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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
6/16/2011
CH2M HILL



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June 16, 2011

Ms. Susanne Haug
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 Site Inspection Report Site 4, Site 9, and Area of Concern 3; Naval Weapons Station Yorktown Cheatham Annex; Williamsburg, Virginia, May 2011*

Dear Ms. Haug:

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 May 13, 2011 that provided comments for the subject document. Comments received are shown in *italics*, followed by the Navy's response.

- ❖ *EPA's Comment #1 - Executive Summary: The size (in terms of acreage) of each study area should be provided.*

Response: The size of each Site/AOC was added to the Executive Summary and respective site description sections as recommended.

- ❖ *EPA's Comment #2 - Page 4-15: For Site 9, an expanded SI and interim removal action are recommended. Per the report, following the removal action, confirmatory samples will be collected. In this regard, prior to initiating removal activities, clean-up goals should be provided to EPA for review.*

Response: The details of the removal action will be submitted under a separate cover. The clean-up goals for the identified COPCs will be presented in this separate report and submitted for regulatory review. No changes to the SI Report were made.

- ❖ *EPA's Comment #3 - Section 1.3.7 on page 1-8 states that the "southern bald eagle (listed on the federal threatened/ state endangered lists) is known to nest nearby at WPNSTA Yorktown." A similar statement appears on page 1-9. The bald eagle was delisted in 2007, and is no longer a federally listed species. This information should be updated.*

Response: Information regarding the bald eagle being listed on the federal threatened/state endangered lists has been revised.

- ❖ *EPA's Comment #4 - Page 2-6 and 2-7, Sections 2.5 and 2.6: The first bullet indicates that two culverts under D Street could not be located and the original two surface water sample and two sediment sample locations were reduced to one. Because of the variability within sediment and the fact that these culverts existed at some time, the original two sample locations need to be collected and analyzed. Finally, Figure 2-8 does not show the single sample midway between the two culverts.*

Response: When the two culverts under D Street could not be located by the field team, on-site personnel, including representatives from the Navy and BTAG, agreed that one sample could be collected from the midway point between the two culverts, and the actual sampling location was agreed upon by members from both the Navy and BTAG. In addition, the surface water and sediment sample IDs were identified as CAS04-SW04 and CAS04-SD04; therefore, they are included in Figure 2-3 as opposed to Figure 2-8. No changes to the SI Report were made and no additional surface water/sediment sampling will be conducted.

- ❖ *EPA's Comment #5 - Section 2.8 describes the decontamination procedure for all sampling equipment. The procedure described on page 2-8 includes a methanol rinse to remove residual organic chemicals, but does not include a nitric acid rinse to remove residual inorganic chemicals. This issue should be discussed since omitting a nitric acid rinse can result in cross contamination among samples.*

Response: A nitric acid rinse was not used to remove residual inorganic chemicals. The decontamination procedures conducted in the field were performed in accordance with the SOP entitled *Decontamination of Personnel and Equipment*, which was included in the Final UFP-SAP and approved by the CAX Partnering Team. No changes were made to the SI Report.

- ❖ *EPA's Comment #6 - Table 2-4: The field parameter salinity is given in percent (PCT). Salinity is usually given in parts per thousand (ppt). Please indicate why the salinity data was listed as NA (not available/not analyzed).*

Response: Surface water quality readings were collected using a Horiba® U-22, which reads salinity in percent as opposed to parts per thousand. However, for Table 2-4, the collected salinity readings were converted to parts per thousand ($\% \times 1000$). In addition, salinity data could not be collected during the surface water sampling of Upstream Pond because the salinity probe on the Horiba® U-22 meter was not working at the time of the sampling. A description of why salinity was not recorded during the Upstream Pond sampling activities was added to Table 2-4.

- ❖ *EPA's Comment #7 - Section 3.2.4 on page 3-13 states that when evaluating ecological risk to soil at Site 4, "the initial COPCs [chemicals of potential concern] were then evaluated using more realistic assumptions to select refined COPCs." A similar approach was performed for terrestrial food chain receptors discussed on page 3-15. There are concerns about evaluating ecological risk using more realistic exposure assumptions as part of the SI since the assessment is based on a limited dataset. It is premature to refine exposure assumptions to less conservative levels and eliminate chemicals from further consideration at this point in the risk assessment process. Even when performing a less conservative analysis as part of a RI, it is inappropriate to eliminate chemicals from further consideration using means, as this underestimates risk from hotspots. This comment also applies to Site 9 discussed in Section 4 and AOC 3 discussed in Section 5.*

Response: The ecological risk screening followed the decision analysis process outlined in Section 1.1.1, which included a refinement step analogous to Step 3A of the ERA process. Although this decision analysis process was not included in the final SAP for these sites, it is essentially identical to the decision analysis process included in the CAX AOC 1, 2, 6, 7 and 8 SI Work Plan, which was reviewed and approved by the Partnering Team. While the

current document is an SI, the amount of data collected was sufficient for an RI-level analysis based upon the density of samples collected for each medium at each site. AOC 3 and Site 4, each approximately 1 acre in size, had 11 and 10 available surface soil samples, respectively. Site 9, approximately 7,000 ft² in size, had 16 available surface soil samples. The upstream pond, approximately 1 acre in size, had 8 available surface water samples (plus 5 more in the input streams) and 12 available surface sediment samples (plus 5 more in the input streams). The Region 3 BTAG was present during the field reconnaissance survey where sample locations were defined. In a refined analysis, the use of central tendency (e.g., mean) concentrations is appropriate to define risks for ecological receptor populations (both upper and lower trophic level), particularly given the relatively small size of each site/water body evaluated. However, the magnitude of the maximum HQs, which can be used as an indicator of the presence of potential "hot-spots," was considered during the refined COPC selection process. For example, during the refined screening for upstream pond surface sediment (Appendix B, Section B.3.3.2), several chemicals were retained as refined COPCs based upon the magnitude of their maximum HQs even though the mean HQs were less than one. No changes to the SI Report were made.

- ❖ *EPA's Comment #8 - Page 3-14, Section 3.2.4 (Ecological Risk Evaluation): There are a number of places where mean HQs are calculated for soil, subsurface soil, sediment, subsurface sediment, and surface water. In all of these cases, the maximum HQs are more relevant because invertebrates and plants have limited mobility and because of the limited dataset. This comment applies to Site 4, Site 9, and AOC3. This will likely increase the number of "refined COPCs" at each site/AOC.*

Response: Please see the response to EPA Comment #7.

- ❖ *EPA's Comment #9 - Section 3.3 provides a release assessment decision analysis for Site 4. Step 3 on page 19 states that a RI is recommended to characterize the nature and extent of contamination within soil, groundwater, surface water, and sediment and to quantify the risk associated with all media. BTAG agrees with this recommendation, however, the full list of detected chemicals must be evaluated in the RI, not the refined list that was developed as part of the less conservative analysis. In addition, the RI will need to evaluate remedial alternatives to mitigate potential risk to ecological receptors and not just human health. This same comment also applies to AOC 3.*

Response: The list of chemicals to be evaluated during the RI will be included in an RI UFP-SAP, to be submitted under a separate cover. The SI Report was revised to clarify that the FS for Site 4 (and AOC 3) will evaluate remedial alternatives to mitigate potential risks to human health and ecological receptors.

- ❖ *EPA's Comment #10 - Table 3-7 (Site 4 Surface Soil): It is not clear why VOCs are not potentially attributable to a CERCLA release when Steps 2a and 2b are N/A and further investigation is required. In addition, VOCs in subsurface soil are listed as potentially attributable to a CERCLA release.*

Response: Since several VOCs were detected in Site 4 surface soil, Table 3-7 was revised, showing that the detected VOC concentrations may be potentially attributable to a CERCLA release. Tables 4-6 and 5-7 were also reviewed and revised as appropriate. In addition, recommendations regarding further investigation were made for the site as a whole as opposed to the different site media/COPCs.

- ❖ *EPA's Comment #11 - Table 3-7 (Site 4 Subsurface Soil): There appear to be inconsistencies in this table. Under pesticides, the concentrations of endosulfan II exceed background and ecological criteria; yet, the results are "acceptable Eco risk value." Other pesticides with concentrations greater than background and Eco conclude "exceeds acceptable Eco risk value." This inconsistency needs to be corrected. The same concern applies to selenium and zinc.*

Response: Steps 2a and 2b in Table 3-7 (and the other Decision Summary Tables) provide a summary of the results from these two independent steps. As outlined in Section 1.1.1, those constituents that exceed background concentrations were compared to the screening criteria outlined in the UFP-SAP (SSLs, RSLs, MCLs, and site specific ESVs, as appropriate) as part of Step 2a. The results of these comparisons are summarized the Step 2a column. In addition to comparing to these screening criteria (Step 2a), a semi-quantitative risk evaluation was conducted to help determine if further investigation or action is warranted as part of Step 2b. The results of these risk evaluations are summarized in the Step 2b column. Since these two steps were conducted independently of each other, it is possible for certain constituents to exceed screening criteria in Step 2a yet have acceptable ecological risk values in Step 2b. No changes to the SI Report were made.

- ❖ *EPA's Comment #12 - Figure 3-2: It is not clear why the conceptual site model cutview does not have potential impacts to Youth Pond and the York River as identified on Figure 3-1 CSM Plan View.*

Response: Figure 3-2 was created to zoom in on Site 4 and AOC 3 so site-specific characteristics (nearby buildings, surface debris, buried debris, etc.) can easily be shown. Figure 3-2 depicts the potential impacts to Upstream Pond (surface water flow and leaching). Since Figure 3-1 identifies the potential impacts to Youth Pond and the York River, no changes were made to the SI Report.

- ❖ *EPA's Comment #13 - Page 4-3: The text identifies the 1995 BTAG screening level for Aroclor-1260 as 100 ppb ($\mu\text{g}/\text{kg}$). The Eco risk screening value listed on Figure 4-3 for Aroclor-1260 is 8,000 $\mu\text{g}/\text{kg}$ (ppb). This inconsistency needs to be corrected.*

Response: There is no inconsistency between the Aroclor-1260 value listed on Page 4-3 and Figure 4-3. Page 4-3 includes a summary of the historical 2005 Screening Level Ecological Risk Assessment (SERA). At the time the SERA was completed, the BTAG screening level of 100 ppb was used to determine if potential unacceptable risk existed at Site 9. The SI Report was revised to clarify the use of this screening value.

As part of the current SI evaluation, media-specific ecological screening values were used to determine if potential unacceptable risk exists at Site 9. As described in Appendix B, the media-specific screening values are based on lower level trophic exposures, and it is these values that are listed in Figure 4-3 (and all other figures and tables within the report).

- ❖ *EPA's Comment #14 - Page 4-15 (Step 3): The text for Step 3 needs to consistently identify all the COPC identified in Step 2b for ecological receptors.*

Response: Step 3 of the Decision Analysis identifies all the COPCs identified in Step 2 (which includes both Step 2a and 2b). Specifically to Site 9, the results of Step 2b identified potential ecological risks associated with endosulfan sulfate and copper in surface soil,

Aroclor-1260, select pesticides, mercury, and selenium in surface sediment, and endosulfan II and endosulfan sulfate in subsurface sediment. However, since the results of Step 2a state that pesticides were not known to have been disposed of at Site 9, these low level pesticide detections have been attributed to normal pesticide use at DOD facilities. Therefore, since the pesticides detected in surface soil and sediment are not site-related, they are not CERCLA-regulated and were removed from the COPC list, leaving only site-related contaminants to be listed as COPCs. No changes were made to the SI Report.

- ❖ *EPA's Comment #15 - Section 4.3 provides a release assessment decision analysis for Site 9. The section states that "due to the small size of the site and extent of contamination, an expanded SI and interim removal action is recommended to further characterize and mitigate copper in surface soil, and PAHs [polycyclic aromatic hydrocarbons], Aroclor-1260, and arsenic, chromium, mercury, and selenium in sediment." BTAG agrees with this recommendation, however, an explanation should be provided stating when downgradient areas in Youth Pond and the York River will be investigated. Additional assessment of the migration pathway for runoff on the other side of the road from the site will be needed as it is unclear to where water in this ditch flows.*

Response: The description of activities to be conducted as part of an expanded SI and interim removal action at Site 9 will be submitted under a separate cover (in an Expanded SI UFP-SAP or EE/CA, as appropriate). It is premature to connect PCB contamination in Youth Pond to Site 9; therefore, it is not appropriate to discuss the Youth Pond investigation within the context of Site 9.

- ❖ *EPA's Comment #16 - Table 4-6: There are some concentrations of chemicals (dieldrin, endosulfan II, and nickel in surface soil) exceeding both background and ecological values yet the conclusion is "acceptable Eco risk value." This is inconsistent with the conclusion for endosulfan sulfate and copper where concentrations exceed background and ecological values and the conclusion is exceeds acceptable ecological risk value. The rest of this table, and all others, will need to be checked/corrected for inconsistencies.*

Response: Please see the response to EPA Comment #11.

- ❖ *EPA's Comment #17 - Page 5-2, Section 5.2.3: The text states "...to determine the lateral and horizontal extent of waste." This should be changed to vertical and horizontal extent of waste.*

Response: The text was changed as recommended.

- ❖ *EPA's Comment #18 - Page 5-7 (Pesticides/Polychlorinated Biphenyls): The text states "In subsurface sediment, Aroclor-1254 exceeded the adjusted residential RSL (1,100 µg/kg) in one subsurface sample...at a concentration of 8,900 µg/kg. This concentration also exceeds the previously identified ecological screening value of 59.8 µg/kg for Aroclor-1254. This needs to be clarified in the text.*

Response: Information regarding the Aroclor-1254 concentration exceeding the ecological screening criteria in subsurface sediment was added to the SI Report as recommended.

- ❖ *EPA's Comment #19 - Section B.4 on page B-16 of Appendix B states that PAHs were highly elevated at two locations, one near the surface debris pile and the other adjacent to a building. The section further states that risks at the building location are likely to be minimal due to the small size of the impacted area and the low quality habitat present. The conclusion of a small size is not*

supported by the data shown in Figure 5-3. The closest downgradient sample is over 200 feet away. Therefore, the extent of this PAH hot spot is unknown. In addition, this area is potentially an ongoing source of PAHs to the upstream tributary and pond. The extent of this hot spot should be further characterized as part of the RI.

Response: The last sentence in the second paragraph of Section B.4 will be deleted. Further characterization of this area will be considered as part of post-SI activities.

- ❖ *EPA's Comment #20 - Section B.4 on page B-17 states that PCBs are not likely related to known Site 4 or AOC 3 source areas. This statement is misleading. PCBs are likely related to activities at Site 9, which is upgradient of the upstream pond. Contaminants found in the upstream pond could be from any of the three sites being investigated. This issue should be clarified.*

Response: The last sentence in the fourth paragraph of Section B.4 will be deleted.

- ❖ *EPA's Comment #21 - Table B-3 presents the screening values used to screen freshwater sediment for potential ecological risk. Values from several different sources are presented. Region III BTAG has developed a list of screening values that should be used to screen freshwater sediment. These values are available at <http://www.epa.gov/reg3hwmd/risk/eco/btag/sbv/fwsed/screenbench.htm>. Other values can be used, per the BTAG FAQs, if one is not available from this list. This comment also applies to freshwater screening values shown in Table B-2.*

Response: The Region 3 BTAG screening values for fresh surface water and sediment were considered when compiling the screening values used in the evaluation (Tables B-2 and B-3). In some cases, the original source was cited rather than the BTAG document for the same value. In other cases, an alternate value was used in place of the BTAG value (e.g., the most recent EPA AWQC values were used regardless of the BTAG values, which were compiled in 2006).

- ❖ *EPA's Comment #22 - Pages 3-5 and 3-6 state that PCE was detected in groundwater upgradient of the site. The PCE source must be found. This could be the leading edge of a larger plume.*

Response: The Navy agrees that the source of PCE must be identified; however, due to the location of the detection (approximately 150 feet upgradient of Site 4) and the type of buried debris (railroad ties, metal, and construction material) the PCE detection is not likely related to historical activities conducted at Site 4. The Navy recommends the CAX Partnering Team discuss creating a new area of concern in order to determine the source of the PCE detection. No changes to the SI Report were made.

Ms. Susanne Haug

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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

A handwritten signature in black ink, appearing to read 'Stephanie Sawyer', written over a horizontal line.

Stephanie Sawyer

Project Manager

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