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U S NAVY RESPONSES TO REGULATORY COMMENTS ON DRAFT DATA GAP  
ASSESSMENT REPORT FOR TANK FARM 1 NS NEWPORT RI  
7/11/2013  
TETRA TECH

**NAVY RESPONSES TO  
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)  
COMMENTS DATED APRIL 22, 2013  
ON THE DRAFT DATA GAPS ASSESSMENT REPORT (MARCH 2013)  
FOR TANK FARM 1, SITE 7 CATEGORY 1 AOCs  
NAVAL STATION NEWPORT  
NEWPORT, RHODE ISLAND**

Navy responses to U.S. Environmental Protection Agency (EPA) comments dated April 22, 2013 on the Navy's Draft Data Gaps Assessment for Category 1 AOCs at Tank Farm 1, Site 7 are presented below. The EPA comments are presented first (in italics) followed by the Navy's responses.

**Letter Comments**

*Letter Comment 1: EPA disagrees with the relocated sampling points at the two transformer vaults, TV2 and TV3. The field-adjusted locations are not adequate to characterize these AOCs for PCB releases. The sampling plan required that the previous-sampled locations be resampled, but that did not occur. Also, most of the samples that were collected to characterize the magnitude and extent of PCB contamination were moved to inappropriate locations. Further evaluation of the two transformer vault areas is necessary to better characterize risk and before a feasibility study can be properly prepared.*

*The information available regarding the samples collected at the transformer vaults does not indicate where these samples were collected. Please confirm how Shaw's sample locations were determined in the field and provide the northing and easting coordinates for the samples and the transformers.*

**Response:** Navy has reviewed the transformer vault sample locations and determined the following. The proposed sample location figure in the sampling plan was conceptual and sample locations were pre-marked during the July 19, 2012 site walk attended by RIDEM and Navy. EPA declined to attend the site walk. In addition, sample locations were field adjusted due to the presence of electric utilities or obstructions, such as trees and utility poles.

Navy has reviewed the proposed sample location in the SAP (Figure 6) and Figure 2-2 in the Draft Data Gaps Assessment Report, and confirmed that the orientation of transformer vault 2 and the depiction of the exterior transformer units are incorrect in the SAP. Field verification determined that the exterior transformer units are located along the north wall of transformer vault 2, not the east wall. During the July 19, 2012 site walk, it was presumed that the 2010 sample location (TV1-EV2-E) was located adjacent to the exterior transformer units, and based on this assumption, proposed samples SB-1020, SB-1021, and SB-1025 were located along the north wall of transformer vault 2. Upon review of the Shaw figure and recently obtained GPS coordinates, it was determined the 2010 sample location was collected along the eastern wall of the vault, along which no exterior transformer units are present.

Navy review of Figure 2-3 determined the depiction of the exterior transformer unit to be correct. The placement of samples SB-1026, SB-1027, and SB-1031 locations at vault 3 was correct in the proposed sample location figure. The field team had to adjust SB-1026 due to the presence of electric utilities and a tree.

It should be noted that Figure 6 in the SAP is schematic (not to scale) representation for the transformer vaults and slight variations in the field located samples are expected. In addition, the original dataset only consisted of two sample locations, which provided limited information on the location of any suspected PCB contaminated soil at the transformer vaults. Although the 2010 location at transformer vault 2 was not resampled, one location (SB-1022) was located within 5 feet of the 2010 location. In addition, samples were collected in the vicinity of the exterior transformer units. All remaining samples were relocated where ever possible at downgradient locations from the original location. Furthermore, there is documented rational for the relocation of sample locations (Utility clearance and site photos). Navy believes that the sampling and analysis performed at the transformer vaults characterizes them.

Newly obtained Shaw sample coordinates and the coordinates for the transformers are provided in an

attachment to this response to comments.

*Letter Comment 2: Please include well construction logs for the existing wells that were not reused (GZ-124R and GT-101R). How does the construction of those wells compare with the wells that the Navy installed? Since new wells were required after the existing wells were found to be dry, why didn't the Navy select new locations for spatial diversity to provide better coverage of bedrock groundwater?*

**Response:** The well construction log for GT-124 is included as an attachment to this document. The log for GZ-101 was not located in historic records. GT-124 was completed to 22.7 feet in weathered bedrock; a water table was not detected. The field investigation planned to sample two down gradient locations, either at existing wells or from newly installed wells. The project was not scoped for additional locations.

*Letter Comment 3: The document provides an analysis of the potential exposure and risk for ecological receptors that is typical in the first stage of a BERA. However, the basic site characterization that is standard for a SLERA is not provided, and the basis of the analysis includes an incomplete dataset for characterizing the PCB contamination at the TV 2 and TV 3 locations. The document needs to provide better characterization of the extent of the contaminants (in particular PCBs at TV 2 and TV 3), a clear description of the habitat size and quality, and discussion of the potential for the presence of species of concern before dismissing the risk to receptors through a BERA-type risk analysis.*

*Before conducting a full SLERA, a site characterization should be presented. The only habitat descriptions in the document are on page 1-4 that states: "The area surrounding the EBP consisted of trees and shrubs of varying size. A grassy vehicle roadway accesses the site from the south. Vegetation growing at the transformer vaults was less dense and consisted of grassy areas and small diameter trees." and on page 3-6: "The Site is generally vegetated, with vegetation types ranging from grass to thorn-scrub and trees throughout the site."*

**Response:**

, Additional habitat information from the Natural Resources Inventory and Assessment of Naval Station Newport (prepared by the Rhode Island Natural History Survey in 2006) will be added to the report. Also, pertinent information from Sections 1 and 3 will be added to Section 6.2.1. Given the small size of the site and the fact that the area is primarily maintained grass, it is unlikely that any species of concern would be present at the site. A discussion of this also will be added to the Section 6.2.1.

Please see response to letter comment 1 regarding the characterization of PCB contamination at the TV2 and TV3 locations. The original 2010 dataset for TV2 and TV3 only consisted of 2 samples. As part of the data gaps investigation, Navy collected an additional 12 samples at these locations. The SLERA will be revised to incorporate the 2010 PCB samples to provide a more complete dataset.

### **Specific Comments**

*Comment 1: p. E-2, ES - The last paragraph of conclusions regarding the risk assessment screening presents results for Human Health only. Include a discussion of ecological risk.*

**Response:** A discussion of ecological risk will be added to the executive summary.

*Comment 2: p. 1-1, §1.1 - The purpose of the DATA GAPS REPORT is stated to be "... determine the presence of media contamination, to identify possible contaminant sources, and to identify potential contaminant migration pathways, potential contaminant receptors, and associated exposure pathways." To accomplish the stated purpose, the Data Gaps Report should not evaluate risk beyond a screening assessment that includes only Step 1 and Step 2 based on EPA Guidance [ERA Guidance for Superfund: Process for Designing and Conducting ERA's (USEPA, 1997) and ECO Update: The Role of Screening-Level Risk Assessment in Refining Contaminants of Concern in Baseline Risk Assessments (EPA, 2001)].*

Response: Section 11.4.1 of the SAP states that a risk screening will be conducted if chemical concentrations in the media exceed screening levels. Because there were exceedences of the screening levels, a risk

evaluation was conducted. It is Navy policy to proceed to Step 3a as the first step in the BERA, if the site does not meet the criteria for exiting the process at Tier 1 (Steps 1 and 2). The purpose of Step 3a is to refine conservative assumptions used in the screening level assessment and re-evaluate risk with consideration of site-specific factors including: background concentrations, detection frequency, bioavailability and exposure assumptions. By including the Step 3a evaluation in the Data Gaps Report, it helps determine if further investigation is necessary to assess ecological risk and if so, helps focus future efforts.

*Comment 3: p. 1-2, §1.2, ¶12 - Describe the habitat type found at both TV 2 and TV 3 and include the size of the impacted areas. See also page 3-5, Section 3.2.*

**Response:** Regarding the habitat type, please see that Navy's response to Letter Comment 3. Section 5.0 states that the size of the transformer vault sites each cover an area less than 625 square feet.

*Comment 4: p. 2-6, §2.3.2.2 - The first paragraph refers to monitoring wells MW-SB101R and MW-SB124R. The fourth paragraph and subsequent paragraph refer to GZ-101R and GT-124R. Please use consistent identifiers.*

**Response:** The monitoring well and boring location identifiers will be checked for consistency.

*Comment 5: p. 2-8, §2.3.2.2, ¶13 - The text states that SB-1026 was moved seven feet to the southeast from its proposed location. This change moved the sample upgradient of the transformer location. While this generally would be unacceptable for characterizing a release from the transformer, this upgradient location had a PCB concentration greater than the concentration detected in 2010 and greater than screening levels. This is problematic and indicates a potential release that may not be directly related to a transformer release and will require further investigation to characterize the magnitude and extent of contamination.*

**Response:** SB-1026 was moved away from its original location due to the presence of an underground electric cable. The topography on the east side of transformer vault is relatively flat therefore it is not accurate to state that the shifted location is upgradient of the transformer location. If the presence of PCBs was due to a transformer leak it is not unreasonable to presume that the PCB detection at SB-1026 originated from transformer vault 3.

*Comment 6: p. 2-8, §2.3.2.2, ¶14 - The text states that SB-1027 was located downgradient from where PCB had been detected previously. That is not correct. The general topography at transformer vault 3 slopes downward to the northwest, but SS-1027 was located east which is generally upgradient of the former sample location.*

**Response:** Although it is correct that the general topography at transformer vault 3 slopes downward to the northwest, the ground surface directly east of the transformer vault is generally flat. This was evident in the field and can be seen in site photographs.

*Comment 7: p. 3-4, §3.1.4, ¶1 - Please revise the text here and elsewhere in this document that discusses the RIDEM groundwater classification. EPA does not recognize the RIDEM groundwater classifications because RIDEM does not have an approved Comprehensive Groundwater Protection Program. Use the language previously approved.*

**Response:** Navy recognizes that the RIDEM groundwater classifications are not accepted by EPA. The following text will be added to the referenced section: "Rhode Island does not have an EPA-approved comprehensive state groundwater protection program, so the GB criteria cannot be considered."

In addition, Navy requests that EPA provide "the language previously approved" for consistency.

*Comment 8: p. 3-6, §3.2.1, ¶12 - The elevations presented differ from those presented in Section 3.1.2. Please correct.*

**Response:** According to the Rhode Island Geographic Information System Spring 2011 Light Detection and

Ranging (LIDAR) data layer, the site ranges from 14 feet above sea level in the central portion of the western site to 148 feet above sea level in the southeastern corner of the site. The information in the report will be revised to report these elevations in a consistent manner.

*Comment 9: p. 3-6, §3.2.1, ¶4 - Move this paragraph to a separate section, and report the likelihood of species of special concern on the site. Clearly state if any protected species or habitats are likely to occur in the vicinity of the site.*

**Response:** The paragraph will be moved into a separate section titled “Natural Resources Assessment and Inventory”. A 2006 species survey documented no known protected species at Tank Farm 1. Relevant sections of this report will be included in the new section. Anecdotal reports do not indicate the presence of any breeding avian species of special concern. The EBP and TV2 and 3 areas do not contain any wetland plant species. The area is predominantly a scrub/shrub upland area.

*Comment 10: p. 4-2, §4.3, ¶3 - Please correct the RIDEM reference to November 2011. Edit this report if any impacts exist because of the use of the older regulations.*

**Response:** The report will be revised to state that soil contaminant concentrations were compared to the lower of the EPA RSL Residential Soil and the EPA SSL, Soil to Air, Residential standards (EPA, 2012). The RIDEM Residential Direct Exposure Criteria (DEC) was applied to the TPH results, only, per the Tank Farm SAP. The DEC reference will also be updated.

*Comment 11: p. 4-5, §4.3.3, ¶2 - The text in Section 1.3.2, page 1-3 states that in samples collected in 2010, one sample at TV 2 had a concentration 24,000 micrograms per kilogram (µg/kg) of Aroclor 1260. The 2010 data should be used in the site analysis. Please recalculate the risk screening using the entire dataset.*

**Response:** The risk screening will be recalculated to include the two 2010 samples. See responses to comments 12 and 13.

*Comment 12: p. 5-4, §5.1.2 - Contaminant concentrations in soil that significantly exceed the protection of groundwater SSLs should also be retained as COPCs. For example, Arochlor 1260 was detected in soil at a concentration of 24,000 µg/kg which significantly exceeds the DAF 1 SSL of 24 µg/kg. No groundwater samples were collected at the transformer vaults so groundwater data cannot be used to eliminate Arochlor 1260 as a COPC. Please retain it as a potential groundwater contaminant. Further investigation is necessary to determine the magnitude and depth of subsurface PCB impacts that may have impacted groundwater.*

**Response:** The text in the first bullet in Section 5.1.2 will be revised as follows: “A chemical detected in soil was selected as a COPC for soil if any detected chemical concentration exceeded the screening levels for residential exposures to soil or for migration from soil to groundwater and, for inorganics”. In addition the text in the sections discussing the comparison of chemical concentrations to the screening levels for migration from soil to groundwater will be revised to say “The following chemicals were detected at maximum detected concentrations exceeding the screening levels and were retained as COPCs for migration from soil to groundwater”. Also as shown on Table 5-10 Aroclor-1260 is identified as exceeding the USEPA RSL for migration from soil to groundwater even without the inclusion of sample TF1-EV2-E. In addition the discussions for the transformer vaults do not attempt to eliminate Aroclor-1260 as a COPC on the basis of groundwater samples. Also see response to Letter Comment 1. For decision making purposes in this report, and consistent with the USEPA guidance on soil to groundwater SSLs, the Navy proposes to use a DAF of 20 for these small area's of concern at Tank Farm 1.

*Comment 13: p. 5-11, §5.3.2 - The screening risk assessments neglected the PCB concentration detected at transformer vault 2 in the 2010 sampling event. Therefore, the risk screening is inappropriate and the magnitude and extent of the PCB contamination has not been adequately defined.*

**Response:** The surface soil sample collected in 2010 at Transformer Vault 2 will be added to the database. The revised ILCRs would be  $1 \times 10^{-4}$  for residential exposures and  $3 \times 10^{-5}$  for industrial exposures. Also see

response to Letter Comment 1.

*Comment 14: p. 5-11, §5.3.3 - The screening risk assessment inappropriately relied on a very small database to calculate the exposure point concentration and subsequently used an exposure point concentration less than the maximum PCB concentration detected at transformer vault 3. Therefore, the risk screening is inadequate and the magnitude and extent of the PCB contamination has not been adequately defined.*

**Response:** The Navy recognizes that there is some added uncertainty with the calculation of UCLs when the same size is small, however USEPA ProUCL guidance warns against the use of the maximum concentration as the EPC. Also the calculated UCL and the maximum concentration are similar in magnitude. The calculated UCL was 2.5 mg/kg and the maximum detected concentration was 4.3 mg/kg. Therefore, while there may be some added uncertainty with the UCL calculation the calculated value is realistic. If the maximum detected concentration was used as the EPC the ILCR for residential exposures would be  $2 \times 10^{-5}$  instead of  $1 \times 10^{-5}$ . For industrial exposures the ILCR would be  $6 \times 10^{-6}$  instead of  $3 \times 10^{-6}$ . Also see response to Letter Comment 1.

*Comment 15: p. 6-1, §6.1, ¶1 - This section (including a full SLERA) is not consistent with the goals of this document which is to "... determine the presence of media contamination, to identify possible contaminant sources, and to identify potential contaminant migration pathways, potential contaminant receptors, and associated exposure pathways." See General Comments and the Specific Comment on Section 1.1.*

**Response:** Please see the Navy's response to Specific Comment 2. In addition, Navy will ensure that the ERA steps are clearly identified in the report and that there are separate conclusions for Tier 1 and Step 3a. To do this, Section 6.3.7 Summary of Tier 1 Screening Level Ecological Risk Assessment will be added to the report. This section will present a summary of the screening level ERA and provide a recommendation for proceeding to Step 3a.

*Comment 16: p. 6-1, §6.1, ¶2 - The risk analysis in the Data Gaps Report should include Steps 1 & 2. Please revise the document to eliminate the analyses proceeding beyond Step 2.*

**Response:** Please see the Navy's response to Specific Comment 2.

*Comment 17: p. 6-3, §6.2.3, ¶1 - In the last sentence, the text states that the surface soil depth interval evaluated was 0 to 2 feet below ground surface (bgs). However, on page 2-3, the text indicates that at the transformer vaults, surface soil samples were collected at 0 to 1 foot. Please correct. The SAP requires that surface soil samples be collected from the 0 to 1 foot depth.*

**Response:** All of the surface soil samples at TV2 and TV3 were collected from 0-1 foot. However, a few samples collected from the EBP were collected from 0-0.5 feet, 1-2 feet, or 0-2 feet because the bedrock was shallow in those areas (see Table 2-1 in the data Gaps report. Because ecological receptors could be exposed to chemicals in the top 2 feet, all of these samples were included in surface soil data set for the ERA. This will be clarified in the Section 6.3.2 of the ERA.

*Comment 18: p. 6-6, §6.3.2, ¶2 - Regarding the third to last sentence, please correct the typo to read: "... from 0 to 1 foot bgs...."*

*Regarding the second to last sentence, please clarify how the samples were combined.*

**Response:** The typo will be corrected. The referenced sentence will be changed to: "Therefore, the soil samples from these depths were included in the surface soil data set for determining the exposure concentrations."

*Comment 19: p. 6-7, §6.3.2, ¶2 - In the text following the formula, please correct the reference to Table 6-5. Table 6-5 does not contain the food-chain model exposure factors, it appears these values are provided in Appendix I, Table I.1.*

**Response:** Table 6-5 will be changed to Table I.1 in Appendix I.

*Comment 20: p. 6-10, §6.4 - Please remove the discussion of COPC refinement. The final step for this Data Gaps Report should be Step 2.*

**Response:** Please see the Navy's response to Specific Comment 2.

*Comment 21: p. 7-7, §7.5, ¶12 - Please revise this paragraph to reflect the results of the SLERA.*

**Response:** Please see the Navy's response to Specific Comment 2. However, the conclusions may change with the addition of Samples TF1-EV2-E and TF1-EV3-N. Please see the Navy's response to Specific Comment 35.

*Comment 22: p. 7-8, §7.6, ¶12 - The discussion in this paragraph should acknowledge that tanks at Tank Farm 2 were located southeast of the ethyl blending plant in an upgradient location and releases from these tanks are likely responsible for the elevated metals concentrations owing to the development of reducing conditions from petroleum releases there. A pump house is located southeast of the ethyl blending plant but is not likely a significant contributor to the metals concentrations found in the groundwater at wells MW-1000 and MW-1001.*

**Response:** The Tank Farm 2 (TF2) investigation around the USTs has not yet occurred. Groundwater contours show groundwater beneath TF2 flowing in a westerly direction. This direction is not towards TF1, except (possibly) in some localized areas. It's premature to say that groundwater at TF2 is likely responsible for elevated metals concentrations at TF1.

*Comment 23: p. 7-8, §7.6, ¶13 - The conclusion that there is no risk at the two transformer vault sites is premature. The magnitude and extent of the PCB contamination at both vaults has not been adequately defined. The most recent data suggest a potential upgradient PCB source at vault 3. The 2010 sampling data, which was not considered for the risk screenings conducted, suggests a potential hot spot proximate to the transformer at vault 2 and potential groundwater impacts based on protection of groundwater SSL exceedances. The sample locations in the SAP were relocated during the field effort and do not reflect the concentrations of PCBs proximate to the transformers. Consequently, further investigation will be required to better characterize risk and to define the extent of contamination before proceeding to a feasibility study.*

**Response:** Navy collected an additional 12 samples to augment the two 2010 samples. The analytical results of this sample effort do not indicate that there is significant PCB soil contamination at TV2 and TV3. At TV2, three samples were collocated with the exterior transformer units and analytical results do not suggest the presence of any historic spills. The 2010 sample that contained 24ppm of aroclor 1260 suggests that this was an isolated occurrence. Sample SB1022, which was collected adjacent to the 2010 sample did not contain detectable concentrations of PCBs, further reinforcing this assumption. At TV3, PCB concentrations are not inconsistent with an industrial setting. Although sample SB1026 contained higher PCB concentrations than detected in the 2010 sample collected adjacent to the exterior transformer unit, samples SB1027 and SB1028, located in proximity to SB1026, contained lower PCB concentrations. This suggests that sample SB1026 is an isolated occurrence, consistent with an industrial setting.

*Comment 24: p. 7-8, §7.6, ¶14 - Regarding the conclusion for the ethyl blending plant area, a feasibility study will require additional groundwater data before the feasibility study can be completed. Please include that in the conclusions.*

**Response:** A release to groundwater has not been identified. The HI for residential exposures to groundwater did exceed 1, however cobalt and manganese were the major contributors to this HI and is attributed solely to the one upgradient groundwater monitoring well. Therefore, additional groundwater monitoring is not warranted.

*Comment 25: Table 2-2 - The locations of the samples at transformer vault 2 based on the northings and eastings are not consistent with the locations presented in Figure 2-2. Table 2-2 data suggests 1021 and 1025 are co-located. Please review all locations and correct.*

*Please also include the northing and easting and ground elevation for the transformers at vaults 2 and 3 as well as the 2010 sample locations.*

**Response:** A review of the coordinates for SB-1021 and SB-1025 confirmed that the error in Table 2-2 and they have been corrected. The remaining transformer vault coordinates and ethyl blending plant coordinates were checked for accuracy and no further revisions to Table 2-2 are necessary.

The coordinates of the transformers at vaults 2 and 3 and the 2010 sample locations are provided in an attachment to this document.

*Comment 26: Table 4-3 - No sample result has been reported for the previous sample location that was to be resampled during the field effort according to the SAP.*

**Response:** A new table will be created that presents the 2010 sample analytical data.

*Comment 27: Table 4-5 - No sample result has been reported for the previous sample location that was to be resampled during the field effort according to the SAP.*

**Response:** A new table will be created that presents the 2010 sample analytical data.

*Comment 28: Table 5-23 - This table indicates that the Navy used an exposure point concentration of only 0.26 milligrams neglecting the previous PCB detection of 24 mg/kg during the 2010 sampling event. Furthermore, because the data collected are not representative of the soil in the vicinity of the transformer, the magnitude and extent of contamination has not been defined and the screening level risk assessment is therefore inadequate to dismiss the PCB risk at transformer vault 2.*

**Response:** See response to Comment 13 and Letter Comment 1.

*Comment 29: Table 5-25 - This table indicates that the Navy used an exposure point concentration of only 2.5 mg/kg, although PCB was detected at transformer vault 3 at 4.3 mg/kg during the 2012 sampling in a sample relocated to an upgradient location. Because only six samples were evaluated, the exposure point concentration calculated is unreliable. The maximum value would be a more appropriate exposure point value. However, because the data collected is not representative of the soil in the vicinity of the transformer, the screening level risk assessment cannot dismiss the PCB risk at transformer vault 3.*

**Response:** See response to Comment 14 and Letter Comment 1.

*Comment 30: Figure 2-2 - The locations of samples SB1020, SB1021, and SB1025 are not consistent with the locations and intent of the sampling plan and are not acceptable representative samples for investigating transformer vault 2. The inclusion of these sample results in an inappropriate calculation of the exposure point concentration. Further investigation to define the magnitude and extent of PCB impacts and associated is required.*

*The sample identifiers in this figure differ from the identifiers used in Figure 2-3. Please correct.*

**Response:** Please see response to Letter Comment 1 regarding the placement of samples SS/SB1020, 1021, and 1025. Navy disagrees that these samples are not representative for the investigation of transformer vault 2. The previous dataset only consisted on one sample. Navy collected samples along each side of the vault and collected additional samples downgradient of the exterior transformer units. A review of Figure 2-2 and the figure from the sampling plan show that the transformer location should have been depicted along the north wall of the vault, as confirmed in the field and in site photographs.

The sample identifiers were edited for consistency with Figure 2-3.

*Comment 31: Figure 2-3 - The locations of samples SS/SB1026, SS/SB1027, and SS/SB1031 are not consistent with the locations required by the sampling plan and are not adequate to characterize PCB impacts at*

*transformer vault 3. Further investigation to define the magnitude and extent of PCB impacts and associated is required.*

*Please identify the structure located east of the vault and its historical use.*

**Response:** Please see response to Letter Comment 1. Navy disagrees that these samples are not representative for the investigation of transformer vault 3. The locations of SS/SB1027 and SS/SB1031 were not adjusted in the field so it is unclear why these locations are not consistent with the sampling plan. It should be noted that the sample plan figure was schematic and therefore the field placed sample locations will differ slightly. Sample SS/SB1026 was adjusted to avoid an underground electric line.

The structure located to the east of transformer vault 3 is a junction box associated with Tank 13.

*Comment 32: Figure 3-1 - It appears that groundwater at well GZ-101R may be unrelated to groundwater passing beneath the ethyl blending plant based on the relative groundwater elevations.*

**Response:** GZ-101R is not directly downgradient from the ethyl blending plant. The groundwater contours on Figure 3-1 will be adjusted so that the 60 ft groundwater contour is shown to bend more to the north to bring it closer to GZ-101R. The text will be revised to indicate that this well is down/cross-gradient of the ethyl blending plant.

*Comment 33: Appendix A-1 - All of the soil sample log sheets provided list the wrong analytes. PCBs rather than SVOCs/PAHs should be listed. Please correct.*

**Response:** The analytes on soil sample log sheets will be corrected to state PCBs rather than SVOCs/PAHs.

*Comment 34: Appendix H - Tables 2 and 3: The risk screening does not include the original sample results that prompted the need for the supplemental sampling at the two transformer vault sites. Samples TF1-EV2-E and TF1-EV3-N had PCB concentrations that should have been considered in the risk screening, and in the case of TF1-EV2-E, may have changed the outcome of the risk screening if included. Since the magnitude and extent of PCB impacts at the transformer vaults has not been characterized, EPA does not accept the risk screening conclusions.*

**Response:** Please see response to Letter Comment 1, and Specific Comments 12 and 13.

*Comment 35: Appendix I - The risk screening does not include the original sample results that prompted the need for the supplemental sampling at the two transformer vault sites. Samples TF1-EV2-E and TF1-EV3-N had PCB concentrations that should have been considered in the risk screening, and in the case of TF1-EV2-E, would change the outcome of the risk screening if included. Consequently, EPA does not accept the risk screening conclusions.*

**Response:** Samples TF1-EV2-E and TF1-EV3-N will be included in the ERA.

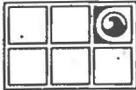
GPS Coordinates - NAD 1983 Rhode Island State Plane Feet  
Tank Farm 1, NAVSTA Newport

Transformer Vault 2

	Northing	Easting	Elevation (ft mean sea level)
West transformer	184307.369	388595.537	81.5
East transformer	184308.821	388600.515	82
TF1-EV2-E	184306.058	388611.354	

Transformer Vault 3

Transformer	184484.125	388105.063	41.5
TF1-EV3-N	184487.315	388107.302	



**GROUNDWATER TECHNOLOGY**

Project: DFSP - MELVILLE TERMINAL  
 Location: Tank Farm One, Portsmouth, RI  
 Project No.: 830011072 Date: 12/8/92  
 T.O.C. Elev.: - Well Depth: 22.70'  
 Explor. Depth: 22.70' Hole Dia.: 8"  
 Casing - Dia.: 4" Length: 7.7' Type: PVC  
 Screen - Dia.: 4" Length: 15.0' Slot Size: 0.020"  
 Drilling Co.: Groundwater Tech., Norwood Driller: J. Bertrand Logged by: N. Frasca  
 Drilling Method: Hollow-stem Auger/Air Rotary Sampling Method: Grab/Split-spoon  
 Notes: R - Refusal

Key:  Concrete  Bentonite  Grout  Native Backfill  Sand/Gravel Pack  Well Screen  Water Table

Depth (feet)	Well Construction	Sample No.	% Rec.	Blows/Density	FID Rdg. (ppm)	Depth (feet)	Soils/Lithology
0	Road Box					0	ASPHALT SURFACE
1	Well casing and screen	S-1 (Grab)			BDL	1	Black, dry, medium to fine SAND, some coarse gravel, little fine gravel, trace silt.
2						2	
3	Well casing and screen	SS-2	25	15,16, 36,R	BDL	3	Weathered BEDROCK. Black, dry, medium to fine SAND and coarse to fine gravel, trace silt.
4						4	
5	Well casing and screen					5	No water table detected
6						6	
7						7	
8						8	
9						9	
10						10	
11						11	
12						12	
13						13	
14						14	
15					15		
16					16		
17					17		
18					18		
19					19		
20					20		
21					21		
22					22		
23					23	Bottom of exploration at 22.7'	
24					24		
25					25		

**NAVY RESPONSES TO  
RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (RIDEM)  
COMMENTS DATED MAY 13, 2013  
ON THE DRAFT DATA GAPS ASSESSMENT REPORT (MARCH 2013)  
FOR TANK FARM 1, SITE 7 CATEGORY 1 AOCs  
NAVAL STATION NEWPORT  
NEWPORT, RHODE ISLAND**

Navy responses to Rhode Island Department of Environmental Management (RIDEM) comments dated May 13, 2013 on the Navy's Draft Data Gaps Assessment for Category 1 AOCs at Tank Farm 1, Site 7 are presented below. The RIDEM comments are presented first (in italics) followed by the Navy's responses.

**Specific Comments:**

***Comment 1: p. E-2, Executive Summary; 5<sup>th</sup> paragraph:*** *This paragraph states that "vapor intrusion is not considered likely, because only two VOCs were detected in groundwater at levels exceeding USEPA criteria." Table 5-8 of the DGA, however, indicates that only chloroform exceeds vapor intrusion screening levels (VISLs). Please correct this sentence to reflect one exceedance; additionally, please modify this sentence to relay other information that would lead to the conclusion that vapor intrusion is not likely to occur, such as the magnitude of exceedance, presence of exceedance only in the upgradient well, lack of a current building, etc.*

**Response:** The paragraph will be changed to: *Vapor intrusion is not considered likely, because only one VOC (chloroform) was detected in groundwater at levels exceeding USEPA vapor intrusion criteria. In addition, chloroform was only detected in one out of four groundwater samples and the detected concentration was just marginally above the vapor intrusion screening criteria.*

***Comment 2: p. E-2, Executive Summary; 6<sup>th</sup> paragraph:*** *Please also include a brief discussion of ecological risk in addition to human health risk in the executive summary.*

**Response:** A brief discussion of the ecological risk assessment will be added to the executive summary..

***Comment 3: p. 1-3, Section 1.3.2, Previous Investigations:*** *Please include a more robust discussion of previous investigations conducted at the Ethyl Blending Plant (EBP) and Transformer Vaults 2 and 3 (TV2 & TV3) in this DGA. For example, please discuss if analytical results detected TPH concentrations above RIDEM's residential criteria at the EBP. What concentrations were detected and where did they occur? Please include figures in the appendix showing the previous test pit locations and soil sample results.*

*For TV2, was the location of the 24,000 µg/kg concentration of PCBs addressed? If not, the data from the sampling event in 2010 needs to be included in the risk assessments in this DGA. Please update the DGA to include all existing data for the two transformer AOCs. Also, please indicate if EPA's TSCA program was sent the PCB sampling results from 2010.*

**Response:** The Navy will add some additional information regarding the EBP, TV2 and TV3.

The data from the 2010 sampling event will be added to the report, including the risk assessments, as requested.

It is not believed that TSCA was notified. It is not believed that there was a TSCA notification requirement.

***Comment 4: p. 4-2, Section 4.3, Summary of Analytical Results; 3<sup>rd</sup> paragraph:*** *Please revise the reference to the Remediation Regulations. These regulations were last revised in November 2011.*

**Response:** The reference will be updated.

**Comment 5:** *p. 5-1, Section 5.1.1, Screening Levels for Soil; 4<sup>th</sup> sentence: "If a chemical was detected in soil at concentrations exceeding an SSL but was not detected in groundwater, then soil is not considered to be impacting groundwater for that chemical."*

*If groundwater data is to be used to evaluate soil leaching potential, it should be done on a point by point basis. To rule out an SSL exceedance, the groundwater sample showing a non-detect of the constituent must be collected at the same location as the SSL exceedance. Therefore, unless groundwater data exists for the same boring/well as the SSL exceedance, please retain all COPCs selected based on SSL exceedances and update this DGA accordingly.*

**Response:** Since all the groundwater samples were collected either upgradient or downgradient of the site the referenced sentence will be deleted from the text. Chemicals detected in on-site soil samples at concentrations exceeding the SSLs will be retained as COPCs. Although it will be noted in the text if these chemicals were detected in the downgradient groundwater samples.

**Comment 6:** *p. 5-2, Section 5.1.1, Screening Levels for Groundwater: Please provide the basis for use of a 0.001 attenuation factor.*

**Response:** The attenuation factor of 0.001 is the USEPA standard default value used in the calculation of the screening levels for vapor intrusion from groundwater. Please see the USEPA Vapor Intrusion Screening Level Calculator at <http://www.epa.gov/oswer/vaporintrusion/guidance.html#Item6>.

**Comment 7:** *p. 5-3, Section 5.1.1, Background Evaluation: The second sentence indicates that no background data for groundwater are available; however, an upgradient well (MW-1001) was installed to assess upgradient conditions at the Site. Please include a discussion of results for this well/soil boring relative to those of downgradient wells and soils.*

**Response:** The text and tables in Section 5 will be revised to evaluate the soil and groundwater samples collected at MW-1001 as upgradient/background samples.

**Comment 8:** *p. 5-4, Section 5.1.2. Decision Rules for Establishing COPCs: Please include an exceedance of vapor intrusion criteria as a criterion for selecting COPCs in groundwater.*

**Response:** The second bulleted item in Section 5.1.2 will be changed to "A chemical detected in groundwater was selected as a COPC for groundwater if the maximum detected concentration in any on-site monitoring well exceeded screening levels for tap water or vapor intrusion."

**Comment 9:** *p. 5-6, Section 5.1.3.3, Ethyl Blending Plant – Groundwater; 2<sup>nd</sup> paragraph after bullets: The text notes that chloroform was detected above the screening criteria. Please note in the text in this section that this compound was detected only in the upgradient well.*

**Response:** See response to comment 7.

**Comment 10:** *p. 5-10, Section 5.3, Page 5-10, 2<sup>nd</sup> to last paragraph: The text indicates that the 95<sup>th</sup> percent UCL on the arithmetic mean was used as the exposure point concentration. Please discuss whether a hot spot analysis was conducted.*

**Response:** No hot spots were identified. The estimated UCLs are similar in magnitude to the maximum detected concentrations.

**Comment 11:** p. 5-10, Section 5.3.1, Ethyl Blending Plant: Please provide cumulative hazard and cancer risk for the residential and industrial scenarios. Cumulative risk should be estimated on a receptor basis and take into consideration exposure across all relevant media and pathways.

**Response:** Cumulative hazard indices and cancers will be provided for residential and industrial exposures.

**Comment 12:** p. 6-6, Section 6.3.2, Exposure Characterization; last sentence: Please add in additional discussion of why bioaccumulation of VOCs was not evaluated (such as low potential for bioaccumulation, limited data on biouptake, etc.).

**Response:** The following text will be added after sentence ending with "...USEPA Region 1" at the top of page 6-7 to explain why bioaccumulation of VOCs was not evaluated: "This is because VOCs do not typically bioaccumulate in plant or animal tissue."

**Comment 13:** p. 6-10, Section 6.3.6, Risks to Mammals and Birds: Please identify in this section which metals were selected as COPCs.

**Response:** The metals (and PAHs) that were selected as COPCs are listed on Tables 6-6 through 6-8 in the report. The Navy does not believe that it is useful to repeat the list of COPCs in the text because it would be repetitive.

**Comment 14:** p. 6-10, Section 6.4, Tier 2, Step 3A: COPC Refinement; whole section: Please provide a summary table in this section, such as the summary table used for the Coddington Cove Rubble Fill Area SASE, to provide transparency to the COPC selection/elimination process.

**Response:** The risk matrix approach that was used at Coddington Cove was specific to that site only. The Navy does not believe that the summary tables that were prepared for Coddington Cove need to be prepared for Tank Farm 1 because fewer chemicals were carried through the Step 3a evaluation so the text is easier to follow without the tables.

**Comment 15:** p. 6-12, Section 6.4.1, Terrestrial Plants, EBP; 1<sup>st</sup> paragraph, 4<sup>th</sup> sentence:

"...VOCs are typically not very toxic to invertebrates..."

*Please clarify if this statement is referring to plants, which is the subject of this section. Additionally, a discussion of background concentrations of metals with respect to benchmark concentrations may be useful in justifying exclusion of a metal as a COPC. (This comment also applies to sections related to other ecological receptors.)*

**Response:** The word "invertebrates" will be changed to "plants" in the referenced section.

A discussion of the background concentrations of the metals is presented in the text but a comparison of the background concentration to the benchmark concentrations will also be included, in instances where it may provide additional justification for eliminating a metal as a COPC.

**Comment 16:** p. 6-16, Section 6.4.2, Mammals and Birds: The second sentence of this section states that the average concentration in surface soil was used to estimate exposure and risk to mammals and birds. Typically, either the 95% UCL or the maximum is used in this assessment. Please modify this section accordingly. Because soil data across multiple intervals (0-1 feet bgs, 1-2 feet bgs, etc.) were combined, please discuss whether there were differences in contaminant concentrations among the different depths, and whether any hot spots were identified.

**Response:** The maximum concentration was used in the screening level food chain model to generate the EEQs in Tables 6-6, 6-7, and 6-8. The average concentration was used in the Step 3a refinement step to generate the EEQs in Tables 6-9, 6-10, and 6-11. The Navy will ensure that there is a clear distinction between Tier 1 and Step 3a and that there are separate conclusions for each. To do this, Section 6.3.7 Summary of Tier 1 Screening Level Ecological Risk Assessment will be added to the report. This section will present a summary of the screening level ERA and provide a recommendation for proceeding to Step 3a. Also, the majority of the samples from the Ethyl Blending Plant were collected from 0-1 feet, with only a few collected from 0-0.5 feet, 1-2 feet, and 0-2 feet (see Table 4-1). A review of the analytical data on Table 4-1 indicates that the data were pretty consistent across the depths, except that the concentrations of PAHs appeared to be lower in the 1 to 2 foot interval. This is already mentioned in Section 4.3.1 of the report.

**Comment 17:** p. 6-17, Section 6.4.2, Mammals and Birds, EBP: Please provide references for the statements that iron is not considered to be bioavailable and that a BAF of one is conservative.

**Response:** A BAF for iron is available in Table C.1 from the Development and Validation of Bioaccumulation Models for Earthworms (Sample et al., 1998). The median value is 0.36 so this BAF will be used to recalculate risks to insectivorous mammals and birds.

**Comment 18:** p. 6-17, Section 6.4.2, Mammals and Birds, Transformer Vaults: Both the conservative screening and the COPC refinement process indicated PCB concentrations in the TV3 area may pose an unacceptable ecological risk. Please retain PCBs as a COPC at TV3, or provide additional justification for its exclusion.

**Response:** The Navy does not agree that the EEQs from the Step 3a food chain model indicates a potential risk to mammals or birds because the LOAEL EEQs were less than 1.0 and because of the small size of the site, birds and mammals will not obtain all of their food from the site. However, this conclusion could change when the results of the 2010 surface soil data are added to the data set.

**Comment 19:** p. 7-1, Section 7.1, Objectives; 2<sup>nd</sup> paragraph: Please indicate in this paragraph if concentrations of TPH at the EBP exceeded RIDEM's residential criteria (500 mg/kg).

**Response:** This information will be added.

**Comment 20:** p. 7-1, Section 7.1, Objectives; 2<sup>nd</sup> paragraph: Please indicate if the location sampled at TV2 with an Aroclor-1260 concentration of 24,000 µg/kg was previously addressed. If not, the data from the sampling event in 2010 needs to be included in the risk assessments in this DGA. Please update the DGA to include all existing data for the two transformer AOCs.

**Response:** The 2010 results were not previously addressed. The 2010 soil results will be added to the DGA report, including the risk assessments.

**Comment 21:** p. 7-2, Section 7.3, Nature and Extent of Contamination; 2<sup>nd</sup> paragraph: Please correct the 2<sup>nd</sup> sentence. The PALs for soil consisted of the lowest of the USEPA RSLs (2012) only. Also, please include the VISLs as PALs for groundwater.

**Response:** The sentences will be corrected.

**Comment 22:** p. 7-5, Section 7.4, HHRSE; 1<sup>st</sup> paragraph:

*“Soil and groundwater analytical results from the August 2012 environmental sampling event were used.”*

*Please see comment 20.*

**Response:** Please see response to comment 20. The 2010 results were not previously addressed. The 2010 soil results will be added to the DGA report, including the risk assessments.

**Comment 23:** *p. 7-6/7-7, Section 7.4, Human Health Risk Assessment Screening Evaluation: Please discuss cumulative hazard and risk, in addition to risks from individual pathways/media. (See comment 11 above).*

**Response:** Please see response to comment 11. Cumulative hazard indices and cancers will be provided for residential and industrial exposures.

**Comment 24:** *p. 7-7, Section 7.5, Ecological Risk Screening Evaluation: Please see comment 18 regarding PCBs in Transformer Vault 3.*

**Response:** Please see the Navy's response to Comment 18.

**Comment 25:** *Figures 4-5 and 4-6, Aroclor 1260 in Surface Soil at TV2 and TV3: Please include previous sample locations and measured concentrations from 2010 on these figures. Also please include groundwater contours.*

**Response:** The 2010 data will be added to these figures. Groundwater contours are not appropriate on these figures because they depict surface soil analytical results.