

**RESPONSE TO COMMENTS  
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY COMMENTS  
DECEMBER 20, 2005  
FEASIBILITY STUDY REPORT (REVISED DRAFT) FOR SITE 22  
NAVAL STATION GREAT LAKES**

January 20, 2006

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NTC GREAT LAKES  
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1) Section E.6 of the Executive Summary - In the third line of Alternative 2, the word associated is misspelled.

**Response:** *The document will be corrected in accordance with the comment.*

2) Section E.6 of the Executive Summary - The discussion of Alternative 5 states the ERH system would be operated for a period of three months. How was this amount of time determined? The endpoint of the remedial action should be based upon a remedial action goal rather than a set amount of time. Three months might not be sufficient to reach the specified remedial action goals. This alternative should allow for continued operation of the remedy until the remedial action goals have been reached.

**Response:** *Based on information provided by vendors who install and operate this technology and the information that has been provided to them about Site 22, the vendors ran a model to estimate the time needed for the ERH system to operate - this period was estimated to be three months. Their estimates are based on an overall cleanup percent (typically they use 90 to 95%) or a target cleanup goal. The attachment for Alternatives 3 and 5 from TRS used an overall cleanup percent of 94%. The attachment for Alternative 5 from CES used target cleanup goals of 0 mg/kg and 5 ug/L. In order to do the comparisons required for the Feasibility Study, engineering estimates, assumptions, and judgments need to be made since details from a remedial design are not known. We do not believe that for the purpose of the Feasibility Study report that a more conservative estimate (i.e. longer time frame for treatment) would be appropriate. No change will be made to the report.*

3) Section E.8 of the Executive Summary - Under Short-Term Effectiveness, the statement in the middle of the first paragraph that "Because the scope of the excavation and ERH are significantly less in Alternative 5, so are the corresponding risks" is misleading. It leads one to believe the total short-term risk for Alternative 5 would be less than the risk for Alternative 3. That may not be the case. The cumulative short-term risk for the ERH work combined with the excavation work under Alternative 5 may not be less than the ERH work alone for Alternative 3. In fact, since excavation is the worst scenario for short-term risk to workers due to the off-gassing of the volatile compounds of concern, the total short-term risk for Alternative 5 is likely more than for Alternative 3, not less. Suggest rewording to be more specific/accurate.

**Response:** *We agree with Illinois EPA comment regarding the short term risk. The wording of this sentence along with sentences in Sections 4 and 5 will be revised to reflect this.*

4) Executive Summary - The next to last sentence states Alternatives 2 and 3 would require pilot scale testing. Since Alternative 5 also uses ERH, like Alternative 3, would it not require a pilot test as well to ensure the ERH system will work? If implementation of the remedy is expected to be the same as or inclusive of the pilot scale test, in this instance, then there should be some discussion to clarify that is the case.

**Response:** *The purpose of the pilot scale testing for Alternatives 2 and 3 is to determine site-specific design criteria of the full-scale treatment system so that an effective/optimized remedial action (for both cost and operations) can be implemented since the remedial action involves a relatively large area and volume. This purpose is identified in Section 4.2.2.1 and 4.2.3.1 (description of the alternative component) and Section 4.2.2.2 and 4.2.3.2 (discussion of the cost). The size of the pilot scale test*

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*treatment area for Alternative 3 is approximately half of area that would be treated for Alternative 5. The need to obtain site-specific design criteria for an effective/optimized system design is not as critical for Alternative 5. See the response to comment 13 for the difference in cost between the pilot study and treatment of the hot spot. No change will be made in the Executive Summary. In Section 4.2.3.1, the following sentence will be added to the end of Component 1 "The pilot testing can be expanded into a full scale treatment if the pilot testing treatment is effective and successful."*

*In addition the following sentence will be added in section 4.2.5.1 as the last paragraph to the Component 1 description "Due to the reduced treatment area in this alternative (as compared to Alternative 3), no pilot testing will be needed to determine site-specific design criteria for an effective/optimized remedial action (for both cost and operations) prior to implementation of the ERH."*

5) Section 1.3.1 - The first bullet identifies the source of the contamination as the former drains and grease catch basin in the southeastern portion of the former Building 105. While that may be accurate, it does not go far enough. The source should be listed as the dry cleaner operation that was formerly located in that portion of the building including the attached drains and grease catch basin.

***Response:*** *The first bullet will be revised as follows "The primary source of soil and groundwater contamination appears to be the former dry cleaner operation and associated drains and grease catch basin in the southeastern portion of the building."*

6) Section 2.1.2.1 - The wording of the fourth bullet item appears to be an incomplete sentence. Please review and revise as necessary.

***Response:*** *The fourth bullet item in Section 2.1.1 was corrected in accordance with the comment. A comma (underlined below) was added and the word "to" (struck through below) was removed. The sentence reads "In order to comply with the Naval Station Great Lakes RCRA permit issued by Illinois EPA, to obtain closure for the drum storage area (RCRA Unit SO1)." The bullets in Section 2.1.2.1 were complete sentences.*

7) Section 2.4 - The hot spot was previously delineated by PCE concentrations of greater than 15,000 ug/kg and covered an area of 2625 square feet, but has now been changed to greater than 30,000 ug/kg and covers only 1400 square feet. Please explain the reasoning for this change in description and the subsequent size of the hot spot. Also, the volume calculation referenced here uses a depth of 17 feet. Shouldn't the depth be 20 feet, since that is the total depth of contamination in that area?

***Response:*** *Based on the September 2005 meeting at Naval Station Great Lakes, several different remedial action goals were discussed - Illinois EPA indicated they would consider 30,000 ug/kg as a possible PRG. Since Naval Station Great Lakes has a Memorandum of Agreement with Illinois EPA for establishing LUCs and there seemed to be a natural cut off at 30,000 ug/kg, the description and size of the hot spot was changed for the purpose of the Feasibility Study. Additional sampling (not considered when preparing this FS - see the response to Comment #10) shows that this alternative, with a slightly expanded area, will address areas with current PCE concentrations greater than 12,000 ug/kg.*

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*Section 2.4 will be revised to 25 feet deep as the volume calculations for this Feasibility Study are based on a depth of 25 feet. The calculations in Appendix A used a depth of 25 feet.*

8) Section 4 - The alternative descriptions do not specify what the remedial action goal (final contaminant concentration) for each alternative is. The remedial action goals should be the same for each alternative and should be consistent with what is stated in Section 2. However, it appears that this is not the case. Please include a statement within each alternative to reiterate the remedial action goal and ensure that the goal is the same across all alternatives so that a fair comparison can be made. If the goal is not the same for all of the alternatives, additional information should be included to provide the details and cost information for each alternative to meet each of the varying goals. In this way a true and accurate comparison can be performed.

***Response:*** *Alternatives 2, 3, and 4 treat the area that would encompass the 60 ug/kg to attain the most restrictive PRGs and meet the RAOs for the site based on that criteria. Alternative 5 treats a smaller area and uses LUCs to attain the RAOs at the site. This is identified in the Figures 4-1, 4-2, and 4-3 and is implied in the description of the alternative and in the cost estimate. In the discussion of the short term effectiveness in Sections 4 and 5, each alternative indicates that it will (or will not, in the case of Alternative 1) attain the RAOs within an approximate time frame. Based on the approximate time frame, and the alternative description, details and costs were developed to provide a true and accurate comparison for this Feasibility Study.*

*However, the purpose of the Feasibility Study is not to have each alternatives meet the same remedial action goal (final contaminant concentration) as indicated in this comment. The Feasibility Study process also allows alternatives that meet the RAOs but require LUCs since the final contaminant concentration is greater than the PRGs – the LUCs would be required until the site achieves the appropriate PRGs (final contaminant concentration). Navy Environmental Policy Memorandum 99-02 requires at least one remedial alternative that provides for unrestricted property use to be included in the Feasibility Study and other alternatives may include LUCs. The comparison of the alternatives takes the LUCs and associated costs into consideration – the long term cost of maintaining LUCs is weighed against the additional cost of clean up to unrestricted use. This provides for a true and accurate comparison as well.*

*No change will be made to the report.*

9) Section 4.2.3.1 - The total volume of soil to be treated is not provided here. Is that value the total volume of contaminated soil above the soil-to-groundwater cleanup goal of 60 ug/kg listed in Section 2 (~10,000 cubic yards) or the selected preliminary remediation goal of 11,000 ug/kg in Section 2 (~2715 cubic yards)? Please provide this information and a figure depicting the treatment area/volume so that the alternatives can be compared accurately and completely.

***Response:*** *Figure 4-1 (for Section 4.2.2.1) and Figure 4-2 (for Section 4.2.3.1) indicate that the area of treatment (and/or LUC) is 13,000 square feet – this corresponds to the cleanup goal of 60 ug/kg described in Section 2.4 and shown on Figure 2-1. No change will be made to the report.*

10) Section 4.2.3.2 - Given the results of the most recent sampling data, has the size of the contaminated area/potential treatment area changed at all? If it has, is the estimate for this alternative still accurate? Please verify that the size of the treatment area/volume and the cost are

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still accurate so that a true comparison can be made of all presented alternatives. This comment also applies to Alternatives 2, 4, and 5 as well.

***Response:*** *The results of the most recent sampling data will not be incorporated into this Feasibility Study since this report is comparing remedial alternatives based on the information from the Remedial Investigation. Also based on the September 2005 meeting at Naval Station Great Lakes, it was decided that the Feasibility Study would be completed based on the Illinois EPA comments, and the information from the treatability study would be included in a separate report where it would be identified as an interim remedial action. The results would also be included in the Proposed Plan and Record of Decision and would provide a basis for the decisions for future activities at the site, if necessary. Based on the Remedial Investigation information, the treatment area/volume is accurate for a true comparison. No change will be made to the report.*

11) Section 4.2.4.1 - The volume of excavated soil is listed as approximately 10,000 cubic yards. Section 2 lists the selected preliminary remediation goal as 11,000 ug/kg. The volume associated with that goal is listed in Section 2 as only 2715 cubic yards. It appears that this alternative excavates down to the soil-to-groundwater cleanup goal of 60 ug/kg goal even though the groundwater use restriction is still part of the remedy. Please explain.

***Response:*** *Section 2 does suggest a PRG of 11,000 ug/kg however the Alternatives 2, 3, and 4 were evaluated using the most conservative cleanup criteria with the intent of meeting Navy Environmental Policy Memorandum 99-02 since evaluation criteria of State and Community Acceptance requires the review and comment on the Feasibility Study (the suggested PRG has not been accepted/approved – this would occur in the Proposed Plan and Record of Decision). In addition, the selected PRG is based on the RAOs and the risk assessment for the site – it has not taken into account technology and cost limitations that are evaluated in Section 4 for Alternatives 2, 3, 4, and 5. No change will be made to the report.*

12) Section 4.2.5.1 - The limited excavation gives a volume of soil to be excavated of only 100 cubic yards. The ERH treatment area volume for the "hotspot" would be only an additional 1296 cubic yards (obtained from Section 2). That results in a total of only 1396 cubic yards to be remediated by this alternative. The volume to be remediated in Alternative 3 is either 2715 or 10,000 cubic yards. The volume for Alternative 4 was listed as 10,000 cubic yards. Please explain the large difference in volumes to be remediated. Is the difference based on a higher, less conservative, cleanup goal? Also, there is no figure associated with this alternative to show the potential treated and excavated areas. The total volume to be remediated, the actual cleanup goal, and a figure should be provided here and for each alternative.

***Response:*** *See the responses to the previous comments. The area/volume to be remediated for Alternatives 2, 3, and 4 are the same in this Feasibility Study – these alternatives also include LUCs for the groundwater. The area/volume to be remediated for Alternative 5 is less and LUCs for soil and groundwater are being used to meet the remaining requirements of the RAOs. Figures 2-1 and 2-2 show the potential areas/volume to be treated. Figures 4-1, 4-2, 4-4, and 4-5 (the block flow diagrams) provide details on the area/volume to be remediated. No change will be made to the report.*

13) Appendices - How is it that the cost associated with the ERH portion of Alternative 5 appears to be less than the cost for the treatability study portion for Alternative 3? According to the specifications, the treated area for both is ~1400 square feet and they both go down to 25 feet

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below ground surface. Have the contractor costs changed? Please clarify and revise the FS as necessary.

***Response:*** *The cost of the ERH treatability study portion for Alternative 3 was estimated to be \$338K and the cost for the ERH portion of Alternative 5 was estimated to be \$387K. The cost for Alternate 5 is greater than the cost for Alternative 3. The treatability study area for Alternative 3 is smaller, approximately 750 square feet. Review of the Feasibility Study, Section 4.2.3.2 Detailed Analysis for the cost indicated the pilot scale testing was \$595K – this number was incorrect and was revised to \$338K.*

14) General - The revised wording of the FS appears to this reader to be slightly biased toward Alternative 5. This may be the Navy's preferred alternative, but it should not be presented in the FS as such. The FS should be a balanced document presenting the alternatives without bias. Please review the FS and revise as necessary.

***Response:*** *Sentences in Section 5 were revised to remove bias toward Alternative 5 as appropriate.*

15) General - There are still a few typographical errors in the report (misspelled words, etc.) that need correcting.

***Response:*** *The document will be proofed/reviewed in accordance with the comment.*