



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

July 1, 1997

Mr. Philip Otis
U.S. Department of the Navy
Northern Division - NAVFAC
10 Industrial Highway
Code 1811/PO - Mail Stop 82
Lester, PA 19113-2090

Re: Interim Response to Comments for the Remedial Investigation Report,
Interim Response to Comments for the Feasibility Study,
Attachment: Conceptual Long-Term Monitoring Plan (LTMP), all dated 28 May 1997
Site 7 Calf Pasture Point
Former Naval Construction Battalion Center, Davisville, RI

Dear Mr. Otis:

The Environmental Protection Agency, Region I (EPA) has reviewed the above captioned documents, dated May 28, 1997, pursuant to § 7.6 of the NCBC Federal Facility Agreement (FFA).

EPA recognizes the Navy's commitment to developing a LTMP which will adequately assess the effectiveness of the selected remedy and forewarn the BCT of any changes in the conceptual model for the site so that the need for additional remedial alternatives may be evaluated. The LTMP is a good starting point for discussions and is adequate for conceptual use in the proposed plan. Phase I should commence this summer. Comments are enclosed that indicated areas where EPA believes that the plan needs changes. Finalization of the plan should take place as part of the remedial design phase.

While most of EPA's comments on the RI/FS have been adequately addressed, the Navy has still not satisfactorily addressed a small number of critical comments, particularly those relating to the use of the groundwater model and EPA's designation of applicable or relevant and appropriate requirements (ARARs). In the attached comments, EPA has referenced those May 5, 1997 EPA comments which have not been properly addressed and the reasons the Navy's responses to the comments are inadequate.

In order that progress on Site 7 not be delayed, I would appreciate hearing from you at your earliest convenience. EPA expects the Navy to respond to these comments in writing for our review. A meeting between the parties should be held to expedite the process.



Recycled/Recyclable
Printed with Soy/Canola Ink on paper that
contains at least 75% recycled fiber

In our letter dated June 13, 1997 concerning the draft PP for this site EPA stated that the administrative record for the OU will not be complete until the Navy submits a final RI/FS. We requested a schedule as to when the revised RI/FS will be submitted, but have not yet received it.

Please be advised that the RI/FS for this OU will not be considered complete until the Navy submits RI/FS documents which are satisfactory to EPA. The complete administrative record for this OU must be available for public review and comment at the time the PP is issued. We stated in our June 13, 1997 letter that the current FFA schedule requires the Navy to submit a draft final ROD with responsiveness summary by September 14, 1997. We look forward to completing this OU within this agreed to schedule.

If you have any questions, or would like to set up a meeting, please contact me (617) 573-5736.

Sincerely,



Christine A.P. Williams, RPM
Federal Facilities Superfund Section

Enclosures

cc: Richard Gottlieb, RIDEM
Walter Davis, NCBC
Marjory Myers, Narragansett Tribe
Marilyn Cohen, ToNK
Howard Cohen, RIEDC
Bryan Wolfenden, RI RC&DC, Inc.
George Horvat, Dynamac
Jim Shultz, EA

Draft Final, IR Program Site 07 Phase III RI, RTC

Comments which were not adequately addressed are discussed below.

EPA GENERAL COMMENTS - ENCLOSURE 1

Comment 1B. In general, most of the previous review comments were not answered properly or satisfactorily. For example, the Navy continues to insist that the results of AT123D model simulation agree with the observed concentrations. Further, the Navy says that the model parameter sensitivity analysis is unnecessary. However, the observed contaminant concentrations at the site are the results of many transport processes. Among the physical and chemical transport processes (advection, dispersion, etc.), the tidal fluctuation could be the most influential factor especially in the vicinity of the shore line. At the site, the groundwater direction, gradient, and salinity are subject to change constantly as a result of sea level fluctuations and fresh water recharge. Considering these factors, the use of a uniform average flow direction and gradient should be limited to an estimation of groundwater flux. For the contaminant transport estimation, the uniform flow assumption will exclude the major processes at the site; mixing and dilution induced by the tidal fluctuation. Therefore, a simple comparison of AT123D model simulation results (which was based on the uniform flow assumption) with field observations raises concerns with the validity of the model application. In other words, the subsurface contaminants mass flux crossing the shore line cannot be properly simulated if the mass dissipation due to tidal interference is omitted.

The Navy explains in their response that results of the model agreed with observed concentrations in the near-shore deep/rock wells and supported the presence of three VOCs detected in the near-shore deep/rock wells. The statement "This finding of consistency between the model predictions and observed values reinforces the applicability of using the near-shore observed concentrations in the risk analysis." This statement is confusing since observed concentrations have no need of reinforcement from modeling to be applicable for risk analysis. Also, the Navy states that nothing would be gained from a sensitivity analysis since it would not contribute anything to the finding of consistency between observed data and predicted results. The finding of consistency has no true value without a sensitivity analysis. The potential inaccuracy of certain assumptions or the lack of certain input data could contribute to the finding of consistency which, without a sensitivity analysis, could not be ruled out as a possible coincidence. In any case, it should be pointed out that the model is based on well locations which pre-date conceptual model revisions regarding the nature/location of ground water discharge to surface water (fresh/saline water interface issue). On this basis alone, the model results should be used with caution.

For the sensitivity analysis issue, it is agreed that the model sensitivity analysis is not needed although not for the reasons stated by the Navy. The sensitivity analysis is not necessary because of the aforementioned conceptual problems. The model sensitivity analysis is beneficial only when the base-case scenario represents the field conditions properly.

The Navy has not taken geologic core samples at sufficient depth in the harbor to validate this

Draft Final, IR Program Site 07 Phase III RI, RTC

model. EPA agrees that the model results should not be taken literally and therefore suggests the RI be amended to state that the model results will not be used to make decisions about fate and transport into the harbor, but that site specific data will be gathered to evaluate the effectiveness of the selected remedy and to determine site risks.

Comment 2A. EPA states that additional locations are needed for groundwater, surface water, and sediment monitoring. In the Navy's response, the reader is referred to the response to Comment 9 where the Navy proposes to install an additional well between MW07-19S and MW07-13S. However, the Navy does not propose surface water or sediment monitoring in the response and this monitoring is also not included in the conceptual Long Term Monitoring Plan (LTMP). This is unacceptable. See EPA comments on LTMP.

EPA SPECIFIC COMMENTS - ENCLOSURE 1

Comments 2, 3, 11, 70, 109, 120, 127, 128, and 144A. The Draft Final Remedial Investigation Report shows that the major plume at the site is migrating toward southwest, south, and southeast from the source. It is not understood why the SUTRA model was applied for the West-East pathway. The modeling results from the West-East pathway should be limited for the same pathway only, provided the exercise followed the basic necessary steps in groundwater modeling (i.e., proper conceptualization, calibration, etc.). It cannot be generally applied for other pathways, especially the North-South pathway where the vertical hydraulic connection was identified.

Comment 2, et al., B. It is agreed that no further modeling is necessary due to the major concerns raised in the review process. The current modeling results should not be used for other than future site characterization and the RI should be amended to state this emphatically.

Comments 2, 3, and 11B. See the response for Comments 2, 3, 11, 70, 109, 120, 127, 128, and 144A, above.

Comment 70. The AT123D code does not account for complex hydrologic processes at the site for reasons explained in previous comments.

Comment 109. Refer to Comment 1B

Comments 120, 127, and 128 A. Even for the preliminary screening level investigation, the AT123D model as applied at this site is not adequate as addressed in Comment 1B.

Comments 120, 127 and 128 B. Refer to Comment 1B.

Comments 5, 8, 38, 93 and 111. In response to EPA's concern over potential unidentified

Draft Final, IR Program Site 07 Phase III RI, RTC

DNAPL pockets in the subsurface at the Site, the Navy indicates that hydroprobe locations HP-10, HP-24, and HP-14 were driven to the top of competent bedrock and revealed VOC concentrations which were not indicative of DNAPL in those areas. Although these locations were selected for discussion based on EPA's discussion of MW07-09, the focus of potential DNAPL on the bedrock surface should be centered in the area of MW07-04, MW07-05D, MW07-15 and MW07-17 based on the concentrations of TCE and 1,1,2,2-PCA ranging from 120,000 $\mu\text{g/L}$ to 77,000 $\mu\text{g/L}$, respectively (see Chapter 5, Section 5.1.3.3, Page 5-8, Paragraph 2). Based on Figure 2-1, Interpretive Contours of the Bedrock Surface and Figure 2-3, Total VOC Detected at Hydroprobe Locations, it is not clear why hydroprobe samples were not collected in this suspect area (in the area surrounded by HP-06, HP-07, HP-05 and HP-03 which is an area of approximately 400 ft by 200 ft). In addition, there is only one bedrock well in this area to provide information, MW07-05R. If it later becomes necessary to determine the feasibility of extracting DNAPL due to an increase in site risks or the movement of higher concentrations of contaminants in the easterly direction indicates higher site risks, this area must be investigated further.

Comment 9. The final location for proposed well MW07-32 and MW07-33S should be field-confirmed during a BCT site visit.

Comment 10. EPA stated that monitoring points located along the perimeter of the site were critical to confirm risk levels and monitor the plume. In response, the Navy stated that it will install two wells; one deep well near MW-26 to be called MW-26D and one shallow well between MW-19 and MW-13 to be called MW-33S. Neither of these wells could be considered perimeter wells as they are well within the site boundaries. The Navy should re-address the question with a commitment to evaluating the possibility of sampling at depth at the near shore.

Comment 39. Sediment sampling will be required in conjunction with ground water sampling. Wells MW07-12S, -25S, and -26D, referred to in the response, are not indicated on the accompanying conceptual LTMP site map.

Comment 76 and 83. The proposed 3 hydroprobe locations mentioned in the response falls far short of what is needed. The inference that the silt layer would "slow" and "filter" VOC migration does not preclude the need to conduct confirmatory field sampling. Additional hydroprobe and/or passive sampling surveys are needed for optimally locating the sampling locations, for all media, on which the LTMP will be based.

Comment 106. Fe and Mn (and perhaps other metals such as As) should not be thought of as simply having a "source". It is more likely that their presence in ground water is the result of "mobilization" of naturally occurring metals coincident with intrinsic biodegradation of VOCs. In this light, they can not be readily dismissed. The LTMP must address this issue.

Draft Final, IR Program Site 07 Phase III RI, RTC

Comment 107. EPA emphasized the need to monitor inland and near-shore sediments as part of the long term monitoring program. In response, the Navy refers the reader to Comments 39 and 76/83. These comments only address the addition of groundwater monitoring wells and do not discuss inland or near-shore sediment monitoring. The Navy proposes in the Conceptual LTMP that the shoreline sediment not be collected and inland sediment collected only if analytical data collected from MW-33S or MW-13S indicate VOC contamination. It is recommended that at least surface water and sediment samples be collected from the wetland area to establish a baseline and confirm the presence or absence of contamination independent of analytical results found in groundwater. Subsequent sediment and surface water sampling in the interior wetland area can be based on groundwater quality data based on those wells.

As stated above, the Navy proposes the evaluation of groundwater data as an indicator of the potential for near-shore sediment contamination as a result of site contaminants. Given the fact that exact groundwater discharge locations to the harbor have not been identified, but are suspected, and; since the potential areas of discharge to Allen Harbor are large but relatively few sediment samples were collected near Calf Pasture Point in relation to the area in question, it seems appropriate that additional rounds of sediment sampling be proposed. If this sediment sampling does not identify the presence of contamination related to the site, further sediment sampling could then be based on the monitoring of groundwater quality in near shore wells. It is agreed that the likelihood of detecting contamination in surface water at the entrance to Allen Harbor with all the processes affecting contaminant transport is low.

Comment 144. EPA stated that monitoring of surface water and sediment will need to be included along with groundwater monitoring. The Navy's response refers the reader to Comment 39 which discusses the installation of additional monitoring wells and the LTMP which does not include surface water or sediment sampling. The Navy should address the question as it was posed. EPA intended for the surface water sampling be conducted within the interior wetlands.

EPA COMMENTS - ENCLOSURE 2

Comment 8. It is not clear if the Navy will address the discrepancy of the simulation period which is shown on Figure 1 as one month and listed in Table 3 as 1 year. At a minimum, the reason for this discrepancy as provided in the Navy's response should be included in the report. Also, the Navy did not address EPA's concern of whether the bedrock was part of the simulation.

RIDEM COMMENTS

Comment 13. RIDEM states that samples from Allen Harbor will need to be collected to validate the groundwater model. The Navy responds that further groundwater modeling will not be performed and states that the conceptual LTMP is being prepared. However, the LTMP as prepared, does not include the collection of samples from Allen Harbor. If the Navy intends to use the model of the contamination out in the harbor, the Navy must perform additional validation

Draft Final, IR Program Site 07 Phase III RI, RTC

with site specific data gathered from the harbor. This information could be gathered during the barge mounted sampling activity this summer at Site 9 without additional mobilization costs.