

UNDERSTANDING CONTAMINANTS OF EMERGING CONCERN

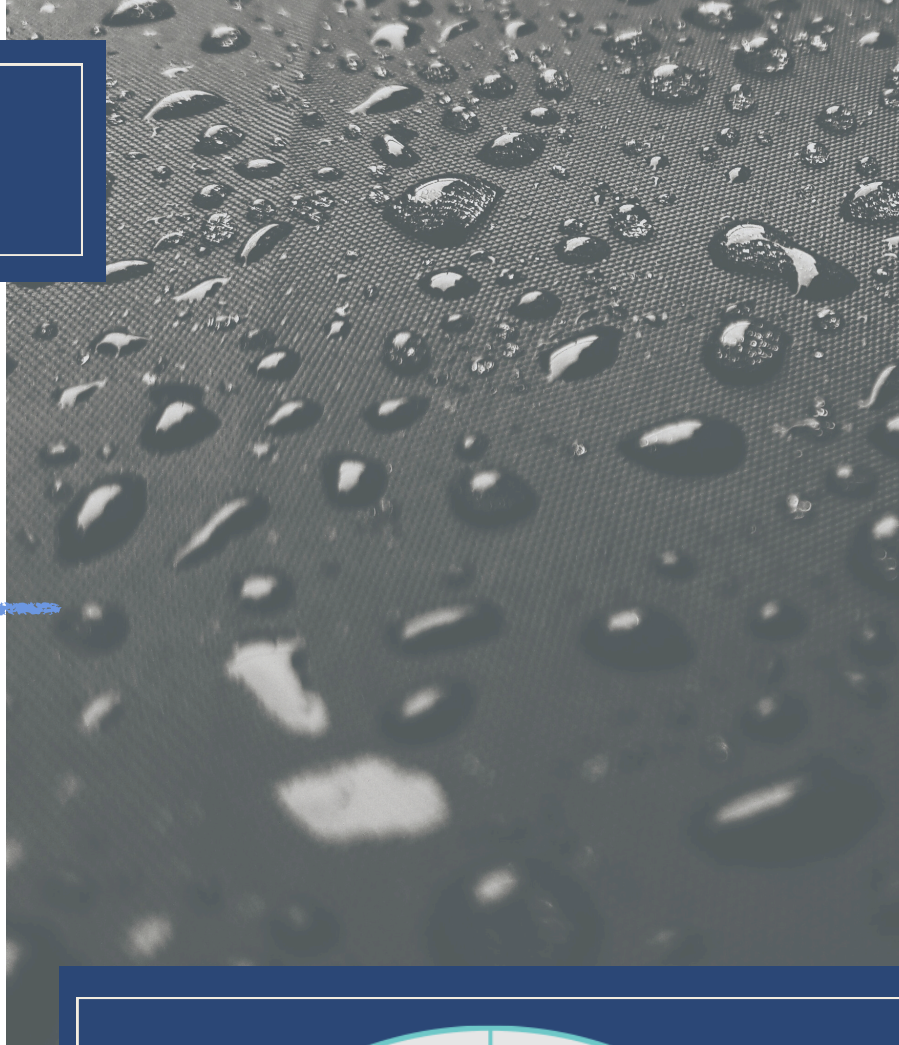
PFAS

Contaminants of emerging concern are chemicals that have been detected in environmental monitoring samples. They may have impacts on human health or nature, and typically are not regulated under current laws.

WHAT ARE PFAS?

Per- and Polyfluoroalkyl Substances (PFAS), are a group of human-made chemicals that were created in the 1930s and 1940s to make coatings and products that resist heat, water, and oil, and allow liquids to spread widely. These “forever chemicals” do not break down easily and may be passed through the environment due to the movement of water, air and soil. There are thousands of PFAS chemicals that may be found in homes, cars, hospitals, and restaurants. In addition, military bases and airports use these chemicals for fire suppression.

In the 1970s health concerns emerged regarding PFAS chemicals. By the 2000s, manufacturers began reducing or phasing out PFAS use. While many companies have been successful in reducing the number of products containing PFAS, they are still found in everyday items.

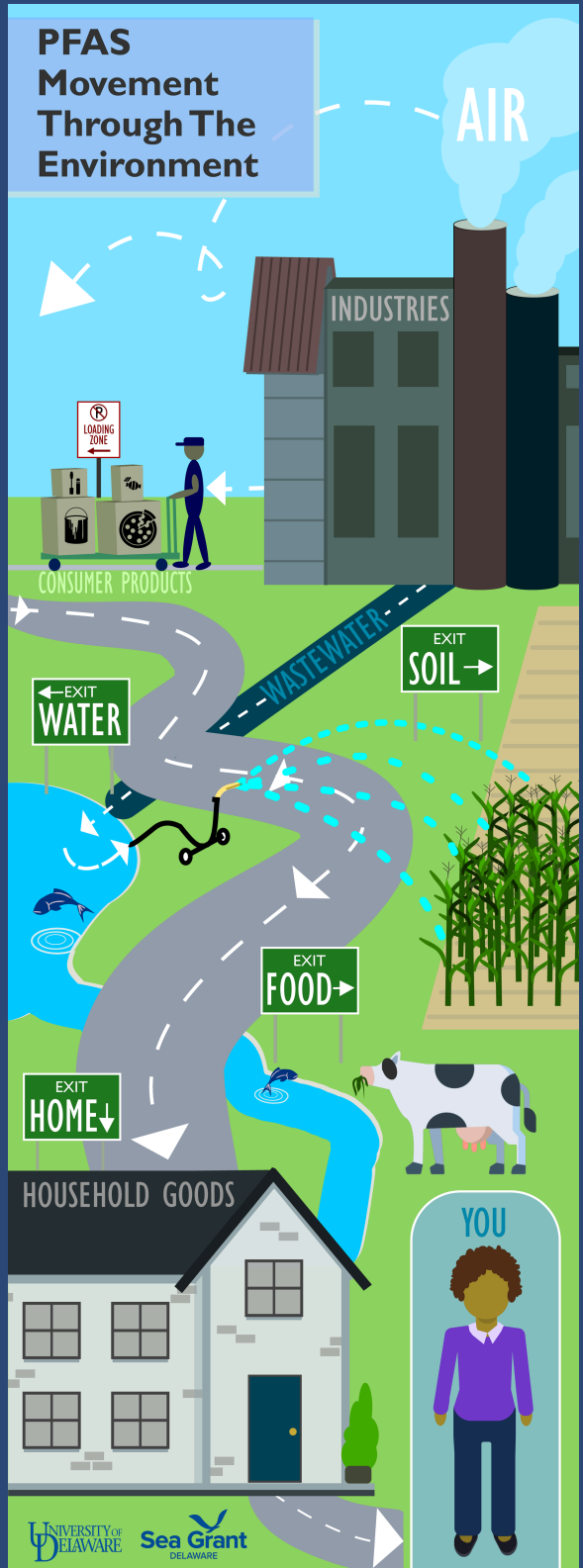


Many everyday household items may contain PFAS.
Graphic Credit: Tampa Bay Water





PFAS CONCERNS AND YOUR HEALTH



PFAS do not break down naturally and may be transported throughout the environment or build up over time. The road in the graphic represents how industries may contribute to the movement of PFAS through air, water and soil and into our food sources and home.

Continuing to understand the implications of PFAS in the environment and their possible effects on your health are a top priority for federal, state and local entities.

To date, research has found that **PFAS remain in the environment and may be found in water, air, food, and soil across the world.** Some PFAS compounds bioaccumulate, or buildup, in the tissues of plants, animals, including humans.

What Does This Mean For You?

Plants, animals, and humans may be exposed to PFAS from a variety of sources. Assessment of the potential human health risks of PFAS are ongoing.

U.S. Environmental Protection Agency (EPA)¹ research suggests that PFAS chemicals may:

- Cause developmental delays in children
- Negatively affect reproductive health
- Reduce the ability to fight infections
- Increase the risk of some cancers
- Increase cholesterol levels



Grease resistant food packaging may contain PFAS.
Photo Credit: Freepik.com

¹US EPA, OA. Our Current Understanding of the Human Health and Environmental Risks of PFAS. 14 Oct. 2021, <https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas>.

HOW CAN I REDUCE MY RISK?



Drinking Water

Drinking water is one way you may be exposed to PFAS. While it is not yet possible to treat for PFAS at drinking water plants, there are things you can do at home to find out what your risk is and to reduce it.

- Have your private well tested. Information is available at [DE.gov/pfas](https://de.gov/pfas) and dhss.delaware.gov/dph/lab/privdw.html
- Use under-sink reverse osmosis and two-stage filters



Food

Our food may come into contact with PFAS. Plants and animals we eat may grow, live or eat in areas with PFAS in the soil, water or air. Food may also be exposed to PFAS during the cooking processes through the use of non-stick treated cookware and storage containers. To reduce your PFAS exposure:

- Use stainless steel, cast-iron, glass or ceramic cookware instead of non-stick pans
- Don't heat up food wrapped in grease-resistant packaging
- Make stovetop popcorn instead of microwaved popcorn bags

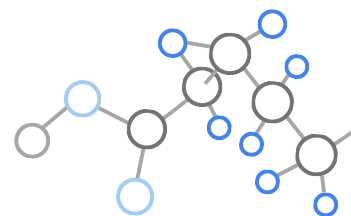


Household Goods

Exposure to PFAS from items around the house may come from products such as upholstered furniture, stain- and water-repellent clothing or carpeting, or cosmetics. Options for reducing your PFAS risk in your home include:

- Avoid purchasing products that are water or stain repellent
- Ensure your vacuum has a HEPA filter and vacuum frequently
- Add home HEPA air filter(s)

WHAT IS DELAWARE DOING?



State of Delaware Activities

The Delaware Department of Natural Resources and Environmental Control (DNREC) and the Department of Health and Human Services (DHSS) work together to conduct statewide testing of public drinking water sources.

If PFAS levels above the proposed EPA regulatory limits are found in drinking water, a response plan is created. DNREC and DHSS are also investigating the implications of these chemicals in surface water, wastewater and edible fishes.

For more information please visit: [DE.gov/pfas](https://de.gov/pfas).

Research Spotlight

Dr. Mi-Ling Li at the University of Delaware is leading PFAS-related research projects. She hopes that by understanding where PFAS is found and how it moves in the environment, we will be able to improve protections of our precious coastal water supplies and ecosystems.

PFAS Movement in Waters

Collaborating with United States Geological Survey scientists, Dr. Li's group is conducting a field study in the Murderkill and St. Jones Watersheds in Delaware. The project's goal is to understand how PFAS moves and chemically reacts in rivers and underground waters, and along the transition from freshwater to saltwater. The project data will be used to predict the movement of PFAS in the environment.

PFAS in Delaware Bay Food Webs

Supported by Delaware Sea Grant, Dr. Li's research group is investigating where PFAS is found in Delaware Bay's waters, sediments, and animals. This project aims to provide a big picture look at PFAS contamination across the bay over time. It also will identify fish species that contain high levels of PFAS.



Dr. Li's group conducting field work at the St. Jones Reserve.
Photo Credit: Dr. Li