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ST JULIENS CREEK
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U S NAVY RESPONSE TO U S EPA REGION III COMMENTS REGARDING DRAFT
PROPOSED PLAN FOR SITE 21 INDUSTRIAL AREA ST JULIENS CREEK ANNEX
CHESAPEAKE VA
04/26/2011
CH2M HILL

**Responses to Comments
Draft Proposed Plan
Site 21: Industrial Area
St. Juliens Creek Annex
Chesapeake, Virginia**

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Comments from EPA Legal, provided 19 April 2011 (dated 18 April 2011)

1. **Comment:** I noticed that there are some places where the word document did not track the hard copy I had. I am not sure which is more up-to-date.

Response: Comment noted with apologies for any confusion. It is unclear what hard copy version was compared to the Word document. The November 2010 draft for team review was distributed in hard copy, while the following submittals (Navy legal review and VDEQ Tier 2/EPA legal review) were distributed electronically only. The Word version should be the most up-to-date version, as it was created from the VDEQ Tier 2/EPA legal review native (.indd file type) version. Because the Word version was prepared in response to a special urgent EPA request, it was noted with its distribution that it may contain conversion errors. A comparison of the VDEQ Tier 2/EPA legal review version to the public review version will be conducted to confirm that there are no substantive differences.

2. **Comment:** Page 5, FS description – correct the spelling of “exposure”. This is found in several locations on page 5 and may be elsewhere in the document.

Response: No instances of incorrect spelling of “exposure” could be located within the current version of the Proposed Plan. However, it is noted that an earlier version of the Proposed Plan (November 2010 team review) had a font error within instances of “exposure”, where the “s” was replaced by the “s” symbol “σ”. If this is consistent with the observed incorrect spelling, it was corrected in later versions. However, if the incorrect spelling was different, please clarify.

3. **Comment:** Figure 3, Conceptual Site Model: Future Resident: "Ingestion and dermal contact with groundwater and inhalation of groundwater vapors (shower)." ["with" rather than "of"].

Response: The text has been changed to “Ingestion of and dermal contact with.”

4. **Comment:** Table 4, Descriptions of Remedial Alternatives for Site 21: Alternatives 2, 3, and 4: "Regular, long-term monitoring performed to verify that:" ["verify" rather than "demonstrate"].

Response: The requested revision has been made.

5. **Comment:** Why does MNA apparently have the same description for its monitoring program as Alternatives 3 & 4? MNA should have a specific list of natural attenuation parameters to be monitored for as well as the COCs.

Response: The monitoring programs for MNA versus ISCR/ERD and ISCO/ERD serve the same objectives. The natural attenuation parameters are addressed within the 4th bullet, which calls for monitoring to confirm there are no changes in hydrogeological, geochemical, or microbiological parameters. The analytes may vary slightly based on the selected remedy, but the variation is insignificant in the development and evaluation of the alternatives and would not impact the remedial alternative recommendation. No changes have been made to the table (aside from those resulting from Comment 4).

6. **Comment:** Reference to the LUCs should be more specific as to what will be prohibited vis a vis groundwater use. Also, land use should be controlled by prohibiting uses that would present an unacceptable risk rather than preventing any change in use.

Response: The requested information has been added to Table 4.

7. **Comment:** Table 5, Evaluation Criteria for Remedial Alternative Analysis: Present-worth cost: ". . . operation and maintenance . . ." [no "s"].

Response: The requested revision has been made.

8. **Comment:** Section 1, second paragraph. Add a comma before "therefore."

Response: The requested revision has been made.

9. **Comment:** Section 1, last paragraph. Put this statement as a footnote to the first instance of a bolded term: "Proposed Plan" on p.1, first line.

Response: The requested revision has been made.

10. **Comment:** Section 2.2, Site Screening Assessment, 2nd to last sentence. (This seems surprising, given that the spills on the surface soil are the apparent source of the groundwater contaminant plumes. What happened to the contaminants in the soil? Volatilized per the CSM?)

Response: Based on the vapor pressures of the COCs, these contaminants have moderate to high volatility, increasing the likelihood that they will volatilize into the air rather than persist in soils. Additionally, they have relatively high aqueous solubilities (greater than 1,000 mg/L), which increases the potential for them to leach into groundwater. Data collected during historical investigations (groundwater, membrane interface probe, and soil) supported these conclusions and are documented within the Remedial Investigation report. No changes have been made to the text.

11. **Comment:** Section 2.2, Remedial Investigation, 3rd paragraph, 3rd sentence. Explain further.

Response: A more detailed explanation of the elimination of arsenic and benzene in shallow groundwater and arsenic and vanadium in deep groundwater as COCs is

provided in the risk assessment summary. A reference (“see Section 5”) has been added to the end of the sentence.

12. **Comment:** Section 2.2, Interim Proposed Plan and Record of Decision. Various text changes.

Response: The requested revisions have been made.

13. **Comment:** Section 2.2, Remedial Investigation and Feasibility Study Addendum, 2nd to last sentence. Please explain [envelopes].

Response: The words “building envelope” have been added to the glossary with the following definition: “The building construction elements (e.g., foundation, walls, ceiling, windows) that provide a separation between the interior and the exterior environments of a building.”

14. **Comment:** Section 3, second paragraph, last sentence. Contiguous with what?

Response: “Contiguous” has been replaced by “continuous.”

15. **Comment:** Section 3.1, 1st paragraph, 1st sentence. (And yet the soil contamination does not warrant any cleanup?)

Response: No unacceptable risk or hazard was identified in soil. No changes have been made to the text.

16. **Comment:** Section 3.2, 1st paragraph, 1st sentence. I know that this is defined in the Glossary, but a brief description in the text would also be useful. I have inserted suggested language.

Response: The following text has been added in place of the suggested text: “(highly concentrated liquid contaminants which may act as a continuing source of contamination to groundwater).”

17. **Comment:** Section 3.2, 1st paragraph, 2nd sentence. Can you explain this term, the first time it is used? “attraction”? “adhesion”?

Response: The text, “e.g., sticking to them,” has been inserted at the beginning of the parenthetical to more clearly explain what is meant by sorption of contaminants to soil surfaces. In addition “(stuck) to” has been added after the use of sorbed in Section 3.1 and replace “into”.

18. **Comment:** Section 4, 1st paragraph, 1st bullet. Is this word [combined] necessary? It looks like “combined excavation,” which is puzzling, though I think the intent is that all of the listed remedial actions are combined in the one ROD. I think it is more confusing than enlightening.

Response: The word has been removed as requested. Within same bullet, the parenthetical has been removed because the ROD has been signed.

19. **Comment:** Section 4, 1st paragraph, 2nd bullet. Did the No-Action RODs for Site 3 and Site 6 follow removal actions? If so, I suggest stating that here to indicate that work was done. (Actually, I guess these would be No Further Action RODs, if that were the case.)

Response: The 2nd and 4th bullets have each been changed to “No further action ROD (post-removal action).”

20. **Comment:** Section 5.1, 1st paragraph, last sentence. Should be a superscript, not a subscript here and for 10-6.

Response: Comment noted. The text is correct in the document distributed for review (.pdf) and in the native file format (.indd). The Word file was provided to EPA with the note that format was not compatible and may contain format errors in response to a special request. The Word file will not be used for future submittals of this deliverable.

21. **Comment:** Section 5.1, 1st paragraph, last sentence. I suggest reversing the order so that the risk is presented from the lower risk up to the higher risk: “1 in 1,000,000 to 1 in 10,000.”

Response: The requested revision has been made.

22. **Comment:** Section 5.1, 1st paragraph. Various text changes.

Response: The requested revisions have been made.

23. **Comment:** Section 5.1, Shallow Groundwater, 1st paragraph. Insert commas before and after “therefore.”

Response: The requested revision has been made.

24. **Comment:** Section 5.1, Vapor Intrusion, 2nd paragraph, second sentence. This should be stated in the negative. E.g., “prohibit residential or commercial (?) use of the buildings on the site,” rather than requiring that the current use of the building be maintained. They don’t have to use the building for anything, if they don’t choose to.

Response: The text has been changed to “...prohibit a change from current industrial building use to residential use or occupation of unoccupied buildings, construction of new buildings, and activities that would compromise the integrity of the building envelopes without further evaluation and/or implementation of mitigation measures

25. **Comment:** Section 6, first paragraph. Various text changes.

Response: The requested revisions have been made.

26. **Comment:** Section 6, second paragraph, 4th sentence. The RAO isn’t, “Reduce contaminant concentrations in shallow groundwater to allow for unlimited use and unrestricted exposure.” Perhaps it would be better to say, “In order to achieve the ROA to reduce contaminant concentrations in shallow groundwater to the maximum extent practicable, the MCLs were established . . .”.

Response: The sentence has been changed to: “To achieve RAOs and comply with the Commonwealth of Virginia’s and EPA’s expectation to return usable groundwaters to their beneficial uses wherever practicable, PRGs were set at the MCLs after consideration of whether the use of MCLs would provide sufficient protection, when factoring in cumulative risks and hazards”

27. *Comment:* Section 6, first paragraph, 4th sentence. (With use of the MCLs as the PRGs?? What would be the risks/hazards of doing this?)

Response: In accordance with an EPA toxicologist comment on the Feasibility Study report, the risk/hazard of using MCLs as the PRGs was evaluated because “MCL's alone may not be protective of cumulative risk.” No changes have been made to the text.

28. *Comment:* Section 7, 2nd paragraph, various text changes.

Response: The requested revisions have been made.

29. *Comment:* Section 7, 3rd paragraph. The descriptions of the Alternatives in the Table serve to show which elements are included in each Alternative and where they differ. However, a more detailed description of the proposed activities and their likely results would be helpful. In particular, a more detailed description of the differences between Alternative 3 and Alternative 4 should be made in this Section.

Response: Minor changes have been made to the table. The primary difference between Alternatives 3 and 4 is the injection of an oxidizing agent versus a reducing agent, which is captured in Table 4. No additional relevant details were identified for addition to the text. Please provide clarification of what information is desired.

30. *Comment:* Section 8, 1st paragraph. Various text changes.

Response: The requested revisions have been made.

31. *Comment:* Section 8.1, Protection of human health and the environment, 1st paragraph, last sentence. Text changes.

Response: The suggested changes are inconsistent with the LUC objectives and have therefore not been made. Use of the groundwater for environmental monitoring will be permitted and there is no potential unacceptable risk driving a requirement to prevent residential development of the site. The intent of this section is to provide a general explanation of how human health and the environment will be protected while more specific details of the LUCs are provided in the remedial alternative descriptions.

32. *Comment:* Section 8.1, Compliance with ARARs, 1st paragraph, last sentence. Text change.

Response: The requested revision has been made, with the exception of spelling out SDWA.

33. *Comment:* Section 8.2, Short-term effectiveness. Text changes.

Response: The requested revisions have been made.

34. *Comment:* Section 8.2, Short-term effectiveness, “exposure to oxidizing chemicals.” “which can . . .”? Explain why worker exposure to oxidizing chemicals is potentially risky.

Response: The following text has been added after oxidizing chemicals, “which present a fire and explosion hazard.”

35. *Comment:* Section 8.2, Implementability. Various text changes.

Response: The requested revisions have been made.

36. **Comment:** Section 8.2, Cost. Various text changes.

Response: The requested revisions have been made.

37. **Comment:** Section 8.2, Modifying Criteria, State Acceptance. Various text changes.

Response: The requested revisions have been made.

38. **Comment:** Section 9, 3rd paragraph. Various text changes.

Response: The requested revisions have been made.

39. **Comment:** Section 9, 3rd paragraph, 5th sentence. Move to end of paragraph.

Response: The requested revision has been made.

40. **Comment:** Section 9, 3rd paragraph, 6th sentence. Text changes.

Response: The sentence has been changed slightly differently than from the suggestion as follows, "The LUCs will be implemented to prohibit the withdrawal of groundwater except for environmental monitoring and prohibit a change from current industrial building use to residential use or occupation of unoccupied buildings, construction of new buildings, and activities that would compromise the integrity of the building envelopes without further evaluation and/or implementation of mitigation measures."

41. **Comment:** Section 9, 3rd paragraph, 7th sentence, "100-foot buffer." (Is the 100 foot buffer the expected maximum migration distance of the plume? If not, how will this prevent the risks associated with exposures?)

Response: The 100-ft buffer reflects the EPA recommendation to investigate vapor intrusion when select VOCs (including the site COCs) are detected within 100 feet of a building. The Proposed Plan text has been changed to the following: "The LUC boundary, depicted as a component of the Preferred Alternative, is the current CVOC groundwater plume boundary with a 100-ft buffer to account for the potential lateral migration of CVOC vapors; this boundary will be modified as the plume boundary is updated (Figure 5)."

42. **Comment:** Section 9, 4th paragraph. Text changes.

Response: The requested revision has been made.

43. **Comment:** Section 10, 1st paragraph. It would be cleaner if only one reference to the details on page 1 were made in this paragraph.

Response: The second and third references to Page 1 in the paragraph have been removed, as the first reference is the most all-encompassing.

44. **Comment:** Glossary. Various text changes.

Response: The requested revisions have been made.

45. **Comment:** Glossary, In situ chemical oxidation definition. (Explain?) [oxidizing chemicals].

Response: The fact that oxidizing chemicals breakdown contaminants by accepting electrons from other chemicals during chemical reactions has been added.

46. **Comment:** Glossary, In situ chemical reduction definition. (Explain?) [reducing chemicals].

Response: The fact that reducing chemicals breakdown contaminants by providing electrons to other chemical reactions has been added.

47. **Comment:** Glossary, Polychlorinated Biphenyl definition. [Should restricted be] (Prohibited?).

Response: Restricted has been changed to “regulated.” While the new use of PCBs in commerce is prohibited, this prohibition is not universal to all uses. For example, PCBs were banned from use in caulk after 1978. However, existing caulk that contains PCBs and that was applied prior to the ban is not currently prohibited for use.

48. **Comment:** Glossary, Restoration Advisory Board definition, Delete [ERP]?

Response: The word “representatives” has been added after ERP.