



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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August 11, 2005

Commander, Southern Division
Naval Facilities Engineering Command
Attn: Mr. Anthony Robinson
2155 Eagle Drive
North Charleston, South Carolina 29406

Re: Draft Feasibility Study Report
Site 22 – Building 105, Old Dry Cleaning
Facility, Naval Station Great Lakes
Great Lakes, Illinois

0971255048 – Lake
Great Lakes Naval Station
Superfund/Technical

Dear Mr. Robinson:

The Illinois Environmental Protection Agency (Illinois EPA or Agency) is in receipt of the Draft Feasibility Study Report, Site 22 – Building 105, Old Dry Cleaning Facility from Tetra Tech NUS, Inc. It was dated June 2005 and received at Illinois EPA on June 6, 2005. The Agency has reviewed the document and is providing the following comments:

- 1) **Section 1.3.1, Nature and Extent** – The process that generated the waste is clearly identified as a dry cleaning operation that used tetrachloroethylene (PCE). Section 1.3.1 needs to be revised to clearly indicate that the contaminated media is a hazardous waste, and identify the hazardous waste codes that apply. (See later comment on Section 2.3.2.)
- 2) **Section 1.3.1, Nature and Extent** – The contaminated media should be analyzed in-situ (prior to excavation) to determine the location(s) and how much of the contaminated media fails TCLP. This will assist in estimating the amount of contaminated soil that will need to be treated (or excavated) to below the TCLP limit of 0.7 mg/L for tetrachloroethylene.
- 3) **Section 1.3.1, Nature and Extent** – The contaminated media can be treated in-situ without triggering RCRA permitting requirements or the Land Disposal Restrictions (LDRs) at 35 Illinois Administrative Code (IAC) 728.
- 4) **Section 1.3.1, Nature and Extent** – The description of Alternative 4 in the executive summary indicated that contaminated media that is below the LDR criteria for PCE (6 mg/kg) could be directly landfilled. While this is true, it should be noted that a contaminated media could meet the LDRs and still be a hazardous waste. In this case, the waste would need to go to a permitted hazardous waste facility. Please revise the document to indicate this distinction.
- 5) **Section 1.3.1, Nature and Extent** – The description of Alternative 4 in the Executive Summary (page ES-5) indicates that excavated material may be drained to remove excess free water, and

may also undergo size reduction or screening. The following comments apply to this proposed alternative:

- a. Any excavated material will need to be managed as a hazardous waste unless and until it can be shown that the media no longer contains a listed hazardous waste and does not exceed the TCLP limit for PCE (or any other TCLP parameter).
 - b. If the contaminated media is excavated and stockpiled, the pile needs to be placed within the area of contamination. Otherwise, it will be regulated as a RCRA hazardous waste pile (35 IAC 724 Subpart L), or a staging pile (35 IAC 725.652), and thus subject to the regulations for these units.
 - c. The water removed from the contaminated media would be a listed hazardous waste.
 - d. The unit used to screen, dewater, or size the material would need to meet the appropriate RCRA regulations (for a tank or miscellaneous unit, etc.).
- 6) **Tables 1-1, 1-2, and 1-3** – Some of the values in these tables appear to have been rounded off to the nearest whole number. When compared to these same tables in the Remedial Investigation (RI) Report, which should be almost identical, there are several instances where the RI report table shows a number to one or two decimal places, but the values in these tables are all whole numbers. Please review these tables and revise as necessary to ensure the values are consistent with those in the RI.
- 7) **Section 2.1.1, Statement of Remedial Action Objectives** – The first bulleted item should also list the ingestion pathway, in addition to the inhalation and direct contact pathways.
- 8) **Section 2.1.1, Statement of Remedial Action Objectives** – The second bulleted item should also list prevention of ingestion of groundwater contaminated above the established Preliminary Remediation Goals (PRGs).
- 9) **Section 2.1.1, Statement of Remedial Action Objectives** – The third bulleted item states that, at the current time, the groundwater exposure pathway is not applicable because the site is capped and groundwater at Naval Station Great Lakes (NSGL) is not used as a source of potable water and is not expected to be in the future. That is incorrect. At this stage of the process, no pathways have been excluded, since no alternative has been chosen and implemented. An exclusion for that pathway might be part of the eventually selected remedy via a use restriction, but this document does not select a remedy, only evaluate and compare the ones presented. That statement should be removed and the groundwater ingestion pathway evaluated along with the other pathways.

As a general note, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) in Section 300.430(e)(2) and (2)(i), in discussing the Feasibility Study (FS) states, "In developing and, as appropriate, screening the alternatives, the lead agency shall: (i) Establish remedial action objectives specifying contaminants and media of concern, potential exposure pathways, and remediation goals." As quoted, the FS must

develop alternatives based upon potential exposure pathways. The groundwater ingestion pathway is potentially complete at NSGL.

Additionally, 35 Illinois Administrative Code (IAC), Subtitle F: Public Water Supplies, Chapter I: Pollution Control Board, Part 620, Groundwater Quality, at Section 301(a) states, "No person shall cause; threaten or allow the release of any contaminant to a resource groundwater such that:

- 1) Treatment or additional treatment is necessary to continue an existing use or to assure a potential use of such groundwater; or
- 2) An existing or potential use of such groundwater is precluded."

A resource groundwater is defined as "*groundwater that is presently being, or in the future is capable of being, put to beneficial use by reason of being of suitable quality.*" The groundwater on base fits this definition.

- 10) **Section 2.1.1, Statement of Remedial Action Objectives** – This document discusses the remedial action objectives (RAOs) in terms of risk to human health and the environment. The discussion of RAOs also needs to indicate whether excavation of hazardous wastes (or soil which exhibits a characteristic of a hazardous waste) is also a remediation goal. The Agency is concerned that a remedial action based solely on risk could leave behind soils that exhibit a characteristic of a hazardous waste. This has a direct effect on the ARARs for the remedial action.

Specifically, if a contaminated media that exhibits a characteristic of a hazardous waste, or contains listed hazardous waste, will be left at the site after the remediation is complete, the RCRA closure and post-closure requirements would be considered applicable, and therefore ARAR in this case.

Therefore, in order to properly evaluate the remedial alternatives and verify compliance with ARARs, the document must clearly indicate which of the following is a remedial objective:

- a. Wastes and contaminated media which exhibit a characteristic of a hazardous waste or contain listed hazardous waste, will be removed or treated to non-hazardous levels, or
 - b. Wastes and contaminated media that exhibit a characteristic of a hazardous waste or contain hazardous wastes will be left in place.
- 11) **Section 2.2, Preliminary Remediation Goals** – The second sentence, within the parentheses, states the Preliminary Remediation Goals (PRGs) are based on "future recreational land-use." That is incorrect. It should state future residential land use. Please revise accordingly.
 - 12) **Section 2.2, Preliminary Remediation Goals** – The sentence following the bullets should clarify that direct exposure can consist of dermal contact, ingestion, or inhalation.

- 13) **Section 2.2.1, Development of PRGs** – In the first paragraph on page 2-9, exposure of construction workers to soil is assumed to occur by ingestion and inhalation. The dermal contact route should also be listed, as it was in the RI Report.
- 14) **Section 2.2.1, Development of PRGs** – In the first paragraph on page 2-9, the exposure assumptions are listed. The values for soil ingestion rate and duration of inhalation to vapors for the construction worker to soil are different than those listed in Tables 6-8 (RME) and 6-9 (CTE) in the RI Report. Please review and revise as necessary.
- 15) **Section 2.2.1, Development of PRGs** – In the table at the end of this section, the Cleanup Goals do not list the lowest (most conservative) of the Federal (USEPA) or State (Illinois EPA) remediation objectives. According to footnote 1, the soil cleanup goals are the lower of the TACO ingestion or inhalation soil remediation objectives for residential properties. The Federal remediation objectives should be taken into account as well. The soil component of the groundwater ingestion exposure route, for both Federal and State objectives, should also be included here for comparison. Those values are all more stringent than the values listed in this table, with the TACO soil to groundwater values being the most stringent. As stated earlier in Section 2.1.2 of this FS, following the second bullet, ARARs consist of, “Any promulgated standard, requirement, criteria, or limitation under a state environmental or facility-siting law that is more stringent than the associated federal standard, requirement, criterion, or limitation.” According to footnote 2, the groundwater cleanup goals are from the USEPA and Illinois EPA maximum contaminant levels (MCLs). The USEPA values should be listed in the table, as they are more stringent than the ones listed in Illinois EPA’s TACO groundwater remediation objectives table. Please review all of the values in this table and revise as appropriate.
- 16) **Section 2.3.2, Action-Specific ARARs** – It states here that the soil and groundwater are not expected to be a listed hazardous waste. Given the available information, this is not an acceptable conclusion. In this case, the process that generated the waste is clearly identified as a dry cleaning operation that used PCE, and the contamination is located directly under the dry cleaning operation. In addition, the process that generated this waste was in operation until the early 1990s – long after the effective date of RCRA and the definitions of hazardous waste.

Therefore, the media (soil and/or groundwater) under Building 105 contaminated with dry cleaning solvents should be identified as a listed hazardous waste for PCE and TCE (F002 and/or U210) if it is generated (excavated). It may also be a characteristic hazardous waste due to the PCE (D039) or TCE (D040) and other TCLP parameters such as 1,1-DCE (D029) as well. Please revise the document to accurately reflect this.

- 17) **Section 2.3.2, Action-Specific ARARs** – Another Federal regulation that would potentially be ARAR is 40 Code of Federal Regulations (CFR) 61, National Emission Standards for Hazardous Air Pollutants, which sets emission standards for designated hazardous pollutants and would be ARAR for incineration and fugitive dust.

- 18) **Section 2.3.2, Action-Specific ARARs** – As above, the State regulation for emission standards for air pollutants, which would be ARAR for incineration and fugitive dust is 35 Illinois Administrative Code (IAC) Subtitle B, Chapter I.
- 19) **Section 2.3.2, Action-Specific ARARs** – Another State Action-specific ARAR that should be provided here and listed on Table 2-4 is the Illinois Environmental Protection Act (415 Illinois Compiled Statute (ILCS) 5/1, Titles I-XVII). State statutes that would be applicable would include the requirements for air pollution (Title II), water pollution (Title III), land pollution and refuse disposal (Title V), and noise pollution (Title VI).
- 20) **Section 2.3.2 and Table 2-4** – References to Illinois EPA hazardous waste regulations should be similar to those for the equivalent federal regulations. That is, they should be referred to as 35 IAC 721, 722, 723, 724, and 728. Please revise accordingly.
- 21) **Section 2.3.2 and Table 2-4** – The Illinois EPA special waste hauling regulations are 35 IAC Part 809. Please revise the document to refer to them in this way.
- 22) **Section 2.3.2 and Table 2-4** – The Illinois EPA groundwater quality regulations at 35 IAC Part 620 are ARAR and should be listed in the table.
- 23) **Section 2.4, Estimated Volumes of Contaminated Soil and Groundwater** – The twelfth line down should begin with “12-foot interval”, rather than “10-foot interval.” Please correct.
- 24) **Table 2-1** – Illinois EPA’s Tiered Approach to Corrective Action Objectives (TACO) should be listed as a TBC instead of as potentially applicable or ARAR.
- 25) **Table 2-3** – The Preliminary Remediation Goals (PRGs) should be the most conservative values for all potential pathways. This is always the initial or preliminary goal. That does not mean they will ultimately be attained. Different proposed remedial alternatives may use or attain less stringent remedial action objectives, when they incorporate steps to allow for the difference in those values. Those steps might include land use controls to limit future use to industrial or commercial purposes or barriers to eliminate certain pathways. At the outset, though, the PRGs should be the most stringent values.
- 26) **Table 2-3** – Footnote number 5 states that those risk-based cleanup levels were back calculated from the risk assessment for Site 22. From what risk level were they back calculated? Illinois EPA’s TACO values are based upon a risk level of one in one million or 10^{-6} . Please clarify.
- 27) **Table 2-4** – The types of ARARs should be referred to as either “Applicable” or “Relevant and Appropriate.” Wording such as “potentially applicable” should not be used. The rationale for when a requirement would be applicable or relevant and appropriate can be discussed in the last column in the table.
- 28) **Section 2 Organization** – It is unclear why the Chemical and Location-Specific ARARs were located in Section 2.1, while the Action-Specific ARARs were placed in Section 2.3. It would

be more straightforward to group them all together. Illinois EPA recommends they be grouped in the same section.

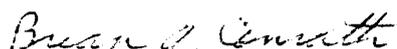
- 29) **Section 3.2, Detailed Screening of Remediation Technologies and Process Options** – For all of the alternatives discussed in this section, the utility corridors that run in various directions through and around the contaminated soil and water need to be discussed. Their location, effect on the implementation of each alternative, and the need for future access to them in the future by repairmen, due to routine maintenance or major disruption, should also be discussed. The alternatives that leave contamination in place would require worker caution statements, as well as other precautions, to ensure the safety of anyone who would need access to those utilities in the future.
- 30) **Section 3.2.3, Containment** – Under Implementability, in the second line, the building number is incorrect. It reads 150 rather than 105. Please revise.
- 31) **Section 3.2.4, Removal** – At the top of page 3-6, there is discussion of controlling dust and debris. Since the contaminants at this site are volatiles, PCE and TCE, this alternative would also need to ensure the safety of the workers and any nearby personnel from the emissions that would be released as those volatile compounds were exposed to the atmosphere during excavation. There should also be ambient air monitoring and the site workers would need to be in the appropriate personal protective equipment (PPE) during implementation of this alternative. Additionally, transportation of the contaminated soil and water would need to incorporate appropriate steps to ensure no off gassing occurred during transport.
- 32) **Section 3.2.4, Removal** – Under Effectiveness, the second paragraph should state that confirmation sampling *would be* required to verify the effectiveness of the removal action, rather than stating it is *typically* required. Please revise accordingly.
- 33) **Section 4.2, Development of Alternatives** – There are two alternatives that mention pilot scale tests to verify the effectiveness and design criteria for those alternatives. There are projected costs attributed to the pilot scale tests, but there is no information provided on them. Please provide the details associated with those pilot scale tests, such as dimensions and location of the test plot, time required to implement the test, and approximate volume of soil and groundwater influenced/treated by it.
- 34) **Section 4.2.4.1, Component 1: Excavation** – In the second sentence on page 4-16, it states that the collected free water would be returned to the excavation area. That would not be acceptable. That free water would be the same as the contaminated pore water, which is one part of the source area. It would make no sense to return contaminated water to the open excavation, where you are trying to remove the contamination. That would potentially contaminate previously clean soil, once the excavation had reached or was nearing unimpacted native soil. That contaminated water would need to be tested and treated or disposed appropriately.
- 35) **Appendix A** – The figures provided here delineating the horizontal extent of contamination at differing soil concentrations for soil volume calculation appear to be working drafts, rather than

finished figures. They are difficult to read and interpret. Please provide better quality figures so that the information to be gleaned from them is more easily obtained.

- 36) **General Comment** – The cost estimates provided herein are a significant increase over the figures passed around just a year ago. The soil volume figures are the same, though. Has the cost of doing business gone up that much in the past year? For example, the 6-phase heating alternative was estimated at 1.2 to 1.5 million dollars last year, but is at 3.1 million dollars now. Please explain where the costs have changed between then and now.
- 37) **General Comment** – There are several typographical errors and such throughout the document. Please review the FS and revise as necessary.
- 38) **General Comment** – Of the four remedial alternatives that have been developed within this FS, only the No Action Alternative would be completely unacceptable to the Agency. Each of the other three remedial alternatives would be protective of human health and the environment and would comply with the Applicable or Relevant and Appropriate Requirements (ARARs). All three would be very similar in meeting the remaining evaluation criteria, with the exception of cost to implement. Alternative four, Excavation, Off-Base Treatment and/or Disposal, and Monitoring, would be very expensive when compared to the other two. Alternative two, In-Situ Chemical Oxidation and Monitoring, would be the least expensive. However, given the potential for success of remedial alternative three, In-Situ ERH and Monitoring, and the stated potential future use of the property as a parking lot with neighboring barracks, galley, and commercial area, Illinois EPA would prefer the Navy choose this alternative and remediate the site down to the unrestricted reuse preliminary remediation goal levels to ensure the safety of any future Navy personnel who would reside in those nearby barracks.

If you have any questions or require additional information, please contact me at (217) 557-8155 or by electronic mail at brian.conrath@epa.state.il.us.

Sincerely,



Brian A. Conrath
Remedial Project Manager
Federal Facilities Unit
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Bureau of Land

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cc: Bob Davis, Tetra Tech NUS, Inc.
Mark Shultz, US Navy - EFA Midwest
Owen Thompson, USEPA (SR-6J)