



Naval Base Kitsap Bangor Silverdale, Washington PFAS Drinking Water Investigation Fact Sheet Summary of Results and Path Forward

May 2021

Per- and polyfluoroalkyl substances (PFAS) are a family of thousands of different chemicals which have been widely used in industrial and consumer products since the 1950s. PFAS have been used in many household and industrial products because of their stain- and water-repellent properties. PFAS are now present virtually everywhere in the world because of the large amounts that have been manufactured and used. Once these compounds are released, they break down very slowly.

The Navy developed a proactive water testing policy to address past releases of PFAS at installations nationwide, as several PFAS are now of emerging public health concern. The U.S. Environmental Protection Agency (EPA) has issued a lifetime health advisory for two commonly used and studied PFAS, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

The most common Navy activity that could have resulted in the historical release of PFOA, PFOS, and other PFAS to the environment is the use of firefighting foam (specifically aqueous film-forming foam, or AFFF) for testing, training, firefighting, and other life-saving emergency responses. PFAS may be present in the soil and/or groundwater at NBK Bangor (Figure 1) as a result of historical uses of AFFF. Because of this historical use, there is potential for PFOA, PFOS, and other PFAS to be in the groundwater on base, and it may also be present in nearby off-base drinking water wells located in the direction that the groundwater flows away from the base within the sampling areas (Figure 2).

Records indicate that residents in the sampling areas either purchase their drinking water from Kitsap Public Utilities, purchase it from a local water purveyor, or use a private well for their drinking water. The Navy collected samples from 339 wells near NBK Bangor between February 2020 and April 2021.

PFAS are chemicals of emerging concern, which have no Safe Drinking Water Act regulatory standards or routine water quality testing requirements. EPA's lifetime health advisories are non-enforceable and non-regulatory. They provide technical information to states, agencies, and other public health officials on health effects, analytical methodologies, and treatment technologies associated with impacted drinking water.

The Navy's proactive water testing policy is in place to ensure that the communities near our installations are not exposed to

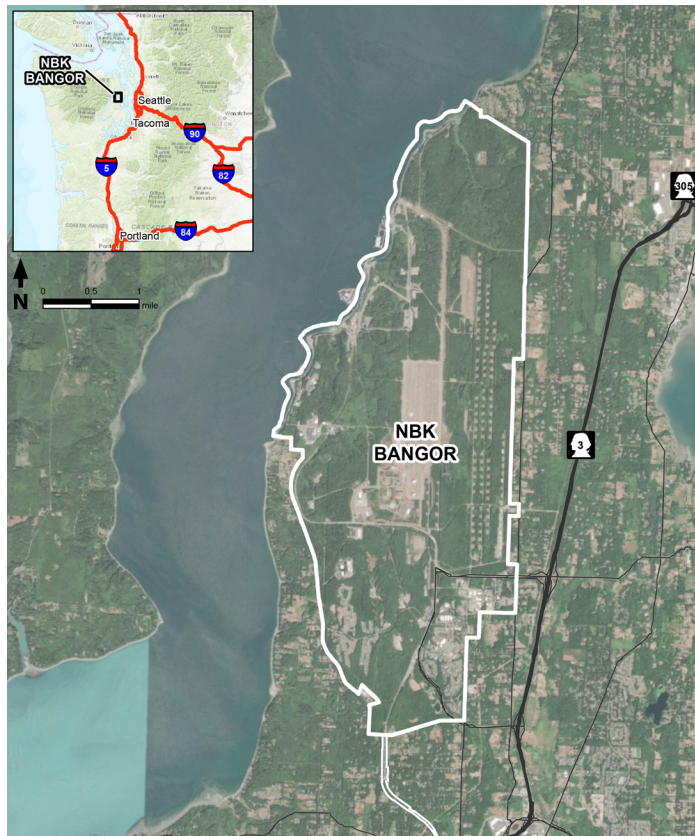


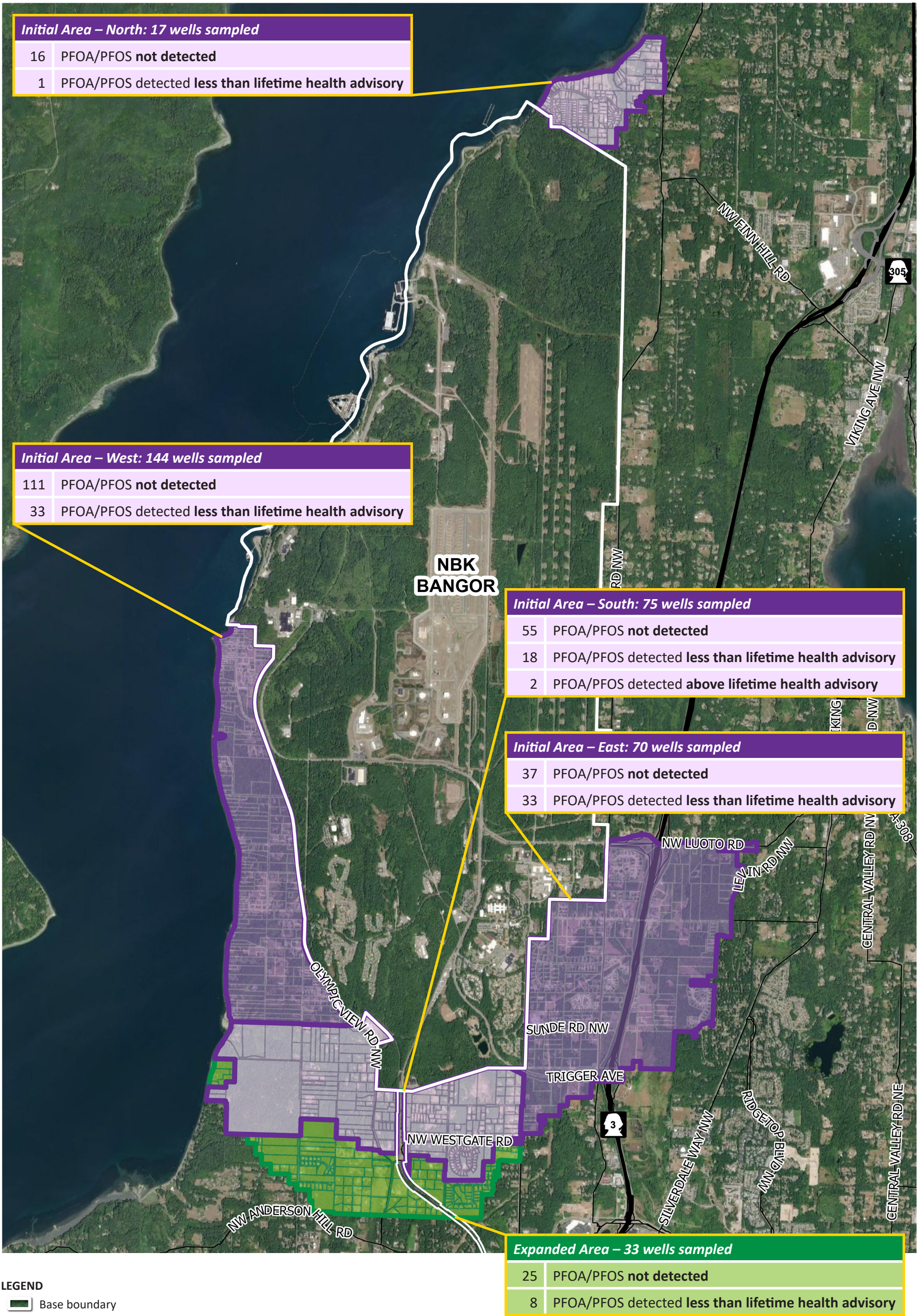
Figure 1 – NBK Bangor

drinking water with PFOA and/or PFOS above the EPA's lifetime health advisory due to past known or suspected Navy release of products containing PFAS. Following this policy, the Navy identified potential PFAS release areas on NBK Bangor that may present an exposure to nearby residents using wells for their drinking water. This drinking water well investigation allows us to identify and address any current exposure to PFOA and/or PFOS above EPA's lifetime health advisory.

There is no legal requirement to conduct this drinking water sampling. The Navy is performing this voluntary sampling because it is important that we ensure that our neighbors in the sampling areas are not drinking water with PFOA and/or PFOS concentrations above the EPA lifetime health advisory as a result of known or suspected releases of PFAS from NBK Bangor.

The Navy will provide bottled water for drinking and cooking to any resident in the sampling areas whose drinking water well contains PFOA and/or PFOS above the EPA lifetime health advisory. The Navy will provide bottled water until a long-term solution is implemented.

Figure 2 – Initial and Expanded Designated Sampling Areas



The Navy is conducting the investigation in collaboration with EPA Region 10, the Agency for Toxic Substances and Disease Registry, the Washington State Department of Ecology, the Washington State Department of Health, and the Kitsap Public Health District.

PFAS

The EPA is currently studying PFAS to determine if national regulation is needed. The EPA's drinking water lifetime health advisory provides Americans, including the most sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS in drinking water. The EPA's health advisory for lifetime exposure is 70 parts per trillion (ppt) for PFOA and 70 ppt for PFOS. When both PFOA and PFOS are found in drinking water, the combined concentrations should not exceed 70 ppt.

RESULTS OF INITIAL AREA DRINKING WATER SAMPLING

In February 2020, the Navy initiated off-base drinking water sampling near NBK Bangor. Table 1 summarizes these results.

Table 1: Initial Area Drinking Water Results

Wells sampled	No detections	Detections of PFOA and/or PFOS below the EPA lifetime health advisory	Detections of PFOA and/or PFOS above the EPA lifetime health advisory
306	219	85	2

RESULTS OF EXPANDED AREA DRINKING WATER SAMPLING

Because of the two detections above the EPA's lifetime health advisory in the Initial Area – South, the sample area was expanded further south and downgradient of this area. Table 2 summarizes these results.

Table 2: Expanded Area Drinking Water Results

Wells sampled	No detections	Detections of PFOA and/or PFOS below the EPA lifetime health advisory	Detections of PFOA and/or PFOS above the EPA lifetime health advisory
33	25	8	0

Based on the sampling results in the expanded sampling area, the Navy is not expanding the off-base sampling area further. Any property owner with a drinking water well in the initial or expanded area whose well has not been sampled can request that it be sampled by the Navy.

ACTIONS BASED ON RESULTS

The Navy provided verbal and written notification of results to property owners. Results have been kept confidential to the best ability of the Navy and to the extent permitted by law.

The Navy has provided an alternate water source for drinking and cooking to the two residents within the sampling area with detections of PFOA and/or PFOS above the EPA lifetime health advisory. The Navy will continue to provide the alternate water until a permanent solution is in place.

HEALTH INFORMATION

Exposure to PFOA and PFOS appears to be global. Studies have found both compounds in the blood samples of the general population. Studies on exposed populations indicate that PFOA and/or PFOS may have caused elevated cholesterol levels and possibly low infant birth weight. In studies conducted using laboratory animals, effects on developmental, neurological, immune, thyroid, and liver function were observed.

Health effects from exposure to low levels of PFAS are not well known, and studies are continuing. At this time, it is not possible to link exposures to PFOA and/or PFOS to a person's individual health issues. Blood tests are available to measure these chemicals, 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 the EPA.

Based on what is known and still unknown about PFOA and PFOS, EPA recommends people not drink or cook with water that contains these compounds above the EPA's lifetime health advisory.

FOR MORE INFORMATION

<https://www.navfac.navy.mil/NWPFAS>

If you have questions,
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PAO_Feedback@navy.mil