



Navy Closure Task Force–Red Hill  
Joint Base Pearl Harbor Hickam

January 2026

Responses to Follow-Up from 20 February 2025 Public Session – Request for Supporting Information Received from National Academies of Sciences, Engineering, and Medicine (NASEM)

## PURPOSE

The purpose of this memorandum is to provide supporting information in response to the information request sent by the National Academies of Sciences, Engineering, and Medicine (NASEM) and the Committee on Clinical Follow-Up and Care for Those Impacted by the JP-5 Release at Red Hill to the Navy Closure Task Force–Red Hill (NCTF-RH) on 15 April 2025. A timeline of events, beginning at the time of the release (November 2021), is provided as Appendix A. Included in the timeline is the corresponding drinking water data collected during that phase (e.g., Emergency Response, Long-Term Monitoring [LTM], Extended Drinking Water Monitoring [EDWM] of the response. A summary of applicable resources, all publicly available, where additional information regarding corrective actions, drinking water sampling, and residence resources is provided as Appendix B. Responses to NASEM’s Request for Supporting Information is provided as Appendix C.

## BACKGROUND

On 6 May 2021, a pressure surge event occurred during routine fuel movement operations at the Red Hill Bulk Fuel Storage Facility (Red Hill) resulting in two piping joint ruptures and subsequent release of Jet Propellant-5 (JP-5) fuel. Although unknown at the time, a fire suppression system sump pump transferred up to 16,999 gallons of the fuel into a retention line, where it remained under 20 November 2021.

On 20 November 2021, a Red Hill watch stander inadvertently struck a low point drain valve in the fire suppression retention line with the passenger cart of a train, cracking the pipe and spilling the fuel deposited there on 6 May. Some portion of that fuel contaminated the Red Hill Shaft and Joint Base Pearl Harbor–Hickam’s (JBPHH) Drinking Water System (System). Both the Navy and the State of Hawaii Department of Health (DOH) received complaints of a chemical or fuel-like odor and taste in the drinking water (tap water) served by the JBPHH System, which serves approximately 93,000 consumers. By 29 November 2021, DOH issued a public health advisory recommending that System users avoid using the water for drinking, cooking, or oral hygiene purposes, and the Red Hill Shaft (RHS), which was impacted by the release, was taken offline. On 3 December 2021, the Navy Aiea–Halawa Shaft (NAHS) was also isolated, and deactivated by the Navy out of an abundance of caution. Navy coordinated with the Army, U.S. Environmental Protection Agency (EPA), and DOH through the Interagency Drinking Water System Team (IDWST) to restore safe drinking water to the System. The team, which launched in December 2021, completed drinking water system restoration in March 2022 when DOH amended the health advisory for the System and declared the water is safe to drink.

To accomplish this task, the IDWST divided the System into 19 Zones, ensuring samples were collected spatially across the entire System and supporting risk management decisions. Between 29 November and 13 December 2021, Naval Facilities Engineering Systems Command Hawai’i (NAVFAC HI) began collecting samples from the distribution system (hydrants), residences, and facilities (clinics, schools, workplaces, and other facilities).

Additionally, DOH independently collected drinking water samples between 24 November 2021 and 02 January 2022. These samples are often referred to as the pre-IDWST drinking water samples that were collected during the first weeks

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after the System was affected and during a period referred to as Emergency Response. The purpose of the pre-IDWST sampling was to evaluate drinking water conditions in the JBPHH system immediately following initial reports of health symptoms, fuel-like tastes, odors, and sheen in drinking water, and to define the extent of impact JP-5 had on the System.<sup>1</sup>

On 17 December 2021, DOH, EPA, the Navy (including the Navy Marine Corps Public Health Center [now titled the Navy & Marine Corps Force Health Protection Command (NMCFHPC)], the Army, and subject matter experts (SMEs) established the IDWST. The IDWST's goal was to restore safe drinking water to communities affected by the 20 November 2021 JP-5 fuel release into the Red Hill Shaft. The IDWST collaborated to establish a flushing and monitoring plan to evaluate drinking water quality and safety. DOH began amending the health advisories on a zone-by-zone basis in February 2022. By 18 March 2022, safe drinking water had been restored to all communities (i.e., the 19 flushing Zones established by the IDWST) on the System.<sup>2</sup>

In March 2022, the Navy began collecting drinking water samples in accordance with the Drinking Water LTM Plan (LTM Plan). The LTM Plan, approved by DOH and EPA, included 2 years of additional monitoring across all 19 Zones of the System, serving to validate DOH's certification that the system had recovered and the drinking water provided by the JBPHH System remained safe. Under LTM, the Navy collected 8,971 samples from residences, schools, Child Development Centers (CDCs), non-residences (e.g., medical buildings, workplaces), hydrants, and the Waiawa Shaft (source water). Over 65% of residences on the System were sampled under LTM.<sup>3</sup>

During the week of 29 January 2024, the Navy rapidly established an interagency team, referred to as the 'Swarm' Team, which convened to investigate and discuss ('swarm') low-level total petroleum hydrocarbon (TPH) detections reported in drinking water samples collected from the System as part of LTM. Representatives from DOH and EPA were consulted during the process. The SMEs evaluated several potential root causes of the low-level TPH detections and concluded that the most likely causes were due to laboratory and method-related challenges. Other root causes that were assessed by the Swarm Team included: TPH within source water, regulated disinfection byproducts, residual JP-5 and/or fuel additives in the System from the November 2021 release from Red Hill, biofilm activity, premise plumbing concerns, water line scaling, pesticides, change in system operations, and contaminants introduced during line breaks. All of these potential causes were evaluated as having either a low or extremely low likelihood of being the root cause.

Through comparison of the analytical chromatographs with a JP-5 standard chromatograph, the TPH results were determined to be from sources unrelated to JP-5. The SMEs evaluated over 9,200 samples (including all of the LTM results); the sampling teams observed no sheens or petroleum odors in any of these samples. All of the TPH detections were less than the safe level of 266 parts per billion (ppb), which is an incident-specific parameter (ISP) established by DOH. The majority of the TPH detections reviewed (> 87%) were low-level detections between the method detection limit (MDL) of 50 ppb and the method reporting limit (MRL) of 70 ppb. Drinking water samples collected during LTM were analyzed at an EPA-certified laboratory consistent with the EPA Method, and the TPH detections reported during LTM are valid. Through the investigative process, the Swarm team determined that the detections were caused by an interaction between free chlorine (in the chlorinated drinking water) and the surrogate standard added during lab extraction, a necessary step in the laboratory analysis of the sample. This interaction produced by-products observed in

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<sup>1</sup> Reference: Technical Memorandum evaluating whether pre-IDWST flushing drinking water sampling data can be used to evaluate exposure from JP-5 fuel into the JBPHH waste system on 20 November 2021. Available at: [https://cnrh.cnrc.navy.mil/Portals/79/CNRH/Documents/red\\_hill/Medical%20Reports/Red%20Hill%20Pre%20IDWST%20Exposure%20Tech%20Memo\\_June\\_23.pdf?ve-r=thH6TShA0Jw2ciZ4f\\_PXgw%3D%3D](https://cnrh.cnrc.navy.mil/Portals/79/CNRH/Documents/red_hill/Medical%20Reports/Red%20Hill%20Pre%20IDWST%20Exposure%20Tech%20Memo_June_23.pdf?ve-r=thH6TShA0Jw2ciZ4f_PXgw%3D%3D).

<sup>2</sup> Reference: Drinking Water Sampling Plan dated December 2021. Available at: [https://jbphh-safewaters.org/public/JBPHH\\_SamplingPlan\\_Addendum3\\_Final.pdf](https://jbphh-safewaters.org/public/JBPHH_SamplingPlan_Addendum3_Final.pdf).

<sup>3</sup> Reference: Drinking Water Long-Term Monitoring Plan dated June 2022. Available at: [https://jbphh-safewaters.org/public/JBPHH\\_LTM\\_Plan\\_FINAL\\_20220629.pdf](https://jbphh-safewaters.org/public/JBPHH_LTM_Plan_FINAL_20220629.pdf).

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the TPH chromatograms, even though the by-products are not fuel-related. Despite the challenges with the analytical method, during LTM, drinking water in the System met EPA and DOH standards. The interagency team developed a revised analytical approach that introduced a step, referred to as quenching, to remove free chlorine from the water before analysis, eliminating the by-products created by the interaction between free chlorine and the surrogate.<sup>4</sup> In early February, during the Swarm Team's evaluation, DOH collected additional samples from the Navy's Waiawa Shaft and across the JBPHH System for independent evaluation and in May 2024 reported that the results of those samples found no fuel in the Navy's drinking water, which continued to meet state and federal standards.

In April 2024, the Navy voluntarily continued enhanced drinking water monitoring and initiated the EDWM program immediately after completing LTM. EDWM incorporated lessons learned from LTM (including revisions to analytical methods made by the Swarm Team) to further deliver on its commitment to investigate any potential fuel-related contamination in the System. The EPA later formally approved the final EDWM Plan on 1 November 2024. During EDWM, the Navy collected 6,840 additional drinking water samples across 20 Zones from residences, schools, CDCs, hydrants, other priority buildings (e.g., medical clinics), and the Waiawa Shaft.<sup>5</sup> During LTM, TPHs were detected in 2,325 out of 8,668 (31%) drinking water samples collected. All results were below the ISP of 266 ppb. Specific to only LTM, in samples where TPH was detected, over 77% of the results were between the MDL of 50 ppb and the MRL of 70 ppb. Based on the results of the Swarm Team Tech Memo, the analytical method for TPHs was modified to remove byproducts resulting from interactions between free chlorine and surrogates. Results from the follow-on EDWM program confirmed the findings of the Swarm Team Tech Memo. During EDWM, TPHs were detected in 13 out of 6,794 (0.19%) drinking water samples collected (additional information is summarized in Appendix C and LTM and EDWM Reports on Safewaters.org). The results of LTM and EDWM demonstrate that JP-5 (or other fuels) is not impacting the System. Over 90% of all residences on the System have been sampled through the course of the Navy's enhanced drinking water monitoring operations.<sup>6</sup>

Drinking water sampling was only one of the efforts the Navy implemented to confirm that the System was no longer impacted by JP-5 fuel and to ensure drinking water in the System was safe. In addition to sampling, the Navy:

- Established the Rapid Response Team in 2022, later expanded into the Water Quality Action Team in early 2024, to respond to consumers' questions, concerns, and requests for sampling, regardless of the nature of water quality concern (e.g. whether related to fuel or not);
- Established the Joint Medical Services Working Group on 01 December 2021 and two phone centers (i.e., Military Health System H2O Hotline and the 24/7 TRICARE Nurse Advice Line) to record medical encounters (e.g., medical care, screening, reporting);<sup>7</sup>
- Established the Red Hill Clinic to provide medical care to active-duty service members and their families experiencing symptoms they believe may be related to the Red Hill fuel spill in November 2021;
- Established the Safe Waters website, a publicly available website that documents ongoing activities, analytical results, up-to-date resources, maps/figures, and notifications for upcoming community outreach programs;
- Conducted a pre-IDWST exposure assessment to determine the potential exposure duration and if data collected prior to the establishment of the IDWST were suitable for conducting a risk assessment;

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<sup>4</sup> Reference: Technical Memorandum summarizing low-level hydrocarbon detections observed during Long-Term Monitoring. Available at: [https://jbphh-safewaters.org/public/Tech\\_Memo\\_JBPHH\\_LOE's\\_LTM\\_TPH\\_Detects\\_Redacted\\_Rev.pdf](https://jbphh-safewaters.org/public/Tech_Memo_JBPHH_LOE's_LTM_TPH_Detects_Redacted_Rev.pdf).

<sup>5</sup> Zone J1, the 20<sup>th</sup> zone, was not on the System during the November 2021 Red Hill fuel release. At the time of the release drinking water was obtained from the Honolulu Board of Water Supply, which was not impacted by the 2021 JP-5 release. Zone J1 was switched to the System after the health advisories were lifted in March 2022.

<sup>6</sup> Reference: Extended Drinking Water Monitoring Plan dated October 2024. Available at: [https://jbphh-safewaters.org/public/JBPHH\\_EDWM\\_Plan\\_23Oct24.pdf](https://jbphh-safewaters.org/public/JBPHH_EDWM_Plan_23Oct24.pdf).

<sup>7</sup> Individuals were encouraged to seek medical attention following the November 2021 JP-5 fuel release and visit the Medical Services Working Group to have their potential exposure recorded, even if there were no symptoms reported. Not everyone who visited the Joint Medical Services Group reported symptoms.

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- Continued to notify and collaborate with EPA and DOH regarding ongoing activities, evaluate key findings, and make health-protective decisions that are data-driven;
  - Developed fact sheets, technical memorandums, residence guides, and other materials to provide drinking water results and access to additional resources for the public;
  - Conducted numerous Drinking Water Information Booths across the community served by the JBPHH System, averaging over two per month from 2023-2025;
  - Hosted open houses and town halls to communicate with those impacted about the safety of drinking water in the System, provide updates on ongoing activities, and answer questions the community has regarding drinking water;
  - Voluntarily conducted bi-monthly PFAS sampling at the JBPHH System active source (i.e., Waiawa Shaft) for a year to demonstrate water quality and establish a baseline well in advance of EPA’s updated National Primary Drinking Water Regulations (NPDWR), which set significantly reduced compliance standards for water utilities by 2029; and
  - Continued to comply with state and federal regulations and perform compliance monitoring in accordance with EPA requirements.

These efforts are only part of the Navy’s commitment to ensuring safe drinking water to all System users at JBPHH. More information is available at: <https://jbphh-safewaters.org/>.

Upon EPA’s endorsement of the completion of EDWM, the Navy will return to conducting only routine compliance monitoring of the JBPHH System.

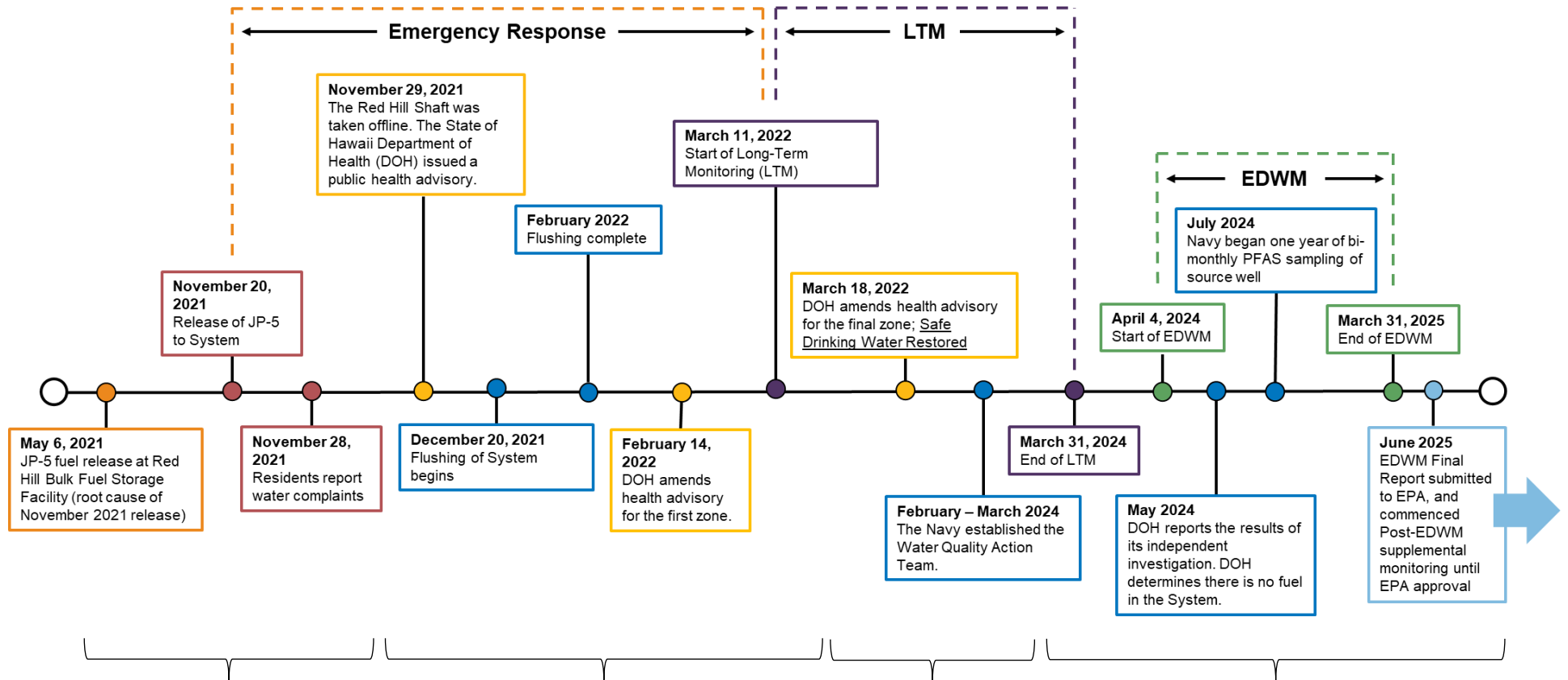
#### **NASEM REQUEST FOR SUPPORTING INFORMATION**

In 2025, NASEM submitted a series of questions to the Navy Closure Task Force–Red Hill to support their ongoing study evaluating the Clinical Follow-Up and Care for Those Impacted by the JP-5 Release at Red Hill. Responses to NASEM’s Request for Supporting Information are provided in Appendix C attached.

#### **ENCLOSURES**

- Appendix A      Timeline of Events
- Appendix B      Additional Information and Resources
- Appendix C      Responses to NASEM Request for Supporting Information

## APPENDIX A. TIMELINE OF EVENTS



### Available Data

The Navy and DOH collected drinking water samples during the Emergency Response to assess the extent of contamination in the System immediately following the November 2021 release. These results are summarized in the Pre-IDWST Tech Memo (see reference no. 10 in Appendix B) and on Safewaters.org (see reference no. 2 in Appendix B).

The Navy collected drinking water samples from the Distribution System and Houses in accordance with the December 2021 Drinking Water Sampling Plan (see reference no. 9 in Appendix B). These results are summarized in the Stage 2 Reports and the Stage 4 Reports (see reference no. 11 and 12, respectively, of Appendix B). The samples were collected from 19 Zones on the System. These data were submitted to DOH and used to determine when drinking water in the System is safe and the health advisories could be amended.

Between March 2022 and March 2024, the Navy collected 8,971 drinking water samples from houses, schools, child development centers, non-residences, hydrants, and Waiawa Shaft. These data were collected in accordance with the LTM Plan (see reference no. 13 of Appendix B). These results are available on Safewaters.org and are summarized in Stage 5 LTM Reports (see reference no. 14 of Appendix B).

Between April 2024 and March 2025, the Navy collected 6,840 drinking water samples from houses, schools, child development centers, non-residences, hydrants, and Waiawa Shaft. These data were collected in accordance with the EDWM Plan (see reference no. 16 of Appendix B). These results are available on Safewaters.org and are summarized in EDWM Quarterly Reports (see reference no. 18 of Appendix B).

## APPENDIX B. ADDITIONAL INFORMATION AND RESOURCES

The table below provides additional references with more specific and detailed information.

	Reference	Source/Link to Access
<i>General Information</i>		
1.	<p><u><a href="https://safewaters.org">Safewaters.org</a></u> The Navy developed a publicly accessible website where the Navy can share updates on its Drinking Water Distribution System Recovery efforts, summarize drinking water sampling results, provide notice for upcoming public outreach opportunities, and make all applicable work plans, sampling plans, reports, and resources available to the JBPHH community. The website also hosts information and data related to the environmental monitoring efforts at the Red Hill facility. The Navy is committed to keeping Safewaters.org up to date and providing transparency into all ongoing sampling activities.</p>	<ul style="list-style-type: none"> <li>▪ <a href="https://jbphh-safewaters.org/">https://jbphh-safewaters.org/</a></li> </ul>
2.	<p><u><a href="#">Safewaters Drinking Water Monitoring Dashboard and Data Summaries</a></u> The Navy is committed to sharing all drinking water sampling results with the JBPHH community, regulators, and other organizations interested in reviewing the data. All drinking water results are available on the Safewaters Drinking Water Monitoring Dashboard, which provides detailed summaries of all collected samples. Details include address, sampling date, sample ID, analyte, screening levels, results, and whether the result exceeded screening levels.</p> <p>In addition to this dashboard, the Navy has published Zone-specific summaries for each sampling event (e.g., Emergency Response, LTM, EDWM, WQAT). These summaries are provided in reports developed by the Navy and reviewed/approved by DOH and EPA. Links to these reports are provided via the Safewaters Drinking Water webpage title System Map page, detailing summary content for each Zone of the system. Information and updates about the Navy’s plan and progress to recover and reactivate the NAHS and RHS as drinking water sources are also provided via this website.</p>	<ul style="list-style-type: none"> <li>▪ <a href="https://app.powerbi.com/view?r=eyJrIjoibm90OTM0ODgwNS00ZjQ4LTg1Y2UtODkxYTgxMjQ5NGZlhiwIdCl6ImUyYzE5MDhiLTl2NzItNGE0Ni05M2ZkLTdmMDhkYTExNiZiNSlslmMiOjJ9">https://app.powerbi.com/view?r=eyJrIjoibm90OTM0ODgwNS00ZjQ4LTg1Y2UtODkxYTgxMjQ5NGZlhiwIdCl6ImUyYzE5MDhiLTl2NzItNGE0Ni05M2ZkLTdmMDhkYTExNiZiNSlslmMiOjJ9</a></li> <li>▪ <a href="https://jbphh-safewaters.org/public/framework/appcontainer.aspx?url=html.aspx&amp;idhtml=10738&amp;title=Water%20System%20Zone%20Map&amp;idMenu=88798&amp;ddlDSN=SYSTEM&amp;DSN=SYSTEM">https://jbphh-safewaters.org/public/framework/appcontainer.aspx?url=html.aspx&amp;idhtml=10738&amp;title=Water%20System%20Zone%20Map&amp;idMenu=88798&amp;ddlDSN=SYSTEM&amp;DSN=SYSTEM</a></li> </ul>
3.	<p><u><a href="#">Navy Closure Task Force-Red Hill Website</a></u> The mission of the Navy Closure Task Force - Red Hill (NCTF-RH) is to safely and expeditiously execute permanent closure of the Red Hill Bulk Fuel Storage Facility and continue long-term environmental remediation efforts in coordination with state and federal regulators in order to protect public health and the environment while continuing to rebuild trust with the state of Hawaii and local community. This website serves as the administrative record and provides detailed information about the closure and remediation of the Red Hill Bulk Fuel Storage Facility (e.g. Tank Closure, Pipeline Removal, Environmental Monitoring, Site Assessment and Remediation).</p>	<ul style="list-style-type: none"> <li>▪ <a href="https://www.navyclosuretaskforce.navy.mil/">https://www.navyclosuretaskforce.navy.mil/</a></li> </ul>
4.	<p><u><a href="#">Defense Health Agency – Red Hill Public Health Information</a></u> This website provides health-related resources and guides for residents at JBPHH.</p>	<ul style="list-style-type: none"> <li>▪ <a href="https://ph.health.mil/topics/campaigns/red-hill-public-health/Pages/default.aspx">https://ph.health.mil/topics/campaigns/red-hill-public-health/Pages/default.aspx</a></li> </ul>
5.	<p><u><a href="#">JBPHH Drinking Water Resident Resource Guide (current as of June 2025)</a></u> The Navy developed a Residence Resource Guide, updated as new information becomes available, to hand out to residents during home sampling. The guide includes information about where drinking water in the System comes from, how the water is tested, who to contact if they have drinking water or other concerns, and where to get more information.</p>	<ul style="list-style-type: none"> <li>▪ <a href="https://jbphh-safewaters.org/public/JBPHH_Water_Response_Resident_Resources_Guide_06052025.pdf">https://jbphh-safewaters.org/public/JBPHH_Water_Response_Resident_Resources_Guide_06052025.pdf</a></li> </ul>
6.	<p><u><a href="#">Navy Closure Task Force-Red Hill YouTube Channel</a></u> The Navy has established a YouTube channel dedicated to discussing drinking water and environmental activities at Red Hill. The podcasts (or vodcasts) include recordings of outreach events, interviews with the technical team, answers to the community’s questions, and videos breaking down current events and ongoing activities.</p>	<ul style="list-style-type: none"> <li>▪ <a href="https://www.youtube.com/@NCTF-RH/videos">https://www.youtube.com/@NCTF-RH/videos</a></li> </ul>
7.	<p><u><a href="#">Frequently Asked Questions (FAQs)</a></u> In accordance with Section 2.3.2 of the 2023 Administrative Consent Order (ACO), the Navy periodically publishes responses to frequently asked questions. These FAQs are intended to keep the public up to date on current events and provide more context on ongoing Drinking Water</p>	<ul style="list-style-type: none"> <li>▪ <a href="https://cnrh.cnic.navy.mil/Operations-and-Management/Red-">https://cnrh.cnic.navy.mil/Operations-and-Management/Red-</a></li> </ul>

	Reference	Source/Link to Access
	Distribution System Recovery Efforts. Beyond scheduled community outreach and engagement opportunities, the public is also encouraged to submit questions and comments at any time to NCTF_PAO@us.navy.mil.	<a href="#">Hill/2023-Administrative-Consent-Order/Frequently-Asked-Questions/</a>
<i>Emergency Response Resources</i>		
8.	<p><u><a href="#">DOH Website with Health Advisories</a></u>  This webpage provides additional information about the Health Advisory issued by DOH on 29 November 2021 and the criteria for determining when a Zone-specific health advisory can be lifted. For each Zone in the System, the Navy developed a report that provided all supporting information to demonstrate that the criteria had been met.</p>	<ul style="list-style-type: none"> <li>▪ <a href="https://health.hawaii.gov/about/navy-water-amendments/">https://health.hawaii.gov/about/navy-water-amendments/</a></li> </ul>
9.	<p><u><a href="#">Drinking Water Sampling Plan, dated December 2021</a></u>  This Sampling and Analysis Plan (SAP) was developed by the IDWST and included procedures for flushing, collecting, and analyzing drinking water samples, and evaluating compliance with drinking water standards. This plan is representative of sampling completed between 13 December 2021 – 28 February 2022.</p>	<ul style="list-style-type: none"> <li>▪ <a href="https://jbphh-safewaters.org/public/JBPHH_SamplingPlan_Addendum3_Final.pdf">https://jbphh-safewaters.org/public/JBPHH_SamplingPlan_Addendum3_Final.pdf</a></li> </ul>
10.	<p><u><a href="#">Technical Memorandum: Determination if Pre-IDWST Flushing Drinking Water Data Should Be Used to Evaluate Human Exposure to JP-5 Fuel in Drinking Water at the Joint Base Pearl Harbor-Hickam Water Distribution System, dated June 2023</a></u>  The NMCFHPC evaluated pre-IDWST flushing drinking water data to determine whether they were suitable for assessing human exposure to JP-5 associated with the November 2021 release at JBPHH. The report is not intended to make any inferences or conclusions about health and/or mental health effects experienced during the release. Pre-IDWST flushing drinking water data were obtained by sampling drinking water shafts, drinking water storage tanks, and locations throughout the JBPHH System between 24 November 2021 and 02 January 2022. Results of drinking water samples collected by NAVFAC HI between 29 November and 13 December 2021 were compared with those collected by DOH between 24 November 2021 and 02 January 2022 to determine whether the results and findings were similar. This report documents the lines-of-evidence approach used to determine whether or not the drinking water samples collected prior to IDWST flushing the System are appropriate for evaluating potential exposure to JP-5 in drinking water after the 20 November release.</p>	<ul style="list-style-type: none"> <li>▪ <a href="https://cnrh.cnic.navy.mil/Portals/79/CNRH/Documents/red_hill/Medical%20Reports/Red%20Hill%20Pre%20IDWST%20Exposure%20Tech%20Memo_June_23.pdf?ver=thH6TS_hA0Jw2ciZ4f_PXgw%3D%3D">https://cnrh.cnic.navy.mil/Portals/79/CNRH/Documents/red_hill/Medical%20Reports/Red%20Hill%20Pre%20IDWST%20Exposure%20Tech%20Memo_June_23.pdf?ver=thH6TS_hA0Jw2ciZ4f_PXgw%3D%3D</a></li> </ul>
11.	<p><u><a href="#">IDWST Drinking Water Distribution System Recovery Plan: Stage 2 Sampling Reports</a></u>  The IDWST established a 5 Stage process for restoring safe drinking water to the System. Stage 1 included flushing the Water Distribution System, and Stage 2 included collecting drinking water samples from the System to demonstrate that the water met safe drinking water standards. The Navy developed Zone-specific reports documenting the results of the Stage 2 sampling.</p> <p><b>Steps for Accessing Stage 2 Reports:</b></p> <ol style="list-style-type: none"> <li>Go to <a href="#">Safewaters.org</a></li> <li>Click on 'View Drinking Water Monitoring Site'</li> <li>Click on 'System Map' in the top yellow banner</li> <li>On the right side of the webpage, under 'Legend', click the Zone you want to view results for</li> <li>Scroll to the bottom of the webpage</li> <li>Under 'Emergency Response,' click '+ Expand for more information on the Emergency Response'</li> <li>Under 'Post System Flushing Data,' click 'Data Summary for Zone <b>C1</b> Stage 2, Updated <b>08 March 2022'</b></li> <li>(i) Note: The <b>bolded</b> information in step g will change depending on the Zone</li> </ol>	<ul style="list-style-type: none"> <li>▪ <a href="https://jbphh-safewaters.org/public/framework/appcontainer.aspx?url=html.aspx&amp;id.html=10738&amp;title=Water%20System%20Zone%20Map&amp;idMenu=88798&amp;ddIDSN=SYSTEM&amp;DSN=SYSTEM">https://jbphh-safewaters.org/public/framework/appcontainer.aspx?url=html.aspx&amp;id.html=10738&amp;title=Water%20System%20Zone%20Map&amp;idMenu=88798&amp;ddIDSN=SYSTEM&amp;DSN=SYSTEM</a></li> </ul>

	Reference	Source/Link to Access
12.	<p><u>IDWST Drinking Water Distribution System Recovery Plan: Stage 4 Sampling Results Reports</u>            The IDWST established a 5 Stage process for restoring safe drinking water to the System. Stage 3 included flushing the Residences on the System, and Stage 4 included collecting drinking water samples from the Residences to demonstrate that the water met safe drinking water standards. The Navy developed Zone-specific reports documenting the results of the Stage 4 sampling.</p> <p><b>Steps for Accessing Stage 4 Reports:</b></p> <ol style="list-style-type: none"> <li>Go to <a href="https://safewaters.org">Safewaters.org</a></li> <li>Click on 'View Drinking Water Monitoring Site'</li> <li>Click on 'System Map' in the top yellow banner</li> <li>On the right side of the webpage, under 'Legend', click the Zone you want to view results for</li> <li>Scroll to the bottom of the webpage</li> <li>Under 'Emergency Response,' click '+ Expand for more information on the Emergency Response'</li> <li>Under 'Post Residential and Non-Residential Flushing Date,' click 'Sata Summary for Zone <b>A3</b> Stage 4 Emergency Response, <b>07 March 2022'</b></li> <li>Note: The <b>bolded</b> information in step g will change depending on the Zone</li> </ol>	<ul style="list-style-type: none"> <li><a href="https://jbphh-safewaters.org/public/framework/appcontainer.aspx?url=html.aspx&amp;id.html=10738&amp;title=Water%20System%20Zone%20Map&amp;idMenu=88798&amp;ddlDSN=SYSTEM&amp;DSN=SYSTEM">https://jbphh-safewaters.org/public/framework/appcontainer.aspx?url=html.aspx&amp;id.html=10738&amp;title=Water%20System%20Zone%20Map&amp;idMenu=88798&amp;ddlDSN=SYSTEM&amp;DSN=SYSTEM</a></li> </ul>
<i>Long-Term Monitoring Resources</i>		
13.	<p><u>Drinking Water Long-Term Monitoring Plan dated June 2022</u>            This SAP was developed by the IDWST and approved by DOH and EPA. This SAP includes procedures for collecting and analyzing drinking water samples as part of the Long-Term Monitoring Program. The LTM Plan was designed to fulfill the post-advisory requirements and to demonstrate that drinking water in the System remained safe after the Health Advisory for each Zone had been amended. This plan is representative of sampling completed between March 2022 – March 2024.</p>	<ul style="list-style-type: none"> <li><a href="https://jbphh-safewaters.org/public/JBPHH_LTM_Plan_FINAL_20220629.pdf">https://jbphh-safewaters.org/public/JBPHH_LTM_Plan_FINAL_20220629.pdf</a></li> </ul>
14.	<p><u>JBPHH Drinking Water Distribution System Recovery Plan: Stage 5 LTM Reports</u>            The IDWST established a 5 Stage process for restoring safe drinking water to the System. Stage 5 included performing Long-Term Monitoring for 2 years at residences, schools, child development centers, non-residential locations (e.g., medical clinics, workplaces), and hydrants throughout all 19 Zones. Reports were developed on a zone-by-zone basis and published following the completion of each period of sampling (there were 7 LTM periods).</p> <p><b>Steps for Accessing Stage 5 (LTM) Reports:</b></p> <ol style="list-style-type: none"> <li>Go to <a href="https://safewaters.org">Safewaters.org</a></li> <li>Click on 'View Drinking Water Monitoring Site'</li> <li>Click on 'System Map' in the top yellow banner</li> <li>On the right side of the webpage, under 'Legend', click the Zone you want to view results for</li> <li>Scroll down to 'Drinking Water Long Term Monitoring'</li> <li>Scroll to the Period you want to view results for</li> <li>Click the 'Data Summary for Zone <b>D4</b> Stage 5 Long-Term Monitoring <b>Period 1, 13 May 2022'</b></li> <li>Note: The <b>bolded</b> information in step g will change depending on the Zone and LTM Period</li> </ol>	<ul style="list-style-type: none"> <li><a href="https://jbphh-safewaters.org/public/framework/appcontainer.aspx?url=html.aspx&amp;id.html=10738&amp;title=Water%20System%20Zone%20Map&amp;idMenu=88798&amp;ddlDSN=SYSTEM&amp;DSN=SYSTEM">https://jbphh-safewaters.org/public/framework/appcontainer.aspx?url=html.aspx&amp;id.html=10738&amp;title=Water%20System%20Zone%20Map&amp;idMenu=88798&amp;ddlDSN=SYSTEM&amp;DSN=SYSTEM</a></li> </ul>
15.	<p><u>Technical Memorandum Summarizing Low-Level Hydrocarbon Detection Results of Test Method Interferences in Total Petroleum Hydrocarbon (TPH) Analysis of Chlorinated Drinking Water</u>            The interagency team of experts (the Swarm Team) evaluated potential causes of low-level TPH detections. It concluded that low-level detections of TPH in the JBPHH drinking water System are (1) not associated with the release of JP-5 or other fuel, and (2) are the result of interferences from chlorine in the drinking water reacting with other compounds required in the method for TPH analysis that is not designed to evaluate drinking water. This technical memorandum documents the lines of evidence evaluated by the Swarm Team and the results of the evaluation.</p>	<ul style="list-style-type: none"> <li><a href="https://jbphh-safewaters.org/public/Tech_Memo_JBPHH_LOE's_LTM_TPH_Detects_Redacted_Rev.pdf">https://jbphh-safewaters.org/public/Tech_Memo_JBPHH_LOE's_LTM_TPH_Detects_Redacted_Rev.pdf</a></li> </ul>
<i>Extended Drinking Water Monitoring Resources</i>		
16.	<p><u>Extended Drinking Water Monitoring Plan, dated 23 October 2024</u>            This SAP was developed by the Swarm Team and approved by EPA. This SAP included procedures for collecting and analyzing drinking water samples as part of the Extended Drinking Water Monitoring Program. This program incorporated lessons learned from LTM and the</p>	<ul style="list-style-type: none"> <li><a href="https://jbphh-safewaters.org/public/JBPHH_EDW_M_Plan_23Oct24.pdf">https://jbphh-safewaters.org/public/JBPHH_EDW_M_Plan_23Oct24.pdf</a></li> </ul>

	Reference	Source/Link to Access
	<p>recommendations documented by the Swarm Team in the Tech Memo documenting Low-Level TPH Detections Observed During LTM (see Reference 15). The purpose of EDWM was to continue demonstrating that drinking water in the System is safe and is not affected by JP-5 fuel associated with the November 2021 release.</p>	
17.	<p><u>Extended Drinking Water Monitoring Plan Supplement A Tier 2 Analysis of Total Petroleum Hydrocarbons (TPH) and Fuel Indicator Compounds</u> Supplement A of the EDWM Plan outlines procedures for conducting what is referred to as “Tier 2” – a detailed analysis of TPH and JP-5 fuel indicator compounds that are detected during EDWM. Tier 2 included several steps: collecting drinking water samples, analyzing them using forensic methods, and using the results to perform a human health risk assessment. Supplement A identifies the sampling procedures and protocol for conducting the risk assessment.</p>	<ul style="list-style-type: none"> <li>▪ <a href="https://jbphh-safewaters.org/public/EDWM_Supplement_A_Oct_2024_Redacted.pdf">https://jbphh-safewaters.org/public/EDWM_Supplement_A_Oct_2024_Redacted.pdf</a></li> </ul>
18.	<p><u>EDWM Quarterly Reports</u> The Navy prepared detailed summary reports documenting the results of each quarter of EDWM. These reports present summary tables, figures, and a discussion on the results of EDWM. In addition to the quarterly reports, the Navy has developed Zone-specific summaries of EDWM data and published the results on Safewaters.org.</p> <p><b>Steps for Accessing Zone-Specific EDWM Summaries:</b></p> <ol style="list-style-type: none"> <li>a. Go to <a href="https://safewaters.org">Safewaters.org</a></li> <li>b. Click on 'View Drinking Water Monitoring Site'</li> <li>c. Click on 'System Map' in the top yellow banner</li> <li>d. On the right side of the webpage, under 'Legend', click the Zone you want to view results for</li> <li>e. Scroll to 'Extended Drinking Water Monitoring'</li> <li>f. Scroll to the Quarter of EDWM you want to view results for</li> <li>g. Click the 'Sampling Results for Zone <b>H3</b> EDWM <b>Q1</b>' <ol style="list-style-type: none"> <li>(i) Note: The <b>bolded</b> information in step g will change depending on the Zone and EDWM Quarter</li> <li>(ii) This webpage also posts Sampling Results for Waiawa Shaft for each EDWM Quarter</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>h. EDWM Q1 Report. <a href="https://jbphh-safewaters.org/public/EDWM_Q1_Data_Summary.pdf">https://jbphh-safewaters.org/public/EDWM_Q1_Data_Summary.pdf</a>.</li> <li>i. EDWM Q2 Report: <a href="https://jbphh-safewaters.org/public/EDWM_Q2_Data_Summary.pdf">https://jbphh-safewaters.org/public/EDWM_Q2_Data_Summary.pdf</a>.</li> <li>j. EDWM Q3 Report: <a href="https://jbphh-safewaters.org/public/EDWM_Q3_Data_Summary.pdf">https://jbphh-safewaters.org/public/EDWM_Q3_Data_Summary.pdf</a>.</li> <li>k. EDWM Q4 Report will be posted on the JBPHH Safewaters Drinking Water webpage Document Library, here: <a href="https://jbphh-safewaters.org/public/framework/appcontainer.aspx?url=html.aspx&amp;idhtml=10881&amp;title=Document%20Library&amp;idMenu=89535&amp;ddIDSN=SYSTEM&amp;DSN=SYSTEM">https://jbphh-safewaters.org/public/framework/appcontainer.aspx?url=html.aspx&amp;idhtml=10881&amp;title=Document%20Library&amp;idMenu=89535&amp;ddIDSN=SYSTEM&amp;DSN=SYSTEM</a></li> <li>l. Data summary reports for EDWM: <a href="https://jbphh-safewaters.org/public/framework/bannerhtml.aspx?idhtml=10737&amp;banner=jbphh_home.png&amp;title=JBPHH%20Drinking%20Water%20Monitoring&amp;idMenu=88797&amp;ddIDSN=SYSTEM&amp;DSN=SYSTEM">https://jbphh-safewaters.org/public/framework/bannerhtml.aspx?idhtml=10737&amp;banner=jbphh_home.png&amp;title=JBPHH%20Drinking%20Water%20Monitoring&amp;idMenu=88797&amp;ddIDSN=SYSTEM&amp;DSN=SYSTEM</a></li> </ol>
<i>Well Recovery and Water Resiliency</i>		
19.	<p>The Navy created a JBPHH Well Recovery and Water Resiliency page on its Safe Waters website to allow the public to find testing data from the JBPHH drinking water production wells and information on water well reactivation plans.</p> <p>Since December 3, 2021, the JBPHH drinking water distribution system has been sourced only by the Waiawa shaft. Water from the Waiawa shaft, located 6.2 miles from Red Hill, remains safe and has been extensively monitored under the interagency-approved DW LTM, EDWM, bi-</p>	<ul style="list-style-type: none"> <li>▪ <a href="https://jbphh-safewaters.org/public/framework/appcontainer.aspx?url=html.aspx&amp;idhtml=10814&amp;title=Well%20Recovery%20and%20Water%20Resiliency&amp;idMenu=103804&amp;ddIDSN=SYSTEM&amp;DSN=SYSTEM">https://jbphh-safewaters.org/public/framework/appcontainer.aspx?url=html.aspx&amp;idhtml=10814&amp;title=Well%20Recovery%20and%20Water%20Resiliency&amp;idMenu=103804&amp;ddIDSN=SYSTEM&amp;DSN=SYSTEM</a></li> </ul>

	Reference	Source/Link to Access
	<p>monthly PFAS monitoring and post-EDWM programs to ensure it meets DOH and EPA standards for safe drinking water. Water samples collected monthly were tested for analytes in the approved EDWM Plan, and PFAS was added for bimonthly testing starting from EDWM Quarter 2.</p> <p>There are currently two (2) drinking water shafts that are isolated from (i.e. not connected to) the JBPHH drinking water distribution system. Both of these shafts are physically disconnected and don't supply water to the System. RHS was shut off on November 28, 2021 and previously served as the minority water supply. The Waiawa well has continued to serve as the Navy's primary drinking water source for the JBPHH drinking water system. The NAHS, located 3 miles away from Red Hill, was shut off on December 3, 2021 and previously accounted for a very limited amount of the JBPHH drinking water supply. Reactivation of NAHS will strengthen the resiliency of the JBPHH drinking water system, while the reactivation of RHS will provide redundancy to the Navy's water supply. Water samples collected monthly were tested for analytes in the approved EDWM Plan, and PFAS was added for bimonthly testing starting from EDWM Quarter 2.</p> <p>The U.S. Navy's JBPHH and the U.S. Army's Aliamanu Military Reservation (AMR) public drinking water systems undergo routine inspections by the U.S. EPA and HI DOH to sustain compliance with requirements of the Safe Drinking Water Act.</p>	