PFAS

FACTSHEET

What Are PFAS?

Per and polyfluoroalkyl substances (PFAS)[1] are a group of manmade fluorinated compounds which are used for a variety of applications by both industry and residential households. PFAS have been in commercial use since the 1940's and are abundant in today's society. These chemicals are widely in use because of their exceptional resistance to heat, water, and oil.

PFAS are commonly found in every American household, and in products as diverse as non-stick cookware, stain resistant furniture and carpets, wrinkle free and water repellant clothing, cosmetics, lubricants, paint, pizza boxes, popcorn bags, and many other everyday products.

Two of the most common types (PFOS and PFOA) were phased out of production in the United States (US) in 2002 and 2015 respectively, but are still present in some imported products. PFOA and PFOS are found in every American person's blood stream in the parts per billion range, though those concentrations have decreased by 70% for PFOA and 84% for PFOS between 1999 and 2014, which coincides with the end of the production and phase out of PFOA and PFOS in the US[2].

PFAS Are Ubiquitous in Our Homes and Our Environment

Several recent legislative and regulatory efforts across the US to address PFAS have focused on limiting levels in drinking water. However, there has been relatively little conversation about the presence of these chemicals in our everyday lives and the public's sheer exposure to PFAS through primary contact from commercial products used in our everyday lives. Several peer reviewed studies have shown that the mean and median concentration of PFOA in household dust in the US was found to be between approximately 10,000 and 50,000 parts per trillion (ppt)[3]. These studies highlight the fact that there is significantly more PFOA in the ambient dust in the average home than the levels currently being discussed as thresholds for drinking water. Because PFAS is in the products we use, is transported through air and water and has been found in the food we eat, there are numerous public exposure pathways for PFAS beyond drinking water.

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Importance of Human Health Protection

Entities providing essential public services such as safe drinking water, wastewater treatment, water recycling, biosolids recycling, and municipal solid waste management firmly believe in our **collective mission to ensure safe drinking water, wastewater treatment, and sanitation services.** We acknowledge and embrace our role as environmental and public health stewards and our continued responsibility and commitment to providing a healthy and clean environment now and for future generations. To that end, we support actions and regulations intended to ensure delivery of those services as long as they are based on credible science and developed after due deliberation. There is concern that in the case of PFAS, due to the complexities inherent with them, notification levels, thresholds, and in some cases limits are being developed rapidly and in advance of the scientific and public process.

PFAS Producers and Heavy Users Are Not the Same as PFAS "Receivers"

Drinking water treatment systems, wastewater treatment facilities, and municipal solid waste landfills are not "producers" or users of PFAS, and **none of these essential public service providers utilize or profit from PFAS chemicals. Rather, they are "receivers" of these chemicals used by manufacturers and everyday consumers, and merely convey and/or manage the traces of PFAS** coming into our systems daily. In order to address the true sources of these chemicals, it is imperative to discontinue and phase out production and use (both domestic and foreign) at manufacturing facilities and find safer alternatives for heavy use areas such as firefighting training sites. As long as PFAS are elements of products used in our everyday lives, and background levels resulting from decades of manufacturing and use persist, these chemicals will continue to be found in "receiver" streams.

Placing PFAS in Context: Distinguishing Highly Contaminated Sites From Background Levels

Recent legislative and regulatory efforts to address PFAS contamination tend to not differentiate between concentrations at producer and heavy user contaminated sites and common background concentrations in drinking water, groundwater, recycled water, wastewater, biosolids, or landfill leachate. The concentrations of PFAS found in these two scenarios are dramatically different and must be managed separately in public policy and regulation. Sites found near PFAS manufacturers have found contamination at concentrations reaching 100,000 to 500,000 ppt. In the same context, firefighting training sites, including military complexes, PFAS concentrations have been found as high as 6,950,000 ppt.[4] In these circumstances, PFAS producers and heavy users have created severely contaminated sites that must be remedied. In contrast, the action levels currently discussed for drinking water systems range from 5–40 ppt, an exceptionally small fraction of the concentrations found at highly contaminated sites. Because of this vast disparity in relative contributions, it is imperative that policy and regulation reflect product manufacturer responsibility and stewardship, as well as cleanup and remediation at highly contaminated sites, differentiated from those that are receiving PFAS in their systems at significantly smaller concentrations.

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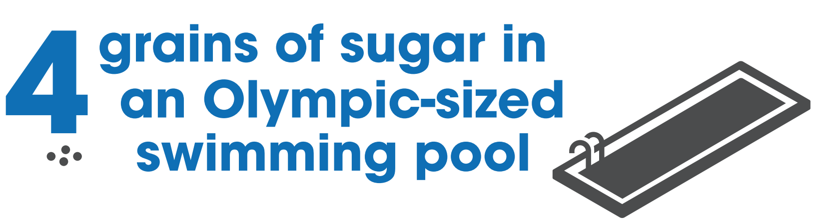
Regulatory Thresholds and Unintended Consequences

The USEPA has set a drinking water health advisory level of 70 ppt individually or combined for PFOA and PFOS in drinking water. Through USEPA's Action Plan[5] the Agency is currently evaluating the need to develop maximum contaminant levels (MCL) for these and possibly other PFAS compounds. The Agency similarly proposed preliminary groundwater remediation goals for PFOA and PFOS at 70 ppt combined in areas where groundwater may be used for drinking water. **For perspective, one part per trillion is the equivalent of four grains of sugar in an Olympic sized swimming pool, or the equivalent of one second in 32,000 years, or $1.50 out of all the US currency in the world.** Even as EPA's work continues, states have begun setting their own PFAS standards for drinking water at a rapid pace and without following some of the usual regulatory and scientific review and public involvement procedures. The public and political concern about PFAS is leading several states to move forward with regulatory standards or notification levels while the science is developing. For example, New Hampshire[6] has adopted regulatory standards of 12 ppt for PFOA and 15 ppt for PFOS in drinking water, the California State Water Board[7] has established notification levels of 6.5 ppt for PFOS and 5.1 ppt for PFOA in drinking water, while other states have adhered to the USEPA health advisory level of 70 ppt for both PFOA and PFOS combined. States adopting different standards for the same PFAS compounds are creating confusion and risking undermining public confidence at a time when greater consistency is needed. **In fact, stringent state requirements could have significant unintended impacts on public municipalities and individuals, if public systems are deemed unusable and/or need to install prohibitively expensive supplemental treatment systems. Similarly, policies that limit the landfill disposal of PFAS containing wastes could force alternative means of disposal that are less protective of public health and the environment.**



Background Levels of PFAS in Wastewater Effluent, Recycled Water, Biosolids, and Leachate

States that are establishing, or have adopted, strict PFAS standards for drinking water could also ultimately impact discharge limits on wastewater treatment plants effluent, recycled water, as well as the management of biosolids and leachate. Because PFAS are ubiquitous in households, consumer products, food, and the environment generally, some trace levels reflecting this ubiquitous broad use of these compounds will make their way into the wastewater and solid waste streams. From wastewater treatment plants, some of these trace amounts of PFAS may also be found in biosolids. Trace amounts will also make their way to landfills and resulting leachate. In response to the phase out of PFAS use and appropriate source control and product substitution, continued reduction of trace levels is anticipated. It is important to note that PFAS are also found in paper mill residuals, digestates, composts, and soils. Given the ubiquity of PFAS, and the comparative background levels which may be found in wastewater, biosolids, and leachates, setting requirements near analytical detection limits on these sources may not provide a discernable benefit to protecting public health.

A Measured, Scientifically Sound Response to PFAS Contamination is Needed

Legislators, regulators, and drinking water, wastewater, and solid waste agencies must work collaboratively to examine how to manage PFAS holistically, with science driving the decision making. We acknowledge and embrace our role as public health and environmental stewards to ensure safe drinking water and sanitation services. However, we know that science is still evolving to understand the fate, exposure, and toxicity of PFAS in various environmental media. The analytical methods needed to study and accurately monitor these chemicals at such trace concentrations are still in development for media other than drinking water. In addition, the extent of public health impacts remains unclear and is not fully understood. This underscores the need to better understand the complex science of PFAS exposure and impacts, verifiable analytical methods, and real-world risk before setting exceedingly stringent thresholds or limits. **The goal of any PFAS policy or regulation should be to determine the most effective steps needed to reduce human exposure and implement them within the broad context of protecting human health.** This requires differentiating high concentration sites from background concentrations and taking action to mitigate concentrations at high use sites. It also demands both a reassessment of products we produce and use daily, and a realistic assessment of how to control PFAS chemicals already in the background environment. The most significant action we need to take today is to remove these chemicals of concern from the stream of commerce and pursue cleanup and remediation at highly contaminated sites. Source reduction and pollution prevention can serve as the most efficient means of addressing the persistent background presence of PFAS and effectively limit exposure to PFAS going forward.

1. PFAS is the broader class of chemicals that includes PFOA, PFOS, and many others.
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4. ewg.org/interactive-maps/2019_pfas_contamination/map
5. https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf
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7. https://www.waterboards.ca.gov/press_room/press_releases/2019/pr082319_pfoa_pfos_guidelines_news_release.pdf