



PERFLUORINATED CHEMICALS IN DRINKING WATER QUESTIONS & ANSWERS

Willow Grove and Warminster, PA

February 2015

At the request of the U.S. Navy, the U.S. Environmental Protection Agency (EPA) is continuing to sample private drinking water wells in the area of the Willow Grove Naval Air Station Joint Reserve Base (NASJRB) in Horsham, PA and in the area of the Naval Air Warfare Center Warminster (NAWC), PA for perfluorinated chemicals (PFCs), including perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA).

To date, EPA has sampled 107 private wells near NAWC and the Navy is providing bottled water to 12 properties that have levels of PFCs at or above the EPA's provisional health advisory level (HAL). Near NASJRB, EPA has sampled 216 private wells and the Navy is providing bottled water to more than 40 properties that have levels of PFCs at or above the EPA's provisional HAL.

Samples taken last summer showed levels of PFOS and PFOA above EPA's provisional HAL in private drinking water wells. EPA continues to coordinate closely with the U.S. Navy, U.S. Air Force, Pennsylvania Department of Environmental Protection (PADEP), the Centers for Disease Control and Prevention (CDC)/ Agency for Toxic Substances and Disease Registry (ATSDR), and public drinking water suppliers to ensure that public health is protected.

HEALTH

Q: Can I continue to drink the public water?

A: Yes. The Horsham Water and Sewer Authority (HWSA), Warrington Township Water and Sewer Department (WTWSD), or Warminster Municipal Authority (WMA) wells that had PFOS and/or PFOA levels exceeding the provisional HALs have been taken off-line until appropriate treatment can be installed. Drinking water wells at the Horsham Air Guard Station have also been removed from drinking water purposes.

Q: What are Provisional Health Advisory Levels (HALs)?

A: In 2009, EPA issued provisional HALs for PFOS and PFOA. There are no drinking water standards for these chemicals. The provisional HAL values are 0.2 micrograms per liter of water ($\mu\text{g/L}$) for PFOS and 0.4 $\mu\text{g/L}$ for PFOA.

While EPA continues its research on these chemicals, it's important to note that HALs are designed to have a significant built-in cushion of protection to account for uncertainties related to toxicity and other sources of exposure.

Q: How long have I been exposed to PFOS and PFOA in my drinking water?

A: Unfortunately, there is no way to determine how long this chemical has been in the water supply.

The drinking water production wells, where PFOS and PFOA were detected at or above the HALs, have been taken off line to prevent further exposure. In addition, the Navy, EPA and PADEP continue to investigate potential sources.

Q: What are the health effects from being exposed to PFOS and PFOA at levels above the HAL?

A: In laboratory studies of animals given large doses of PFCs, results indicate that PFOS and PFOA can cause developmental, reproductive, and other adverse effects including increased liver weight in laboratory animals. In humans, more research is needed, but the most consistent findings from epidemiology studies are elevated blood serum total cholesterol levels among exposed populations, and limited findings related to low infant birth weights.

HEALTH, CONT'D

Q: Do PFOS and PFOA cause cancer?

A: Both chemicals, in large doses, have caused tumors in animal studies.

At this time, there is not enough information to determine, for certain, if cancers and other adverse health effects in humans are caused by PFOS and PFOA.

There are some epidemiology data that indicate a link between PFOA (but not PFOS) and kidney and testicular cancers in humans however, more research is underway to evaluate the impacts of these compounds on human health and the environment.

We do know that studies show that nearly all people have some level of PFCs in their blood, regardless of age. People may be exposed to PFCs through food, water, or from using some commercial products.

Q: What can I do to protect my family?

A: A few simple steps can help reduce your exposures to PFOS and PFOA in drinking water, including:

- Avoid ingesting contaminated tap water above the provisional HALs for PFOS and PFOA.
- For private well users in the test area, participate in the Navy's sampling program.
- When considering a household treatment system, consult the manufacturer about the system's specifications. Research is underway to study the effectiveness of household treatment systems on reducing the levels of PFCs in private drinking water, however, there is currently no guidance for private well users regarding the proper filter change and maintenance for treating PFCs using household treatment systems.
- Discuss your health concerns with your family doctor.
- Toxicologists from EPA and CDC/ATSDR are available to answer questions. To set up a meeting, please see contact information to the right.

Q: Can I prepare baby formula with water contaminated with PFOS/PFOA above the HAL, or at any level?

A: To reduce potential exposure to infants, caregivers should use pre-mixed baby formula or reconstitute using alternative water sources not containing PFOS and/or PFOA.

Q: Should I be concerned about the other PFCs listed on my private well results?

A: At this time, we don't have much information about the toxicity of the other PFCs. Most toxicity studies involving PFCs have focused on PFOS and PFOA. As more research is done on this group of chemicals, we will learn more about potential health effects.

Q: Can I use my private well to water my vegetable garden?

A: From a health perspective, ingesting PFOS and PFOA in drinking water, above the provisional HALs, is the primary exposure pathway of concern. PFOS and PFOA are unlikely to be taken up by plant roots. As a precautionary measure, vegetables or fruits irrigated by contaminated water should be washed thoroughly prior to consumption.

Q: Can I use my private well for showering/bathing children?

A: Yes. Our primary concern is the ingestion of PFOS and PFOA in drinking water above the provisional HALs.

For additional information about health concerns, contact:

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PRIVATE WELL TESTING

Q: Do I have to get my private well tested?

A: If you live within the testing area, EPA and our health partners recommend that you get your well tested so you may take the proper steps to ensure the health and safety of your family. The testing process is quick and offered at no cost to residents.

Q: Can I get my well tested if I live outside of the testing area?

A: At this time, the Navy is focusing their testing on certain areas where PFOS and PFOA are impacting the public drinking water supply. If the results of the current sampling indicate the need to expand the testing area, the Navy will do additional sampling.

Q: Who is paying for the testing and alternate water supply for private well users?

A: The U.S. Navy is paying for the testing and alternate water until an appropriate solution is implemented.

EPA'S UNREGULATED CONTAMINANT MONITORING RULE (UCMR)

Q: What is the Unregulated Contaminant Monitoring Rule (UCMR)?

A: The EPA's UCMR program is used to collect data for selected contaminants, suspected to be present in drinking water, to determine how frequently and at what level they occur. These contaminants do not have health-based standards under the Safe Drinking Water Act.

Q: How often does EPA look for new contaminants?

A: Every five years EPA develops a Contaminant Candidate List to evaluate new chemicals not currently tested for in public drinking water supplies. From this list and other sources of information, EPA identifies a smaller group of contaminants (30 or less) for monitoring by public water systems. The next list of chemicals to be monitored under the UCMR is due in 2016.

Perfluorinated Chemicals (PFCs), including PFOS and PFOA, are part of the third list of contaminants to be investigated, therefore we call it UCMR3.

UCMR3 contains 28 chemical contaminants and two viruses. Of the chemical contaminants, only six are PFCs and only two of the PFC's have provisional health advisory levels at this time (PFOS and PFOA).

Q: Do all water systems have to sample for UCMR contaminants?

A: No. Only those water systems serving more than 10,000 people are required to sample for UCMR contaminants. In addition, approximately 800 small water systems are randomly selected to be included in the sampling program.

ADDITIONAL INFORMATION

Q: What are PFOS and PFOA?

A: PFOS and PFOA are organic chemicals used in repellants for stains, water, oil, and grease. Commercial and consumer products containing or degrading to these compounds were first introduced in the 1950s.

They have been used in a variety of products such as the fabric of upholstered furniture, carpets, non-stick cookware, floor wax, and the lining of microwave popcorn bags. Firefighting foams also contain these chemicals. Over time, both chemicals became widely distributed in the environment and have been detected in the blood of humans, wildlife, and fish.

For more information about PFOS and PFOA, please see links to fact sheets on the last page of this fact sheet.

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Links to More Information

Provisional Health Advisory Fact Sheet:

http://water.epa.gov/action/advisories/drinking/upload/2009_01_15_criteria_drinking_pha-PFOA_PFOS.pdf

UCMR Fact Sheet:

http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/upload/UCMR3_FactSheet_General.pdf

PFOS/ PFOA Emerging Contaminant Fact Sheet:

http://www2.epa.gov/sites/production/files/2014-04/documents/factsheet_contaminant_pfos_pfoa_march2014.pdf

EPA Headquarters Frequently Asked Questions Page:

<http://www.epa.gov/oppt/pfoa/pubs/faq.html>

ATSDR TOXFAQs Link for Perfluoroalkyls:

<http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=1116&tid=237>