

PFCs and Human Health



The Air Force's Priority is the Protection of Human Health and the Environment.

What are PFCs?

According to the EPA, perfluorochemicals (PFCs) are a group of synthetic chemicals that have been used in many consumer products. PFCs are used in a variety of industrial applications and consumer products, including manufacturing nonstick cookware and for surface protection in stain-resistant carpets, clothing, furniture, and some paper and cardboard products used for food packaging (e.g., microwave popcorn bags, fast food wrappers, and pizza boxes). PFCs are also used in numerous products to help them flow freely. These include paints, cleaning products, and certain firefighting foams called aqueous film-forming foams (AFFFs) that are used to fight fuel-based fires.

Where are PFCs found?

PFCs have been found in soil, air, and water and do not break down easily in the environment. PFCs in air emissions are thought to remain in the air for days to weeks, and can travel long distances before falling to the ground. Some PFCs are also able to move through soil and easily enter groundwater where they can travel long distances. Because PFCs remain in the environment for a long time, environmental exposure will still be possible even after production of these chemicals stops.

How does the Air Force use PFCs?

In 1970, the Air Force began using firefighting foam that contains PFCs to extinguish petroleum-based fires. PFCs in firefighting foams have been important to the Air Force's ability to fight aircraft fires and protect human lives and resources.

How are PFCs regulated?

The federal government does not regulate PFCs in drinking water and there are no state or federal enforceable standards. Under the Federal Safe Drinking Water Act, the EPA identifies contaminants in public drinking water that need further study to determine if a standard should be established. PFCs are among the contaminants being monitored, and the EPA has developed provisional drinking water standards for PFOS and PFOA.

A provisional health advisory (PHA) reflects drinking water levels that are currently considered safe for both adults and children. The provisional levels for PFOS and PFOA are based on adverse effects seen in animal studies. The provisional health advisory levels are 0.4 parts per billion (ppb) for PFOA and 0.2 ppb for PFOS. The EPA recommends that action be taken to reduce levels if they are above the PHA. In response to the PFOS level found at the Haven well, the well was voluntarily removed from use.

What are the effects of PFCs?

According to the EPA, PFCs are found world-wide in the environment, wildlife and humans and leave the body slowly over time. To date, significant adverse effects have not been found in the general human population.

What should I do if my blood results are higher than the national average?

According to the NH DHHS frequently asked questions, a variety of health effects have been studied, but the summary of the literature does not demonstrate a conclusive causal relationship between PFC exposure and any specific health outcome. No one knows what a specific blood PFC level may mean for a person's health, and there is no guidance about any specific medical testing or screening that should be performed as a result of PFC exposure. Please consult your healthcare provider to understand what the PFC levels may mean for their health. For more information, read the NH DHHS FAQs here: <http://www.dhhs.nh.gov/dphs/investigation-pease.htm>.

Air Force Response to PFCs at Former Pease AFB



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How the Air Force has protected human health

- We conducted drinking water sampling in early 2014 after the concerns about PFC exposure were raised by EPA and New Hampshire officials.
- As soon as it was known that PFCs exceeding the EPA's provisional health advisory were present in the Haven well, the City of Portsmouth shut it down. It is no longer a source of public drinking water.
- We also tested 44 private wells, determined one exceeded the EPA's PHA level and provided bottled water to the home within four hours and installed a treatment system within six weeks.
- We performed an extensive survey to locate where firefighting foam was used, stored and released.
- We re-sampled 33 of the groundwater monitoring wells in the vicinity of the Haven Well to track the potential movement of the fire-fighting chemicals and values indicated no movement.
- Currently, we monitor the public water supply on a weekly basis. We have collected 400 samples from the public water system and sentry wells, and have performed over 9,400 analyses for various PFCs.
- We began a base-wide investigation to sample soil and groundwater and identify where mitigation measures might be necessary in the future to protect the private municipal water supplies.
- Results of our monitoring program show that levels at two down gradient municipal wells from the Haven well are well below the EPA's PHA for any firefighting foam contaminants, and the water supply at Pease is deemed safe to drink.

How the Air Force will continue to protect human health

- We will implement the work required by the EPA's Administrative Order and are committed to the protection of human health and the environment.
- We will follow public health recommendations from the Centers for Disease Control's Agency for Toxic Substances and Disease Registry
- We will investigate known or suspected PFC releases, and mitigate where samples are above the EPA's PHA levels.
- We are looking at how to find and notify service members and DoD civilians who may have been exposed to PFCs during the time they were stationed at the base.
- We will establish a Restoration Advisory Board at Pease and participate in public events to engage the Portsmouth community about our PFC-mitigation activities.
- We are actively exploring alternatives to the fire-fighting agent that carries PFCs and limiting those types of releases.
- We will investigate known or suspected PFC releases, and use mitigation measures to prevent levels above EPA's PHA levels in private municipal water supplies.
- The Air Force established a public website to keep the community informed at www.afcec.af.mil/environment/perfluorinatedcompounds.

The Air Force has a proven track record of resolving contamination issues at active and closed bases.

