



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

JUL 07 2011

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

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

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

- 1) SWMU 45 (Outside Areas of Building 38 – Former Power Plant) – Draft Final Corrective Measures Study (CMS) Final Report, dated December 17, 2010
- 2) SWMU 79 (former Drone Launching Areas on Cabras Island) – Revised Final Phase I RFI Work Plan, dated June 21, 2011

Dear Mr. Davidson:

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

SWMU 45 (Outside Areas of Building 38 – Former Power Plant) – Draft Final Corrective Measures Study (CMS) Final Report

EPA has completed its review of the above document and the Navy's Responses to EPA's October 14, 2010 comments, both of which were submitted on behalf of the Navy by Mr. Mark Kimes' (of Michael Baker, Inc., your consultant) letter of December 17, 2010. As part of our review EPA requested our contractor, TechLaw Inc., to review the Navy's Responses and the CMS Final report.

Based on those reviews, EPA has determined that the proposed remedy discussed in the CMS Final Report and the Navy's Responses to EPA's previous comments appear consistent with the National Contingency Plan (EPA 1990), since the *cumulative* carcinogenic risk for the various site receptors does not exceed 1E-04, except for future hypothetical residents. To address that potential risk, the CMS indicates that as part of the proposed final remedy, an institutional control (IC) restricting future residential land and groundwater use will be developed. Also, while the total hazard index (HI) across all media and exposure routes exceeds 1.0 for various industrial exposure receptors (e.g., current and future on-site workers [HI=2.49], future construction workers [HI=8.43], and future industrial/commercial workers [HI=4.26]), the only hazard driver for that HI risk is the constituent vanadium in subsurface soil or sediment (refer to Section 5.0 of the CMS Final Report risk and hazard summary tables). Since, as discussed in the CMS Final Report the vanadium concentrations in subsurface soil and sediment at SWMU 45 are representative of background concentrations, when compared with the February 29, 2008 *Revised Final II Summary Report for Environmental Background Concentrations of Inorganic Compounds, Naval Activity Puerto Rico*, the CMS concludes that CAOs for vanadium are not warranted as part of the proposed final remedy.

However, there are several minor issues that still need clarified or corrected, and are discussed in the enclosed Technical Review, dated March 14, 2011 (Enclosure #1). In addition, the Puerto Rico Environmental Quality Board (PREQB) has reviewed the Navy's Responses to PREQB's previous comments and the December 17, 2010 CMS Final Report. PREQB's comments are given with their letter dated January 13, 2011 to myself. A copy is attached as Enclosure #2. Within 60 days of your receipt of this letter, please submit as an addendum, responses and any necessary revisions to the CMS Final Report to address comments given in the enclosed Technical Review and PREQB's January 13, 2011 comments.

EPA will conditionally approve the CMS Final Report and the proposed final remedy, subject to the Navy addressing EPA's and PREQB's enclosed comments, and implementation of public review of the CMS and the final remedy proposal, pursuant to Section XXVIII of the 2007 Consent Order. Therefore, in preparation for such public review, please also submit within sixty days of your receipt of this letter, an updated draft Statement of Basis for the proposed remedy and the recommended status of Corrective Action Complete, with institutional controls.

#### SWMU 79 (former Drone Launching Areas on Cabras Island) – Revised Final Phase I RFI Work Plan

EPA has completed its review of the above document and the Navy's Responses to EPA's March 11, 2011 comments, both of which were submitted on behalf of the Navy by Mr. Mark Kimes' (of Michael Baker, Inc., your consultant) letter of June 21, 2011. EPA will approve the Revised Final Phase I RFI Work Plan dated June 21, 2011. However, EPA notes that the Responses are not fully in agreement with the text in the Revised Final Work Plan. Specifically, the Navy's

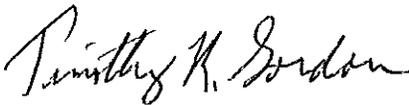
Response to EPA Specific Comment #18 states that Section 3.1.3 of the Work Plan will be revised to include the following "If FID/PID screening and visual/olfactory observations do *not indicate* contamination, then a soil sample will be collected for laboratory analysis from the 2-foot interval immediately above the water table." Whereas, Section 3.1.3 of the Revised Final Work Plan includes that statement plus the following additional statement "If FID/PID screening and visual/olfactory observations *do indicate* contamination at the surface soil sample, then the subsurface soil samples for laboratory analysis will be collected at the 1-3 foot interval and at the 2-foot interval immediately above the water table." EPA is in agreement with the approach given in Section 3.1.3 of the Revised Final Work Plan.

In addition, the Puerto Rico Environmental Quality Board (PREQB) has reviewed the Navy's Responses to PREQB's previous comments and the Revised Final Work Plan, and had one comment on the Responses and the Revised Final Work Plan. This comment is discussed in PREQB's letter dated July 6, 2011 to myself. A copy is attached as Enclosure # 3. However, as discussed in their letter, PREQB states that "we will accept the document as final." Therefore, no further revision to the June 21, 2011 Revised Final Work Plan is required.

EPA understands that the Navy has commenced implementation of the Phase I RFI investigations around June 13, 2011. Therefore, pursuant to the schedule given in Figure 5-1 of the Work Plan, please submit the draft Phase I RFI Final Report within 60 days of your receipt of validated analytical results for all sampling performed under the Work Plan.

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

Sincerely yours,



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

Enclosures (3)

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

**EVALUATION OF THE NAVY RESPONSE TO EPA COMMENTS  
DATED OCTOBER 14, 2010 ON THE  
DRAFT CORRECTIVE MEASURES STUDY REPORT SWMU45 –  
AREA OUTSIDE BUILDING 38 (FORMER POWER PLANT)  
DATED JULY 22, 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.  
205 West Wacker Drive  
Suite 1622  
Chicago, Illinois 60606**

<b>EPA Task Order No.</b>	<b>004</b>
<b>Contract No.</b>	<b>EP-W-07-018</b>
<b>TechLaw TOM</b>	<b>Cathy Dare</b>
<b>Telephone No.</b>	<b>315-334-3140</b>
<b>EPA TOPO</b>	<b>Timothy Gordon</b>
<b>Telephone No.</b>	<b>212-637-4167</b>

**March 14, 2011**

**EVALUATION OF THE NAVY RESPONSE TO EPA COMMENTS  
DATED OCTOBER 14, 2010 ON THE  
DRAFT CORRECTIVE MEASURES STUDY REPORT SWMU45 –  
AREA OUTSIDE BUILDING 38 (FORMER POWER PLANT)  
DATED JULY 22, 2010**

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

Presented below is an evaluation of the Navy Response to EPA Comments dated October 14, 2010 on the *Draft Corrective Measures Study Report SWMU 45 – Area Outside Building 38 (Former Power Plant)* [CMS], dated July 22, 2010. Only those comments which have not been adequately addressed or which require further discussions are presented below.

**SPECIFIC COMMENTS**

**Evaluation of the Response to EPA Specific Comment 1:** The response is partially adequate. However, note that the EPA Regional Screening Levels were updated in November 2010 and may be accessed here: [http://www.epa.gov/reg3hwmd/risk/human/rb-concentration\\_table/Generic\\_Tables/index.htm](http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Review the November 2010 RSLs to determine any impacts to the selection of chemicals of potential concern (COPCs), and if any, revise the Human Health Risk Assessment (HHRA) uncertainty analysis accordingly.

**Evaluation of the Response to EPA Specific Comment 3:** The response is adequate. However, it was noted during review of Section 5.3.2.4, Data Analysis, that ProUCL Version 4.00.04 was used to calculate the 95% upper confidence limits (UCLs) on the mean, which was used as the exposure point concentration (EPC) in some cases. ProUCL Version 4.00.04 has been superseded by ProUCL Version 4.00.05 dated May 2010. Revise the HHRA uncertainty analysis to discuss any potential impacts to the HHRA resulting from not using the latest version of ProUCL to calculate 95% upper confidence limits, if any.

**Evaluation of the Response to EPA Specific Comment 5:** The response is partially adequate. While the response to the General Comment is adequate, Section 5.3.4.3, Potential Human Health Effects, should be more detailed. For completeness, it is recommended that Section 5.3.4.3 be revised to discuss/provide the risk and hazard estimates for each exposure pathway and receptor (both exposure pathway-specific risks and hazards as well as total cumulative risk and hazards).

ENC. # 2



COMMONWEALTH OF PUERTO RICO  
Office of the Governor  
Environmental Quality Board



ENVIRONMENTAL EMERGENCIES RESPONSE AREA

January 13, 2011

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

**RE: TECHNICAL REVIEW RESPONSE TO COMMENTS  
DRAFT CORRECTIVE MEASURES STUDY REPORT  
FOR SWMU 45 – AREA OUTSIDE BUILDING 38  
NAVAL ACTIVITY PUERTO RICO (NAPR)  
CEIBA, PR PR2170027203**

Dear Mr. Gordon:

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

Joint comments between the HWPD and the FFC are being sent in order to avoid comment duplicity. Enclosed please find PREQB's comments issued as part of the technical review. If you have any additional comment or question please feel free to contact Gloria M. Toro Agrait at (787) 767-8181 extension 3586 or myself at extension 6129.

Cordially,

Wilmarie Rivera  
Federal Facilities Coordinator  
Environmental Emergencies Response Area

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

**Technical Review of the Response to Comment on the Draft Corrective Measures Study  
Report for SWMU 45 – Area Outside Building 38  
Naval Activity Puerto Rico, Ceiba, Puerto Rico - PR2170027203  
December 17, 2010**

The responses to PREQB comments are acceptable, with the exception of the following:

1. PREQB Comment 2, Page 5-2, Section 5.2:

- a. Please clarify why soils down to 10 feet bgs were evaluated in this risk assessment when groundwater is present at depths ranging from 4 to 9 feet bgs. Please describe typical building construction and whether excavations down to 10 feet are typically conducted. Please note that for other sites, subsurface soil down to 6 feet is evaluated for the construction worker due to typical construction practices in Puerto Rico.

Navy Response to PREQB Specific Comment 2(a): At NAPR, it is considered that soil up to 10 feet bgs could be exposed during construction activities. Therefore, soil down to 10 feet bgs is evaluated as a potentially complete exposure pathway as agreed upon in the January 9, 2009 conference call between the Navy, USEPA, and PREQB.

Evaluation of Response: In general, soil down to 10 feet bgs is evaluated as a potentially complete exposure pathway; however, site-specific hydrogeology may make excavation down to that depth unlikely. Please address whether construction activities would occur down to 10 feet bgs in this area, given the depth to groundwater encountered at this site. Inclusion of soil data below exposure depths may dilute exposure point concentrations.

- b. Although an adult fisherman may catch the fish, the fish may be brought home and consumed by all family members or youths and children may also catch the fish. Therefore, EQB prefers the more protective approach of evaluating adults, youths and children for fish ingestion.

Navy Response to PREQB Specific Comment 2(b): The adult recreational fisherman exposure scenario evaluated in the HHRA represents a very conservative approach. Fish/biota tissue exposure concentrations calculated from concentrations of important bioaccumulative chemicals detected in the sediment and conservative USEPA default exposure parameters were used in the risk calculations. The site setting is not conducive to fishing (i.e., public access to site is prohibited; industrial setting consists of the former power plant and the rocky, steep shoreline surrounding Puerca Bay). For these reasons, evaluation of an adult receptor only is considered reasonable and adequate. It is not expected that risks will be significantly underestimated by including only the adult. However, discussion will be added to the uncertainties section (Section 5.3.5) stating that although youth and child recreational fishermen were not evaluated in the HHRA, it is not expected that risks would be significantly underestimated.

Evaluation of Response: The response provides a general statement that “although youth and child recreational fishermen were not evaluated in the HHRA, it is not expected that risks would be significantly underestimated.” However, no supporting document is provided. To ensure adequate protection for all potential fish consumers, it is PREQB’s preference that when a fish ingestion scenario is evaluated, youth and child receptors are quantitatively evaluated for fish consumption.

2. PREQB Comment 3, Page 5-3, Section 5.3.1.1:

- a. Please provide a discussion of the usability of the data for risk assessment purposes since the data are from historical investigations that may have been performed for different project objectives. As part of this discussion, please include an evaluation of the detection limits for the data as compared to screening criteria used to identify chemicals of potential concern for the risk assessments.

Navy Response to PREQB Specific Comment 3(a): Risk assessments were conducted for the documents listed in Section 5.3.1.1, and data usability discussions are provided therein. An evaluation of the detection limits compared to screening criteria is currently provided in the document in Section 5.3.5.2.

Evaluation of Response: Please include a brief discussion of the data usability evaluations presented in other reports and state whether the data meet data quality objectives for conducting the risk assessments, as the data from these reports is being used in the human health risk assessment (HHRA) presented in this document. This summary is needed for completeness and transparency.

3. PREQB Comment 4, Page 5-8, Section 5.3.1.2.3, Fish Tissue: Due to the potential for natural process to convert inorganic mercury to methyl mercury, EQB prefers to include methyl mercury as a COPC for fish tissue, as mercury is identified as a chemical of potential concern in sediment.

Navy Response to PREQB Specific Comment 4: Inorganic mercury was not identified as a COPC in sediment or fish tissue. No revisions to the document are required.

Evaluation of Response: Mercury was detected in sediment sample 11SD02 and was identified as a COPC in sediment in the ecological risk assessment. As mercury was detected, it is PREQB’s preference that methyl mercury be evaluated in the HHRA.

4. PREQB Comment 6, Page 5-11, Section 5.3.2.1:

- b. Fisherman may be exposed to soil, sediment, and surface water while fishing at the site. Please include these environmental media for the fisherman exposure scenario. Also, it is unclear that only adult fisherman would be fishing at the site. EQB’s preference would be to evaluate an adult, youth and child for this exposure scenario.

Navy Response to PREQB Specific Comment 6(b): An adult trespasser receptor was evaluated for potential exposures to surface water and sediment at SWMU 45. The surface water/sediment exposure estimates would be comparable to those for the adult recreational fisherman (i.e., the exposure parameters would be the same or similar). A statement will be added to Section 5.3.2.1 to state that the adult recreational fisherman receptor's potential exposures to SWMU 45 surface water and sediment is considered comparable to that of the adult trespasser. Concerning the addition of youth and child recreational fishermen receptors, refer to the Navy response to PREQB Specific Comment 2(b).

Evaluation of Response: The risk estimates calculated for surface water and sediment for the adult trespasser need to be included in the overall risk estimates for the adult recreational fisherman to account for exposure to surface water and sediment since risks for each receptor group are calculated and presented separately. Please present this information in the Risk Characterization for the adult recreational fisherman.

5. PREQB Comment 7, Page 5-12, Section 5.3.2.1: Please clarify why a future industrial worker is not evaluated for exposure via ingestion of groundwater. A future worker will consume water while working at a site; therefore, EQB's preference is to include groundwater as an exposure medium for the industrial worker for ingestion exposure since groundwater is considered potable.

Navy Response to PREQB Specific Comment 7: Evaluation for groundwater exposure via ingestion was not included for the future industrial/commercial worker for the following reasons. Groundwater exposure is not listed as a potentially complete pathway for a future industrial worker in the RCRA §7003 Administrative Order on Consent for NAPR (USEPA, 2007). It is unlikely that a future worker (assuming an indoor office setting) would consume a significant amount of tap water while working at a site when compared to the amount of tap water consumed at a residence. The HHRA currently includes an evaluation of the groundwater ingestion exposure pathway for future residential and future construction worker receptors. Therefore, the potential groundwater exposure is adequately evaluated using the future residential and construction worker receptors.

Evaluation of Response: As risks are evaluated separately for each receptor group, the evaluation of groundwater exposure by the construction worker or resident is not relevant to the industrial worker exposure scenario. Groundwater is considered potable in Puerto Rico and future groundwater ingestion is evaluated for other receptor groups. Therefore, to ensure that potential risks to future commercial/industrial workers is quantified in this HHRA, PREQB's preference is to quantify groundwater exposure by future commercial/industrial workers, where a commercial/industrial worker is assumed to ingest 1 liter of groundwater per work day.

6. Page 5-16, Section 5.3.2.5 and Table 5-7:
  - a. PREQB prefers a more protective approach for evaluating fish ingestion provided by EPA where it is assumed that 8 oz of fish is consumed at each meal (EPA 2000), and fish

is consumed at 7 meals per week, based on a fish study conducted in Puerto Rico (Burger and Gochfeld, 1991).

Navy Response to PREQB Specific Comment 10(a): The Navy agrees that a more conservative fish ingestion rate is appropriate. However, consumption of 8 oz. of fish (approximately equal to 0.23 kg) per meal for 7 meals per week is considered extremely conservative for a recreational exposure scenario at this SWMU. There is currently no presumption of a fish advisory for Puerca Bay as indicated by the EPA (2000) reference. The USEPA recommends a conservative fish ingestion rate of 0.063 kg/meal the general population (refer to Navy response to EPA Specific Comment 4). Given the conservative nature of this exposure scenario (i.e., public access to site is prohibited; industrial setting consists of the former power plant and the rocky, steep shoreline surrounding Puerca Bay), the ingestion rate of 0.063 kg/meal is considered appropriate. Therefore, the HHRA will be revised to reflect a fish ingestion rate of 0.063 kg/meal.

Evaluation of Response: To ensure protection of Puerto Rico fish consumers who may ingest a larger quantity of fish than the general US population, PREQB prefers the use of a fish ingestion rate based on the study performed in Puerto Rico. Please note that Table 5-7 in the Draft Final report shows an ingestion rate of 0.417 kg/meal.

- b. As an adult is assumed to be present at a residence for 24 years, EQB prefers a more protective approach where this same exposure duration is applicable to the fisherman, who may fish at the site throughout the time period he resides in the area.

Navy Response to PREQB Specific Comment 10(b): As shown in Table 5-7, the exposure duration used for the adult recreational fisherman is 24 years. No revisions to the HHRA are necessary.

Evaluation of Response: Table 5-7 (page 3 of 3) shows an exposure duration of 10 years for fish ingestion. Please revise the table as indicated in the response.

- c. Children may also ingest fish from the site brought home by fisherman and need to be added as a receptor for the fish ingestion exposure scenario.

Navy Response to PREQB Specific Comment 10(c): Refer to the Navy response to PREQB Comment 2(b).

Evaluation of Response: Please refer to the Evaluation of Response to PREQB Comment 2(b).



COMMONWEALTH OF PUERTO RICO  
Office of the Governor  
Environmental Quality Board



ENVIRONMENTAL EMERGENCIES RESPONSE AREA

July 6, 2011

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

Re: Technical Review of the Response to Comments and  
Revised Final Phase I RCRA Facility Investigation Work Plan  
SWMU 79 – Navy Operations on Cabras Island  
Naval Activity Puerto Rico  
Ceiba, PR2170027203

Dear Mr. Gordon:

The Federal Facility Coordinator (FFC) and the Hazardous Wastes Permits Division (HWPD) has finished the review of the Draft Phase I RCRA Facility Investigation Work Plan for SWMU 79 at the US Naval Activity Puerto Rico.

The Navy's responses to PREQB comments in the Working Draft, Revised Final Phase I RCRA Facility Investigation Work Plan for SWMU 79 are acceptable, with the exception of the response to comment 17(h). PREQB recognizes that the Navy on this site will prepare work plans in the UFP-QAPP format for future projects. However, agency review of the selected laboratory's achievable limits is requested as part of the work plan review. PREQB prefers that a table be prepared in all work plans summarizing the information included on Worksheet #15 of the UFP-QAPP to ensure that the data will meet the project action limits and that the data collected during the investigation meets data quality objectives for making site cleanup decisions. However, PREQB deferred to EPA on this issue. Hence, we will accept the document as final.

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

Cordially,

Wilmarie Rivera  
Federal Facilities Coordinator  
Environmental Emergencies Response Area

cc. Gloria M. Toro Agrait, Environmental Permits Office

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