

N62661.AR.002516
NS NEWPORT
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U S NAVY RESPONSE TO U S EPA REGION 1 COMMENTS TO SAMPLING AND ANALYSIS
PLAN APRIL 2011 ETHYL BLENDING PLANT TANK FARM 1 SITE 7 FOR DATA GAPS
ASSESSMENT NS NEWPORT RI
6/3/2011
U S NAVY

**NAVY RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
COMMENTS DATED JUNE 3 2011
SAMPLING AND ANALYSIS PLAN FOR THE DATA GAPS ASSESSMENT
ETHYL BLENDING PLANT, SITE 07, TANK FARM 1 (APRIL 2011)**

General Comments:

The Navy has selected only the ethyl blending plant as a Category 1 area at Tank Farm 1. As has been the practice at other tank farms, the Navy typically stored and maintained batteries at its local electrical substations/control buildings. Lead is a CERCLA contaminant and could be present at a electrical substations/control building. Please clarify if such a building exists at Tank Farm 1 and if it does, include it in this investigation. EPA notes that an electrical substation exists immediately south of the southern boundary of Tank Farm 1. If this building serviced Tank Farm 1, please include it within the scope of the Tank Farm 1 investigation.

Groundwater at this site and particularly at the points of interest for this SAP is within the bedrock. Groundwater is likely to migrate via bedrock fractures and therefore, it is not apparent that the existing or proposed groundwater monitoring wells would capture contamination migrating in the groundwater. Unless the monitoring wells have been placed based on an investigation of groundwater fractures it appears that the proposed groundwater monitoring locations are not reliable locations for capturing contamination that might be migrating with groundwater.

Please supplement this SAP with information confirming the groundwater contours/groundwater flow direction at Tank Farm 1 and specifically in the vicinity of the ethyl blending plant.

Local groundwater flow directions are likely influenced by the continuous operation of the tank ring drains. Tank 17 is located less than 200 feet north of the ethyl blending plant and may affect the groundwater flow direction near the plant. This should be considered and possibly evaluated when selecting groundwater monitoring locations for this SAP.

Response:

- A review of the infrastructure present at Tank Farm 1 has not found evidence of the presence of an electric substation within the Tank Farm 1 boundary. There is an active electric substation present to the south of Tank Farm 1. NAVSTA Newport has indicated that this active facility does not service the Tank Farm 1 area.
- The comment suggests that groundwater at Tank Farm 1 is likely to be present in bedrock. It is acknowledged that this possibility is a likely scenario. Regardless, Tetra Tech will plan for the contingency to install bedrock groundwater monitoring wells at the proposed sample locations. Because this is the first effort to investigate groundwater at the Ethyl Blending Plant, the sampling proposal to investigate groundwater is appropriate for an initial investigation. Soil data in conjunction with groundwater data will be evaluated and a determination will be made if additional groundwater investigation is necessary.
- A groundwater contour map included in the Tetra Tech EC 2009 groundwater monitoring round will be included with this response to comments document. Groundwater contours are likely to include any influences on groundwater flow from the ring drains.

Specific Comments:

Comment 1: p. 9, Worksheet 2: Please add the scoping session from February 3, 2011 to the list in paragraph 4 (see page 20).

Response: The suggested change will be made to the SAP.

Comment 2: p. 18, Worksheet 9: Regarding the comments for the November 17, 2010 scoping session, please determine if utilities are active because if they are not, sampling at the transformers should be

included in this sampling plan. EPA notes that the Site has reportedly been inactive since the termination of DESC operations in the early 1990s so it is not clear why the utilities would be active or why this site should be considered active.

Response: Recent site activities conducted by Shaw have determined that there are several active utility lines at Tank Farm 1. These include several underground and pole-mounted electric lines. Transformers will not be included in the sampling plan due to the active status of utilities at Tank Farm 1. A report generated by Shaw documenting their PCB soil sampling in the vicinity of Tank Farm 1 transformers will be included with this response to comments document.

Comment 3: *p. 19, Worksheet 9: The projected date of sampling should be July 2011.*

Response: The suggested change will be made to the SAP.

Comment 4: *p. 20, Worksheet 9: The projected date of sampling should be July 2011.*

Response: The suggested change will be made to the SAP.

Comment 5: *p. 22, §10.3: Please supplement the second paragraph to indicate that the groundwater elevation in the wells surrounding the ethyl blending plant is beneath the bedrock surface. This is an important consideration in selecting or placing monitoring wells for the ethyl blending plant.*

Response: Monitoring well GT-124 is located downgradient of the ethyl blending plant. The boring log for GT-124 shows the placement of the screen in bedrock. Monitoring wells located in the vicinity of Tank 17, located downgradient of the ethyl blending plant are screened in bedrock. No monitoring wells are located in the immediate vicinity of the ethyl blending plant therefore the location of the groundwater table is unknown. Section 10.3 will be revised to indicate that the groundwater aquifer is located in bedrock in monitoring wells located downgradient of the ethyl blending plant.

Comment 6: *p. 28, §11.2.1: For ease of reference, please supplement the text in the third bullet to indicate that NGVD 1929 will be used for vertical measurements. Please confirm that the horizontal and vertical datums proposed are consistent with those previously used at the site.*

Response: The suggested change will be made by indicating that NGVD 1929 will be the vertical control datum. The horizontal and vertical datums used by Shaw Environmental are consistent with those used by Tetra Tech at this site.

Comment 7: *p. 29, §11.2.3: Regarding the third bullet, because EPA considers the top twelve inches surface soil, please clarify that shallow subsurface soil is accessible to some terrestrial receptors.*

Response: The suggested change will be made to indicate that the 0 to 1 foot interval is accessible to terrestrial receptors.

Comment 8: *p. 30, §11.2.3: The first paragraph states that non-detected results greater than the PSLs will be treated as values less than the PSL for decision-making. Because the purpose of the sampling is to screen the site, the screening criteria should be selected to conservatively capture potential contamination rather than to eliminate potential contamination of concern. Therefore, this sampling and analysis program should be designed accordingly and non-detected results greater than the PSLs should preferably be treated as exceedances or as data gaps. Please edit the document accordingly.*

Response: In situations where the LOD is greater than the PAL and the analyte is not detected, it is typical to treat the result as a non-detect, and identify it as an uncertainty in the data set. Most uses of the data involve calculation of half the U-value and using that value in statistical evaluations of the data, but these data points are still counted as non-detects. This is common practice within CERCLA-based programs; however, it will be clarified in the cited paragraph.

Comment 9: p. 31, §11.4.1: *There are no background data for VOCs and EPA does not accept the use of literature background values for PAHs to screen out contaminants at this stage. Please rewrite this section.*

Response: Section 11.4.1 will be revised to remove the reference to the background study. Analytical concentrations will be compared to the associated groundwater, and soil PSLs.

Comment 10: p. 31, §11.4.2: *No site-specific background data are available for PAHs for the site and it is not appropriate to eliminate contaminants based on literature background values. Decisions for these contaminants in the Category 1 AOCs should be made without consideration to background and if background concentrations appear to be potentially relevant then further discussions and actions including a background study would be appropriate.*

Response: Section 11.4.2 will be deleted from the Ethyl Blending Plant SAP. As suggested in the comment, background concentrations may be potentially relevant to future discussions regarding further action at the Category 1 AOC.

Comment 11: p. 34, Worksheet 13: *Please delete the second reference in this worksheet by Bradley, Magee, and Allen because literature values are not appropriate for screening contaminants.*

Response: The reference to the Bradely et al study will be deleted.

Comment 12: p. 46, Worksheet 15b: *Please clarify why DBCP will not be analyzed by Method SW 846 8011 (similar to EDB). Since EDB is going to be analyzed by Method 8011, it makes sense to also analyze for DBCP. Method 8011 will also have a significantly lower reporting limit for DBCP than 8260B.*

Response: Agreed. Worksheet 15b and other appropriate worksheets will be revised to specify the analysis of both EDB and DBCP by method 8011 for the water samples.

Comment 13: p. 50, Worksheet 15b: *The analytical Methods listed refer to 7471B, but the reference should be 7470A for groundwater.*

Response: The method will be corrected to 7470A in Worksheet 15b.

Comment 1: p. 50, Worksheet #15b: *The PSLs for arsenic and chromium are almost 50 times lower than the other metals, and the laboratory cannot meet the project goals for either metal. Please clarify why the MCLs are not being used for arsenic and chromium.*

Response: The PSLs for this project are the lower of the MCLs and the EPA tapwater RSLs. The tapwater RSLs were chosen because those criteria would be used to screen the data if a risk assessment were performed. Screening against the RSLs during this project will allow the Project Team to determine whether a risk assessment is needed. In addition, including the RSLs in the determination of the PSLs in Worksheet 15 ensures that methods will be chosen to achieve analytical sensitivity that is sufficiently low for the data to be used if a risk assessment is performed. Although the LOQs and LODs for arsenic and chromium are higher than the RSLs, screening against the RSLs will be more useful than just screening against the MCLs because results may be detected that are lower than the MCLs but higher than the RSL.

Comment 14: p. 53, Worksheet 17: *The second paragraph states that existing wells GZ-101 and GT-124 will be sampled for this SAP. Please note that GT-124 has consistently been dry when sampled and GZ-101 has occasionally been dry (both were dry when Shaw sampled in 2010). Therefore, please include a contingency plan to get additional groundwater data should one or both of these wells be dry.*

Response: It will be assumed that existing monitoring wells GZ-101 and GT-124 will need to be replaced. Text will be added to the Worksheet #17 stating that existing well will be replaced if it is determined that a groundwater sample is unattainable.

Comment 15: p. 54, Worksheet 17: *The second paragraph discusses the collection of soil samples stating that the second interval sampled will be directly above the water table. Please clarify the intent if the water*

table is beneath the bedrock surface, as it appears it is near the ethyl blending plant.

Response: The location of the water table in the vicinity of the Ethyl Blending Plant is unknown. Drilling activities will document the location of the groundwater table. If groundwater is determined to exist in bedrock, the second soil sample interval will be collected directly above bedrock.

Comment 16: p. 56, Table 17-1:

a) *Because the site groundwater is in bedrock near the ethyl blending plant, the usefulness of the groundwater monitoring wells identified in this table and in Figures 3 and 5 for capturing contamination migrating from the ethyl blending plant is questionable because fractures will likely determine the groundwater flow direction. Please re-evaluate the plan for collecting relevant groundwater samples.*

Response: Groundwater samples have not historically been collected in the vicinity of the Ethyl Blending Plant. Tetra Tech proposes to install two monitoring wells to begin the characterization of groundwater in this location. This approach is appropriate considering this is an initial groundwater investigation.

b) *Please do not change the name for the two existing groundwater monitoring wells. Presumably the determination of geological conditions for the existing wells will be based on the boring logs prepared when the wells were first installed.*

Response: Tetra Tech uses a sample naming convention to facilitate the incorporation of site data into a database. The AOC identifier "EBP" is used to indicate that these samples were collected from the Ethyl Blending Plant site. The original name of the well is retained in the sample name. The original boring logs for GT-124 will be used to determine geologic conditions. The boring log for GZ-101 could not be located in the file review.

Comment 17: p. 57, Worksheet 18:

a) *Two of the four wells listed in this Worksheet are existing, so no soil samples will be collected from them unless the Navy is proposing to install new borings adjacent to these existing wells. Please clarify.*

Response: Soil samples for the existing well locations were added as a contingency in the event these wells would have to be replaced.

b) *The names for the two existing groundwater monitoring wells should not be changed.*

Response: See response to comment 16b.

Comment 18: p. 58, Worksheet 19: *This Worksheet lists SOP CA-391 for water analysis for EDB, but Worksheet 23 and Worksheet 28a list SOP CA-319. Please correct.*

Response: SOP CA-319 is correct. Worksheet 19 will be revised to list CA-319.

Comment 19: p. 59, Worksheet 20:

a) *Please correct the number of soil samples included in this table.*

Response: The number of soil samples includes the contingency that existing monitoring wells will have to be replaced. A footnote will be added to the table to clarify this assumption.

b) *Please clarify Note 4 that calls for shipping one trip blank per cooler. Because VOCs and EDB will be analyzed by separate methods for groundwater samples, clarify whether the Navy intends to provide separate trip blanks for VOC and EDB analysis as implied by this table.*

Response: The footnote will be revised to read “In each cooler containing volatile samples, ship one trip blank per volatile analytical group.” In addition, Worksheet 12 will be revised to add trip blanks for aqueous EDB and DBCP analysis

Comment 20: p. 62, Worksheet 23: Worksheet 19 lists CA-204 for PAH/SVOC analysis for soil and water, but that SOP is not listed in Worksheet 23 or 28c. The later two list CA-226 which is not included in Worksheet 19. Please correct.

Response: CA-204 is incorrect. The laboratory uses SOP CA-226 for 8270D full scan analysis (SVOCs) and SOP CA-213 for 8270D SIM analysis (PAHs). Worksheets 19, 24, and 28 will be revised to list the correct SOPs for PAHs and SVOCs.

Comment 21: p. 73: Rinsate Blanks (second bullet): Is there a "1" missing at the end of the example (i.e., TF1-W-RB01-0811)?

Response: The text will be revised to add a “1” to the end of the example.

Comment 22: p. 83, Worksheet #28f: The matrix spike recovery is listed as 80-120% under the Method Acceptance Limits, but it is 75-125% under the Measurement Performance Criteria (MPC). Please correct.

Response: The MPC will be revised to be the same as the Method Acceptance Limits.

Comment 23: p. 88, Worksheet 30:

a) Please delete Method 6010C from this table because it is not being used according to Worksheets 19 and 28f.

Response: Method 6010C will be deleted from Worksheet 30.

b) Please clarify for SVOCs/PAHs that both full scan and SIM will be run.

Response: The analytical method will be revised to “SW-846 8270D/8270D SIM”.

Comment 24: p. 96, Worksheet 36: Please delete Method 6010C from this table for metals because it is not being used according to Worksheets 19 and 28f.

Response: Method 6010C will be deleted from Worksheet 36.

Comment 25: Figure 4:

a) This figure includes an infiltration pathway to overburden groundwater, but near the ethyl blending plant and over much of Tank Farm 1, the groundwater table is beneath the bedrock surface. At a minimum, add bedrock groundwater to this figure and clarify that overburden groundwater may not exist near the ethyl blending plant.

Response: Figure 4 will be edited to reflect that groundwater may be present in either overburden or bedrock.

b) Please correct or clarify the bulleted list of exposure pathways and receptors on the right side of the figure. The exposure identified for the Onsite Construction Worker includes groundwater but this receptor is listed under Soil not Groundwater/Soil.

Response: Figure 4 will be edited so the OnSite Construction Worker appears below the GW SOIL potential exposure pathways.

Comment 26: Figure 5:

a) Please supplement the sampling plan with at least four additional borings immediately adjacent to the four sides of the ethyl blending building.

Response: The sample locations are based on a 15 foot by 15 foot grid system. Seven locations are adjacent to the ethyl blending plant building (SB1010 through SB1012, SB1016, SB1019, SB1021, and SB1022). Locations can be adjusted during a field verification trip.

b) The established grid for sampling proposes very few samples within the limits of the AOCs. This is not acceptable. Most of the samples should be collected within the boundaries of the AOCs, to document the presence or absence of contamination, with some additional samples located around the perimeters to attempt to characterize the extent of contamination. Please revise the sampling plan to better characterize the AOCs.

Response: The photo interpretation of the AOCs associated with the Ethyl Blending Plant reviewed aerial photos from 1951, 1954, 1962, and 1972. This report is included in Appendix A-2 of the SAP. The size and dimensions of AOCs 4, 5, and 18 differed slightly in different years. Therefore, a grid system was incorporated to place sample locations. Figure 5 is based on the 1962 aerial photograph. Navy believes that samples are properly positioned to characterize the AOCs. Figure 5 has been revised to include the AOC polygons from each year and will be included with this response to comments document.

Comment 27: Appendix A-4: This appendix suggests literature-based background concentrations for PAHs in soil for use at Tank Farm 1. The proposed values for PAHs are based on samples collected from urban areas much larger and more densely populated than that at Tank Farm 1. Further, the proposed background values result in exceedance of EPA's acceptable risk range for residential exposure and a cumulative risk for industrial exposure in excess of RIDEM's criterion of 1×10^{-5} excess lifetime cancer risk based on Regional Screening Level concentrations. Screening decisions for these contaminants in the Category 1 AOCs should be made without consideration to background and if background concentrations appear to be potentially relevant then further discussions and actions, including a background study, would be appropriate.

Response: Appendix A-4 will be removed from the SAP. As suggested in the comment, background concentrations may be potentially relevant to future discussions regarding further action at the Category 1 AOC.

Comment 28: Appendix D:

a) Please correct references in the field forms to ensure that they refer to Tank Farm 1.

Response: The field forms in Appendix D will be edited to refer to Tank Farm 1.

b) GRO, ExTPH, and dioxins are not analytes of concern for this SAP. Please correct the forms in this appendix to refer to the correct analytes.

Response: The field forms in Appendix D will be edited to include VOCs, SVOCs/PAHs, and metals in the analysis sections of the groundwater and soil sample log sheets.

c) Please change references from 4°C to 6°C on the forms.

Response: Temperature references in the field log sheets will be changed from 4°C to less than or equal to (\leq) 6°C

Comment 29: Appendix E, p. L-2-2:

a) The discussion in the second full paragraph is ambiguous and needs to more accurately describe the procedure to be followed. For example, the first sentence should refer to each interval to be collected, not each interval to be sampled. The text should clarify that, in addition to the two fixed intervals that will be

sampled, the third sample interval will be selected based on the initial PID screening results and/or visual and olfactory observations. Each jar headspace sample needs to be collected as close as possible to the portion of the sample interval collected for lab analysis. Multiple VOC samples will initially be collected, one from each soil interval collected between the top and bottom intervals and the VOC sample selected for laboratory analysis will be determined after all the soil intervals have been evaluated.

Response: The text in Appendix E, p. L-2-2 will be revised to add detail on the sample collection procedure for VOCs.

b) The second last sentence in the second full paragraph refers to TEL analysis. Should this be deleted?

Response: The reference to TEL will be deleted.

c) Please change the reference in the third full paragraph to 6°C which is the value used throughout the rest of the SAP.

Response: The text will be edited to change 4°C to <=6°C.