

Site Characterization Plan Addendum, Collection, Hold, and Transfer Tank Overflow Site Characterization RTC
Red Hill Bulk Fuel Storage Facility, JBP HH, O'ahu HI
Reviewer: DOH/EPA
Date: October 06, 2023

Item	Section No.	Comment
1	General	The purpose of the site characterization is to determine the magnitude and extent of impacts from the overflow of the CHT tank to the environment, not to simply characterize light non-aqueous phase liquid (LNAPL) as mentioned throughout the document.

Response: Concur; This is stated in Section 1.0 of the document.

2	General (a)	The Addendum states the Draft 2018 DOH Hazard Evaluation and Emergency Response (HEER) Office Technical Guidance Manual (TGM) Update, Section 9.3: LNAPL/Petroleum Guide, which primarily contains guidance for preparing a conceptual site model for LNAPL, is the basis for the tasks presented in the Addendum. However, this is not the appropriate guidance document to base a surface release assessment on because it is a draft guidance document that focuses on LNAPL floating on the groundwater.
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Response:

As described in Comment 2, Hawaii Department of Health (DOH) Technical Guidance Manual (TGM) Section 9.3 has superseded the Draft 2018 LNAPL/Petroleum Guidance for Petroleum Contaminated Sites. References to the Draft 2018 document have been removed from the document.

3	General (b)	The site characterization should instead be based on the guidance outlined in the <u>current DOH HEER Office TGM</u> , which can be found at https://health.hawaii.gov/heer/tgm/ . This includes guidance regarding the use of <u>spill area decision units outlined in Section 3.4.3</u> and the collection of multi increment soil samples in Section 5.0.
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Response: The Navy notes that HEER Office TGM has been revised since the submittal of this draft Work Plan in December 2022. The current revision, Interim Final, July 2023 does not synchronize with the sections described in DOH Comment 3.b.

- Section 3.4.3 Health and Safety Plan, and
- Section 5 – Reserved

In addition, the Interim Final, July 2023 HEER TGM has removed the text describing the potential usefulness of discrete sampling as a phased approach to developing DUs, which was the basis for the Navy's work plan sampling strategy. The current TGM indicates that small DUs should be used for delineation purposes. Based on these revisions, the Navy will revise the work plan to incorporate small DUs and MI sampling in accordance with the Interim Final, July 2023 HEER TGM. If necessary, the Navy will follow up in a phased approach with additional sampling DUs, based on the results of this initial sampling event.

4	Section 2.3 (a)	The document references Appendix A, Section 4.1.6 (LNAPL Plume Delineation) of the Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater document. However, there is no Appendix A in this document, so it is unclear what guidance document the stated delineation methods for soil are based on.
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Response: Appendix A Section 4.1.6 (LNAPL Plume Delineation) should have referred to (DOH 2018) LNAPL/Petroleum Guide. This reference and the resulting information has been removed (per Response to Comment 2) as it has been superseded by the updated TGM, Section 9.3.

5	Section 2.3 (a, i)	Instead of collecting discrete soil samples from individual borings that are spaced approximately 15 feet apart, decision units are to be established and multi increment soil samples collected in accordance with the DOH HEER Office TGM to ensure that potential impacts from the release are adequately assessed.
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Response: Please see Response to Comment 3.

6	Section 2.3 (a, ii)	Data collected from soil samples should initially be screened against the DOH Tier 1 Environmental Action Levels (EALs) for unrestricted land use where groundwater is a potential drinking water source, and the nearest surface water body is less than 150 meters. The data may then be further screened using site-specific EALs when evaluating potential hazards that may be posed by contamination. It is premature to determine what the relevant potential hazards are and subsequently limit the applicable EALs until data has been collected and an Environmental Hazard Evaluation is prepared.
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Response: The Navy will conduct an initial evaluation of the sample results using DOH Tier 1 EALs. The inclusion of the EHE evaluation in a combined Site Characterization and Environmental Hazard Evaluation, as shown in DOH TGM, Section 18.5.9 Site Investigation Report, will be discussed with the Regulatory Agencies after completion of sampling. The comments for Section 11.0 of the SIR outline states that the EHE maybe combined with the Site Investigation Report, or included as a separate document for more complex sites.

7	Section 2.3 (a, ii, 1)	This comment is relevant to Table 2-B as well.
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Item	Section No.	Comment
Response: Please see Response to Comment 6.		
8	Section 2.3 (a, ii, 2)	Please note the EALs listed in Table 2-B do not necessarily match the screening criterion presented in Table B.1-2 in Appendix B.1.
Response: Screening Criterion in Table B.1-2 have been revised to be consistent with Table 2-B.		
9	Section 2.3 (a, iii)	It is unclear why groundwater EALs are included in the Addendum if only soil samples and samples from the Frac tanks are to be collected.
Response: Groundwater action levels will be removed and added, if necessary, to future phases.		
10	Section 2.3 (a, iii, 1)	This comment is relevant to Table 2-B as well.
Response: Groundwater action levels will be removed and added, if necessary, to future phases.		
11	Section 2.3 (b)	Clarify "cleaning agents that might have been used to clean the tunnel after the initial May 2021 release." The Navy's June 30, 2023 response to the DOH's Request for Information on tunnel cleanup methods states, "[n]o other cleaning agent other than water was used" following the May 6, 2021 release.
Response: The Navy confirms that cleaning agents were not used during the May 6, 2021 release; however, a small amount was used during the November 20, 2021 release. The conflicting text will be removed.		
12	Section 5.0 (a)	Please provide specifics regarding sample collection methodology. As previously stated in General Comment 1b., multi increment samples are to be collected when assessing potential impacts from a surface release. It is recommended that in addition to multiple lateral decision units, multiple vertical decision units are also used as part of the assessment.
Response: In accordance with the Interim Final, July 2023 HEER TGM, the Navy will revise the sampling strategy to include multiple lateral (horizontally-based) DUs and multiple vertical DUs as part of the assessment.		
13	Section 5.0 (b, i)	The approximate dimensions of each decision unit.
Response: The revised work plan will include the approximate dimensions of each DU.		
14	Section 5.0 (b, ii)	Number of increments to be collected per sample.
Response: The revised work plan will include the number of increments per MI sample.		
15	Section 5.0 (b, iii)	Approximate sample mass.
Response: The revised work plan will include the approximate sample mass for MI samples collected.		
16	Section 5.0 (b, iv)	Sample collection containers (e.g., will the volatile portion be preserved using methanol, etc.).
Response: The revised work plan will include a description of the sample collection containers, and preservatives including for volatile organic compounds.		
17	Section 5.0 (b, v)	How will the volatile portion of the sample be collected compared to the non-volatile portion?
Response: The revised work plan will include the sample collection methodology, including for volatile organic compounds.		
18	Section 5.0 (b, v, 1)	The use of hand drills to collect soil samples for volatile analysis may lead to volatile loss and may result in analytical results that are biased low.
Response: Section 5.2.3 indicates samples will be collected with a hand auger, not a hammer drill, due to limited access to the site.		
19	Section 5.0 (b, vi)	Number of replicate samples to be collected (a frequency of at least 10%).
Response: The revised work plan will include a description of replicate sample collection and frequency of at least 10%.		

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Item	Section No.	Comment
20	Section 5.2.1 (a)	Section 2.3 of the Addendum discusses the need to evaluate samples for additives known or suspected to have been pre-blended into the fuel stored in the Red Hill tanks, as well as cleaning agents that might have been used to clean the tunnel after the May 2021 release to conduct a risk evaluation. These analyses were not included in the proposed analyte list for the fuel samples in Section 5.2.1. Additionally, on June 28, 2023, EPA requested the U.S. Department of the Navy sample fuel remaining in the Red Hill tanks for additional analytical methods to understand risk and fate and transport prior to defueling. Additional analysis of fuel recovered from the frac tanks would also help to understand risks related to the fuel released during the 2021 releases. The workplan shall be updated to include the additional analytical methods below:

Response: The fuel associated with the May 2021 and November 2021 releases of the same fuel has been sampled and analyzed at the request of EPA. All results from those analyses are posted in EDMS for viewing.

The intent of the Frac Tank sampling is to quantify the amount of LNAPL recovered during the initial response, not for evaluation as part of the CHT Tank investigation. The CHT Tank investigation purpose is to determine the scope of the release to the environment and, subsequently, the nature and extent of impact in the environment.

All analytical methods listed in the following comments are more applicable to the delineation sampling for the soil samples. If the Regulatory Agencies require additional analytical tests for the soil samples that will be collected as part of the CHT Tank investigation, the Navy respectfully requests that the Regulatory Agencies identify the compounds and EPA-approved analytical methods specifically for soil. No groundwater is expected to be evaluated during this phase of sampling.

21	Section 5.2.1 (a, i)	Saturated Hydrocarbons (EPA Method 8015M via GC/FID) 1. Analysis should include Alkanes C9-C40, pristane, phytane, and other selected isoprenoids. 2. These data are useful for basic characterization and fingerprinting.
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Response: Please see Response to Comment 20.

22	Section 5.2.1 (a, ii)	Alkylated polycyclic aromatic hydrocarbons (PAHs) (EPA Method 8270M via GC/MS-SIM) 1. Analysis should include parent and alkyl PAHs including naphthalenes. 2. These data are useful for characterization and fingerprinting.
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Response: Please see Response to Comment 20.

23	Section 5.2.1 (a, iii)	SVOCs (Method SW8270 via GC/MS) 1. Analysis should include 2-(2-methoxyethoxy)-ethanol and phenol. 2. These data are useful for detecting fuel additives.
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Response: Please see Response to Comment 20.

24	Section 5.2.1 (a, iv)	VOCs w/ methylbenzenes (Method SW8260 via GC/MS) 1. Analysis should include methylbenzenes. 2. These data are useful for detecting tri- and tetra-methylbenzenes.
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Response: Please see Response to Comment 20.

25	Section 5.2.1 (b)	In the event that any analyte(s) associated with the additional analyses listed in Comment 3a are detected in the aqueous sample(s) collected from the Frac tanks, the multi increment soil samples collected as part of the site characterization will need to be analyzed for these analytes in addition to those listed in Table 2-A. If the Navy chooses not to initially analyze all soil samples via the additional analytical methods described in Section 3 a, the Navy may refine the soil analyte list based on Frac tank results. The RAs would accept the following approaches:
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Response: As per Response to Comment 20, the Frac Tanks will be sampled for LNAPL quantification only. Therefore, the soil samples collected will be analyzed in accordance with the approved sampling list for soil, as the presence of groundwater is not anticipated. The Navy respectfully requests that the Regulatory Agencies identify any additional compounds and EPA-approved analytical methods for soil characterization that are recommended.

At this time, the schedule for soil sampling is unknown due to delays associated with defueling operations. Once approval for the start of field work is provided, the Navy will ensure that the Regulatory Agencies are aware of when the soil sampling will take place. Regarding sampling of the Frac tanks for LNAPL quantification, the Navy prefers to sample around the same time as the CHT site characterization field work.

26	Section 5.2.1 (b, i)	Mobilize twice. Collect and analyze the samples from the Frac tanks prior to conducting the soil sampling, or
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Response: Please see Response to Comment 3.

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27	Section 5.2.1 (b, ii)	Collect soil samples during the initial mobilization and request that the laboratory hold the excess soil samples for further analysis after the Navy receives the Frac tank results (so long as the hold times will not be exceeded).

Response: Per Response to Comment 25, the Navy prefers to have the Frac tanks sampled around the same time as the soil sampling occurs to reduce hold time concerns.