

JOSH GREEN, M.D.
GOVERNOR OF HAWAII
KE KIA'AINA O KA MOKU'AINA 'O HAWAII



KENNETH S. FINK, MD, MGA, MPH
DIRECTOR OF HEALTH
KA LUNA HO'OKELE

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

In reply, please refer to:
File:

June 24, 2024

Rear Admiral Stephen Barnett
Navy Closure Task Force – Red Hill
850 Ticonderoga Street, Suite 110
Joint Base Pearl Harbor-Hickam, Hawaii'i 96860
[via email only: stephen.d.barnett.mil@us.navy.mil]

Dear Rear Admiral Barnett,

SUBJECT: **Disapproval of:**

- ***Draft Final Technical Memorandum, Phase 2 Holding Tank and Leach Tank Characterization, November 2021 Pipeline Release, Red Hill Bulk Fuel Storage Facility, dated November 22, 2022***
- ***Draft Closure Report, Concrete Tank Removal, Red Hill Bulk Fuel Storage Facility, dated January 2023***

The Hawaii'i Department of Health (DOH) received the U.S. Department of the Navy's (Navy's) *Draft Final Technical Memorandum, Phase 2 Holding Tank and Leach Tank Characterization, November 2021 Pipeline Release, Red Hill Bulk Fuel Storage Facility*, dated November 22, 2022, hereinafter the "Site Characterization Report," and *Draft Closure Report, Concrete Tank Removal, Red Hill Bulk Fuel Storage Facility*, dated January 2023, hereinafter the "Closure Report." After review, the DOH disapproves of both documents at this time, as the information provided does not sufficiently support the stated conclusions and recommendations.

It is our understanding that additional actions associated with the release from the holding and leach tanks will be part of the overall site investigation and remediation required by the May 2022 Emergency Order for closure of the underground storage tank system that includes the Red Hill Facility. Consequently, please provide revised versions of both documents based on the enclosed comments within 45 calendar days of receiving this letter.

Rear Admiral Stephen Barnett
June 24, 2024
Page 2 of 2

If you have any questions regarding this letter or its enclosure, please contact me at KellyAnn.Lee@doh.hawaii.gov or (808) 586-4226.

Sincerely,



KELLY ANN LEE
Red Hill Project Coordinator
State of Hawai'i, Department of Health

Enclosure

copy w/encl. via email only:

Matthew Cohen, EPA
Jamie Marincola, EPA
Ash Nieman, EPA
RDML Marc Williams, NCTF-RH
Noor James, NCTF-RH
Lyndsay Kelsey, NCTF-RH
Joshua Stout, NCTF-RH

Enclosure

DOH Comments on *Draft Final Technical Memorandum, Phase 2 Holding Tank and Leach Tank Characterization, November 2021 Pipeline Release, Red Hill Bulk Fuel Storage Facility*, dated November 22, 2022 (Site Characterization Report), and *Draft Closure Report, Concrete Tank Removal, Red Hill Bulk Fuel Storage Facility*, dated January 2023 (Closure Report)
June 24, 2024 Letter to Rear Admiral Stephen Barnett
Page 1 of 5

COMMENTS THAT REQUIRE ACTION

General Comments

1. Errors and inconsistencies were observed between the data in the text, the data in tables, and the data on figures throughout both documents. Examples are provided below; however, these are only a few of the observed inconsistencies. Revise accordingly and ensure that all future documents are adequately reviewed prior to submittal to the Hawai'i Department of Health (DOH).
 - a. **Site Characterization Report, Section 9.1.1, PDF page 27**

There are errors in the reported findings in this section. Specify if both undetected (U/UJ flags) and detected (J flags and blanks) are being reported. Check all analytes mentioned in the text and tables for errors, as the example below is not the only error.

The listed detected total petroleum hydrocarbons as gasoline (TPH-g) percentage is incorrect. "[D]etected in..." should not include any U/UJ flags. Therefore, there were 15 samples that had detections out of a total of 51 samples, which results in a detection percentage of 29%. Even if including samples with elevated method reporting limits, this would only result in a detection percentage of 39%, not the listed 51%. (These values are all calculated from Table 8, PDF pages 64-73.)
 - b. **Site Characterization Report, Figures 6 to 9 (PDF pages 46-49) and Figures 4 to 6 in Appendix A (PDF pages 120-122)**

Both sets of figures are the same set of cross-sections; however, there are discrepancies between them. One example is that the TPH-g concentration reported for sample LT-N25-16-17 was 980 parts per million (ppm) in Figure 7 (PDF page 47) but was reported as 4800 ppm in Figure 5 (PDF page 121).
 - c. **Closure Report, Section 2.4, PDF page 13**

The reported number of subsurface soil samples that were analyzed for each analyte and the breakdown of exceedances of each specific DOH Environmental Action Level (EAL) in the text is inconsistent with the same information that was presented in Table 9 in the Site Characterization Report.
2. Provide all tables in both documents to the DOH in a workable format (e.g., Excel, csv). Our ability to find additional errors was limited by the PDF format.

Enclosure

DOH Comments on *Draft Final Technical Memorandum, Phase 2 Holding Tank and Leach Tank Characterization, November 2021 Pipeline Release, Red Hill Bulk Fuel Storage Facility*, dated November 22, 2022 (Site Characterization Report), and *Draft Closure Report, Concrete Tank Removal, Red Hill Bulk Fuel Storage Facility*, dated January 2023 (Closure Report)

June 24, 2024 Letter to Rear Admiral Stephen Barnett

Page 2 of 5

3. The DOH EALs and Hazard Evaluation and Emergency Response (HEER) Office Technical Guidance Manual (TGM) have been updated since these documents were submitted to the DOH. Update these documents accordingly.

Specific Comments on Site Characterization Report

4. **Section 10.2, PDF page 35** – In addition to comparing the concentrations of contaminants of potential concern (COPCs) to the Drinking Water Toxicity EAL, due to the potential hydrologic connection to the nearby South Halawa Stream, the concentrations should also be compared to the DOH EALs for ecotoxicity.
5. **Section 11, PDF page 35** – In addition to addressing the contamination identified in the soil, steps are to be taken to address the contamination identified in the perched aquifer and sediment.
6. **Figure 11, PDF page 55** – Revise this figure so that it illustrates those borings which exceed the DOH EALs or have elevated field screening measurements, as opposed to illustrating which phase the boring was drilled in. If there is a strong preference to indicate which borings are from Phase 1 and Phase 2, use different shapes to differentiate between the two phases.
7. **Appendix A, PDF Page 107** – The referenced Table 3 and Table 4 are not included in the Appendix. Include these tables.
8. **Appendix B, beginning on PDF page 175**
 - a. Boring logs for LT-E15 and HT-N15 are not included.
 - b. Boring logs for borings LT-N55 (PDF page 352), LT-W50 (PDF page 369), and HT-35W-ALT (PDF page 374) are included in the Appendix, but the locations of these borings are not included on the figures. While these borings appeared to have been terminated due to refusal, please include their locations on the figures.
 - c. Appendix B was referenced in Section 2.4.1 on PDF page 18 with regards to the borelog for OWDFMW06A; however, it was not included in the Appendix. Include the referenced borelog.

Enclosure

DOH Comments on *Draft Final Technical Memorandum, Phase 2 Holding Tank and Leach Tank Characterization, November 2021 Pipeline Release, Red Hill Bulk Fuel Storage Facility*, dated November 22, 2022 (Site Characterization Report), and *Draft Closure Report, Concrete Tank Removal, Red Hill Bulk Fuel Storage Facility*, dated January 2023 (Closure Report)
June 24, 2024 Letter to Rear Admiral Stephen Barnett
Page 3 of 5

- d. The boring logs for HT-N10, HT-S10, HT-S17.5, and HT-S25 should be used to create an additional cross-section figure. This would provide additional information regarding the magnitude and extent of contamination.

Specific Comments on Closure Report

9. The Site Characterization Report identified contamination in the perched aquifer and sediment; however, neither of these media are discussed or addressed in the Closure Report. Indicate what steps have been taken/will be taken to fully delineate and remediate the identified contamination.
10. **Figures, PDF page 38** – Include a figure that illustrates the remedial excavation that was conducted in relation to the results of the site characterization. It is unclear how the two rounds of remedial excavation spatially relate to each other, as well as the data collected during the site characterization. Consequently, the DOH is unable to evaluate whether the lateral and vertical extent of soil contamination has been adequately removed.

COMMENTS FOR FUTURE CONSIDERATION

General Comments

11. The DOH does not consider discrete soil samples to be representative for decision making purposes. In the future, use the multi-increment (MI) sampling methodology when conducting a soil or sediment investigation.
12. Figures should be at a high enough resolution so that labels, legends, and data are legible. For example, in Figures 6 through 9 of the Site Characterization Report (PDF pages 46-49), it is very difficult to read the volatile organic compound concentrations.

Specific Comments on Site Characterization Report

13. Based on the field screening results, there appear to be data gaps when identifying the vertical and lateral extent of contamination.
 - a. **Table 4, PDF pages 59-60**
Boring HT-E10 detected an elevated vapor measurement of 297 parts per million by volume (ppmv) at a depth of 22 feet below ground surface (ft bgs), yet boring HT-E17.5, which is just east of this boring was only drilled to a depth of 15 ft bgs.

Enclosure

DOH Comments on *Draft Final Technical Memorandum, Phase 2 Holding Tank and Leach Tank Characterization, November 2021 Pipeline Release, Red Hill Bulk Fuel Storage Facility*, dated November 22, 2022 (Site Characterization Report), and *Draft Closure Report, Concrete Tank Removal, Red Hill Bulk Fuel Storage Facility*, dated January 2023 (Closure Report)

June 24, 2024 Letter to Rear Admiral Stephen Barnett

Page 4 of 5

Another example is that boring LT-E15 had elevated vapor measurements starting at 16 ft bgs; however, boring HT-S25, just southeast of this boring, was completed at 15 ft bgs. Relying solely on discrete soil samples when determining the extent of contamination is not appropriate.

b. **Section 5.2, PDF page 21**

Based on the elevated vapor measurements collected in the soil at boring LT-N25, there should have been further delineation to the northwest of this boring.

c. **Figure 11, PDF page 51**

The illustrated approximate footprint of soil contamination seems to be based solely on soil laboratory analytical data; however, field screening results reported in the Site Characterization Report indicate it may extend further. Section 8.4.2 of the DOH HEER Office TGM states that a photoionization detector screening level of 10 ppmv is recommended for soils impacted with middle distillate fuels (i.e., diesel fuel, JP-5, etc.). This corresponds to anticipated lower vapor emissions from soils containing 100 milligrams per kilogram TPH-middle distillates. Consequently, the vapor measurements should have been taken into consideration when determining the estimated lateral and vertical extent of contamination.

14. **Section 2.1.1, PDF Page 14** – Include a more recent annual precipitation rate and average temperatures for southern O’ahu with the information already provided. Also, include monthly precipitation and average monthly temperatures from the month of release until the following year.

Specific Comments on Closure Report

15. It does not appear that the initial remedial excavation conducted was based on the site characterization data, as it only extended to approximately 12 ft bgs and did not laterally extend as far as indicated based on the site investigation data. Instead, it appears it was initially based on results of the waste characterization sampling (Closure Report, Section 3.4, PDF page 18). Site characterization data should be taken into account when conducting the selected remedial option.

16. **Section 3.10.1, PDF page 24**

- a. Bottom and side wall Decision Units (DUs) should not be combined into one MI sample. When evaluating whether the lateral and vertical extent of contamination

Enclosure

DOH Comments on *Draft Final Technical Memorandum, Phase 2 Holding Tank and Leach Tank Characterization, November 2021 Pipeline Release, Red Hill Bulk Fuel Storage Facility*, dated November 22, 2022 (Site Characterization Report), and *Draft Closure Report, Concrete Tank Removal, Red Hill Bulk Fuel Storage Facility*, dated January 2023 (Closure Report)

June 24, 2024 Letter to Rear Admiral Stephen Barnett

Page 5 of 5

has been determined, each sidewall and bottom should be a separate DU to identify if additional remedial excavation is needed in a particular direction.

- b. The area of each DU should be clearly reported.
- c. A cross section illustrating the final remedial excavation should be provided so that it is clear where each DU is located with relation to the sloping sidewalls. It is difficult to determine whether the removal action was sufficient based on Figure 6.