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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

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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.

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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>

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EPA. 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>

EPA. 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

/s/ March 1, 2024

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

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 |

