

PFAS and Private Wells



PFAS, or per- and polyfluoroalkyl substances, are a family of human-made chemicals that have been widely used for their ability to resist heat, oil, grease, and water. PFAS have been used for decades in manufacturing and consumer products including nonstick cookware, stain and water-resistant products, cleaning products, cosmetics, food packaging materials, and firefighting foam. These chemicals break down very slowly in the environment and can be found in water, air, soil, fish, and wildlife.

How can I be exposed to PFAS?



Some common ways you can be exposed to PFAS include using products containing PFAS, workplace exposure, and consuming contaminated food or water. When PFAS are found in drinking water, the main exposure is typically from ingesting water through drinking and eating foods prepared with that water. Household uses such as cleaning, dishwashing, showering, and bathing are less likely to result in significant exposure.¹

What are the health risks from exposure to PFAS?

Research is ongoing to better understand the health risks associated with exposure to PFAS. Recent scientific studies indicate exposure to some PFAS may increase the risk for certain cancers, raise cholesterol levels, decrease fertility, lower birth weights, and reduce the immune system's ability to fight infections.

What are the drinking water limits for PFAS?

Reducing PFAS in drinking water helps reduce PFAS health risks. The US Environmental Protection Agency (US EPA) has set limits for six PFAS in drinking water for public water systems (see table). The regulations set Maximum Contaminant Level Goals (MCLGs), which are non-enforceable, public health goals below which there is no known or expected risk to health. Additionally, enforceable Maximum Contaminant Levels (MCLs), which are the highest level of a contaminant that is allowed in drinking water, are set as close to the MCLGs as possible. The Hazard Index is intended to set limits for mixtures of the four PFAS listed, as combinations of these chemicals can have negative health risks.

PFAS	Maximum Contaminant Level Goal	Maximum Contaminant Level
PFOA	0	4.0 ppt*
PFOS	0	4.0 ppt
PFHxS	10 ppt	10 ppt
PFNA	10 ppt	10 ppt
GenX Chemicals (HFPO-DA)	10 ppt	10 ppt
Mixture of two or more: PFNA, HFPO-DA, PFHxS, and PFBS	Hazard Index of 1 (unitless)	Hazard Index of 1 (unitless)

*ppt = parts per trillion

Should I be concerned about PFAS in my well?

PFAS can contaminate groundwater and potentially impact private wells when products such as certain fire fighting foams or fertilizers containing PFAS are used, through accidental releases, or from facilities that use, manufacture, or dispose of PFAS. PFAS have been detected in surface and groundwaters across the state, and testing is in progress to better understand where they can be found. US EPA drinking water regulations for PFAS do not set any requirements or standards for private well owners. However, if you are concerned about PFAS contamination in your well, you may consider contacting a certified laboratory for testing, connecting to a local public water system, or adding treatment to reduce your exposure to PFAS.

¹ According to the US Centers for Disease Control and Prevention. High levels of PFAS may still be a concern for general use. Contact the KY Department for Environmental Protection at PFAS@ky.gov if you find high levels of PFAS in your well.

How can I reduce the levels of PFAS in my home drinking water?

◆ Conduct Water Sampling

To know whether PFAS are a concern in your drinking water, contact a certified laboratory for more information on sample testing. A list of certified labs is available at eec.ky.gov/PFAS. PFAS testing can be expensive due to the specialized equipment involved. The US EPA's maximum contaminant levels are provided on the front page as a reference, but be aware that laboratories may only be able to report PFOA or PFOS levels down to approximately 2-4 ppt.

◆ Connect to a Public Water System

Contact your local public water system to learn more about their available PFAS results. In certain areas, funding may be available to assist in connecting households to public water systems.

◆ Consider a Home Treatment Unit

Consider home treatment units if you are concerned that your water may be contaminated and would like to reduce PFAS levels in your drinking water. **Point-of-entry** systems are installed on the main water line and treat all of the water entering a home, while **point-of-use** units such as a pitcher, faucet-mounted, or refrigerator filter treat water from a single faucet or fixture.

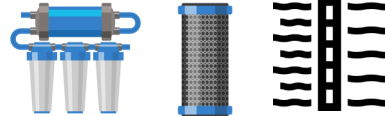
Treatment units include **granular activated carbon (GAC)** filters and **reverse osmosis (RO)** systems. It is important to confirm that the unit has been independently tested and certified to reduce PFAS by the National Sanitation Foundation (NSF) and the American National Standards Institute (ANSI). When determining which home treatment unit is right for you, consider the particular needs of your household, purchase costs, installation needs, and maintenance requirements. It is important to follow the manufacturer's recommendations for installation and maintenance of the system, including the frequency for replacing filters.

Granular Activated Carbon (GAC)



- GAC filters remove PFAS by trapping PFAS and other contaminants with small pieces of carbon as water passes through the filter.
- Types of GAC filters include refillable pitchers and dispensers, faucet-mounted filters, and whole house treatment systems.
- Look for NSF/ANSI 53 standard certification for GAC filter units.

Reverse Osmosis (RO)



- RO systems remove PFAS by passing contaminated water through a membrane that blocks PFAS, but allows clean water to flow through.
- RO systems for homes are typically installed under the sink or on a countertop for a specific faucet. RO systems should also include a GAC component.
- Look for NSF/ANSI 58 and 53 standard certifications for the RO and GAC components.

More Information

- Potential Health Effects of PFAS | www.atsdr.cdc.gov/pfas/health-effects/index.html
- US EPA Information on PFAS | www.epa.gov/pfas
- NSF/ANSI Water Treatment Standards | www.nsf.org/consumer-resources/articles/standards-water-treatment-systems
- Search for NSF/ANSI Certified Products | <https://info.nsf.org/Certified/DWTU/>