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COMMONWEALTH OF PUERTO RICO
OFFICE OF THE GOVERNOR
ENVIRONMENTAL QUALITY BOARD

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President

May 8, 2005

Mr. Christopher T. Penny, PE
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1510 Gilbert Street
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**Re: Draft Site-Specific Work Plan Phase I RFI for 8 PI/PAOC Sites
Former Atlantic Fleet Weapons Training Facility (AFWTF)
Vieques Island, Puerto Rico**

Mr. Penny:

The Puerto Rico Environmental Quality Board (PREQB) has completed its review of the November 2004 Draft Site-Specific Work Plan Phase I RCRA Facility Investigation for Eight PI/PAOC Sites, Former Atlantic Fleet Weapons Training Facility (AFWTF), Vieques Island, Puerto Rico. We respectfully submit the comments regarding the draft document mentioned.

If you have any questions, you may contact me at (787) 365-8573.

Cordially,

Yarissa Martinez
Special Assistant to the President

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Technical Comments
Draft Site-Specific Work Plan
Phase I RCRA Facility Investigation for Eight PI/PAOC Sites
Former Atlantic Fleet Weapons Training Facility (AFWTF)
Vieques Island, Puerto Rico
November 2004

I. INTRODUCTION

EQB has reviewed and provides the attached evaluation of Draft Site-Specific Work Plan Phase I RCRA Facility Investigation for Eight PI/PAOC Sites, dated November 2004.

The Work Plan outlines the work proposed for the recommended Phase I RFI to be completed at two PI (PI 4 and 7) and six PAOC (PAOC J, K, L, N, S, and U) sites at the former AFWTF. These eight sites were recommended for further investigation in the Draft Phase I RCRA Facility Investigation Report Former Atlantic Fleet Weapons Training Facility, Vieques Island, Puerto Rico, dated June 2004.

This evaluation summarizes significant issues identified with the Navy's RFI Work Plan.

II. GENERAL COMMENTS

1. Subsurface Soil Sample Depth

Subsurface soil sample depth should be determined based on field screening. The subsurface soil sample depth of 4 to 6 feet bgs is the default depth that should be used only if field screening does not indicate the presence of contamination at a different subsurface soil depth. Please revise the text throughout the document, including Table 3-1 and Section 3.2.2.1.

2. Headspace Field Screening.

Headspace field screening analysis should be conducted on all samples to aid selection of soil samples for fixed-based laboratory analysis. The procedure should be included in Section 3.2.2.1.

3. Lack of Information on Environmental Setting

A brief summary of the environmental setting for each site would clarify the appropriateness of the proposed activities. A concise conceptual model should provide the direction of groundwater flow, soil and bedrock type, depth to bedrock, and condition of bedrock (e.g., fractured, highly weathered saprolite layer, etc.).

4. Limited Rationale for Sampling Locations and Depths

In general, the document provides limited information justifying sampling locations and depths. Subsurface soil sampling depths are arbitrarily set at 4 to 6 feet, as opposed to selecting samples based on field instrument readings and other observations (e.g., visual, olfactory).

5. CERCLA TCL and TAL Analyses

The Work Plan should be revised for clarity regarding the proposed analyses. The text in Sections 2.1.3, 2.2.3, 2.3.3, 2.4.3, 2.5.3, and 2.8.3 currently state that the full CERCLA TCL and TAL list will be used. However, cyanide is not included as a target parameter in the Work Plan text or tables. The Work Plan should clarify whether cyanide analysis is required and on which samples.



If required, tables throughout Work Plan must be updated to include cyanide.

III. PAGE-SPECIFIC COMMENTS

~~Page VI, List of Acronyms~~ – Add POC and its associated definition to the List of Acronyms. The acronym is used in Figure 1-3.

~~Page 1-1, Section 1.0, Paragraph 5~~ - The background investigation only evaluates the background concentrations of metals in soil. Therefore, please revise the discussion of the comparison of site investigation results to background here and elsewhere in the text of the work plan to clarify that the comparison to background is to determine whether metals detected in site soil samples are attributable to background or may be associated with a release. A comparison of site soil samples to background data may facilitate the determination of the extent of metals impacts, but will not aid in the determination of the extent of organic constituent impacts. Please clarify this in the text as well.

~~Page 1-5, Section 1.1, Second Bullet~~ - The text should be revised to indicate that the 95% upper threshold limit (UTL) will be used for comparison to site data. The last sentence currently refers to evaluating the risks associated with background constituents below the maximum background concentrations. This methodology was agreed upon in the Navy's response to EPA consolidated comment 5 on the Draft Background Investigation Work Plan for Eastern Vieques Technical Memorandum.

Section 2.1, PI 4 – Former Helicopter Maintenance Area, Trenched area, and Bermed Areas used for Fuel Bladder Storage

~~Page 2-1, Section 2.1.1~~ - The text should note that possible debris was observed in a trench in the 1959 photo. Also, please note whether the purpose of the manhole has been determined or will be determined during the course of the investigation.

~~Page 2-4, Figure 2-3, Photos 1 through 4~~ – The locations of the items presented in Photographs 1 through 4 should be identified on Figures 2-1 and 2-2.

~~Page 2-5, Paragraph 2~~ – For clarity, indicate the laboratory reporting limits for the DRO and GRO analyses from the EBS.

~~Page 2-5, Section 2.1.3~~ –

- a. The Work Plan should fully describe the methodology to ensure that trench samples will be obtained from the appropriate locations. Historic evidence suggests that debris was buried in these trenches. Therefore, sampling should be conducted within trenches.
- b. If possible, the samples proposed for collection at each side of the concrete pad of Building 949 should be obtained from in front of former doorways, in the absence of visual or field-screening observations.
- c. The text should clarify whether the concrete pad for Building 949 still exists or has been removed. If it exists, the pad should be inspected to determine if any drains or trenches discharge to the subsurface are evident. These features should be discussed in the report of findings and evaluated with respect to past disposal practices.
- d. The Work Plan should specify the basis for the distance from potential source areas to the proposed locations of downgradient monitoring wells. Based on the scale presented



in Figure 2-1, it appears that monitoring wells are located approximately 150 feet downgradient from the former helicopter maintenance area and bermed areas. It is unclear the monitoring well locations are appropriately placed to adequately characterize potential source areas. Since the locations of the proposed wells appears adequate to determine the extent of a plume, if one exists, source area monitoring wells should also be installed and sampled. An additional well should be placed adjacent to the downgradient edge of each potential source area under investigation. Two additional wells should be installed within the "footprint" of the Former Trenched Area to verify the absence of localized groundwater contamination. A table presenting the rationale for each monitoring well should be presented in the Work Plan.

- e. The Work Plan should include TPH analysis for soil and groundwater using methods to be determined by EPA.
- f. The Work Plan should clarify why the depth of soil borings is restricted to 6 feet bls. If it is known that bedrock exists at 6 feet bls, please clarify this in the text. If bedrock does not exist at 6 feet bls, then subsurface soil sample depths should be determined based on visual observations and field screening, such as photoionization detector/flame ionization detector headspace measurements. If field screening does not indicate the presence of subsurface contamination, then subsurface soil samples may be collected at 4 to 6 feet bls.
- g. Identify each soil sample that will be collected at each man-made structure described on Page 2-1, Paragraph 2. The text should clarify that each structure will be evaluated via sample data.
- h. The text should clarify whether available information indicates the presumed depth to groundwater at this site. It is unclear if groundwater is expected to be found in the overburden or in bedrock.
- i. Provide the rationale for not collecting soil sample(s) for laboratory analysis from the well installation locations. The Work Plan should propose samples from intervals exhibiting visual and/or field screening impacts.
- j. The Work Plan should indicate that at least two (2) of the soil borings be advanced to refusal to help document the potential depth to bedrock.
- k. The Work Plan should clarify the rationale for pesticide analysis of soil samples collected from the former fuel bladder areas.
- l. At a minimum, perchlorate analysis should be conducted of the groundwater sample obtained from the well downgradient from the trenched area.

Section 2.2, PI 7 – Former Quarry, Tar Disposal Area, and Construction Debris Area

Page 2-6, Section 2.2.1 – The site summary should be expanded to discuss the crushed drums covered in a petroleum-like substance that were identified at this site as well as the interviews and records that indicate that the southern portion of this site was a former quarry and tar disposal area. Information on past tar disposal practices (i.e., placement and burial, placement of drums, etc) and specific locations for tar disposal should also be included in this report.

Page 2-8, Figure 2-5, Photos 1 through 3 – The locations of the items presented in Photographs 1 through 3 should be identified on Figure 2-4.

Table 2-1 –

- a. Provide the laboratory reporting limits for the "ND" results.
- b. Discuss the suitability of the SSL20 as a screening criterion for migration to groundwater



in the context of the Conceptual Site Model (CSM) for PI 7.

- c. The table shows "NA" for the EPA Region 9 PRG for bis(2-ethylhexyl)phthalate. However, the associated PRG is 35 mg/kg. The table must be updated to show this value.

~~Page 2-10, Section 2.2.2, last paragraph~~ – The text states that SVOCs were not detected at certain locations in past investigations, indicating that contamination may be in a localized area. However, there is no evidence that the nondetect results for SVOCs in these locations exhibited reporting limits which were below the associated screening criteria. Currently, the table presenting this information (Table 2-1) only shows "ND" for nondetect results. Table 2-1 must be updated to show the reporting limits associated with these nondetect results.

~~Page 2-11, Section 2.2.3~~ –

- a. The depth of sample collection should be based on field screening, such as jar headspace photoionization/flame ionization detector readings, as well as visual and olfactory observations.
- b. At least two (2) of the soil borings should be advanced to refusal to help document the potential depth to bedrock.
- c. A monitoring well should be installed at a downgradient boring location and a groundwater sample be analyzed for VOC, SVOC, and Metals constituents in order to assist in verifying an absence impact.
- d. The Work Plan should summarize the available information that was reviewed to determine the location of the six borings. The rationale for boring and sample locations should be clear.
- e. The Work Plan should include TPH fraction analysis to be determined by EPA in the suite of analytical methods.

Section 2.3, PAOC J – Former Vehicle Maintenance Area

~~Page 2-11, Section 2.3.3~~ –

- a. Additional information needs to be provided about the site to clarify the selection of the sampling locations. The sampling points appear to be centered on a dirt road or path in the 1962 pre-demolition photograph, and not near a particular building or facility where vehicle maintenance took place.
- b. The depth of sample collection should be based on field screening, such as jar headspace photoionization/flame ionization detector readings, as well as visual and olfactory observations.
- c. At least one (1) soil boring should be advanced to refusal to help document the potential depth to bedrock.
- d. A monitoring well should be installed at a downgradient boring location and a groundwater sample be analyzed for VOC, SVOC, and Metals constituents in order to assist in verifying an absence impact.
- e. The Work Plan should present the methodology that will be used to ensure that sampling takes into account that surface soil was likely disturbed during building demolished and/or subsequent grading. Surface soil samples should be collected from 6 inches to 2 feet bls.
- f. The Work Plan should specify that field screening will be conducted and will be used to select soil samples for fixed-based laboratory analysis.



Section 2.4, PAOC K – Former Wash Rack

Page 2-13, Section 2.4.3 –

- a. The depth of sample collection should be based on field screening, such as jar headspace photoionization/flame ionization detector readings, as well as visual and olfactory observations.
- b. At least one (1) soil boring should be advanced to refusal to help document the potential depth to bedrock.
- c. A monitoring well should be installed at a downgradient boring location and a groundwater sample be analyzed for VOC, SVOC, and Metals constituents in order to assist in verifying an absence impact.
- d. Please include TPH fraction analysis to be determined by EPA in the suite of analytical methods.

Section 2.5, PAOC L – Former Paint and Transformer Storage Area

Page 2-16, Section 2.5.3 –

- a. The depth of sample collection should be based on field screening, such as jar headspace photoionization/flame ionization detector readings, as well as visual and olfactory observations.
- b. One (1) soil boring should be advanced to refusal to help document the potential depth to bedrock.
- c. A monitoring well should be installed at a downgradient boring location and a groundwater sample be analyzed for VOC, SVOC, and Metals constituents in order to assist in verifying an absence impact.
- d. Please include TPH fraction analysis to be determined by EPA in the suite of analytical methods.

Section 2.6, PAOC N – Former Fuel Farm and Filling Station

Page 2-16, Section 2.6.1 – The description of the tanks should be revised for clarity. The text should indicate which tanks are currently present at the site and which have been removed. The Work Plan should present the size/volume, installation/removal dates, and materials contained for all tanks.

Page 2-17, Figure 2-9 – The direction of groundwater flow should be added.

Page 2-19, Figure 2-11 – The bermed pad in the photograph appears to have a trench drain or sump. Provide additional information about this containment structure, including its construction and condition, and indicate to where the sump/drain discharges. Any discharge location should be targeted for investigation/sampling.

Page 2-20, Section 2.6.3 –

- a. The depth of sample collection should be based on field screening, such as jar headspace photoionization/flame ionization detector readings, as well as visual and olfactory observations.
- b. One (1) soil boring should be advanced to refusal to help document the potential depth to bedrock.
- c. The text should describe the rationale for the location of each of the four soil borings in relation to tank location, etc.



- d. Please include TPH fraction analysis to be determined by EPA in the suite of analytical methods for soil and groundwater.
- e. The text should clarify whether available information indicates the presumed depth to groundwater at this site. It is unclear if groundwater is expected to be found in the overburden or in bedrock.
- f. Provide the rationale for not collecting soil samples for laboratory analysis from the well installation locations. The Work Plan should propose samples from intervals exhibiting visual and/or field screening impacts.
- g. Additional wells should be installed within the "footprint" of the Former Trenched Area to check on localized groundwater contamination.
- h. The Work Plan has not demonstrated that the well locations are downgradient of the sites/locations to be monitored. Additional data should be presented in this regard.

SECTION 2.7, PAOC S – FORMER POL PIPELINE AND POWER PLANT

Page 2-20 to 2-23, Section 2.7.1 -

- a. Please clarify why the underground pipeline is being investigated with the power plant.
- b. For clarity, describe the types of petroleum products transported by the pipeline. If leaded gasoline was transported through the pipeline, additional analysis for lead along the pipeline route may be warranted.
- c. Describe the size and materials of construction of the former fuel pipeline. Describe any measures that were implemented to prevent corrosion of the fuel line (e.g., coal tar wrap, cathodic protection, paint), if any. If the pipeline was not protected (e.g., bare steel), then there is increased potential for past product release.
- d. Describe the type of fuel used at the power plant (e.g., No. 2 fuel oil, No. 6 fuel oil, etc.), the method of fuel storage, and the location where storage and transfer took place.
- e. Clarify if the period of operation of the former power plant and when the power plant was razed.
- f. Please clarify what the potential sources are for contaminant releases associated with the former power plant (i.e., diesel-powered turbines, PCB-containing transformers, etc.).
- g. Please clarify whether it is known where products containing hazardous substances were stored, used, and disposed of and how sample locations were selected.
- h. The Work Plan should include a geophysical survey of the power plant area to check for the presence of buried fuel lines and underground storage tanks (USTs) that may not have been removed.

Page 2-21, Figure 2-12 – Clearly indicate the location of SWMU-2 (the origin of the pipeline described in the text) and the valve location where fuel trucks were filled south of Camp Garcia. Also indicate the location of Camp Garcia on the figure.

Page 2-23, Section 2.7.3 –

- a. It is PREQB's understanding that samples will be collected along the pipeline at approximately 500-foot intervals and at former valve locations. Please ensure that this information is included in the Work Plan. A greater density of sample locations may be required along the former pipeline route to check on the potential for a release. Observations of stressed vegetation and/or stained soils will not be sufficient metrics to identify a release from the pipeline, which likely occurred underground.



- b. Include sampling at the terminus of the pipeline where fuel was transferred to trucks.
- c. Summarize what sampling, if any, was conducted relative to the pipeline during any investigations of the SWMU 2. If the SMWU 2 investigation did not adequately address the pipeline, then additional sampling is warranted at this terminus of the pipeline.
- d. Please include TPH fraction analysis to be determined by EPA in the suite of analytical methods.
- e. The depth of sampling below the surface should be based on field screening, such as jar headspace photoionization detector readings, as well as visual and olfactory observations.
- f. The depth of sampling should also relate to the depth of buried contaminant sources. For example, a depth of 4 to 6 feet may not be sufficient for the power plant area if the depth of installation of fuel tanks was greater. However, the potential depths of installation of underground storage tanks (USTs), if any, at the power plant, or the depth of installation of the pipeline (unspecified in the text) do not appear to have been considered.
- g. Soil borings should be advanced to refusal to help document the potential depth to bedrock.
- h. Provide the rationale for not sampling groundwater at these locations.

Section 2.8, PAOC U – Vehicle Maintenance Area

Page 2-26, Section 2.8.2, last paragraph – The text states that select parameters were not detected at certain locations in past investigations. However, there is no evidence that these nondetect results exhibited reporting limits which were below the associated screening criteria. Currently, the table presenting this information (Table 2-2) only shows “ND” for nondetect results. Table 2-2 must be updated to show the reporting limits associated with these nondetect results.

Page 2-27, Section 2.8.3 –

- a. The depth of sampling below the surface should be based on field screening, such as jar headspace photoionization detector readings, as well as visual and olfactory observations.
- b. Soil borings should be advanced to refusal to help document the potential depth to bedrock.
- c. Provide the rationale for not sampling groundwater at this location.
- d. Please include TPH fraction analysis to be determined by EPA in the suite of analytical methods.

Section 3 – Technical Approach and Investigation Procedures

Page 3-3, Table 3-1 –

- “TCL” Herbicides has been included whenever the full TCL/TAL list is required. However, it should be noted that herbicides are not covered under the CLP methods. Clarification is needed on whether the herbicide analysis is actually required. If yes, further clarification as to which herbicides and reporting limits are required must be provided.
- The number of groundwater samples in the table (three) for PI 4 is not consistent with the text (Section 2.1.3 states four samples will be collected). The table or text must be updated to be consistent.
- Section 2.1.3 states that four groundwater samples will be collected for explosives analysis in PI 4. However, the table shows “N/A”. The table or text must be updated to be consistent.
- If cyanide analyses are deemed to be required, the table must be updated to



include cyanide.

~~Page 3-4, Table 3-2 –~~

- In general, low concentration aqueous CLP methods (OLC03.2) are not appropriate for soil samples. The analytical methods for VOCs, SVOCs, PCBs, and pesticides should be OLM04.3.
- The analytical method for methods should be the most recent statement of work, ILM05.3.
- As stated above, herbicides are not covered under the TCL. Therefore, the citation of a CLP method for herbicides is inappropriate. The table must be updated to include a valid herbicide method.
- If cyanide analyses are deemed to be required, the table must be updated to include cyanide.

~~Page 3-4, Paragraph 3 –~~ As previously noted, the depth of sampling below the surface should be based on field screening, such as jar headspace photoionization detector readings, as well as visual and olfactory observations. The depth of sampling should also relate to the depth of buried contaminant sources. For example, a depth of 4 to 6 feet may not be sufficient for the power plant area if the depth of installation of fuel tanks was greater. As noted previously, the potential depths of installation of underground storage tanks (USTs), if any, at the power plant, or the depth of installation of the pipeline (unspecified in the text) do not appear to have been considered. In addition, soil borings should be advanced to refusal to help document the potential depth to bedrock.

~~Page 3-6, Table 3-3 –~~

- The analytical method for methods should be the most recent statement of work, ILM05.3.
- As stated above, herbicides are not covered under the TCL. Therefore, the citation of a CLP method for herbicides is inappropriate. The table must be updated to include a valid herbicide method.
- If cyanide analyses are deemed to be required, the table must be updated to include cyanide.
- If explosives analyses are deemed to be required at PI 4, the table must be updated to include explosives.
- The table must clarify that "amber" glass bottles are required for the SVOCs, PCBs, pesticides, and herbicides analyses.

~~Sections 3.3 and 3.3.2 –~~ The validation guidelines cited for metals validation are not the most recent. The most recent guidelines, *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (EPA, 2004) must be cited.

~~Page 3-18, Section 3.3.2 –~~ The definition of the "U" qualifier should be detected above the ~~quantitation limit~~ (not method detection limit).