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U S NAVY RESPONSE TO U S EPA REGION III COMMENTS TO DRAFT SITE INSPECTION REPORT SITES 4 AND 9 AREA OF CONCERN 3 (AOC3) NWS YORKTOWN CHEATHAM ANNEX WILLIAMSBURG VA
9/29/2011
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September 29, 2011

Mr. John Burchette
NPL/BRAC Federal Facilities Branch
United States Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Subject: Response to Comments on the *Draft Final Site Inspection Report Site 4, Site 9, and Area of Concern 3; Naval Weapons Station Yorktown Cheatham Annex; Williamsburg, Virginia,* September 2011

Dear Mr. Burchette:

On behalf of the U.S. Department of the Navy's Naval Facilities Engineering Command (NAVFAC), CH2M HILL has prepared this letter in response to your letter dated September 21, 2011 that provided additional comments for the subject document. EPA comments for this document were received in letters dated May 13, 2011 and July 25, 2011, with responses to those comments submitted June 16, 2011 and August 15, 2011, respectively. The new comments received are shown in *italics*, followed by the Navy's response.

- **BTAG Comment 1** - *The Navy states in their August 15, 2011 letter to EPA that "…the maximum chemical concentrations were considered during the refined analysis." It is not clear from the main part of this document that other than to identify how many COPCs they were using maximum concentrations, that these maximum concentrations were used in any other way to refine the number of contaminants. For the two Sites and one AOC, there is text identifying which chemicals were retained as COPCs using maximum concentrations. This is followed by text indicating which chemicals were retained as COPCs using the mean concentrations (refined). It is presumed that once the recommended next steps (RIs or expanded SI) are initiated, the refined COPCs will be used. The Navy needs to clearly indicate that maximum contaminant concentrations will be used to assess ecological risk to plants and invertebrates in the ecological risk assessments that are based on the next recommended steps. It must be noted that all new data obtained during the RI must be screened to ensure that no additional / new COPCs are present.*

  Navy Response – The proposed path forward for Site 4/AOC 3, in agreement with the CAX Team Partnering Meeting Site 4 RI SAP scoping session, is an RI to sample soil (surface and subsurface) and sediment for PAHs, PCBs, and inorganics and sample groundwater for VOCs, PAHs, and inorganics (total and dissolved), plus conduct toxicity tests. For Site 9, the proposed path forward is an expanded SI to further characterize and mitigate copper in surface soil, and PAHs, Aroclor-1260, arsenic, chromium, mercury, and selenium in sediment. The actual sampling plan, COPCs, and use of the data will be presented in the UFP-SAPs for both investigations, which the CAX Partnering Team (including technical staff) will have time to review and provide comment, and the UFP-SAPs can be refined as necessary.

- **BTAG Comment 2** - *Related to the above, the ecological risk evaluation portion of Section 3.2.4 (Site 4) contains the number of chemicals using maximum concentrations and mean concentrations depicted in the table below. The SI for Site 4 recommended an RI be completed for this site with soil, groundwater, surface water, and sediment to quantify risk associated with all media. The need for an RI is supported. However, it is not clear how these data in the table will be used in the RI; when they appear inappropriately used in the SI (e.g., the SI does not use the maximum concentrations of contaminants to assess risk to some ecological receptors (e.g., plants, invertebrates) for soil, sediment, and surface water). The ecological risk evaluation portion of the text does contain the statement "The initial COPCs were then evaluated using more realistic assumptions to select refined COPCs…" which supports the inappropriate use statement made above.*

Site 4 media	*COPCs (maximum concentrations)*	*Refined Analysis – COPCs (mean concentrations)*
Surface Soil	*15*	*6*
Subsurface Soil	*12*	*4*
Surface Water	*4*	*2*
Surface Sediment	*31*	*0*
Subsurface Sediment	*25*	*1 (summary text says zero)*

Navy Response – Please see the response to BTAG Comment 1.

- **BTAG Comment 3** - *Site 9: The conclusion for this site is to produce an expanded SI and interim removal action to further characterize and mitigate copper in surface soil, and PAHs, Aroclor 1260, arsenic, chromium, mercury, and selenium in sediment. While the expanded SI and interim removal action may be appropriate, it is not clear why an RI is not recommended for this site. The text of Section 4, starting on page 4-11 (ecological risk evaluation), indicates the following number of COPCs using maximum and mean concentrations*

Site 9: media	*COPCs (maximum concentrations)*	*Refined Analysis – COPCs (mean concentrations)*
Surface Soil	*7*	*2*
Subsurface Soil	*3*	*0*
Surface Sediment	*10*	*9*
Subsurface Sediment	*5*	*2*

The text does not adequately address ecological risk to all receptors (e.g., plants and invertebrates) because ecological risk based on maximum concentrations in not factored into the refinement of ecological risk. In particular, the use of maximum contaminant concentrations needs to be used specifically for plants and invertebrates in soil, sediment, and surface water in the refined ecological risk assessment.

Navy Response – An RI was not recommended for Site 9 due to the limited amount of contaminants detected in the site media. On May 13, 2011, the EPA agreed with this recommendation (EPA Comment #15). In addition, during a recent site visit, the Navy observed that the drainage ditch where the surface and subsurface "sediment" samples were collected had been destroyed. It is assumed that this area was overturned during the recent installation of utility lines within the area. It is anticipated that new (soil) samples

will need to be collected from this area (however, this will be discussed and agreed to by the CAX Partnering Team as part of scoping) and will be presented in the expanded SI.

Finally, in regards to addressing ecological risk to all receptors, please see the response to BTAG Comment 1.

- **BTAG Comment 4** - *AOC 3: The conclusion for this area is to complete a RI. This does appear appropriate. Again, it is not clear how these data from the SI will be used in the RI. The following table shows the number of COPCs based on maximum concentrations, mean concentrations (refined), and the portion of the text labeled Ecological Risk Evaluation. The same issue regarding the need to use maximum concentrations to assess ecological risk to plants and invertebrates that was addressed at the previous two sites applies at AOC 3.*

AOC 3: Media	*COPCs (maximum concentrations)*	*Refined Analysis – COPCs (mean concentrations)*
Surface Soil	*23*	*10*
Subsurface Soil	*9*	*1*
Surface Water	*4*	*3*
Surface Sediment	*57*	*38*
Subsurface Sediment	*53*	*15*

Navy Response – Please see the response to BTAG Comment 1.

- **BTAG Comment 5** - *On page 3-14, the first bullet refers to using LC50 and EC50 values which exceed the maximum concentrations of carbazole at Site 4. The LC50 and EC50 values are not appropriate to use as they represent the concentration which adversely affected 50 percent of the test organisms (survival, growth, and/or reproduction). While these may be the only comparative criteria available, ecological risk to receptors is likely present at concentrations less than either of these values.*

Navy Response - Appropriate uncertainty factors will be used to adjust the LC50 and EC50 values to approximate chronic NOECs in the discussion.

- **EPA BTAG Comment 6** - *It is not clear why the recommendation for Site 9 is an expanded SI instead of an RI.*

Navy Response - Please see the response to BTAG Comment 3.

- **EPA BTAG Comment 7** - *Regarding surface water, the COPCs that are important to ecological receptors need to include those with maximum concentrations that equal or exceed appropriate ecological criteria in unfiltered samples, as well as filtered samples. Maximum concentrations also need to be used in the refined list of COPCs as it will apply to both plants and invertebrates.*

Navy Response – Please see the response to BTAG Comment 1.

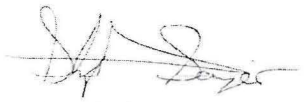
- **EPA BTAG Comment 8** - *The Navy's response to EPA comments 11 and 16 states "Since the processes used to conduct the semi-quantitative risk evaluation were described in appendices…B (Ecological Risk Screening), they were not included in the June 16, 2011 RTC letter." A re-review of Appendix B did not identify the term "semi-quantitative risk evaluation." In light of the additional comments noted above, it is not clear that this "semi-quantitative risk evaluation" was correctly conducted.*

Navy Response – While not specifically defined as the semi-quantitative risk evaluation in Appendix B, the process used in conducting this evaluation is fully described in this appendix. The term "semi-quantitative risk evaluation" was used in the response because the process used, as described in Appendix B, was an abbreviated version of the typical ERA process for Steps 1 through 3A.

If you have any questions or comments regarding the above response to comments, please feel free to contact Marlene Ivester at (757) 873-1442, X41633 or me at 757-671-6273.

Sincerely,

CH2M HILL



Stephanie Sawyer
Project Manager

cc: Ms. Krista Parra /NAVFAC Mid-Atlantic
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Ms. Marlene Ivester/CH2M HILL
Project File