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Mr. Rob Thomson
Remedial Project Manager
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103

Subject: Additional Responses to USEPA Comments on the *Draft Background Study Work Plan* for Naval Weapons Station, Yorktown, Yorktown, VA and Cheatham Annex, Williamsburg, VA

Dear Mr. Thompson,

On behalf of the U.S. Department of the Navy's Naval Facilities Engineering Command (NAVFAC), this letter is in response to your letter dated March 26, 2009, which provided comments on the Navy's responses to USEPA's original comments on the subject document. It is understood that out of the twelve original comments, the USEPA feels seven (Comments 3, 4, 5, 6, 8, 11, and 12) have been adequately addressed and that five (Comments 1, 2, 7, 9 and 10) need further clarification. Presented below is the resolution of these five comments.

GENERAL COMMENTS:

- 1. The Navy's response did not fully address the concerns EPA outlined in General Comment #1. Please address each bulleted concern separately, and provide revised text/inserts as needed for review.*
- 2. The Navy's response did not fully address the concerns EPA expressed in General Comment # 2. Please give a detailed response to the specific concern outlined in the review comment, along with text modification.*
- 9. The Navy's response did not fully address the concerns EPA outlined in specific comment #9. Please provide a more detailed response and include text modification to insure that the Work Plan is specific and clear.*
- 10. The Navy's response did not fully address the concerns EPA outlined in General Comment #10. Please provide text modifications to insure that the Work Plan is specific and clear. Also, please address the issue of dealing with symmetrical background distribution if it is encountered.*

Navy Response:

These comments were discussed at the April 30, 2009 Yorktown Partnering meeting, as the Navy believed that between its responses to the original comments and the work plan itself, these comments had been adequately addressed. However, the EPA felt, while they understand what the Navy is proposing, the language should be geared toward normal vocabulary for the reader - that the work plan needs to define the ways the data will be used and provide more clarity for the audience reading the work plan who might not understand the statistics. Overall, the EPA said no additional RTC letter was necessary, but wanted language added to the work plan that stated the statistical model actually used could vary from what was proposed, as it is dependent on the how the data is distributed. Additionally, the EPA and Navy would agree on the model to use once the data was available.

The Navy agrees that the model to use is dependent on the data distribution. The Navy and EPA will discuss and agree upon the model to use for calculating the new soil and groundwater background values.

Regarding changes to the work plan, work plans are not geared toward the average person and are intended for technical reviewers who understand the science and the proposed course of action for a project/site. This project is further complicated by the fact that it is statistical in nature and has a more narrow audience. Adding more detail to the work plan about the statistics likely would be more confusing rather than providing more clarity. The Navy feels the background study report is a more appropriate place to present the details on how the data will be used and will include them there instead of in the work plan. The following changes to the work plan have occurred based on the discussion of these four comments:

Section 3.2, first paragraph

"Overall, statistical approaches are dependent upon the distribution of the data and could vary from what is proposed in this work plan. The subsections below present the intended approach for calculating the soil UTLs. However, the Navy and EPA have agreed to review the data and decide together on the best statistical approach."

Section 5.2, first paragraph:

"Overall, statistical approaches are dependent upon the distribution of the data and could vary from what is proposed in this work plan. The subsections below present the intended approach for calculating the groundwater UTLs. However, the Navy and EPA have agreed to review the data and decide together on the best statistical approach."

7. The Navy's response did not fully address the concerns EPA outlined in Specific Comment # 7. The Navy 's response is not clear about the factors influencing the grouping of soil associations. The response indicates that the clarification requested was already presented in the draft Work Plan, in several different paragraphs. However, the text referenced did not address or answer the concern, which is whether the grouping of soil associations will be based on similarities in soil characteristics or in contaminant concentrations? Usually for background studies, samples are segregated based on soil characteristics. If that is not what is proposed in the draft Work Plan, then an explanation needs to be provided for review.

Navy Response:

Following the April 30, 2009 Yorktown Partnering meeting, CH2M HILL provided the EPA with this response:

“Yes, the samples will be segregated based on soil characteristics. There are four soil associations located at both WPNSTA Yorktown and CAX - 1 (Bohicket, Johnston, Axis), 2 (Dogue, Pamunkey, Uchee), 3 (Emporia, Slagle, Craven-Uchee Complex), and 4 (Slagle, Emporia, Emporia Complex. WPNSTA Yorktown has a fifth soil association (5 - Slagle, Bethera, Craven-Uchee); however, data from Soil Association 5 at WPNSTA Yorktown was excluded from the BG data set because this soil association comprises a relatively small portion of the Facility and there are no known CERCLA sites located with the areas of this soil association.

When determining the suitability to combine soil types and soil depths, the largest determining factor is the soil composition (i.e., grain size, organic content). The soil grain size distribution and organic content can impact a contaminant's transport properties as well as alter the contaminant's properties. Soil types are closely associated to the geographic features which represent varying deposition environments (i.e. wetlands are associated with low, quiet waters producing predominantly silt to mud deposits). The highest variability in a contaminant's characteristics within a soil occurs between soils composed of sands to those composed of silts and muds. Soils with higher organic contents generally have the capacity to accumulate inorganic compounds and as such would produce higher concentrations of naturally occurring metals. For this reason, high organic soils (Bohicket, Johnston, Axis) are not combined with sandier, low-organic content soils (Slagle, Emporia).

Soils which are considered similar in their physical composition are then compared statistically. This process is repeated to determine if soil depths may also be considered for combination based on their physical composition. The purpose of conducting this process is to increase the statistical pool of data leading to a higher confidence in the statistics.”

The EPA concurred with response. The above response has been incorporated into the work plan, Section 3.2.1, first three paragraphs.

All EPA comments on the draft work plan are now resolved and the final work plan will be prepared. Any questions regarding these responses or the background study work plan should be directed to me at (757) 873-1442, x 34 or Mr. Bill Friedmann at (757) 671-6223.

Sincerely,

CH2M HILL



Marlene Ivester
Project Manager

cc: Mr. Thomas Kowalski/NAVFAC MIDLANT
Mr. Christopher Murray/NAVFAC MIDLANT
Ms. Susanne Haug/USEPA
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