and/or historic use of PFAS and evaluate appropriate next steps to characterize potential contamination pathways (e.g., drinking water, soil, surface water, etc.)

## REFERENCES

[EPA Action Plan](#)  
[ITRC PFOS Document](#)

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