



# RED HILL BULK FUEL STORAGE FACILITY

## Tank Closure Plan – Supplement 3

June 28, 2024

Office of the Secretary of the Navy

Enclosure (1)

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# Acronyms

AFFF	Aqueous Film Forming Foam
ASN EI&E	Assistant Secretary of the Navy for Energy, Installations and Environment
AST	Above Ground Storage Tank
CNRH	Commander, Navy Region Hawaii
CF&T	Contaminant Fate and Transport
CPM	Critical Path Method
CSM	Conceptual Site Model
DoD	Department of Defense
DOH	Department of Health
DON	Department of the Navy
EO	Emergency Order
EPA	Environmental Protection Agency
EPP	Environmental Protection Plan
EXWC	Engineering and Expeditionary Warfare Center
FLC	Fleet Logistics Center
FOC	Full Operating Capability
FOR	Fuel Oil Reclaimed
FRP	Facility Response Plan
GWFM	Ground Water Flow Model
HAR	Hawaii Administrative Rules
IDW	Investigation-Derived Waste
JBPHH	Joint Base Pearl Harbor-Hickam
JTF-RH	Joint Task Force – Red Hill
NAVFAC	Naval Facilities Engineering Systems Command
NAVSUP	Naval Supply Systems Command
NCTF-RH	Navy Closure Task Force - Red Hill
OSD	Office of the Secretary of Defense
PAH	Polynuclear Aromatic Hydrocarbons
RAs	Regulatory Agencies
RHBFSF	Red Hill Bulk Fuel Storage Facility
SAWP	Site Assessment Work Plan
SECDEF	Secretary of Defense
SECNAV	Secretary of the Navy
TPH	Total Petroleum Hydrocarbons
TPH-DRO	Total Petroleum Hydrocarbons – Deisel Range Organics
TPH-LRO	Total Petroleum Hydrocarbons – Lubricant Range Organics
UST	Underground Storage Tanks
VOC	Volatile Organic Compound
VZM	Vadose Zone Model
WMP	Waste Management Plan

# 1. Introduction

In accordance with the Secretary of Defense (SECDEF) March 7, 2022, memorandum the Department of Defense (DoD) is responsible for the safe defueling and closure of the Red Hill Bulk Fuel Storage Facility's (RHBFSF) underground storage tanks (UST), surge tanks, and associated piping systems. The SECDEF established the Joint Task Force – Red Hill (JTF-RH) on September 30, 2022, to lead and execute all defueling activities, after which the Department of the Navy (DON) would commence with the permanent closure of the Facility.

The Deputy Chief of Naval Operations for Fleet Readiness and Logistics issued a planning order on May 23, 2023, directing U.S. Pacific Fleet (PACFLT) and other commands to establish a planning cell to provide plans for a Navy Task Force to execute the permanent closure of the RHBFSF. The result of these efforts came to realization on November 7, 2023, when SECDEF ordered the creation of the Navy Closure Task Force – Red Hill (NCTF-RH).

After a two-and-a-half-month methodical transition, on March 28, 2024, NCTF-RH assumed responsibility of the RHBFSF from JTF-RH, marking the completion of the defueling phase under JTF-RH's scope of work and the commencement of the closure phase.

In its defueling, closure, and environmental remediation efforts, the DON continues to adhere to the 2015 Administrative Order on Consent (AOC), signed by the DON, the Defense Logistics Agency (DLA), the Hawaii State Department of Health (DOH), and the Environmental Protection Agency (EPA)(DOH and EPA are collectively referred to as the Regulatory Agencies (RAs)); the DOH Emergency Order (EO) issued on May 6, 2022; and the 2023 Administrative Consent Order (ACO) signed on June 2, 2023 by the DON, DLA, and EPA.

## 1.1 NCTF-RH Mission

The mission of NCTF-RH is to execute the permanent decommissioning of the RHBFSF safely and expeditiously and to continue long-term environmental remediation in coordination with State and Federal regulators in order to protect public health and the environment. This includes executing command and control of all closure elements while providing sustained, iterative planning and schedule deconfliction. Furthermore, sustained, transparent, and high-quality engagement with external stakeholders and the community is paramount to NCTF-RH's success. The graphic below describes the NCTF-RH mission and the four lines of effort that form the approach to closure of the RHBFSF.

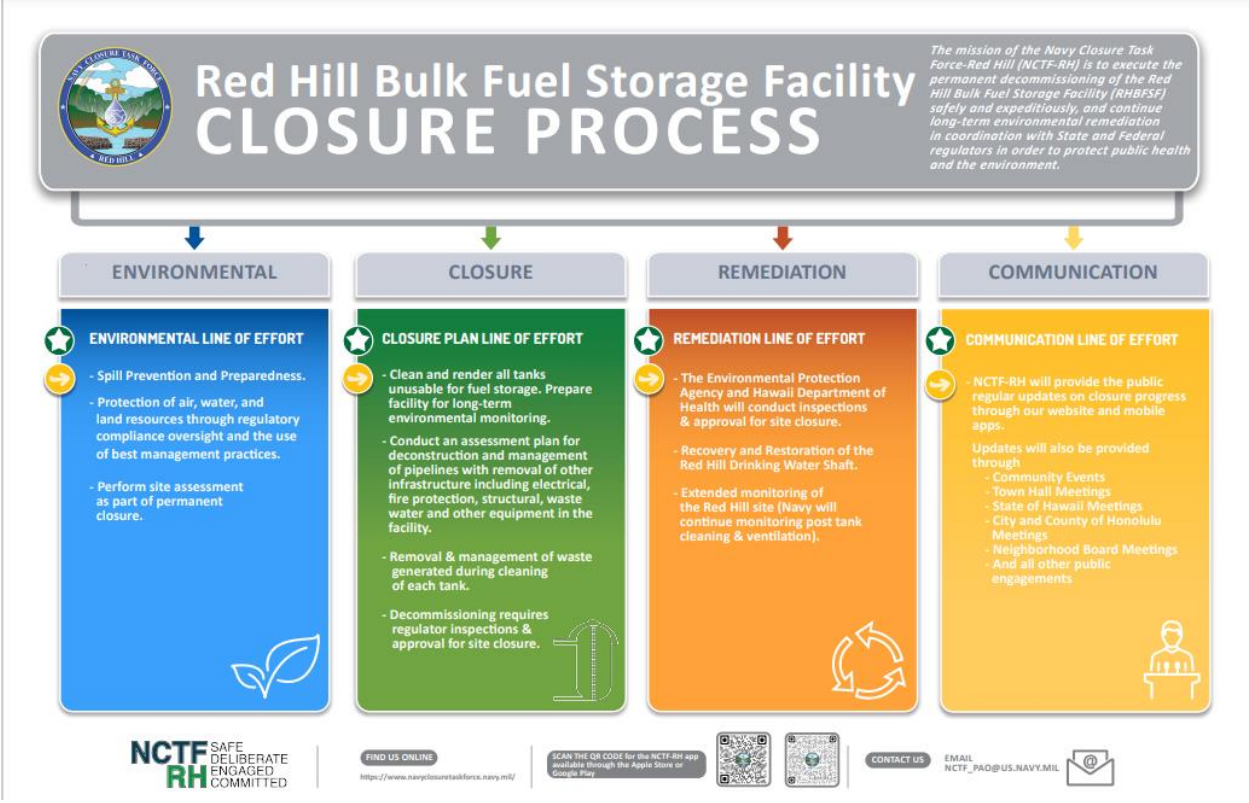


Figure 1

## 1.2 NCTF-RH Organizational Structure

The Navy established the NCTF-RH, reporting directly to PACFLT, to serve as the single DoD entity to synchronize all actions required to execute the timely and safe closure of the RHBFSF, while maintaining continuous and transparent stakeholder engagement.

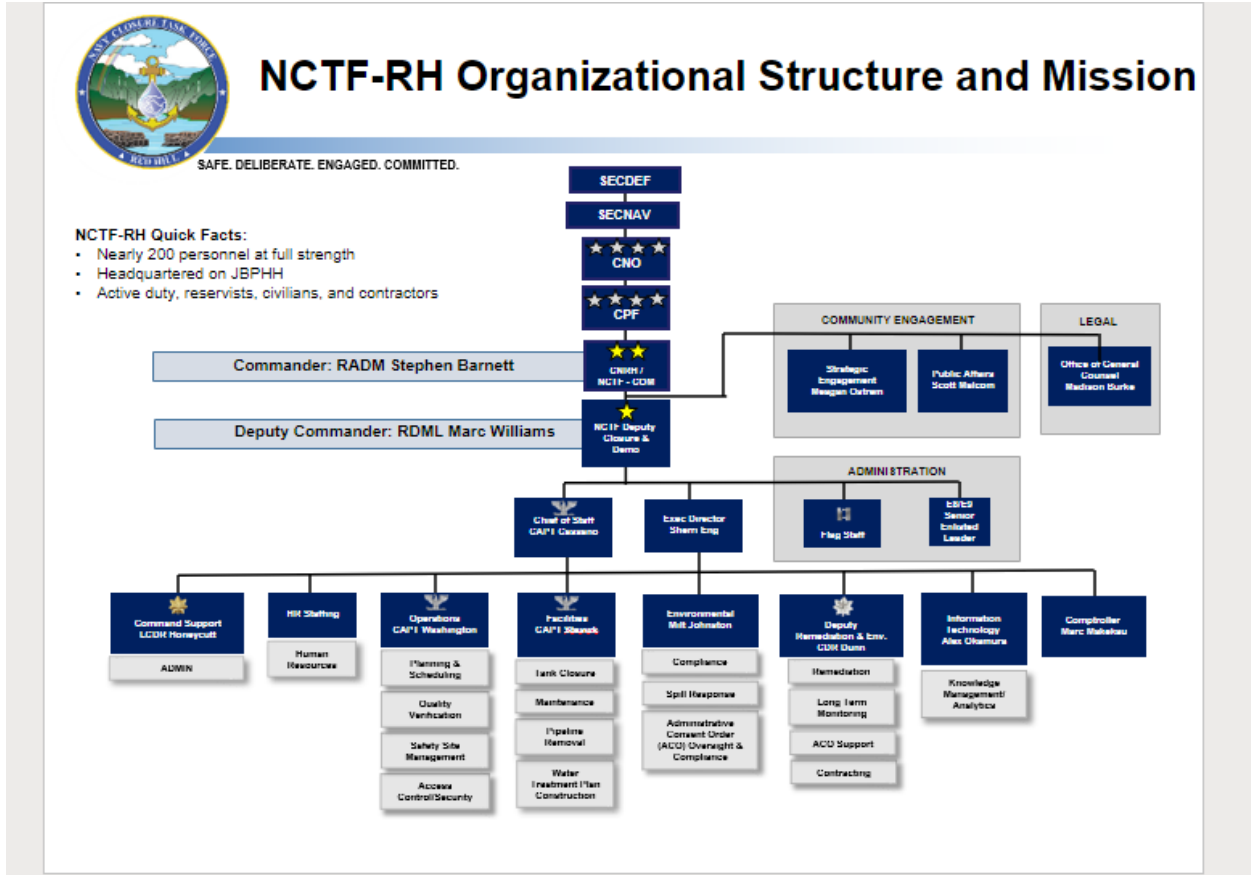


Figure 2

### 1.3 DON Tank Closure Plan History

On November 1, 2022, the DON submitted a Tank Closure Plan to DOH and EPA which provided a framework to permanently close the 20 USTs, four surge tanks, and associated valves and piping systems at RHBFSF. The DON Tank Closure Plan addressed the following:

- Infrastructure Description and Procedures Needed Before Cleaning
- Sequence and Process for Cleaning of Tanks and Removal of Piping Systems
- Management and Disposal of Accumulated Sludge and Materials
- Method of Permanent Closure and Associated Design Process
- Site Assessment and Release Investigation and Response
- Coordination and Outreach
- On December 22, 2022, the DON submitted a third-party analysis of the following tank closure alternatives, which evaluated engineering feasibility, worker safety, impacts to the environment and surrounding community, potential costs, and work schedule considerations:
  - ALTERNATIVE 1: Closure In-Place.
  - ALTERNATIVE 2: Closure In-Place and Preparation for Non-Fuel Reuse.

- ALTERNATIVE 3: Closure with Fill.
- ALTERNATIVE 4: Remove Tank Steel Liner and Fill.

With the submission of the third-party analysis, the DON formally sought DOH approval for ALTERNATIVE 1: Closure In-Place as the permanent closure method. The DON selected this alternative because it will minimize safety concerns and reduce impacts to the environment, local community, and closure schedule while allowing for the possibility of potential beneficial non-fuel reuse of the tanks at some point in the future.

The DON presented a compiled report of three independent studies exploring potential beneficial non-fuel reuse of the RHBFSF for Congressional review in March 2024. These studies included outreach to the general public and community leaders facilitated by locally owned research firm Nakupuna Companies, a DoD feasibility and cost analysis performed by the RAND Corporation in accordance with the 2023 National Defense Authorization Act (NDAA), and an investigation into the potential for energy-related reuses completed by the University of Hawaii. Upon Congressional review, the information from the studies will help inform the path forward for any potential beneficial non-fuel reuse once the Facility is closed.

On February 28, 2023, the DON submitted Tank Closure Plan Supplement 1 to the RAs, providing additional detail on tank and pipeline cleaning, procedures for waste management, a process for updating the Facility Response Plan, an update on planning for beneficial non-fuel reuse, an updated Critical Path Method (CPM) schedule, and responses to DOH comments on the initial Tank Closure Plan.

On May 31, 2023, the DON submitted Tank Closure Plan Supplement 2 to the RAs, providing a plan for removal of the three fuel pipelines, a third-party assessment of the long-term structural integrity of the tanks, and additional procedures for addressing the surge tanks. Additionally, the Navy responded to comments from the RAs on the third-party analysis of alternatives for tank closure, the initial Tank Closure Plan, and Supplement 1.

### 1.3.1 NCTF-RH Progress

Since NCTF-RH assumed responsibilities for the RHBFSF on March 28, 2024, continual progress has been made toward the permanent closure of the RHBFSF through the execution of the Tank Closure Plan and Supplements 1 and 2. Table 1 provides a comprehensive list of major deliverables and events completed as of June 5, 2024. NCTF-RH has completed all tasks by their due dates or submitted appropriate extension requests in a timely manner. Major milestones include transition with JTF-RH, coordination with the RAs on submissions and revisions of work and monitoring plans, Senior Executive Level and Congressional site visits, public and civic engagements, implementation of the water injection, tank ventilation, and spill response drills. Enclosure 3, the Integrated Master Schedule (IMS), contains the long-range schedule and major tasks.



Table 1

<b>Date</b>	<b>NCTF-RH Deliverables and Events</b>
3/28/2024	NCTF-RH Full Operating Capability (FOC)
3/28/2024	JTF–RH Closing Ceremonies / Transition to NCTF-RH on the USS Missouri
3/28/2024	JTF-RH Phase 5B / Residual Fuel Complete
3/28/2024	Publish Updated RH Access List (effective 29 Mar)
3/30/2024	Transition Plan Office of the Secretary of Defense (OSD) Suspense Date
3/30/2024	Publish Integrated Master Schedule (Monthly Update)
4/1/2024	App Transfer to NCTF
4/5/2024	Regulator Walkthrough of AFFF Concentrate Removal Operation
4/ 9 – 15 /2024	AFFF Concentrate Draining
4/10/2024	House Special Committee on RH (HSCRH)
4/15/2024	ACO 2.6 Monthly Progress Report (Mar 2024)
4/16/2024	Committee on Water Resource Management
4/19/2024	Ko'olaupoko Kupuna Council
4/22/2024	Air Quality Monitoring (AQM) Plan response received from DOH
4/29/2024	Drilling of RHMW21 starts
4/22/2024	Water Injection in Tanks 7 & 8 starts
4/29/2024	Publish Integrated Master Schedule (Monthly Update)
5/1/2024	Response to DOH's AQM Plan of 4/22/2024
5/6/2024	Tank Cleaning Verification Plan response from RAs
5/14/2024	Tank Decommissioning Meeting with DOH
5/14/2024	RA Walk-through for Tanks 7 & 8 Draining; Tanks 5 & 6 Spool Removal
5/15/2024	ACO 2.6 Monthly Progress Report (April 2024)
5/15/2024	NCTF-RH Open House
5/16/2024	2Q24 Senior Level Meeting
5/16/2024	Red Hill Shaft Flow Reduction
5/16/2024	1st Water Drain Tanks 7 & 8
5/17/2024	2nd Water Injection into Tanks 7 & 8
5/23/2024	AQM Plan Approved by RA
5/23/2024	2nd Water Drain Tanks 7 & 8
5/28/2024	NCTF-RH Submission of Tank 7 & 8 Ventilation CONOP /OPORD to DOH
5/29/2024	NCTF-RH Conditional Approval for Tank 7 & 8 Ventilation CONOP/OPORD
5/30/2024	Ventilation, Tank 8 (Start)
5/31/2024	Publish Integrated Master Schedule (Monthly Update)
5/31/2024	STAFFDEL, Office of SEN Hirono, RH Site Visit
6/5/2024	Ventilation, Tank 7 (Start)

## 1.4 Contents of Tank Closure Plan Supplement 3

This Supplement builds upon the November 1, 2022, December 22, 2022, February 28, 2023, and May 31, 2023, submissions. Supplement 3 provides the following:

- Up-to-date organizational structural information and graphic;
- Tank Closure progress update and graphic;
- Site Assessment Work Plan (Enclosure 1) and Executive Summary;
- Additional information on Release Response Actions; and
- Updated Integrated Master Schedule.

## 2. Site Assessment Work Plan Executive Summary

The Phase 1 Closure Site Assessment Work Plan (SAWP) was prepared per the Facility closure guidance set forth in the 2022 DOH EO and the 2023 ACO. Per Hawaii Administrative Rules (HAR) Chapter 11-280.1, Subchapter 7, “Before permanent closure of a UST site is completed, measurements must be taken for the presence of a release where contamination is most likely to be present.” Consistent with HAR §11-280.1-72(b), if the results of the Phase 1 Closure Site Assessment indicate that release response actions (site characterization and/or remediation) are required, such work will be performed in accordance with the HAR regulations for release response actions (HAR §11-280.1 Subchapter 6) under a separate work plan.

The purpose of the Phase 1 Closure SAWP is to detail a proposed sampling and analysis regime capable of determining the presence or absence of petroleum hydrocarbon contamination. The Phase 1 Closure Site Assessment will focus on “onsite” locations where it is unknown whether a release (s) has occurred. For the purposes of this SAWP, ‘onsite’ is defined as including the area within the RHBFSF property boundary, the Red Hill tunnel system and the four Surge Tanks adjacent to Adit 1 on JBPHH. Sampling these locations will verify the presence or absence of petroleum before proceeding with permanent closure of the Red Hill UST System. The portion of the Red Hill UST system that is within the Phase 1 Closure Site Assessment boundary (onsite) includes the following components and respective sampling plan:

- RHBFSF Tunnels (including the 20 field-constructed USTs, F-76, F-24 and JP-5 fuel transmission lines, and a portion of the Fuel Oil Reclaim (FOR) Pipeline): Approximately 683 co-located soil vapor and soil samples will be collected down the tunnel centerline from Tank 19 and 20 to the Under Ground Pump House at Adit 1 at JBPHH. The soil vapor samples will be analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and polynuclear aromatic hydrocarbons (PAHs). The soil samples will be analyzed for TPH-diesel range organics (TPH-DRO) and TPH-lubricant range organics (TPH-LRO).

- For Pipeline and Tank 311: Four co-located soil vapor and soil samples from around the perimeter and one soil vapor and soil sample from the outdoor section of the Fuel Oil Recovery (FOR) Line outside Adit 3 will be collected. The soil vapor samples will be analyzed for TPH, VOCs, and PAHs; and methane, carbon dioxide, and oxygen. The soil samples will be analyzed for TPH-DRO and TPH-LRO.
- Section of the Abandoned Aviation Gasoline Line: Approximately 243 co-located soil vapor and soil samples will be collected from the abandoned aviation gasoline line. The soil vapor samples will be analyzed for TPH, VOCs, and PAHs; and methane, carbon dioxide, and oxygen. The soil samples will be analyzed for tetraethyl lead, TPH-DRO and TPH-LRO.
- Former Slop Tank and Slop Pump Area: Approximately 16 co-located soil vapor and soil samples will be collected. The soil vapor samples will be analyzed for TPH, VOCs, and PAHs; and methane, carbon dioxide, and oxygen. The soil samples will be analyzed for TPH-DRO and TPH-LRO.
- Former Standby Power Plant: Approximately 11 co-located soil vapor and soil samples will be collected. The soil vapor samples will be analyzed for TPH, VOCs, and PAHs; and methane, carbon dioxide, and oxygen. The soil samples will be analyzed for TPH-DRO and TPH-LRO.
- Surge Tanks: Six soil vapor and twelve soil samples will be collected. The soil vapor samples will be analyzed for TPH, VOCs, and PAHs; and methane, carbon dioxide, and oxygen. The soil samples will be analyzed for TPH-DRO, TPH-LRO, VOCs and PAHs.

Upon completion of field activities and sample analysis, the Navy will complete a Phase 1 Closure Site Assessment Report that documents the Phase 1 field investigation and provides recommendations for further actions. The Report will also integrate the Phase 1 analytical results with available environmental data from ongoing, separate release response actions within the Phase 1 Site Assessment (onsite) area including areas beneath the 20 USTs, the Former Oily Waste Disposal Facility, the Adit 3 tunnel area, the Former Holding Tank/Leach Tank area, and the CHT Tank area. The Navy will continue response actions at these areas under their existing regulatory programs while the Phase 1 Site Assessment progresses.

Prior to commencement of the Phase 2 Site Assessment, the Navy will evaluate the ‘offsite’ components of the JBPHH fuel system, including components that were previously closed or abandoned, to determine whether these components should be included in Phase 2 investigation. The Phase 2 Closure Site Assessment Work Plan will address any ‘offsite’ components of the fuel system that are determined should be included as part of permanent closure of the Red Hill UST system. The DON will submit a Phase 2 SAWP to Hawaii DOH and the EPA under a separate cover.

The Navy is currently responding to subsurface petroleum impacts associated from known and/or suspected fuel releases from the Red Hill UST system beneath the 20 USTs, the former Oily Waste Disposal Facility, the Adit 3 tunnel area, the Former Holding Tank/Leach Tank area, and

the CHT Tank under separate regulatory programs. The Navy will continue the response actions at these areas under their existing regulatory programs while the Phase 1 Closure Site Assessment progresses.

### 3. Release Response Actions

Release Response Actions are actions defined by the HAR Chapter 11-280.1, Subchapter 6, “conducting site assessment of and any necessary release response for the soil, groundwater, and soil vapor that may have been contaminated by the Facility Subject to Closure.” These actions are different than the *immediate* actions that would be taken if a release occurred. In place to counter any potential spills or contamination incidents, the DON has implemented the Ground Water Protection Plan, the Air Quality Monitoring Plan, and the Spill Response Plan. Drills have been and are continually conducted to ensure personnel are sufficiently trained and prepared to respond to potential events.

In accordance with the 2015 AOC, Statement of Work, Section 6.3, the DON submitted the Investigation and Remediation of Releases (IRR) Report to the RAs on March 25, 2020, which examined the feasibility of alternatives for investigating and remediating fuel releases from the RHBFSF. The IRR Report presented the findings of petroleum product releases at the RHBFSF up to the submission date, focusing on the screening of 19 potential remediation technologies, and the in-depth evaluation of five remedial alternatives that may be effective in remediating fuel releases. This entailed the evaluation of measured containments from the January 2014 release from Tank 5 as well as hypothetical, potential future releases, which differs from the typical evaluation of remedial alternatives that are based on actual, measured contaminant releases and impacts.

On May 8, 2024, the RAs sent a letter of disapproval for the IRR, citing various deficiencies and documenting changes that have occurred since the DON submittal in 2020. Although the Navy understands the concern and desire for the Release Response Actions, it is not viable to provide the public or RAs this information without adequate modeling data, site assessment, and the nature and extent investigation results. Both the RAs’ disapproval letter and the DON original submission of the IRR stated that additional information from the Conceptual Site Model (CSM) and Contaminate Fate and Transport (CF&T) models is needed to support evaluation for release response actions.

In September 2024, the Navy intends to submit to the RAs updates to the GWFM, VZM, and CF&T models. These will play a role in updating the Conceptual Site Model, which will be used to develop the release response actions for closure of the RHBFSF.

The SAWP enclosed with this document describes the work that will be completed during the Site Assessment. The first phase of site assessment field work will determine presence/absence of petroleum on RHBFSF. Information gathered during the Site Assessment will assist in

updating the CSM and provide information that will shape future remedies being evaluated based on the nature and extent investigations.

## 4. Conclusion

Through the establishment of NCTF-RH, the DON in collaboration with Federal, State, and community stakeholders, is committed to the successful, permanent closure of the 20 Red Hill USTs, four surge tanks, and associated valves and pipelines. NCTF-RH continues to work with DOH and EPA to ensure compliance with all applicable laws and regulations.

Beyond safe and permanent closure of the RHBFSF, the DON is dedicated to long-term environmental remediation and aquifer restoration efforts in the interest of safeguarding public health and the environment. Concurrently with tank closure operations, and to preserve transparency, NCTF-RH will continue sampling air, water, and soil and provide those results to the public and regulators, taking release response actions if necessary.