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LETTER AND U S NAVY RESPONSE TO U S EPA REGION I COMMENTS REGARDING DRAFT SAMPLING AND ANALYSIS PLAN FOR SITE 19 NS NEWPORT RI
08/08/2011
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C-NAVY-08-11-4523W

August 8, 2011

Project Number 112G02747

Ms. Kymberlee Keckler, Remedial Project Manager
U.S. EPA Region I
5 Post Office Square, Suite 100
Boston, Massachusetts 02114-3912

Reference: CLEAN Contract No. N62470-08-D-1001
Contract Task Order No. WE61

Subject: Responses to Comments on Response Summary
Draft Sampling and Analysis Plan, IR Site 19, Former Derecktor Shipyard (Offshore),
Naval Station Newport, Newport RI

Dear Ms. Keckler:

On behalf of Ms. Winoma Johnson, US Navy NAVFAC Mid-Atlantic, I am providing to you attached the response to comments on your letter dated August 1 regarding the UFP SAP for the off-shore portions of Site 19 (May 2011). Based on these responses, the Sampling and Analysis Plan will be revised and published with the intention of beginning field work prior to the end of August.

If you have any questions, please do not hesitate to contact me at 978-474-8434.

Very truly yours,

Stephen S. Parker, LSP
Project Manager

Enclosures

c: D. Barclift, NAVFAC (w/encl.)
P. Crump, (w/encl.)
K. Finkelstein, NOAA (w/encl.)
A. Gavaskar, NAVFAC (w/encl.)
G. Glenn, TtNUS (w/o encl.)
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File 112G02747-8.0 (w/encl.), 3.1 (w/o encl.)

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Response to Comments From USEPA
Sampling and Analysis Plan for the Data Gaps Investigation
Site 19, Former Derecktor Shipyard Marine Sediment, NETC
Comments Dated 8/1/11

GC2: 2) The response is inconsistent in stating that TOC data will be collected to evaluate bioavailability of chemical constituents but that risk assessment is not a goal of this investigation because bioavailability is an integral component of risk assessment. EPA does not concur with the Navy's decision to limit TOC sampling as proposed.

Response: The first part of the comment is correct in that the TOC is used to evaluate bioavailability of chemical constituents, and typically this is done in the risk assessment step. TOC analysis for this Data Gaps Investigation was requested by EPA, but because it is not the objective to recalculate risk at this site, the Navy did not agree to include TOC at the outset. However, as a compromise, the Navy included TOC in the SAP for 50% of the surface samples and 20% of the subsurface samples. It is still the Navy's position that analysis of TOC in every sample is excessive, and in the interest of moving this project forward, it is proposed that TOC be analyzed in all the surface sediment samples to be collected in the Data Gaps Investigation.

GC3: EPA is concerned that only a one-foot core is planned for the radioisotope analysis and that nine samples will be collected for analysis from this core. Collecting a longer core would be more appropriate and reliable. Assuming a sediment deposition rate of one centimeter per year, a one-foot core could reveal up to 30 years of deposition history. However, there are potential problems in relying on the one-foot core. First, there is a history of compaction and also loss of sediment at this site, either of which will make analysis of the results difficult. (EPA assumes that multiple attempts to collect a complete and accurate core will be made.) While these effects would also exist with a longer core, there would be more material available to analyze that could result in the loss of fewer samples. Second, a greater deposition rate would result in a shorter history for a one-foot core that could result in not achieving the project objectives. (EPA has previously noted that deposition rates are likely quite different with and without the aircraft carriers.) Third, disturbance of the sediment from ship traffic could totally confound the results for a one-foot core, whereas, a greater history would be revealed with a longer core even if sediment within the top one foot is disturbed. EPA strongly recommends that the Navy collect a deeper core for radioisotope analysis.

Response: The comment above identifies three issues related to the proposed collection of one-foot cores. The first is a history of compaction and sediment loss at the site. While it is not clear, it is assumed that this is meant to be related the post-depositional environment, and not compaction due to core collection. Compaction and sediment loss would both serve to expand the time interval that would be captured by a one-foot core. If a 1cm/yr accumulation rate is assumed, and compaction due to pore water loss reduces the thickness over time, the older layers would be thinner than the younger layers, and it would be possible for 50+ years of sediment to be recovered in a 30cm core. Compaction and loss during coring will be compensated for as described in Appendix F of the SAP.

The second item mentioned is that a depositional rate of more than 1 cm/yr may be possible, thereby reducing the time period captured by a one-foot core. While it is true that a longer core will result in the capture of a greater time span, it is not necessary to capture the entire post-dredging period in order to generate an estimate of sediment accumulation rates. As mentioned above, compaction due to pore water loss will reduce the thickness of the annual deposits so that a 1-foot core could be sufficient for an accumulation rate of greater than 1cm/yr.

The final item is that "disturbance of the sediment from ship traffic could totally confound the results for a one-foot core". The recent multi-beam survey revealed no scour or sediment disturbance as a result of the carrier removal. Given the depth of the carrier and the tugs required to move it, it is not likely that other ship traffic has been significantly altering the bottom since the last dredging event occurred. Bioturbation and physical energy from tides and storms may disturb the upper few centimeters of the core, but it is not anticipated that the disturbance would be significant.

Therefore, a preliminary core will be collected and visually inspected to determine if there are bedding layers present that indicate long term deposition, or a thick layer of what may appear to be disturbed material. The core for radioisotope analysis will be collected adjacent to this, and will penetrate one foot into what is expected to be bedded sediment. Final cores selected for radioisotope analysis may be one foot or may be longer as appropriate.

ATTACHMENT A

Page	Comment
SC5. p. 37, §11.4	*The revised sampling plan relocates samples originally placed under the existing aircraft carrier to a location closer to the existing one. This should result in the collection of appropriate samples assuming the locations can be maintained.*

Response: Comment noted.

SC6. p. 38, §11.4

a) Zinc and copper were not carried forward as COCs for the risk assessment only because they were not the primary risk drivers because of other co-located COCs in higher concentrations. If this investigation determines that zinc and copper concentrations are significant at some locations, they cannot be dismissed if they result in a significant risk. This is consistent with earlier agreements.

Response: Comment noted.

b) If retained, the statement should read that it is Navy's expectation that the data will be sufficient to support remedy selection and design. EPA believes that the results of the data gap investigation will determine whether there are sufficient data to support remedy selection and design without the need for further investigation. As EPA has stated in previous letters and in our October 27, 2010 meeting, the data from this study will not be sufficient to

determine whether natural recovery is occurring.

Response: The purpose of this investigation is to determine the appropriate response action for this site. As stated in the conceptual plan dated 12/15/11, "Data will be collected to support remedial decision-making in portions of the study area that are affected by site related contaminants. Data will be adequate to support remedy selection and design. These actions could include, but my not be limited to: removal (dredging), cover (full cap or thin layer cap), monitored natural recovery, and/or institutional controls. **These actions will be fully evaluated in either an EECA or FS.**"

SC10. p. 58, Worksheet #18 Please clarify which subsurface intervals will be sampled at each location.

Response: The requested information is presented in Note 2 of the table.

SC11. p. 64, Worksheet #19 b) Please respond to this comment. For the TOC holding time, the 1988 Lloyd Kahn method specifies 14 days (not 28 days) for analysis if held at 4°C. Please correct the holding time proposed.

Response: The comment is noted and the correction will be made.

SC13. Figure 11-1 b) Per General Comment 1-1, EPA added five additional sampling locations around Pier 1 to Figure 17-1 (attached), which also impacts Figure 11-1. Note that neither location AD1 nor X1 was included because the focus of the additional locations was to evaluate metals contamination identified in Army Corps of Engineers sampling. One additional location was added to Pier 2.

Response: The addition of three new sample stations at Grid Cells AB11, AB15, and Y3 is acceptable. The addition of zinc and copper to three other existing stations AB24, AE26 and C9 is acceptable. The revised SAP will be updated to accommodate these stations and analyses.

Comment on GEL Laboratories Quotation Attachment in Navy's RTCs:

Technical Note #6 states that "GEL will determine Polonium-210 by Alpha Spectroscopy and assume equilibrium with Lead-210." Lead-210 has a half-life of 22.3 years but Polonium-210 has a half-life of only 138 days. Consequently, any Polonium-210 deposited in sediment more than approximately 2.5 years ago (7 half-lives) will likely be undetectable, whereas Lead-210 would be detectable for up to about 150 years. Furthermore, this technical note is inconsistent with the previous description of the radioisotope analysis methodology to be used that stated that Lead-210 would be the analyte of interest. Please clearly describe the methodology proposed for radioisotope analysis and why it is the most appropriate analysis for dating the sediment layers.

Response: The text and methods are correct as stated: There is a constant supply of Polonium-210 in the sediment. Lead-210 decays (t-1/2 = 22yrs) to Bismuth 210 (t-1/2 = 5 days) to Polonium-210 (t-1/2 = 140 days). Within 2 years, polonium-210 (Po-210), the granddaughter of Pb-210, is in secular equilibrium (i.e. the same activity) with the Pb-210. This means that Po-210 is produced and then decays at roughly the same rate that Pb-210 decays. The alpha emitting Po-210 is measured because it provides more accurate estimates of the Pb-210 than will direct measurements of Pb-210. Since Pb-210 and Bi-210 undergo gamma decay, and Po-210 undergoes alpha decay, the quoted statement that the lab will determine Polonium-210 by Alpha Spectroscopy and assume equilibrium with Lead-210 is exactly correct.