



DEPARTMENT OF THE NAVY

NORTHERN DIVISION

NAVAL FACILITIES ENGINEERING COMMAND

10 INDUSTRIAL HIGHWAY

MAIL STOP, #82

LESTER, PA 19113-2090

IN REPLY REFER TO

5090

Code 1823/ME

FEB 29 1996

Ms. Kymberlee Keckler
U. S. Environmental Protection Agency
Region I (HBT)
JFK Building
Boston, MA 02203-2211

Subj: RESPONSES TO USEPA'S JANUARY 22, 1996 COMMENTS REGARDING
THE DRAFT AREA A EAST END INVESTIGATION REPORT, NAVAL
SUBMARINE BASE NEW LONDON, GROTON, CT

Dear Ms. Keckler:

Please find enclosed the Navy's responses to your comments regarding the Draft Area A East End Investigation Report. Once we receive your consensus on these responses we will finalize the report.

I look forward to working with you and the CT DEP on this issue. Please call me at (610) 595-0567 ext. 162 if you wish to discuss further.

Sincerely,

A handwritten signature in cursive script that reads "Mark Evans".

MARK EVANS
Remedial Project Manager
By direction of the
Commanding Officer

Copy to:
Mark Lewis, CT DEP
Andrew Stackpole, SUBASE NLON
Jean-Luc Glorieux, Brown & Root

**RESPONSES TO U.S.EPA'S JANUARY 22, 1996 LETTER OF COMMENTS ON
DRAFT AREA A EAST END INVESTIGATION REPORT
AREA A LANDFILL REMEDIAL DESIGN
NAVAL SUBMARINE BASE NEW LONDON
GROTON, CONNECTICUT**

February 28, 1996

1. Page 1-6, 1st paragraph:

Comment: Review the text discussing the borings advanced during the construction of the Racquetball Building for accuracy. The second sentence states that seven borings were advanced in May 1981, but only six borings are identified. In addition, the description of the borings dates is not consistent with those included on the boring logs in Appendix B.1. According to the boring logs, B-201 through B-205A were drilled in May 1986, and the remaining seven borings (B-1 through B-4A) were drilled in May 1981. Boring logs for B-4 and B-4A were absent from the report.

Response: The text of Section 1.3.1: "Racquetball Building Construction" will be corrected to reflect that the seven (7) borings installed in May 1981 were B-1, B-2, B-3, B-3A, B-3B, B-4, and B-4A and the six (6) borings installed in May 1986 were B-201, B-202, B-203, B-204, B-205, and B-205A. It is possible that boring logs for B-4 and B-4A are somehow missing of Appendix B.1 of the USEPA's copy of the draft Area A East End Investigation Report, but Appendix B.1 in other copies of this report does include these logs.

2. Page 1-6, 3rd paragraph:

Comment: Review the text for consistency with Table 1-1. For example, the text indicates that the soil samples obtained from 2MW3S were analyzed for radiological elements. However, Table 1-1 does not present any radiological results. Additionally, Table 1-1 includes TCLP analytical results that are not discussed in the text:

Response: The text of Section 1.3.2: "Phase I RI" will be corrected to be consistent with the analytical data presented on Table 1-1. The mention that the soil samples collected from wells 2MW3S and 2MW3D were analyzed for radiological elements will be deleted and the TCLP analytical results will be mentioned in the text.

3. Page 1-11, 2nd paragraph:

Comment: Review the text for consistency with Table 1-3. The text states that the groundwater samples obtained from each of the two wells for Rounds I and II were analyzed for radiological elements and pesticides. However, Table 1-3 indicates the results for radiological and pesticide parameters were not analyzed.

Response: The text of Section 1.3.3: "Phase II RI" will be corrected to be consistent with the analytical data presented on Table 1-3. The mention that the groundwater samples collected from wells 2LMW20S and 2LMW20D for Rounds I and II were analyzed for radiological elements and pesticides will be deleted.

4. Page 2-1, 2nd paragraph:

Comment: The text concerning the review of aerial photographs should discuss EPIC photographs available from the 1950s, in particular the photograph taken on April 10, 1957 that is listed in Appendix E. Earlier photographs may provide additional information pertaining to the type of fill material placed in the area of concern.

Expand the discussion regarding aerial photographs to include descriptions of the appearance of the fill material placed in the Area A Landfill, including any information about the nature and color of the material deposited.

Response: The EPA's Photographic Interpretation Center (EPIC) report describes the Area A Landfill as a feature not present in either of the photographs dated October 8, 1941, October 9, 1941, June 19, 1943, November 21, 1951, August 24, 1952, and April 10, 1957. The text of Section 2.1: "Review of Aerial Photographs" will be amended to mention this fact.

The Navy believes that the appearance and color of the Area A Landfill fill material in the EPIC photographs is sufficiently described in Section 2.1 (page 2-1, last paragraph and page 2-2, 1st and 2nd paragraphs). It is not clear to the Navy what could be said to usefully expand on the remarks made in this Section.

The Navy will include a discussion on the various construction drawings that were reviewed as part of the records search.

5. Page 2-1, 4th paragraph:

Comment: Review the text for consistency with Appendix E. The text referring to the "February 4, 1974" photograph included in the EPIC report is not consistent with the list of EPIC photographs in Appendix E. According to the list in Appendix E, the photograph was taken on February 24, 1974. In addition, the two photographs discussed in the text (April 17, 1980 and March 26, 1990) do not appear in Appendix E.

Response: The correct date is that indicated in Appendix E: February 24, 1974. The text of Section 2.1: "Review of Aerial Photographs" will be corrected accordingly. The reason why the April 17, 1980 and March 26, 1990 photographs are not listed in Appendix E is that they were not part of the EPIC report and were, instead, provided to the Navy by the Connecticut Department of Environmental Protection (CTDEP). The text of Section 2.1 will be amended to mention this.

6. Page 3-5, 1st paragraph:

Comment: Expand the text to discuss potential impacts to the program resulting from modifications to the subsurface soil sample locations. As stated in the Scope of Work for this field investigation two soil samples were to be collected from each of the three borings, including one from the overlying fill material and one from the dredge spoils. Section 3.1 indicates that the boring samples selected for analysis were collected in the fill strata, except at location LF-SB08 where a sample was obtained from the dredge material and exhibited potential contamination. Since the two samples from each borehole retained for analysis do not appear to follow the format outlined in the Scope of Work, the text should discuss the rationale and impact of the alternative sampling procedure.

Clarify which location was used to obtain subsurface soil samples, the sample from LF-SB08 or LF-SB08A.

Response: Although the Navy agrees that the field investigation deviated from Scope of Work,

it was not without merit. The Navy believes that the current text of Section 3.1: "Soil Borings" (page 3-5, 1st paragraph, 2nd and 3rd sentences) adequately discusses the rationale for the selection of the sampling location within each boring. Although it had been originally planned during the preparation of the Scope of Work to simply collect one sample in the fill material and the other in the dredge spoil, subsequent thinking led to two logical decisions regarding selection of sampling location. First, since the primary purpose of the investigation was to quantify subsurface soil contamination if any, the primary criteria for selecting sampling location should be an indication of potential contamination as determined from visual or olfactory observation, or from the reading of a field organic vapor detector (HNU). Second, since the fill material was the focus of the investigation, sampling should also be concentrated in that strata and this was further reinforced by a closer examination of the existing data which revealed that more data was available for the dredge spoil than the fill and therefore the acquisition of additional fill data was proportionally more important. That rationale is presented in the text of Section 3.1: "Soil Borings" (page 3-5, 1st paragraph, 2nd and 3rd sentences).

As indicated in the text of Section 3.1: "Soil Borings" (page 3-1, 3rd paragraph), the subsurface soil samples collected from borings LF-SB08A were not retained for analysis because of concerns about improper decontamination.

7. Page 3-5, 4th paragraph:

Comment: Revise the text discussing the test trenching activities for consistency with the logs presented in Appendix C.2. The text states that the test trenches extended approximately 10 feet north of the landfill cap boundary and extended a minimum of 30 feet. According to the test trench logs, the trenches extended approximately 5 to 10 feet within the cap boundary and extended a minimum of 22 feet.

Response: This comment is well taken. The text of Section 3.2: "Test Trenches" reflects the planned location and dimensions of the test trenches. The logs included in Appendix C.2 show the location and dimensions of the test trenches based upon visual field observations. The accurate location and dimensions of the test trenches are those actually surveyed in the field as shown on Figure 3-1. The text of Section 3-2 will be revised to indicate the "as-surveyed" locations and dimensions of the test trenches.

8. Page 3-5, 5th paragraph:

Comment: Discuss why two samples were not collected from each trench as described in the Scope of Work. Expand the text to present the rationale for the modification and discuss potential impact.

Response: During the initial planning of the Area A East End Investigation, it had been decided that collection and analysis of a total of four subsurface soil samples, in addition to visual observation and HNU field screening, would be sufficient for the characterization of the test trenches. As only two trenches were planned at first, the Scope of Work indicated that two samples would be collected in each trench. Following USEPA's July 11, 1995 comments on the original Scope of Work and the September 19, 1995 phone conference, it was agreed, however, to increase the number of trenches to six. At that time the Navy's understanding was not to increase the total number of samples collected for analysis unless field observations and screening results revealed strong evidence of widespread contamination, which was not the case.

9. Page 4-1:

Comment: Expand this section to discuss the analytical results of this investigation. Several contaminants were noted in the subsurface that are consistent with the pattern of contamination

that would be expected from waste in a landfill. Indicate more specifically why contaminant level do not warrant encapsulation. For example, the statement that detected concentrations are not "...representative of a widespread pattern of contamination.." does not appear consistent with analytical results from test pit samples indicating elevated concentration of total petroleum hydrocarbons ("TPH") in TP22 and TP23. The TPH data suggest an area of greater contamination along the southwestern boundary of the Area A Landfill that may need to be addressed. A figure presenting the analytical results from the soil boring and test pits activities, by sample location, would help to evaluate trends or patterns in the reported contaminant concentrations. The text should also describe the methodology used to evaluate the data and determine that the detected concentration are *very low*. A table comparing detected concentrations to cleanup criteria or risk based action levels would assist in evaluating the significance of the results.

Discuss the findings of the data validation regarding data quality in the text presenting the analytical results. For example discuss the rejected cyanide data and evaluate potential impacts to the investigation.

Response: Section 4.0: "Samples Testing Results" will be significantly expanded to discuss in some detail the analytical results, why these results are not "...representative of a widespread pattern of contamination..", and why the extent of detected contamination does not warrant remedial action. Section 4.0 will also provide in tabular form (new Table 4-5) a comparison between detected concentrations and potential cleanup criteria, in this case the CTDEP Proposed Remediation Standard Regulations (CTDEP, December 13, 1995). According to these regulations, the direct exposure cleanup criteria for Total Petroleum Hydrocarbons (TPHs) are 500 mg/kg for residential use and 2,500 mg/kg for industrial use. According to the same regulations, the GA mobility cleanup criteria for TPHs is 500 mg/kg. TPHs concentrations of 244 and 71 mg/kg for test trenches LF-TP22 and LF-TP23, respectively, should therefore not be considered as unacceptable. As the test trenches were located along the southeastern edge of the current landfill cap design, it is not clear how the TPHs analytical data suggest an area of greater contamination along the southwestern boundary of the landfill.

The findings of the data validation process are quite straightforward and the Navy believes that they are sufficiently well explained within Appendix D: "Laboratory Analytical Results and Data Validation". Mention will, however, be added to the text of Section 4.0 to indicate that the holding time for the cyanide analysis of the samples collected in soil boring LF-SB07 and test trenches LF-TP26 and LF-TP27 were exceeded and that this data must therefore be rejected. From the rejected results as well as the results obtained at adjacent locations, there is, however, no reason to believe that significant cyanide concentrations are present at LF-SB07, LF-TP26, or LF-TP27.

10. Page 4-4:

Comment: Review Table 4-2 for consistency with boring information presented in Appendix B.3 and text on page 3-1, ¶3. According to the text and boring logs, samples for LF-SB08 were discarded because of improper decontamination procedures. However, Table 4-2 appears to report the results of LF-SB08.

Response: See response to Comment No. 6 above. As indicated in the text of Section 3-1: "Soil Borings" (page 3-1, 3rd paragraph), the subsurface soil samples collected from borings LF-SB08A were not retained for analysis because of concerns about improper decontamination. The notation "sample retained", which appears in all logs in Appendix B.3 including that for boring LF-SB08A, merely indicates that samples were collected at specific locations but not that these samples were retained for analysis. The analytical results shown on Table 4-2 are for boring LF-SB08.

11. Page 4-9:

Comment: Review Table 4-4 for consistency with the data presented in Appendix D.2. For example the level of calcium reported for LF-TP22 is listed on the data sheet as 2870 ppm (J), however, Table 4-4 indicates that the concentration was 1870 ppm (J). The levels of arsenic in LF-SB08 (12-14 feet), selenium in LF-SB06 (14-16 feet), and sodium in LF-TP22 should have the qualifier U associated with each analyte.

Response: The analytical results shown on Table 4-4 (and all other tables) will be checked with consistency with the data included in Appendix D: "Laboratory Analytical Results and Data Validation" which is the governing document. Table 4-4 will be corrected to show that the proper calcium concentration for the soil sample collected in test trench LF-TP22 is 2870 mg/kg (J). Table 4-4 will also be corrected to show a "U" qualifier for the concentrations of arsenic in LF-SB08 (12-14 feet), selenium in LF-SB06 (14-16 feet), and sodium in LF-TP22.

12. Appendix F:

Comment: There are a number of inconsistencies and undefined qualifiers included in Table F-1. The compounds acetone and 2-butanone, which were indicated in the Trip Blank, should not be shaded. The qualifiers used for magnesium were not explained in the key.

Response: Table F-1 will be checked for consistency with Table 1-2 (pages 47 to 50) of the Area A Landfill FFS (Atlantic Environmental Services Inc., May 26, 1995) which is the source for this document. Shade will be removed from the acetone and 2-butanone analytical results for the trip blank. The "*" qualifier for the magnesium and the "N" qualifier for manganese analytical results will be explained in the footnotes.