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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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June 21, 2007

Mr. Kevin Cloe
Western Vieques Remedial Project Manager
Commander Atlantic Division
Naval Facilities Engineering Command
6506 Hampton Boulevard
Norfolk, VA 23508-1278

Re: Review of the Draft Work Plan Removal Actions SWMU 6, SWMU 7, AOC J, and AOC R
Former Naval Ammunition Support Detachment Vieques Island, Puerto Rico

Dear Mr. Cloe:

The U.S. Environmental Protection Agency (EPA) has completed the review of the Draft Work Plan Removal Actions Solid Waste Management Unit (SWMU) 6, SWMU 7, Areas of Concern (AOC) J, and AOC R, Former Naval Ammunition Support Detachment, Vieques, Puerto Rico, revision of March 2007. Enclosed you will find our comments.

If you have any questions or comments, please contact me at (787) 741-5201.

Sincerely,

Daniel Rodríguez
Remedial Project Manager
Enforcement and Superfund Branch

Enclosure

- cc: Yarissa Martinez, EQB, w/ encl.
- Richard Henry, FWS, w/ encl.
- Oscar Díaz, FWS, w/ encl.
- Brett Doerr, CH2M Hill, w/ encl.

**EPA Comments on the Review of the Draft Work Plan Removal Actions
SWMU6, SWMU 7, AOC J, and AOC R
Former Naval Ammunition and Support Detachment
Vieques, PR**

General Comments:

1. It is noted that a Work Plan (WP) and a Sampling and Analysis Plan (SAP) were submitted in addition to the QAPP. A QAPP prepared under the UFP-QAPP guidance is functionally equivalent to submitting separate SAP and QAPP, avoiding the duplication of effort and repetitive information.
2. Overall, the organization of this plan is confusing. It is difficult to determine if the proposal, specifically in regards to the post-excavation sampling and the risk assessments, are appropriate. For example, Appendix A, the Quality Assurance Project Plan (QAPP), is supposedly an Appendix of Appendix C the Field Sampling and Analysis Plan (SAP), which in itself is confusing. However neither of these Appendices is directly appended to the work plan. Further, the QAPP contains the individual worksheets referenced throughout the SAP. QAPP Worksheet #17 indicates that there are sampling maps attached to this worksheet. However, there are none. During the April 24th Environmental Restoration Program (ERP) Subcommittee meeting figures were distributed, which appear to be those referenced in Worksheet #17. However, they could not be located on the website. Efforts should be made to ensure that the various plans that need to be appended are included for ease of reviewing.
3. The document does a good job in presenting the variability of the dump piles at each of the AOCs/SWMUs. Each pile is comprised of different materials, contains significantly different volumes, and the subsurface depth of each pile is unknown. Taking all of this into account, it is difficult to project where post excavation samples will be collected. However, for those areas where the data will be used for risk assessment purposes - to determine if the removal is complete and to determine if the excavated soil can be used as cover with unrestricted access in other areas - the number of samples must be sufficient for risk assessment statistical calculations, i.e., a minimum of 10 samples. The document should more clearly define the number of samples to be collected.
4. It should be clarified that samples that will be used for risk assessment purposes will be grab samples, and not composited.
5. As agreed in the April 24 ERP Technical Subcommittee meeting, details regarding the proposed locations and numbers of post excavation confirmatory soil samples from the walls and bottom of the excavations will be discussed after the results of the waste characterization sampling is available. All applicable parts of the document should be modified to reflect this.
6. Characterization of groundwater directly beneath the waste piles needs to be conducted after soil excavation has occurred. The groundwater sampling needs to include a representative number of groundwater samples from the areas that were excavated. The proposal to sample only downgradient wells to determine any impacts in groundwater at each of the sites will not give enough information to make decisions regarding possible No Further Action requests at

these sites.

7. Prior comments made by EPA regarding the groundwater sampling methodology used at some of these sites needs to be addressed. For example, for AOC J, two comments below need to be taken into account when conducting additional work:
 - Whenever there is a discrepancy in two sets of data, a third set is necessary to determine which results are valid. Therefore, additional groundwater sampling and analysis will be required to confirm concentrations of TCE and perchlorate in groundwater as per the original comment.
 - Using a peristaltic pump initially to purge and collect for some parameters then removing the tubing and lowering a bladder pump to collect VOCs would have disturbed the water column. The VOC data between rounds is not comparable at each well. Therefore, the wells should be sampled again for VOCs using the correct low-flow sampling methodology.

Attachment 1, B. Groundwater Sampling SOP, of the Final Master QAPP needs to be followed when sampling groundwater at all of the sites.

Specific Comments:

8. **Section 1.1, Background:** Figure 3 (SWMU 6) does not show the area of proposed excavation; it only illustrates the outline of the site itself, rather than the waste boundary. In addition, the legend is missing. This figure should be amended to clearly illustrate those areas identified for excavation. Please note that Figure 6 should clearly identify those SWMUs and AOCs which are part of the Department of Interior Land. Further, figure 6 does not specifically show AOC R. This figure should be similar to Figure 6 referenced as an attached figure in QAPP Worksheet # 17.
9. **Section 1.2.1, SWMU 6:** The description of the waste area is "... approximately 260' wide and 180' deep." It is unclear if the depth in this statement refers to length, as it is unlikely that the waste pile extends to 180' below the surface.
10. **Section 2.1, Waste Profiling Set-up, Third bullet:** The work plan indicates that prior to clearing vegetation, FFSI/Shaw will walk the areas with a USFWS representative and that wetland areas will be marked to minimize impact and disturbance from equipment. More details should be provided as to how this effort will be carried out. It would be helpful to include a vegetation clearing Standard Operating Procedure (SOP), as requested by USFWS as an appendix to this document. This SOP should detail, but not be limited to, how trees will be marked (flagged), the type of equipment to be used, and the need for replanting.
11. **Section 2.3, Sample Analysis and Waste Characterization, First Bullet:** The work plan notes that toxicity characteristic leaching procedure (TCLP), reactivity, corrosivity, and ignitability (RCI) and total petroleum hydrocarbon (TPH) data will not need to be validated. Justification for this should be presented. All data which will be used for making decisions should be validated.

12. **Section 2.3, Sample Analysis and Waste Characterization, Second Bullet:** The work plan indicates that, "Because residual human health and ecological risk assessment will be performed using post-removal confirmatory data, removal goals (i.e., soil constituent concentrations) determined via the pre-removal risk assessment will be for internal (Navy and removal contractor) use to guide the removal and, therefore, not subject to regulatory comment. However, the removal goal information will be provided to the regulatory agencies for informational purposes." This statement is confusing. It is unclear what data will be used for the pre-removal risk assessment and how the removal goals will be established. Regardless, the development of any removal goals, including the data and assumptions used to develop these goals, should be subject to agency review and approval.
13. **Section 2.5, Removal Action:** The work plan notes that a temporary, high-visibility barricade fence (approximately three feet in height) will be installed at the limits of each exclusion zone to restrict unauthorized access by both humans and animals. It is doubtful that a fence three feet in height installed at the limits of each exclusion zone will be effective in keeping animals or humans from accessing the areas.
14. **Appendix C, Field Sampling and Analysis Plan, Section 2.1, Scope of Work:** Post-excavation confirmatory sampling proposed is for the collection of one discrete soil sample from the bottom of each excavation at a frequency of one sample per 2,000-square feet, and one discrete soil sample per 100 linear feet from the perimeter of the excavation. Additional details regarding this proposal are contained in QAPP worksheet #17 and individual figures for each of the sites. Other sites undergoing similar removal actions being conducted by the same contractor call for the collection of five composite samples from every 2,500-square feet (e.g., Richardson Road Hill Landfill [South Pond Excavation] in Sidney, NY). In New Jersey, post excavation sampling conducted at the Ringwood Mines Site included collecting a discrete sample from the side walls every 30 linear feet, and a discrete soil sample from the bottom of the excavation every 900 square feet. Therefore, the proposed sampling frequency in this plan may result in too few data points to support the proposed risk assessments. The rationale to support this recommended post-excavation sampling proposal should be discussed.

Worksheets Comments:

15. Worksheet # 2:
 - a. Item number 5, (dates of scoping sessions), is left blank; however, Worksheet # 9 provides information about scoping sessions for this project. This information, along with any other meetings and teleconferences in which the technical direction of the project was discussed should be listed.
 - b. There were previous versions instances of Work Plans, QAPPs, etc. prepared for these sites which should be listed in Item # 6.
 - c. The column "Crosswalk to Required Documents" should be populated with those sections

in other documents that provide information that complements the QAPP worksheets.

16. The reasons for not filling out Worksheet # 4 should be provided.
17. Worksheet # 9, Page 3, Step 3: Item 3 under Step 3 states that risk assessments will be developed "...for internal (Navy) use to guide risk-based removal limits." Please clarify how the Navy will use these assessments, if regulatory agencies such as EPA and EQB will be able to review these, and if these reports will be available to the public.
18. Worksheet # 10: The otherwise excellent "If...Then" statements should provide a reference for the location of the regulatory limits.
19. Worksheet # 12: Matrix Spikes (MS) are usually used to measure accuracy, while Matrix Spike Duplicates are used to measure precision. The worksheets should be corrected to reflect this. It should be noted that the UFP-QAPP does not recommend the use of MSDs.
20. Several instances throughout the QAPP make reference to SW-846 Methods 8260, 8260B or 8260C. The latest version of this method is 8260C. Please review and correct as necessary.
21. Worksheets # 12.10 through 12.15: Should include the TCLP Method 1311 in addition to the analytical method.
22. Worksheet # 15.2 to 15.6 and 15.16: It is stated in the footnotes that the final remediation goal will be at the discretion of the Navy. It should be noted that concurrence from regulatory agencies and the public is necessary for remediation goals to be implemented. Estimated or desired action limits should be developed and listed in these worksheets to ascertain that the analytical methods are capable of meeting the project goals.
23. Worksheet # 21: Copies of the sampling SOPs should be provided as an appendix or their location should be provided as a reference.
24. Worksheet # 28: The references to Region III guidelines should be changed to Region 2 guidelines.
25. Worksheet # 29: The final project report should be listed.
26. Worksheet # 35:
 - a. It is indicated that validation will be performed only on confirmatory samples below action limits. Region 2 policy is that all data that will be used for environmental decision making should be validated.
 - b. The latest version of the National Functional Guidelines for data validation should be used. The guidelines are located at: <http://www.epa.gov/superfund/programs/clp/guidance.htm>. The latest EPA Region 2 data validation SOPs are located at: <http://www.epa.gov/region02/qa/documents.htm>.

27. Worksheet # 37: should be used to describe how data quality issues will be addressed and how limitations on the use of the data will be handled. The procedures that will be used to determine whether data are of the right type, quality, and quantity to support the environmental decisions for the project should be provided.