Frequently Asked Questions

What is PFOA?

Per-and polyfluoroalkyl substances (PFAS), also known as perfluorinated chemicals (PFCs), are a large group of more than 3,000 man-made chemicals that have been used since the 1940s in a wide variety of industrial and commercial applications around the world. PFAS repel water and oil and are resistant to heat and chemical reactions. Thus, they have been used in thousands of products, including in consumer products such as stain resistant coatings for upholstery and carpets, water-resistant outdoor clothing, paper packaging for food and non-stick cookware. PFAS have also been used in firefighting foam and a number of industrial processes. PFAS chemicals are very persistent in the environment and in the human body. In other words, they don't break down and, instead, accumulate over time.

Perfluorooctanoic acid (PFOA), the subject of the notice you recently received from the Essex Fells Water Department, is one type of PFAS. Another type of PFAS, which you will see referenced in the fact sheets and other background materials identified below, is perfluorooctane sulfonate (PFOS). PFOA and PFOS have been the most extensively produced of the PFAS chemicals. While consumer products and food are a large source of exposure to PFOA and PFOS for most people according to the United States Environmental Protection Agency (EPA), they can also enter drinking water through industrial release to water, air or soil. PFOA and PFOS have been identified in bodies of water and in a variety of land and water animals.

For additional information, please refer to the fact sheets on PFOA and PFOS published by the EPA and the NJ Department of Environmental Protection (NJDEP). Copies of these fact sheets and related materials are available at essexfellsboro.com/pages/pfoa.

What prompted the notice I received regarding levels of PFOA above NJ drinking water standards?

New Jersey began regulating PFOA and PFOS in drinking water, effective in 2021. As of September 1, 2021, our test results at three locations showed levels of PFOA above the NJ regulatory standard, prompting the regulatory notice to you.

Until this year, PFOA and PFOS were unregulated contaminants, meaning neither the EPA nor the NJDEP regulated these substances in drinking water. In 2016, the EPA set a "lifetime health advisory" level for PFOA and PFOS (either singly or in combination) in drinking water at 70 parts per trillion. In other words, 70 ppt is the concentration of PFOA or PFOS in drinking water at which the EPA concluded adverse health effects are not anticipated to occur over a lifetime. In 2019, the Essex Fells Water Utility began monitoring for PFOA and PFOS and reporting those results to you in its Annual Drinking Water Quality Report. PFOA was detected and reported for 2019 and 2020, but those results did not approach the EPA's health advisory level.

Effective in 2021, New Jersey began regulating PFOA and PFOS in drinking water. NJ is one of the first states to regulate these substances and it adopted stringent new standards for them: the maximum contaminant level in New Jersey is now 14 parts per trillion for PFOA and 13 parts per trillion for PFOS, measured at all points of entry to the system, not at your tap.

Based on samples collected through September 1, 2021, our water system exceeded the new NJ standard for PFOA in three locations. Those test results at those facilities showed PFOA levels of 15, 16 and 22 parts per trillion, respectively, meaning they exceeded NJ's 14 ppt regulatory limit by 1, 2 and 8 parts per trillion, respectively, and were well below the EPA's health advisory level of 70 ppt. Our test results for PFOS as of September 21, 2021 were within NJ regulatory and EPA advisory limits.

To help you visualize what these "parts per trillion" measurements mean, one ppt is equivalent to a single drop of food coloring in 18 million gallons of water. 18 million of gallons of water is the total volume of water contained in over 27 Olympic-size swimming pools, combined. Stated differently, one ppt would be 1/27 of a drop of food coloring in a single Olympic-size swimming pool.

How does PFOA affect people's health?

The human health effects from exposure to low environmental levels of PFOA are unknown. See: https://www.cdc.gov/biomonitoring/PFOA_FactSheet.html. This is an emerging topic of public concern and, while more information is continually becoming available, additional research is needed to better understand exactly how exposure to PFOA can affect human health. Where regulatory standards have been established or advisories issued, the concern is with a lifetime of accumulation, due to the tendency of these materials to accumulate over time. The current health advisories for PFOA in drinking water are focused on ingestion (drinking water or using it in food preparation), not skin contact or other exposures.

In laboratory animals given large amounts, generally at levels well above human exposure, PFOA can affect growth and development, reproduction, and injure the liver.

According to the NJ DEP, there have been some studies of the general population, communities with drinking water exposures and exposed workers (e.g., in industries that manufacture or use these chemicals) that suggest that PFAS increase the risk of a number of health effects. In these studies, the most consistent human health effect findings for PFOA are increases in serum cholesterol, some liver enzymes and uric acid levels. Please refer to the NJDEP and EPA fact sheets for more information.

The usual caveats regarding any contaminants in water, of course, apply. Some people may be more vulnerable to contaminants in drinking water than the general population. In the case of PFOA specifically, if you are pregnant, nursing or providing an infant with formula that requires adding water, regulatory authorities recommend you seek advice regarding PFOA in drinking water from your health care providers.

Please carefully review the September 2021 regulatory notice and the fact sheets on PFOA published by the NJ Department of Environmental Protection (NJ DEP) and the United States Environmental Protection Agency (US EPA). Copies of these materials are available at essexfellsboro.com/pages/pfoa.

How prevalent are PFOA and other PFAS in the environment?

Because these chemicals have been used in an array of consumer products over a long period of time, most people have been exposed to them. Scientists have found PFOA and PFOS in the blood of nearly all the people they tested. According to the NJDEP, four types of PFAS, including PFOA and PFOS, have been found in the serum (the clear part of blood) of greater than 98% of the U.S. population. Serum PFAS levels generally reflect exposure that has occurred over several years.

Since 2002, the use of PFOA and PFOS has decreased substantially in the United States. Between 2000 and 2002, PFOS was phased out of production in the U.S. by its primary manufacturer. In 2006, eight major companies agreed to phase out their global production of PFOA and PFOA-related chemicals, although there are a limited number of permitted ongoing uses. As the use of some PFAS has declined, some blood PFAS levels have gone down as well.

Are other water systems in New Jersey affected? What about bottled water?

NJ is a state with a long industrial history. Thus, unsurprisingly, these chemicals have been detected at varying levels across the state, including in many water systems throughout the state.

PFOA appears more likely to find its way into water systems that use wells drilled into groundwater aquifers. Less affected are systems that rely on surface water, like rivers and reservoirs. Essex Fells draws its water from aquifers, which we believe is better than water drawn from NJ rivers. However, in this instance, that feature has likely contributed to the elevated PFOA samples.

With respect to bottled water, you would have to consult the applicable provider. As with any water source, you should review the source's drinking quality reports to review all contaminants that the water contains. You should also consider the personal health and environmental effects of the delivery vessel (the plastic bottle).

What is the source of PFOA in local water?

According to the EPA, PFOA contamination is typically localized and associated with a specific facility, for example an industrial facility where these chemicals were produced or used to manufacture other products. Although Essex Fells by ordinance has never had commercial development or industrial uses, NJ is an industrial state and there may have been businesses in the area that released PFOA into the environment. We also have a small number of wells outside our borders. PFOA likely made its way into the ground and, over time, migrated into one of the aquifers from which we draw water.

We have retained experts to help us answer this question and evaluate what remedies may be available to us. In the interim, we are focused on the steps we will take to isolate and filter the PFOA that has been detected.

How will the water utility reduce or eliminate this contaminant?

We are committed to ensuring the quality of your water, and we are taking several steps, short- and long-term, to reduce the concentration of PFOA and bring the three affected sites within the applicable NJ standard. To deal with this contaminant:

- We will be expanding our existing treatment facilities to filter PFOA, using granulated activated carbon granules and/or ion exchange resins. Both technologies have been approved by the NJ DEP for the removal of PFOA from water. Our experts completed a feasibility study for this work earlier this year, and are in the process of refining the design and confirming the timeline and cost. To accommodate the size of the filtration equipment, we need to construct or expand buildings at up to three sites. Our goal is to expedite construction, but the timing is subject to NJ DEP and local approvals, including approvals that will be required from other towns where we have facilities. Timing is also subject to the availability of specialized labor and materials, supplies of which are in high demand given the large number of water systems in New Jersey that need to build similar filtration systems in response to the new regulation.

- In the interim, we are confirming what steps we can take to most effectively isolate and reduce concentrations of PFOA during the period before large new treatment facilities are constructed. We have stopped drawing water from two wells with higher concentrations of PFOA, at least temporarily. We may close other wells or blend water sources at different rates. We have substantial capacity at wells that do not have excess levels of PFOA, which provides some flexibility. We are conducting additional testing throughout the system to gauge the impact of the initial steps we have taken and inform our analysis of the additional steps we

can take. We may also utilize supplemental water sources. All of these interim measures are subject to additional discussions with our regulators and experts and careful consideration of the potential environmental impact of closing or reducing the amount we draw from particular wells.

I have installed, or am considering installing, a residential water filtration system in my home. Does it/will it remove PFOA?

There are residential (point of use) filtration systems that are designed to reduce PFOA and PFOS. Please consult the manufacturer or installer for information on whether a particular residential water filtration system effectively removes or reduces PFOA (and, if so, to what level).

Before that consultation, you may find it helpful to review page 3 of the EPA fact sheet regarding its PFOA and PFOS drinking water health advisory, a copy of which is available at essexfellsboro.com/pages/pfoa. The EPA fact sheet describes the standards and the protocol for certifying home treatment systems against American National Standards Institute (ANSI) standards to verify their contaminant removal claims.

Please remember that the EPA's standard for PFOA and PFAS is 70 parts per trillion (combined) and some residential systems on the market may be certified to that threshold. New Jersey's environmental standard is 14 parts per trillion for PFOA and 13 parts per trillion for PFOS. Thus, when evaluating the potential effectiveness of home filtration systems, you should confirm the standard to which the filtration system is certified. The September 1, 2021 test results that prompted the notice letter you received from the Essex Fells Water Department regarding three of its treatment plants showed test results for PFOA that were 15, 16 and 22 parts per trillion at three treatment facilities (these were not point of use measurements, so may not correspond to results at your tap), which is well below the EPA standard. Accordingly, the benefits of a residential filtration system that is certified only to the EPA standard should be carefully considered.