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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

September 18, 2001

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: Basewide Groundwater Operable Unit Remedial Investigation Report at the Naval Submarine Base - New London in Groton, CT

Dear Mr. Evans:

Thank you for the opportunity to review of the *Basewide Groundwater Operable Unit Remedial Investigation Report* The revised RI report includes responses to EPA's June 11, 2001 comments.

The revised RI report was reviewed for incorporation of revisions and additions agreed to in the various responses to comments and conference calls regarding the RI. With a few exceptions, Navy has carried through with the changes agreed in the comment resolution process. Text and figures have been modified in accord with the agreements reached. Agreed to revisions and additions have been made and appear to be adequate and appropriate.

The Responses to Comments and the subsequent discussions left a few issues open, with Navy stating that the issues would be addressed in ongoing work. In particular, further work to delineate contamination associated with the newly discovered disposal area north of Stream 5 in Site 3 and the detection of TCE in the single downgradient monitoring well at the SASDA (Site 15) is deferred by Navy to data-gap investigations to be conducted in developing Feasibility Studies for these sites. All stakeholders should be aware of these agreements going forward. Detailed comments are provided in Attachment A.

With regard to the response to comment 10 (page vi), although it is not EPA's policy to require quantification of residential children's exposures, EPA has promoted the awareness of children's health threats from toxins in the environment and established a new national agenda to more comprehensively protect children from such risks. According to EPA Region I's Risk Update #5 (September 1999), children are known to differ from adults with respect to the amount and types of exposure, physical sensitivity and vulnerability to chemical agents, and the likelihood of lifelong effects. There has been a misconception that children are smaller adults, therefore, children's exposures to environmental toxins would be proportionately smaller than those for

adults. An April 1997 Executive Order on children's health emphasized that protection of the environment is critical to children's health. Thus, EPA strongly recommends the approach of quantifying risks for residential children's exposures on site-specific conditions (*see also* response to comment 96, page xxxvii).

For the reasonable maximum exposure scenario of residential children consuming drinking water, the default exposure parameters that EPA has used for other Superfund sites are: ingestion rate of 1 L/day, body weight of 15 kg, exposure frequency of 350 days/year, exposure duration of 6 years.

On a minor note, no response was provided for EPA's comment 126 (page xliv). Please address this comment.

I look forward to working with you and the Connecticut Department of Environmental Protection to protect the groundwater resources of the Naval Submarine Base. Please do not hesitate to contact me at (617) 918-1385 should you have any questions or wish to arrange a meeting.

Sincerely,

Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachment

cc: Mark Lewis, CTDEP, Hartford, CT
Dick Conant, NSBNL, Groton, CT
Chau Vu, USEPA, Boston, MA
Jennifer Stump, Gannett Fleming, Harrisburg, PA
Corey Rich, Tetra Tech-NUS, Pittsburgh, PA

ATTACHMENT A

Page	Comment
p. 3-37, §3.4.1	The Response to Specific Comment 11 specifies a revision to text including modification of the term describing soil samples collected from 0 to 10 feet in historic work as "*surface*/subsurface." This change was not made in the revised manuscript where the discussion appears at the top of page 3-37. Does this represent a decision not to introduce this terminology, or is this an oversight in the editing?
p. 4-16, §4.2.3.3	The discussion added in response to Specific Comment 55 is a good description of the process of dissolution of iron oxide coatings and release of sorbed metals under reducing conditions, and its possible role in transport in various sites at NSBNL. The revised text states that "... the number of sorption sites for dissolved metals will decrease, thereby lowering the ability of the aquifer to retard metal migration." While the oxides in the system are indeed being removed by dissolution, it might be noted that the time scale for achieving significant changes in the overall abundance of sorption sites and having an impact on transport processes may be very long. A comparison of the mass of iron present in solid phases (*e.g.*, FeOOH via selective extraction) with that present in solution (Fe(II)) would likely show that the former is orders of magnitude greater than the latter. Thus, with slow transport rates via advection and dispersion, the role of the iron oxides may persist indefinitely for practical purposes.
p. 5-12, §5.3.4.2	The Response to Specific Comment 68 stated that text would be added that discuss the impact of the cap on the site hydrology. This change does not appear to have been made.
p. 5-28, §5.5	The text added to address redox controls on transport of inorganics is a welcome improvement to the fate and transport discussion. The original comment (Specific Comment 73) requested discussion of site-specific data. While this is done to some extent (*e.g.*, the discussion of correlations between arsenic, barium, and iron in groundwater), the paragraph remains generic. Having set the stage with a discussion of the controls on arsenic mobility, for example, the paragraph would be better integrated with the section on Site 2 if it were to review the pH and ORP conditions found in the field investigation, and what those imply for the broad generalizations given. For example, the discussion mentions arsenic mobility in "slightly oxidizing," "more reducing," and "intermediate" environments, as well as "mildly acidic" conditions. What do the field data from this particular site

suggest are the predominant conditions, and in what category (or categories) does the site fall?

p. 6-7, §6.2.1.9

The Response to Specific Comment 85 (June 11, 2001) provides a paragraph discussing monitoring well 2DMW11D (presumed destroyed during remedial activities) to be added to section 6.2.1.9. The change appearing in the revised text consists of a single sentence noting that the well was destroyed, but omits the discussion of historical analyses from the well. That discussion is important, because it provides some justification for not being concerned about the loss of this well with respect to characterization, as well as arguments in support of the decision not to replace the well. Please check to verify that all explanatory text intended for this section is included.

p. 8-11, §8.5.1

Please change "... TCE was not detected in any size 20 monitoring wells" to "... TCE was not detected in any Site 20 monitoring wells."

p. 10-9, §10.3.4

Text has been added in response to the request to offer arguments in support of the claim that TCE observed at 8MW2 originates offsite at the Fusconi dry cleaner. The text is significantly improved in this regard, and the scenario developed (*i.e.*, that TCE at 8MW2 represents an overburden portion of the plume that may have followed the storm-drain route) is quite plausible. While this conceptual model is consistent with observations and physically plausible, it is noted that the link between the TCE at 8MW2 and the dry cleaner source is still not supported by field data establishing continuity along the purported transport pathway. If the dry cleaner plume investigation is ongoing or is required to proceed to further work, it should be required to delineate the downgradient impacts more completely to eliminate any lingering questions regarding the extent of the plume. Additionally, EPA's earlier requests to sample deeper wells in the tank farm area remains.