



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



**STATE OF HAWAII
DEPAF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378**

MAY 16 2019

Captain Marc Delao
Regional Engineer
Navy Region Hawaii
850 Ticonderoga St. STE 110
Joint Base Pearl Harbor Hickam, Hawaii 96860

Re: Tank Upgrades Alternatives (“TUA”) and Release Detection Decision Document and Implementation, Sections 3.5 and 4.8 of the Red Hill Administrative Order on Consent (“AOC”) Statement of Work (“SOW”)

Dear Captain Delao:

The U.S. Environmental Protection Agency (“EPA”) and Hawaii Department of Health (“DOH”), collectively the “Regulatory Agencies”, are committed to seeing that the U.S. Department of the Navy and the Defense Logistics Agency continue to make infrastructure improvements at the Red Hill Bulk Fuel Storage Facility. Following the productive discussions held on March 11 and 14, 2019, the Regulatory Agencies expect that the Navy and DLA will submit a combined TUA and Release Detection Decision Document to the Regulatory Agencies in the August to September timeframe of this year.

The Regulatory Agencies have approved the Navy and DLA’s previous work under the TUA (Section 3) and Release Detection (Section 4) portions of the Red Hill AOC SOW. In particular, the TUA Report was approved on May 21, 2018 and the New Release Detection Alternatives Report was approved on August 30, 2018. Following these approvals, the AOC Parties have held important conversations to discuss infrastructure concerns, such as corrosion assessment, tank inspection and repair, and the anticipated tank upgrade proposal. The Regulatory Agencies understand that Navy and DLA may need some additional time during this current phase of the Decision Meetings to complete an internal review of the intended tank upgrade proposal, however the Regulatory Agencies do not believe that an extension of the Decision Meetings among the AOC Parties is needed.

As outlined in the Regulatory Agencies’ letter dated March 7, 2018 to Admiral Brian P. Fort, the letter dated November 29, 2018 to Captain Marc Delao, and as discussed during our face to face meetings, the Best Available Practicable Technology (“BAPT”) and release detection and response program identified by the Navy and DLA for the tanks at the Red Hill Bulk Fuel Storage Facility must include comparative environmental performance of each TUA and demonstrate to EPA and DOH’s satisfaction that

groundwater and drinking water resources will be protected. The TUA and Release Decision Document must also include strong justification that supports the Navy and DLA's tank upgrade proposal and utilizes available data from other sections of the Red Hill AOC SOW.

The Red Hill AOC SOW requires the AOC Parties to host public meetings at least annually to provide progress updates to the public. The last public meeting was held in March 14, 2018. The Navy and DLA should be able to communicate clearly their tank upgrade and release detection proposal to the public during an annual meeting to be scheduled for later this year. We look forward to this meeting and the continued work to improve the facility's infrastructure and further prevent the likelihood of releases. Please let us know if you have any comments or concerns with this letter.

Sincerely,



Omer Shalev
Project Coordinator
EPA Region 9 Land Division



Roxanne Kwan
Interim Project Coordinator
DOH Solid and Hazardous Waste Branch

Enclosures: Attachment 1: EPA and DOH letter to Navy dated March 7, 2018
Attachment 2: Navy letter to EPA and DOH dated May 4, 2018
Attachment 3: EPA and DOH letter to Navy dated May 21, 2018
Attachment 4: EPA and DOH letter to Navy dated November 29, 2018

cc: Mr. Mark Manfredi, Navy (via email)



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MAR - 7 2018

Admiral Brian P. Fort
Commander, Navy Region Hawaii
850 Ticonderoga Street, Suite 310
Joint Base Pearl Harbor Hickam, Hawaii 96860-5101

**Re: Red Hill Administrative Order on Consent ("AOC") Statement of Work ("SOW")
Section 3 - Tank Upgrade Alternatives**

Dear Admiral Fort:

The U.S. Environmental Protection Agency ("EPA") and the Hawaii Department of Health ("DOH") recognize the U.S. Department of the Navy ("Navy") and Defense Logistics Agency's ("DLA's") continued efforts to implement improvements to the Red Hill Bulk Fuel Storage Facility's infrastructure and operations that will reduce the potential for future fuel releases. Section 3 of the Red Hill AOC Statement of Work requires the Navy and DLA to identify the best available practicable technology ("BAPT") that can be applied to all in-service tanks and submit their proposal to the EPA and DOH ("Regulatory Agencies") for review and approval. The Regulatory Agencies acknowledge that this proposal to upgrade the tanks is a challenging, multi-faceted decision, therefore we are clarifying our expectations of the Navy and DLA's proposal so that it may obtain Regulatory Agency approval.

Please note that this letter is being provided before the pending judicial order upon DOH. The Navy and DLA shall ensure that the BAPT identified in their tank upgrade proposal meets all applicable federal and state laws and regulations.

The BAPT identified by the Navy and DLA must demonstrate to EPA and DOH's satisfaction that groundwater and drinking water resources will be protected. Presently, the Navy and DLA are evaluating six general alternatives as candidates for BAPT. These candidates include three single wall options, three double wall retrofits, along with several improvements to facility's operational practices and contingency measures. In addition, the Navy and DLA are studying the feasibility and benefits of storing the fuel at Red Hill at alternative locations. The Regulatory Agencies understand that the cost, uncertainty, and level of effort required to implement these options vary dramatically. The Tank Upgrade Alternatives ("TUA") Decision Document must include ample justification supporting the Navy and DLA's tank upgrade proposal.

Based on our review of documents and information provided to date, the Regulatory Agencies have concerns regarding how the Navy and DLA plan to compare the relative environmental performance of each TUA. The evaluation of environmental performance of each TUA should not only include the

design of the tank vessel, but also other aspects of the various fuel management systems. For example, the identification of BAPT should describe aspects of the tank system, including, but not limited to:

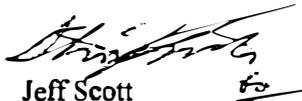
- physical description of the tank vessel,
- leak detection,
- leak response procedures, including contingency measures,
- Red Hill tank maintenance procedures, including the integrity of nondestructive examination,
- pipeline integrity; and
- performance of the lower tunnel to contain fuel.

The Navy and DLA's TUA Decision Document and their identification of BAPT should consider these aspects of the tank system and a conservative conceptual site model to adequately compare the environmental performance of different TUAs. The reported 2014 release from tank 5 and some documented historical releases from the facility can be attributed to specific modes of tank operation, such as recommissioning. Therefore, the Navy and DLA should also compare a TUA's environmental performance during all modes of operation, (i.e. during recommissioning, static storage, transient storage) and from different release initiating events (with attention paid to cracks and/or corrosion in the steel liner, and catastrophic hazards, such as major earth movement, explosion, fire, flood).

The Regulatory Agencies have reviewed the Navy and DLA's TUA Decision Process Document. It primarily describes the information that the Navy and DLA plan to use, and the teams and organizations within the U.S. Department of Defense that will develop the proposed decision. The Navy and DLA's decision process should describe its approach to balancing factors such as operational performance, environmental performance, and cost in the process of developing a proposed decision. Additionally, the Navy and DLA should address how uncertainty will be addressed in the decision process. The Navy and DLA should revise their Decision Process Document based on this letter, our previous discussions, and input received from stakeholders prior to the initial TUA Decision Meeting.

Along with Navy and DLA, the Regulatory Agencies seek zero future fuel releases from the facility. To help achieve this goal, the Regulatory Agencies look forward to the next steps in the process to upgrading the tanks at the facility. The Regulatory Agencies are finishing our review of the TUA Report, and we currently anticipate approval of the TUA Report in the coming weeks. Once approved, Navy and DLA will have 60 days to provide a revised TUA Decision Process Document and commence the initial TUA Decision Meeting. Please contact us if you would like to discuss the issues identified in this letter.

Sincerely,



Jeff Scott
Director
Land Division



Keith Kawaoka
Deputy Director
State of Hawaii, Department of Health

cc: Captain Richard D. Hayes III, Navy (via email)
Mark Manfredi, Navy (via email)



DEPARTMENT OF THE NAVY

COMMANDER
NAVY REGION HAWAII
850 TICONDEROGA ST STE 110
JBPBH HI 96860-5101

May 4, 2018

CERTIFIED NO:

Mr. Jeff Scott
Director Land Division
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105

CERTIFIED NO:

Mr. Keith Kawaoka
Deputy Director for Environmental Health
State of Hawaii Department of Health
1250 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Scott and Mr. Kawaoka:

SUBJECT: ADMINISTRATIVE ORDER ON CONSENT STATEMENT OF
WORKSECTION 3 – TANK UPGRADE ALTERNATIVES, RED HILL BULK
FUEL STORAGE FACILITY, JOINT BASE PEARL HARBOR-HICKAM, OAHU,
HAWAII

Thank you for your letter of March 7, 2018. The Navy and Defense Logistics Agency (DLA) acknowledge the concerns you expressed and feel we are prepared to move forward in the Tank Upgrade Alternative (TUA) decision process. Navy and DLA consider the TUA Report of December 8, 2017 complete in its current form. We have carefully considered your concerns, together with all the work we have accomplished to date in support of the Administrative Order on Consent (AOC), as well as the remaining work currently being planned and in execution at Red Hill.

The Navy and DLA feel confident we can fully demonstrate to the Environmental Protection Agency (EPA) and Department of Health's (DOH) satisfaction that the ground and drinking water resources in the vicinity of Red Hill will be protected with the best available practicable technology being reviewed within Navy/DLA channels. We have been responsibly evaluating the options discussed in our TUA Report of December 8, 2017 as well as the concept presented in our Alternate Location Study of February 5, 2018. With the additional work coming due this July in support of AOC/SOW sections 4, 5, 6, and 7 along with a supplemental report to the Alternate Location Study, we are confident we will have enough information available to inform the TUA decision process in the timeframe currently established. We enthusiastically anticipate EPA and DOH's response to our TUA Report which will initiate the final phases of the TUA selection process.

My Red Hill staff and I look forward to working with you and your staffs in the coming weeks in what will ultimately be a historical decision for a project which will serve well both the people of Hawaii and our nation's defense for many years to come.

A handwritten signature in black ink, appearing to read "B. P. Fort", is written over a horizontal line.

B. P. FORT



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MAY 21 2018

Mark Manfredi
Red Hill Regional Program Director
850 Ticonderoga Street, Suite 110
Joint Base Pearl Harbor Hickam, Hawaii 96860-5101

**Re: Approval of Red Hill Administrative Order on Consent ("AOC")
Statement of Work ("SOW") Section 3 - Tank Upgrade Alternatives**

Dear Mr. Manfredi:

The U.S. Environmental Protection Agency ("EPA") and the Hawaii Department of Health ("DOH"), collectively the "Regulatory Agencies", have reviewed the *Tank Upgrade Alternatives Report* ("Report") submitted by the U.S. Department of the Navy ("Navy") and Defense Logistics Agency ("DLA") on December 8, 2017. The Regulatory Agencies have determined that the Report satisfies the requirements of Section 3.3 of the Red Hill AOC SOW. The Report, prepared by Navy and DLA expert engineering contractors, identifies and evaluates tank upgrade alternatives ("TUA") that can be applied to the tanks at the Red Hill Bulk Fuel Storage Facility ("Facility"). Pursuant to 7(b) of the Red Hill AOC, the Regulatory Agencies approve the Report.

The Report documents dozens of technologies that may be applied to the tanks at the Facility, and it details various aspects of the alternatives that were proposed in the Report's Scope of Work. The Navy and DLA and the Regulatory Agencies agreed during scoping meetings that the following six alternatives were likely feasible and merited detailed examination:

- 1) maintaining the current tank system with substantial improvements to tank operations and maintenance procedures;
- 2) option 1) with an additional full internal coating of the tank vessel's steel liner;
- 3) option 1) with a new internal steel liner and full internal coating;
- 4) a composite double-wall carbon steel tank retrofit;
- 5) a composite double-wall carbon steel and stainless-steel tank retrofit; and
- 6) a storage vessel constructed within each existing tank.

The Report includes conceptual designs and construction considerations, and characterizes important attributes for each of these six options now under evaluation. Although the Regulatory Agencies are approving the Report, it is important to recognize that the evaluation conducted by the Navy and DLA in the Report may be subject to various technical interpretations and conclusions. The Regulatory Agencies will make their own technical interpretations and conclusion based on its review of the Report and other

data gathered to date regarding Red Hill, our independent expert analysis, and the TUA decision process.

With this approval, the Regulatory Agencies look forward to a constructive TUA decision-making process. The Navy and DLA should prepare for the upcoming decision meetings by assembling the information requested in our March 7, 2018 letter to Admiral B.P. Fort. As detailed in that letter, the Regulatory Agencies anticipate that the Navy and DLA will present information that compares the relative environmental performance of each potential tank system. Based on Admiral Fort's May 4, 2018 response, we anticipate that the Navy and DLA are gathering this information and completing work from other portions of the Red Hill AOC SOW and expect to be well positioned to proceed towards developing a proposed tank upgrade decision for EPA and DOH review. We are also aware that the Navy and DLA are revising the alternative sites location study to include additional information and analysis on relocating the fuel currently being stored at the Facility. We look forward to reviewing this critical information to yield productive TUA Decision Meetings in the coming months, seek public and stakeholder input and hold a public meeting.

We know that the Navy and DLA share the Regulatory Agencies' goal of zero future fuel releases from the Facility. These next steps in the TUA decision-making process are critical to upgrading the tanks at the Facility and achieving this goal. We look forward to our meetings in the coming months. Please let us know if you have any comments or concerns.

Sincerely,



Omer Shalev
Red Hill Project Coordinator
EPA Region 9



Roxanne Kwan
Red Hill Project Coordinator
State of Hawaii, Department of Health

Enclosures: 1. EPA and DOH Letter to Navy dated March 7, 2018
2. Navy letter to EPA and DOH dated May 4, 2018

cc: Admiral Brian P. Fort, Navy (via email)
Captain Richard D. Hayes III, Navy (via email)



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NOV 29 2018

Captain Marc Delao
Regional Engineer
Navy Region Hawaii
850 Ticonderoga St. STE 110
Joint Base Pearl Harbor Hickam, Hawaii 96860

**Re: Expectations for Release Detection Decision Document, Section 4.8 of the Red Hill
Administrative Order on Consent ("AOC") Statement of Work ("SOW") and Comments on
Early Procurement of Release Detection Equipment**

Dear Captain Delao:

The U.S. Environmental Protection Agency ("EPA") and Hawaii Department of Health ("DOH"), collectively the "Regulatory Agencies", have received the U.S. Department of Navy's ("Navy's") letter dated October 26, 2018, and acknowledge the Navy's plan to proceed with procurement and installation of the Navy and Defense Logistic Agency's ("DLA's") selected release detection equipment.

Section 4 of the Red Hill AOC SOW charges the Navy and DLA with summarizing their current release detection practices and investigating opportunities to improve their release detection practices to better the Red Hill Bulk Fuel Storage Facility's ("Facility's") ability to operate in an environmentally protective manner. The Navy and DLA, with input from the Regulatory Agencies, conducted tests of several promising release detection devices at one of the Facility's large fuel storage tanks to assess whether improvements are practicable. This work demonstrated that improved release detection is likely feasible.

The Regulatory Agencies support the Navy's intentions to improve Facility operations as soon as possible. However, we cannot provide official approval of this upgrade pursuant to the AOC SOW process because the Navy and DLA have not submitted a New Release Detection Alternatives Decision Document. The Regulatory Agencies acknowledge that both the AOC SOW process and the Navy's procurement process can take time, and we appreciate the Navy's initiative to expedite improvements at the Facility.

Section 4.8 of the AOC SOW specifies that once the Regulatory Agencies approve the New Release Detection Alternatives Decision Document, which includes an implementation plan and schedule, the Navy shall implement the plan. For the upcoming New Release Detection Alternatives Decision

Document, the Regulatory Agencies reiterate some of our expectations as discussed in our August 30, 2018 letter and in meetings during the week of October 2, 2018. The Decision Document should address the following:

- Ability to install the selected high precision release detection system in all in-service tanks as soon as possible, notwithstanding current regulatory requirements.
- Integration of the selected new release detection system with existing and/or improved fuel monitoring systems, to provide increased overall monitoring, redundancy, and accuracy.
- Establishment of “triggers” or thresholds that result in running a high precision release detection test, causative research, or other actions.
- Enhanced use of existing soil vapor probes with possible continuous and/or real-time data readings, and the reassessment of the current soil vapor “trigger level.”
- Discussion regarding how the proposed release detection system will be used to determine a suspected release and confirm or disconfirm a suspected release.
- Increased available capacity or alternative tank capacity to allow for immediate fuel movement, as necessary.
- Discussion regarding the ability and benefits or disadvantages of reducing the current measured level change that causes unscheduled fuel movement alarms to be actuated. For levels being referenced, see Section 6-2 of the Navy’s *Current Fuel Release Monitoring Systems Report* dated August 16, 2016.
- Response measures to potential future releases that may impact drinking water sources (i.e., contingency plan). This could include pre-positioned activated carbon filtration systems.

The tank upgrade alternatives (“TUA”) currently under review will likely require years to implement, therefore improved release detection and response activities should be implemented quickly, independent of the TUA implementation. In a relatively short time, release detection and response improvements can result in increased environmental protection while the more lengthy tank upgrade process proceeds.

We look forward to receiving the Navy’s Tank Upgrade Alternatives and New Release Detection Alternatives Decision Documents. Please let us know if you have any comments or concerns with the information in this letter.

Sincerely,



Omer Shalev
Project Coordinator
EPA Region 9 Land Division



Roxanne Kwan
Interim Project Coordinator
DOH Solid and Hazardous Waste Branch

cc: Mr. Mark Manfredi, Navy (via email)