



United States Environmental Protection Agency
One Congress Street, Suite 1100 (HBT)
Boston, MA 02114-2023

December 21, 2004

Mr. Fred Evans
Naval Facilities Engineering Division - North East
10 Industrial Highway, 5090 Code EV23/FE - Mail Stop 82
Lester, PA 19113-2090

Re: Final, Phase II Screening Level Ecological Risk Assessment of IR Program Site 16
(Creosote Dip Tank and Fire Fighting Training Area), dated November 2004, at the
former Naval Construction Battalion Center (NCBC) Davisville, RI

Dear Mr. Evans:

Pursuant to § 7.6 of the Davisville Naval Construction Battalion Center Federal Facility Agreement dated March 23, 1992, as amended (FFA), the Environmental Protection Agency has reviewed the subject document. EPA is disappointed that the Navy decided to issue a final document prior to gaining acceptance with the responses to EPA comments on the draft document. This is not how the BCT has conducted business in the past and we do not expect this to become business as usual. The FFA §7.2(a) requires the Navy to "meet to informally dispute any unresolved issues"[on the draft prior to issuing the draft-final].

EPA does agree, however, that the Navy has presented a low risk due to sediment exposure by the aquatic environmental receptors with the data evaluated in this document. Therefore, even though EPA does not agree that the Navy has quantitatively demonstrated that the low risk found is only due to current non-Navy sources, EPA is willing to let this final stand with the addition of the enclosed rebuttal as a new Appendix G. Please provide change pages to all recipients. If you have any questions with regard to this letter, please contact me at (617) 918-1384.

Sincerely,

A handwritten signature in cursive script, appearing to read "Christine A.P. Williams".

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

Enclosure

cc: Louis Maccarone, RIDEM
Richard Gottlieb, RIDEM (via e-mail only)
Bill Brandon, EPA (via e-mail only)

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Steve DiMattei, EPA (via e-mail only)
Marilyn Cohen, ToNK
Steven King, RIEDC
Kathleen Campbell, CDW (via e-mail only)
Conrad Leszkiewicz, CDW (via e-mail only)
Kristen Alberti, GF (via-email only)
Jim Shultz, EA Engineering, Science and Technology
Deborah Chisholm, TETRA-TECH NUS, Inc
Robert Tess, ECC (via e-mail only)

EPA Rebuttal on the Site 16 SLERA Appendix E

SUMMARY COMMENTS

Detailed comment is not provided on the new document itself; rather, particular attention was given to EPA comment portion of Appendix E, "Comment Responses to the Draft August 2004 SLERA from USEPA Region 1, RIDEM and NOAA". The Navy responses were reviewed relative to resolution of comments previously provided to the Navy by the USEPA.

Review of the Responses to Comments did not find that the Navy concurred with or accepted any of the interpretations provided by EPA in the comments relative to the August 2004 draft document. The Navy response to comments is generally a reiteration of their previous interpretations contained in the draft report. For the most part, the Navy's responses to comments are somewhat subjective in that their interpretation of the site conditions (harbor flushing), degree of contribution of contaminants from Site 16 to Allen Harbor (including potential magnitude of past site operations), and relative contribution of contaminants from other source areas (storm water drains and marina dock pilings) is not fully supported by analytical data to the extent implied.

While the Navy does provide some support for its argument that past operations at Site 16 did not significantly contribute to contamination of the sediments in Allen Harbor, based on two creosote dipping tank source area samples for poly aromatic hydrocarbons (PAH), there were not as the Navy states "many lines of evidence" to support its conclusions. While the levels of contamination can be argued to be major or comparatively minor, from a risk perspective, the forensic work does not conclusively eliminate the former creosote dipping area, possible storage areas, and Site 16 as a whole, as a metals and PAH source area to the harbor sediments. At best, the issue is still unresolved.

In particular, the Navy is not consistent in its forensic analysis. While it aggressively asserts that the forensic PAH analysis makes its argument, it makes statements relative to the drainage area at Fishing Cove such as runoff from that area "cannot rival" the drainage area contributing runoff to Allen Harbor, yet provides no supporting documentation for that statement. The drainage area for the built up areas around Fishing Cove appear to be much greater than that which enters Allen Harbor at the drain to the southeast corner of the harbor. There has been no quantitative assessment of the likely contribution of storm water discharges and potential contaminant loading from those built up areas to Fishing Cove.

The Navy also attributes a portion of the PAH contribution to Allen Harbor from the marina docks. Again, this is a subjective interpretation that is not backed by analytical data for the preservative used in the pilings, let alone the fact that the distribution around the pilings does not follow a uniform leaching pattern. If the marina dock pilings were contributing significant PAH to the sediment due to leaching, etc. it would be expected that the distribution of PAH would be more uniform around the dock area, which it is not. Therefore, this assumption/interpretation does not seem to be backed up by the available forensic information.

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Also, while runoff discharge from storm drains can impact sediment quality, there does not appear to have been any actual sampling of “first flush” runoff from the storm drain. The contaminants contained in the sediment at those locations were simply assumed to be from storm water runoff from the drain. Normally, contributions from point discharges such as storm drains are assessed by analysis of the initial discharge of storm water (“first flush”) since the initial discharge contains roughly 80% of contaminant loading from the drainage area during storm events. Again, while sediments at the outfall may be totally impacted from storm water discharges, the location of the storm drain still abuts the Site 16 shore line. All of the sediment contaminants cannot be assumed to be impacted only by storm water discharges. In addition, the Navy report describes a 10 acre parking area to the west of Allen Harbor contributing to storm water discharge into the harbor. However, this feature is relatively recent and prior drainage area conditions, during time of likely Creosote and/or Fire Fighting Training Area PAH deposition, were significantly different.

The Navy states that the past creosote dipping operations at the Site 16 locations were not major or typical of commercial creosote dipping operations and references another site location. However, this interpretation is subjective in that “major” may be a relative term. It also conflicts with previous assessments. Inspection of Figure 1-2 clearly depicts a relatively significant area where creosote operations were conducted relative to size of the adjacent Allen Harbor. While the Navy dismisses the scale of past operations due to lack of specific observations on several aerial photographs and anecdotal information provided by Navy personnel, the operations in this area have been described previously in a manner that can be interpreted as “major” at least for periods of time. Section 2.2, Page 2-7 in the “Quality Assurance Project Plan Addendum for Additional Sediment Sampling and Characterization Phase II Remedial Investigation IR Program Site 16,” August 2003 states “Creosote dipping of wood pilings occurred during the late 1960’s in the western portion of the site. The wood pilings were dipped into tanks containing creosote and staged in the area before being **loaded onto ships.**” This does not denote a minor operation as implied by the Navy. The area was also noted to be larger than just the area of the creosote dipping tank shown on the figure and the statement quoted above notes the plural form of tank i.e. tanks. It is likely that significant or relatively major creosote dipping operations were conducted to support the Vietnam War effort.

The Navy also does not adequately address the distribution of PAH compounds shown on Figure 4-8. While there is potential input of PAH to sediments near the storm drain outfall from runoff discharges, there is clearly elevated PAH in sediments along the shoreline directly abutting the Site 16. Nonetheless, the Navy generally dismisses the elevated PAH detected as being related to the marina, even though the distribution of PAH does not follow a pattern that would correlate with such an interpretation. The Navy attributes the higher PAH concentrations at Allen Harbor compared to another highly developed area (Fishing Cove) and the lower PAH concentrations along the northern marina dock as being due to different hydraulics or circulation patterns within the two sites. However, no quantitative information is provided to back up this interpretation.

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While the Navy states that its forensic analysis is proof that there is no correlation of Allen Harbor sediment PAH with Site 16 soil PAH this interpretation is still open to question. The creosote dip tank area appears to have only two samples collected with another two samples being collected in an extended area of interpreted former creosote dipping operations. While the Navy may consider this source area sample analysis robust for comparison with a much larger number of harbor sediment samples, EPA does not. Also, the Navy states that it's forensic analysis would not be affected by biogeochemical processes. However, there is also no mention of whether other processes such as photolysis or pyrolysis would have affected the chemical structure of PAH released on site as potentially occurred through reported burning operations at the adjacent former fire training area. In addition, as noted by EPA in comments relative to the QAPP there is no data provided to be certain that the sediment interval sampled reflected the zone of deposition from past erosion of soil from Site 16 to the adjacent harbor sediments.

GENERAL COMMENT

- Comment 1:** *Comment noted.* However, EPA does not concur with the Navy that "many lines of evidence support its conclusions." Elevated PAH in harbor sediment relative to developed background environment (Fishing Cove) exists. Review of the final report still results in the observation that the distribution of PAH in harbor sediment is not explained by roadway runoff, marina docks, or poor circulation in the harbor.
- Comment 1a:** *Comment noted.* EPA still notes that only two soil samples (Source 1-1 and 1-2) appear to have been collected in the creosote dipping area. This is still deemed by EPA to be insufficient to assess the chemical structure of PAH compounds that may have been historically used in the creosote dipping process. Also, while the Navy repeatedly states that the marina dock pilings are a source for PAH in the harbor there is no accompanying "source" analysis for this interpretation.
- Comment 1b:** *Comment noted.* Contrary to the Navy's current interpretation, past text supplied by the Navy suggests that a major creosote dipping operation did occur at this site. Sufficient operations were conducted such as to provide loading onto ships in order to support military operations, likely during the Vietnam War. This suggests significant quantities of creosote and major dipping operations were conducted. The Navy has also stated that this facility was used to support the entire Atlantic and Caribbean theaters. The Navy's dismissal of the size of the operation, especially relative to the size of Allen Harbor appears to trivialize past operations that were documented to have been conducted at Site 16.
- Comment 1c:** *Comment noted.* However, aside from the fact that there appear to have

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been only two soil samples collected in the creosote source area, the discussion of mechanisms that could impact the chemical signature is only partially complete. Exposure to direct sunlight (photolysis) and combustion may also affect the chemical signature of PAH at Site 16 compared to sediment environments. Specifically, PAH compounds at the site have been exposed to direct sunlight and burning operations were conducted at the Site 16 area in the immediate vicinity of the creosote dipping tanks. Do these environmental variables have the potential to change the chemical structure of PAH?

Comment 1d:

Comment noted: The text in this response is confusing in that it does not address the distribution of PAH observed and depicted on Figure 4-8. While there are likely contributions from storm drain input, the marina docks have not been shown to be a contributor to PAH in sediment in the harbor. The magnitude of the storm drain contribution may also be overstated (see comment 1e). Also, contrary to what is implied in this response, the elevated concentrations of PAH along the shoreline do, in fact, imply contribution from the Site 16 area, logically via from deposition as a result of erosion from the Site 16 point and non point locations. Also, the response appears to allocate elevated PAH to the marina dock and lump the observed PAH distribution to storm drain discharge, marina pilings leaching, and seemingly grudgingly, possibly some input from Site 16 into a general "normal" pattern of deposition. This interpretation is not supported by EPA. The pattern displayed can just as readily be interpreted as deposition from the Site 16 area, including PAH in sediment at the southeast corner of the harbor which is presumed in this report to be totally from storm drain deposition.

Comment 1e:

Comment noted. Nonetheless, the text provided in this response is a somewhat convoluted interpretation of explaining the elevated PAH concentrations in Allen Harbor relative to another highly, (and possibly more highly) developed site, i.e. Fishing Cove. The text of the response states that the storm drain into Allen Harbor receives runoff from a 10 acre parking lot to the west of Allen Harbor/Site 16. However, this parking lot is a recent feature and the area previously has been buildings and unpaved rail yard area. Further, while the response subjectively states that the Fishing Cove drainage area cannot "rival" this area, no drainage area for Fishing Cove is provided. Review of Figure 2-6 shows that Calf Neck and Shore Acres encompass far greater developed areas, likely in excess of 50 acres. There is only a qualitative, subjective discussion as to the degree of circulation in both locations with Fishing Cove being interpreted to have higher circulation. It is recommended that additional quantitative data be

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supplied to document the hydraulic characteristics of Fishing Cove and Allen Harbor, the chemical composition of preservatives used for the marina dock pilings in Allen Harbor, and the degree of development, i.e. contributing paved surface area, etc. that contributes runoff to each area, if the Navy is intent on disproving any contribution to the low risk due to the contaminant exposure by the aquatic environmental receptors.

Comment 2: *Comment noted:* It is suggested that chemical quantification of the degree of leaching of PAH from the Allen Harbor marina docks be provided to justify the interpreted contribution of PAH from that area to the harbor, if the Navy is intent on disproving any contribution to the low risk due to the contaminant exposure by the aquatic environmental receptors. The observed PAH distribution pattern shown on Figure 4-8 does not support the Navy's interpretation that the marina docks contribute in a significant way to PAH deposition in the harbor. While road runoff has likely provided some contribution to sediment PAH loading in Allen Harbor, this appears to be overestimated and the degree of contribution from the Site 16 area appears to be underestimated. There is no quantitative storm water drainage assessment for Fishing Cove (likely over 50 developed acres) and the area draining into Allen Harbor of the stated 10 acres, including recent time when the majority of that area was not paved.

Comment 3: *Comment noted.* No response.

Comment 4: *Comment addressed.*

Comment 5: *Comment addressed.*

Comment 6: *Comment addressed.*

SPECIFIC COMMENTS

Comment 7: *Comment addressed.*

Comment 8: *Comment not addressed.* There is a contribution of cis-1, 2 DCE to the harbor. While the discharge may be intermittent, because the sample location lies directly down gradient of a known plume of elevated organic compounds (CVOC) it cannot be dismissed as "an aberration." Further, the statement that "if it is a release into Allen Harbor, is not representative of a wide discharge" is not justified. Because there is no regular, comprehensive monitoring program for groundwater discharge into the

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harbor there is no way of making this determination. Again, EPA requests the Navy provide a plan for determining the discharge location of the OU-9, (Creosote Dip Tank and Fire Fighting Training Area-site 16) TCE plume and it's associated risk to human health and the environment.

Comment 9: *Comment addressed.*

Comment 10: *Comment addressed.*

Comment 11: *Comment addressed.*

Comment 12: *Comment addressed.*