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REVIEW OF DRAFT IR SITE 57 FEASABILITY STUDY REPORT DATED MAY 2002  
8/26/2002  
NAVFAC WASHINGTON

**REVIEW OF DRAFT IR SITE 57 - FORMER DRUM LOADING AREA  
FEASIBILITY STUDY REPORT OF MAY 2002**

Reviewer: Shawn Jorgensen, 26 August 2002

General Comments

Please remove all references to the Base Master Plan (BMP). Unfortunately, the BMP has taken on a regional twist and will not address the issues that we are looking control (land use and groundwater). Fortunately, we have the Geographic Information System (GIS), which does contain information on certain areas, including IR sites. The GIS allows our Activity to put restrictions on those areas, as necessary, to ensure people are not exposed to unhealthy conditions. Anyone wishing to dig on-site must obtain a Dig Permit from the Public Works Department, which contains a constraints map of the area of excavation, and must address any issues identified on the map, such as IR sites, threatened or endangered species, archeological sites, etc.

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1.    ES-3    Table ES-1, Alternative 2, Short-Term Effectiveness. Does Alternative 2 require "off-site transport"?
  
2.    ES-4    Table ES-1. Was hot spot removal of arsenic considered?
  
3.    ES-5    Table ES-2. What about the TCE that is entering the storm sewer pipe? I assume that all of the alternatives will allow the groundwater infiltration to continue since we are currently under the 100 ppb limit of our NPDES permit. However, will installing a permeable reactive barrier "stop up" the flow of groundwater, forcing more groundwater, potentially with higher concentrations of TCE, to enter the storm sewer pipe? Ultimately, this could make us exceed the 100 ppb limit for TCE at the outfall.
  
4.    ES-7    Table ES-2. Alternative 4, Short-Term Effectiveness. Shouldn't the additional studies needed for this alternative have been completed prior to preparing the FS? How can we make an informed decision on the best alternative without having this information? For example, what if the process will not work at this site because of some strange occurrence in the underlying clay layer?

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| 5.       | 1-4         | <p>Section 1.2.9. The date of the population information is a bit old (1994) and changes frequently. I don't know if we want to update this for reports on a yearly basis or not. The most current data I have is from the Indian Head Division 2001 Year in Review Report (it's for FY 2001). Here are the numbers:</p> <p>3,410 acres<br/>2,217 Civilian Employees (IHDIV-1,756; Tenants-449)<br/>517 Military Personnel (IHDIV-23; Tenants-484)<br/>800 Contractors (IHDIV-467; Tenants-333)<br/>548 Military and Family Members Living in Base Housing</p> <p>Please note that this breakdown is not quite the same as in this section. Also, most of those living in base housing work at IHDIV, but some do not.</p> |
| 6.       | 1-6         | <p>Section 1.3.2, fifth sentence. Please add "at Industrial Wastewater Outfall 80 (IW80)" to the end of the sentence.</p>  |
| 7.       | 1.6         | <p>Section 1.3.2, sixth sentence. Please add "at IW40" to the end of the sentence.</p>   |
| 8.       | 1-11        | <p>Section 1.3.5, first paragraph, last line. Should "outfall detected" be "detected at the outfall"?</p>  |
| 9.       | 1-13        | <p>Section 1.3.6, first bullet, first line. Please remove the comma between "methylene" and "chloride".</p>  |
| 10.      | 1-14        | <p>Section 1.3.6, first three lines on page. Please clarify where these samples are located. It sounds like these two points may be related to IW40. However, it is not clear.</p>   |
| 11.      | 1-14        | <p>Section 1.3.6, first bullet on page, third line from the last. Please change "alower" to "lower".</p>   |
| 12.      | 1-14        | <p>Section 1.3.6, next to last bullet on page. Please specify the date that the initial sample from potable well PW-07 was collected. Also, if Site 57 does not appear to be the source of the TCE, then what is?</p>  |

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| 13.      | 1-15        | Section 1.3.6, first line on page. Is the storm sewer outfall IW80? If so, please state in document. This should be done throughout this chapter. There are two outfalls, IW40 and IW80, that flow to the Mattawoman Creek from this area. It is difficult to almost impossible to tell which one is being referred to in this chapter. IW40 is the storm sewer drainage ditch that flows through the concrete drainage channel by Building 160. IW80 is the underground storm sewer pipe that previously lined in-situ. IW40 should have little, if anything, to do with Site 57. |
| 14.      | 1-15        | Section 1.3.7, first paragraph, middle of paragraph. There is a lot of discussion throughout this chapter of the "unnamed stream"; however, I do not see it identified on any of the site figures. Could a label be added to at least one of the drawings showing its location? I apologize if I somehow missed it on one of the drawings.   |
| 15.      | 1-19        | Section 1.3.10.1, first paragraph, last sentence. I believe that the Table being referred to is 1-12, not 1-10.  |
| 16.      | 1-21        | Section 1.3.10.2, fourth paragraph, ninth line. Please remove the second "(" in "(620 (☒g/L)".   |
| 17.      |             | Figure 1-2. This is obviously an old drawing of sites. Some of the site locations and sizes have changed. Please incorporate the latest from the GIS into this drawing.  |
| 18.      |             | Figure 1-5. Please remove "outfall" from "Concrete drainage channel outfall" near Building 160. The structure is just a concrete drainage channel, not an outfall. The actual outfall is located near Building 436.  |
| 19.      |             | Figure 1-5. Please be consistent with the monitoring well naming at Site 41. Either use MW or GW in the name. Currently, in the text of page 1-9 under Cross-Section E-E', both 41MW01 and 41GW01 are used. The same issue occurs on Figure 1-8.   |

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20.		Figure 1-9. It appears that a component of the groundwater is flowing towards the Scrap Yard, as shown on this figure south of Building 159. Should we have sampled between this point and the Scrap Yard to determine if contamination is also flowing in that direction which we will need to address?
21.		Figure 1-15. Is there a reference to this figure in the document? If so, I didn't see it.
22.	2-12	Section 2.4.1, second paragraph, first sentence. Is it a "baseline human risk assessment" or "baseline human health risk assessment"?
23.	2-14	Section 2.6.2, second paragraph, last sentence. Does this mean that we need to install additional wells?
24.	3-2	Section 3.2.3, last sentence. What is "...pumping groundwater from gradient control..."?
25.	3-3	Section 3.2.5, first line. The word "process" should be plural, i.e., "...in-situ and ex-situ treatment processes...".
26.	3-5	Section 3.4.2. Just a question: Can natural attenuation occur in soil versus just groundwater? If so, can it be measured? Can it be an alternative?
27.	3-5	Section 3.4.2.2, first paragraph. Should "review" be added between "...remain after preliminary" and "are land used controls..."?
28.	3-5	Section 3.4.2.2, first paragraph, second sentence. Please remove "Records in the Base Master Plan" and replace with "Identifying restrictions in the Geographic Information System (GIS)". Currently the GIS is consulted before beginning any project that requires digging. The Dig Permit Process requires that all projects involving digging must get an approved Dig Permit prior to beginning work. The Dig Permit includes a constraints map, which shows IR Sites, Areas of Concern, archeological sites, eagles

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|     |      | nests, etc., in the location where the project will take place.  |
| 29. | 3-7  | Section 3.4.2.3, first paragraph on page, second sentence. I believe that "ground" should be "grout".  |
| 30. | 3-7  | Section 3.4.2.3 Containment, <u>Implementability</u> , second paragraph. Could contaminated groundwater circumvent the barrier? Also, an increase in the upgradient groundwater elevation may increase infiltration of groundwater into the storm sewer. This issue should be addressed in this section. Perhaps, this is another reason not to use this technology.   |
| 31. | 3-11 | Section 3.4.2.7 Disposal, second paragraph, last sentence. Is there something in CERCLA that states that soil with chemical concentrations lower than risk-based values are exempt from RCRA regulations? Per the RCRA Mixture Rule, soil with any concentration of TCE would remain an F002 listed hazardous waste until it is treated, regardless of whether or not the concentration is below risk-based values. Perhaps we could waive this RCRA ARAR in this situation. The only other option would be to delist waste soil that has chemical concentrations that do not exceed the PRGs (which may not be worth the effort). |
| 32. | 3-13 | Section 3.4.3.2 Institutional Controls, second sentence. Please replace "Records in the Base Master Plan" with "Identifying restrictions in the GIS".  |
| 33. | 3-14 | Section 3.4.3.3 Containment, Implementability, first sentence. See comment #30.  |
| 34. | 3-14 | Section 3.4.3.3 Containment, implementability, second sentence. This sentence is confusing.  |
| 35. | 3-15 | Section 3.4.3.3 Containment, Conclusion. Eliminating this technique doesn't make sense. It's not clear why it is being eliminated.   |
| 36. | 3-15 | Section 3.4.3.4 Removal, third paragraph third sentence. Can horizontal drilling be used to form a   |

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		collection trench rather than excavation? I would think that horizontal drilling would be easier to perform and would be less costly.
37.	3-16	Section 3.4.3.4, first paragraph on page. With the high iron and manganese we have on-site, do you believe that we will likely have deposit formation problems with this technique? If so, this should be stated in this section.
38.	3-16	Section 3.4.3.4, <u>Implementability</u> , second paragraph, last sentence. See comment #36.
39.	3-16	Section 3.4.3.4, <u>Conclusion</u> . On page 3-15 at the top of the page (Conclusion for section 3.4.3.3) states to see Section 3.4.3.4 for hydraulic barrier information, however, hydraulic barriers are not discussed in this section. Are both extraction wells and collection trenches considered hydraulic barriers? If not, which one is?
40.	3-16	section 3.4.3.4, <u>Conclusion</u> , second sentence. Would horizontal drilling keep collection trenches from being removed from further consideration.
41.	3-19	Section 3.4.3.5, <u>Implementability</u> , third paragraph, last sentence. According to RCRA soil excavated with any TCE in it would be considered a listed hazardous waste (EPA Waste Number F002).
42.	3-22	Section 3.4.3.6, <u>Implementability</u> , first two lines on page. Considering the manganese and iron that is in our soils, do you believe that clogging will be a big issue with this technique? If so, please state that in this section.
43.	3-23	Section 3.4.3.7 Discharge/Disposal, <u>Effectiveness</u> , first paragraph, second sentence. When you say "discharge limits" do you mean National Pollutant Discharge Elimination System (NPDES) limits? If so, please state. If not, please elaborate on what discharge limits are being discussed.

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| 44.      | 3-23        | Section 3.4.3.7 Discharge/Disposal, <u>Effectiveness</u> , first paragraph, third sentence. If the "unnamed stream" being discussed is what flows through the concrete drainage channel, then we are talking about storm water and industrial wastewater that flows to Industrial Wastewater Outfall 40 (IW40). What chemicals can be discharged to this outfall depends on what is allowed in the permit. In addition, it is likely that the permit can be amended, if necessary, to accommodate this effluent. |
| 45.      | 3-23        | Section 3.4.3.7 Discharge/Disposal, <u>Implementability</u> , first paragraph, second sentence. Please replace "Virginia" with "National" and replace the "V" in "VPDES" with "N", to make it "MPDES".   |
| 46.      | 3-23        | Section 3.4.3.7 Discharge/Disposal, <u>Implementability</u> , third sentence. Again, this should not be an issue since the so-called "unnamed stream" is IW40.   |
| 47.      | 3-23        | Section 3.4.3.7 Discharge/Disposal, <u>Implementability</u> , second paragraph. The MDE may have issues with reinjection. Therefore, it may be more difficult to implement this alternative than you might think.  |
| 48.      | 3-24        | Section 3.4.3.7 Discharge/Disposal, <u>Conclusion</u> , second sentence. I do not agree that "discharge to the 'unnamed tributary' and reinjection" should be eliminated from further consideration because of implementability issues. I believe that we should look further at these, especially if either is needed for the selected remedy.  |
| 49.      |             | Table 3-1, page 1 of 3, Containment, Vertical Barriers, Screening Comments. Something is missing in the screening comment for this technology.   |
| 50.      |             | Table 3-1, page 2 of 3, In-Situ Treatment (cont.), Physical/Chemical (cont.), Multi-phase extraction, Screening Comments. Something is missing in the screening comment for this process option.   |

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| 51.      |             | Table 3-2, page 5 of 5, Discharge/Disposal, Surface Discharge, Indirect discharge, Screening Comment. Why eliminate this option? We have a sewage treatment plant on-site into which we may be able to discharge some water, if needed.  |
| 52.      | 4-2         | Section 4.2.1, General Response Action list. Does both "Removal" and "Removal (cont.)" need to be on the list or can "extraction wells (groundwater)" be moved up under "Removal"?   |
| 53.      | 4-3         | Section 4.3.2, second paragraph. Please change "Base Master Plan" to "GIS" throughout this section.  |
| 54.      | 4-3         | Section 4.3.2, last paragraph, last sentence. The wording here may need to be looked at by Navy legal counsel. There is a June 4, 2002 guidance letter from the Office of the Under Secretary of Defense, Subj: Interim Guidance on Environmental Restoration Records of Decision, which states: "These supplemental measures [Land Use Controls] may be documented in voluntary agreements, non-enforceable arrangements, and internal documents, all of which normally would be included in the information repository for the site. However such supplemental measures shall not be included in the ROD or any post-ROD enforceable documents. Examples of supplemental measures that are not to be included are: ... requirements for land use control implementation or assurance plans." Even though the FS is pre-ROD, maybe Jennifer Scott of EFACHES needs to provide some input on the language. |
| 55.      |             | Section 4.3 in general. Am I correct in reading that there are only two options available for the soil: capping with land use controls, and excavation with off-site disposal. Are there no other innovative technology options for the soil? These two choices are costly, intrusive, and/or time consuming. How about a mixture, such as excavation and disposal for the arsenic soil, and an innovative in-situ technology for the VOCs that we can try to prove out? We need to think of ways to keep long-term institutional controls out of the remedy, keep costs down, and try new things  |

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		to expedite cleanup. We don't want to monitor these sites forever. Nor do we want to spend a lot of money needlessly. Perhaps we should contact the Navy Facilities Engineering Service Center (NFESC) to see if they have any innovative technologies that we can try. Maybe we can even get funding for trying an innovative technology.
56.	4-5	Section 4.4.2, second paragraph. Please see comment #53.
57.	5-5	Section 5.2.2. How might the infiltration of groundwater into the storm sewer pipe, or exfiltration of storm water out of the storm sewer pipe into the ground (upgradient of the site where the pipe was not relined), affect this remedy? Perhaps this alternative would not be very effective.
58.	5-7	Section 5.2.2.6, second paragraph. I'm confused. How does this alternative meet the PRGs since you are not reducing the contamination in the soil to the levels identified as PRGs for soil?
59.	5-7	Section 5.2.2.7, last sentence. This sentence states that the depth of excavation is less than 1 foot, however, the third paragraph in section 5.2.2.1 states that "...soil would be excavated to a depth of approximately 2.5 feet..." What's the story?
60.	5-9	Section 5.2.3.6, fourth paragraph. Wouldn't the PRGs (in addition to the RAOs) be met by excavating the contaminated soil?
61.	5-10	Section 5.2.3.8. Was the large flow in the storm sewer pipe, which would have to be diverted during the excavation of the pipe, included in the cost estimate? I didn't notice it on the table for Soil Alternative 3 in Appendix I. Also, when Insituform relined the pipe in that area, they had difficulty getting a good seal on the upper pipe with a Vetter bag because of cracks in the pipe. Therefore, if we do get a seal, we will have water exiting the pipe from upgradient of Building 292. This will cause us to have a dewatering

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		issue during the excavation. We would have to store the water in Baker tanks, sample the water, and then send the water out for disposal or send it to the Sewage Treatment Plant at a metered rate so we don't overwhelm the system.
62.	5-12	Section 5.3.2.1, last paragraph on page, third line. Should the reference to Appendix "M.1" be "G.1"?
63.	5-14	Section 5.3.2.6, second paragraph. The reference to Appendix "M.3" should be "G.3".
64.	5-15	Section 5.3.3.1, <u>In-Situ Bioremediation</u> , first paragraph, fourth line. Reference to Appendix "M.3" should be "G.3".
65.	5-16	Section 5.3.3.1, sixth line on page. Remove "the" between "...delivery points to form" and each barrier,..."
66.	5-16	Section 5.3.3.1, second and third complete paragraphs on page. To clarify the locations of Areas 1 and 2, please include a figure showing the areas, or at least reference an existing figure that shows where these areas are located.
67.	5-17	Section 5.3.3.1, first line on page. Is "Area 3" shown on any figures. See comment #66.
68.	5-18	Section 5.3.3.4. Would the treatability studies be done ex-situ? If so, and this is a viable alternative, shouldn't we start it as soon as possible (definitely prior to preparing the proposed plan), to prevent holding up the cleanup later?
69.	5-20	Section 5.3.4.1, <u>Permeable Reactive Barrier</u> , last paragraph. The cross-section shown on Figure 5-3 does not show how outfall IW-40 (I believe you call it the "unnamed" stream) will be handled. Will the barrier force groundwater up and into this outfall? Was the depth of the "stream" in this area measured to determine if the PRB would be located sufficiently beneath it or if it would be through it, i.e., out of

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		the ground and in the "stream"? (The IW40 stream is at least 4 feet below ground surface in some areas.)
70.	5-20	Section 5.3.4.1, <u>Natural Attenuation</u> , last line on page. The reference to Appendix "M.1" should be "G.1".
71.	5-23	Section 5.3.4.7, top two line on page. There are at least two sewer lines (pipes) in this area. One is storm sewer (IW80) and the other is sanitary, which flows to the pumping station, Building 1701 (near Building 436). In addition, the IW80 pipe is terra cotta and is most likely cracked. We did not reline this far down the storm sewer line during the removal action.
72.	5-24	Section 5.3.5, first paragraph on page, fifth line. The reference to Appendix "M.2" should be "G.2".
73.	5-24	Section 5.3.5, <u>Groundwater Extraction, Treatment, and Discharge</u> , third line from the end of the paragraph. What regulations/values are you basing the statement that "treatment of the air emissions from the air stripper would not be required"?
74.	5-25	Section 5.3.5.6, second paragraph, second line. The reference to Appendix "M.3" should be "G.2".
75.	5-26	Section 5.3.5.7, last sentence. Please change "VPDES" to "NPDES".
76.		Figure 5-4. A symbol in the legend has a circle with a dot in it for Cone Penetrometer Test. However, I do not (or cannot) see this symbol on the figure.
77.	6-1	Section 6.1.2, second paragraph. Can the TCE contaminated soil in this area be considered a solid waste landfill?. Since any soil containing TCE is hazardous waste (F002), wouldn't this be a hazardous waste landfill (if considered a landfill at all)? Will the MDE and EPA even agree with capping as an alternative for this situation?

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| 78.      | 6-2         | Section 6.2.5, last line on page. Please change "proposes" to "proposed".   |
| 79.      | 6-4         | Section 6.3.3, second paragraph, first line. Should "provided" be "provide"?  |
| 80.      | 6-4         | Section 6.3.4. Is natural attenuation considered a "passive" treatment? The biodegradation process does ultimately "reduce the toxicity, mobility, or volume of the hazardous substance in groundwater."  |
| 81.      | R-1         | Fifth reference (ENSAFE/Allen & Hoshall). The date on the Final SI Report, Phase II is March 4, 1994 (not 1992).  |
| 82.      |             | Appendix A, A.3 Well Completion Reports. Why are there 6 well abandonment-sealing report forms (temporary wells TMP014 through TMP019) that all have the same well number (CH-94-4176)? I was under the impression that a separate well number was required for each well installed. If this has changed, please let me know.<br><br>Also, why are there two well completion reports for well CH-94-4175 (one has S57MW022 written in the "Location of Well on Lot" space in the report and the other doesn't)? |
| 83.      |             | Appendix G, G.2 Groundwater Monitoring Report, last page in section (Figure 7). The text states the 75 gallons per minute (GPM) are pumped, but the figure shows 74 gpm. Will this 1 gpm make any difference in the time to reach PRGs or is the 75 gpm in the text (74 on the figure) just a typo?   |