



Why Is the Navy Sampling for PFOS and PFOA?

Additional information can be found online at www.secnav.navy.mil/eie/pages/pfc-pfas.aspx For updates as more information becomes available, visit https://navfac.navy.mil/NWPFAS

If you have specific questions, please contact PAO_feedback@navy.mil (email) or 360-396-1030 (voicemail)

The Navy is being protective by identifying potential exposure to unregulated compounds (PFAS) in drinking water.

- The Navy used AFFF, a source of PFAS, for fire fighting.
- The EPA established a lifetime health advisory (70 ppt) for two PFAS, specifically PFOS and PFOA, in drinking water.
- Navy policy is to identify and prioritize locations with the potential for exposure to PFOS and/or PFOA.
- The Navy has tested and continues to test for PFOS and PFOA in drinking water to prevent exposure and protect human health.



aqueous film forming foam U.S. Environmental Protection Agency per- and polyfluoroalkyl substances

perfluorooctanoic acid perfluorooctane sulfonate parts per trillion

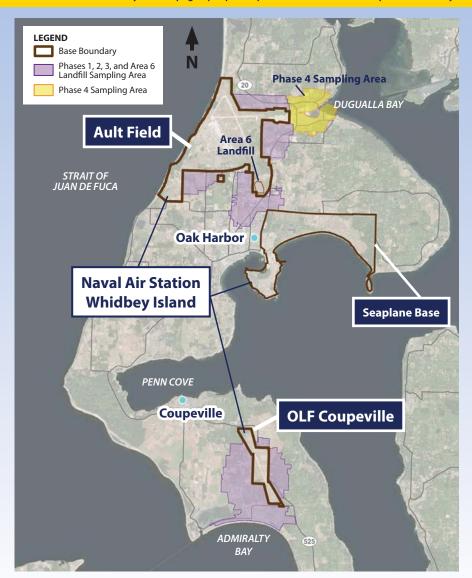




Off-base Drinking Water Sampling near Ault Field and OLF Coupeville

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Drinking Water and Groundwater Investigations

- Investigations required due to confirmed releases of AFFF at Ault Field and evidence of AFFF release at **OLF** Coupeville
- Previous drinking water investigation areas Phases 1, 2, 3, and Area 6 Landfill

New Sampling Area – Phase 4

October 2018 – Additional Release Area Discovered

- PFAS found in stormwater drain near Hangar 6
- PFAS found in associated stormwater drainage system (empties into Clover Valley Stream and Dugualla Bay)

January 2019 – Sampling Expanded to Phase 4 Area

- Sampling area includes half-mile to the north-northeast and south-southeast of PFAS detections above the EPA lifetime health advisory (yellow area on map)
- Requesting permission to sample drinking water wells

If your property is in any of the previous sampling areas and has not already been sampled, the Navy will still sample your well.

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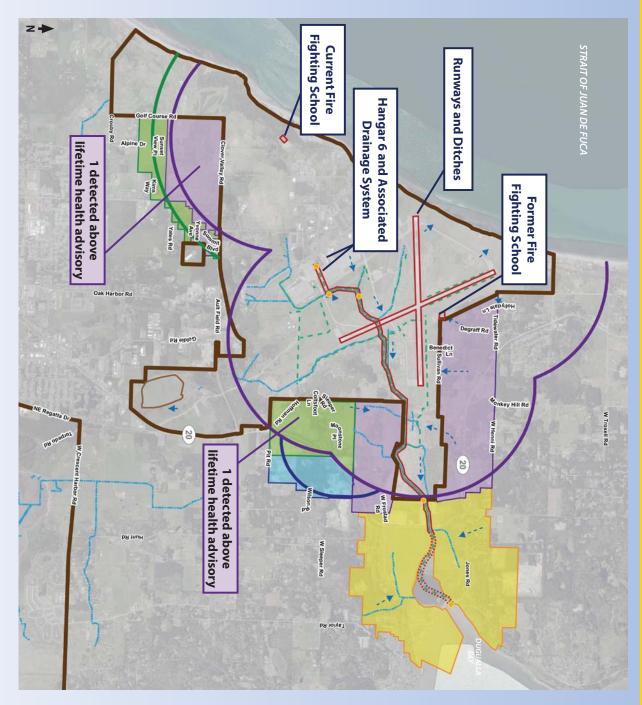


Ault Field Drinking Water Investigation

www.secnav.navy.mil/eie/pages/pfc-pfas.aspx Additional information can be found online at

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LEGEND

Phase 1 Sampling Area Phase 4 Sampling Area Phase 3 Sampling Area Phase 2 Sampling Area

PFAS Sampling Point

- **Base Boundary** Suspected Source Area
- 1-mile Zone
- Half-mile Step-out Downgradient (Phase 2)
- Half-mile Step-out Downgradient (Phase 3)
- Surface Water
- Drainage Ditch

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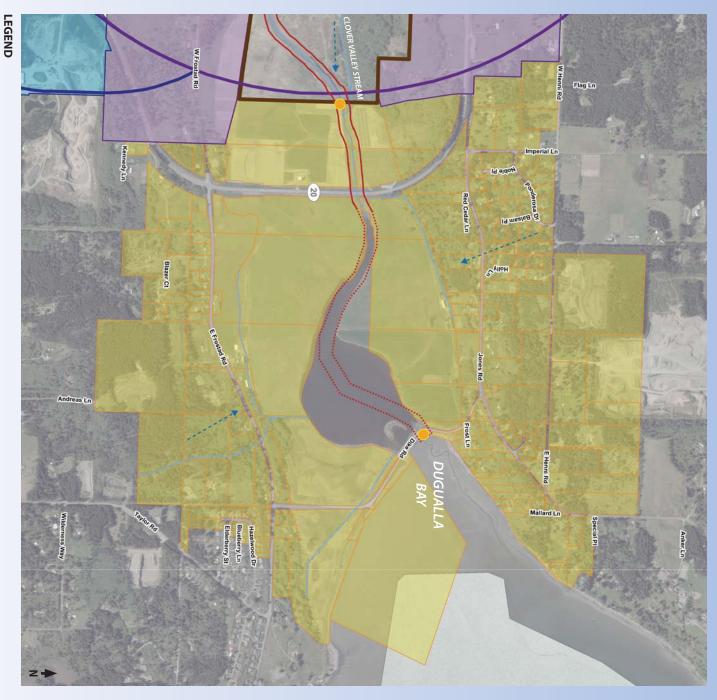
Approximate Groundwater Flow Direction

Note: Figure represents PFOS and/or PFOA exceedances for unique wells sampled during all phases.

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- AFFF EPA Phase 1 Sampling Area
 Phase 3 Sampling Area
 Phase 4 Sampling Area
 - 1-mile Zone PFAS Sampling Point Base Boundary
 - Surface Water Half-mile Step-out Downgradient (Phase 3)
 - П Suspected Source Area Approximate Groundwater Flow Direction

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PFAS Known and Suspected Release Locations on Ault Field

(70 ppt) On-base monitoring wells have PFOS and/or PFOA above the lifetime health advisory

- Two wells near the Former Fire Fighting School
- Nine wells near the Current Fire Fighting School
- Also found near hangars, runways, and in adjacent ditches

Off-base Sampling Is Occurring in Phases

exceed the lifetime health advisory. PFOA above 70 ppt. The Navy is evaluating long-term solutions for the two wells that Goal is to sample private wells and provide bottled water to owners with PFOS and/or

- **Phase 1** (November 2016) Areas within a half-mile of on-base wells with detected PFAS
- accounted for uncertainty in ground water flow Phase 2 (February 2017) – Expanded areas half-mile downgradient of exceedance and
- Phase 3 (June 2017) Expanded areas half-mile downgradient of exceedance
- Phase 4 Proposed sampling in January 2019
- the on-base drainage system Areas within half-mile of where PFAS were detected above 70 ppt in surface water of
- Includes drinking water wells to the north-northeast and south-southeast

Sampling Information

	Number of		Wells Sampled	ampled			Wells with PFOS
	properties Phase 1 Phase 2 Phase 3 Phase 4	Phase 1	Phase 2	Phase 3	Phase 4		and/or PFOA
	identified 11/2016 2/2017 6/2017 1/2019 Total	11/2016	2/2017	6/2017	1/2019	Total	above 70 ppt
Phase 1	176	54	27	0	TBD	81	
Phase 2	60	ı	17	0	TBD	17	
Phase 3	14	1	1	7	TBD	7	0
Phase 4	114	TBD	TBD	TBD	TBD	TBD	TBD
Total	364					105	2

TBD = to be determined

AFFF EPA



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Removal Actions May be implemented at any time within the process

- A response implemented in an expedited manner to address situations that require prompt action
- Removal action response type is based on situation, urgency, and required planning period
- Emergency Removal Action
 Response required immediately

The Navy will provide bottled water for cooking and drinking to households whose water exceeds the EPA lifetime health advisory for PFOS and/or PFOA.

- Time-Critical Removal Action
- Non-Time-Critical Removal Action

Time-Critical and Non-Time-Critical Removal Actions may include:

- Point of service treatment
- Hook up to alternative source
- Drinking water monitoring
- New well

The Navy will be involved until necessary actions are complete.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Implementation Process INVESTIGATION **LONG-TERM** CLEANUP MANAGEMENT Long-term Management **Remedial Action** Operation **Remedial Action** Construction Remedial **WE ARE HERE** Design Proposed Plan/ **Record of Decision Feasibility** Study Remedial Investigation Site Inspection **Preliminary** Assessment Activity boxes do not indicate the relative length of any activity. **NEW SITE**

AFFF

EPA





Per- and Polyfluoroalkyl Substances (PFAS)

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Where Do PFAS Come From?

- They are manufactured compounds with no natural occurrence.
- They have been used since the 1950s in many products.
- They last a long time in the environment.
- They are globally distributed and have been detected in people, wildlife, and fish.



AFFF



stain-resistant carpets



nonstick cookware



paints and stains



water-repelling fabrics



food packaging

What Is the EPA Health Advisory for PFOS and PFOA?

- Sets a concentration of 70 ppt in drinking water.
- Protects against adverse health effects to sensitive populations and the general public, even for lifetime exposure.
- Compares the total concentration of both PFOS and PFOA found to the 70 ppt advisory.
- Provides information to state agencies and public health officials on health effects and treatment so they can take steps to reduce exposures.
- Is non-enforceable.

How Is the EPA Health Advisory Calculated?

- Is based on animal studies and considers health effects found in exposed populations.
- Considers information regarding health effects of people exposed to PFOS and PFOA.
- Protects sensitive populations, including the fetuses or nursing infants of mothers who are exposed.
- Assumes 20 percent of overall exposure is from drinking water, 80 percent of exposure is from other sources.

aqueous film forming foam ATSDR Agency for Toxic Substances and Disease Registry CDC Centers for Disease Control and Prevention

EPA U.S. Environmental Protection Agency PFAS per- and polyfluoroalkyl substances **PFOA** perfluorooctanoic acid **PFOS** perfluorooctane sulfonate

parts per trillion ppt





SEPA WHealth Exposure and Health Effects

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PFAS in People

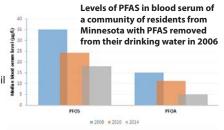
- Monitoring by the Centers for Disease Control estimates that most people in the U.S. have PFAS in their bodies.
- Levels of PFOS and PFOA are going down over time following their phase-out from use.
- Some PFAS can build up in the body and leave slowly over time through urine.



Source: CDC National Health and Nutrition Examination Survey

Exposures to PFAS

- Exposure appears to be widespread across the world.
- For most people, exposure occurs when they:
 - Ingest contaminated food, water, or soil
 - Breathe air that contains contaminated dust from carpets, upholstery, clothing, etc.
- PFAS build up in the body until exposure stops.



Source: Minnesota Department of Health. Available from: http://www.health.state.mn.us/divs/hpcd/ tracking/biomonitoring/projects/emetro-landing.html

- PFAS reach the fetuses or nursing infants of mothers who are exposed.
- Exposure is not significant through skin contact when bathing or showering.

How To Reduce Exposure

- If water contains PFOS and PFOA above the health advisory level, you can reduce exposure by using a different water source for drinking, cooking, and brushing teeth.
- Use certified granular activated carbon or high-pressure membrane systems, such as reverse osmosis, to filter water. These treatment systems require ongoing maintenance.

Health Effects

- More research is needed to confirm or rule out possible links between exposure and health effects. Based on limited evidence from studies with people, the potential health effects include:
 - Higher cholesterol levels
 - Altered hormone levels
 - Thyroid disease
- Immune system changes

- Higher risk of certain types of cancer
- Problems with pregnancy
- Lower infant birth weight
- Animals in PFAS studies exhibit developmental, reproductive, and liver effects, as well as an increased occurrence of cancer.
- The presence of PFOS or PFOA in a well or water system does not predict whether any health effects will occur.

Should I Have My Blood Tested?

ATSDR and CDC understand and acknowledge that you may want to know the level of PFAS in your body. However, there are some limitations with blood tests to consider:

- Test results will not provide clear answers for existing or possible health effects.
- Blood testing for PFAS is not a routine test that health care providers offer.

Consult with your doctor for more information.

AFFF	aqueous film forming foam
ATSDR	Agency for Toxic Substances
	and Disease Registry
CDC	Centers for Disease Control
	and Prevention

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The Navy has expanded the off-base sampling area and will notify residents of results.

Is the result above the health-based level?



The Navy will provide alternate water for drinking and cooking.

Is the result at or below the health-based level?



No immediate action is needed; the Navy may monitor as necessary.

Please help us:

- Identify drinking water wells in sampling areas.
- Sample wells to aid site investigations.
- Understand the community's concerns by participating in the Restoration Advisory Board.

Ongoing Actions

- Provide bottled water to limit exposure to PFOS and/or PFOA.
- Expand sampling area based on validated sampling results near Ault Field.
- Monitor drinking water wells where PFOS and/or PFOA were detected.
- Meet with homeowners with results above the EPA lifetime health advisory to gather data needed to develop long-term solutions.
- Continue to monitor the science and regulations related to PFAS.
- Continue to communicate with residents through the press, websites, emails, phone line, and Restoration Advisory Board.
- Continue to investigate on-base groundwater for PFAS source locations, migration, and exposure pathways.
- Continue to partner with local, state, and federal environmental and health agencies to determine the best path forward.

AFFF aqueous film forming foam
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We Need Your Help – **Drinking Water Sampling Process**

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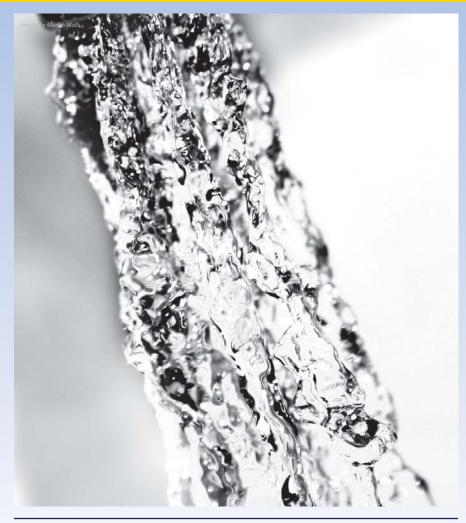
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Sampling Process

- We encourage you to contact us if you've received a sampling notification letter and have not signed up for sampling.
- We need your help to:
 - Make your appointment (sampling will take less than an hour).
 - Review and fill out the questionnaire.
- A team of qualified professionals will:
 - Collect cold water from the sample point (water will run for 3-5 minutes).
 - Analyze the sample according to EPA guidelines for a sampling and analysis process that follows strict quality control and quality assurance protocols.

Other Ways to Schedule an Appointment

To schedule an appointment for sampling your drinking water, please contact: PAO_feedback@navy.mil (email) or 360-396-1030 (voicemail)



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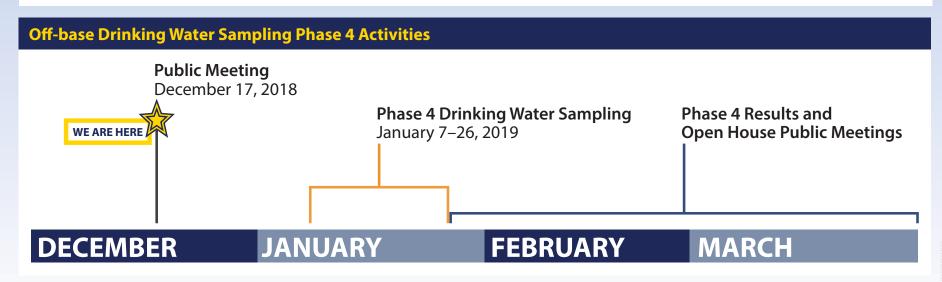
Sign Up for Your Sampling **Appointment Here**

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Off-base Drinking Water Well Sampling

- Drinking water samples will be collected
 - Monday–Saturday, January 7–26.
- Sampling appointments are available 8 a.m.-7 p.m.
- The homeowner must give permission for sampling.
- Sampling takes less than an hour.
- An adult resident (18 years of age or older) must be present during sampling.



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Sign Up to Receive Email Updates Here