UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

JUN 0 6 2011

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Mark E. Davidson
US Navy
BRAC PMO SE
4130 Faber Place Drive - Suite 202
North Charleston, SC 29405

Re: Naval Activity Puerto Rico (NAPR), formerly Naval Station Roosevelt Roads, EPA I.D. Number PRD2170027203

1) SWMU 2 (Langley Drive Disposal Site) – Final Interim Corrective Measures Work Plan, dated May 6, 2011

2) SWMU 71 (Former Quarry Disposal Site) - Final Full I RFI Work Plan, dated May 26, 2011

3) SWMU 80 (Drainage Ditch Near Building 207) – Final Phase I RFI Work Plan, dated May 27, 2011

4) AOC F (MNA Areas) – Site 1738 – Draft MtbE Treatability Study Work Plan, dated February 18, 2011

Dear Mr. Davidson:

This letter is addressed to you as the Navy's designated project coordinator pursuant to the January 29, 2007 RCRA Administrative Order on Consent ("the Consent Order") between the United States Environmental Protection Agency (EPA) and the U.S. Navy (the Navy).

SWMU 2 (Langley Drive Disposal Site) – Final Interim Corrective Measures (ICM) Work Plan

EPA has completed its review of the above document and the Navy's responses to comments transmitted with EPA's letter of March 24, 2011. Both documents were submitted on behalf of the Navy by Baker Environmental's (Mr. Mark Kimes') letter of May 6, 2011. EPA hereby approves the Navy's responses to EPA's comments and the ICM Work Plan, dated May 6, 2011.

In addition, EPA has completed its review of the Navy's responses to comments on the Final Design Package for the ICMs transmitted with EPA's letter of March 24, 2011. Those responses and an updated project schedule were submitted on behalf of the Navy by Right Way Environmental Contractors' (Mr. Pedro Tejada's) letter of May 27, 2011. Mr. Tejada's letter also responds to comments on the ICM made by the U.S. Fish and Wildlife Service in Mr. Edwin Muniz's letter of March 1, 2011 addressed to Mr. Tejada. Based on those responses, EPA hereby approves the Navy's (Right Way Environmental Contractors') responses to EPA's March 24, 2011 comments on the Final Design Package, which required no changes as discussed in the May 27 responses, and the updated project schedule.

Pursuant to the updated project schedule, please commence implementation of the ICM activities by June 26, 2011, and submit the Draft "ICM Delineation Report" by January 12, 2012, as shown in the updated project schedule, or submit a revised schedule within 60 days of your receipt of this letter.

SWMU 71 (Former Quarry Disposal Site) - Final Full I RFI Work Plan

EPA has completed its review of the above document and the Navy's responses to comments transmitted with EPA's letter of March 11, 2011. Both documents were submitted on behalf of the Navy by Baker Environmental's (Mr. Mark Kimes') letter of May 26, 2011. As part of that review, EPA and our consultant, TechLaw Inc., had reviewed a "Working Draft" of the Navy's proposed Responses, which were Emailed to EPA by Ms. Vicki Kaye of Baker Environmental on April 12, 2011. EPA hereby approves the Navy's Responses to EPA's comments and the Full RFI Work Plan, dated May 26, 2011. Please commence implementation of the Full RFI Work Plan by August 15, 2011, pursuant to the schedule given in Figure 5-1 of the Work Plan, or submit within 60 days of your receipt of this letter, a revised schedule for its implementation.

SWMU 80 (Drainage Ditch Near Building 207) – Final Phase I RFI Work Plan

EPA has completed its review of the above document and the Navy's responses to comments transmitted with EPA's letter of March 11, 2011. Both documents were submitted on behalf of the Navy by Baker Environmental's (Mr. Mark Kimes') letter of May 27, 2011. As part of that review, EPA had reviewed a "Working Draft" of the Navy's proposed Responses, which were Emailed to EPA by Ms. Vicki Kaye of Baker Environmental on April 13, 2011. EPA hereby approves the Navy's Responses to EPA's comments and the Full RFI Work Plan, dated May 27, 2011. Please commence implementation of the Phase I RFI Work Plan by August 16, 2011, pursuant to the schedule given in Figure 5-1 of the Work Plan, or submit within 60 days of your receipt of this letter, a revised schedule for its implementation.

AOC F – Site 1738 – Draft MtbE Treatability Study Work Plan and Project Schedule

EPA has completed its review of the above document submitted on behalf of the Navy by Baker Environmental's (Mr. Mark Kimes') letter of February 18, 2011. As part of that review, EPA requested our consultant, TechLaw Inc., to review the work plan. TechLaw's comments are given in the enclosed Technical Review dated May 26, 2011 (Enclosure # 1). Within 60 days of your receipt of this letter, please submit written responses addressing comments in the enclosed Technical Review and any necessary changes to the Work Plan.

In addition, EPA has also reviewed the proposed Project Schedule for AOC F Site 1738 which was submitted on behalf of the Navy by Baker Environmental's (Mr. Mark Kimes') letter of April 19, 2011. The Project Schedule provides for submission of the Final Treatability Work Plan, the field work for additional site characterization, and development of a comprehensive MtBE Investigation Report. Since the Project Schedule shows "Regulator Review and Approval" of the Final Treatability Study Work Plan being completed by October 16, 2011, EPA sees no need to modify the schedule based on our above comments on the Treatability Study. Therefore EPA will approve the Project Schedule, with the additional characterization sampling to commence by November 15, 2011, and the Draft Comprehensive MtBE Investigation and Tratability Study Report scheduled to be submitted by April 25, 2012.

Also, the Puerto Rico Environmental Quality Board (PREQB) in its letter of April 6, 2011 to myself had several comments on the Treatability Study Work Plan. PREQB's comment letter is included as Enclosure # 2. Within 60 days of your receipt of this letter, please also submit written responses addressing PREQB's comments and any necessary changes to the Work Plan.

If you have any questions, please telephone me at (212) 637- 4167.

Sincerely yours,

Timothy R. Gordon
Project Coordinator
Corrective Action and Special Projects Section
RCRA Programs Branch

Enclosures (2)

cc: Ms. Wilmarie Rivera, P.R. Environmental Quality Board, w/encl. #1 only
Ms. Gloria Toro, P.R.Environmental Quality Board, w/encl. #1 only
Mr. Mark Kimes, Baker Environmental, w/encls.
Mr. Pedro Tejada, Right Way Environmental, w/encls.
Ms. Cathy Dare, TechLaw Inc., w/o encls.
Mr. Felix Lopez, USF&WS, w/o encls.

Enclosure #1

TECHNICAL REVIEW OF THE DRAFT MtBE TREATABILITY STUDY WORK PLAN AOC F SITE 1738

NAVAL ACTIVITY PUERTO RICO
EPA ID No. PR2170027203
CEIBA, PUERTO RICO

DATED FEBRUARY 2011

Submitted to:

U.S. Environmental Protection Agency
Region 2
290 Broadway
New York, NY 10007-1866

Submitted by:

TechLaw, Inc.
205 West Wacker Drive
Suite 1622
Chicago, Illinois 60606

EPA Task Order No.	002
Contract No.	EP-W-07-018
TechLaw TOM	Cathy Dare
Telephone No.	315-334-3140
EPA TOPO	Timothy Gordon
Telephone No.	212-637-4167

May 26, 2011

TECHNICAL REVIEW OF THE
DRAFT MtBE TREATABILITY STUDY WORK PLAN
AOC F SITE 1738

NAVAL ACTIVITY PUERTO RICO
EPA ID No. PR2170027203
CEIBA, PUERTO RICO

DATED FEBRUARY 18, 2011

The following comments were generated based on review of the February 18, 2011 *Draft MtBE Treatability Study Work Plan, AOC F, Site 1738 for Naval Activity Puerto Rico (NAPR), EPA ID. PR2170027203, Ceiba, Puerto Rico* (hereinafter referred to as the Work Plan.)

GENERAL COMMENTS

1. Figure 1-3, Site Map, depicts a wetland less than 400 feet northeast of the former gas station area. The Work Plan does not propose any sampling at this wetland as part of the in-situ chemical oxidation (ISCO) treatability study. However, it is unclear whether the ozone/hydrogen peroxide injections may have any impact on this potentially sensitive environment. Revise the Work Plan to provide justification for not including the wetland in the monitoring schedule for the treatability study, or propose additional sampling at the wetland to evaluate potential changes in its geochemistry as a result of the treatability study.

2. Baseline groundwater sampling prior to the injections, groundwater sampling during the treatability study, and post-shutdown groundwater sampling will be conducted at the site. The Work Plan proposes to analyze the groundwater samples for benzene, toluene, ethylbenzene, and xylene (BTEX), methyl tertiary butyl ether (MtBE), and total petroleum hydrocarbon (TPH) diesel range organics (DRO)/gasoline range organics (GRO). Metals analysis has not been proposed (with the exception of total and dissolved iron in select wells). However, according to the *Technical and Regulatory Guidance for In Situ Chemical Oxidation of Contaminated Soil and Groundwater,* dated January 2005 and prepared by the Interstate Technology and Regulatory Council (ITRC) (hereinafter the January 2005 ITRC Guidance), metals can be mobilized within the treatment zone due to a change in oxidation state and/or pH, caused by the addition of the oxidants. As such, monitoring for metals in groundwater should be proposed. The January 2005 ITRC Guidance, on Page 24, states, "The initial investigation should include the following metals at a minimum: arsenic, barium, cadmium, chromium, copper, iron, lead, and selenium. In addition, hexavalent chromium should be tested…since chromium+3 can be temporarily converted to chromium+6 under oxidizing conditions." Revise the Work Plan to propose to analyze the groundwater samples collected as part of the treatability study for metals, or provide the rationale for not analyzing the groundwater samples for metals.

3. The Work Plan does not state that analytical data will be validated or identify who will perform data validation. Further, it is unclear how it will be determined that data are usable, meet project goals, and whether a data quality assessment will be performed. The Work Plan should include the amount of data that will be validated and the criteria for accepting, rejecting, or qualifying data (e.g., data validation checklists). Alternatively, the Work Plan should provide a specific reference where this information can be found. Revise the Work Plan to indicate that analytical data will be validated and discuss how the samples will be validated. Further, revise the Work Plan to propose a data quality assessment, and provide a summary of what this will include (e.g., precision, accuracy, representativeness, completeness, comparability, sensitivity, trends, biases, etc.) and to identify the personnel responsible for data validation.

4. The Work Plan does not contain data quality objectives (DQOs) for this project including, but not limited to the rationale for the sample number, sample locations, and proposed analyses. Also, how this study will be deemed successful is not discussed. Revise the QAPP to provide detailed DQOs for the proposed sampling activities in accordance with EPA's *Guidance on Systematic Planning using the Data Quality Objectives Process* (EPA QA/G-4), dated February 2006.

5. Section 3.6, Sampling and Analysis Program, of the Work Plan indicates that all sampling and analyses will be conducted in accordance with the Final RCRA Facility Investigation Management Plans, dated 1995; however, Section 3.6.1, Subsurface Sampling Program, indicates that soil sampling will follow the procedures of the Monitored Natural Attenuation Work Plan for AOC F, dated 2008. Revise the Work Plan to indicate which procedures will be followed.

SPECIFIC COMMENTS

1. **Section 1.3, Previous Investigations, Page 1-2:** This section states that sampling results obtained from May 2008 through August 2010 indicate high concentrations of MtBE in the groundwater in the vicinity of the former pump island and the former gasoline station. This section references Figure 1-4, MtBE Concentrations vs. MNA Event, for a summary of these results. However, Figure 1-4 only presents a graphical presentation of the results for four onsite wells. The Work Plan should also include data summary tables of groundwater sampling results for all site wells, including those sampled during the September 2010 field investigation, particularly since Page 1-3 refers to "[r]esults obtained from the September 2010 field investigation..." The most up to date groundwater data should be presented in order to evaluate the proposed treatability study activities. Revise the Work Plan to present the groundwater analytical results for all site wells, and include data from the September 2010 field investigation. In addition, Section 1.3 should present a summary of the activities conducted as part of the September 2010 field investigation.

2. **Section 1.3, Previous Investigations, Page 1-3**: This section states, at the top of Page 1-3, "The preferred degradation pathway for MtBE in groundwater appears to be aerobic (ITRC, 2005)." A complete reference for this 2005 ITRC document has not been included in Section 7.0, References. Revise Section 7.0 to include the complete reference for the 2005 ITRC document identified in Section 1.3.

3. **Section 1.3, Previous Investigations, Page 1-3:** The second paragraph indicates that the September 2010 field investigation "confirmed the relatively tight permeability of the soil at the site." The Work Plan does not present any data relative to the permeability of the soil. According to the January 2005 ITRC Guidance, saturated zone permeability is useful to understand the potential migration of contamination as well as to determine the volume/pressure required to evenly distribute the injected oxidant. To aid in the evaluation of the proposed treatability study design, revise the Work Plan to include data relative to the permeability of the site soil.

4. **Section 1.3, Previous Investigations, Page 1-3**: The last paragraph of this section indicates that Appendix A, In-Situ Chemical Oxidation Design Parameters, includes analytical results for specific parameters collected during the September 2010 field investigation to establish a baseline for the treatability study design. Appendix A appears to include data for only two wells (1738GW05R and 1738GW12). According to Figure 2-1, Location of Focus Area for Treatability Study, well 1738GW05R appears to be located downgradient of the source area, and well 1738GW12 is located upgradient. No data appear to have been collected within the focus area for the treatability study. Revise the Work Plan to clarify whether any additional data were collected from wells within the focus area for the treatability study, and include that data in Appendix A.

5. **Section 2.1, Current Site Conditions, Page 2-1:** The first paragraph of this section states that there are no structures located onsite. Figure 1-3, Site Map, appears to show a structure or some other site feature, enclosed in a fence, in the western portion of the site (near boring SB-9). Revise the Work Plan to identify this structure or other site feature in the text of the document.

6. **Section 2.2.1, Geology, Page 2-1:** This section describes the geology in the southern portion of the site, which is the focus area for the treatability study. However, the geology downgradient and north of the focus area for the treatability study is not clearly described. It is acknowledged that the fill material is absent in the northern portion of the site, but soil conditions in the northern portion of the site should be better described. If the geology differs substantially, the Work Plan should consider expanding the treatability study to encompass well 1738GW05R, located in the northern portion of the site, since this well also reported some of the highest concentrations of MtBE (Figure 2-1). Revise the Work Plan to present additional descriptions of the geology in the northern portion of the site, in the vicinity of well 1738GW05R. Also, clarify whether inclusion of well 1738GW05R into the focus area of the study would be beneficial to evaluate the effectiveness of the ISCO treatment in an area of the site where fill material is absent.

7. **Section 2.2.2, Hydrogeology, Page 2-1:** The first paragraph indicates that groundwater was observed at the interface with the fill and saprolite in the area of the former gas station, but there is no description of the groundwater table in the northern portion of the site where the fill material is absent. For clarity, revise Section 2.2.2 to discuss the depth to groundwater in the northern portion of the site.

8. **Section 2.2.2, Hydrogeology, Page 2-2:** Hydraulic conditions at the site are described in this section, but groundwater flow velocities have not been documented. To provide a better understanding of the hydrogeology at the site, revise the Work Plan to present the groundwater flow velocity at the site.

9. **Section 2.2.2, Hydrogeology, Page 2-2**: The last paragraph of this section indicates that well 1738MW03 is screened in saprolite since a clay layer was absent at this location. The Work Plan does not indicate whether any other site wells are screened within the saprolite or beneath the clay layer. The Work Plan should include the construction details of the wells included in the ISCO monitoring program as well as identify the soil/rock type in which they are screened. This will allow for a better understanding of what portions of the aquifer are being monitored during the treatability study. Revise the Work Plan to clarify whether any other site wells are screened within saprolite or beneath the clay layer. Also, include the construction details of site wells that will be included in the treatability study monitoring program.

10. **Section 2.2.3, Aquifer Conditions, Page 2-2:** The second sentence of the first paragraph states, "MtBE had been detected in all wells at the site prior to the September 2010 field event." It is unclear whether "all wells at the site" refers to wells 1738MW01, 1738MW02, 1738MW03, and 1738MW05R only, or if all the wells shown on Figure 1-3, Site Map, have reported detections of MtBE. Revise the Work Plan to clarify this concern. Inclusion of data summary tables of all wells, as previously requested, would likely clarify this concern.

11. **Section 2.2.3, Aquifer Conditions, Page 2-2:** The second paragraph discusses the groundwater quality parameters at the site, and states, "Under reducing biodegradation conditions within a petroleum contamination plume, dissolved oxygen and sulfate would be expected to be depleted with respect to background conditions. Likewise dissolved iron (a surrogate for Fe+2) and methane would be expected to be elevated with respect to background conditions." The remainder of the paragraph describes why reducing conditions were observed at site wells, but there is no comparison to background conditions to substantiate the observations. None of the wells for which data are provided in Tables 1-1 and 1-2 appear to be a background well. Revise Section 2.2.3 to clarify how reducing conditions were observed when there is no comparison to background conditions to determine whether the dissolved oxygen, sulfate, iron, and methane concentrations are elevated or depleted with respect to background conditions.

12. **Section 2.3, Focus Area for Treatability Study, Page 2-3:** This section states, "For the purposes of this work plan, the water table was assumed to be 20 feet below ground surface (bgs) with native soil lithology consisting of silt and clay." The basis for assuming the water table is 20 feet below ground surface is unclear since Table 1-1, Groundwater Quality Parameters – Site 1738, reports that depths to groundwater range from approximately four feet bgs at 1738MW05R to approximately 16.5 feet bgs at 1738MW03. Revise the Work Plan to clarify why a water table of 20 feet bgs is assumed for the study when the existing data do not support this depth to groundwater.

13. **Section 2.3, Focus Area for Treatability Study, Page 2-3:** This section indicates that the radius of influence (ROI) at each injection point is assumed to be 15 feet "[b]ased on ROI data observed during activities at sites with similar lithology." Specific references for "sites with similar lithology" should be provided in support of the initial 15 foot ROI. Revise the Work Plan to provide specific references or supporting documentation of sites with similar lithology to support the proposed injection point spacing.

14. **Section 3.2.1, Injection Well Installation, Page 3-2:** Nested injection wells will be installed at the site, with the vertical separation of the well screens for these wells determined in the field (but will be between two and five feet apart). The field conditions that will aid in determining the appropriate vertical separation of the screens has not been described. For clarity, revise the Work Plan to describe the field conditions that will aid in determining the appropriate vertical separation of the screens for the nested injection wells.

15. **Section 3.2.1, Injection Well Installation, Page 3-2:** This section states that the nested injection wells will be installed to 35 feet below ground surface. The rationale for this depth has not been provided. Additionally, the Work Plan does not specify the screen lengths for the nested wells. Revise Section 3.2.1 to clarify why a well depth of 35 feet is anticipated. Additionally, revise the Work Plan to specify the screen lengths for the nested wells.

16. **Section 3.2.2, Monitoring Well Installation, Page 3-3**: The specifications for the proposed monitoring wells (i.e., depth, screen length, portion of the aquifer to be monitored, etc.) have not been provided. Additionally, the rationale for the proposed well locations, with the exception of well 1738MW18, is unclear. Section 1.2, Site Description and History, previously noted that the *Draft MtBE Investigation Report* recommended additional monitoring wells at Site 1738 to further define the lateral extent of MtBE in groundwater. Without the groundwater data from the 2010 field investigation, an evaluation of the adequacy of the proposed locations for the monitoring wells cannot be conducted. Revise the Work Plan to include rationale for proposing the additional monitoring wells. A groundwater contaminant plume map that shows the current configuration of the plume with respect to the proposed monitoring well locations should be provided as supporting documentation.

17. **Section 3.3, Equipment and Materials, Page 3-3**: This section describes an enclosed trailer or container for the chemical treatment system as well as a staging area for the hydrogen peroxide drum/totes that will be brought to the site. The proposed locations for the trailer and staging area have not been described or otherwise shown on a site figure. Revise the Work Plan to describe the proposed location for the trailer and the drum staging area.

18. **Section 3.4, System Installation and Start-up, Page 3-4**: In the description of system start-up, this section states, "During each step, vapor monitoring will be conducted to ensure there are no preferential pathways for ozone, oxygen, or VOCs to travel to the surface. " This section does not specify the locations for the vapor monitoring nor does it describe how vapor monitoring will be conducted. Revise Section 3.4 to clarify the procedures for vapor monitoring, and identify the specific locations that will be monitored. Alternatively, if the only vapor monitoring to be conducted is that presented in Section 3.6.4, Air Monitoring Program, revise Section 3.4 to include a reference to Section 3.6.4.

19. **Section 3.6.1, Subsurface Soil Sampling Program, Page 3-5**: The first paragraph indicates that one subsurface soil sample will be collected from each of the five injection well locations, but that the depth of these samples will be determined in the field. The Work Plan does not describe what factors will be considered in the field to select the soil sample depth. Revise the Work Plan to clarify how the subsurface soil samples from the injection well locations will be determined in the field.

20. **Section 3.6.1, Subsurface Soil Sampling Program, Page 3-5:** Soil borings will be installed, and subsurface soil samples will be collected in the former tank pit area based on recommendations from the *Draft MtBE Investigation Report*. The Work Plan does not include a summary table of existing soil data for the site, so the appropriateness of the proposed boring locations are not substantiated. Revise the Work Plan to include a summary table of detected concentrations of constituents in soil so that the proposed sampling locations can be substantiated.

21. **Section 3.6.2, Groundwater Sampling Program, Page 3-5:** The text states that groundwater samples will be collected "via low-flow methodology," but a specific reference has not been provided. It is unclear what methodology or standard operating procedure (SOP) will be used, since the Final RCRA Facility Investigation Management Plans do not appear to contain an SOP with this title. Revise the Work Plan to include the low-flow methodology or a specific reference to the SOP that will be used for groundwater sampling.

22. **Section 3.6.2, Groundwater Sampling Program, Page 3-5:** The Work Plan proposes to analyze a subset of the site wells for physical/geochemical characteristics to include chemical oxygen demand (COD), heterotrophic plate count (HPC), total and dissolved iron, and carbon dioxide during baseline sampling; however, the rationale for selection of each of the wells in the subset is not described. As presented in Table 3-1, Summary of Sampling and Analytical Program – Environmental Samples, some of the wells in this subset are to be analyzed for some of the additional parameters while others in the subset are not. For example, wells 1738GW13S and 1738GW13D will be analyzed for total and dissolved iron but not carbon dioxide or HPC; whereas well 1738GW01 will be analyzed for COD, carbon dioxide, but not total and dissolved iron. Revise the Work Plan to provide the rationale for the selection of each well at which additional physical/geochemical parameters are proposed, and clarify why different parameters are proposed at different wells within this subset of wells.

23. **Table 3-1, Summary of Sampling and Analytical Program – Environmental Samples:** This table indicates that baseline groundwater samples will be collected at wells 1738GW13S, 1738GW13D, 1738GW14S, 1738GW14D, 1738GW15S, 1738GW15D, 1738GW16S, 1738GW16D, 1738GW17S, and 1738GW17D. These wells locations could not be found on Figure 3-1, Proposed Injection Well, Monitoring Well, and Soil Boring Locations. However, it appears that these groundwater samples may be related to the injection well points. Revise Figure 3-1 to clarify whether the above-referenced wells refer to the injection well points rather than monitoring wells.

ENCLOSURE 2

COMMONWEALTH OF PUERTO RICO
Office of the Governor
Environmental Quality Board

PUERTO RICO VERDE

ENVIRONMENTAL EMERGENCIES RESPONSE AREA

April 6, 2011

Mr. Timothy Gordon
U.S. Environmental Protection Agency – Region II
290 Broadway – 22nd Floor
New York, New York 10007-1866

RE: TECHNICAL REVIEW DRAFT MtBE
TREATABILITY STUDY WORK PLAN AOC F SITE 1738
NAVAL ACTIVITY PUERTO RICO (NAPR)
CEIBA, PR PR2170027203

Dear Mr. Gordon:

The Hazardous Wastes Permits Division (HWPD) and the Federal Facility Coordinator has finished the review of the above-mentioned document.

Enclosed please find PREQB's comments. If you have any additional comment or question please feel free to contact Gloria M. Toro Agrait at (787) 767-8181 extension 3586 or myself at extension 6129.

Cordially,

Wilmarie Rivera
Federal Facilities Coordinator
Environmental Emergencies Response Area

cc: Gloria M. Toro Agrait, EQB Hazardous Waste Permits Division

Cruz A. Matos Environmental Agencies Building
Ponce de León Avenue 1375, San Juan, PR 00926-2604
PO BOX 11488, Santurce, PR 00910
Tel. 787-767-8181 • Fax 787-7767-8118

Technical Review of the Draft MtBE Treatability Study Work Plan
AOC F Site 1738
Naval Activity Puerto Rico
February 18, 2011

GENERAL COMMENTS

1. There were several comments made regarding the findings presented in the January 2011 Draft MTBE Investigation Report for AOC F for which responses to comments have not yet been provided. Several comments focused on issues surrounding whether or not the plume has been adequately delineated both horizontally and vertically, the potential for other source areas, and whether current well configurations were adequate to evaluate whether LNAPL is present at the site. Although moving forward with a treatability study will aid in providing information needed for the design of the final remedy, data on sources and groundwater plume characterization discussed above are also integral to designing an effective remedy. Please address.

PAGE-SPECIFIC COMMENTS

1. Page 1-3, Section 1.3: The reference ITRC, 2005 was not included in the References in Section 7.0.

2. Page 1-3, Section 1.3: The text refers to Appendix A for baseline parameters collected during September 2010. Please explain why nitrate and total and dissolved manganese data were collected during the baseline but are not proposed as part of the treatability study.

3. Page 3-3, Sections 3.2.1 and 3.2.2: Please provide the timeframe between well development and sampling. Please note that PREQB review comments on the AOC F Site 1738 MTBE Investigation Report noted that it is a common practice to wait for a period of one to two weeks following well development before sampling is conducted (refer to the December 1995 USEPA OSWER article EPA/540/S-95/504 by Puls and Barcelona) to allow for physical and chemical equilibration in the area of newly-installed wells.

4. Page 3-5, Section 3.6.1: Please provide details on how soil samples for VOCs and GRO will be collected. Please note that PREQB review comments on the AOC F Site 1738 MTBE Investigation Report showed that soil samples for GRO analysis were not collected and preserved in accordance with SW-846 method 5035. Please ensure that these samples will be collected with methanol preservation or using EnCore™ samplers.

5. Page 3-2, Section 3.2.1, paragraph 3:
   a. It is noted that the vertical separation of the screens for the 1-inch injection points will be field-determined, but will likely be separated by approximately 2 to 5 feet. Please provide an indication as to what factors will be considered in the field in order to make the determination of the vertical separation and will the separation distance vary from point to point?
   b. Please explain why an approximate depth of 35 feet below grade has been chosen for the injection points. Also, please consider including the cross-sectional views through this area that were developed for the January 2011 *Draft MTBE Investigation Report AOC F – Site 1738.*

6. Page 3-3, Section 3.3: The text describes the equipment to be used for the chemical oxidation system, including sensors and alarms. Please clarify if the equipment has the capability of recording operational parameters. One of the stated goals of the treatability study is to obtain operational and performance data to design a full-scale ISCO application, including flow rates, pressures and other design parameters. Recording operational parameters (e.g., data on variations over time or in response to natural events) on a frequent basis is needed to meet this data quality objective. Section 3.5 does state that O&M will be performed on a weekly basis. However, many variations or alarm conditions could be experienced that either will go undetected or for which the cause will not be identified. This could limit the design, should a scale-up design be needed.

7. Table 3-1: Please provide details on how alkalinity will be determined in the field.

8. Table 3-2:
   a. The analytical method listed for chemical oxygen demand in this table is SM 5220D. However, Section 3.6.2 of the work plan states that EPA method 410.1 will be used. Please confirm.
   b. The analytical method listed for carbon dioxide in this table is SM 2320B. However, Section 3.6.2 of the work plan states that SM20-4500 will be used. Please confirm.

COMMONWEALTH OF PUERTO RICO
Office of the Governor
Environmental Quality Board

PUERTO RICO VERDE

ENVIRONMENTAL EMERGENCIES RESPONSE AREA

May 27, 2011

Timothy Gordon
US Environmental Protection Agency – Region II
290 Broadway – 22nd Floor
New York, New York 10007-1866

Re: Review Response to Comments and Final Interim Corrective Measures Work Plan for SWMU 2 Naval Activity Puerto Rico (NAPR) Ceiba, PR PR2170027203

Dear Mr. Gordon:

The Federal Facility Coordinator (FFC) and the Hazardous Waste Permit Division has finished the review of the above-mentioned document. The document was revised as a working draft, and PREQB comments were also discussed during a conference call.

All of the responses to comments are acceptable and the final document reflects our previously reached agreements. Hence, PREQB will not issue any additional comment.

If you have any additional comments or questions please feel free to contact Gloria M. Toro Agrait at (767) 787-8181 extension 3586 or myself at extension 6129.

Cordially,

Wilmarie Rivera
Federal Facilities Coordinator
Environmental Emergencies Response Area

cc. Gloria M. Toro Agrait, Environmental Permits Officer

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