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BOARD OF WATER SUPPLY
KA 'OIHANA WAI
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET • HONOLULU, HAWAI'I 96843
Phone: (808) 748-5000 • boardofwatersupply.com

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August 26, 2026

The Honorable Scott Y. Nishimoto, Chair
and Members
Committee on International & Legal Affairs
Honolulu City Council
530 South King Street, Room 100
Honolulu, Hawai'i 96813

Dear Chair Nishimoto and Councilmembers:

SUBJECT: Resolution No. 26-193 – Urging the United States Environmental Protection Agency and the Hawai'i State Department of Health to require the United States Department of the Navy to Increase the Frequency, Chemical Scope, and Geographic Extent of Groundwater Testing for Per- and Polyfluoroalkyl Substances and Petroleum Chemicals in the Immediate Vicinity of the Red Hill Bulk Fuel Storage Facility and Surrounding Areas

The Honolulu Board of Water Supply (BWS), strongly supports Resolution No. 26-193, urging the United States Environmental Protection Agency (EPA) and the Hawai'i State Department of Health (DOH) to require the United States Department of the Navy (Navy) to increase the frequency, chemical scope, and geographic extent of groundwater testing for per- and polyfluoroalkyl substances (PFAS) and petroleum chemicals in the immediate vicinity of the Red Hill Bulk Fuel Storage Facility and surrounding areas.

PFAS are a group of nearly 15,000 synthetics chemicals, highly persistent in the environment due to its water solubility and molecular structures, also known as "forever chemicals". It has been used since the 1940s to make products resistant to water, grease, and heat. PFAS do not break down easily in the environment and can accumulate in human body, causing cancer, liver diseases, compromised immune systems, and other illnesses.

The Red Hill Bulk Fuel Storage Facility (Facility) has incurred numerous known and unknown fuel and hazardous chemical releases into the environment over its 80 years of operation, including 27,000 gallons of jet fuel on January 13, 2014, 14,000 gallons of

a water-jet fuel mixture in November 2021 that contaminated the Navy's Red Hill Shaft water source, and the release of approximately 1,300 gallons of aqueous film forming foam concentrate that contained PFAS on November 29, 2022.

Although the Facility was defueled in 2024 and is in the process of being decommissioned for permanent closure, the type, volume, and location of past releases and its impact to the environment remains unknown.

As detailed in the attached BWS letter to Mr. Mike Martucci. Acting Administrator of the EPA and Dr. Kenneth S. Fink, MD of the DOH dated June 16, 2026, the recent widespread and similarity in PFAS detections in BWS wells and Navy wells raises questions that require more consistent testing and investigation to better understand and characterize the extent of PFAS in the underground drinking water aquifer.

There is no substitute for clean and safe drinking water.

Thank you for your consideration and for the opportunity to provide testimony on Resolution No. 26-193.

Very Truly Yours,

ERNEST Y.W. LAU, P.E.
Manager and Chief Engineer

Attachment

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GENE C. ALBANO, P.E., Ex-Officio

June 16, 2026

Mr. Mike Martucci, Acting Administrator
United States Environmental Protection Agency
Pacific Southwest, Region 9
75 Hawthorne Street
San Francisco, California 94105

Dr. Kenneth S. Fink, MD, MGA, MPH
Director
State of Hawai'i
Department of Health
1250 Punchbowl Street
Honolulu, Hawai'i 96813

Dear Mr. Martucci and Dr. Fink:

Subject: Sampling and Testing the Navy's Red Hill Groundwater Monitoring Wells

The Board of Water Supply (BWS) has detected per- and polyfluoroalkyl substances (PFAS) in our drinking water and groundwater monitoring wells that are located in proximity to the Red Hill Bulk Fuel Storage Facility (Red Hill facility). The types of PFAS and the amounts detected are shown below.

All values in ng/L (ppt)											
	PFOA	PFOS	PFHxS	PFHxA	PFHpA	PFHpS	PFPeA	PFPeS	PFBS	PFBA	PFNA
BWS Well Name											
Halawa Shaft	*	3.4	3.6	2.1	*	*	*	*	*	*	*
Halawa Wells	*	3.5	2.7	3.5	*	*	4.6	*	*	*	*
Moanalua Wells	*	2.2	*	*	*	*	*	*	*	2.8	*
Kaamilo Wells	4.0	5.0	3.7	3.8	2.1	*	4.5	*	3.1	*	*
											*
Site J1 monitor well	*	*	*	*	*	*	*	*	*	*	*
Site H1 monitor well	*	*	*	*	*	*	*	*	*	*	*
Site D1 monitor well	*	3.4	2.9	*	*	*	*	*	*	*	*
Site D2 monitor well	5.8	*	11	*	*	*	*	*	*	*	*
Site A1 monitor well	16	13	11	13	7.2	*	19	*	57	8.3	*
Site S1 monitor well	5.6	16	2.4	*	*	*	*	*	*	*	*
* Not detected											
BWS samples collected May 2026. Moanalua Wells samples from May 2023.											
ng/L = nanogram per liter (parts per trillion)											
Drinking water MCL for PFOA and PFOS is 4 ng/L											

The Navy has also detected PFAS in its drinking water and monitoring wells. The table below shows the types and amounts of PFAS detected. The data is from the NAVFAC publication titled *PFAS Substances Data Summary No.1, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor- Hickam, Oahu, Hawaii, July 2025*. The data for the Navy Aiea-Halawa Shaft was obtained from *Navy Aiea-Halawa Shaft Reactivation Plan-JBPHH Oahu, Hawaii, October 10, 2024*. The data for NMW32 was obtained from *Naval Facilities Engineering Systems Command Pacific, Per- and Polyfluoroalkyl Substances Delineation Baseline Groundwater Wells Investigation Report, November 27, 2023*.

All values in ng/L											
	PFOA	PFOS	PFHxS	PFHxA	PFHpA	PFHpS	PFPeA	PFPeS	PFBS	PFBA	PFNA
Navy Well Name											
RHMW01R	*	*	*	0.16J	0.051J	*	*	*	*	0.38 J	*
RHMW02	0.21J	*	*	0.72J	0.71	*	4.1	*	*	*	0.09
RHMW03	0.77	0.34J	*	5.8	3.5	*	7.4	*	0.49J	2.5	0.34
RHMW04	*	0.17J	*	*	*	*	*	*	*	*	*
RHMW05	*	0.07J	*	*	*	*	*	*	*	0.28J	*
RHMW06	0.23		*	0.11J	0.23J	*	0.23J	*	*	*	*
RHMW07	*	0.16J	0.084J	0.083J	0.092J	*	0.18J	*	0.04J	0.47J	*
RHMW08	1.7	0.16J	0.13J	4.5	4.2	*	10	*	0.098J	6	0.14J
RHMW17	0.88	0.53	0.55	1.5	1.6	*	2.4	*	0.081J	1.2J	0.14J
RHMW17D	0.16J	0.12J	0.2J	0.15J	0.054J	*	*	*	0.068J	*	
RHMW17S	0.68	0.65J	0.35J	1	0.52	*	*	*	0.38J	7.8	0.23J
RHMW18	*	0.075J	*	0.53	0.15J	*	1.5	*	0.047J	0.5J	*
RHMW20	0.16J	0.4	*	0.14J	0.092J	*	0.23J	*	*	0.31J	*
RHMW21	*	0.13J	0.057J	1.1	0.22J	*	3.8	*	*	0.84J	*
RHMW2254-01 (Red Hill Shaft)	0.68	0.73J	0.63	0.67	0.42	*	0.73J	0.071J	0.6	*	*
Navy Aiea-Halawa Shaft	5.09	6.78	4.16	**	**	**	**	**	3.26	**	0.364
RHP01	6.2	14	5.5	4.4	4	0.23J	9.2	0.45	1.9	14	1.1
RHP02	6.8	15	5.4	5.5	4.4	0.22J	11	0.46	3.7	14	1.7
RHP03	3.7	5.6	5	3.7	3.1	0.16J	7	0.47	2.5	7.3	0.54
RHP04A	1.3	1.7	4.6	1.2	0.79	0.07J	1.5	0.49	0.76	1.7	0.56
RHP04B	*	0.14J	*	0.29J	0.12J	*	0.37J	*	*	*	*
RHP04C	0.15	0.28J	0.19J	0.54	0.093J	*	1.6	*	*	*	*
RHP05	4.5	4.6	4.8	3.1	2	0.11J	3.6	0.4J	1.1	2	1.1
RHP06	3.5	5	3.5	3.7	2.6	0.11J	5.1	0.38J	1.7	4.8	0.55
RHP07	4.9	19	5.1	2.6	2.5	0.28J	5.8	0.44	1.4	9.2	1.1
RHP08	1.2	1.8	1.7	0.78J	0.65	0.067J	0.87	0.16J	1.1	1.1J	*
RHP08B	0.28J	0.12J	*	0.11J	0.44J	*	0.99	*	*	0.95J	*
OWDFMW01	1.3	0.95	0.69	2.1	2.5	*	4.6	*	0.29J	3.7	0.41
OWDFMW02A	0.41	0.22	0.16J	2	1.3	*	6.7	*	0.067J	6.6	*
OWDFMW03A	0.28J	0.29J	0.28J	8.4	3.9	*	18	*	0.13J	8.4	0.18J
OWDFMW03B	29	69	62	4100	1200	1.9	4800	9.6	8	1900	1.5
OWDFMW04A	8.1	87	3.8	12	14	0.13J	19	0.39J	2.7	11	2.9
OWDFMW05A	1.2	1.7	2	81	24	0.047J	120	0.25J	0.67	44	0.44
OWDFMW08A	0.34J	0.47	0.8	0.81	0.59	*	3.1	0.083J	0.21J	3.9	0.099J
OWDFMW08B	18	17	12	27	20	0.29J	43	0.8	12	26	2.9
NWM32	5.9	16.0J	**	**	**	**	**	1.7J	**	**	**
* Not detected											
** Not reported	Navy Aiea Halawa Shaft sampled June 2024. RHMW, RHP and OWDF samples collected Sept and Oct 2024										
J = estimated concentration.											

The name of the PFAS abbreviations used in this letter is explained below.

Abbreviation	PFAS Chemical Name
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
PFHxS	Perfluorohexanesulfonic acid
PFHxA	Perfluorohexanoic acid
PFHpS	Perfluoroheptanesulfonic acid
PFHpA	Perfluoroheptanoic acid
PFPeA	Perfluoropentanoic acid
PFPeS	Perfluoropentanesulfonic acid
PFBS	Perfluorobutanesulfonic acid
PFBA	Perfluorobutanoic acid
PFNA	Perfluorononanoic acid

The location of the BWS drinking water and groundwater monitoring wells relative to the Red Hill facility and the Navy's drinking water and monitoring wells are shown in the map below. Those that have recorded PFAS detections including estimates are highlighted in yellow.



We reviewed the data herein and offer the following observations.

1. There is widespread occurrence of PFAS in this part of the aquifer underneath the Red Hill Facility. More than 10 different types of PFAS chemicals have been detected in samples from perched shallow groundwater and deep groundwater wells.

2. PFOS, PFHxS, and PFHxA appear in many of the BWS production and monitoring wells. The Navy's Red Hill piezometer (RHP), Red Hill monitoring wells (RHMW) and oily waste disposal facility monitoring wells (OWDFMW) also show the presence of these PFAS including PFOA, PFHpA, PFPeA, PFHpS, PFPeS, PFBS, PFBA and PFNA.

3. The Navy's RHP, OWDFMW and RHMW wells show varied levels of PFAS ranging from estimated values below the minimum reporting limits (MRL) to values greater than the MRL as high as 4,800 ng/L. The wide variety of PFAS chemicals detected and the levels found in the groundwater under the Red Hill Facility suggest this area may be a source of PFAS contamination in the aquifer. More testing is needed to better understand and characterize the extent of the types and amount of PFAS present.

4. The BWS and Navy detected similar types of PFAS in their respective wells. This similarity may suggest possible relationships between these wells and the PFAS chemicals being detected. Such relationships may include but not limited to groundwater flow direction and PFAS moving with the groundwater from one location to another.

5. The presence of PFAS chemicals other than PFOS and PFOA in the Navy's monitoring wells suggest aqueous film forming foam (AFFF) formulations containing PFAS with less than eight carbons may have been used and stored at the Red Hill Facility including other PFAS containing products.

6. The table shows the Navy has more than 30 monitoring wells within the Red Hill facility property showing the presence of PFAS. More testing should be conducted to determine any variability and trends in the PFAS chemicals being detected.

7. The BWS and Navy wells that contain PFOA, PFOS, PFHxS and PFHxA are located along the same westerly direction away from the Red Hill facility. This westerly direction is consistent with current understanding of groundwater flow direction in the area.

8. The Navy's RHP wells, OWDFMW03B, 04A, 05A and 08B, RHMW03 and RHMW08, and Aiea-Halawa Shaft are located in a westerly direction from the Red Hill facility. The BWS Kaamilo Wells, Site D2, and A1 monitoring wells are also located in the same westerly direction away from the Red Hill facility. This alignment of the BWS and Navy wells in the westerly direction and the similar PFAS detected may suggest that PFAS from the Red Hill Facility is flowing with the groundwater and affecting receptor wells in this path. If the Navy and Regulatory Agencies disagree then they should provide the data and studies that conclusively show the Red Hill Facility is not the source of PFAS found at the BWS wells.

9. The Navy have indicated that the Halawa Industrial area and spills at other sites in Halawa Valley to be the source of PFAS found in the Navy's groundwater monitoring wells. To our knowledge, the Navy does not have any monitoring wells in the Halawa Industrial area nor tested and provided the results of these wells. The Navy and Regulatory Agencies should provide us the data that the Navy is using to conclude PFAS is coming from the Halawa Industrial area or spill sites and not the Red Hill Facility.

10. The Navy has not yet explained the source of the PFOA at NMW32. Until then the PFOA found at NMW32 may have come from the Red Hill Facility based on the position of the well. If the Navy disagrees, then provide the data to show the PFOA at NMW32 did not come from the Red Hill Facility.

Below is an image from the Navy's Groundwater Flow Model Report dated March 25, 2020, showing the particle track when Red Hill Shaft is not operating and the BWS Halawa Shaft is pumping at 12 million gallons per day (MGD). The particle track is the model predicting the direction a contaminant from the Red Hill Facility could take in the groundwater. The model starts the particles at the Red Hill Facility then plots several tracks showing movement northwest toward the BWS Halawa Shaft, and westward toward the Navy Aiea-Halawa Shaft, BWS Aiea Wells and Kaamilo Wells. According to the Navy's Groundwater Flow Model Report, the particle track shown represents estimated water flow patterns that do not represent contaminant flow. However, the similarity of this track with the position of the Navy and BWS monitoring wells containing PFAS located in the westerly direction from the Red Hill Facility and to the northwest at BWS Halawa Shaft cannot be ignored.

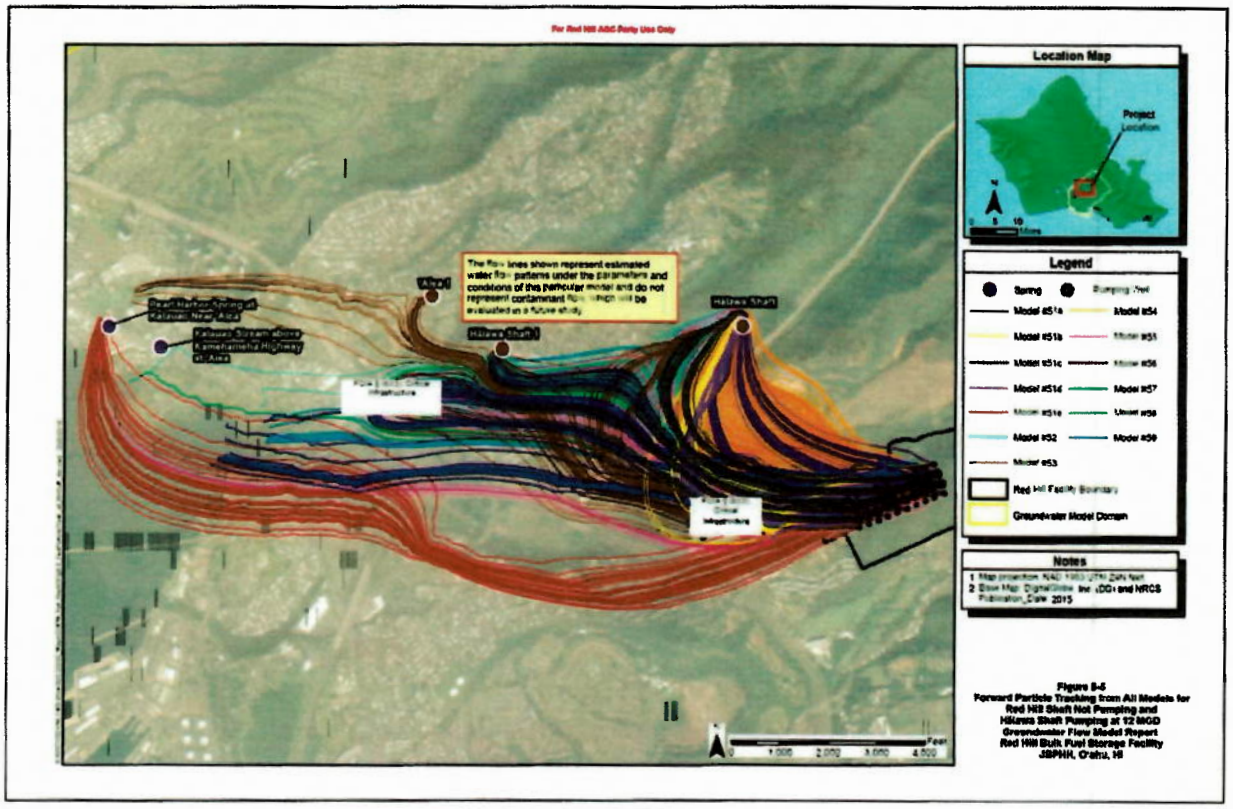
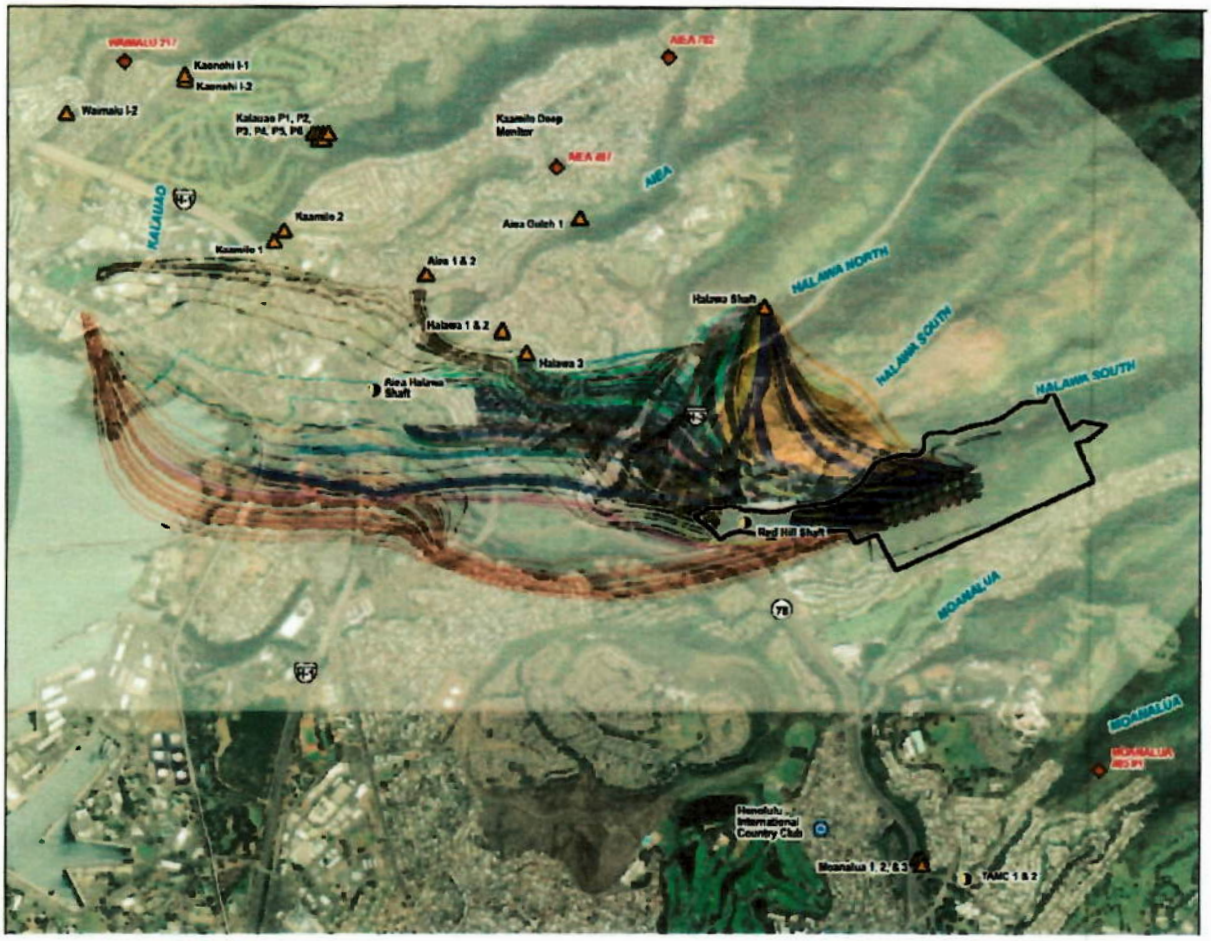


Figure 8-5
Forward Particle Tracking from All Models for Red Hill Shaft Not Pumping and Halawa Shaft Pumping at 12 MGD
Groundwater Flow Model Report
Red Hill Bulk Fuel Storage Facility
JBPHH, O'ahu, HI

The similarity of the particle track with northwest position of the BWS Halawa Shaft and westward orientation of the PFAS containing Navy and BWS wells relative to the Red Hill Facility could also be validating the Navy's groundwater model predictions with real world data and vice versa. Without question, more data is absolutely needed to confirm the model's particle track predictions. Below is the same Navy particle track map from the Navy's Groundwater Flow Model Report dated March 25, 2020 modified to show the locations of various BWS and Navy drinking water sources.



If the Navy and Regulatory Agencies are committed to understanding and mitigating the impact of past PFAS (and petroleum) releases in the aquifer then there should be no hesitation to increase the testing frequency of the Navy's drinking water and groundwater monitoring wells in the vicinity of and away from the Red Hill facility for all PFAS and petroleum chemicals that the test methods can detect. This information will add to the data in this letter and improve our knowledge of how the aquifer is impacted and what mitigation is needed to arrest its movement to other parts of our sole source aquifer water resource.

BWS has repeatedly asked the Navy, as well as United States Environmental Protection Agency (EPA) and Hawaii Department of Health (DOH) (collectively, the "Regulatory Agencies") to weekly sample and analyze all the Navy's groundwater monitoring wells to collect the data needed to determine the location and impact of past releases on the groundwater aquifer to no avail. In a letter to the Regulatory Agencies dated January 22, 2026 (Lau, 2026), BWS asked to include Monitoring Well 16 (MW-16) at the former 'Aiea Laundry facility to the Navy's list of Red Hill groundwater monitoring wells (Red Hill Monitoring Network), increase the testing frequency and to analyze for all of the total petroleum hydrocarbon (TPH), polycyclic aromatic hydrocarbon (PAH), and PFAS chemicals that the test methods can detect. The data will provide critical information that will improve our understanding of groundwater flow direction, contaminant fate

and transport and the extent plumes associated with releases are migrating from the Red Hill facility.

The Regulatory Agencies' response dated March 5, 2026 to my January 22 letter (EPA and DOH, 2026) appears to reject expanding the groundwater monitoring near Red Hill, at least as it pertains to MW-16 and PFAS. As part of the basis for its response, the Regulatory Agencies noted that the Navy is currently performing a Remedial Investigation (RI) of PFAS at Red Hill. The Regulatory Agencies further stated that "the existing soil and groundwater data demonstrate two areas of concern for PFAS at the Red Hill facility, one near Adit 6 and one near the Oily Waste Disposal Facility" and the former 'Aiea Laundry facility "is located over a mile from the Red Hill facility, and current data does not demonstrate a link between the contaminants at the two facilities." (emphasis omitted). We ask the Regulatory Agencies to provide us with the data, studies and analysis they used to support this conclusion. Both letters are in Attachment B and C respectively.

As a key stakeholder, BWS does not agree with the Regulatory Agencies' explanation and maintains that increased testing and sampling of the Red Hill Monitoring Network is needed. The Navy's data in this letter clearly show that PFAS is prevalent in the perched shallow groundwater and deep groundwater under the Red Hill Facility. Documented and suspected releases from Red Hill, including the November 29, 2022 release of approximately 1,300 gallons of PFAS-containing aqueous film-forming foam (AFFF) concentrate, have not yet been fully characterized to establish the disposition of the released substances or the environmental impacts to the underlying sole source aquifer.

The Navy's RI, which is being conducted with oversight from the Regulatory Agencies to collect data to characterize site conditions, determine the nature of the released substances, and assess risk to human health and the environment, is too limited. The regulations governing the RI does not preclude the Navy from conducting supplemental testing (external to the RI) to maximize data quality, sufficiently characterize the nature and extent of the risks posed by releases from Red Hill, and meaningfully evaluate potential remedial options, the Navy (and by extension the Regulatory Agencies) beyond what is presently collected. This is particularly true where, as here, the Red Hill Monitoring Network already exists and is currently being monitored by the Navy such that no significant costs would be necessary to expand current monitoring to inform the RI process and future site remediation.

The Regulatory Agencies' suggestion that certain groundwater monitoring well locations are too far from Red Hill to necessitate additional monitoring is contrary to their past letters to the Navy advocating for more testing. On March 1, 2024, the Regulatory Agencies wrote a letter to the Navy asking for additional PFAS sampling once every two months stating the "*detections of PFOS in soil and groundwater may indicate a wider Red Hill problem with PFAS that cannot be solely attributed to the November 2022 AFFF release*" and "*further investigation to determine the source and extent is warranted*". The letter also stated "*additional investigation is also required to determine how co-located contamination from historic PFAS releases may affect risk from Red Hill petroleum releases and the fate and transport of petroleum contamination through the environment under and surrounding Red Hill*".

On February19, 2025 EPA sent another letter to the Navy requesting to collect PFAS groundwater samples. In the letter, EPA stated "*it is very important to identify and address sources of PFAS that are in the immediate vicinity of the Red Hill Shaft drinking source and EPA*

notes that aqueous film forming foam (AFFF) systems at Red Hill date back to at least 1962" and "*the distribution of contaminants in groundwater around Red Hill Shaft and north and south of the water development tunnel as detected in the RHP series wells suggest releases from or near Adit 3 are potential sources of PFAS contamination in groundwater.*"

On May 5, 2026, EPA wrote another letter to the Navy indicating the "*RI workplan for PFAS is essential to developing a comprehensive understanding of the nature and extent of PFAS and comingled petroleum hydrocarbons in soil and groundwater at the Red Hill Bulk Fuel Storage Facility.*" and the conceptual site model in the final report should include (among other requirements) "*an evaluation of the concentration and mass flux of individual PFAS and total PFAS migrating onto Red Hill, and the mass of individual and total PFAS migrating off the facility.*"

The Regulatory Agencies in these letters express the importance of additional testing for PFAS, collecting more data and determining the nature, extent, directional movement of the contamination in the subsurface. The significance of PFAS detections at other well-receptors and the potential for contaminant migration should be tirelessly investigated and not ignored. The PFAS detections shown in this letter strongly suggest that contaminant migration is possible and should be comprehensively investigated. As shown in the maps herein and in Attachment A, the spatial pattern of detections of PFAS analytes surrounding the Red Hill facility is consistent with groundwater transport in the aquifer. These results affirm the need for and importance of expanded testing. Despite the explanations given to date, neither the Navy nor the Regulatory Agencies have advanced a technically sound rationale to support the conclusion that a water-soluble contaminant cannot or would not have migrated to other groundwater receptors, nor provide the technical data supporting the Navy's current practice of limiting the testing and sampling frequency for PFAS and other contaminants of concern where an existing groundwater monitoring well network exists.

Expanded groundwater monitoring at all wells in the Red Hill Network should be weekly testing for TPH, PAH, and all forms of PFAS. Requiring the Navy to monitor the Red Hill Network for the full suite of contaminants of concern is the most scientifically sound and prudent course of action to inform the Regulatory Agencies' ultimate evaluation of the extent of the contamination emanating from the Red Hill facility as well as the appropriate remedial action to address it. Expanded monitoring of the Red Hill monitor well network will serve to better protect the irreplaceable sole source aquifer upon which all people on O'ahu rely as their primary source of pure drinking water.

If you have any questions, please contact me at (808) 748-5061.

Very truly yours,

ERNEST Y.W. LAU, P.E.
Manager and Chief Engineer

Attachment A – Map of Vicinity of the Red Hill Bulk Fuel Storage Facility – PFAS Detections.

Attachment B - Ernest Y.W. Lau (Lau). 2026. Letter to Mr. Martucci and Dr. Fink Re: Request to Expand Red Hill Monitoring Well Network to Include Existing Basal Aquifer Groundwater Monitoring Well at the Former 'Aiea Laundry Facility. January 22.

Attachment C - U.S. Environmental Protection Agency (EPA) and Hawaii Department of Health (DOH), 2026. Letter to Mr. Lau Re: U.S. Environmental Protection Agency and Hawai'i Department of Health Response to Board of Water Supply Request to Expand Red Hill Monitoring Well Network to Include Existing Basal Aquifer Groundwater Monitoring Well at the Former 'Aiea Laundry Facility, dated January 22, 2026. March 5, 2026.

Attachment D – EPA and DOH Letter to Rear Admiral Stephen Barnett Re: Request for Additional PFAS Sampling. March 1, 2024

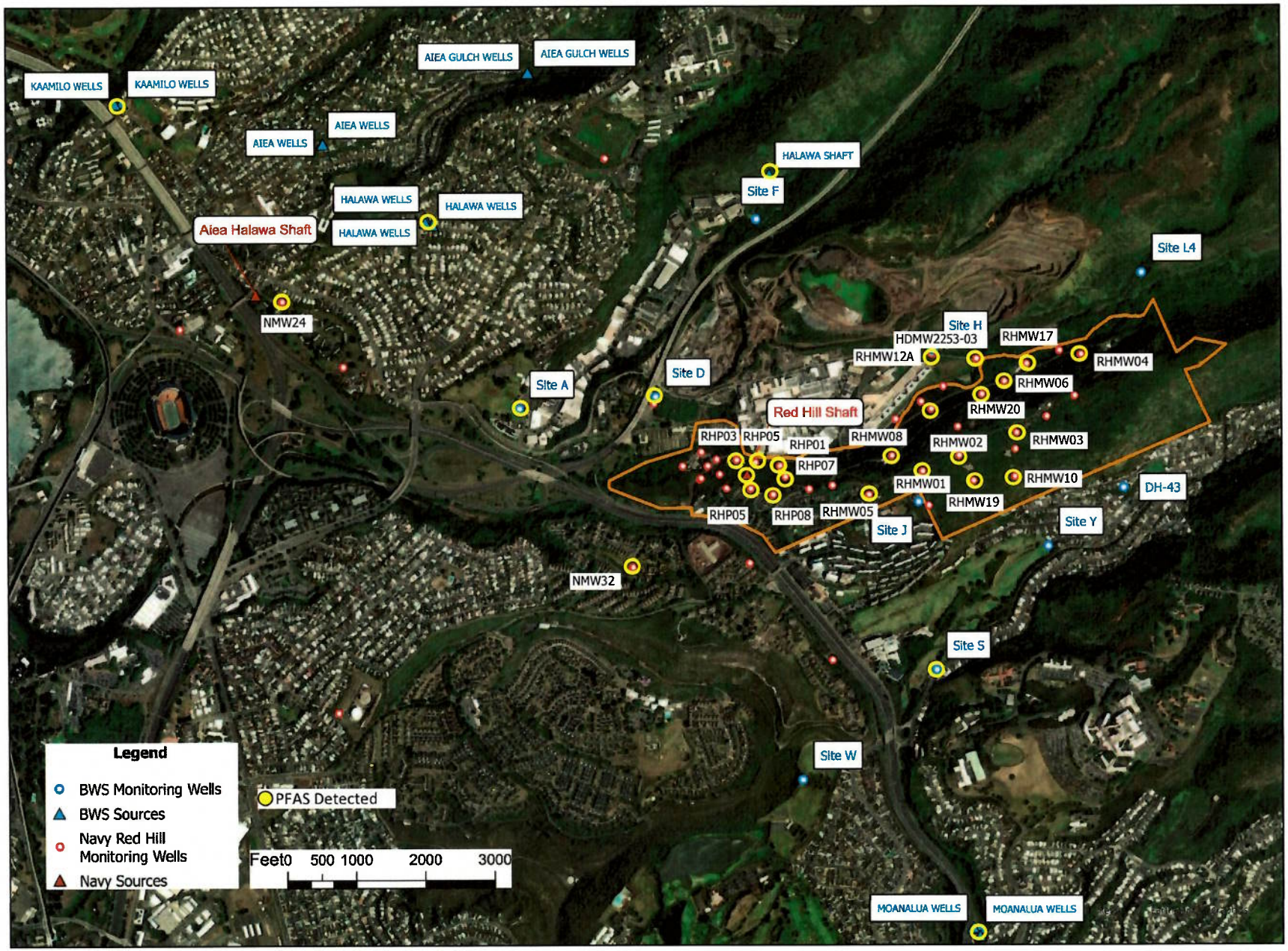
Attachment E – EPA letter to Jocelyn Tamashiro, NAVFAC, Re: Request to Collect PFAS Groundwater Samples. February 19, 2025

Attachment F – EPA letter to Jocelyn Tamashiro, NAVFAC, Re: U.S. EPA Comments on the Revised Draft Remedial investigation Work Plan PFAS, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Hawaii. May 5, 2026.

cc: John Chesnutt, Region 9 Superfund Program Section Manager, U.S. Environmental Protection Agency

Gracelda Simmons, Environmental Management Program Manager, Hawai'i State Department of Health

Jocelyn Tamashiro, Environmental Restoration Manager, Naval Facilities Engineering Systems Command Hawai'i


KAAMILO WELLS
KAAMILO WELLS
AIEA GULCH WELLS
AIEA GULCH WELLS
AIEA WELLS
AIEA WELLS
HALAWA SHAFT
Site F
HALAWA WELLS
HALAWA WELLS
HALAWA WELLS
Aiea Halawa Shaft
NMW24
Site L4
Site H
HDMW2253-03
RHMW17
RHMW12A
RHMW04
RHMW06
Site A
Site D
RHMW20
Red Hill Shaft
RHP03
RHP05
RHP01
RHMW08
RHMW02
RHMW03
RHP07
RHMW01
RHMW10
DH-43
RHMW19
RHP05
RHP08
RHMW05
Site J
Site Y
NMW32
Site S
Site W
MOANALUA WELLS
MOANALUA WELLS
Legend
BWS Monitoring Wells
BWS Sources
Navy Red Hill Monitoring Wells
Navy Sources
PFAS Detected
Feet0 500 1000 2000 3000
N

2026-05-15

Attachment B

BOARD OF WATER SUPPLY
KA 'OIHANA WAI
CITY AND COUNTY OF HONOLULU
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Phone: (808) 748-5000 • boardofwatersupply.com

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MAYOR
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MANAGER AND CHIEF ENGINEER
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NĀ'ĀLEHU ANTHONY, Chair
JONATHAN KANESHIRO, Vice Chair
LANCE WILHELM
JEFFREY LAUPOLA
EDWIN H. SNIFFEN, Ex-Officio
GENE C. ALBANO, P.E., Ex-Officio

January 22, 2026

Mike Martucci, Acting Administrator
United States Environmental Protection Agency
Pacific Southwest, Region 9
75 Hawthorne Street
San Francisco, California 94105

Dr. Kenneth S. Fink, Director
State of Hawai'i, Department of Health
1250 Punchbowl Street
Honolulu, Hawai'i 96813

Dear Mr. Martucci and Dr. Fink,

Subject: Request To Expand Red Hill Monitoring Well Network to Include Existing Basal Aquifer Groundwater Monitoring Well at the Former 'Aiea Laundry Facility

I write to you today as both a Pearl Harbor -Hickam -Kalaeloa Restoration Advisory Board (RAB) Member and the Manager and Chief Engineer of the Board of Water Supply (BWS) to respectfully request the immediate inclusion of the existing monitoring well at the Former 'Aiea Laundry Facility to the monitoring well network for the Red Hill Bulk Fuel Storage Facility monitoring, sampling, and remediation efforts.

On January 10, 2026, RAB members including myself attended a field visit to the Former Aiea Laundry Facility hosted by Naval Facilities Engineering Systems Command (NAVFAC) Hawai'i's Environmental Restoration staffs. NAVFAC staffs were thorough in providing an overview of past operations, past investigation and remedial work done, and current ongoing monitoring activities on site. It is my understanding that monitoring wells were installed during the remedial investigation of the facility, but many have since been decommissioned and filled, except for one Monitoring Well 16 (MW-16) that remains today. Enclosed for your reference is Figure 2-5 from the Final Remedial Investigation and Feasibility Study of Former 'Aiea Laundry Facility, dated July 2016.

As subject matter expert of past releases and current per- and polyfluoroalkyl substances (PFAS) investigation at the Red Hill Bulk Fuel Storage Facility, I urge the regulators, the United States Environmental Protection Agency and the Hawai'i State Department of Health, to immediately require the Navy to include MW-16 into the Red Hill monitoring well network for regular testing of total petroleum hydrocarbon(TPH), polycyclic aromatic hydrocarbon, and PFAS. MW-16 is an existing basal aquifer groundwater monitoring well that requires no additional cost to acquire through private owners nor construction cost. The MW-16 is also fully located within military property, an open parking lot, requiring no landowner approval to schedule water sampling events. Furthermore, the location of MW-16 provides a critical sampling data point just southwest of the Navy 'Aiea-Hālawa Shaft and NMW24, which can be used to monitor down gradient flow paths should the contaminant plume migrates.

Should you have any questions or would like to coordinate a meeting to further discuss, please contact me at 808-748-5061.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Enclosure: Figure 2-5. Final Remedial Investigation and Feasibility Study, Former Aiea Laundry Facility, Joint Base Pearl Harbor-Hickam, Oahu, Hawaii. July 2016.

Cc: Kathleen Ho
Hawai'i State Department of Health
Deputy Director of Environmental Health

Jocelyn Tamashiro
Naval Facilities Engineering Systems Command Hawai'i
Environments Restoration Manager

Francie Whitfield
RAB Community Co-Chair



LEGEND

- Existing Basal Aquifer Groundwater Monitoring Well Location
- Basal Aquifer Groundwater Monitoring Well Location (Decommissioned October 2014)
- Laundry Area
- Backyard Area
- St. Elizabeth Church and School Property Boundary

NOTES

1. Base Imagery: Google Earth V6.2.2.6613 (January 1, 2013). DigitalGlobe 2013, USGS 2013. http://www.earth.google.com [October 4, 2013].
2. Map Projection: UTM NAD83 Zone 4

N

0 100 200 Feet

Figure 2-5
October 2014
Existing and Decommissioned
Basal Groundwater Monitoring Well Locations
Remedial Investigation/Feasibility Study
Former Aiea Laundry Facility
PHNC NPL Site
JBPHH, Oahu, Hawaii

Attachment C

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

STATE OF HAWAII
DEPARTMENT OF HEALTH
KA 'OIHANA OLAKINO
P. O. BOX 3378
HONOLULU, HI 96801-3378

March 05, 2026

Mr. Ernest Y.W. Lau, P.E.
Manager and Chief Engineer
Board of Water Supply - City and County of Honolulu
630 South Beretania St
Honolulu, Hawai'i 96843

Subject: U.S. Environmental Protection Agency and Hawai'i Department of Health Response to Board of Water Supply Request to Expand Red Hill Monitoring Well Network to Include Existing Basal Aquifer Groundwater Monitoring Well at the Former 'Aiea Laundry Facility, dated January 22, 2026

Dear Mr. Lau:

Thank you for your January 22, 2026 letter to the U.S. Environmental Protection Agency (EPA) and Hawai'i Department of Health (HDOH) requesting inclusion of groundwater monitoring well MW-16, located at the Former 'Aiea Laundry Facility, in the Red Hill groundwater monitoring and sampling program. We also appreciate hearing this request from you at the Pearl Harbor-Hickam-Kalaeloa Restoration Advisory Board (RAB) Meeting at the Oahu Veterans Center on January 14, 2026.

Under the Pearl Harbor Naval Complex Federal Facilities Agreement under CERCLA Section 120, the U.S. Navy is performing a Remedial Investigation (RI) of per- and polyfluoroalkyl substances (PFAS) at Red Hill with oversight from the EPA and HDOH. Data from this investigation will guide recommendations to help evaluate the site groundwater monitoring well network.

The Former 'Aiea Laundry Site (Pearl Harbor Naval Complex Superfund Site Operable Unit 11) is currently in the Treatability Study phase for soil vapor remediation and additional monitoring and investigation at the neighboring property continues. The primary site contaminant is

tetrachloroethylene (PCE). **The site is located over a mile from the Red Hill facility, and current data does not demonstrate a link between the contaminants at the two facilities.**

As the Navy project manager presented at the RAB meeting on January 14, 2026, the existing soil and groundwater data demonstrate two areas of concern for PFAS at the Red Hill facility, one near Adit 6 and one near the Oily Waste Disposal Facility. EPA and HDOH are reviewing the Navy's updated RI work plan to evaluate the nature and extent of PFAS in soil and groundwater in the two areas of concern. We will continue to evaluate the groundwater monitoring well network to ensure data-driven, strategic expansion. As additional data are collected and the conceptual site model is updated, we can continue to develop and refine technically sound rationale to require additional groundwater monitoring locations. We look forward to your continued engagement on this effort as a key stakeholder and a member of the RAB.

The HDOH appreciates your request to include groundwater monitoring for PFAS at the former 'Aiea Laundry Site. As you are aware, SB 2095 Relating to Environmental Protection which seeks to establish a PFAS working group within the HDOH to investigate the existence and environmental dangers of per- and polyfluoroalkyl substances was heard and passed by the Senate Committee on Agriculture and Environment and the Senate Committee on Health and Human Services. SB 2095 has been referred to the Ways and Means Committee.

The HDOH provided comments in support of continuing the efforts of our internal working group to assess PFAS contamination and to provide recommendations on additional locations appropriate for PFAS testing and assessment and to study sources of potential PFAS contamination in the State.

We appreciate your time in corresponding with EPA and HDOH. If you have any additional questions, please reach out to, Grace Simmons at gracelda.simmons@doh.hawaii.gov or John Chesnutt, section manager, EPA Region 9 Superfund Program at chesnutt.john@epa.gov.

Sincerely,

Gracelda Simmons

Gracelda M. Simmons
Environmental Management Program Manager
Hawai'i State Department of Health

Sharon Lin
Assistant Director
EPA Superfund & Emergency Management Division

cc by email only:
Jocelyn Tamashiro, NAVFAC
Joshua Stout, NCTF-RH
Alison Fong, EPA Region 9 Land, Chemicals, and Redevelopment Division

Attachment D

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

STATE OF HAWAII
DEPARTMENT OF HEALTH
KA 'OIHANA OLAKINO
P. O. BOX 3378
HONOLULU, HI 96801-3378

March 1, 2024

Rear Admiral Stephen Barnett
Commander, Navy Region Hawai'i
850 Ticonderoga St., Ste. 110
Joint Base Pearl Harbor Hickam, HI 96860-5101
(Sent via Electronic Mail)

Subject: Request for Additional PFAS Sampling

Dear Rear Admiral Barnett:

During a meeting on December 7, 2023, the U.S. Department of the Navy (Navy) disclosed that the Red Hill Bulk Fuel Storage Facility (the Facility) Remedial Investigation (RI) will not begin until fiscal year 2025. At the same meeting, the Navy stated it would discontinue the monthly groundwater per- and polyfluoroalkyl substances (PFAS) sampling conducted in response to the November 2022 aqueous film-forming foam (AFFF) release from Adit 6. We also learned that the Navy does not plan to perform interim monitoring at or around locations where Perfluorooctane sulfonic acid (PFOS) exceedances were identified during baseline sampling of 21 wells in September 2023. The U.S. Environmental Protection Agency (EPA) and Hawai'i Department of Health (DOH), collectively the Regulatory Agencies (RAs), request that the Navy continue to monitor the groundwater using the wells identified on the enclosed spreadsheet once every two months until the plumes are delineated. The basis for this request is presented below.

Adit 6 AFFF Release Investigation

Following the November 29, 2022 AFFF release from Adit 6, the Navy submitted the *PFAS-Specific Sampling and Analysis Plan, Red Hill Bulk Fuel Storage Facility, Adit 6*, dated December 7, 2022, in accordance with the DOH's December 2, 2022 Notice of Interest (NOI). Under the *PFAS-Specific Sampling and Analysis Plan*, the Navy sampled ten locations on a weekly basis, including multilevel groundwater monitoring wells, Red Hill Shaft, and the Red

Hill Shaft pre-chlorination point for forty PFAS compounds using EPA Method 1633. In June 2023, the Navy transitioned from weekly to monthly PFAS sampling. The monthly PFAS sampling event was included in the Navy's proposed *Consolidation and Optimization of the Groundwater Sampling Programs, Red Hill Bulk Fuel Storage Facility*, dated May 2023.

The weekly sampling conducted in response to the 2022 AFFF release consistently detected low-level PFAS compounds in multiple wells. The PFAS detected included 6:2 FTS, a primary component of newer formulations of AFFF such as the material released at Adit 6. While the monthly routine sampling results did not exceed current screening levels, detections were persistent, widespread throughout the monitoring area, and not delineated.

Historic and Baseline Sample Results

In 2023, EPA requested that the Navy sample wells throughout the Red Hill Facility. The Navy shared data from the September 2023 Baseline Sampling Event and submitted a full results report on January 16, 2024. The RAs understand that PFAS that exceeded EPA Regional Screening Levels (RSLs) and proposed Maximum Contaminant Levels (MCLs) in groundwater near Adit 3 and south of the freeway during the September 2023 Baseline Sampling Event are longer-chain PFAS compounds that are more commonly associated with legacy AFFF releases.

Although many PFAS compounds detected in groundwater near Adit 6 are more commonly associated with newer AFFF releases and do not initially seem connected to the types of PFAS detected near Adit 3, the legacy compound PFOS was detected in very high concentrations in soil near the entrance to Adit 6. Prior to the November 2022 Adit 6 release, PFOS were also detected in two December 2021 samples from the water in Red Hill Shaft at concentrations that exceed current RSLs and proposed MCLs. PFAS were detected in groundwater samples collected from RHMW2254-01 on December 20 and 27, 2021, at low parts per trillion (ppt) concentrations. Specifically, perfluorooctanoic acid (PFOA) was detected at 2.76 ppt and 3.49 ppt, and perfluorooctanesulfonic acid (PFOS) was detected at 6.72 ppt and 4.35 ppt on the two sampling dates respectively. DOH collected two additional groundwater samples from RHMW2254-01 on December 20 and 27, 2021, and these samples did not detect PFAS. (DOH and EPA, 2022).

These detections of PFOS in soil and groundwater may indicate a wider Red Hill problem with PFAS that cannot be solely attributed to the November 2022 AFFF release. Further investigation to determine the source and extent is warranted. Additional investigation is also required to determine how co-located contamination from historic PFAS releases may affect risk from Red Hill petroleum releases and the fate and transport of petroleum contamination through the environment under and surrounding Red Hill. Until the RI is conducted, additional routine monitoring is needed.

Path Forward

The RAs recommend the following path forward until the RI is completed and the Navy and the RAs better understand the nature and extent of PFAS contamination that was released from the Facility:

- Expedite the Red Hill PFAS RI.
- Perform bi-monthly (every two months) sampling for PFAS in Facility wells using EPA Method 1633:
    - Continue routine sampling of PFAS released in November 2022.
    - Continue and expand existing baseline sampling to continuously monitor and better understand the detections and exceedances of PFAS that the Navy identified during the September 2023 Baseline Sampling Event.
    - Sample all wells listed on the enclosed spreadsheet.
- Evaluate the data to identify trends and better understand seasonal or other variations in PFAS concentrations that may indicate migration towards sensitive receptors or drinking water systems.
- Before disposing the 2021 release fluids stored in the collection, hold, and transfer tank outside of Adit 3, sample its contents for PFAS using EPA Method 1633. Use a Coliwasa to sample the transfer tank sludge as well as the liquid.
- Submit the schematics and map of the entire Red Hill AFFF system.
- Respond to the RAs' July 31, 2023 comments on the *Consolidation and Optimization of the Groundwater Sampling Programs, Red Hill Bulk Fuel Storage Facility*, dated May 2023
- Analyze and compare groundwater samples to the DOH Environmental Action Levels (EALs) for PFAS. Refer to Table A of the April 2023 *Interim Soil and Water Environmental Action Levels (EALs) for Perfluoroalkyl and Polyfluoroalkyl Substances* Memorandum (Ref. RB-037-2023) available at: https://health.hawaii.gov/heer/files/2023/04/PFASEALsUpdateHIDOHApril2023.pdf

References:

DOH and EPA. 2022. Letter: Preliminary Investigation of PFAS. November 2. Link: https://www.epa.gov/system/files/documents/2024-02/epa-hawaii-doh-letter-to-us-navy-prelim-pfas-investigation-2022-11-02.pdf.

EPAa. 2022. Proposed PFAS National Primary Drinking Water Regulation Website. Updated September 22, 2023. Link: https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas

EPAb. 2022. Rulemaking: Per- and polyfluoroalkyl substances (PFAS): Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS) National Primary Drinking Water Regulation Rulemaking. Docket ID EPA-HQ-OW-2022-0114.
Link : https://www.regulations.gov/search/docket?filter=epa-hq-ow-2022-0114

EPAc. 2023. Regional Screening Levels (RSLs) Website. Updated November 7, 2023. Link: https://www.epa.gov/risk/regional-screening-levels-rsls

DOH.2023.Interim Soil and Water Environmental Action Levels (EALs) for Perfluoroalkyl and Polyfluoroalkyl Substances (PFASs) Website. Updated April 20, 2023.
Link : https://health.hawaii.gov/heer/files/2023/04/PFASEALsUpdateHIDOHApril2023.pdf

If you have any questions regarding this letter, please contact Matthew Cohen, EPA Red Hill Project Coordinator, at Cohen.Matthew@epa.gov or (415) 972-3691; or Kelly Ann Lee, DOH Red Hill Project Coordinator, at KellyAnn.Lee@doh.hawaii.gov or (808) 586-4226.

Sincerely,

/s/ March 1, 2024

Matthew Cohen PG
Red Hill Project Coordinator
U.S. Environmental Protection Agency, Region 9

/s/ March 1, 2024

Kelly Ann Lee
Red Hill Project Coordinator
State of Hawai'i, Department of Health

Enclosure Table 1: Wells to Sample for PFAS

cc: RDML Marc Williams, Deputy Commander, Navy Closure Task Force – Red Hill
Sherri Eng, Executive Director, Navy Closure Task Force – Red Hill
Milton Johnston, Environmental Director, Navy Closure Task Force – Red Hill
Joshua Stout, ACO/AOC Portfolio Manager, Navy Closure Task Force – Red Hill
CAPT James Sullivan, Commanding Officer, NAVFAC Hawai'i
CDR Benjamin Dunn, Red Hill Environmental OIC, NAVFAC Hawai'i
Steven Saepoff, Environmental Restoration Product Line Leader, NAVFAC Hawai'i
Charlotte Rangel, Remedial Project Manager, NAVFAC Hawai'i

Wells Recommended for Continued and Expanded PFAS Monitoring

Well ID	Adit 6 Investigation	Baseline	Bi-Monthly
RHMW02	X		X
RHMW03	X		X
RHMW04	X		X
RHMW06	X		X
RHMW10	X		X
RHMW12A	X		X
RHMW16	X		X
RHMW17	X		X
RHMW17D	X		X
RHMW17S	X		X
RHMW225401	X		X
HDMW225303	X		X
RHMW19		X	X
RHMW08		X	X
RHP04c		X	X
RHP01		X	X
RHP01R		X	X
RHP02		X	X
RHP03		X	X
RHP07		X	X
RHMW05		X	X
RHP04A		X	X
RHP05		X	X
NMW32		X	X
RHMW09		X	X
RHMW20		X	X
RHP08		X	X
RHP06		X	X
RHMW07		X	X
NMW25		X	X
RHP04B		X	X
NMW24		X	X
RHMW01		X	X
RHMW18			X

Attachment E

REGION 9

SAN FRANCISCO, CA 94105

February 19, 2025

VIA ELECTRONIC MAIL ONLY

Jocelyn Tamashiro
Environmental Restoration Manager
NAVFAC Hawaii, EV3
400 Marshall Road, Building X-11
Joint Base Pearl Harbor-Hickam, Hawai'i 96860

Subject: Request to Collect Per- and Polyfluoroalkyl Substances Groundwater Samples

Dear Ms. Tamashiro:

Thank you for meeting with the Hawai'i Department of Health (DOH) and United States Environmental Protection Agency (EPA) on 22 January 2025 to discuss the first quarter per– polyfluoroalkyl substances (PFAS) groundwater sampling results and proposed path forward. On 31 January 2025, EPA received the U.S. Department of Navy's (Navy) memo in response to a request to collect additional PFAS groundwater samples.

EPA appreciates that Navy plans to add the groundwater wells listed below to the routine sampling program:

- OWDF02B (when sufficient water is available)
- OWDF04B (when sufficient water is available)
- OWDF05B
- OWDF06A
- OWDF06B
- OWDF07A
- OWDF07B
- OWDF07C
- Cluster wells near building 313 (when complete)

During the meeting, EPA also requested that the temporary wells in Adit 3 be added as part of the second quarter PFAS sampling event. Consensus was not reached in the meeting, and we agreed to provide our rationale in writing. We request that the temporary wells in Adit 3 be sampled in the upcoming quarter 2 event because:

- It is very important to identify and address sources of PFAS that are in the immediate vicinity of the Red Hill Shaft (RHS) drinking source. EPA notes that aqueous film forming foam (AFFF) systems at Red Hill date back to at least 1962 and information regarding AFFF system components, testing, and use are not available. Furthermore, the distribution of contaminants in groundwater around RHS and north and south of the water development tunnel as detected in the RHP series wells, suggest releases from or near Adit 3 are potential sources of PFAS contamination in groundwater. The proximity of the Adit 3 to RHS and the Navy proposal to reactivate RHS as a drinking water source makes this a high priority area for investigation.

- At this phase of the remedial investigation, groundwater, and specifically perched water, is an effective medium to sample for identifying sources. It represents water derived locally from the vadose zone and provides a composite sample of an area unlike a discrete soil sample. This sampling assesses perched water contamination, and thus contributes to the objective of determining nature and extent of PFAS contamination in Area B.

- The perched zone has been impacted by previous releases of fuel in Adit 3; the PFAS data would complete the characterization of water quality in the perched water.

- Navy notes the wells were installed for the investigation of fuel releases, not PFAS releases covered under non-Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). However, EPA is unaware of reasons why this distinction would compromise the quality and representativeness of perched groundwater samples. If the concern pertains to potential PFAS content of the materials used to construct the temporary wells, the specific materials should be identified and investigated.

- Navy expressed concern that the data quality would not be suitable for risk assessment purposes. EPA notes that the data for the Adit 3 wells is being collected for screening purposes and data collection for risk assessment can be a separate effort.

- If significant levels of PFAS are detected in the perched wells, then a more robust investigation of potential PFAS sources, including sorbent pads sources of the contamination, would be warranted. Regardless of the original source, significant levels of PFAS in the perched water could have adverse impacts on the basal aquifer and contribute to contamination in the RHS, therefore it should be investigated.

If you have any questions regarding this letter, please contact me at russi.tonya@epa.gov or (415) 972-3706.

Sincerely,

/s/

Tonya Russi
Red Hill Project Coordinator
U.S. Environmental Protection Agency, Region 9

cc: CDR Benjamin Dunn, NCTF-RH
Joshua Stout, NCTF-RH
Charlotte Rangel, NAVFAC
Niels Heidner, NAVFAC
Allison Hutto, DOH
Gracelda Simmons, DOH
John Chesnutt, EPA

REGION 9
SAN FRANCISCO, CA 94105

May 05, 2026

VIA ELECTRONIC MAIL ONLY

Jocelyn Tamashiro
Environmental Restoration Manager
NAVFAC Hawaii, EV3
400 Marshall Road, Building X-11
Joint Base Pearl Harbor-Hickam, Hawai'i 96860

Subject: U.S. Environmental Protection Agency Comments on the *Revised Draft Remedial Investigation Work Plan Per- and Polyfluoroalkyl Substances, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Hawaii*, February 2026

Dear Ms. Tamashiro:

Thank you for submitting the *Revised Draft Remedial Investigation Work Plan Per- and Polyfluoroalkyl Substances, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Hawaii.* The Remedial Investigation (RI) is essential to developing a comprehensive understanding of the nature and extent of per- and polyfluoroalkyl substances (PFAS) and comingled petroleum hydrocarbons in soil and groundwater at the Red Hill Bulk Fuel Storage Facility (RHBFSF). The Work Plan focuses on two areas: Area A, including Building 313 and the Adit 6 entrance, and Area B, including the westernmost portion of the Red Hill facility around Adit 3 and the Oily Waste Disposal Facility (OWDF). EPA is committed to working with the Navy to expedite the sampling efforts in Area B. Please find attached EPA's comments on the RI Work Plan. We look forward to the Navy's revisions and commencement of field work.

If you have any questions regarding this letter, please contact Tonya Russi at russi.tonya@epa.gov or (415) 972-3706.

Sincerely,

John Chesnutt
Manager, Superfund Pacific Islands Section
U.S. Environmental Protection Agency, Region 9

Tonya Russi
Red Hill Coordinator
U.S. Environmental Protection Agency, Region 9

Attachment: 1. EPA Comments on Revised Draft Remedial Investigation Work Plan Per- and Polyfluoroalkyl Substances

cc: (email only)
CAPT Gregory deWindt, NCTF-RH
CDR Benjamin Dunn, NCTF-RH
Joshua Stout, NCTF-RH
Charlotte Rangel, NAVFAC
Niels Heidner, NAVFAC
Gracelda Simmons, Hawaii Department of Health
Jennah Oshiro, Hawaii Department of Health
Kelly Ann Lee, Hawaii Department of Health

Attachment 1 – EPA Comments on Revised Draft Remedial Investigation Work Plan Per- and Polyfluoroalkyl Substances

Comments:

1. EPA understands the proposed data collection effort described in this work plan is the first phase of the investigation of PFAS impacts at the Red Hill Facility. EPA appreciates Navy's commitment to fully investigate the PFAS impacts at Red Hill in this and future phases. Accordingly, we have limited our comments to matters most relevant to this initial phase of investigation.

2. Construction projects around the facility are ongoing. Active construction may limit access to potential areas of concern. Please provide all known construction and grading timelines in identified areas of concern. Please describe how you will alert EPA/Hawaii Department of Health in advance of any planned or changed construction that could affect PFAS investigation/cleanup activities (i.e. written notification to EPA project manager, etc.)

3. If additional sampling methods or protocols are implemented, please submit a quality assurance project plan addendum, minimally including project quality objectives, reference limits, sampling design/rationale, and field and laboratory quality control processes.

4. **Page 23 (PDF page 29), Worksheet #6, Communication Pathways:** For Regulatory Agency Interface procedures, please update the language as follows: *The Navy RPM will forward all project documentation. The Navy will ensure EPA Region 9 and DOH are notified of major changes or corrective actions. While input on corrective actions will be sought beforehand whenever possible, notification will occur within 24 hours of implementation.*

5. **Page 43 (PDF page 49), Worksheet #10, 10.1 Overview (objectives of the RI):**
    a. The work plan states, "Characterize the nature and extent of PFAS in Area B..." Please update to "...characterize the nature, extent, and sources of PFAS in soil and groundwater in Area B..."
    b. For the objectives of the RI, please add Area B remedial investigation will include developing a hydrogeologic and contaminant conceptual site model (CSM) for the perched aquifers in the vicinity of the former OWDF facility and beneath Adit 3.

6. **Page 69 (PDF page 75), Worksheet #11, 11.1.2 Step 1 – State the Problem, Area B:** The work plan presents the following conclusion: "*Initial assessments of the monitoring data indicated that PFAS detected in NMW32 probably does not originate from the Facility (DON 2023o).*" The cited reference does not provide this global conclusion. Rather, it states the PFAS found in NMW-32 was not related to aqueous film forming foam (AFFF) product released in November 2022. However, the PFAS detected on the former OWDF represents a different and unknown source. Please remove this statement and reevaluate the connection with NMW-32 following delineation of OWDF impacts.

7. **Page 70 and 71 (PDF page 76), Worksheet #11, 11.3 Step 3 – Identify the Information Inputs to the Decision:** The seventh bullet indicates that the: "*Results from DoD-approved methods to*

assess the potential for COPCs to migrate from soil and perched water measured in the valley fill sediments to the underlying basal groundwater that is a drinking water resource." Please identify project screening levels (PSL) for specific PFAS protective of the leaching-to-groundwater pathway and provide a description of the method for EPA review.

8. **Page 103 (PDF page 109), Worksheet #14, 14.13.1 Data Management Tasks:** Please provide field notes/data sheets to regulators. This should include all information necessary to understand the results (example: water quality collected via a flow-through cell). EPA requests this information be uploaded to the Navy's Environmental Data Management System or other equivalent database accessible to regulators.

9. **Page 138 (PDF page 144) 17.6, Worksheet #17, 17.6 Area B Groundwater Sampling Design and Locations:** EPA recommends installing pressure transducers in Area A and Area B perched wells and temporary wells in Adit 3 to collect continuous groundwater elevation measurements. This information will be important for identifying sources of perched aquifer recharge, temporal response to precipitation events, saturated thickness of the perched zone and the direction and rate of groundwater flow.

Expectations for Future Submittals

10. As part of future phases, when updating the CSM, evaluating fate and transport, and choosing sample locations, please consider pipelines, utility conduits, and other infrastructure that may cause preferential pathways for contaminant migration.

11. EPA acknowledges there is a Department of Defense (DoD) Office of the Secretary of Defense memorandum that stipulates which screening levels the Navy will use. EPA recommends that DoD use the updated regional screening level that reflects the latest science. Rescreening may be needed as new scientific information emerges.

12. Releases to the environment have occurred from the collection, holding and transfer tank (CHT) and holding tank-leach tank (HT/LT) and are currently being investigated for petroleum impacts. These release locations also represent possible PFAS release locations. Future project phases may require PFAS soil and groundwater sampling at CHT and HT/LT locations.

13. PFAS was detected in the perched aquifer beneath Adit 3 (OWDF-08B). EPA expects that future phases of the project will include sampling in Adit 3 to improve our understanding of the distribution of PFAS contamination in the perched aquifer.

14. **Page 63 (PDF page 69), Worksheet #10, 10.4.3.2 Area B:** The report states; *"PFOA is defined in the basal aquifer below the PSL to the west and south of Area B; however, it is not fully defined to the east, or to the north along the Facility boundary toward the Halawa Industrial Park (Figure 17)."* As presented in Figure 20, perfluorooctanoic acid results from OWDFMW-04A, RHP-05 and RHP-06 exceed the PSL in the basal aquifer, suggesting that in future phases of the project, further definition will be necessary to the south and west of the OWDF. The results of the initial phase of soil and groundwater investigation and an updated hydrogeologic CSM should be used to optimize the locations of these basal wells.

15. **Page 77 (PDF page 83), Worksheet #12, Field Quality Control Samples:** From previous Navy responses, EPA understands that the high relative percent difference (RPD) shown for field duplicates are standard for Navy sites on Joint Base Pearl Harbor Hickam (JBPHH). However, the limits in DoD Module 6: Data Validation Guidelines are used as an example of what may be considered a major exceedance. Results with high RPDs may require additional sampling.

16. **Page 96 (PDF page 102), Worksheet #14, 14.7.3 Groundwater Sampling:** EPA requests four quarters of groundwater sampling after all monitoring wells are installed. EPA requests a meeting to discuss groundwater monitoring frequency and the included wells.

17. **PDF page 321, Table B-4, Summary of Area A Perched Groundwater Quarterly Expedited Sampling Analytical Data:** EPA notes PFAS data collected between December 2022-December 2023 at Red Hill monitoring wells after the November 2022 release outside Adit 6 is missing from the analytical data summary. EPA requests this data be reviewed and considered for both the CSM development and the evaluation of impact on basal groundwater quality.

18. At minimum, the CSM in the final report should include the following:
    a. Characterization of seasonal variability in perched aquifer conditions including saturated thicknesses, flow directions and flow rates.
    b. An evaluation of basal groundwater flow direction in the vicinity of the OWDF.
    c. Identification of sources of water recharging the perched aquifers.
    d. Identification of areas where perched aquifers are recharging the basal aquifer.
    e. An estimate of the net mass of PFAS contamination released to the environment in November 2022 that was not recovered through removal activities.
    f. An evaluation of PFAS weathering, transformation, and mobility in the environment.
    g. An evaluation of PFAS mass loading rates to the basal aquifer resulting from individual (impacted) perched aquifers and to the basal aquifer in the vicinity of Adit 6.
    h. An evaluation of the concentration and mass flux of individual PFAS and total PFAS migrating onto Red Hill, and the mass of individual and total PFAS migrating off the facility.
    i. An evaluation of the relationship between PFAS contamination detected at the former OWDF and Red Hill Facility and PFAS contamination detected in offsite wells including NMW-24, 25 and 32.

19. In the final report please include:
    a. A description of the geostatistical methods used to support the development of all plume maps.
    b. A description of previous soil excavations, site grading, and other work that may have affected contaminant occurrence and distribution at or adjacent to the OWDF.
    c. Details about the 2025 removal of the AFFF Retention Tank and ongoing trenching, excavation, and grading near Area B, including locations where soil movement activity occurred.
    d. Cross-section and plan-view figures of soil excavations and site grading.
    e. Figures identifying the footprint of the proposed permanent water treatment facility relative to features on the OWDF such as the former AFFF storage tank, the temporary GAC treatment system infrastructure, existing wells, and soil borings and temporary well

locations.

f. Description of the water releases from Tank 316 in May 2025 and Tank 685 in September 2025, focusing on their impact on potential contaminant transport.
g. A figure showing proposed sampling locations in proximity to the Tank 685 washout area.
h. Discussion of any impact the erosion control project may have on the sampling schedule.