



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203-0001

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NSB NEW LONDON
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September 16, 1998

Mark Evans, Remedial Project Manager
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

Re: EPA Review of the Responses to Comments on the Lower Subbase Remedial Investigation

Dear Mr. Evans:

EPA reviewed the *Responses to USEPA's June 23, 1998 Letter of Comments Regarding the April 1998 Draft Remedial Investigation Report for Lower Subbase*, dated August 7, 1998 for technical sufficiency, adherence to the NCP, EPA guidance, and generally accepted practice. Detailed comments are provided in Attachment A.

For brevity, an evaluation of a response or further comment is only presented if warranted. Discussions during the August 27, 1998 meeting have been integrated into the review of Navy responses. The response evaluation uses the same comment numbering system that was used in the Navy responses.

The majority of the responses agree with the EPA comment and propose revision to the RI document. Discussions during the August 27, 1998 meeting focused on comments for which there was disagreement.

Agreements reached at the meeting included revision of the fate and transport sections of each zone to include a geochemical evaluation and make the discussion more site specific, revision of the recommendations for each zone, addition of a weights-of-evidence data summary to the ecological risk assessment.

Resolution of some of the comments could not be accomplished at the meeting. They are as follows 2, 3, 4, 7, 9, 23, and 49. Resolution to these comments are described in Attachment A.

I look forward to working with you on this issue. Please do not hesitate to contact me at (617) 573-5777 should you have any questions.

Sincerely,



Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachment

cc: Mark Lewis, CTDEP, Hartford, CT
Jeff Sullivan, NSBNL, Groton, CT
Patti Lynne Tyler, USEPA, Lexington, MA
Ken Finkelstein, NOAA, Boston, MA
Jennifer Stump, Gannett Fleming, Harrisburg, PA
Corey Rich, Brown & Root, Pittsburgh, PA

ATTACHMENT A

<u>Response #</u>	<u>Comment</u>
2	<p>Historic NPDES data will be collected and summarized by NSB-NLON personnel. A meeting between CTDEP and NSB-NLON personnel to discuss storm water issues will hopefully assist in resolving some of the concerns raised in the EPA comment. Also it was discussed at the August 27 meeting that storm water issues should be integrated into the monitoring plan for Lower Subase.</p>
3&4	<p>The Work Plan and Sampling Analysis Plan for Lower Subase Remedial Investigation, §1.4 contains the following statements. "The chemistry results of Thames River sediment samples may indicate potential risks to benthic invertebrates from sediment contaminants. If the Lower Subase is shown to be the source of elevated chemical concentrations in the Thames river sediment near the Lower Subase, additional ecological investigations may be conducted to more fully characterize potential risks. Several factors will be taken into account when determining if potential risks are high enough to warrant additional studies. These include, but are not limited to, magnitude of exceedances of guideline values (<i>e.g.</i>, ER-Ms), bioavailability (<i>e.g.</i>, AVS/SEM ratios), frequency of detection, location of exceedances, and whether elevated contaminants are capable of bioaccumulating. The sediment chemistry represents the first tier in the ecological risk assessment for the Thames River. If the factors listed above indicate significant potential risks, an additional tier of study will be performed." This section of the Work Plan also states that the objective of the sediment samples is to fill data gaps and provide sufficient data for the ecological risk assessment for the Thames River adjacent to Zones 1 through 7.</p> <p>The EPA comments on the Draft RI indicated that there appears to be data gaps. It was decided at the August 27 meeting that a table would be developed that summarizes all of the existing sediment chemistry and toxicity test data for the zones of the Thames River. After this summary table is presented to EPA, the existence of data gaps and the need for additional chemical analysis or toxicity testing will be evaluated.</p>

- 7 & 8 Adding text to Section 3 that describes the approach discussed in Appendix F and discusses the hot spot issue will be sufficient.
- 9 As stated in the August 31, 1998 e-mail from EPA, the HHRA must be revised to quantify the additional contaminants for dermal absorption.
7. p. 3-32, §3.4.1.1 The original comment noted an inconsistency in the definition of "shallow soils." The response acknowledges an error in the presentation, and, presumably, it will be corrected. As it now stands, the definition of "shallow" is 0 to 4 feet or 0 to 5 feet bgs, depending upon the zone. Because this definition is not fixed throughout the document, care should be taken to note the depth of the "shallow soils" for each zone. When first introduced (see, e.g., p. 2-3, §2.2.1), it should be noted that the definition of "shallow" is zone-specific. The original text in §2.2.1 gives only one definition. Also, the rationale for redefining "shallow" on a zone-by-zone basis should be given in §2.2.1.
14. p. 4-12, §4.4.1.1 See Comment 7 above.
15. p. 4-20, §4.5.1 See General Comment 6 above.
16. p. 4-21, §4.5.2 The original comment noted ambiguity in wording with respect to lead migration to adjacent zones and/or to the river. The proposed revision clarifies the intent of the statement. The comment also noted the difficulty of drawing meaningful conclusions regarding transport from the data shown in Drawings 13 and 14, and the response states that the conclusions will be appropriately qualified. This discussion of the data should caution against over interpretation of contour plots based on sparse data and the adoption of an interpolation scheme.
17. p. 4-22, §4.5.3 The original comment requested additional discussion of the dissolved oxygen data and its interpretation. The information provided puts the data into perspective. The response is adequate.
18. p. 4-32, §4.7.4 The comment suggested that the claim that contamination is "well defined" is overstated. The proposed change is adequate.

20. p. 5-14, §5.5.1 The original comment noted an apparent contradiction in statements concerning lead transport. The proposed revision is adequate to improve the internal consistency of the text. However, the larger, technical issue demonstrating a clear understanding of lead mobility under site-specific conditions and its implications remains. See General Comment 6 above.

21. p. 5-16, §5.5.3 The original comment requested more discussion of the DO data and consistency in its use. The proposed added text addresses the concern adequately. It should be noted that the measurement uncertainty for DO using the YSI meter of plus or minus 0.2 mg/L is precision rather than accuracy. That is, under controlled conditions, the probe may give DO readings whose standard deviation is of that order, but the uncertainty of the field measurement relative to the true DO content of the groundwater may be larger.

23. p. 6-2, §5.5.3 It was agreed at the August 28, 1998 meeting that the storm drain information will be integrated into the fate and transport discussion with in the in the RI and will be integrated into the FS. The role of the storm drains in the transport of contaminants to the river remains a major issue with respect to site characterization and understanding pathways. The Navy states here that additional work will be "considered."

There is a data gap, there are chemical analysis data for only 5 storm sewer outfalls. There are no storm sewer analytical data for Zone 3.

There remain some major issues here to be resolved between the Navy and the regulators. See evaluation of the response to general comment 2.

24. p. 6-12, §6.4.1.2 The original comment requested clarification of statements concerning lead levels relative to background. The proposed revision is a clearer statement. It would be improved further if a more quantitative statement could be made regarding metals near background. If the background data are sufficient to determine both a mean and a standard deviation for each metal in background, then a more definitive statement could be made regarding metals detected in the present RI relative to background. For example, rather than stating that a certain compound is "slightly above background," one could state that it is within one standard deviation of the mean of the

background data set. Or, if there is reason to believe that the background data should not be described in terms of a particular statistical distribution (*e.g.*, normal, log-normal, *etc.*), at least the range of the background data set could be considered. In that case, for example, an analysis could be described as above the mean, but within the range, of the background data set.

26. p.6-15, §6.4.2.2 The original comment requested discussion of results in which dissolved fractions were higher than total. The discussion offered in the response clarifies the matter, and should be included in the text, as is stated.
27. p. 6-16, §6.5.1 See evaluation of the response to General Comments.
28. p. 6-17, §6.5.2 The original comment expressed reservations about drawing conclusions concerning "cross-contamination" from one Zone to another, and cautioned against over interpretation of contour plots based on sparse data and interpolation schemes that can yield a convincing picture, but in reality are poorly constrained. The response states that the text will be qualified appropriately. It would be useful, too, if the text were to further elucidate the processes that are inferred to be operating here. In particular, what is the conceptual model that emerges from consideration of these data? If "cross-contamination" has occurred, was it by spreading on the ground surface before the hydrocarbons seeped into the soil, transport by groundwater through fluctuations in the water table, or some other mechanism? What appears to be consistent with the data?
29. p. 6-17, §6.5.2 The original comment was similar to that discussed in 28 (above), but here in the context of lead rather than TPH. The response agrees to revise the text as requested to qualify the conclusions appropriately. The revised text should state clearly the basis of the conclusion that lead has migrated from Zone 3 to Zone 2 (*i.e.*, is this inference drawn from the change in lead concentration from 2-EXBE-ALBACORE-04 to 13TB11)? If some transport mechanism is envisioned that is consistent with the setting and what is observed, it should be discussed.
30. p. 6-19, §6.5.3 The comment raised questions regarding the interpretation of data relevant to biodegradation of the hydrocarbons. The proposed

revision is an improvement, in that it acknowledges that sulfate reduction cannot be ruled out based on the available data. It would be clearer yet to expand upon this further by stating, for example, that in the absence of sulfide data, the results are ambiguous. The reply states that sulfide was not on the analyte list, but that the analyte list will be revisited in the event that monitored natural attenuation is considered further as a remedial alternative for any of the zones. Such a review of the analyte list for any future sampling that bears on natural attenuation is encouraged.

31. p. 6-19, §6.5.3 The comment noted that the case for the efficacy of natural attenuation in this setting was somewhat overstated. The response states that the text will be revised to acknowledge limitations and qualify the conclusions. This is a satisfactory response. It is recommended that the revised text state clearly that *some* indicators of biodegradation are encouraging, but that, within the scope of this investigation, others are ambiguous. These results do indicate value in further evaluation, and that conclusion should be stated. However, the data in hand do not provide support for the conclusion that monitored natural attenuation (MNA) is a "practical" remedial alternative. This has not been established at this time.
32. p. 6-26, §6.7.1 It is suggested that the revised text also note that the data from the temporary well are regarded as "screening" data, and note that these data are not shown on the figures.
33. p. 6-26, §6.7.2 The comment requested that broad conclusions regarding fate and transport be appropriately qualified where the data and analysis are only suggestive, rather than strongly supporting. The response states that the text will be modified as requested. The response is adequate.
49. Appendix I.6 As stated in the August 31, 1998 e-mail from EPA, the IEUBK model can be run using the default (4 mg/l) concentration for lead in groundwater considering that the area is served by public water and the groundwater is brackish.