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

AUG 24 2010

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 62 (Former Bundy Disposal Area) – Draft Full RFI Work Plan

2) SWMU 71 (Former Quarry Disposal Site) – Draft Full RFI Work Plan

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).

EPA has completed its review of the above documents, and has the following comments:

SWMU 62 – Draft Full RFI Work Plan

EPA has completed its review of the Draft Full RFI Work Plan, dated June 18, 2010.

As part of that review, EPA requested our consultant, TechLaw Inc., to review the Full RFI Work Plan proposal. TechLaw's comments are given in the enclosed Technical Review dated July 26, 2010 (Encl. #1). Please submit, within forty five days of your receipt of this letter, written responses to comments in the enclosed Technical Review and any necessary revisions to the Full RFI Work Plan.

In addition, the Puerto Rico Environmental Quality Board (PREQB) has several comments on the RFI Work Plan. Those are given in the August 10, 2010 letter to myself, which is enclosed with this letter (Encl. #2). Please submit written responses to PREQB's comments and any necessary revisions to the Full RFI Work Plan within forty five days of your receipt of this letter.

SWMU 71 – Draft Full RFI Work Plan

EPA has completed its review of the Draft Full RFI Work Plan, dated June 11, 2010. As part of that review, EPA requested our consultant, TechLaw Inc., to review the Full RFI Work Plan proposal. TechLaw's comments are given in the enclosed Technical Review dated July 13, 2010 (Encl. #3). Please submit, within forty five days of your receipt of this letter, written responses to comments in the enclosed Technical Review and any necessary revisions to the Full RFI Work Plan.

In addition, the Puerto Rico Environmental Quality Board (PREQB) has several comments on the Draft Full RFI Work Plan. Those are given in the July 30, 2010 letter to myself, which is enclosed with this letter (Encl. 4). Please submit written responses to PREQB's comments and any necessary revisions to the Full RFI Work Plan within forty five days of your receipt of this letter.

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

Sincerely yours,

Timothy R. Gordon
Project Coordinator
Resource Conservation and Special Projects Section
RCRA Programs Branch

Enclosures (4)

cc: Ms. Wilmarie Rivera, P.R. Environmental Quality Board, w/encls., #1 and #3
Ms. Gloria Toro, P.R.Environmental Quality Board, w/encls., #1 and #3
Mr. Mark Kimes, Baker Environmental, w/encls.
Mr. Jonathan Flewelling/Cathy Dare, TechLaw Inc. w/o encls.
Mr. Felix Lopez, USF&WS, w/o encls.

ENCL. #1

REPA4R2-002-ID-196

TECHNICAL REVIEW OF THE DRAFT FULL RCRA FACILITY INVESTIGATION WORK PLAN SWMU 62 DATED JUNE 18, 2010

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

Submitted to:

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

Submitted by:

TechLaw, Inc.
221 Mineola Boulevard
Mineola, NY 11501

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

July 26, 2010

TECHNICAL REVIEW OF THE
DRAFT FULL RCRA FACILITY INVESTIGATION WORK PLAN SWMU 62
DATED JUNE 18, 2010

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

The following comments were generated based on review of the June 18, 2010 *Draft Full RCRA Facility Investigation Work Plan for SWMU 62, Naval Activity Puerto Rico, Ceiba, Puerto Rico* (Work Plan).

GENERAL COMMENTS

1. According to Section 1.3, Objectives, one of the objectives of the Full RCRA Facility Investigation is to conduct a general inventory of the types of debris within the vicinities of the proposed sample locations. A detailed methodology for this task has not been discussed in Section 3.0, Scope of Investigation. Revise the Work Plan to provide a discussion for how this task will be completed.

2. Subsurface soil samples collected below three feet should not be included in the future soil data set for comparison to soil screening values. Soil deeper than three feet is not considered environmentally available to potential terrestrial receptors, except in the presence of fossorial mammals or if subsurface soil may be excavated to become surface soil, neither of which appears to be the case at SWMU 62. The literature-based toxicological benchmarks selected as screening values (Table 4-1) are based on surface soil (0 to 1 foot) and subsurface soil (1 to 3 feet). Soil samples collected more than three feet below the surface need to be removed from the future data set and should not used for comparison to ecological soil screening values. The text needs to be modified to reflect this distinction.

3. Section 2.2.2 (Page 2-2) of the Work Plan mentions that some of the Phase I RFI soils were analyzed for Polychlorinated Biphenyls (PCBs). Neither the discussion in Section 2.2.2 nor subsequent sections of the Work Plan mention PCBs. Clarify why PCBs have been eliminated from the investigation.

4. 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 exceedances of risk-based screening criteria warrant a HHRA and/or ERA. In addition, provide any other decision criteria that will be used to prompt a HHRA or ERA.

5. 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 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 on the Final Correctives Measure Study for SWMU 68 (Baker, 2009b).

Ensure that the Work Plan 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 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 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 ecological risk assessments, 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).

6. The Work Plan does not discuss the potential biota at SWMU 62 that could be exposed to contaminants in soil or groundwater. Revise the Work Plan to specify that biota at or hydrologically downgradient from SWMU 62 will be discussed in the subsequent RFI Report.

7. The Work Plan does not summarize the approach and methodology to be used in any subsequent HHRA and/or ERA, should such analyses be warranted. For completeness, the Work Plan should, at a minimum:

   - Provide a Conceptual Site Model (CSM) for human and ecological receptors (i.e., show sources, potentially complete exposure pathways, and receptors).
   - Provide a brief discussion of exposure assumptions.
   - Clarify how COPCs will be identified.

- Clarify how non-detected compounds will be evaluated.
- Summarize standard EPA and/or Navy risk assessment approaches (as appropriate).
- Reference risk assessment guidance documents.

Revise the Work Plan to include additional details regarding how human health and ecological risk will be quantitatively evaluated, if warranted, by the analytical data screening.

8. The Work Plan is lacking several elements required by *EPA Requirements of Quality Assurance Project Plans* (QA/R-5), dated March 2001. For example:

   - Laboratory specific information (e.g., laboratory specific standard operating procedures [SOPs], reporting limits [RLs], quality control [QC] limits, and analytical calibration criteria) has not been provided.
   - Specific procedures for data verification and validation have not been provided.
   - There is no discussion on how data will be verified or validated.
   - There is no discussion of how precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS) measures will be incorporated into a usability report 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).
   - There is no discussion of corrective action procedures.

   Revise the Work Plan to provide the level of detail as discussed in QA/R-5.

9. The data quality objectives (DQOs) presented in the Work Plan are insufficiently detailed. For example, decision rules and boundaries of the study have not been defined. In addition, the rationale for the number, type, and location of the samples is not sufficiently explained. The level of information contained in the seven-step DQO process described in EPA's *Guidance on Systematic Planning Using the Data Quality Objectives Process* (QA/G-4), dated February 2006, should be provided. Revise the Work Plan to provide more detailed DQOs.

10. Although discussed in Section 4.6 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 were presented. Verification that the laboratory RLs 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.

11. The Work Plan references outdated SW-846 analytical methods (e.g., 6020, 6010B, 7470A/7471A); newer versions of the methods (6020A, 6010C, 8270D, 7470B/7471B) are available. Revise the Work Plan to reference the most updated analytical methods. Alternatively, revise the Work Plan to indicate QC procedures and criteria presented in the current methods will be used.

12. The Work Plan does not provide an adequate rationale for the proposed soil sampling depths. For example, Section 3.1 indicates that surface samples will be collected. However, there is no discussion on why the proposed sample numbers, type, and locations are sufficient to address study goals. Revise the Work Plan to provide a more detailed rationale for the proposed sampling.

13. Figure 4-1 and Section 4.6.3 indicate that a statistical process will be used to evaluate the data generated during this effort. However, it appears that sample locations are judgmental and not random. Therefore, statistical analysis is not appropriate. Revise the Work Plan to clarify this apparent discrepancy.

14. The Work Plan indicates surface soils from 0 to 1 ft below ground surface (bgs) and subsurface soils from 1 to 3 ft bgs and 5 to 7 ft bgs will be collected. However, the Work Plan does not discuss how representative sub samples of the intervals will be obtained for analysis. Revise the Work Plan to discuss field and laboratory subsampling procedures.

SPECIFIC COMMENTS

1. **Section 3.3.3, Investigation Derived Waste Management, Page 3-4:** This section states that soil cuttings from subsurface soils will be placed back into the boring from which they came, unless contamination is present. As much as possible, soils last out of the hole will be returned first, thereby, approximating original stratigraphy. However, it is unclear how soils will be returned to the correct boring and in the correct order if soil cuttings are collected and stored temporarily in 55-gallon drums. In addition, since samples will be analyzed off-site it is unclear how it will be known if soil borings do not contain any contamination. Revise this section to clarify these points.

2. **Section 3.3.3, Investigation Derived Waste (IDW) Management, Page 3-4:** More detailed IDW sampling procedures should be provided. The Work Plan should indicate how each aliquot of IDW will be collected for soil and water, and how these aliquots will be combined for the composite sample. In addition, the Work Plan should discuss how representative samples are obtained from the composite drum sampling. Revise the Work Plan to provide this information.

3. **Section 3.3.5, Surveying, Pages 3-4 to 3-5:** This section indicates that a global positioning system (GPS) will be used to locate samples. However, it is unclear what accuracy will be used. Revise the Work Plan to indicate the accuracy of the field grade GPS.

4. **Section 3.3.7, Chain-of-Custody, Page 3-5:** 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.

5. **Section 4.0, Reporting, Pages 4-1 through 4-4:** This section does not indicate that a data quality assessment (DQA) will be included in the final report. Revise this section to specify that a DQA will be included in the final report. Further, revise the Work Plan to discuss what will be included in the DQA.

6. **Section 4.6.3, Background Screening Values, Page 4-4:** It is unclear if the background screening values were calculated from results that include areas of contamination. In order to represent true background, on-site concentrations that are statistically elevated (e.g., due to contamination) should be removed from the background calculations. Revise the Work Plan to clarify if contaminated areas are included in the calculation of background screening levels.

7. **Section 4.7, Conclusions and Recommendations, Page 4-4:** 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 how the data will be incorporated into the database, or if the database is compared to the hard copy data to ensure its accuracy. In addition, 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 data is incorporated into the database, how the accuracy of the database is ensured, and to clarify if the validation qualifiers are entered in the database.

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

9. **Table 3-1, Summary of Sampling and Analytical Program - Environmental Samples:** This table indicates that subsurface field duplicates and matrix spike/matrix spike duplicates will be collected from the 5 to 7 ft bgs interval. However, Section 3.1 of the Work Plan indicates that previous studies show that samples from 5 to 7 ft bgs did not exhibit metals contamination. It is suggested that field QC samples be collected from the 1 to 3 ft bgs interval as the associated results will be more useful in evaluating the site conditions where higher concentrations of metals are expected (e.g., heterogeneity, interferences, etc.).

10. **Table 3-1, Summary of Sampling and Analytical Program - Environmental Samples:** The footnotes appear to provide contradictory information. Footnote[(1)] specifies that the 5 to 7 ft bgs interval will be sampled unless other contamination is

encountered at different intervals. However, footnote [2] indicates that if other intervals are contaminated, they will also be sampled. Revise footnote [1] to clarify conditions under which the 5 to 7 ft bgs interval will not be sampled.

11. **Table 3-3, Method Performance Limit:** Selenium has an ecological surface soil screening value below the quantitation limits (QL) presented in Table 3-3. However, the table does specify how results below the QL will be reported or if they will be qualified. Revise the table to clarify this and to specify that selenium has a screening level lower than the QL. In addition, clarify why potentially more sensitive methods for selenium were not proposed.

12. **Table 3-3, Method Performance Limit:** 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.

13. **Table 4-1 Ecological Soil Screening Values-** The surface soil screening value given for zinc (4.6 mg/kg) from USEPA 2007d is incorrect. The correct value from this source is 46 mg/kg. The zinc screening value needs to be corrected in this table.

14. **Appendix C Summary of Phase 1 RFI Analytical Results-** Thallium and zinc are not included in the list of metals analyzed in surface or subsurface soil samples. Yet, Table 4-1, *Ecological Soil Screening Values*, gives a soil screening value for both analytes. The screening values for thallium and zinc should be removed from Table 4-1 if neither compound will be included in future analyses. However, a reason needs to be provided for the removal of these two metals. Amend the text accordingly.

15. **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. 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 are presented in Table 4-1. The screening values in Appendix C for beryllium, cadmium, chromium, copper, lead, silver, and vanadium 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 is used in the future assessment of soil data from SWMU 62. Amend the text accordingly.

ENCL. #2

COMMONWEALTH OF PUERTO RICO
OFFICE OF THE GOVERNOR
ENVIRONMENTAL QUALITY BOARD

PUERTO RICO VERDE

LAND POLLUTION CONTROL AREA

August 10, 2010

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

RE: TECHNICAL REVIEW DRAFT FULL RCRA FACILITY INVESTIGATION WORK PLAN FOR SWMU 62 – FORMER BUNDY DISPOSAL AREA
NAVAL ACTIVITY PUERTO RICO (NAPR)
CEIBA, PR PR2170027203

Dear Mr. Gordon:

The Hazardous Wastes Permits Division has finished the review of the above-mentioned document. The document was prepared and submitted by Michael Baker, Jr., Inc. on behalf of the Navy. It was received on June 21, 2010. The purpose of this work plan is to further delineate the environmental impact to media found during the Phase I RFI conducted at SWMU 62.

This corrective action activity was scheduled as a commitment in the Fiscal Year 2010 RCRA Grant Work Plan negotiated between the U.S. Environmental Protection Agency (EPA) and the PREQB.

After a thorough review, several comments were issued. The Federal Facility Coordinator (FFC) also provides comments after reviewing the document. Joint comments of the HWPD and the office of EQB's FFC are being forwarded in order to avoid duplicity and facilitate the responses. Enclosed please find PREQB's comments to the reviewed document.

If you have any additional comment or question please feel free to contact Gloria M. Toro Agrait of my staff at (787) 767-8181 extension 3586 or (787) 833-1188.

Cordially,

María V. Rodríguez

María V. Rodríguez Muñoz
Manager
Land Pollution Control Area

cc: Ariel Iglesias Portalatín
Wilmarie Rivera, Federal Facilities Coordinator

Technical Evaluation of the Draft Full RCRA Facility Investigation Work Plan
SWMU 62 – Former Bundy Disposal Area
Naval Activity Puerto Rico, Ceiba, Puerto Rico
June 18, 2010

I. GENERAL COMMENT

Please consider conducting a removal of the debris to eliminate the source for continued future contamination. Note this is consistent with actions taken at other debris sites in Puerto Rico.

II. PAGE-SPECIFIC COMMENTS

1) Page 2-1, Section 2.2.1, paragraph 2. Please clarify to what depths the subsurface soil samples were collected. Also note if debris was observed in the soil borings.

2) Page 2-3, Section 2.2.2, paragraph 2. Please clarify what exposure parameters were used in conducting the human health risk assessment for arsenic and how this assessment differs from the exposure scenario EPA uses in calculating the residential Regional Screening Level (RSL), as EPA's default residential exposure scenario is used in calculating the default value. Please also clarify what exposure point concentration was used for arsenic in this assessment.

3) Page 2-3, Section 2.2.2, Paragraph 4: The text states that only barium and cobalt in subsurface soil (specifically, 1 to 3 feet bgs) exceeded both ecological screening criteria and background screening values. However, barium exceeds both the ecological screening criteria and background at 9 to 11 feet bgs in sample 62SB03 and at 1 to 3 feet bgs in sample 62SB06. Please revise the text accordingly.

4) Page 3-2, Section 3.1, Paragraph 1:

   The text states that the selection of the 1 to 3 and 5 to 7 feet bgs depth intervals for subsurface soils was based on the results from sample 62SB06 which showed metals contamination at 1 to 3 feet bgs but not at the subsequent depth interval of 5 to 7 feet bgs. However, the results in Appendix C show that barium did exceed the ecological screening criteria as well as the background screening values at the 5 to 7 feet bgs depth interval. Please clarify and revise the text accordingly.
   Please add that field observations will include identification of debris observed in soil borings, if possible.

5) Page 3-4, Section 3.3.2, Paragraph 1: Please remove the words "and well" from this sentence, as wells are not proposed as part of this work.

6) Table 3-1: The notes should be revised to:

   a. Delete TBD
   b. Delete the "x" at the end of the abbreviation "APP"

7) Table 3-3: Please include the preparation method being used for metals in soil samples.

8) Page 4-1, Section 4.5: Please add identification of types of debris to what will be reported in this section, consistent with the recommendations of the Phase I RFI.

9) Page 4-3, Section 4.6.2: Please update the most recent version of EPA's RSL table to May 2010.

10) Figure 4-1: EPA has a current (2010) statistical software, ProUCL, which is peer-reviewed, public domain, and vetted statistical software that is widely used at environmental sites to conduct this analysis. Please consider updating the approach presented in this figure to make use of EPA's current recommended software for conducting this type of analysis.

ENCL. #3

REPA4R2-002-ID-193

TECHNICAL REVIEW OF THE DRAFT FULL RCRA FACILITY INVESTIGATION WORK PLAN SWMU 71- QUARRY DISPOSAL SITE DATED JUNE 11, 2010

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

Submitted to:

U.S. Environmental Protection Agency
Region 2
290 Broadway
New York, NY10007-1866

Submitted by:

TechLaw, Inc.
221 Mineola Boulevard
Mineola, NY 11501

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

July 13, 2010

TECHNICAL REVIEW OF THE
DRAFT FULL RCRA FACILITY INVESTIGATION WORK PLAN
SWMU 71- QUARRY DISPOSAL SITE
DATED JUNE 11, 2010

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

The following comments were generated based on review of the June 11, 2010 *Draft Full RCRA Facility Investigation Work Plan for SWMU 71 – Quarry Disposal Site, Naval Activity Puerto Rico, Ceiba, Puerto Rico*(Work Plan).

GENERAL COMMENTS

1. The Work Plan is lacking several elements required by *EPA Requirements of Quality Assurance Project Plans* (QA/R-5), dated March 2001. For example:

   - Laboratory specific information (e.g., laboratory specific standard operating procedures, reporting limits (RLs), quality control (QC) limits,and analytical calibration criteria) has not been provided.
   - Specific procedures for data verification and validation have not been provided.
   - There is no discussion of how precision, accuracy, representativeness, comparability and completeness and sensitivity (PARCCS) measures will be incorporated into a data quality assessment, 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).
   - There is no discussion of corrective action procedures.

   Revise the Work Plan to provide the level of detail as discussed in QA/R-5.

2. The data quality objectives (DQOs) presented in the Work Plan are not sufficiently detailed. For example, decision rules and boundaries of the study have not been defined. In addition, the rationale for the number, type, and location of the samples is not sufficiently explained. The level of information contained in the seven-step DQO process described in EPA's *Guidance on Systematic Planning Using the Data Quality Objectives Process* (QA/G-4), dated February 2006, should be provided. Revise the Work Plan to provide more detailed DQOs.

3. Section 3.1 indicates that surface soil samples will not be collected in the Lower Area of SWMU 71 since "the areas surrounding the Commissary Building and parking lot are assumed to be disturbed to a depth of about one foot bgs because of construction activities, thus surface soil is unrepresentative of surface soil and the SWMU that may have had a release from SWMU activities." However, it is not clear how the assumption that soils are

disturbed was determined and whether the extent of these disturbed soils encompassed all proposed sampling locations. In addition, no information was provided to establish that these disturbed soils are not impacted from SWMU activities. Revise the Work Plan to provide further details explaining why surface soils in the Lower Area of SWMU 71 will not be collected and analyzed.

4. The Work Plan does not provide an adequate rationale for the proposed soil sampling depths. For example, Section 3.1 often indicates that contamination was detected above screening criteria from 7 to 9 feet (ft) below ground surface (bgs); however, no soil samples at greater depths (e.g., 9 to 11 ft bgs) have been proposed to vertically delineate contamination. Further, the text often proposes sampling at the 1 to 3 ft bgs interval, without a clear rationale for the selection of this sampling interval, especially given prior statements regarding historical soil disturbance associated with construction activities. Revise the Work Plan to provide sufficient rationale for selection of soil sampling depths, and to clarify why vertical delineation of contamination has not been proposed.

5. The Work Plan does not provide adequate details on monitoring well installation. For example, Section 4.1 indicates that a minimum of only 6 inches of bentonite would be used for very shallow wells; however, it is unclear why limiting the amount of bentonite would be necessary, since the anticipated depth of boring refusal is 16 to 29 feet bgs. Similarly, Section 4.1 indicates that the thickness of sand above the well screen may be reduced. Revise the Work Plan to provide additional well installation details and provide anticipated depth of water information to support any limitations on sand or bentonite usage.

6. Appendix D discusses EPA Region II'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 and discuss how its use would be appropriate for both wells installed at depths of up to 30 feet as well as for very shallow wells.

7. Although discussed in Section 4.6 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 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 reporting limits (RLs) are also provided alongside the screening values.

8. It is unclear if the background screening values are calculated from results that include areas of contamination. In order to represent true background, on-site concentrations that are statistically elevated (e.g., due to contamination) should be removed from the background calculations. Revise the Work Plan to clarify if contaminated areas are included in the calculation of background screening levels.

9. The Work Plan references outdated SW-846 analytical methods (e.g., 6020, 6010B, 8270C); newer versions of the methods (6020A, 6010C, 8270D) are available. Revise the Work Plan

to reference the most updated analytical methods. Alternatively, revise the Work Plan to indicate that the QC procedures and criteria discussed in the current versions of these methods will be used.

10. Table 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.

11. 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 exceedances of risk-based screening criteria warrant a HHRA and/or ERA. In addition, provide any other decision criteria that will be used to prompt a HHRA or ERA.

12. 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 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 have been accepted based upon EPA's approval letter dated August 6, 2009 on the Final Correctives Measure Study for SWMU 68 (Baker, 2009b).

    Ensure that the Work Plan 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 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 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 ecological risk assessments, 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).

13. The Work Plan does not discuss the potential biota at SWMU 71 that could be exposed to contaminants in soil or groundwater. Revise the Work Plan to specify that biota at or hydrologically downgradient from SWMU 71 will be discussed in the subsequent RFI Report.

14. The Work Plan does not summarize the approach and methodology to be used in any subsequent HHRA and/or ERA, should they be warranted. For completeness, the Work Plan should, at a minimum:

    - Provide a Conceptual Site Model (CSM) for human and ecological receptors (i.e., show sources, potentially complete exposure pathways, and receptors).
    - Provide a brief discussion of exposure assumptions.
    - Clarify how COPCs will be identified.
    - Clarify how non-detected compounds will be evaluated.
    - Summarize standard EPA and/or Navy risk assessment approaches (as appropriate).
    - Reference risk assessment guidance documents.

    Revise the Work Plan to include additional details regarding how human health and ecological risk will be quantitatively evaluated, if warranted by the analytical data screening.

15. MCLs will be used to screen groundwater data; however, 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 71 to prevent consumption of groundwater (e.g., residential development). Further, if a HHRA is warranted, note that groundwater COPCs should be selected based on the applicable Tap Water RSL and not the MCL.

16. The Work Plan indicates that "background screening values" will be used to evaluate analytical results relating to both human and ecological receptors. For the purposes of risk assessment, inorganic compounds above risk-based criteria should not be eliminated on the basis of background, even though statistical comparisons to background may be included to better understand site-related contamination. With respect to the HHRA, all inorganic compounds above risk-based screening levels should be evaluated quantitatively in the HHRA. Then, as part of the uncertainty analysis, the Navy may present a refinement of the total risk and hazard by providing a breakdown of risks attributable to site-related contamination and risks attributable to background levels.

    Regarding the ERA, ecological risks are evaluated much the same way (i.e., Step 2 of the Navy ecological risk assessment guidance does not eliminate inorganic compounds based on background but presents the calculation of hazard and the hazard estimates for all identified COPCs, whereas Step 3a presents a refinement of hazard). Clarify these approaches in the Work Plan.

17. 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 based on tables that compare the QLs to applicable human health and ecological screening values.

SPECIFIC COMMENTS

1. **Section 2.2.1, Phase II ECP Investigation, Pages 2-2 and 2-3:** The last paragraph on page 2-2 indicates that several compounds in surface soil, subsurface soil, and groundwater exceeded risk-based concentrations including two Polynuclear Aromatic Hydrocarbons (PAHs) in subsurface soil (benzo[a]pyrene and dibenzo[a,h]anthracene) and one PAH in groundwater (naphthalene). The first sentence at the top of page 2-3 states, "None of the concentrations of these compounds exceeded the established background concentrations at NAPR at that time." This statement is misleading as background concentrations for organics (e.g., PAHs) do not exist. Revise Section 2.2.1 to resolve this discrepancy.

2. **Section 2.2.2, Phase I RFI, Page 2-3:** This section states that various compounds "were detected above regional and/or industrial Screening Levels..." Revise Section 2.2.2 to clarify if residential screening levels were exceeded.

3. **Section 2.2.2, Phase I RFI, Page 2-3:** This section indicates that groundwater from 71SB04 was not analyzed for pesticides, total petroleum hydrocarbons (TPH) diesel range organics (DRO), or metals due to low groundwater volume. However, no discussion regarding these potential data gaps has been provided. In addition, additional groundwater sampling near 71SB04 was not included in this Work Plan. Revise the Work Plan to discuss how these data gaps will be addressed.

4. **Section 2.2.2, Phase I RFI, Page 2-3:** The summary of samples in this section indicates that groundwater samples were collected from 71SB04, 71SB06, and 71SB08, but does not discuss groundwater samples from 71SB05. However, Figure 3-2 indicates that groundwater samples were collected at 71SB05. Revise the Work Plan to address this apparent discrepancy.

5. **Section 3.1, Soil Sampling and Analysis Program, Page 3-2:** The first item on this page indicates that one soil boring (71SB31) will be advanced south of Phase I RFI sample location 71SB11 to delineate cobalt contamination detected in subsurface soil (7.0 to 9.0 ftbgs). Based on Figure 3-2, it is unclear why one soil boring is sufficient to delineate cobalt contamination as it appears that no data exist north, east, or west of boring 71SB11. Revise the Work Plan to clarify the sampling approach in the vicinity of Phase I RFI sample location 71SB11.

6. **Section 3.1, Soil Sampling and Analysis Program, Page 3-2:** The second item on this page indicates that arsenic and cobalt exceeded screening criteria in subsurface soil (at 7to 9 ft bgs) from Phase I RFI sample location 71SB04, but the text indicates that the proposed samples in the vicinity of this boring will be collected from 1 to 3 ft bgs and from 7 to 9 ft bgs (or from an alternate interval) based on the discretion of the field geologist. Since the

metals contamination was located from 7 to 9 ft bgs, it is unclear why an alternate interval would be appropriate. Revise the Work Plan to provide clarification regarding this matter.

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

8. **Section 3.2, Monitoring Well Installation, Page 3-5:** 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 suggested 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.

9. **Section 3.4, Quality Assurance/Quality Control Samples, Page 3-6:** This section states the *Final RCRA Facility Investigation Management Plans* (Management Plans), dated 1995, will be used as guidance for the current sampling and analysis plan. However, the quality control acceptance criteria in the Management Plans are based on outdated or no longer existing SW-846 methods. Revise the Work Plan to provide updated analytical methods and QC acceptance criteria.

10. **Section 3.4.2, Equipment Rinsates, Page 3-6:** 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 suggested that the equipment rinsates be collected from equipment that has been decontaminated (e.g., groundwater pump) to ensure no cross-contamination has occurred. Revise the Work Plan to indicate that equipment rinsates will be collected from equipment requiring decontamination.

11. **Section 3.5.5, Investigation Derived Waste Management, Page 3-8:** It is not clear if investigation derived waste (IDW) will be combined from multiple wells into one 55-gallon drum or if each well will have its own drum. In addition, it is not clear 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.

12. **Section 3.5.5, 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 water, and how these aliquots will be combined for the composite sample. Revise the Work Plan to provide this information.

13. **Section 3.5.9, 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.

14. **Section 4.0, Reporting, Pages 4-1 through 4-7:** 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).

15. **Section 4.7, Conclusions and Recommendations, Page 4-7:** 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 how the data will be incorporated into the database, or if the database is compared to the hard copy data to ensure its accuracy. In addition,, 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 data is incorporated into the database, how the accuracy of the database is ensured, and to specify that validation qualifiers are entered in the database.

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

17. **Table 3-1, Summary of Sampling and Analytical Program – Environmental Samples, Page 1:** There are more than 10 surface soil samples proposed, but only one field duplicate sample and no matrix spike/matrix spike duplicate (MS/MSD) samples have been proposed for surface soil samples. The Work Plan indicates that duplicates should be collected at a frequency of 1 per 10 environmental samples, and MS/MSDs should be collected at a frequency of 1 per 20. Revise the Work Plan to address this discrepancy.

18. **Table 3-1, Summary of Sampling and Analytical Program – Environmental Samples, Pages 3-4:** The table indicates that the groundwater sampling depths are not available. 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.

19. **Table 3-1, Summary of Sampling and Analytical Program – Environmental Samples, Page 4:** The notes at the bottom of this page are incomplete. Revise the Work Plan accordingly.

20. **Table 3-1, Summary of Sampling and Analytical Program – Environmental Samples, Pages 1-4:** This table indicates that field duplicate samples will be distinguished using a "D" at the end of the sample nomenclature. However, the analytical laboratory can easily figure out that the "D" represents duplicate. Therefore, it is suggested that all field duplicate samples be submitted to the laboratory blind. Revise the Work Plan to remove the "D" from field duplicate sample nomenclature and indicate that duplicate samples will be submitted to the laboratory blind.

21. **Table 3-2, Summary of Sampling and Analytical Program – QA/QC Samples, Page 1:** It is unclear why this table indicates that aqueous IDW samples will not be analyzed for metals. Since vanadium is an issue in groundwater, aqueous IDW samples should be analyzed for metals. Revise the Work Plan to address this discrepancy.

22. **Table 3-3, Method Performance Limits:** This table contains analytes that have RLs above ecological screening levels, but have not been shaded as indicated in the key (e.g., copper, nickel, and silver). In addition, 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.

23. **Table 4-2, Ecological Groundwater Screening Values:** Table 4-2 provides ecological "groundwater" screening values, which represent conservative surface water screening benchmarks. The Work Plan needs to clarify how these values will be applied in screening the groundwater analytical data, considering that (a) groundwater at SWMU 71 is expected to be approximately 20ft deep (see Section 2.2.1, Page 2-2), and (b) the closest aquatic habitat is the bay located about 1,500fteast of SWMU 71 (see Figure 1-2). Revise the Work Plan to clarify how these values will be used in screening groundwater analytical data.

MINOR COMMENT

1. **Section 3.1, Soil Sampling and Analysis Program, Page 3-1:** The last bullet on this page indicates four samples (71SB28 through 21SB30) will be collected. However, it appears the text should indicate that three samples will be collected. Revise the Work Plan accordingly.

ENCL. #4

COMMONWEALTH OF PUERTO RICO
OFFICE OF THE GOVERNOR
ENVIRONMENTAL QUALITY BOARD

PUERTO RICO VERDE

LAND POLLUTION CONTROL AREA

July 30, 2010

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

Re: Review Draft Full RCRA Facility Investigation
Work Plan for SWMU 71 – Quarry Disposal Site
Naval Activity Puerto Rico (NAPR), Ceiba
EPA ID No. PR2170027203

Dear Mr. Gordon:

The Hazardous Wastes Permits Division and the Federal Facility Coordinator have finished the review of the above-mentioned document. The document was prepared and submitted by Michael Baker, Jr., Inc. on behalf of the Navy. It was received on June 15, 2010. The purpose of this work plan is to further delineate the environmental impact to media found during the Phase I RFI conducted at SWMU 71.

This activity was scheduled as a commitment for the Fourth Quarter at the FY-10 RCRA Work Plan negotiated between the USEPA and EQB.

After a thorough review, several comments were issued. The federal facility coordinator also provided comments on the document. Joint comments of the HWPD and the office of EQB's Federal Facility Coordinator are being forwarded to EPA in order to avoid duplicity. Enclosed please find PREQB's comments to the reviewed work plan.

If you have any question or additional comment regarding the matter feel free to contact Gloria M. Toro-Agrait of my staff at 787-767-8181 extension 3586 or 787-833-1188 extension 6906.

Cordially,

María V. Rodríguez

María V. Rodríguez Muñoz
Manager
Land Pollution Control Program

cc: Ariel Iglesias Portalatín
Wilmarie Rivera, Federal Facilities Coordinator

Review Full RCRA Facility Investigation Work Plan,
SWMU 71 – Quarry Disposal Site, Naval Activity Puerto Rico,
EPA I.D. No. PR2170027203
June 11, 2010

1. Page 2-2, Section 2.2.1:
   a. Paragraphs 3 and 4: Please clarify whether the depth to ground water is 24 feet below grade, as stated in paragraph 3 or 20 feet below grade, as stated in paragraph 4.
   b. Paragraph 4: Please correct the mis-spelling of "indeno[1,2,3-cd]pyrene in the second sentence.

2. Page 2-3, Section 2.2.2, paragraph 3: Please clarify what is meant by "regional and/or industrial Screening Levels (SLs)." This phrase is used here and in Section 3.1. It appears that residential and/or industrial regional screening levels were used for comparison to Phase I RFI data. Please revise this phrase to "residential and/or industrial regional screening levels" in this section and in Section 3.1.

3. Page 3-1, Section 3.1: Please specify in the text that the analysis Appendix IX Metals in soil samples are for total metals.

4. Page 3-1, Section 3.1, Third bullet of the Upper Area: Correct that samples 71SB28 through 71SB30 are three samples instead of four.

5. Page 3-1, Section 3.1: As discussed in Section 2.1, surface water runoff from the majority of the site flows southwest towards an existing ditch and culvert system before eventually discharging into nearby wetlands. Please provide a justification for not proposing samples within the ditch and downgradient areas as this system would appear to provide a depositional environment for site contaminants transported via past stormwater runoff.

6. Page 3-2, Section 3.1, Lower Area:
   a. Bullet 1: Please consider the collection of a sub-surface soil sample from 9- to 11-feet below grade at proposed location 71SB31 which is being drilled to evaluate conditions in the area of 71SB11. The Phase 1 RFI results indicated that the cobalt concentration decreased to below the SLs in the 13- to 15-foot interval at the 71SB11 location, however, there are no analytical results from the 9- to 11-foot interval at this location.
   b. Bullet 2: Although shallow refusal is anticipated in the upper area based on previous testing, please consider including a statement to indicate that if sub-surface conditions allow, soil samples will also be collected from the 3- to 5-foot below grade interval in the vicinity of boring 71SB03 to assess cobalt concentrations.

c. Bullet 4: As the constituents of concern at the proposed borings around 71SB06 are metals, which cannot be discerned by the geologist in the field without the aid of specialized equipment, please consider identifying a secondary sampling interval (7 to 9 feet below grade) based on the previous results.
d. Bullets 1 to 4: Please provide detail on what criteria will be used by the field geologist in selecting the appropriate subsurface sampling interval when his or her discretion is used rather than PID or olfactory information. Please address here and on Page 3-3, in the second full paragraph.
e. Bullets 1 to 4: Please clarify why soil that may have been graded or reworked during construction activities is being excluded from investigation. If soil was impacted by past releases and then moved around an area, elevated concentrations of contamination would still be associated with the past release, similar to natural fate and transport mechanisms moving contamination away from an original release. Please note exclusion of surface soil from investigation is also discussed on Page 3-3, in the second full paragraph.

7. Page 3-3, Section 3.1, paragraph 3: Please change the word "form" in the fifth sentence to "from".

8. Page 3-3, paragraph 4: Provide further clarification regarding that the samples will be analyzed for total metals.

9. Page 3-5, Section 3.3: Please specify the appropriate containers that the laboratory will provide to collect and place the groundwater samples.

10. Page 3-8, Section 3.5.5: The document claims that "the soil cuttings from the subsurface soil sampling will be placed back into the boring from which they came, unless contamination is present." It is not clear how this will be achieved. Please provide more details on the considerations to be taken to determine if the soil cuttings are or not suitable for being returned to the boring.

11. Page 3-6, Section 3.4.4 and 3.4.5: Please clarify if soil is being considered an environmental media regardless of samples being taken at the surface or subsurface at the moment of calculating the frequency of field duplicates and MS/MSD samples. According to Table 3-1, there will be 74 soil samples, 6 duplicates and 4 MS/MSD, if the soil will be considered as one environmental media the frequency is acceptable.

If not, there should be one more duplicate and one MS/MSD samples for surface Soil Samples and 3 MS/MSD for subsurface soil samples.

12. 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.

13. Page 4-3, Section 4.6.1.2: Groundwater sampling results are proposed to be screened against surface water screening benchmarks representing dissolved concentrations. Please note that metal ambient water quality criteria presented in the Puerto Rico Water Quality Standards (March 2010) are based on total recoverable concentrations of metals. Please revise the text accordingly.

14. Page 4-6, Section 4.6.2.2: Please also include Puerto Rico's Water Quality Standards Regulation (PRWQS) in this section. Please use the more stringent of either the federal WQS or PRWQS as the enforceable groundwater standard.

15. Page 4-6, 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.

16. Table 3-1
    a. The table shows that for samples 71SB28 through 71SB30 the laboratory will perform analysis for Appendix IX Low-Level Polycyclic Aromatic Hydrocarbons (PAHs) and Metals (Total), according to Section 3.1 the analysis will be only for Appendix IX Low-Level PAHs. Please clarify and make appropriate corrections.
    b. The table shows that for samples 71SB44 through 71SB48 the laboratory will perform analysis for Appendix IX Low-Level Polycyclic Aromatic Hydrocarbons (PAHs) and Metals (Total), according to Section 3.1 the analysis will be only for Appendix IX Metals (Total). Please clarify and make appropriate corrections.

17. Table 3-1: Please revise and correct for the following typographical errors:
    a. The mis-spelling of "collected" in note 2.
    b. In the electronic version posted at the Team's Website please finish the sentences for notes 2 and 3.

18. Table 3-2:
    a. TBD should be eliminated from the footnotes.
    b. IDW should be corrected changing an "f" for a "g".

19. Tables 3-3 and 4-2: Please check the quantitation limits for the aqueous samples versus the screening level presented in Table 4-2. In particular, it appears as though the quantitation limits for copper, nickel and silver exceed the ecological screening values.