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November 30, 1995

Commanding Officer
Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street (Bldg. N-26)
Norfolk, Virginia 23511-2699

Attn: Mr. James Harris
Code 18225

Re: Contract N62470-89-D-4814
Navy CLEAN, District III
Contract Task Order (CTO) 0269
Draft Final Remedial Investigation (RI)
Report and Review Comment Responses, Building LP-20 Site
Naval Base, Norfolk, Virginia

Dear Mr. Harris:

Baker Environmental, Inc. (Baker) has completed preparation of the Draft Final RI Report for the above-referenced CTO. As requested, four (4) copies of the report are enclosed for your review. In addition, one copy of the report has been forwarded to Ms. Dianne Bailey at Naval Base, Norfolk. Copies have also been submitted to the U.S. Environmental Protection Agency (USEPA), Commonwealth of Virginia Department of Environmental Quality (VDEQ), OHM Remediation Services Corporation, and Restoration Advisory Board members as noted below.

The Draft Final RI report has incorporated the review comments provided by the Activity (COMNAVBASE) and LANTDIV. COMNAVBASE and LANTDIV comments and associated Baker responses are provided as Attachment A and Attachment B, respectively. Attachment C presents responses to Navy Environmental Health Center (NEHC) comments.

Baker appreciates the opportunity to provide continued technical support to LANTDIV on this important project. Should you have any questions or comments, please do not hesitate to contact me at (412) 269-2026 or Mr. Gordon Ruggaber at (412) 269-4697.

Sincerely,

BAKER ENVIRONMENTAL, INC.

David J Mamrose

David J. Mamrose, P.E.
Project Manager

DJM/lq (With Enclosure C ONLY)

cc: Ms. Karen Wilson, Code 183(Letter Only)
Mr. Rollie Burford, Code 02112 (Letter Only)
Ms. Dianne Bailey, COMNAVBASE Code N-42B (One Copy)
Mr. David Fulton, OHM Remediation Services (One Copy)
Mr. Robert Thomson, USEPA (Two Copies)
Mr. Dinesh Vithani, VDEQ (Two Copies)
Restoration Advisory Board Members (See Attached)

ATTACHMENT C

Response to Navy Environmental Health Center Comments
Draft Remedial Investigation Report
Building LP-20 Site
Naval Base, Norfolk, Virginia
Contract Task Order 0269

Review Comments and Recommendations

1) Page 8-3, Section 8.2.1, "COPC Selection Criteria."

Comment: There is no discussion in the text of any background samples taken at or nearby this site. Reference (b) states that "background sampling is conducted to distinguish site-related contamination from naturally occurring or other non-site-related levels of chemicals and should be collected from each medium of concern." A significant number of samples should be collected in order to statistically calculate the risk of background so that it could be compared to the on-site risk.

Recommendation: Provide information on any background samples and locations. Discuss adequacy of background sample site selection on the basis of uniform site characteristics (e.g., geological, hydrogeological, analytical results).

Response: Because a vast portion of the facility was constructed of dredge material, "Background" data is not available for Naval Base Norfolk. With the exception of a deep groundwater sample, no upgradient data was collected. For deep groundwater, the upgradient data was not used as a conservative measure.

2) Page 8-6, Section 8.2.2.1, "Subsurface Soil"
Page 4-3, Section 4.2, "Subsurface Soil Investigation"

Comment: The text on Page 4-3, states that "the first soil sample obtained for laboratory analyses was collected from 0 to 0.5 feet (if the boring was located in an unpaved area) or at a depth no greater than three feet (if the boring was located in a paved area)." The collection of soil surface samples at 0 to 0.5 feet is consistent with the Environmental Protection Agency (EPA) guidance such as reference (b). However, it is inconsistent with the Agency for Toxic Substance Disease Registry's (ATSDR) guidance, reference (c) which defines surface soil samples from depths of 0 to 3 inches.

Recommendations: To facilitate correlation between public health assessments and health risk assessments and to minimize costs associated with redundant sample collection and analysis, we recommend the adoption of "0 to 3 inches" as the norm for surface soil sample collection for any future site soil sampling investigation and/or monitoring efforts that may be undertaken. The adoption of this sampling protocol will not be in controversy with current EPA guidance, since reference (b) does direct that surface soil samples should be collected at "the shallowest depth practical" to accurately reflect potential surface soil exposure pathways.

Response: This recommendation will be considered for future sampling events at Naval Base Norfolk.

3) Page 8-8, Section 8.2.2.3, "Shallow Groundwater"
Page 8-3, "Summary of COPC Selection Shallow Groundwater"

Comment: In Table 8-3, iron is listed as exceeding the Virginia Drinking Water Standards and the Federal Safe Drinking Water Advisory criteria in 21 out of 21 samples. However, iron is not retained as a Chemical of Potential Concern (COPC). In the text on page 8-9, there is no mention of iron detected or exceeding groundwater criteria or the reason for its elimination as a COPC.

Recommendation: Clarify whether iron is detected or exceeds groundwater criteria. If iron does exceed groundwater criteria, provide information on why it is not considered a COPC for this site.

Response: Iron was not considered as a COPC because it is an essential nutrient. Also, there are no toxicity factors available for iron to be utilized in a quantitative risk assessment.

4) Page 8-11, Section 8.2.2.4, "Deep Groundwater"

Comment: Antimony and cadmium were detected in the dissolved (filtered) deep groundwater samples, but were not detected in the total (unfiltered) deep groundwater samples. Theoretically, the inorganic metals should have been detected in the unfiltered samples at a higher concentration than in the filtered samples. There is no discussion of the reason (i.e., sampling technique, contamination, well construction material) why antimony and cadmium were found in the filtered samples and not also in the unfiltered samples.

Recommendation: Discuss the reason(s) why antimony and cadmium were not detected in the total groundwater samples.

Response: There are no adequate reasons as to why this occurs; therefore, none were cited.

5) Page 8-21, Section 8.3.4.1, "Concentrations Used on the Estimate of Exposure"
Page 8-46, Section 8.6.3, "Exposure Assessment"

Comment: The text on page 8-46 states that "the use of a Reasonable Maximum Exposure (REM) approach, designed as not to underestimate daily intakes, was employed throughout this risk assessment." An EPA Deputy Administrator memorandum dated 26 February 1992 ("Guidance on Risk Characterization for Risk Managers and Risk Assessors") and an EPA publication dated May 1992 ("Supplemental Guidance of RAGS: Calculating the Concentration Term") indicates that a single number used to represent the health risk to an individual or population may hamper the risk's manager's ability to make an informed risk decision. Although the guidance discusses the concept at length, the bottom line is that risk estimates for both the upper bound (RME) and average case should be presented. We fully endorse the EPA's guidance for calculating quantitative risk estimates for the average case as well as the RME case.

Recommendation: Future remedial investigations should provide quantitative risk estimates for the average as well as the RME case.

Response: Quantitative risk estimates for central tendency exposure have been included in the current draft final report.

6) Page 8-23, Section 8.3.4.1, "Concentrations Used in the Estimate of Exposure"

Comment: The text states that "for current/future on site workers and future construction workers, organics and unfiltered inorganics COPCs were used to assess potential public health impacts. For future residents, organics and filtered (dissolved) inorganic COPCs were used." We strongly concur with the collection of both filtered and unfiltered groundwater samples. Reference (b) states that "unfiltered groundwater data should be used to estimate exposure concentrations."

Recommendation: Justify the use of filtered inorganics for future residents.

Response: Residential exposure to filtered groundwater is the most likely exposure scenario. It assumes that unfiltered groundwater will be filtered before residential use. This approach has been used in other risk assessments by Baker Environmental, Inc. and has been accepted by USEPA Region III and the Virginia Department of Environmental Quality.