

Exposure to PFAS in Private Residential Drinking Water Wells Communities near the Pease International Tradeport in New Hampshire

At the request of the U.S. Air Force (USAF), ATSDR evaluated whether drinking water (in the past or currently) containing per- and polyfluoroalkyl substances (PFAS) from private residential drinking water wells within 1 mile of the Pease International Tradeport may harm people's health. USAF coordinated the sampling and analysis of water from these wells between June 2014 and June 2020. The source of PFAS in the drinking water wells likely came from aqueous film-forming foam (AFFF) used on the former Pease Air Force Base. **This fact sheet summarizes ATSDR's findings and recommendations.**

ATSDR Findings: General Summary

- USAF tested 42 wells in Newington and Greenland:
 - 2 wells did not have any PFAS detected in them, so users have not been exposed to harmful levels of PFAS.
 - 1 well is no longer in use, but users may have been exposed to harmful levels of PFAS in the past.
 - 4 wells had a treatment system installed, so users may have been exposed to harmful levels of PFAS in the past. But current use of these wells is not expected to harm health.
 - 5 wells had PFAS detected but at a level well below what is expected to cause harmful health effects.
 - 30 wells have a mixture of PFAS detected that resulted in past or current exposure; however, the risk of harmful health effects is uncertain because of limited scientific information*.
- The cancer risk from current and past exposure to PFAS in many private wells is uncertain because of limited scientific information*.
- Other PFAS exposure sources, such as food and consumer products, could increase the risk of harmful effects beyond the risk from the drinking water exposures alone.

Use the table on page 2 to look up your specific well and learn more about the possible health effects from exposure to PFAS.

*Limited Scientific Information

Currently, there are limited scientific studies about the health effects of many PFAS. Also, there are inadequate methods to evaluate the possible harmful effects from the mixtures of PFAS found in some of the wells.



Possible Health Effects

Current studies suggest that exposure to PFAS may cause the following health effects:

- Increased cholesterol levels
- Changes in liver enzymes
- Decreased vaccine response in children (an immune effect)
- Increased risk of high blood pressure or pre-eclampsia in pregnant women
- Small decreases in infant birth weights (a developmental effect)
- Increased risk of kidney or testicular cancer



**U.S. Department of
Health and Human Services**
Agency for Toxic Substances
and Disease Registry

ATSDR Findings: Specific Wells

Private Wells	Expected Health Effects from Past and Current PFAS Exposure
7, 10, 12, 13, and 27	If you use these private wells, you are exposed to PFAS. However, we don't expect you to have harmful cancer or non-cancer effects because your past and current exposure levels are likely well below the level that causes harmful health effects.
17	This well now has a whole-house treatment system, installed by the USAF. Therefore, we don't expect you to have harmful health effects from current exposure to PFAS. Young children who drank the water from this well before the treatment system was installed (or were born to mothers who did) may have increased risk of harmful non-cancer health effects (such as developmental and immune effects). Adults who used this well previously are also at an increased risk of harmful non-cancer health effects. The cancer risk from past exposure to PFAS is uncertain for both adults and children.
19, 21	The users of these wells now have alternate water but were previously provided a treatment system by the USAF. Therefore, we don't expect you to have harmful health effects from current exposure to PFAS from these wells. Young children who drank the water from these wells before the treatment system was installed (or were born to mothers who did) may have increased risk of harmful non-cancer health effects (such as developmental and immune effects). We are uncertain about the risk of harmful non-cancer health effects for adults who used these wells before the treatment system because current scientific methods are inadequate to evaluate the non-cancer health effects from the mixture of PFAS. The cancer risk from past exposure to PFAS in these wells is also uncertain (for both adults and children).
23	This well now has a whole-house treatment system, installed by the USAF. Therefore, we don't expect you to have harmful health effects from current exposure to PFAS. Young children who drank the water from this well before the treatment system was installed (or were born to mothers who did) may have increased risk of harmful non-cancer health effects (such as developmental and immune effects). We are uncertain about the risk of harmful non-cancer health effects for adults who used these wells before the treatment system because current scientific methods are inadequate to evaluate the non-cancer health effects from the mixture of PFAS. The cancer risk from past exposure to PFAS is uncertain (for both adults and children).
30 and 42	PFAS were not detected in these wells. If you drink water from these wells, you are not exposed to PFAS through your drinking water; therefore, harmful cancer or non-cancer health effects are not expected.
37	This well is currently not in use. However, young children who drank the water from this well previously (or were born to mothers who did) may have increased risk of harmful non-cancer health effects. We are uncertain about the risk of harmful health effects for adults who used this well previously because current scientific methods are inadequate to evaluate the non-cancer health effects from the mixture of PFAS. The cancer risk from past exposure to PFAS in this well is also uncertain (for both adults and children).
Remaining 30 wells	If you currently use or previously used water from the remaining 30 sampled private wells, you have exposure to a mixture of different PFAS. We cannot determine your risk of harmful cancer or non-cancer health effects because current scientific methods are inadequate to evaluate the health effects from these mixtures.

Notes: The USAF used "RES" followed by the well number to identify wells sampled around Pease. ATSDR used the same designations in the health consultation to avoid confusion. Also, in the table above, the "remaining 30 wells" include the following: RES01, RES02, RES03, RES04, RES05, RES06, RES08, RES09, RES11, RES14, RES15, RES18, RES20, RES22, RES24, RES25, RES29, RES31, RES34, RES38, RES43, RES41, RES45, RES48, RES49, RES50, RES51, RES52, RES53, and RES54.

ATSDR Recommendations

For Agencies: The New Hampshire Department of Environmental Services (NHDES), U.S. Environmental Protection Agency (EPA), and USAF should continue with long-term plans to stop exposure to private drinking water sources that have PFAS above EPA or other applicable state guidelines. They should also continue their monitoring program that evaluates PFOS, PFOA, PFHxS, and other PFAS in private wells that do and do not have treatment systems.

For Residents:

- If you are exposed to PFAS from private well water and want to reduce that exposure, use an alternative or treated water source for drinking, food preparation, cooking, brushing teeth, and other activities that might result in ingestion of water. We do not expect you to have significant exposure from PFAS-contaminated water for bathing, showering, washing dishes, and doing laundry.

- If you are concerned about exposure you or your family might have had, talk to your doctor. ATSDR is available to consult with any healthcare provider, as needed. Information to guide healthcare providers is available from <https://www.atsdr.cdc.gov/pfas/resources/info-for-health-professionals.html>.

For People with Long-Term Exposure to PFAS: If you have long-term PFAS exposure, be aware of ways to reduce your exposure. For example,

- Do not consume shellfish from some areas of Great Bay and do not consume deer liver from the area.
- Visit the ATSDR website (<https://www.atsdr.cdc.gov/pfas/health-effects/exposure.html>) to learn more.
- Contact ATSDR at 800-CDC-INFO (800-232-4636) or at <https://www.cdc.gov/dcs/ContactUs/Form> to arrange a consultation with ATSDR scientists.

For Breastfeeding Mothers: We continue to learn more about the health effects of PFAS exposure on mothers and children. From what we know about PFAS exposure through breastmilk, the benefits of breastfeeding outweigh the risks. Your decision to breastfeed is an individual choice that includes different factors, many unrelated to PFAS exposure. This decision also can be made in consultation with your healthcare providers. ATSDR has developed information to guide healthcare providers in this decision-making process with you: <https://www.atsdr.cdc.gov/pfas/resources/info-for-health-professionals.html>.

For More Information

Community members with questions about ATSDR's report or private well users with questions about their individual test results:

- Contact ATSDR at 800-CDC-INFO (800-232-4636) or at <https://wwwn.cdc.gov/dcs/ContactUs/Form> to arrange a consultation with ATSDR scientists.
- To read the full report online, visit www.atsdr.cdc.gov/HAC/PHA/index.asp.



ATSDR

For more information about ATSDR, visit www.atsdr.cdc.gov.

For more information about PFAS, visit the following websites:

- **PFAS and your health:** www.atsdr.cdc.gov/pfas/index.html
- **PFAS Clinical Guidance:** <https://www.atsdr.cdc.gov/pfas/docs/clinical-guidance-12-20-2019.pdf>
- **Breastfeeding and Contaminants:** <https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/environmental-exposures/index.html>

EPA

- **Pease AFB:** <https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0101213>

NHDES

- **Perfluorochemicals:** www.dhhs.nh.gov/dphs/pfcs/index.htm

This evaluation of past and current PFAS exposure from water in private wells near the Pease International Tradeport is limited by several uncertainties. Read more about these uncertainties and actions planned by ATSDR and other agencies in the full report, "Per- and Polyfluoroalkyl Substances (PFAS) in Private Residential Water Wells near the Pease International Tradeport."

You can access the full report at <https://www.atsdr.cdc.gov/HAC/PHA/HCPHA.asp?State=NH>. ATSDR released this report on April 30, 2020 for public comment. During the public comment period which ended on July 30, 2020, ATSDR received 65 comments. Appendix C of the final health consultations provides a response to each of the public comments received.

