Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

Airside Business Park
100 Airside Drive
Moon Township, PA 15108
Office: 412-269-6300
Fax: 412-375-3995

November 5, 2010

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

Attn: Mr. Adolph Everett, P.E.
Chief, RCRA Programs Branch

Re: Contract N62470-10-D-3000
IQC for A/E Services for Multi-Media
Environmental Compliance Engineering Support
Delivery Order (DO) JM01
U.S. Naval Activity Puerto Rico (NAPR)
EPA I.D. No. PR2170027203
Final Full RCRA Facility Investigation Work Plan for SWMU 70

Dear Mr. Everett:

Michael Baker Jr., Inc. (Baker), on behalf of the Navy, is pleased to provide you with one hard copy of the replacement pages for the Draft Full RCRA Facility Investigation Work Plan for SWMU 70, Naval Activity Puerto Rico for your review and approval. These replacement pages make up the Final Full RCRA Facility Investigation Work Plan for SWMU 70. Directions for inserting the replacement pages into the Draft full RCRA Facility Investigation Work Plan for SWMU 70 are provided for your use. Also included with the copy of the replacement pages is one electronic copy provided on CD of the Final Full RCRA Facility Investigation Work Plan for SWMU 70.

This document is being submitted in accordance with EPA comments dated September 16, 2010. The Navy responses to these comments are attached for your review.

If you have questions regarding this submittal, please contact Mr. Mark Davidson at (843) 743-2124. Additional distribution has been made as indicated below.

Sincerely,
MICHAEL BAKER JR., INC.

Mark E. Kimes, P.E.
Activity Coordinator

MEK/lp
Attachments

cc: Ms. Debra Evans-Ripley, BRAC PMO SE (letter only)
Mr. David Criswell, BRAC PMO SE (letter only)
Mr. Mark E. Davidson, BRAC PMO SE (1 hard copy and 1 CD)
Mr. Pedro Ruiz, NAPR (1 CD)
Mr. Tim Gordon, US EPA Region II (1 hard copy and 1 CD)
Mr. Carl Soderberg, US EPA Caribbean Office (1 hard copy and 1 CD)
Ms. Bonnie Capito, NAVFAC Atlantic – Code EV42 (1 hard copy for Administrative Record)
Ms. Gloria Toro, PR EQB (1 hard copy and 1 CD)
Ms. Wilmarie Rivera, PR EQB (1 CD)
Mr. Felix Lopez, US F&WS (1CD)
Mr. Brenda Smith, TechLaw, Inc. (1 CD)

NAVY RESPONSES TO EPA COMMENTS DATED SEPTEMBER 16, 2010
ON THE TECHNICAL REVIEW OF THE
DRAFT FULL RCRA FACILITY INVESTIGATION WORK PLAN
SWMU 70 – DISPOSAL AREA NORTHWEST OF LANDFILL
DATED JUNE 30, 2010

(EPA comments are provided in italics while Navy responses are provided in regular print.)

General Navy Response: The main objective of this Full RFI Work Plan is to delineate contaminants detected in the Phase I RFI and to define the likely source areas of contamination. Therefore, the objectives of the Draft Full RFI in Section 1.3 will be edited to delete the fourth bullets. The fourth bullet states that the Full RFI will further evaluate the potential for human health and ecological risks. Figure 4-1 – Statistical Analysis Process will be deleted and Section 4.6.3 Background Screening Values will be edited since statistical analysis will not be conducted during the Full RFI. Further evaluation of the potential for human health and ecological risks as well as a statistical background analysis for inorganic chemicals exceeding one of more of the human health or ecological screening values will be conducted as part of the Corrective Measures Study (CMS) investigation. All text in subsequent sections referencing conducting a human health/ecological risk assessment or statistical background analysis during this Full RFI will be deleted from the Work Plan. However, Preliminary Conceptual Models are provided for human health and ecological receptors. The human health and ecological screening values that are discussed within the Work Plan will be used as a tool to determine if a release has occurred, and to delineate and define the extent of contamination after the proposed sampling program is completed.

EPA COMMENTS

The following comments were generated based on review of the June 30, 2010, *Draft Full RCRA Facility Investigation Work Plan: SWMU 70 – Disposal Area Northwest of Landfill*, Naval Activity Puerto Rico, Cieba, Puerto Rico (Work Plan)**.**

GENERAL COMMENTS

1. *The Work Plan is lacking several elements required by EPA Requirements of Quality Assurance Project Plans (QAPP), dated March 2001 (QA/R-5). These elements are necessary to evaluate the proposed Work Plan:*

    - *Laboratory specific information including standard operating procedures, method detection limits, reporting limits (RLs), quality control (QC) acceptance limits, analytical calibration procedures and acceptance criteria, and corrective actions should the calibration/QC criteria be exceeded must be provided for the currently proposed analytical methods.*
    - *Specific procedures for data verification and validation of the proposed methods must be provided. While the referenced Management Plan provides validation procedures, it does not include how data generated by Methods 6020A, 8260B, 6010C, 9012A, 1010/1030, 9040B/9045C, 9034, 9060 or Acid Volatile Sulfides/Simultaneously Extracted Metals will be validated.*
    - *Project specific completeness goals for both the field and laboratory have not been provided. In addition, the Work Plan does not indicate if any proposed samples are deemed critical to this investigation.*

- *There is no project specific discussion of how precision, accuracy, representativeness, comparability and completeness and sensitivity (PARCCS) measures will be incorporated into a data quality assessment, how completeness will be measured for this project, or if an evaluation of significant trends and biases will be included as part of a data quality assessment.*
- *Examples of all forms and checklists to be used have not been provided (e.g., chain-of-custody forms, sample labels, audit checklists, data validation checklists).*

Navy Response to General Comment 1: The Navy plans to implement this investigation at NAPR in accordance with the EPA approved Master Project Management Plan (PMP), Master Data Collection Quality Assurance Plan (DCQAP), Data Management Plan (DMP), and Master Health and Safety Plan (HASP) for NAPR (Baker, 1995. Final RCRA Facility Investigation Management Plans, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. September 14, 1995. Coraopolis, Pennsylvania.) The EPA approved the work plan on September 25, 1995. These Master Plans define acceptable data requirements and error levels associated with the field and analytical portions of this investigation. Therefore, to maintain consistency with past Navy work under the Consent Agreement, this work plan has been revised using the Navy's EPA approved Master Plans for this facility.

In response to previous comments by the EPA on Phase I RFI Work Plans for SWMUs 62, 71 and 78 (see the April 17, 2008 letter from Baker on behalf of the Navy to the EPA); the Navy provided an evaluation of the Master Project Plans (Baker, September 14, 1995) in relation to the QA/R-5 requirements ("EPA Requirements for Quality Assurance Project Plans." EPA/240/B-01/003. [EPA, March 2001]). Table 1 of the April 17, 2008 letter provides a map between the DCQAP sections, the work plan content and the sections required by QA/R-5 and illustrates that although there are format and minor content differences, the DCQAP is generally consistent with and includes all of the main elements required by QA/R-5. For example, data validation is discussed in Section 10 of the DCQAP; PARCCS measures are discussed in Section 4 of the DCQAP; and forms and checklists are provided in the tables and appendices of the DCQAPP. Some additional examples of forms and checklists that may be found in the DCQAP are shown in the following table:

Item	Location in the DCQAP
System Audit Checklist	Table 12-1
Test Boring Record	Appendix B – SOP F101 – Borehole and Sample Logging
Typical Monitoring Well Construction Details and Test Boring and Well Construction Records	Appendix B – SOP F103 – Monitoring Well Installation
Chain of Custody Form	Appendix B – SOP F302 – Chain of Custody
Sample Label	Appendix B – SOP F302 – Chain of Custody
Data Validation Checklists	Appendix D – Data Validation Methodologies

The analytical methods, analyte lists, detection limits, etc. may have changed to some degree since publication of the DCQAP. Consequently, the Full RFI Work Plans contain the following tables specifying the sampling and analytical program requirements so that data of sufficient quality for future risk management decisions is collected:

- Table 3-1 Summary of Sampling and Analytical Program – Environmental Samples
- Table 3-2 Summary of Sampling and Analytical Program – QA/QC Samples
- Table 3-3 Method Performance Limits

The information provided in these tables has been reviewed against screening levels and have been determined to generally meet these levels. Table 3-3 has been revised to include preparation methods. Ecological screening values for soil, groundwater / surface water, and sediment are presented on Tables 4-1, 4-2, and 4-3, respectively. In addition, tables with Human Health Screening Values (Table 4-4) and NAPR Background Screening Values (Table 4-5) have been added for easy comparison to the analytical method detection limits. These quantitation limits have also been reviewed by the analytical laboratory to ensure that they can be met. In all cases, the quantitation limits are the lowest achievable by the laboratory for the specified analytical method. These tables are then provided to the analytical laboratory subcontractor as part of their scope of work so that the laboratory is clearly aware of the analytical requirements of the project. Additionally, only laboratories capable of providing an acceptable Laboratory Quality Manual (LQM) will be selected for this project. The LQM will be provided to USEPA after selection of the analytical laboratory.

This evaluation (presented in the April 17, 2008 letter), which was approved by EPA on May 13, 2008, indicated that the Phase I RFI Work Plan structure, with reference to the 1995 Master Project Plans and inclusion of project-specific tables summarizing the sampling and analysis program for environmental and QA/QC samples and method performance limits, and other factors as discussed in the April 17, 2008 letter, when taken together provide the information and guidance necessary for the project team to generate good quality data and to use that data for developing risk management based recommendations and decisions. The structure of the Full RFI Work Plans for SWMU 70 is identical to the Phase I RFI structure and therefore meets the QA/R-5 QAPP requirements.

2. *A data quality objective (DQO) section should be provided in the Work Plan. The DQO section should clearly define the problem and the environmental questions that should be answered for the current investigation. Project decision "If…, then…" statements should be developed, linking data results with possible actions. The DQOs should also identify the type, quantity, and quality of data needed to answer the study questions. The following information should be added to the Work Plan so that complete DQOs are presented;*

    - *Provide project decision conditions ("If…, then…" statements) for each matrix and/or decision area.*
    - *Specify how "good" the data need to be in order to support the environmental decision (e.g., definitive-data with 100% validation).*
    - *Provide the rationale for the proposed number of samples for each area of interest, matrix, and interval. In addition, provide the rationale for the proposed type of sample (e.g., grab samples vs. composite samples as well as random samples vs. judgmental samples). The rationale should provide sufficient detail to explain why each of these will address the environmental questions being asked.*

Navy Response to General Comment 2: Although the seven-step DQO process was not applied rigorously, elements essential to the process (with the exception of statistically

determining the number of samples) have been considered in the development of the sampling design. Because the investigation is designed to determine the extent of impacts that have occurred to soil and groundwater at the site, the sample locations have been selected to reflect the most likely impacted areas based on site history and professional judgment.

Detailed sampling rationale, including the number and location of samples from each media, specific rationale for each sample, sampling procedures, and associated laboratory analyses is provided in Section 3.1.

Project decision conditions include comparing analytical data to human health-, ecological-, and background-based screening values. Exceedances of human health and/or ecological screening values and background screening values will result in a recommendation that the site move to a CMS with an initial step being preparation of a CMS Work Plan. A HHRA and ERA will be conducted as part of the CMS. Although human health and ecological risk assessments will not be conducted during the Full RFI, the Full RFI Work Plan was developed with input from our human health and ecological risk assessors to assure that the investigation will provide the data that is needed for future risk management decisions. The human health and ecological risk assessors review the sampling (number, frequency, location and collection methods) and analytical programs (analytical methods, parameter lists, detection limits) and compare applicable screening values to method performance limits to maximize the usability of the resultant data. The decision criteria for this project (comparison of environmental media analytical results to screening criteria), is discussed extensively in Sections 4.6.1, 4.6.2 and 4.6.3 of the Full RFI Work Plan. Additional data quality criteria are provided in Section 4.1.1.2 (data quality levels) and Section 14.3 (data completeness and other criteria) of the approved final DCQAP. Based on the above, no revisions to the text of the Full RFI Work Plan for SWMU 70 are required.

3. *Although discussed in Section 4.6.2 of the Work Plan, human health screening values [i.e., Regional Screening Levels (RSLs), federal drinking water maximum contaminant limits (MCLs)] and background screening values have not been presented in the Work Plan. Only ecological screening levels (ESLs) were presented. Verification that the laboratory reporting limits will be able to meet screening level values cannot be performed without a presentation of all of the screening values to be used. Revise the Work Plan to provide all screening criteria to allow for comparison to analytical results. Ensure that laboratory RLs are also provided alongside the screening values.*

   Navy Response to General Comment 3: The human health screening values (Regional Screening Levels) and NAPR background screening values will be provided in the work plan as new tables (i.e., Tables 4-4 and 4-5, respectively). Laboratory quantitation limits are provided in Table 3-3.

4. *Figure 4-1 indicates that a statistical process will be used to evaluate the data generated during this effort. However, it appears that sample locations will be judgmental and not randomly chosen. Therefore, statistical analysis of the data is not appropriate. Revise the Work Plan to clarify this apparent discrepancy.*

   Navy Response to General Comment 4: The Navy offers the following points of clarification relative to this comment. Full RFI analytical data will not be statistically compared to background soil data sets and Figure 4-1 will be deleted (background data sets for surface soil and subsurface soil are presented within the Revised Final II Summary Report for Environmental Background Concentrations of Inorganic Compounds, Naval Activity

Puerto Rico, Ceiba, Puerto Rico [Baker, 2010]). Instead, the Full RFI analytical data will be compared to ULM background concentrations derived from the background data sets presented within the above referenced document. The data sets presented within the background report, ULM background concentrations, as well as the ecological and human health screening values discussed in Sections 4.6.1 through 4.6.3, will be compared to the Full RFI analytical data to determine if the proposed sampling effort delineated the extent of soil contamination detected during the Phase I RFI. It is noted that the background data sets presented within the Background Report have been approved by the EPA and are not populated with analytical data for samples collected from areas of contamination.

5. *Appendix D discusses EPA Region 2's low-flow sampling procedures but does not indicate the type of pump to be used during groundwater sampling. Revise the Work Plan to specify the type of pump that will be used during groundwater sampling.*

Navy Response to General Comment 5: The procedure is directed primarily at monitoring wells that can accept an adjustable rate, submersible pump (for example, centrifugal or bladder pump constructed of stainless steel or Teflon) and have a screen, or open interval of 10 feet or less. This procedure, however, is flexible and can be used in a variety of well construction situations. Clarification has been added to Section 3.3 of the Work Plan. For this investigation, a bladder pump will be used.

6. *The Work Plan does not specify that exceedances of human health and/or ecological risk-based screening criteria warrant the need for a Human Health Risk Assessment (HHRA) and/or Ecological Risk Assessment (ERA) if complete exposure pathways exist. Clarify that detected concentrations of chemicals will be compared to generic human health and/or ecological risk-based screening criteria only as part of the RCRA Facility Investigation (RFI), and that if exceedances exist, a HHRA and/or ERA will be conducted as part of the Corrective Measures Study Work Plan, unless sufficient justification is provided to demonstrate that a HHRA and/or ERA is not warranted.*

Navy Response to General Comment 6: As discussed in the Navy's General Response to EPA Comments, Section 1.3 of the Final Full RFI Work Plan has been revised to eliminate further evaluation of the potential for human health and ecological risk as a stated objective. The need for a HHRA and ERA was identified by the Phase I RFI, which concluded that impacts to the environment have occurred at SWMU 70 based on the presence of chemical concentrations in soil greater than human health/ecological screening values and background screening values. The proposed sampling program for the Full RFI will attempt to delineate the extent of contamination detected at the SWMU during the Phase I RFI by comparing analytical data to human health-, ecological-, and background-based screening values. Exceedances of human health and/or ecological screening values and background screening values will result in the site moving to a Corrective Measures Study (CMS) and preparation of a CMS Work Plan. A HHRA and ERA will be conducted as part of the CMS. The CMS work plan will present the specific methodology that will be employed for conducting the human health and ecological risk assessments. The first paragraph of Section 4.7 will be revised as follows:

> Information from the physical and analytical results (nature and extent of contamination) will be synthesized into conclusions regarding site conditions. Recommendations will be made from these conclusions as to whether a Corrective Measures Study (CMS) is needed or the SWMU can proceed toward corrective action complete. If the conclusions from the Full RFI indicate exceedances of human health and/or ecological screening

values and background screening values, then the Full RFI Report will recommend moving the SWMU to a Corrective Measures Study (CMS) with the preparation of a Draft CMS Work Plan. A HHRA and ERA will be conducted as part of the CMS and the CMS Work Plan will present the specific methodology that will be employed for conducting these assessments, if required.

7. *The Work Plan indicates that "background screening values" will be used to evaluate analytical results relating to both human and ecological receptors. Consistent with EPA guidance and following agreements with the Navy, inorganics that exceed human health risk-based screening criteria cannot be eliminated from the quantification of SWMU-specific risk and hazard regardless of background concentrations. Specifically, the EPA raised this issue in a comment letter dated January 23, 2009 on the Draft Final Correctives Measure Study for Solid Waste Management Unit (SWMU) 68. The Navy responses to the EPA comment letter, dated June 12, 2009, stated that chemicals detected above risk-based screening criteria will be retained as Chemicals of Potential Concern (COPCs) and assessed under total baseline conditions. The Navy's responses further stated that those chemicals at or below background levels (non-site related) will be discussed as part of the risk characterization and then exit the risk assessment process. This approach is consistent with U.S. Navy Human Health Risk Assessment Guidance (available at http://www-nmcphc.med.navy.mil/downloads/ep/Chapters%201-12.pdf). Note that this approach appears to be acceptable based on EPA's approval letter dated August 6, 2009 for the Final Correctives Measure Study for SWMU 68 (Baker, 2009b).*

   Ensure that the Work Plan (e.g., first paragraph of Section 4.6.2, Human Health Screening Values, and Section 4.6.3, Background Screening Values) is revised to reflect these previous agreements to maintain consistency among all HHRAs performed at Naval Activity Puerto Rico (NAPR) SWMUs and demonstrate compliance with EPA-recommended risk assessment methodologies. HHRAs conducted for NAPR SWMUs should quantify SWMU-specific risk and hazard for any and/or all inorganic compounds that exceed residential or industrial health-based screening criteria. Further, the uncertainty analysis, presented as part of the risk characterization, should include a refinement of risk. This refined risk evaluation should present a breakdown of the total SWMU-specific risk as site-related risk and background risk. This will provide the basis for exiting such inorganic COPCs from the HHRA process (i.e., show that such inorganic COPCs should exit at the end of Tier 2, Baseline HHRA, and not continue to the Tier 3 process, risk assessment for selection of remedial alternatives).

   With respect to ERAs, the Navy's approach is generally consistent with EPA guidance because inorganic compounds are not excluded based on background in Step 2 (Tier 1) of the Navy's ERA process, and Step 3.a (Tier 2) does include a refinement of risk based on statistical background comparisons (much like the refinement of risk conducted as part of the HHRA uncertainty analysis).

   Navy Response to General Comment 7: The Navy offers the following points of clarification relative to this comment. As discussed in the Navy's General Response to EPA Comments, the Full RFI analytical data will not be statistically compared to background analytical data as part of the Full RFI. Instead, Full RFI analytical data will be compared to the background-screening values (i.e., ULM background concentrations) presented within the Revised Final II Summary Report for Environmental Background Concentrations of Inorganic Compounds, Naval Activity Puerto Rico, Ceiba, Puerto Rico [Baker, 2010]), as well as human health and ecological screening values, to define the extent of contamination that was detected by the Phase I RFI. Exceedances of human health and/or ecological

screening values and background screening values will result in the site moving to a Corrective Measures Study (CMS) with the preparation of a Draft CMS Work Plan; a HHRA and ERA will be conducted as part of the CMS as detailed in the CMS Work Plan

Inorganic concentrations below background levels will be eliminated from further consideration as site-related contaminants in the Full RFI. However, this does not eliminate them from the quantification of risk in the event an HHRA is warranted. Rather, in HHRAs conducted for NAPR all chemicals detected above risk-based screening criteria, regardless of whether those chemicals are at or below background, are retained as COPCs and evaluated quantitatively as part of the total baseline HHRA. In addition, a refinement of total site (where the term "site" refers to the SWMU under evaluation) risk addressing the contribution of background to risk (i.e., risks from those chemicals at or below background levels [non-site related]) would be included as part of the uncertainty analysis and risk characterization. Those chemicals whose SWMU-specific concentrations and associated risk/hazard are attributable to background would then exit the risk assessment process, which is consistent with *U.S. Navy Human Health Risk Assessment Guidance*.

8. *MCLs should not be used to screen groundwater data; MCLs are not solely risk-based. Groundwater exceedances of risk-based screening criteria warrant an HHRA unless land use controls and/or institutional controls are in place at SWMU 70 to prevent consumption of groundwater (e.g., residential development). Further, if a HHRA is warranted, note that groundwater COPCs should be selected based on comparison of analytical results to the applicable Tap Water Regional Screening Level (RSL) and not the MCL during the HHRA conducted as part of the CMS. Revise the Draft RI Work Plan to update Section 4.6.2, Human Health Screening Values, accordingly and omit Section 4.6.2.2, Federal Drinking Water MCLs, or provide adequate justification for not doing so.*

   Navy Response to General Comment 8: MCLs will be used only as one of the screening tools in the Full RFI. As indicated in Section 4.6.2, USEPA Regional Tap Water SLs and inorganic background levels also will be used for groundwater screening in the Full RFI for SWMU 70. It is acknowledged in Section 4.6.2.2 that MCLs are not solely risk-based. Note that it is not the objective of the Full RFI to evaluate the potential for human health risks. Further evaluation of the potential for human health risks will be conducted as part of a CMS investigation. In HHRAs conducted for NAPR, only risk-based screening criteria are used in the COPC selection process. As such, MCLs are not used to identify groundwater COPCs. No revisions to the text of the Full RFI Work Plan for SWMU 70 are required.

9. *Ensure that contract-required quantitation limits (QLs) are low enough to meet human health and ecological screening criteria. Revise the Work Plan to show that QLs will be low enough to meet data quality standards for risk assessment purposes. The requested revision can be addressed by simply adding/updating tables that compare the QLs to applicable human health and ecological screening values.*

   Navy Response to General Comment 9: Human health screening values (Regional Screening Levels and MCLs) are provided in Table 4-4 and ecological screening values are provided in Tables 4-1 to 4-3. The information provided in Table 3-3 has been reviewed against project-specific screening levels and has been determined to generally meet these levels. The quantitation limits have also been reviewed by an analytical laboratory to ensure that they can be met. In all cases, the quantitation limits are the lowest achievable by the laboratory for the specified analytical method. The project-specific screening values are then provided to the analytical laboratory subcontractor as part of their scope of work so that the

laboratory is clearly aware of the analytical requirements of the project.

10. *Appendix D discusses EPA Region 2's low-flow sampling procedures but does not indicate the type of pump to be used during groundwater sampling. Revise the Work Plan to specify the type of pump that will be used during groundwater sampling.*

    Navy Response to General Comment 10: Duplicate comment – please see Navy response to general comment #5 above. A bladder pump will be used for this investigation.

11. *Figure 1-3 of the Work Plan outlines three areas in the western portion of SWMU 70 (east and northeast of sample location 70SB06) in blue. According to the figure legend, this color denotes a "water boundary," which would seem to indicate that these areas may be surface water bodies, at least for part of the year. Standing water appears to be present in the largest of the three areas in the aerial photograph. However, except for Ensenada Honda, the Work Plan does not discuss the presence of surface water at the site. Revise the Work Plan to clarify if surface water bodies are present at SWMU 70, even if only for part of the year. If so, these areas need to be discussed in the Work Plan and investigated.*

    Navy Response to General Comment 11: Figure 1-3 of the Work Plan outlines three areas which appear to be surface water bodies for at least a part of the year. A discussion of the presence and proposed investigation of surface water has been added to Section 2.1, Section 3.4 and Section 3.5 of the Work Plan.

12. *The link between groundwater and surface water at SWMU 70 has not been adequately described in the Work Plan. Figure 1-3 indicates that a large portion of SWMU 70 has been identified as estuarine wetlands, and the Work Plan details plans to collect 19 sediment samples in these areas. As noted in the General Comment 11 on Figure 1-3, the Work Plan does not discuss the presence of surface water at SWMU 70, other than Ensenada Honda. The presence of shallow groundwater is noted several times in the Work Plan. On page 4-3, Section 4.6.1.2 of the Work Plan states that groundwater sampling results will be compared to surface water (specifically, saltwater) screening. Although the rationale for this decision is not explained, it is possible that shallow groundwater in the wetland areas rises above the soil surface and exists as surface water at least part of the time. However, this occurrence is not mentioned in the text of the Work Plan. The presence of surface water, even if sporadic, could indicate the presence of additional ecological receptors and exposure pathways. Revise the Work Plan to include information about the connection, if any, between groundwater and surface water at SWMU 70.*

    Navy Response to General Comment 12: Comment noted. A discussion of the presence of surface water has been added to Section 2.1, Section 3.4 and Section 3.5 of the Work Plan.

13. *The Work Plan does not discuss potential ecological receptors that could be exposed to contaminants in soil, sediment, or groundwater at SWMU 70. Revise the Work Plan to specify that biota at or hydrologically downgradient from SWMU 70 will be discussed in the subsequent RFI Report.*

    Navy Response to General Comment 13: The Work Plan has been revised to include two new subsections (Sections 2.1.1 and 2.1.2), which provide a discussion of the habitats and biota that may occur at SWMU 70 and surrounding areas. As previous investigations have not documented the specific habitats and biota at SWMU 70, the discussion will rely primarily on literature-based information for Puerto Rico and NAPR. As part of the Full RFI

field investigation, specific vegetation and biota (if any) observed at SWMU 70 will be documented.

14. *Appendix C of the Work Plan shows that several bioaccumulative COPCs, those with log K_{ow} above 3.5, were detected in soil samples from SWMU 70 and open water sediment samples from Ensenada Honda during the Phase I RFI. These COPCs include benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, and pyrene. Many of these detections were estimated. Although the previously detected concentrations did not exceed risk-based ecological screening levels, bioaccumulation of these contaminants may occur through food webs and impact upper trophic level receptors. However, the Work Plan does not discuss this issue, and no additional soil or sediment samples will be analyzed for these COPCs in the Full RFI. The potential impact to ecological receptors via bioaccumulation of COPCs should be addressed in order to be protective. Revise the Work Plan accordingly to explain why additional sampling is not warranted to address COPCs that bioaccumulate.*

    Navy Response to General Comment 14: Section 3.4 of the work plan has been revised to explain why additional sampling was not warranted to address COPCs that bioaccumulate.

SPECIFIC COMMENTS

1. ***Section 2.2.1, Phase II ECP, Page 2-1:*** *This section indicates that subsurface soil samples were proposed but not collected from soil boring locations 16E-03 through 16E-06 because the groundwater at these four locations was encountered at depths ranging from 0.3 foot below ground surface (bgs) to 1.2 feet bgs. However, no discussion regarding these potential data gaps has been provided. Also, additional subsurface soil sampling near 16E-03 through 16E-06 was not included in this Work Plan. Revise the Work Plan to discuss how these data gaps will be addressed.*

    Navy Response to Specific Comment 1: Shallow groundwater was encountered while sampling at soil boring locations 16E-03 through 16E-06. Due to the shallow groundwater, and the associated saturated soils, subsurface samples were not collected. Additional subsurface sampling was not proposed within the Phase II ECP since subsurface samples are not warranted in saturated soils. Therefore, no revisions have been made to the work plan.

2. ***Section 2.2.2, Phase I RFI, Page 2-3:*** *The text indicates that acetone exceeded the ESL at three surface soil locations (70SB06, 70SB07, and 70SB08), and concludes that the acetone is a result of laboratory contamination. However, the levels of acetone reported in Appendix C, page 8 of 18, appear to be significantly higher (i.e., approximately 2 orders of magnitude in some cases) than the reporting limit for acetone. Further, no information has been presented to support the conclusion that acetone should be considered a laboratory contaminant (i.e., if acetone was observed in the corresponding laboratory method blanks, trip blanks, the levels it was found in the blanks as compared to the samples, etc.). Without further information to support the conclusion that elevated acetone results were the result of laboratory contamination, acetone should not be eliminated from future sediment investigations. Revise the Work Plan to either provide supporting information that acetone in sediment samples was the result of laboratory contamination or include acetone in the list of analytes that will be addressed in estuarine and open water sediment samples for this investigation.*

Navy Response to Specific Comment 2: An additional statement has been provided in Section 2.2.2. to indicate that acetone in sediment samples was the result of laboratory contamination and not considered site related.

3. ***Section 3.1, Soil Sampling and Analysis Program, Page 3-1:*** *Under the first bullet of this section, two additional groundwater samples are proposed to delineate arsenic in groundwater; however, they are located south and west of the existing well 70SB01 and there does not appear to be any delineation of groundwater to the north or east of well 70SB01. Revise the Work Plan to discuss the rationale for the groundwater sampling around well 70SB01 or propose additional wells to fully delineate arsenic in this area.*

   Navy Response to Specific Comment 3: The groundwater flow is to the south to southwest at SMWU 70. One (1) additional well has been proposed (70SB46) to the east of 70SB01 to further delineate the up-gradient area at the edge of SWMU 70. An additional statement explaining the groundwater flow at SWMU 70 has been added to Section 3.1 for clarification.

4. ***Section 3.1, Soil Sampling and Analysis Program, Page 3-1:*** *Under the first bullet, the text states, "One surface, one shallow subsurface [1 to 3 feet (ft) below ground surface (bgs)]) sample and a groundwater sample will be collected from soil borings 70SB01, 70SB15 and 70SB16." However, it is unclear why surface and subsurface soil is proposed at 70SB01 since it is an existing well location. Revise the Work Plan to address this.*

   Navy Response to Specific Comment 4: The first bullet in Section 3.1 has been revised to remove 70SB01 from surface and shallow subsurface sampling. It was the Navy's intent to only sample groundwater from sample 70SB01. The discrepancies have been corrected throughout the document.

5. ***Section 3.1, Soil Sampling and Analysis Program, Page 3-1:*** *Under the second bullet of this section, two additional groundwater samples are proposed to delineate arsenic and vanadium in groundwater; however, they are located south and west of the existing well 70SB02 and there did not appear to be any delineation of groundwater to the north or east of well 70SB02. Revise the Work Plan to discuss the rationale for the groundwater sampling around well 70SB02 or propose additional wells to fully delineate arsenic and vanadium in this area.*

   Navy Response to Specific Comment 5: Similar to "Navy Response to Specific Comment 3", an additional well (70SB46) has been proposed to the north of the existing monitoring well 70SB02 to further delineate the up-gradient area at the edge of SWMU 70.

6. ***Section 3.1, Soil Sampling and Analysis Program, Page 3-2:*** *The text indicates that a boring log will be maintained during soil boring installation "indicating, among other things, lithology, water occurrence, photoionization detector (PID) measurements and other observations." The text should be revised to clarify what information is required for the boring log and a specific list of items that will be presented in the boring log. Revise the Work Plan to provide this information.*

   Navy Response to Specific Comment 6: Section 3.1 has been revised to provide additional details that should be included on the boring logs, including soil description (e.g., color and texture), sample number and location, presence or absence of soil discoloration, actual depth determined in field, and the time of sample.

7. ***Section 3.2, Monitoring Well Installation, Page 3-4:*** *The text states, "The wells will be developed until the discharged water runs relatively clear of fine-grained materials." The text further indicates that typical limits placed on well development may include, "Clarity of water based on visual determination." Since the clarity of the water is a qualitative measure that could be subjective based on the person making observations, it is recommended that three to five borehole volumes be removed to ensure proper development, at a minimum. Revise the Work Plan to require the removal of at least three to five borehole volumes during well development.*

   Navy Response to Specific Comment 7: Section 3.2, page 3-4, third bullet item states that one of the limits placed on well development, in addition to a visual inspection of clarity, is a maximum borehole volume (typically three to five borehole volumes plus the amount of any water added during the drilling or installation process). No revisions to the text of the Full RFI Work Plan for SWMU 70 are required.

8. ***Section 3.4, Sediment Sampling and Analysis, Page 3-6:*** *The text states, "If field conditions indicate that the proposed samples should be classified as soil, the sampling program will be modified to reflect the change in media and surface and subsurface soil samples will be collected;" however, it is not clear what the field conditions are or what criteria will be used to distinguish between sediment and soil. Revise the Work Plan to include specific criteria for determining the nature of media at the site.*

   Navy Response to Specific Comment 8: Section 3.4 states, "If field conditions indicate that the proposed samples should be classified as soil, the sampling program will be modified to reflect the change in media and surface and subsurface soil samples will be collected as discussed in Section 3.1." Section 3.1 further explains that all samples will be "collected following the procedures in Final RCRA Facility Investigation Management Plans (Baker, 1995)". Within this document, Appendix B, SOP101, is the criteria for distinguishing between sediment and soil. An additional statement has been added for clarification.

9. ***Section 3.4, Sediment Sampling and Analysis, Page 3-5:*** *In the description of the methodology to be used for collecting sediment samples for the Full RFI, the Work Plan does not indicate the depth to which sediment will be collected. In order to represent the most relevant exposures for sediment-dwelling ecological receptors, sediment samples should be collected from zero to six inches below ground surface. Revise this section to clarify the planned depth range for sediment sampling.*

   Navy Response to Specific Comment 9: A revision has been made to Section 3.4 to clarify the sediment sampling depth from zero to six inches, as requested.

10. ***Section 3.5.2, Equipment Rinsates, Page 3-7:*** *This section indicates that the equipment rinsate samples will be collected from macro core liners for soils and from the Teflon-lined polyethylene tubing for groundwater. The liners and tubing are usually not decontaminated in the field; therefore, it is recommended that the equipment rinsates be collected from equipment that has been decontaminated (e.g., groundwater pump) to ensure no cross-contamination has occurred. In addition, this section does not identify hand augers as a potential piece of equipment that may require a rinsate sample. Revise the Work Plan to indicate that equipment rinsates will be collected from equipment requiring decontamination and identify all potential equipment.*

Navy Response to Specific Comment 10: Section 3.6.2 Equipment Rinsates and Table 3-2 will be revised to include that an equipment rinsate will be also collected from the bladder pump used for groundwater sampling and from equipment requiring decontamination. The potential equipment has been identified in this section.

11. ***Section 3.6.5, Investigation Derived Waste Management, Page 3-8:*** *It is unclear if investigation derived waste (IDW) will be combined from multiple borings into one 55-gallon drum or if each boring will have its own drum. Also, it was unclear how the procedure for potentially replacing the soil cuttings into the borings would be implemented if the soil cuttings are combined from multiple borings into one 55-gallon drum. Revise the Work Plan to clarify IDW management procedures.*

    Navy Response to Specific Comment 11: The soil cuttings associated with subsurface soil sampling will be placed back into the location where the cuttings were collected from immediately after the subsurface soil samples are collected if a monitoring well is not going to be installed at that soil boring. If a monitoring well is going to be installed at a soil boring location, the soil cuttings associated with that soil boring will be stored temporarily in a 55-gallon drum. All the soil cuttings for soil borings that have monitoring wells installed will be placed in the same drum (there will not be one drum for each soil boring) and a composite sample will be collected and submitted for laboratory analysis. The text in Section 3.7.5 has been edited to clarify the IDW procedures.

12. ***Section 3.6.5, Investigation Derived Waste Management, Page 3-8:*** *More detailed IDW sampling procedures should be provided. The Work Plan should indicate how each aliquot of IDW will be collected for soil, and how these aliquots will be combined for the composite sample. Revise the Work Plan to provide this information.*

    Navy Response to Specific Comment 12: Additional IDW sampling procedures are provided in Section 3.7.5, to indicate how each of IDW will be collected for soil, and how these aliquots will be combined for the composite sample

13. ***Section 3.6.7, Delineation of Wetland Boundaries, Page 3-9:*** *This section indicates wetland delineation will be performed at the site; however, the timing and any potential effect on sampling locations was not included. For example, proposed sediment sample location 70SD17 is currently shown on Figure 3-1, Proposed Full RFI Sample Location Map, as being located in an upland area. It was not clear if this sample location would contain sediment or soil. Revise the Work Plan to include the timing of the wetland delineation and any potential adjustments to sample locations or media based on the wetland delineation.*

    Navy Response to Specific Comment 13: The timing of the wetland delineation and the adjustments to the sample locations based on the wetland delineation are now provided in Section 3.7.7, stating that, "Soil and sediment sampling locations will be altered from those depicted on Figure 3-1 based on field delineated location of wetland."

14. ***Section 3.6.7, Delineation of Wetland Boundaries, Page 3-9:*** *This section indicates wetland delineation will be performed at the site; however, the timing and any potential effect on sampling locations was not included. For example, proposed sediment sample location 70SD17 is currently shown on Figure 3-1, Proposed Full RFI Sample Location Map, as being located in an upland area. It was not clear if this sample location would contain sediment or soil. Revise the Work Plan to include the timing of the wetland delineation and any potential adjustments to sample locations or media based on the wetland delineation.*

Navy Response to Specific Comment 14: Duplicate comment – please see Navy response to specific comment #13 above.

15. ***Section 3.6.10, Chain-of-Custody, Page 3-9:*** *This section states that chain-of- custody procedures will be followed; however, these procedures have not been provided in the Work Plan. Revise this section to provide the chain-of-custody procedures to be followed.*

    Navy Response to Specific Comment 15: The Navy plans to implement this investigation at NAPR in accordance with the EPA approved Master Project Management Plan (PMP), Master Data Collection Quality Assurance Plan (DCQAP), Data Management Plan (DMP), and Master Health and Safety Plan (HASP) for NAPR (Baker, 1995. Final RCRA Facility Investigation Management Plans, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. September 14, 1995. Coraopolis, Pennsylvania.) The EPA approved the Work Plan on September 29, 1995. The procedures for the chain-of-custody forms are in the PMP; a reference to this document will be added to the chain-of custody text in Section 3.7.10.

16. ***Section 4.0, Reporting, Pages 4-1 through 4-9:*** *This section does not indicate that a data quality assessment will be included in the final report. Revise this section to specify that a data quality assessment will be part of the final report, and specify what will be included in the data quality assessment (e.g., an evaluation of PARCCS, significant trends and biases, comparing data to DQOs to ensure questions were addressed, etc.).*

    Navy Response to Specific Comment 16: All data from the laboratory will be certified by a Puerto Rican Chemist and laboratory data will be validated to ensure data usability. Only usable data will be included in the evaluation and the conclusions and recommendations sections of the report. Data validation reports will be included as an appendix to the Full RFI report and will discuss:

    - Overall Evaluation of the Data
    - Potential Usability Issues
    - Data Completeness
    - Technical Holding Times
    - Initial and Continuing Calibrations
    - Method and QC Blanks
    - Laboratory Control Samples
    - Matrix Spikes
    - Quantitation and Data Qualifications

17. ***Section 4.6.1.2, Groundwater Screening Values, Page 4-3****: This section indicates that chronic saltwater National Ambient Water Quality Criteria (NAWQC) were preferentially used as groundwater screening values. However, neither the salinity of the groundwater at SWMU 70, nor the rationale behind the use of saltwater NAWQC are discussed in the Work Plan. In the interest of clarity and completeness, revise the Work Plan to explain the use of saltwater NAWQC as opposed to groundwater screening criteria.*

    Navy Response to Specific Comment 17: The rationale behind using the saltwater NAWQC is now discussed within Section 4.6.1.2 of this Work Plan.

18. ***Section 4.6.1.3, Sediment Screening Values, Page 4-5:*** *The Work Plan indicates in Section 3.4 that sediment samples will be collected for Acid Volatile Sulfide and Simultaneously Extracted Metals (AVS/SEM) analysis. AVS/SEM analysis is useful in quantifying the bioavailability of divalent metals. However, the Work Plan does not explain how the AVS/SEM data will be used in the sediment screening process. Revise the Work Plan to clarify how the AVS/SEM data will be used.*

    Navy Response to Specific Comment 18: AVS/SEM data will not be used in the Full RFI, as discussed in Section 3.4. The data may be used in a future ecological risk assessment (ERA) as a means of evaluating the bioavailability of SEM metals (cadmium, copper, lead, nickel, selenium, and silver). If needed, the ERA will be included as part of a future CMS. Revisions have been made to Section 4.6.1.3 to explain how the AVS/SEM data will be used in the sediment screening process.

19. ***Section 4.7, Conclusions and Recommendations, Page 4-8:*** *This section states that information from the physical and analytical results will be synthesized into conclusions regarding site conditions; however, this section does not describe how data usability will impact the conclusions and recommendations. Revise the section to address this issue.*

    Navy Response to Specific Comment 19: Similar to Specific Comment #16 above, a data validation report will be included as an appendix to this report and will discuss the data usability.

20. ***Section 4.7, Conclusions and Recommendations, Page 4-8:*** *This section states that data obtained during the field effort will be incorporated into the web based Geographic Information System (GIS) currently residing on the NAPR project team web site; however, it is unclear if the database is compared to the hard copy data to ensure its accuracy. Also, it is unclear if validation qualifiers will be entered into the database to ensure qualifications are considered when using the database (i.e., especially if data are rejected during validation). Revise the Work Plan to discuss how the accuracy of the database is ensured and to clarify if the validation qualifiers are entered in the database.*

    Navy Response to Specific Comment 20: The text in Section 4.7 will be revised to clarify that validated data with the validation qualifiers are checked against the hard copies of the validation reports before the database is uploaded to the NAPR website.

21. ***Section 6.1, Project Team Responsibilities, Page 6-1:*** *This section does not provide the responsibilities of all the project team members (e.g., laboratory chemist, data validator, etc.). Revise the section to provide a list of all the members of the project as well as their responsibilities.*

    Navy Response to Specific Comment 21: The project team personnel primarily responsible for the project are listed in Section 6.1. The Work Plan was prepared with the understanding that an as yet undetermined third party would be responsible for laboratory analysis, data validation, etc. Since these are variable depending on the bidding process, the Navy disagrees with adding this information into the work plan since it is undetermined until the project bidding is completed.

22. ***Table 3-1, Summary of Sampling and Analytical Program – Environmental Samples:*** *The table indicates that the groundwater sampling depths are not applicable. However, the Work*

Plan should specify the depth at which the pump will be set in the well during sample collection. Revise the Work Plan to provide this information.

Navy Response to Specific Comment 22: The depth interval indicated on Table 3-1 is intended for specifying soil sampling depths and is not applicable to groundwater samples. The subsurface soil at this SWMU is typically a very tight, low yielding clay with no distinct water bearing zones. Consequently, the pump intake should be placed at the lowest practicable point in the well, which is typically within a couple feet of the bottom of the well. The first sentence of the second paragraph of Section 3.3 will be revised to read as follows:

> "The groundwater will be sampled using a bladder pump and low-flow sampling technique, if the well exhibits sufficient yield, with the pump intake set at the lowest practicable point in the well."

23. ***Table 3-3, Method Performance Limits:*** *This table contains analytes that have RLs above ecological screening levels, (e.g., copper, nickel, and silver). However, the Work Plan does not specify how analytes with reporting limits that exceed screening levels will be evaluated or qualified. This is particularly important since the RLs in Table 3-3 are based on wet weight results, and they will be elevated when corrected for dry weight. Finally, it is unclear if the laboratory chosen will be able to meet the reporting limits presented in the table. Revise the Work Plan to present the laboratory specific reporting limits, indicate which analytes have screening levels below the reporting limits and clarify how results will be evaluated and/or qualified if screening levels are below the reporting limit.*

Navy Response to Specific Comment 23: The Navy is aware that some of the reporting limits exceed the ecological surface soil screening levels. The analytical laboratory chosen for analyzing data provide the lowest reporting limits possible. It is noted that the ERA, conducted as part of the CMS, will quantify risks for non-detected chemicals. Non-detected chemicals with maximum reporting limits greater than ecological screening values will be identified as ecological chemicals of potential concern (COPCs) in Step 2 of the screening-level ERA (SERA) and undergo additional evaluation in Step 3a of the baseline ecological risk assessment (BERA).

24. ***Table 3-1, Summary of Sampling and Analytical Program – Environmental Samples, Pages 1-3:*** *This table indicates that field duplicate samples will be distinguished using a "D" at the end of the sample nomenclature. However, it is recommended that all field duplicate samples be submitted to the laboratory as blind duplicates. Revise the Work Plan to remove the "D" from field duplicate sample nomenclature.*

Navy Response to Specific Comment 24: To maintain consistency with the standards established for data reporting and GIS management throughout the corrective action program, the sample designations will not be modified. No revisions to the Full RFI Work Plan for SWMU 70 are required.

25. ***Table 4-1, Ecological Soil Screening Values:*** *The surface soil screening value listed for zinc, 4.6 mg/kg, cited from the USEPA document Ecological Soil Screening Levels for Zinc (Interim Final) (2007), is incorrect. The correct value from this source is 46 mg/kg. Revise the table to cite the correct value.*

Navy Response to Specific Comment 25: Table 4-1 will be revised to correct the screening value for zinc to 46 mg/kg.

26. ***Appendix C Summary of Phase 1 RFI Analytical Results:*** *Several of the "Selected Ecological Surface Soil Screening Values" in Appendix C differ from the ecological soil screening values listed in Table 4-1 of the Work Plan. The lowest-available benchmark for plants, soil invertebrates, avian herbivores, avian ground insectivores, avian carnivores, and mammalian herbivores was selected as the soil screening value for each analyte and presented in Table 4-1. The screening values listed in Appendix C for beryllium, cadmium, chromium, copper, lead, vanadium, and zinc all exceed the values listed in Table 4-1. The selected ecological surface soil screening values used in Appendix C for soil comparison should be the same as those presented in Table 4-1. In addition, ensure that the lowest soil screening value for each analyte is used in the future assessment of soil data from SWMU 70. Amend the text accordingly.*

Navy Response to Specific Comment 26: The "Selected Ecological Surface Soil Screening Values" in Appendix C represent screening values that were current at the time the Phase I RFI was conducted. The ecological screening values presented in the Full RFI Work Plan are the screening values to be used moving forward. However, it should be noted that all applicable screening values will be updated as necessary at the time the Full RFI is conducted. No revisions to the document are necessary.

PREQB COMMENTS DATED AUGUST 17, 2010

GENERAL COMMENTS

1. *Please note that the readers of the work plan would benefit from a statement regarding the direction of ground water flow (as determined based on the previous ground water level measurements), as well as an indication on one of the figures.*

Navy Response to General Comment 1: A statement has been added regarding the direction of ground water flow. Figures 1-3, 1-4, and 3-1 have also been revised with an arrow to indicate the direction of ground water flow.

SPECIFIC COMMENTS

1. ***Pages 2-1 to 2-2, Section 2.2.1:***
   a. *The text of the second bullet states that subsurface soil samples were collected to depths of 15 feet bgs and 5 feet bgs. However, according to the summary of results in Appendix B, both subsurface soil samples were collected from 3-5 feet bgs. Please clarify.*

Navy Response to Specific Comment 1a: The inconsistency has been corrected. The subsurface soil samples were collected at 16E-01 and 16E-02 at a depth of 15 feet bgs and 5 feet bgs, respectfully. Appendix B of the work plan has been revised.

   b. *In paragraph 4, please include a reference to the constituents in the sediment samples exceeding their respective marine sediment screening values. The current lead-in to this section references exceedances of USEPA Region III Residential RBCs for soils or USEPA Region III RBCs for tap water only.*

Navy Response to Specific Comment 1b: A reference to the constituents in the sediment samples exceeding their respective marine sediment values has not been added to Section 2.2.1. The Phase I RFI Report addresses this issue and is located in Section 2.2.2. The

purpose of the limited samples collected in the ECP was a data gathering exercise only.

c. *Subsurface Soil Bullet: Add vanadium to the list of exceedances in subsurface soil. This is in accordance with the results presented in Appendix B for the subsurface soil sample collected at 1.6E-01.*

Navy Response to Specific Comment 1c: After review of Appendix B (Table B-4), it was verified that vanadium did exceed the USEPA Region III Residential RBCs. Therefore, vanadium was added to the list of exceedances in the subsurface soil.

2. ***Page 2-3, Section 2.2.2:***
   a. *Please discuss total metals concentrations in groundwater, as they are used for human health screening purposes.*

Navy Response to Specific Comment 2a: Of the metals detected in groundwater, none of the total metals were detected at concentrations in excess of the NAPR base-wide background screening value for groundwater. A paragraph was added to Section 2.2.2 for clarification.

b. *In paragraph 4, please specifically identify that the Phase I RFI ground water sample 70SB04 is the one in which the vinyl chloride concentration exceeded the Regional Tap Water SL.*

Navy Response to Specific Comment 2b: The text has been edited as follows; "Groundwater sample 70SB04 was identified as the sample location in which the vinyl chloride concentration exceeded the Regional Tap Water SL".

c. *In paragraph 6, please specify that the two locations in which the cobalt concentrations in surface and/or subsurface soils exceed the Residential RBCs were 70SB02 and 70SB05.*

Navy Response to Specific Comment 2c: The text has been edited as follows; "Surface and subsurface soil samples 70SB02 and 70SB05 were identified as the sample locations in which cobalt concentration exceeded the Residential RBCs".

d. *It would be helpful to consider cobalt concentrations detected in other sediment samples collect in Ensenada Honda as a possible line of evidence for whether cobalt is site-related or within the range of background.*

Navy Response to Specific Comment 2d: Comment noted, however the Navy has indentified and studied cobalt for SWMU 70; no additional changes were made to the report. The Full RFI Report concluded that cobalt concentrations in up-gradient media were less than associated background, indicating that any migration from SWMU 70 into the Ensenada Honda above what would be expected under background conditions is not occurring. The Phase I RFI concluded, "While it is acknowledged that cobalt may be migrating from up-gradient media to open water sediment, it does not appear that the presence of cobalt in the open water sediment is site-related or the result of a past release at SWMU 70 because cobalt was not identified as site-related in any other medium."

3. ***Page 3-1, Section 3.1, Bullet 1:*** *The text indicates that a surface soil sample, subsurface soil sample and ground water sample will be collected from soils borings 70SB01, along with the two proposed borings. This regimen for location 70SB01 is not indicated by the*

symbol/color-coding on Figure 3-1. Is it the intent to re-sample soils adjacent to the existing 70SB01 monitoring well location? Please clarify.

Navy Response to Specific Comment 3: The first bullet in Section 3.1 has been revised to remove 70SB01 from surface and shallow subsurface sampling. It was the Navy's intent to only sample groundwater from sample 70SB01. The discrepancies have been corrected throughout the document.

4. ***Page 3-1, Section 3.1, Bullet 3:*** *Please see the comment above for Bullet 1 in this section – the same comment applies to the reference to the 70SB04 location.*

   Navy Response to Specific Comment 4: Similar to the comment above, it was the Navy's intent to only sample groundwater from sample 70SB04. The discrepancies have been corrected throughout the document.

5. ***Page 3-1, Section 3.1, Bullet 3:*** *Please consider the addition of VOCs to the analyte list for the soil samples to be collected in the up-gradient direction of location 70SB04. There are two likely scenarios for the detection of vinyl chloride in the ground water at this location: a source in the immediate area that may not have been detected by the original 70SB04 soil samples or migration of impacts in the ground water from a source up-gradient of SWMU 70. Sampling up-gradient soils for VOCs would shed some light on the likely scenario.*

   Navy Response to Specific Comment 5: The Phase I RFI report indicated vinyl chloride was detected in one of eight locations at a concentration exceeding the Regional tap water SL. The laboratory analysis indicated vinyl chloride to be slightly greater than the reporting limit. Given no additional groundwater detections and re-sampling/analysis of the well during the upcoming Full RFI, the addition of VOCs to the analyte list for samples up-gradient of 70SB04 is not warranted.

6. ***Page 3-3, Section 3.2, Bullet 1:*** *Please consider that the more favorable method for well installation would be to install the well materials through the augers, as opposed to into an open borehole. The augers allow for the hole to remain open to the desired depth and allow for the sand pack to be placed under more controlled conditions. The shallow water table conditions in this area that will prevent the placement of a full two feet of sand above the top of the screen dictate the sand pack be placed under very controlled conditions.*

   Navy Response to Specific Comment 6: Bullet 1 has been revised as requested.

7. ***Page 3-7, Section 3.5.2 and Table 3-2:*** *The text states that polyethylene tubing will be used during the collection of groundwater samples. However, Table 3-2 states that Teflon-line polyethylene tubing will be used. Polyethylene tubing is not acceptable at wells being sampled for VOCs. Revise the text in Section 3.5.2 to incorporate Teflon-lined tubing for these wells. As per the Region 2 low flow groundwater sampling SOP included in Appendix C of this Work Plan, Teflon or Teflon-lined polyethylene tubing must be used to collect groundwater samples for organic analyses. Polyethylene tubing would be appropriate for inorganic analyses only.*

   Navy Response to Specific Comment 7: The text in Section 3.6.2 will be edited to state that the equipment rinsate samples will be collected using Teflon-lined polyethylene tubing during the collection of groundwater. Table 3-2 will be edited to reflect that the equipment rinsate will be collected from Teflon or Teflon-lined polyethylene tubing.

8. ***Page 4-3, Section 4.6.1.2:*** *Groundwater screening values are proposed for evaluating constituents detected in groundwater samples at the site. Please include the aquatic life criteria presented in the Puerto Rico Water Quality Standards (March 2010) as the preferential screening benchmark source. Please note that metal ambient water quality criteria presented in the Puerto Rico Water Quality Standards are based on total recoverable concentrations of metals.*

   Navy Response to Specific Comment 8: Section 4.6.1.2 will be revised to indicate that Puerto Rico Water Quality Standards for aquatic life will be used as the preferential screening benchmark source for groundwater.

9. ***Page 4-8, Section 4.6.2.2:*** *Please also include Puerto Rico's Water Quality Standards Regulations (PRWQS) in this section. Please use the more stringent of either the federal WQS or PRWQS as the enforceable groundwater standard.*

   Navy Response to Specific Comment 9: Section 4.6.2.3 has been added to include the Puerto Rico's Water Quality Standards Regulations.

10. ***Page 4-8, Section 4.6.3:*** *Please consider using the EPA's statistical software, ProUCL, to conduct the statistical comparison of site data to background. This software is published by EPA, and is used at sites in Puerto Rico for conducting statistical analysis.*

    Navy Response to Specific Comment 10: As noted in the Navy's general response to EPA comments, Full RFI analytical data will not be statistically compared to background soil data sets. Statistical background analyses for inorganic chemicals exceeding one of more of the human health and ecological screening values will be conducted in conjunction with the risk assessments as part of the CMS. Therefore the EPA's statistical software will not be used for this Work Plan.

11. ***Table 3-1:*** *Sediment samples are proposed to be collected from the surface to three inches. Generally, sediment samples are collected to a depth of six inches unless site-specific characteristics or objectives require a shallower or deeper sampling depth. Please provide the site-specific rationale for collecting sediments to a depth on only three inches at SWMU 70 or revised the table to indicate a surface to six inch sampling depths. Note that all previous sediment samples collected during the Phase I RFI and Phase II ECP Investigation were collected from 0-0.5 feet bgs. In addition, samples 70SD09 through 70SD12 are being used specifically to delineate contamination found at 70SB07 which was collected from 0-0.5 feet bgs.*

    Navy Response to Specific Comment 11: Table 3-1 has been revised to indicate a surface to six inch sampling depth. Samples are proposed to be collected to six inch depth unless site-specific characteristics warrant otherwise.

12. ***Table 3-3:***
    a. *Please revise the method description for the VOC analysis to GC/MS instead of Inductively Coupled Plasma.*

    Navy Response to Specific Comment 12a: The table will be revised as requested.

b. *Please include the preparation methods being used for metals in soil, sediment and groundwater samples.*

Navy Response to Specific Comment 12b: The preparation methods have been included on Table 3-3 as requested.

c. *Groundwater samples from 70GW04, 70GW31, 70GW32 are being collected for VOCs due to a previous exceedances of a Regional Tap Water Screening Level for vinyl chloride. The current screening level for vinyl chloride is 0.016 ug/L method (i.e., selective ion monitoring) needs to be used in order to ensure that the project objectives will be achieved.*

Navy Response to Specific Comment 12c: Comment noted.

d. *The QLs listed for metals in aqueous samples appear very high and more appropriate for analysis via 6010C instead of 6020A. Please verify these QLs with the laboratory and/or procure a laboratory that is capable of reporting lower QLs. Most of the listed QLs appear to be high by about one order of magnitude compared to QLs typically reported by method 6020A. It is important to note that many of the aqueous metals QLs exceed the risk screening levels (ecological EPA Regional Screening Levels [RSLs]) and therefore lower QLs are needed in order to achieve project objectives. Specific exceedances of risk screening levels are as follows:*
   - *Antimony QL (20) > EPA Tap water RSL (1.5)*
   - *Arsenic QL (10) > EPA Tap water RSL (0.045)*
   - *Cadmium AL (5) > EPA Tap water RSL (1.8)*
   - *Chromium QL (10) > EPA Tap water RSL (0.043)*
   - *Cobalt QL (10) > EPA Tap water RSL (1.1)*
   - *Vanadium QL (10) > EPA Tap water RSL (0.26)*
   - *Copper QL (20) > ecological groundwater screening levels (3.73)*
   - *Nickel QL (4) > ecological groundwater screening levels (8.28)*
   - *Silver QL (10) > ecological groundwater screening levels (0.23)*

Navy Response to Specific Comment 12d: The Navy conducted a comparison of quantitation limits from different laboratories and found that the quantitation limits for Method 6020A provide lower reporting limits than Method 6010C. The Navy is aware that many of the reporting limits exceed the ecological groundwater screening levels presented in Table 4-2 as well as the May 2010 Regional Screening Levels.

13. ***Table 4-2:*** *This table references an outdated Puerto Rico Water Quality Standards reference. In addition, the ambient water quality criteria for metals presented in the Puerto Rico Water Quality Standards (March 2010) are based on total recoverable concentrations of metals. Please correct the table accordingly.*

Navy Response to Specific Comment 13: Table 4-2 has been revised per the current version of the Puerto Rico Water Quality Standards.

Minor Points:

1. ***Page 3-1. Section 3.1, Bullet 2:*** *Please remove the "s" from the second reference to the word "location: in the first sentence.*

   Navy Response to Minor Point Comment 1: The "s" was removed from the second reference to the word "location".

2. ***Page 3-5. Section 3.4, Paragraph 1:*** *Please capitalize the "t" in the first word of the fourth sentence.*

   Navy Response to Minor Point Comment 2: The "t" was capitalized in the first word of the fourth sentence.