INITIAL INVESTIGATION FIELD REPORT

WASHINGTON STATE DEPARTMENT OF ECOLOGY

☐ **Check this box if you have attached any documents to this form (using the paperclip icon on the left).**

ERTS #(s):	717368
Parcel #(s):	multiple - see below
County:	Island
FSID #:	58874252
CSID #:	3434
UST #:	

SITE INFORMATION

Site Name (Name over door):	Site Address (including City, State and Zip):	Phone / Email
Pine Terrace and Whispering Pines	Pine Terrace: parcel S7740-00-0000D-0 Whispering Pines: parcel R13324-242-2140	
Site Contact, Title, Business:	Site Contact Address (including City, State and Zip):	Phone / Email
Site Owner, Title, Business:	Site Owner Address (including City, State and Zip):	Phone / Email
Site Owner Contact, Title, Business:	Site Owner Contact Address (including City, State and Zip):	Phone / Email
Previous Site Owner(s): Alternate Site Name(s):	Additional Info (for any Site Information Item): water system contact (for both systems): Sandra Bodamer, PO Box 2243, Oak Harbor WA 98277	

Latitude (Decimal Degrees):	48.341666
Longitude (Decimal Degrees):	-122.674999

INSPECTION INFORMATION

☑ Please check this box if there is relevant inspection information, such as data or photos, in an existing site report for this site.

Inspection Conducted? Yes ☐ No ☒	Date/Time:	Entry Notice: Announced ☐	Unannounced ☐
Photographs taken?	Yes ☐	No ☐	Note: Attach photographs or upload to PIMS
Samples collected?	Yes ☐	No ☐	Note: Attach record with media, location, depth, etc.

RECOMMENDATION

No Further Action (Check appropriate box below):	
Release or threatened release does not pose a threat	☐
No release or threatened release	☐
Refer to program/agency (Name: _____)	☐
Independent Cleanup Action Completed (contamination removed)	☐

LIST on Confirmed and Suspected Contaminated Sites List: ☐

Update to existing site file for Fire Training Station NAS Whidbey, CSID 3434.

COMPLAINT (Brief Summary of ERTS Complaint):

The Whidbey Island Water System Association made a report to ERTS to alert Ecology to Group A water systems in Island County that had detected PFAS in samples collected related to the requirements of the Department of Health's PFAS SAL establishment.

CURRENT SITE STATUS (Brief Summary of why Site is recommended for Listing or NFA):

The Whispering Pines Homeowners Coop and Pine Terrace Water Association are located within the area established to be impacted by PFAS from sources related to operations on Naval Air Station Whidbey Island. New cleanup sites for the PFAS in these water systems do not need to be created. Recommendation: Update to existing file.

Investigator: Kim Wooten Date Submitted: 7/11/2023

OBSERVATIONS ☑ **Please check this box if you included information on the Supplemental Page at end of report.**

Description (If site visit made, please be sure to include the following: site observations, site features and cover, chronology of events, sources/past practices likely responsible for contamination, presence of water supply wells and other potential exposure pathways, etc.):

This IIFR includes two of the water systems included in the submitted list of systems with per- and poly-fluoroalkyl substance (PFAS) detections in the samples collected to meet the requirements for initial sampling related to State Action Levels (SALs) for PFAS in Group A water systems.

WHISPERING PINES HOMEOWNERS COOP:
This water system has two active wells. The sample analyzed for PFAS was taken in February 2022 from the pump house, representing a finished water sample (blending of source wells).

The sample contained the following PFAS at concentrations between 2 and 32 ng/L: PFBS, PFBA, PFPeS, PFHxs, PFHxA, PFOS, and PFOA (see below for full names of all compounds referred to by abbreviation throughout the IIFR). The additional 18 PFAS compounds included in the analysis were not present above the laboratory reporting limit (2 ng/L for each compound).

The WA State Department of Health has established state action levels (SALs) for drinking water for 5 PFAS: PFBS, PFHxS, PFOS, PFOA, and PFNA. The concentrations of PFBS, PFHxS, PFOS, and PFOA in the water system sample were below the applicable state action levels, which are also the basis for MTCA groundwater cleanup levels. There are also established groundwater Method B cleanup levels for PFBA adn HPFO-DA, which were not exceeded in this sample.

PINE TERRACE WATER ASSOCIATION:
This water system has two active wells. The sample analyzed for PFAS was taken in April 2022 from the pump house, representing a finished water sample (blending of source wells).

The sample contained the following PFAS at concentrations between 11 and 174 ng/L: PFBA, PFPeA, PFHpA, and PFHxA. The additional 21 PFAS compounds included in the analysis were not present above the laboratory reporting limit (2 ng/L for each compound). The PFBA concentration did not exceed the Method B cleanup level.

Although none of the individual PFAS detected in water samples from these two systems exceeded a SAL or cleanup level, enough individual PFAS were detected to suggest they had been impacted by a release of PFAS nearby. Based on the locations of the wells for these two systems, that release is likely to be one already documented and under investigation at the Naval Air Station Whidbey Island (NAS Whidbey) facility. The information evaluated in this IIFR should be included as an update to the existing site file for NAS Whidbey, but does not warrant the creation of new cleanup sites at this time.

Documents reviewed:

Island County - ICGeoMap. https://icgeomap.islandcountywa.gov/Html5Viewer/Index.html?viewer=ICGeoMap#

WA State Department of Health water system information:
Source Water Assessment Program Map. https://fortress.wa.gov/doh/swap/index.html
Find Water System database. https://fortress.wa.gov/doh/eh/portal/odw/si/Disclaimer.aspx?Page=/portal/odw/si/findwatersystem.aspxDOH
Find Water Quality database - results for sample ID 16601 from Deer Lake Estates Water System (system ID 67600) and sample 18801 from Whispering Pines Homeowners Coop Water System (system ID 88215).
https://fortress.wa.gov/doh/eh/portal/odw/si/FindWaterQuality.aspx

NAVFAC (prepared by CH2M Hill). April 2022. Technical Memorandum: Results of Investigation of Per-and Poly-fluorinated Alkyl Substances in Off-Base Drinking Water - Ault Field, Area 6, and Outlying Landing Field Coupeville.

CONTAMINANT GROUP	CONTAMINANT	SOIL	GROUNDWATER	SURFACE WATER	AIR	SEDIMENT	DESCRIPTION
Non-Halogenated Organics	Phenolic Compounds						Compounds containing phenols (Examples: phenol; 4-methylphenol; 2-methylphenol)
	Non-Halogenated Solvents						Organic solvents, typically volatile or semi-volatile, not containing any halogens. To determine if a product has halogens, search HSDB (http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB) and look at the Chemical/Physical Properties, and Molecular Formula. If there is not a Cl, I, Br, F in the formula, it's not halogenated. (Examples: acetone, benzene, toluene, xylenes, methyl ethyl ketone, ethyl acetate, methanol, ethanol, isopropranol, formic acid, acetic acid, stoddard solvent, Naptha). *Use this when TEX contaminants are present independently of gasoline.*
	Polynuclear Aromatic Hydrocarbons (PAH)						Hydrocarbons composed of two or more benzene rings.
	Tributyltin						The main active ingredients in biocides used to control a broad spectrum of organisms. Found in antifouling marine paint, antifungal action in textiles and industrial water systems. (Examples: Tributyltin; monobutyltin; dibutyltin)
	Methyl tertiary-butyl ether						MTBE is a volatile oxygen-containing organic compound that was formerly used as a gasoline additive to promote complete combustion and help reduce air pollution.
	Benzene						Benzene
	Other Non-Halogenated Organics						TEX
	Petroleum Diesel						Petroleum Diesel
	Petroleum Gasoline						Petroleum Gasoline
	Petroleum Other						Oil-range organics
Halogenated Organics (see notes at bottom)	PBDE						Polybrominated di-phenyl ether
	Other Halogenated Organics		S				Other organic compounds with halogens (chlorine, fluorine, bromine, iodine). search HSDB (http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB) and look at the Chemical/Physical Properties, and Molecular Formula. If there is a Cl, I, Br, F in the formula, it is halogenated. (Examples: Hexachlorobutadiene; hexachlorobenzene; pentachlorophenol) PFAS
	Halogenated solvents						PCE, chloroform, EDB, EDC, MTBE
	Polychlorinated Biphenyls (PCB)						Any of a family of industrial compounds produced by chlorination of biphenyl, noted primarily as an environmental pollutant that accumulates in animal tissue with resultant pathogenic and teratogenic effects
	Dioxin/dibenzofuran compounds (see notes at bottom)						A family of more than 70 compounds of chlorinated dioxins or furans. (Examples: Dioxin; Furan; Dioxin TEQ; PCDD; PCDF; TCDD; TCDF; OCDD; OCDF). *Do not use for 'dibenzofuran', which is a non-chlorinated compound that is detected using the semivolatile organics analysis 8270*
Metals	Metals - Other						Cr, Se, Ag, Ba, Cd
	Lead						Lead
	Mercury						Mercury
	Arsenic						Arsenic
Pesticides	Non-halogenated pesticides						Pesticides without halogens (Examples: parathion, malathion, diazinon, phosmet, carbaryl (sevin), fenoxycarb, aldicarb)
	Halogenated pesticides						Pesticides with halogens (Examples: DDT; DDE; Chlordane; Heptachlor; alpha-beta and delta BHC; Aldrin; Endosulfan, dieldrin, endrin)

CONTAMINANT GROUP	CONTAMINANT	SOIL	GROUNDWATER	SURFACE WATER	AIR	SEDIMENT	DESCRIPTION
Other Contaminants	Radioactive Wastes						Wastes that emit more than background levels of radiation.
	Conventional Contaminants, Organic						Unspecified organic matter that imposes an oxygen demand during its decomposition (Example: Total Organic Carbon)
	Conventional Contaminants, Inorganic						Non-metallic inorganic substances or indicator parameters that may indicate the existence of contamination if present at unusual levels (Examples: Sulfides, ammonia)
	Asbestos						All forms of Asbestos. Asbestos fibers have been used in products such as building materials, friction products and heat-resistant materials.
	Other Deleterious Substances						Other contaminants or substances that cause subtle or unexpected harm to sediments (Examples: Wood debris; garbage (e.g., dumped in sediments))
	Benthic Failures						Failures of the benthic analysis standards from the Sediment Management Standards.
	Bioassay Failures						For sediments, a failure to meet bioassay criteria from the Sediment Management Standards. For soils, a failure to meet TEE bioassay criteria for plant, animal or soil biota toxicity.
Reactive Wastes	Unexploded Ordinance						Weapons that failed to detonate or discarded shells containing volatile material.
	Other Reactive Wastes						Other Reactive Wastes (Examples: phosphorous, lithium metal, sodium metal)
	Corrosive Wastes						Corrosive wastes are acidic or alkaline (basic) wastes that can readily corrode or dissolve materials they come into contact with. Wastes that are highly corrosive as defined by the Dangerous Waste Regulation (WAC 173-303-090(6)). (Examples: Hydrochloric acid; sulfuric acid; caustic soda)

(fill in contaminant matrix above with appropriate status choice from the key below the table)

Status choices for contaminants	
Contaminant Status	**Definition**
B— Below Cleanup Levels (Confirmed)	The contaminant was tested and found to be below cleanup levels. (Generally, we would not enter each and every contaminant that was tested; for example if an SVOC analysis was done we would not enter each SVOC with a status of "below". We would use this for contaminants that were believed likely to be present but were found to be below standards when tested
S— Suspected	The contaminant is suspected to be present; based on some knowledge about the history of the site, knowledge of regional contaminants, or based on other contaminants known to be present
C— Confirmed Above Cleanup Levels	The contaminant is confirmed to be present above any cleanup level. For example—above MTCA method A, B, or C; above Sediment Quality Standards; or above a presumed site-specific cleanup level (such as human health criteria for a sediment contaminant).
RA— Remediated - Above	The contaminant was remediated, but remains on site above the cleanup standards (for example—capped area).
RB— Remediated - Below	The contaminant was remediated, and no area of the site contains this contaminant above cleanup standards (for example— complete removal of contaminated soils).

Halogenated chemicals and solvents: Any chemical compound with chloro, bromo, iodo or fluoro is halogenated; those with eight or fewer carbons are generally solvents (e.g. halogenated methane, ethane, propane, butane, pentane, hexane, heptane or octane) and may also be used for or registered as pesticides or fumigants. Most are dangerous wastes, either listed or categorical. Organic compounds with more carbons are almost always halogenated pesticides or a contaminant or derivative. Referral to the HSDB is recommended if you are unfamiliar with a chemical name or compound, as it contains useful information about synonyms, uses, trade names, waste codes, and other regulatory information about most toxic or potentially toxic chemicals.

Dibenzodioxins and dibenzofurans are normalized to a combined equivalent toxicity based on 2,3,7,8-tetrachloro-p-dibenzodioxin as set out in WAC 173-340-708(8)(d) and in the Evaluating the Toxicity and Assessing the Carcinogenic Risk of Environmental Mixtures using Toxicity Equivalency Factors Focus Sheet (https://fortress.wa.gov/ecy/clarc/FocusSheets/tef.pdf). Results may be reported as individual compounds and isomers (usually lab results), or as a toxic equivalency value (reports).

FOR ECOLOGY II REVIEWER USE ONLY (For Listing Sites):

How did the Site come to be known: ☑ **Site Discovery (received a report):** _____ (Date Report Received)
☐ **ERTS Complaint**
☐ **Other (please explain):** _____

Does an Early Notice Letter need to be sent: ☐ Yes ☒ No
If *No*, please explain why: update to file

NAICS Code (if known): _____
Otherwise, briefly explain how property is/was used (i.e., gas station, dry cleaner, paint shop, vacant land, etc.):
_____

Site Unit(s) to be created (Unit Type): ☐ Upland (includes VCP & LUST) ☐ Sediment
If multiple Units needed, please explain why: _____

Cleanup Process Type (for the Unit): ☐ No Process ☐ Independent Action
☐ Voluntary Cleanup Program ☐ Ecology-supervised or conducted
☐ Federal-supervised or conducted

Site Status: ☐ Awaiting Cleanup ☐ Construction Complete – Performance Monitoring
☒ Cleanup Started ☐ Cleanup Complete – Active O&M/Monitoring
☐ No Further Action Required

Model Remedy Used? ☐
If yes, was this a transformer spill? ☐

Site Manager (Default: _____): _____

Specific confirmed contaminants include:

_____ in Soil

_____ in Groundwater

_____ in Other (specify matrix: _____)

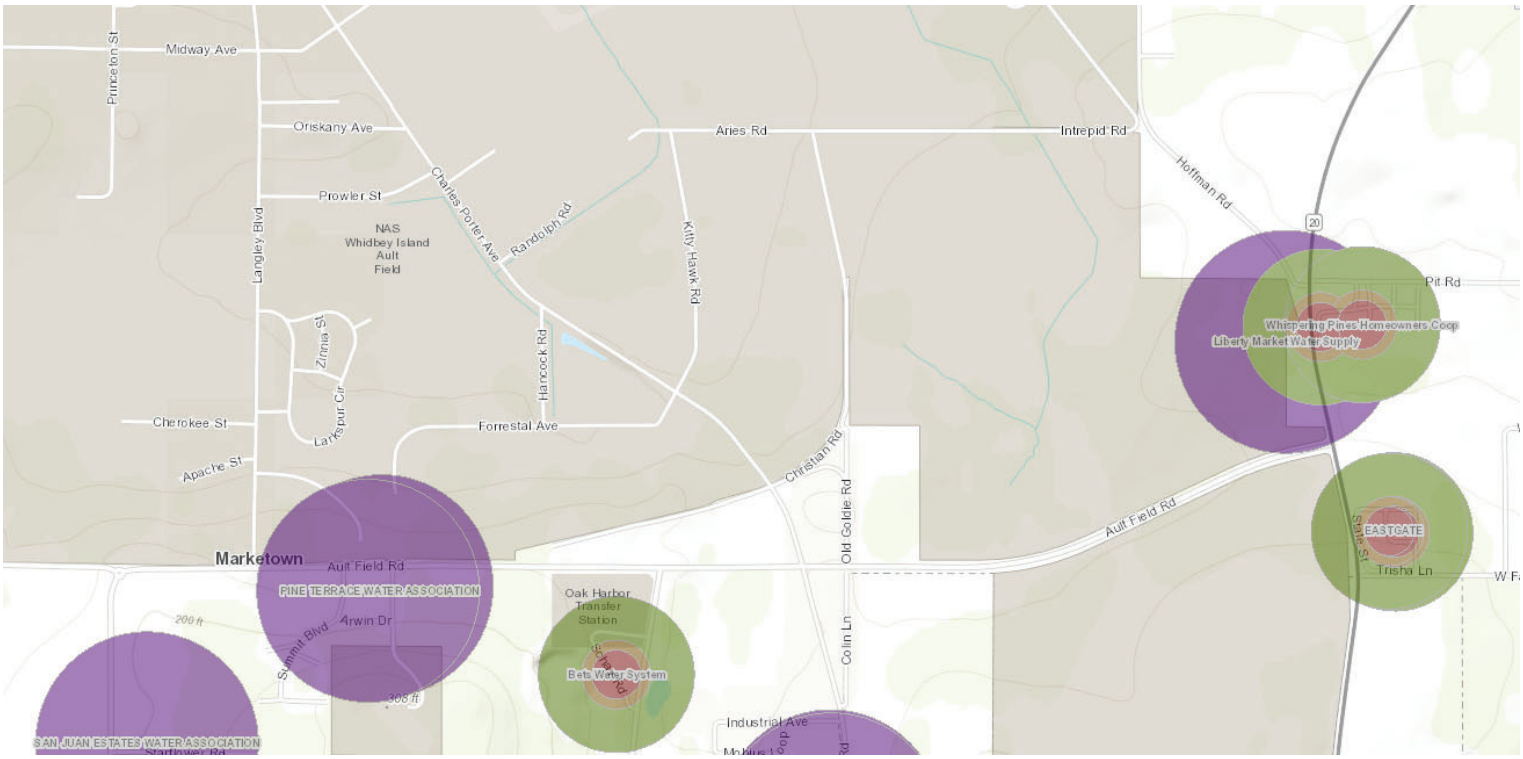
Facility/Site ID No. (if known):
58874252
Cleanup Site ID No. (if known):
3434

COUNTY ASSESSOR INFO: Please attach to this report a copy of the tax parcel/ownership information for each parcel associated with the site, as well as a parcel map illustrating the parcel boundary and location.

Additional or Supplemental Information from Observations Page

Please use this box for any text that requires special formatting

Locations of Whispering Pines (east side of tan area on basemap indicating NAS Whidbey boundaries; 2 wells in system) and Pine Terrace (south side of NAS Whidbey area) water system wells. From DOH SWAP Map, with other group A systems also shown. Multi-colored rings for Whispering Pines indicate 6 month, 1 year, and 5 year time-of-travel areas for each well.



PFAS sampling results from water systems in Island County reported under ERTS 717368. Sampling was completed between January and April 2022. Sampling was completed to meet requirements for DOH SAL testing - only one sample is required as part of the initial testing unless a compound is present above a SAL.

	MTCA Method B Groundwater Cleanup Level	Crosswoods Water Co	Deer Lake Estates	Harrington Lagoon		Hillcrest Village Water Co	Lyon Rd Community Association	Mabana Shores	Maple Hill Park	Mecca Community Association	Northgate Terrace Community Club	Penn Cove	Pine Terrace Water Association	Rolling Hills - Glencairn	Sierra Country Club	Whispering Pines Homeowners Coop
				intial	confirmation											
PFBS	345	<2	4.97	17.2	17.9	<2	4.63	63.4	<2	<2	3.14	<2	<2	<2	<2	4.24
PFHxS	65	2.25	2.5	52.8	63.9	<2	<2	<2	<2	<2	4.15	<2	<2	<2	2.25	31.4
PFOS	15	<2	2.53	63.7	79.9	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	4.95
PFOA	9	<2	2.54	2.35	3.45	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	4.35
PFNA	10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
PFBA	8000	<2	<2	5.55	6.89	<2	2.31	3.49	5.25	<2	<2	<2	50.6	<2	3.42	<2
HPFO-DA	24	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
PFHpA	--	<2	<2	5	6.99	<2	<2	<2	<2	<2	<2	3.03	11.1	6.19	<2	<2
PFHxA	--	<2	2.32	25.5	30.8	<2	5.2	58.2	2.33	4.08	<2	<2	85.6	<2	<2	2.6
PFHpS	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2.67
PFPeA	--	<2	<2	8.25	16.9	2.25	4.63	5.44	6.07	2.43	<2	<2	174	<2	<2	<2
PFPeS	--	<2	<2	23.1	23.8	<2	<2	73.5	<2	<2	<2	<2	<2	<2	<2	2.78

concentrations in ng/L

table includes all PFAS with existing cleanup levels, and any others present above reporting limits (2 ng/L) in at least one sample

Groundwater Cleanup Levels are protective of use as drinking water

"-" indicates no cleanup level has been established for that compound; note that all PFAS are designated MTCA hazardous substances and cleanup levels may be developed for these in the future

FULL NAMES OF PFAS COMPOUNDS

PFBA – perfluorobutanoic acid

PFBS – perfluorobutane sulfonic acid

PFPeA – perfluoropentanoic acid

PFPeS – perfluoropentane sulfonic acid

PFHxA – perfluorohexanoic acid

PFHxS – perfluorohexane sulfonic acid

PFHpA – perfluoroheptanoic acid

PFHpS – perfluoroheptane sulfonic acid

PFOA – perfluorooctanoic acid

PFOS – perfluoroctance sulfonic acid

PFNA – perfluorononanoic acid

HFPO-DA – hexafluoropropropylene oxide-dimer acid (also known as GenX)