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JEB LITTLE CREEK
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LETTER AND U S NAVY RESPONSES TO U S EPA REGION III COMMENTS ON DRAFT SECOND COMPREHENSIVE FIVE YEAR REVIEW NAB LITTLE CREEK VIRGINIA BEACH VA (PUBLIC NOTICE)
2/28/2014
CH2M HILL

CH2M HILL
5701 Cleveland Street,
Suite 200
Virginia Beach, VA 23462
Tel 757.518.9666
Fax 757.497.6885

February 28, 2014

USEPA Region 3
NPL/BRAC Federal Facilities Branch (3HS11)
Attn: Mr. Jeffrey Boylan
1650 Arch Street
Philadelphia, PA 19103-2029

Subject: Responses to EPA Comments on the
Draft Second Comprehensive Five-Year Review
Joint Expeditionary Base Little Creek, Virginia Beach, Virginia
Navy CLEAN 8012, Contract N62470-11-D-8012, Contract Task Order WE61

Dear Mr. Boylan:

On behalf of the Navy, CH2M HILL is pleased to submit the following response to the comments from EPA received via email on February 12, 2014 and February 24, 2014 on the *Draft Second Comprehensive Five-Year Review*, Joint Expeditionary Base Little Creek, Virginia Beach, Virginia (CH2M HILL, December 2013):

Toxicologist

Comment 1: Figure ES-1: This figure appears to have been duplicated from the previous five-year review. Language in some of the boxes on this figure should be revised to reflect the current status of the site.

Response: The figure has been updated as requested.

Comment 2: Page 4-5: The first paragraph indicates that no clean-up goals were established for Site 7 because "no potential risks were identified from exposure to contaminants in site media." However, as presented in Section 4.5.2 of the Five-Year Review report, Arsenic in groundwater at the site does exceed its MCL. An exceedance of the Arsenic MCL would result in an unacceptable potential risk under a residential exposure scenario. A more robust explanation for the lack of clean-up goals at this site should be provided in the report.

Response: The 9th sentence of *Changes in Toxicity and Other Contaminant Characteristics* in Section 4.5.2 has been revised to read: "The changes in toxicity values associated with metals would not affect protectiveness because, with the exception of arsenic detected in May 2012, the metals concentrations were below the MCLs. Total and dissolved arsenic was detected above the MCL in one monitoring well (LS07-MW03) located upgradient of the landfill and are therefore, not reflective of impacts from historic landfilling activities." Additionally, the 1st sentence of the 1st paragraph on page 4.5 was revised to read: "No unacceptable risks to human health were identified from exposure to soil, groundwater, sediment, or surface water at or beyond the boundaries of the landfill and ecological risks identified were mitigated following completion of the NTCRA. The only unacceptable risk at

Site 7 is from direct exposure to landfill contents remaining on site; therefore, quantitative cleanup goals were not established."

Hydrogeologist

Comment 1: Ensure the LTM plans for the sites be developed and implemented prior to the next five year review as presented in the five year review comments.

> **Response:** Comment noted. LTM plans for Sites 11, 12, and 13 are currently being implemented. The Team will ensure that the LTM plan for Site 11a is developed and implemented prior to the next five year review. Sampling plans for Sites 7, 9, and 10 will be developed and implemented as determined necessary. No changes to the document were made.

BTAG

Comment 1: Section 4.3.2.2 on page 4-6 discusses the groundwater monitoring at Site 7. This section states that although some exceedances of screening criteria were identified, the May 2012 post-Record of Decision groundwater monitoring results are consistent with data collected during pre-Record of Decision groundwater sampling. The section further states that concentrations are not indicative of a site release and offsite migration of groundwater contaminants. It is not clear if this is accurate and should be confirmed by EPA's hydrogeologist. Until the Navy's premise is confirmed by EPA's hydrogeologist, we must assume that data from the wells are indicative of what is leaving the site and potentially discharging to surface water. This section should indicate whether groundwater concentrations were compared to ecological screening criteria to evaluate potential risk to aquatic receptors in the tidal wetlands of Little Creek.

> **Response:** The conclusion that concentrations are not indicative of a site release and offsite migration is reflective of the conclusions presented in the *Final Long-Term Monitoring Report, Site 7 – Amphibious Base Landfill, JEB Little Creek, Virginia Beach, Virginia* (CH2M HILL, October 2013), which was reviewed by the EPA hydrogeologist. As noted in the text of Section 4.3.2.2, the groundwater data were screened against RSLs, MCLs, and background UTLs. Ecological screening values were not included in the comparison because no ecological groundwater COCs were identified in the 2004 BERA and concentrations in pre-ROD and post-ROD groundwater samples were consistent. The following sentence was added to the end of Section 4.3.2.2: "Because a site release and offsite migration of contaminants was not identified, data were not screened against ecological screening values for protection of Little Creek Cove."

Comment 2: Section 4.5.1 on page 4-7 indicates two feet of soil cover was established and site drainage swales were installed to promote runoff and control erosion. Please confirm that the soil cover under the drainage swales is two feet thick.

> **Response:** To install the drainage swales, the vegetative cover only was removed and replaced with stone. The stone used to create the drainage swales is considered to be a part of the landfill cover; therefore, the required two feet of total cover remains. Appendix E provides a schematic of the swales installed. No changes to the document were made.

Comment 3: Section 4.5.2 on page 4-8 states that there have been some changes in ecological screening values since the baseline ecological risk assessment (BERA) for Site 7 was issued [November 2004] for some of the chemicals detected in soil, groundwater, surface water, and

sediment. However, these changes would not substantially change the results and conclusions of the BERA. Because no data is presented, this conclusion is not supported. A more detailed evaluation must be conducted and specific information must be presented to support this statement. This comment also applies to Sites 9 and 10 in Section 5.5.2 on page 5-12.

> **Response:** Tables comparing the medium-specific ecological screening values (ESVs) used in the site-specific ERAs with current ESVs have been included as Table 4-6 (Site 7) and Table 5-7 (Sites 9 and 10) and referenced in Sections 4.5.2 and 5.5.2, respectively.

Comment 4: Section 5.4.2 on page 5-8 states that a comparison of data to risk-based screening criteria and facility background values, as well as a statistical evaluation of data trends and prediction intervals, concluded that releases to groundwater from the landfills at Sites 9 and 10 have not occurred and are not likely to occur in the future. It is not clear if this is accurate and should be confirmed by EPA's hydrogeologist.

> **Response:** This statement is reflective of the conclusions presented in the *Revised Draft Long-term Monitoring Exit Rationale for Sites 9 – Driving Range Landfill and Site 10 – Sewage Treatment Plant Landfill, Joint Expeditionary Base Little Creek, Virginia Beach, Virginia* (CH2M HILL, November 2013), which was reviewed by the EPA hydrogeologist. No changes to the document were made.

Comment 5: Section 6.2.2 on page 6-2 states that stormwater runoff at Site 11 is collected by man-made stormwater drainage ditches and discharged to the stormwater sewer system. Figure 6-1 shows the extent of the underground stormwater system at this site. These stormwater pipes appear to overlap or are in close proximity to the contaminant groundwater plumes shown in Figure 6-4. If any stormwater pipes are compromised, this would provide a pathway for contaminated groundwater to enter the pipe, leave the site, and discharge directly to surface water bodies. This section should clarify that the integrity of the stormwater system has been investigated or the system has been relined recently to prevent groundwater from entering the stormwater system. Groundwater sampling would be insufficient to assess this pathway. This comment also applies to Site 11a discussed in Section 7, Site 12 discussed in Section 8, and Site 13 discussed in Section 9.

> **Response:** Groundwater elevation survey data and corresponding groundwater flow maps do not indicate any ongoing influence from stormwater systems located at Sites 11, 11a, and 13, which is evidence that impacted groundwater from these sites is not entering the stormwater system and being discharged via this pathway to surface water bodies. Additionally, site groundwater COCs at each site, if entering the stormwater system, would be expected to be diluted by other contributions to the stormwater system and to a lesser extent VOCs to volatilize prior to reaching the surface water bodies located over 3,000 feet from the site. No additional investigation of this potential transport pathway is warranted at this time. Because there is no change in potential transport pathways to surface water bodies via potential groundwater entry into the storm water system, Sections 6.2.2, 7.2.2, and 9.22 remains accurate and no changes to the document were made.
>
> Groundwater elevation survey data at Site 12 and the corresponding flow map, presented on Figure 8-3, indicate a depression in groundwater elevation in the vicinity of LS12-MW36S and LW12-MW36D that may be representative of ongoing influence from storm water or sanitary sewer systems. A review of the groundwater elevation data indicates consistent groundwater elevation highs randomly observed across the site in monitoring wells MW03S/D, MW04S, MW05T, MW06T, MW07T, MW08T, MW09T, and MW26T. These

monitoring wells have not been surveyed since prior to completion of the SRI in 2002, while the remaining monitoring wells were surveyed as part of remedial action implementation in 2007 or basewide well repair efforts in 2010. It is recommended that all site monitoring wells be resurveyed and groundwater flow, as well as, potential storm water and sanitary sewer systems with influences be re-evaluated. It also should be noted that with the exception of TCE, cis-1,2-DCE and vinyl chloride in LS12-MW02S, shallow Columbia aquifer COC concentrations are below freshwater ecological screening values and BTAG values and are not expected to impact the canal. No changes to the document were made.

Comment 6: Section 8.2.4.1 on page 8-3 states that as a result of the leaking sanitary sewer line intercepting groundwater at Site 12 prior to discharge to the canal, the assessment concluded there was no complete exposure pathway to groundwater for ecological receptors. According to Figure 8-4, the plume of volatile organic compounds in groundwater is currently closer to the canal compared to pre-injection levels. An evaluation of the current potential for discharge at the groundwater/surface water interface in the canal in the vicinity of the plume (in the area of monitoring wells 28D and 36D) appears to be necessary. As there now appears to be a complete exposure pathway, evaluation of the potential for ecological risk is warranted.

Response: As part of ongoing LTM at Site 12, COC data is collected from downgradient monitoring well MW36D on a quarterly basis for evaluation of potential impacts to the canal. Site-specific surface water project actions levels were developed for data collected at this monitoring well and were included in the LTM UFP SAP. A review of the development of these project action levels indicates that they are based on potential human exposures and do not currently account for potential ecological exposures at the groundwater/surface water interface. A table comparing LTM data collected from MW36D to freshwater ecological screening values (ESVs) has been added and referenced in Section 8.5.2.

Section 8.5.2, Changes in Exposure Pathways, was revised to read: "Current and anticipated future land use is industrial and is expected to remain the same. The exposure assumptions used to develop the HHRA and ERA are reasonable given that the current land use has not changed over time at Site 12. With the exception of potential groundwater discharge to the canal, physical conditions at Site 12 that would affect exposure pathways have not changed since the last Five-Year Review. As a result of the sanitary sewer line historically leaking and intercepting groundwater prior to discharge to the canal, the SERA conducted for Site 12 concluded that there was no complete exposure pathway to groundwater discharging to the canal. Following repair of the leaking sanitary sewer line, groundwater flow direction has changed to be west towards the canal. To assess the potential risks associated with this change in groundwater flow direction, groundwater samples are collected quarterly as part of ongoing LTM for analysis of site COCs from downgradient well LS12-MW36D, located adjacent to the canal, and compared to surface water project action levels. These project action levels are based on protection against human exposure and do not currently consider potential ecological exposures associated with the groundwater/surface water interface. Table 8-6 provides a comparison of LTM data collected from downgradient monitoring well LS12-MW36D to freshwater ecological screening values and Region 3 BTAG values. Concentrations of COCs have been below ecological screening values and Region 3 BTAG values in this well throughout the LTM program. It is recommended that groundwater sampling at LW12-MW36D continue quarterly in accordance with the LTM UFP SAP; however, it is recommended that the surface water project action levels be updated to account for the evaluation of potential groundwater discharges to, and subsequent

ecological exposures in, the canal. No new contaminants or sources were identified as part of this Five-Year Review." The need for additional sampling of canal surface water or sediment pore water may be considered if continued LTM indicates increasing and sustained concentrations of COCs above these revised action levels.

Comment 7: Regarding Site 12, the text on page 8-3 states "…unacceptable risks to aquatic receptors exposed to sediment and surface water in the drainage canal were identified." This quote does not support the statement ("No complete and significant exposure pathways") in Table 8-2 (page 8-5) under ecological risk. Please clarify.

Response: Although potentially unacceptable risks to aquatic receptors exposed to sediment and surface water in the canal were identified, these risks were subsequently mitigated as a result of the City of Virginia Beach dredging of the canal, as noted in the second paragraph. Table 8-2 presents only those media and risks that required action per the ROD. Therefore, Table 8-2 is reflective of groundwater only. No changes to the document were made.

Comment 8: Regarding Site 13, the text on page 9-3 states "There is no complete pathway for ecological exposure to groundwater and no aquatic habitats exist on the site." The document must address whether the potential for groundwater discharge to surface water, as well as the potential ecological risk, was evaluated.

Response: This potential pathway (groundwater discharge to surface water bodies) was evaluated in the SERA conducted for the site and found to be incomplete. The potential pathway from site drainage ditches to surface water bodies via Outfall 011 was also evaluated in a subsequent BERA and found not to pose any unacceptable ecological risks. The last sentence in Section 9.2.4, Ecological Risk was revised to state: "There is no complete pathway for ecological exposure to groundwater, no complete and significant transport pathway for groundwater or storm water discharge to surface water bodies, and no aquatic habitats exist on the site".

Legal

Comment 1: Signature page: Make the following changes in the first paragraph: . . . for taking action **that leaves any hazardous substances, pollutants, or contaminants at the site**: . . .; . . . National Oil and Hazardous **Substances** Pollution . . .; . . . part 300.430(f)(4)(ii) of **Title 40 of** the . . .

Response 1: The requested revisions have been made.

Comment 2: Page V (Executive Summary): First paragraph, fourth line: 300.430(f)(4)(ii) of **Title 40 of** the

Response: The requested revision has been made.

Comment 3: Summary Form: "Implementing Party" should be "Navy" not federal facility.

Response: The requested revision has been made.

Comment 4: Figure ES-1: This figure is labeled to apply to this second 5YR, but the text in most of the boxes uses tenses and words that were probably in the first 5YR. The text in each box needs to be proofread and updated to state the status as of 2014. Example: Site 11a . . ."Remedy implementation is scheduled for FY 2012." Should be updated to "Remedy was implemented in FY 2012."

Response: The figure has been updated as requested.

Comment 5: Page 1-1: Second paragraph, fourth line: 300.430(f)(4)(ii) of **Title 40 of** the; CERCLA Section 121(c) quote at bottom of page is missing a bit of text and a comma. Edit as follows: . . . section [104] or [106] **of this Title,** the President . . .; Department of the Navy is defined as "Navy" in the second paragraph and as "DON" on the next page, last paragraph. The Executive Summary also defines Department of the Navy as "Navy" so I recommend using only "Navy" to mean the Navy.

Response: The requested revisions have been made. Use of the acronym "DON" has been removed from the document.

Comment 6: Page 3-1: Please delete the dash at the end of the fourth line in the second paragraph, and put in the hyphen that should be there.

Response: The requested revision has been made.

Please do not hesitate to contact me at 757-671-6280 if you have any questions concerning these responses.

Sincerely,

Nathaniel Price, P.E.
Project Manager

cc: Mr. Bryan Peed/NAVFAC Mid-Atlantic
Mr. Paul Herman/VDEQ
Administrative Record File