



Overview of Testing Results for Perfluorinated Compounds (PFCs) and Follow-On Actions for NALF Fentress

April 2016

INTRODUCTION

In February, the Navy sampled drinking water from homes within a designated sampling area near Naval Auxiliary Landing Field (NALF) Fentress. The request was made as a result of recent sampling conducted on Naval Auxiliary Landing Field (NALF) Fentress which found perfluorinated compounds (PFCs) above US Environmental Protection Agency (EPA) provisional health advisory levels in drinking water and groundwater. A review of results from the private drinking water sampling in February 2016 indicated no further action was needed at the majority of properties sampled and no additional homes were added to the designated sampling area. This information was shared with the public at an Open House Meeting on March 24, 2016. **After further review of the initial sampling data, the Navy discovered a transposition error in the evaluation of the data which resulted in one additional property warranting quarterly monitoring. The correction of this error also resulted in an expansion of ½ mile radius for private drinking water well sampling. Please be aware the sample which resulted in expanding the investigation area did not contain PFCs at levels exceeding any US EPA provisional health advisory levels. The expansion of the designated sampling area is a precautionary step to ensure PFCs have not impacted private drinking water.**

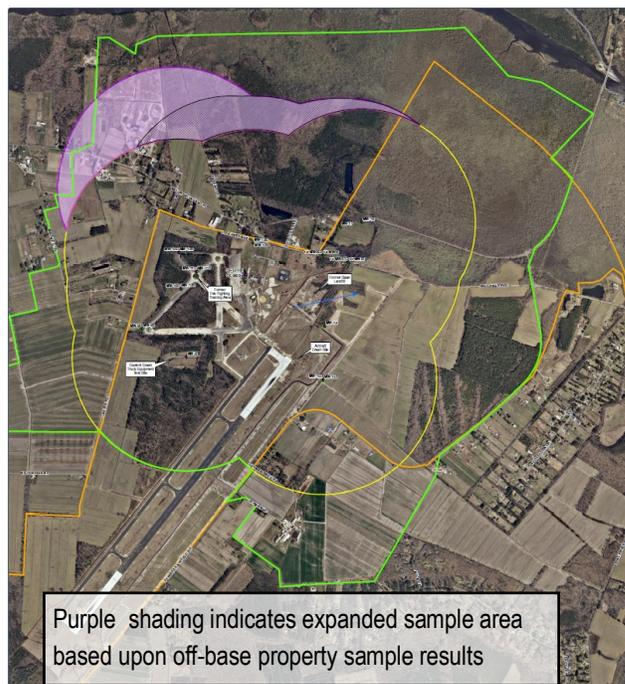
The Navy recognizes the potential for the PFCs to move off the NALF Fentress property in the groundwater, which could impact the quality of drinking water for nearby residents. *The Navy has been working with the EPA, the Virginia Department of Environmental Quality (VDEQ), the Virginia Department of Health (VDOH), Agency for Toxic Substances and Disease Registry (ATSDR), and the City of Chesapeake to develop the off-base sampling approach, including identifying the expanded designated sampling area, as shown in the figure.*

There is no legal requirement to have conducted the drinking water testing. It has been a voluntary measure because the water quality both on-base and for our off-base neighbors is a priority for the Navy. *The Navy has provided alternate drinking water supplies to two off-base properties that were found to contain PFCs above the EPA provisional health advisory. The Navy will continue to provide alternate drinking water to these properties while a long-term solution is implemented.*

This fact sheet provides additional information on PFCs and Navy policy; the off-base drinking water sampling; and planned actions now that results are available.

PFCs AND NAVY POLICY

PFCs are man-made chemicals, which have been used since the 1950s in many household and industrial products because of their stain and water repellent properties. PFCs are now present virtually everywhere in the world because of the large amounts which have been manufactured and used. Once these compounds are released to the environment they break down very slowly.





Health Information

Exposure to PFOA and PFOS appears to be widespread. Studies have found both compounds in the blood samples of the general human population and wildlife nationwide. Exposure to PFOS and PFOA through ingestion is the primary health concern for people. Studies on exposed human populations indicate PFOS and/or PFOA may cause elevated cholesterol levels and possibly low infant birth weight. When animals are given large doses, they exhibit developmental, reproductive and liver effects. Other studies suggest a link with certain cancers.

Health effects from exposure to low levels of PFOS and PFOA are not well known and studies are continuing. At this time, it is not possible to link exposures to PFOS and PFOA in water to a person's individual health issues. Blood tests are available, but they are not routinely done because the results can be inconclusive and test results do not predict health effects. Long term exposure effects are still being investigated by EPA. **Based on what is known and still unknown about PFOS and PFOA, the EPA recommends people not use water that contains PFOS and/or PFOA above the provisional health advisory levels for drinking or cooking.**

Currently, PFCs are classified as unregulated or "emerging" contaminants, which have no Safe Drinking Water Act regulatory standards. PFCs are being studied by the EPA to determine if regulation is needed. The EPA's Office of Water has issued provisional health advisory levels for two PFCs, perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). **Provisional health advisory levels are not regulatory standards. They are health based concentrations above which the EPA recommends action should be taken to reduce exposure.** The EPA provisional health advisory level is 0.2 parts per billion (ppb) for PFOS and 0.4 ppb for PFOA.

Parameter	Maximum Concentration Detected in Fentress Groundwater	EPA PHA Level	Exceeds EPA PHA Level	Unit
Perfluorooctane Sulfonate (PFOS)	11	0.2	Yes	ppb*
Perfluorooctanoic Acid (PFOA)	0.88	0.4	Yes	ppb*

*1 part per billion (ppb) = 1 microgram per liter (µg/L)

EPA = Environmental Protection Agency

PHA = Provisional Health Advisory

Until a decision on regulating PFOS and PFOA or other PFCs is made by EPA, the Navy proactively developed a policy to ensure drinking water has not been impacted by PFC contamination at installations where there has been a nearby known or suspected release of PFCs to the environment. The drinking water and groundwater on NALF Fentress was tested in response to Navy policy because PFC-containing foam was used in years past for fire-fighting training. Results received in January 2016 from samples of the NALF Fentress on-base groundwater monitoring wells (see table above) show that the water contains both PFOS and PFOA above the EPA provisional health advisory levels. The PFC-containing foam is no longer used in training activities at NALF Fentress.

The Navy has started an investigation under our Environmental Restoration Program to determine if, and how far, PFCs have moved off the NALF Fentress property in the groundwater. Our first priority in this investigation has been determining if PFCs are present in the drinking water of nearby residents and taking appropriate action as needed.



OFF-BASE DRINKING WATER SAMPLING

The Navy began notifying residents in the designated sampling area on January 28, 2016 to request to sample their drinking water. Off-base drinking water sampling was conducted at no cost to residents in the sampling area in February 2016. The sampling process took approximately 30 – 45 minutes, and involved a team of two technicians coming into the home to collecting a sample from a unfiltered discharge point. Prior to collecting the sample, the technicians also went over a homeowner questionnaire that was provided with the sampling notification packet.

The questionnaire was designed to gather information about the drinking water well and any filtration systems being used which helped with selecting the appropriate tap to sample and assist when evaluating the sampling results and developing follow-on investigation plans as needed.

ACTIONS BASED ON RESULTS

Results were received in March 2016. The Navy provided notification to each resident sampled of their personal drinking water results on March 22, 2016 as well as notification of follow on actions if needed for their home. The Navy hosted an Open House Public Meeting on March 24, 2016 to share a summary of results and the next steps of the investigation with the public. Due to the transposition error later identified in the data collected, the Navy began notifying residents within the expanded designated sampling area on April 28, 2016 to request to sample their drinking water. The results of this additional sampling are expected in early June 2016. The following is a summary of planned actions based on drinking water sampling results:

Provide Alternate Drinking Water: The Navy will provide alternate water sources (e.g. bottled water) for drinking and cooking to residents within the designated sampling area if their drinking water sample is found to contain PFOS or PFOA at or above the EPA provisional health advisory level. The Navy will continue to provide alternate water at no cost to these residents until a long term solution can be put in place.

Action	PFOA Concentration	PFOS Concentration
Provide alternate water (2 properties)	At/above Provisional Health Advisory level (0.4 ppb*)	At/above Provisional Health Advisory level (0.2 ppb*)
Follow-up sampling, initially quarterly (3 properties)	0.1 ppb* to 0.4 ppb*	0.05 ppb to 0.2 ppb*
No further action at this time (all remaining sampled properties)	Below 0.1 ppb*	Below 0.05 ppb*

*1 part per billion (ppb) = 1 microgram per liter (µg/L)

Quarterly Drinking Water Sampling: The Navy will also conduct additional quarterly sampling for one year at homes found to contain PFOS and/or PFOA at concentrations below the provisional health advisory level, but



above 25% of the provisional health advisory level. The Navy will begin providing an alternate water source for drinking and cooking at no cost to these residents if any of the follow-on drinking water samples are found to contain PFOS and/or PFOA above the provisional health advisory level.

No Additional Action Needed: No additional sampling or other action will be required for homes where PFOS and PFOA are not detected in the drinking water or where concentrations are detected at concentrations less than 25% of the provisional health advisory level for both compounds.

The Navy will use the results to guide the installation of monitoring wells both on-base and off-base as needed for a groundwater investigation. The Navy will work with the EPA and VDEQ to identify and evaluate long-term solutions to PFCs in groundwater.

The Navy and our partnering agencies recognize that you will likely have questions, so we will be holding an Open House Public Meeting in June 2016.

The Navy and City of Chesapeake have set up a water station at **1564 Mount Pleasant Road, Chesapeake, Virginia 23322** (across the street from Butts Road Intermediate School), where residents can take containers to fill with potable drinking water treated by the City of Chesapeake.

FOR MORE INFORMATION

To learn more about the emerging contaminants PFOS and PFOA, please see the EPA fact sheet at:

<http://1.usa.gov/1QbweBl>.

To answer any questions you may have on the sampling program, please call **757-433-3132** or email at

fentressinfo@navy.mil.

The Navy has also established a website at www.cnic.navy.mil/FentressInfo, which we will continue to update as more information becomes available.