



PFAS and Wastewater and Biosolids

PFAS is the acronym for multiple organic chemicals – per- and polyfluoroalkyl substances. These man-made compounds are a product of our modern convenience society. PFAS are found in furniture and carpet stain protection, non-stick cookware, water repellent products, dental floss, food packaging and many other consumer products. Certain manufacturing processes use them, and firefighting foam is a major source of PFAS in the environment. They are ubiquitous in the environment as persistent, toxic compounds at low parts-per-billion or parts-per-trillion concentrations.

Vermont has legislated a swift response to PFAS contamination. A drinking water health advisory and ground water enforcement standard of 20 ppt (parts per trillion) has been enacted for the sum of five PFAS compounds, including perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) (20 ppt is equal to 20 seconds in 31,700 years). A state-wide testing of ambient levels has been completed. Testing of water supplies and wastewater facility's incoming water, discharge and process biosolids is in progress.

PFAS Facts:

- Use of the most common PFAS (PFOA and PFOS) has been mostly phased out in the U.S., but they persist in the environment. Thousands of newer, shorter carbon-chain versions have been developed and warrant further scrutiny.
- The most effective PFAS control policy is to eliminate PFAS from the source -- our homes and specific manufacturing -- and to address high-risk local sources such as industrial and firefighting sites.
- According to the Centers for Disease Control, human PFOA and PFOS blood contamination levels have declined more than 70% since 2000 (CDC NHANES, 2015) presumably because they were phased out.
- Average United States blood levels are 4,300 ppt of PFOS and 1,100 ppt of PFOA (American Red Cross, 2017).
- Testing confirms PFAS are present in wastewater in very low quantities near or below the Vermont regulatory limit. There is debate on testing reliability for wastewater and wastewater residuals. Currently, there are no EPA-approved PFAS testing methods for anything but drinking water.
- Public drinking water and wastewater systems do not use PFAS chemicals in their processes, and they do not generate PFAS. PFAS reach wastewater facilities via consumer products that are flushed down the drain. Testing in Vermont of wastewater and biosolids have found traces of PFAS, and they are ubiquitous in many other environmental media.
- Drinking water may become contaminated if the source of that water is contaminated with PFAS.
- The mean and median concentrations of PFOA in household dust in the United States was found to be between 10,000 and 50,000 parts per trillion (Trudel et al., Risk Analysis Vol. 28 No. 2, 2008).
- Over 55% of homes in Vermont rely on septic systems, the highest level per population in the United States. PFAS down the drain may reach groundwater and does reach soil.

GMWEA Supports:

- Current monitoring efforts to determine the extent of PFAS contamination in Vermont.
- Creation of a grant program to help small drinking water systems pay for monitoring and to help any drinking water supplier cover the costs of treating water for PFAS if necessary. Program should also include wastewater facilities that receive landfill leachate if treatment becomes necessary.
- Focusing remediation efforts on highly polluted sites and controlling sources of contamination.
- A sensible response based on science and data collected.
- Standardized analytical methods for quantifying PFAS compounds in different sample matrices such as drinking water, surface water, soil, etc.
- Research on fate and impacts, if any, of PFAS in water, wastewater, and biosolids in the environment.