



Per-and Polyfluoroalkyl Substances

PFAS are a group of manufactured chemicals used in industrial and consumer products since the 1940s because of their useful properties (they resist heat, oil, stains, grease, and water). A common and concerning characteristic of PFAS is that it breaks down slowly and can build up in people, animals, and the environment over time.

PFAS are often called “Forever Chemicals” because they do not break down in the environment and can build up, or bioaccumulate, in humans and animals. Most chemical contaminants identified by the U.S. Environmental Protection Agency (EPA) are localized in their impact and can be traced to a single source. But PFAS, are a new and widespread concern we are only just beginning to understand.

PFAS does not occur naturally but is widespread in the environment. PFAS can be found in the environment near areas where they are manufactured or where products containing PFAS are often used. PFAS are found in people, wildlife, and fish worldwide. Most PFAS do not break down easily in the environment. Some PFAS can stay in people’s bodies for a long time.

There are currently five per-and polyfluoroalkyl substances (PFAS) that have health advisory levels, established by the Environmental Protection Agency (EPA): PFOA, PFOS, PFNA, PFHxS, and HFPO-DA (known as GenX chemicals).

Q&A

What Are PFAS/ PFOA?

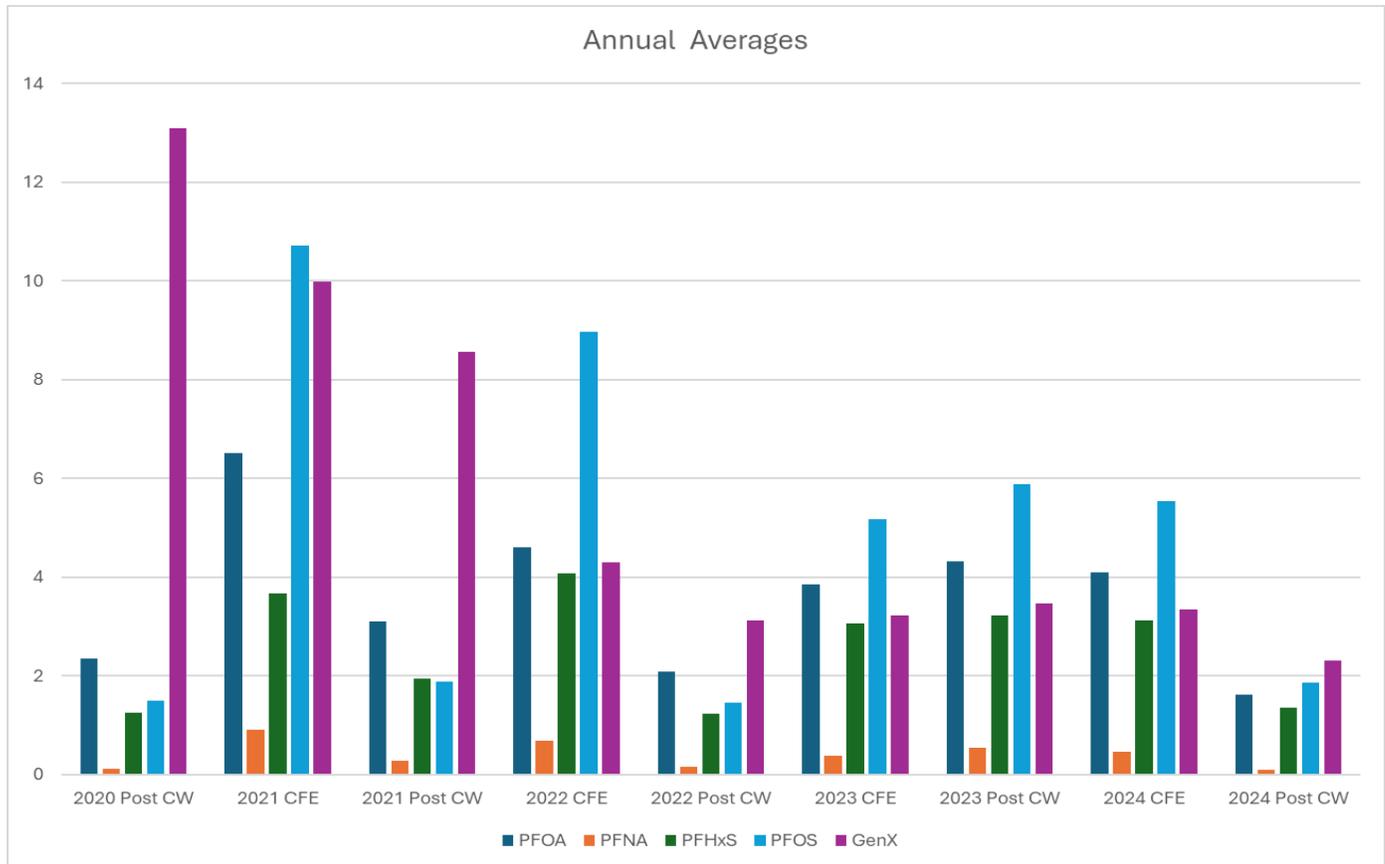
Per- and polyfluoroalkyl substances (PFAS) are manufactured chemicals historically used in many household products, including nonstick cookware (e.g., Teflon™), stain repellants (e.g., Scotchgard™), and waterproofing (e.g., GORE-TEX™). They are or were also used in industrial applications such as firefighting foams and electronics production. There are thousands of PFAS chemicals, and they persist in the environment. Additional information on PFAS from the U.S. Environmental Protection Agency (EPA) can be found at <https://www.epa.gov/pfas>.



Perfluorooctanoic Acid (PFOA) has been manufactured perfluorochemical and a byproduct in producing fluoropolymers. Perfluorochemicals (PFCs) are a group of chemicals used to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. PFOA was used particularly for manufacturing polytetrafluoroethylene, but since 2002, manufacturers have used a new process not requiring this chemical. PFOA persists in the environment and does not break down. PFOA has been identified in bodies of water and in a variety of land and water animals.

What Are You Doing About PFAS In The Drinking Water?

Pender County Utilities tests quarterly the Combined Filter Effluent (CFE) and the Post Clearwell (PCW) water to ensure it remain in adherence with the Safe Drinking Water Act (SDWA) standards. The CFE and PCW are water in the Pender County Water Treatment Facility before and after the Granular Activated Carbon (GAC) Contactors. The Pender County Utilities Water Treatment Facility was built in 2012 and incorporated 4 GAC Contactors. All Pender County Utilities' Wells have been tested for the five chemicals below and none were detected. We have been proactively testing for PFOS/PFOA since 2020. The annual water quality report which includes information on PFAS is available on our website.



What is Granular Activated Carbon (GAC)?

Granular Activated Carbon or “GAC” is a material used to filter harmful chemicals from contaminated water or air. It is composed of granules of coal, wood, nutshells, or other carbon-rich materials that have been heated to “activate” the surface of the granules. As contaminated water or air flows through the GAC, contaminants sorb (stick) to the GAC surface and are removed. GAC can sorb a wide range of contaminants such as fuel oil, solvents, polychlorinated biphenyls (PCBs), dioxins, and other industrial chemicals, as well as radioactive materials. More information can be found at

<https://semspub.epa.gov/work/HQ/401595.pdf>

What Are The EPA PFAS Limits In Drinking Water?

On April 10, 2024, the Environmental Protection Agency (EPA) announced the final drinking water standards or Maximum Contaminant Levels to limit six PFAS compounds in drinking water. Public water systems have five years to meet the new MCLs.

| Chemical | Maximum Contaminant Level Goal (MCLG) | Maximum Contaminant Level (MCL) |
|------------------------|---------------------------------------|---------------------------------|
| PFOA | 0 | 4.0 ppt |
| PFOS | 0 | 4.0 ppt |
| PFNA | 10 ppt | 10 ppt |
| PFHxS | 10 ppt | 10 ppt |
| HFPO-DA (GenX) | 10 ppt | 10 ppt |
| Mixture of two or more | Hazard Index of 1 | Hazard Index of 1 |

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology and taking cost into consideration. MCLs are enforceable standards.

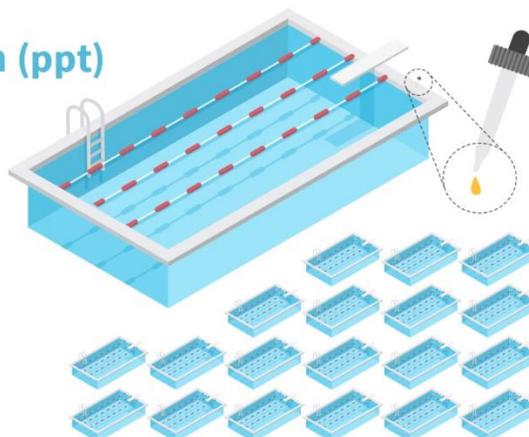
Hazard Index (HI): (i.e., exposure to multiple chemicals). The HI is made up of a sum of fractions. Each fraction compares the level of each PFAS measured in the water to the health-based water concentration.

ppt: parts per trillion

1 part per trillion (ppt)

IS EQUIVALENT TO A SINGLE DROP OF WATER IN

20 olympic-sized swimming pools



What Can I Do To Reduce My Exposure To PFAS?

It is difficult to fully prevent PFAS exposure because PFAS are present at low levels in some foods and the environment. However, there are steps you can take to reduce your PFAS exposure:

- If you live near known sources of PFAS contamination or your drinking water contains PFAS above the EPA health advisory levels, you may want to use a different water source or filter your water before drinking, cooking, and preparing infant formula.
- The North Carolina Department of Health and Human Services has developed a PFAS testing and treatment factsheet. This factsheet provides information on available treatment systems that have been shown to reduce PFAS concentrations in drinking water.
(https://epi.dph.ncdhhs.gov/oeef/pfas/PFAS_TestingFiltration.pdf)
- Reduce your use of products containing PFAS (packaged foods, products with non-stick or stain-resistant coatings, and some personal care products). If you have questions about the products you use in your home, contact the Consumer Product Safety Commission at 1-800-638-2772.
- **Boiling water will not remove PFAS.**

Additional Resources:

EPA information on GAC: <https://semspub.epa.gov/work/HQ/401595.pdf>

EPA Explains PFAS: <https://www.epa.gov/pfas/pfas-explained>

FDA information on PFAS: <https://www.fda.gov/food/environmental-contaminants-food/and-polyfluoroalkyl-substances-pfas>

NCDEQ Strategy for PFAS: <https://www.deq.nc.gov/news/key-issues/emerging-compounds/action-strategy-pfas>

NCDHHS and PFAS: https://epi.dph.ncdhhs.gov/oeef/a_z/pfas.html

EPA PFAS Fact Sheet: https://www.epa.gov/system/files/documents/2024-04/pfas-npdwr_fact-sheet_general_4.9.24v1.pdf