

# Point-of-Use Drinking Water Treatment Naval Air Station Whidbey Island Ault Field, Oak Harbor and Outlying Landing Field, Coupeville

## 1.0 Purpose

The purpose of this Action Memorandum (AM) is to document the decision by the Department of the Navy (Navy) to take additional precautionary measures to reduce concentrations of per- and polyfluoroalkyl substances (PFAS), specifically perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in 10 drinking water wells adjacent to Naval Air Station Whidbey Island (NASWI), near Ault Field in Oak Harbor, Washington, and Outlying Landing Field (OLF) Coupeville, in Coupeville, Washington. The two sites are being addressed in this AM as a combined area of concern.

This AM was prepared per Section 300.415(n)(2) of Title 40 of the Code of Federal Regulations, as part of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The Navy is the lead agency, under Executive Order 12580, for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) actions at NASWI. Ault Field is currently listed on the National Priorities List (NPL) and OLF Coupeville is not listed. However, environmental restoration activities at OLF Coupeville are generally being conducted in accordance with the CERCLA process, consistent with Ault Field.

The Navy is implementing a Time-Critical Removal Action (TCRA) in response to the discovery of PFOS and PFOA in residential drinking water supply wells near Ault Field and OLF Coupeville at concentrations above the USEPA Lifetime Health Advisory (LHA). An emergency removal action (Navy, 2017) included supplying bottled water to the residents where drinking water supply wells exceeded the PFOS/PFOA USEPA LHA of 0.07 microgram per liter ( $\mu\text{g}/\text{L}$ ). Bottled water is being provided for drinking and cooking water use. A TCRA is needed to provide residents with another drinking water option besides bottled water to reduce the burden that bottled water usage may have on the residents while maintaining protectiveness. The Navy has decided to offer the residents who have drinking water supply wells that exceed the PFOS/PFOA USEPA LHA the option to install a point-of-use (POU) water treatment system for their kitchen sink tap water to replace the bottled water. The POU system will treat the resident's well water so that PFOS/PFOA concentrations are less than the USEPA LHA for drinking and cooking purposes.

## 2.0 Site Conditions and Background

Ault Field was commissioned on September 21, 1942, and currently supports several types of aircraft, 8,250 military personnel, and 2,100 civilian personnel. The Navy's mission at Ault Field is to maintain and operate naval aircraft and aviation facilities, as well as provide other associated support.

Based on a review of available data and previous investigations, one site at NASWI, Area 16 (Ault Field Runway Ditches), was identified as a location where aqueous film forming foam (AFFF) may have been used in firefighting activities. The Navy has confirmed use of AFFF at two additional sites, Area 31 (Former Runway Fire Training School) and the current firefighting school.

From November 2016 to June 2017, 106 drinking water samples were collected, as part of a voluntary sampling program, from residential potable water wells located downgradient from where PFAS was discovered in on-base wells. The wells were sampled to determine whether the combined concentration of PFOS and PFOA are present above the USEPA LHA of 0.07  $\mu\text{g}/\text{L}$ . Samples were initially collected from off-base residential properties within 1

mile downgradient of wells with elevated PFAS on-base. The investigation area was then extended to include step-out areas from the off-base sampling locations where PFOS/PFOA were detected at levels exceeding the USEPA LHA. The results of the investigation indicated that PFOS/PFOA compounds are present above the USEPA LHA in two off-base drinking water wells near Ault Field. The locations with USEPA LHA exceedances were resampled in October 2017 and the results confirmed that PFOS/PFOA compounds remained above the USEPA LHA in the two off-base drinking water wells near Ault Field.

OLF Coupeville was commissioned for use by the Navy in 1942. OLF has supported day and night Field Carrier Landing Practice operations by the Navy for aircraft based out of Ault Field since 1967. Such operations allow aviators to practice touch-and-go, simulating carrier landings and takeoffs. OLF Coupeville is seen by the Navy as an ideal airfield for this type of carrier training due to its remote location and low ambient lighting, which provides pilots an optimum experience that replicates landing aboard an aircraft carrier. There is no formal documentation of AFFF usage at OLF Coupeville.

The Navy conducted on-base drinking water sampling at OLF Coupeville in September 2016. PFOA was detected in one on-base drinking water well below the USEPA LHA, near Building 2807. No previous groundwater investigations had been conducted at OLF Coupeville, so there was significant uncertainty regarding groundwater flow direction. In November 2016, off-base drinking water wells were sampled under a voluntary sampling program. Due to the uncertainty of groundwater flow direction, the Navy used Building 2807 as the center point to draw a 1-mile radius to initiate the first round of off-base drinking water sampling. Based on the results of the first round of sampling, the investigation area was expanded to include residential wells one-half mile downgradient of the initial 1-mile radius. A total of 113 drinking water samples were collected from November 2016 to June 2017. The results indicate that PFOS/PFOA are above the USEPA LHA in seven off-base drinking water wells located south of the OLF Coupeville runway. The wells with USEPA LHA exceedances, and two new wells that were not previously sampled were sampled in October 2017. The results of the October 2017 sampling confirmed the USEPA LHA exceedances in the seven off-base wells and in one new location, for a total of eight off-base drinking water wells with PFOS/PFOA compounds present above the USEPA LHA. The eight affected residential wells supply 10 residences.

As discussed above, and further below, an emergency TCRA was implemented in December 2016 (Navy, 2017) to supply affected residents with bottled water for drinking and cooking purposes. The Navy is implementing this second TCRA to allow the residents the option to have a POU treatment system for their kitchen sink tap water as a replacement for the bottled water.

### 3.0 Threats to Public Health or Welfare or the Environment, and Statutory and Regulatory Authorities/Endangerment Determination

Potential releases of pollutants and contaminants may present an imminent and substantial endangerment to public health, welfare, and the environment. Any historical release on Navy facilities may have impacted groundwater and drinking water adjacent to the Navy facilities. The source and areal extent of PFOS and PFOA is not yet known. The Navy is continuing to assess potential exposure through drinking water adjacent to the facilities and will implement subsequent site inspections and remedial investigations based on findings.

### 4.0 Removal Action and Estimated Costs

On December 9, 2016, the Navy began supplying bottled water for drinking and cooking to the first residence with PFOS and/or PFOA concentrations measured in drinking water wells above the USEPA LHA as an emergency removal action (Navy, 2017). Since that date, the Navy has supplied bottled water to 12 residences due to PFOS/PFOA concentration exceedances above the USEPA LHA in 10 drinking water wells. The long-term solution, which will be addressed under separate AMs for Ault Field and OLF Coupeville, is expected to take until late 2018, or longer, to implement. Therefore, a second TCRA is needed to provide residents with a drinking water option

besides the bottled water to reduce the burden that bottled water usage may have on the residents while maintaining protectiveness.

The Navy evaluated three TCRA options to replace bottled water:

- POU treatment (single-sink water treatment)
- Point-of-Entry (POE) treatment (treatment at the wellhead; treats all water to the household)
- Household water supply tank

The POU system will treat the resident's well water at a single-sink tap to reduce PFOS/PFOA concentrations to less than the USEPA LHA. The Navy chose this option because it was the least costly and afforded the shortest implementation schedule of the three options considered. The Navy plans to connect OLF residents with PFOS/PFOA exceedances in their drinking water well to the Town of Coupeville water supply, so investing in a POE system for these homes was not preferred. The Washington State Department of Health and Island County Public Health both indicated to the Navy that they would not approve the household water supply tank option because of concerns for long-term water safety.

The Navy is continuing to evaluate potential PFOS/PFOA exposure to the public via drinking water downgradient of NASWI. If additional drinking water samples above the USEPA LHA are identified during site investigation activities, the Navy will supply bottled water (Navy, 2017) and offer the installation of a POU treatment system for the impacted residences. Bottled water or a POU system will be provided to these residents until a long-term solution is evaluated and implemented to provide drinking water with concentrations of PFOA and PFOS below the USEPA LHA.

The POU system installation is currently in the contracting phase. Detailed system designs will be provided by the chosen subcontractor and approved by the Navy. At the time of this AM, at least one resident has requested the installation of a POU system.

The POU system monitoring, to evaluate treatment effectiveness and to trigger treatment media change-out, is outlined in the *Sampling and Analysis Plan, Point-of-Use Treatment System Monitoring, Ault Field and Outlying Landing Field Coupeville, Naval Air Station Whidbey Island, Oak Harbor and Coupeville, Washington* (CH2M, 2018).

The estimated project cost for providing POU installation and monitoring and maintenance for 1 year is \$35,000 to \$70,000 per house.

## 5.0 Expected Change in the Situation Should Action be Delayed or Not Taken

If a POU system is not installed at a residence with PFOS and/or PFOA concentrations above the USEPA LHA, then bottled water will continue to be provided. Failure to provide clean drinking water to residents with impacted drinking water would result in continued exposure to PFOS and/or PFOA above the USEPA LHA. Residents who decline installation of the POU treatment system will remain on bottled water to reduce their exposure to PFOS and/or PFOA above the USEPA LHA following the original emergency response AM (Navy, 2017).

## 6.0 Future Regulatory Standards for PFAS

This removal action is being performed for off-base drinking water based on the exceedance of the USEPA LHA for PFOS and PFOA. If the USEPA LHA for PFOA and PFOS is reduced, or additional PFAS compounds are assigned promulgated drinking water standards, the analytical data from all residences' drinking water samples will be re-evaluated. In the event this re-evaluation indicates additional adversely impacted drinking water, additional removal actions by the Navy may be warranted (i.e., alternate or treated drinking water to impacted residents).

## 7.0 Recommendations

This AM documents approval of the second TCRA selected to address off-base drinking water exposure to PFOS and/or PFOA. Providing POU system treated drinking water to the impacted residences will reduce the potential

POINT-OF-USE DRINKING WATER TREATMENT  
NAVAL AIR STATION WHIDBEY ISLAND  
AULT FIELD, OAK HARBOR AND OUTLYING LANDING FIELD, COUPEVILLE

exposure to PFOS and PFOA in drinking water in a more convenient manner than bottled water. NAVFAC Northwest is undertaking this TCRA.

Approval:



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G.C. Moore  
Captain, U.S. Navy  
Commanding Officer



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Date