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LETTER AND COMMENTS FROM U S EPA REGION 1 REGARDING REVIEW OF DRAFT
TECHNICAL MEMORANDUM FOR SUPPLEMENTAL REMEDIAL INVESTIGATION SITE 8 NS
NEWPORT RI
1/20/2011
U S EPA REGION 1



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
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BOSTON, MASSACHUSETTS 02109-3912

January 20, 2011

Edward J. Corack, P.E.
Remedial Project Manager
NAVFAC MIDLANT
Northeast IPT, Code OPTE3-EC
9742 Maryland Avenue
Norfolk, VA 23511

Re: Draft Technical Memorandum
Supplemental Remedial Investigation for Site 08, NUSC Disposal Area
NAVSTA Newport, Rhode Island
December 2010

Dear Mr. Corack:

EPA has completed its review of the "Draft Technical Memorandum, Supplemental Remedial Investigation for Site 08, NUSC Disposal Area," dated December 2010, as prepared by Tetra Tech NUS, Inc., on behalf of Naval Station Newport, RI. The Draft Supplemental Remedial Investigation (SRI) summarizes the supplemental investigation activities and findings conducted under the Work Plan Addendum dated June 2010. Enclosed are EPA's comments on the Draft SRI.

If you have any questions, please contact me at (617) 918-1754 or at lombardo.ginny@epa.gov.

Sincerely,

A handwritten signature in cursive script that reads "Ginny Lombardo".

Ginny Lombardo
Remedial Project Manager

Attachment

cc: Gary Jablonski, RI DEM
Deb Moore, NAVSTA Newport
David Dorocz, NAVSTA Newport
Jim Ropp, TtNUS
Stephen Parker, TtNUS
Chau Vu, EPA
Bart Hoskins, EPA
Carol Stein, Gannett Fleming
David McTigue, Gannett Fleming

**EPA Comments on
Draft Technical Memorandum
Supplemental Remedial Investigation for
Site 08, NUSC Disposal Area
December 2010**

General Comments:

1. There is no figure corresponding to Figures 3-2 through 3-6 showing concentrations for 1,1,1-TCA. Please add a figure showing the 1,1,1-TCA distribution.
2. For clarity, please indicate on a figure which wells are completed in bedrock and which are in the overburden (or overburden/bedrock).
3. Figures with cross-sections showing the 1,1,1-TCA plume downgradient from Building 179 and also showing cross-sections with both 1,1,1-TCA and TCE daughter products should be added to the SRI or included in the revised draft FS.
4. If the Navy intends to pursue Monitored Natural Attenuation (MNA) as a remediation strategy for this site, EPA recommends collection of adequate additional data – specifically, the parameters commonly used to evaluate the potential for anaerobic biodegradation of chlorinated VOCs to support MNA. Refer to Table 2.3 of EPA’s “Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water,” September 1998 [EPA/600/R-98/128].
5. Neither the characterization of the TCE in the North Meadow nor that of the 1,1,1-TCA in the Building 179 plume bounds the contamination at depth. While there may be plausible arguments to support the contention that contamination is unlikely to have penetrated to great depth in this system (e.g., information about vertical hydraulic gradients may support this), such arguments are not advanced in the memorandum. Remedies to be considered in the FS may require additional characterization to bound the plumes at depth.

Specific Comments:

1. Page 2-4, Section 2.4, Construction of Monitoring Wells: The text states that North Meadow borings for MW-127B and MW-128B were terminated after encountering high-yielding fractures when advanced to depths of 44 ft bgs and 51 ft bgs, respectively. It was determined that these transmissive intervals “likely correspond to the fracture set with the dissolved VOC plume.” This presupposes that all of the contaminant transport of concern is confined to a single fracture or closely spaced fracture set. It is noted that there are two locations in the North Meadow (MW-117B and MW-118B) where well couplets are available, and these both show TCE at comparable concentrations in both the shallow and deep intervals (MW-117D1 (19 – 29 ft bgs; 140 ppb) and MW-117D2 (29 – 39 ft bgs; 130 ppb); MW-118D1 (27 – 37 ft bgs; 200 ppb) and MW-118D2 (35 – 45 ft bgs; 160 ppb)). These locations seem to confirm that the TCE can invade fractures at multiple depths, including at least one depth below the first (shallowest) transmissive fracture encountered.

“...anaerobic biodegradation is likely supported in localized areas.” Only one well in this subgroup (MW-7A) supports this statement, while the other two for which natural attenuation parameters were measured show conditions that are not conducive to anaerobic biodegradation.

8. Page 3-5, Section 3.2.2, Building 179 Area – Soil: The text indicates that 2 of the 3 soil borings were installed in backfill material and the Navy will remobilize to collect additional soil samples to confirm the successful removal of the contaminated soil from the former UST area. Provide a schedule for this resampling effort and submission of this data.
9. Page 3-8, Section 3.4, Additional Groundwater Sampling between Building 185 and North Meadow, Biodegradation Parameters: The text in this subsection states that ferrous iron was not detected at MW-101B, elevated at MW-103B, and ‘negligible’ at MW-105B. Provide a pointer to these ferrous iron data.
10. Page 3-8, Section 3.4, Additional Groundwater Sampling between Building 185 and North Meadow, Biodegradation Parameters: Three of the wells in this area were sampled for parameters used to assess the potential for anaerobic biodegradation in bedrock. Of these, only one (MW-103B) yielded a natural attenuation score indicating an ‘adequate capacity’ for reductive dechlorination. The other two (MW-101B and MW-105B) show ‘limited evidence’. Again, these results should not be overinterpreted due to the sparse data, but conditions for anaerobic biodegradation do not appear to be widespread in this area. This should be stated clearly in the text.
11. Page 4-2, Section 4.1, Screening Levels for Groundwater: Add another bullet for Region 1's Vapor Intrusion RSLs as used in Table 4-10 (see footnote 7).
12. Section 4.2, Selection of COPCs: It is Region 1's practice to divide the non-cancer RSLs by 10 to use for screening non-cancer COPCs to account for cumulative adverse effects from multiple contaminants. Therefore, the non-cancer screening levels at HI=0.1 of the non-cancer RSLs should always be used for screening COPCs.
13. Page 4-3 and 4-4, Section 4.2, Selection of COPCs, Overburden-Bedrock Interface Groundwater: Note that “1,1-CA” needs to be changed to “1,1-DCA” in the 2nd paragraph of this subsection. In the text, 1,1-DCA is reported as a constituent not retained as a COPC in the RI Report (January 2010). Isopropylbenzene is also reported here as not retained as a COPC in the RI Report. However, 1,1-DCA and Isopropylbenzene were both retained as COPCs in Tables 6-14 and 6-19 of the RI Report. Further, 1,1-DCA was retained as a COC and listed in Table 6-38 of the RI, although Isopropylbenzene was not considered a COC and was not listed in Table 6-38. Please revise the text to address these errors.
14. Page 4-4, Section 4.2, Selection of COPCs, Bedrock Groundwater: In the 1st paragraph of this subsection, correct “...based on tap water RSLs *and* MCLs is presented in Table 4-9.”
15. Page 4-6, Section 4.3, Comparison of Concentrations to EPCs used in HHRA, Subsurface Soil: The 2nd paragraph of this subsection states that “risk estimates calculated for all

- Under Hypothetical Lifelong Residents, 1,1-DCA should be listed as a COPC and chromium should not be listed.
- EPA does not concur with the elimination of Arsenic and Manganese as COCs in groundwater. The aquifer conditions caused by Navy releases are responsible for the elevated concentrations of Arsenic and Manganese in groundwater and the concentrations are well above the arsenic MCL and manganese health advisory level and risk levels. In addition, EPA does not concur with the elimination of Chromium as a COC in groundwater. Unless the Navy can provide speciation data to support that the Total Chromium concentrations are not reflective of Cr⁺⁶, EPA's must make the conservative assumption that this is the case. Chromium levels are well above MCLs and risk-based levels. Therefore, arsenic, manganese and chromium must be retained as COCs for groundwater.

21. Table 6-2 [Compared with Table 6-38 of the RI Report]:

- Under Construction Workers, Aluminum should not be listed.
- Under Industrial Workers, Total Arochlors and Chromium should not be listed and Naphthalene should be listed.
- Under Adolescent Trespassor, Child Recreational User, Adult Recreational User, Lifelong Recreational User, Hypothetical Adult Resident, Hypothetical Child Resident and Hypothetical Lifelong Resident, Chromium should not be listed.
- Arsenic is proposed to be eliminated as a constituent of concern throughout this table as the report states that "site concentrations are similar to background." This conclusion is based on a straight comparison of site maximum, 95% UCL and average concentration data to background maximum and average concentration data from the Background Soil Investigation Report (September 2006). However, the site maximum and average both exceed the background maximum and average. Therefore, EPA does not agree that this comparison supports that site levels are similar to background. In addition, site levels are above risk levels. The Background Soil Investigation Report states that "(a)nalytical data from on-site or site-related soil samples will be statistically compared to background data representing the same soil type (metals) and moisture content category (metals and organics) to determine concentrations elevated above background following appropriate statistical procedures." In order to further evaluate whether arsenic can be eliminated as a COC for soil at NUSC based on background, a higher level statistical comparison of the site data set to the background data set should be completed. Refer to Chapter 5 of EPA's "Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites," September 2002 [EPA 540-R-01-003].

22. Table 6-3 [Compared with Table 6-38 of the RI Report]:

- Carcinogenic PAHs should be listed as COPC, not just benzo(a)pyrene. Therefore, the other 6 carcinogenic PAHs should be added to the table. Chromium should not be listed.
- Since site maximums and site averages are below the hydric soil background maximum and average for both benzo(a)pyrene and arsenic, EPA agrees that these constituents do not need to be carried forward as COCs to the FS. However, refer to Appendix B of EPA's "Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites," September 2002. The guidance states:

25. Table 6-6: Lead should be listed as a COPC for the pond based on high concentrations and co-location with numerous other chemicals. This co-location makes it difficult to fully exonerate lead as a COPC for the pond, and it is site-related.
26. Figure 3-2: The concentration of Trichloroethene at MW103B should be color coded as green.