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RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT COMMENTS TO
DRAFT TECHNICAL MEMORANDUM FOR SUPPLEMENTAL REMEDIAL INVESTIGATION
SITE 8 WITH TRANSMITTAL NS NEWPORT RI

01/24/2011

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

File: G02124-3.1

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RHODE ISLAND

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462

January 24, 2011

Edward Corack, P.E.
NAVFAC MIDLANT (Code OPTE3)
Environmental Restoration
Building Z 144, Room 109
9742 Maryland Avenue
Norfolk, VA 23511-3095

Re: Draft Technical Memorandum, Supplemental Remedial Investigation
Site 08, NUSC Disposal Area
Naval Station Newport, Newport, Rhode Island

Dear Mr. Corack,

The Office of Waste Management at the Rhode Island Department of Environmental Management has conducted a review of the "*Draft Technical Memorandum, Supplemental Remedial Investigation*", dated December 2010 for Naval Undersea Systems Center Disposal Area (NUSC Site 08), Naval Station Newport, located in Newport, Rhode Island. As a result of this review, this Office has generated the attached comments on the "*Draft Technical Memorandum, Supplemental Remedial Investigation*".

If you have any questions, in regards to this letter, please contact me at (401) 222-2797, extension 7148 or by e-mail at gary.jablonski@dem.ri.gov.

Sincerely,

Gary Jablonski, Principal Engineer
Office of Waste Management

cc: Matthew DeStefano, RIDEM
Richard Gottlieb, RIDEM
Ginny Lombardo, USEPA Region I
Deb Moore, NETC, Newport, RI
Stephen Parker, Tetra Tech

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- 1. Page 2-4, Section 2-4, Construction of Monitoring Wells; 1st paragraph, 4th sentence.**

“Based on the observed yields, it was concluded that high-yielding fracture set (likely corresponding to the fracture set with the dissolved VOC plume) was encountered, and drilling deeper was not necessary”.

The above sentence is unsubstantiated based on the current data due to the fact that in bedrock high-yielding fracture zones do not always correspond to contaminate migration. Please eliminate the following text from the sentence above in the report: *“(likely corresponding to the fracture set with the dissolved VOC plume)”*.

- 2. Page 2-5, Section 2-5, Groundwater Sampling.**

Please note in the report how groundwater elevations were measured, that is, whether the groundwater elevation used in the contours was obtained before or after purging the well, whether an electric probe, or oil/water probe, was employed, etc.

- 3. Page 2-9, Section 2-6, Sediment and Surface Water Sampling; 2nd Paragraph.**

The report notes that the surface water sampling requested by RIDEM, could not be collected because Deerfield Creek was dry on 12 August 2010. Please explain why the RIDEM requested surface water samples were not collected during the first round of surface water sampling performed on 25 July 2010. RIDEM's comments were dated 8 June 2010 and the surface water sampling was performed on 25 July 2010, approximately 47 days after RIDEM's dated request.

- 4. Page 3-2, Section 3.1.1 North Meadow – Groundwater; 4th paragraph.**

There appears to be a typo in the following sentence: *“TCE concentrations decreased over time in well MW-02B, from 1,500 µg/L in 2003 to 190 µg/L in 2008, and then to 150 µg/L in 2010.”* Please change MW-02B to MW-03B.

- 5. Page 3-2, Section 3.1.1, North Meadow Groundwater; 4th paragraph.**

This section states that the concentration of certain VOCs decreased over time in MW 02B (note well should have been listed as MW 03B) between the Phase I RI and the Supplemental RI. This and subsequent sections of the report then discusses biodegradation and the associated spatial distribution of anaerobic conditions and whether degradation is occurring in all wells. Please include in the report a table which contains the analytical results for the individual wells over the various sampling rounds with their associated sampling depths.

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6. Page 3-3, Section 3.1.2, North Meadow Soils; last sentence.

"No continuing source in this area is indicated by these results."

Contrary to this statement, based upon the groundwater data collected to date at the site it appears that a continuing source could potentially be in the vicinity of monitoring well (128B) with the highest detection of TCE. Two additional soil samples collected in this large area is not sufficient to make this conclusion. Please delete the above sentence from the report.

7. Page 3-3, Section 3.2.1, Building 179 Area Groundwater, Figure 3-1.

Figure 3-1 depicts the groundwater contours for the site. Based upon the information presented it appears that the legs of the 50, 45, and 40 contours west of the stream should not be as steep to the north east as presented and instead include a northwestern component. Please review these contours and modify the figure, if necessary.

8. Page 3-4, Section 3.2.1, Building 179 Area Groundwater; last paragraph.

This paragraph states "...*anaerobic biodegradation is likely supported in localized areas*". However, only one of the three wells tested in this area supported this statement. Please delete or revise the last paragraph from the report, accordingly.

9. Page 3-6, Section 3.3.1, Building 185 Complex Soils.

Figure 3-8 is referenced in this section of the text but was not found with the figures. Please provide Figure 3-8.

10. Page 3-6, Section 3.3.1, Building 185 Complex Soils

Soil Boring B185A1-SB3 had a jar head space reading of 1,042 ppm. This reading was substantially higher than the other borings collected in this area. Despite the high jar head space reading the concentration of contaminants in this boring were similar or less than those observed in other borings which had lower jar head space readings. Please add to this section a discussion in regards to these discrepancies. This discussion should also note that this sample emitted a petroleum odor (this was the only petroleum odor noted in the boring logs) and should consider whether the observed PID readings were due to either TPH or Otto Fuel.

11. Page 4-1, Section 4-1, Derivation of Screening Criteria; 1st Paragraph.

This section notes that as part of the elimination process, soil data was compared to background values from the base wide and NUSC Background Studies. In order to

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perform a background assessment, data from comparable soil types must be employed. Please provide a map of the soil types for the NUSC complex, as well as, the soil types used in the background assessment and the values employed in the assessment.

As you are aware, under "Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites" (EPA 540-R-01-003 OSWER 9285.7-41 September 2002) EPA guidance (EPA 540-R-01-003) calls for retaining rather than eliminating chemicals based on background: "In RAGS, EPA cautioned that eliminating COPCs based on background (either because concentrations are below background levels or attributable to background sources) could result in the loss of important risk information for those potentially exposed, even though cleanup may or may not eliminate a source of risks caused by background levels. In light of more recent guidance for risk-based screening (EPA, 1996; EPA, 2000) and risk characterization (EPA, 1995c), this policy recommends a baseline risk assessment approach that retains constituents that exceed risk-based screening concentrations. This approach involves addressing site-specific background issues at the end of the risk assessment, in the risk characterization. Specifically, the COPCs with high background concentrations should be discussed in the risk characterization, and if data are available, the contribution of background to site concentrations should be distinguished. COPCs that have both release-related and background-related sources should be included in the risk assessment. When concentrations of naturally occurring elements at a site exceed risk-based screening levels, that information should be discussed qualitatively in the risk characterization."

Please retain contaminants which exceed risk based screening numbers in the risk assessment as they attribute to the overall risk at the site.

12. Page 4-1, Section 4-1, Derivation of Screening Criteria & Table 4-1.

The report employed EPA RSL equivalent to a lifetime cancer risk of 10^{-6} for carcinogens and a HQ of 1 for non carcinogens. Please add to this section and Table 4-1 RIDEM DEC and leachability criteria.

13. Page 4-5, Section 4-3, Comparison of Concentrations to Exposure Point Concentrations Used in the Human Health Risk Assessment, Tables 4-13-4-17.

This section discusses the exposure point concentrations and the overall risk for contaminants of concern in the RI and the Supplemental RI. In certain cases the risk number value is provided, in other cases the report simply states that the risk falls within a certain range. Tables 4-13-4-17 contain the exposure point concentrations from the RI and the Supplemental RI. Please include in these tables, (or submit separate tables) the corresponding risk values. These tables should be submitted in response to comments prior to the submission of the draft final report.

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14. Page 4-5, Section 4-3, Comparison of Concentrations to Exposure Point Concentrations Used in the Human Health Risk Assessment.

The report compares the overall risk in the Phase I RI and the Supplemental RI to the acceptable EPA risk ranges. Please include a comparison to the RIDEM acceptable risk ranges (10^{-6} for individual, 10^{-5} cumulative). This information should be submitted in response to comments prior to the submission of the draft final report.

15. Page 4-5, Section 4-3, Comparison of Concentrations to Exposure Point Concentrations Used in the Human Health Risk Assessment.

This section of the report notes how risk at the site compares to various scenarios, residential, construction, etc. Please be advised that the residential and recreational scenarios are equivalent under RIDEM Regulations. Therefore, exceedances of residential should also be considered exceedances of recreational.

16. Page 4-5, Section 4-3, Comparison of Concentrations to Exposure Point Concentrations Used in the Human Health Risk Assessment.

The report notes the actual risk values or the ranges for exposure to the various media. Please indicate whether the quoted ranges are cumulative or represent individual contaminants. Under RIDEM Regulations, the cumulative range should be evaluated. If this was not done please provide this information in the response to comments.

17. Page 4-9, Section 4-5, Summary.

This section contains a table delineating which scenarios exceed EPA acceptable risk range. Please include in this table or a separate table depicting exceedances of RIDEM acceptable risk range (10^{-5} cumulative, 10^{-6} individual, HQ of 1) employing RIDEM RES-DEC for soil and groundwater standards. In addition RIDEM TPH criteria must also be employed.

18. Page 5-1, Section 5-1 Sediment, 3rd Paragraph.

The report states that carbon disulfide was eliminated as it is a common laboratory contaminant. As you are aware, typically the information from field blanks and other source of QA information is normally used in the process of determining whether a suspect laboratory contaminant is due to lab contamination. Please perform this assessment and discuss the results in the report why this is or is not a lab contaminant.

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19. Page 6-3, Section 6-4, Risk Assessments, 1st Paragraph.

The report states that the unacceptable risks were identified for different exposure scenarios in the Phase I RI and the Supplemental RI; however, the COPC would remain the same. The FS and the ROD will develop remedies based upon the exposure scenarios. An acceptable remedy for a construction worker may not be acceptable for residential exposure. As such, independent of whether the COPC would remain the same if an unacceptable exposure scenario has been identified in the Supplemental RI, please carry forth all risk receptors through the CERCLA process including the ROD.

20. Page 6-3, Section 6-4, Risk Assessments, last paragraph.

The report notes that COCs were identified in the Supplemental RI were not identified as COCs in the Phase I RI even though they fall within the same range of concentrations. Please elaborate in more detail in the text why these COCs fall out of the COPCs screening process since a few COCs reviewed by this Office are above the screening criteria and MCLs.

21. Page 6-4, Section 6-5, Refinements of COPCs; 1st Paragraph, Tables 6-1-6-6.

The report notes that certain contaminants of concern were eliminated based upon a comparison to background data (average and max). Please include a section in the Supplemental RI describing how this assessment was performed.

Based upon a review of the data it appears that certain contaminants which were rejected based upon background should have been retained. For example, the observed maximum concentration of arsenic at the site was 122 ppm. The maximum background value was 71 ppm (also be advised RIDEM does not consider the background data set with 71 ppm as appropriate for a background study) and the average concentration was 16 ppm for the site and 11 ppm for background. Despite the site concentration being higher than the employed background concentration arsenic was not retained as a contaminant of concern. Also, the maximum and average site concentration for chromium was 103 ppm and 17 ppm while the background corresponding values were 28 ppm and 13 ppm. Please include arsenic and chromium as contaminants of concern and review the background analysis conducted on the other contaminants and provide the requested information on how the background assessment was performed in the response to comments.

22. Page 6-4, Section 6-5, Refinements of COPCs, 2nd and 3rd Paragraphs, Table 6-1.

The arsenic concentration in the groundwater was reported at a maximum of 503 and a mean of 34.8 ug/l. The background maximum arsenic concentration was 24.7 and a mean of 9.82 ug/l, respectively. The report concludes that the observed arsenic at the

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site is not the result of a CERCLA release. The site was a landfill which received industrial and hazardous waste from the Navy base, as such a release is attributable. Please remove this conclusion and retain arsenic as a contaminant of concern in the groundwater.

23. Page 6-4, Section 6-5, Refinements of COPCs; 2nd Paragraph, Tables 6-3 & 6-5.

The foot notes for these tables state that sediment samples were compared to background soil values. Please be advised that sediment samples should have been compared to background sediment samples not soil samples. Please conduct this assessment and modify the report accordingly.

24. Page 6-4, Section 6-5, Refinements of COPCs; 2nd Paragraph, Table 6-4.

Table 6-4 foot note 1 states that there is no record of a CERCLA release of pesticides at the site. The Navy does not have manifest, bills of lading, etc. documenting what was disposed of at this known disposal site. This can not be used to state that observed contamination was not related to site activities. Further, the statement that pesticides "are likely from anthropogenic sources" exclusive of site activities is speculative and can not be substantiated. Please remove this statement from the foot note and any other section in the report.

25. Page 6-4, Section 6.5, Refinements of COPCs; Tables 6-1- 6-6.

Due to the fact that concentrations in surface water samples of certain organics and metals exceeded criteria in the Phase I RI, please discuss in this report the risk evaluation of surface water for the site.

26. Page 6-4, Section 6.5, Refinement of COPCs; Tables 6-1- 6-6.

The report proposes eliminating COCs if the site wide average concentration is below the screening benchmarks (EPA RSL or RIDEM-DEC/leachability). Please use the maximum and/or reasonable maximum in lieu of the average concentration in determining which COCs are carried forth in the process. Please modify the report accordingly.

27. Page 6-4, Section 6.5, Refinement of COPCs; Tables 6-1&6-6.

The report proposes eliminating chromium because the oxidation state may not be in the more toxic form. The concentration of chromium is well above MCLs and as the oxidation state is not known it cannot be rejected, based upon the assumption that it may be in the less toxic form. Similarly, manganese is proposed to be eliminated due to toxicity and source uncertainties. Please include chromium and manganese as COCs to be carried through the PRG process.

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28. Page 6-4, Section 6-5, Refinements of COPCs; 2nd Paragraph, Tables 6-1-6-6.

These tables contain a selection of COCs which will be forwarded into the PRG process. The tables note that contaminants which exceed the 10^{-5} criteria will be retained for PRGs. In accordance with Section 4-1 of this document and in accordance with RIDEM Regulations, please include in the PRG process all COCs which exceed the 10^{-6} criteria and/or the HQ of 1. In accordance with CERCLA, where there is a difference between the values, either the RIDEM criteria or the EPA RSL (which ever is more conservative) will be employed in this process.

Please be advised that since there is a known risk at this site, in accordance with CERCLA, RIDEM Site Remediation Regulation must be listed and employed in the screening process, as ARARs in these tables and in the text (RIDEM direct exposure, leachability, TPH, groundwater, and surface water criteria). Finally, the cumulative risk for each scenario cannot exceed RIDEM Regulations of 10^{-5} therefore, as a final step in the elimination of COCs, the cumulative risk of the proposed COCs for elimination must be combined with the retained COCs to evaluate whether an exceedance of 10^{-5} occurs.

29. Page 6-4, Section 6.5, Refinement of COPCs, Table 6-4.

The report proposes the elimination of COCs found in fish tissue due to the oxidant state of chromium, the lack of documentation that a particular contaminant was disposed of at the site (manifest, bills of lading, etc), and the position that the PCBs found in the fish could not be attributed to sediments. Due to the fact that the oxidation state of chromium was never measured and this site was a known disposal area please retain chromium as a COC. In regards to PCBs bioaccumulation, please demonstrate that the observed concentrations in the various media would not result in the levels observed in the fish, and as such the concentrations observed in the fish are due to other sources.

30. Page 6-4, Section 6.5, Refinement of COPCs, Table 6-5.

The report proposes eliminating a number of COCs, which were being retained in the Phase I RI, (such as PAHs, pesticides, etc) based upon no documented evidence of a CERCLA release and comparison to background. As you are aware of the site is a known disposal area which received a wide variety of hazardous waste (manifests and bills of lading are not available). As such, it is inappropriate to state there is no evidence of a CERCLA release for this site. Also, it does not appear that the background analysis was conducted using appropriate media (background soil samples were used for sediment comparison instead of using background sediment samples). Please retain COCs previously identified in the Phase I RI for the FS/PRG process.

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31. Page 6-4, Section 6.5, Refinement of COPCs, Table 6-5.

The approach employed for selecting COCs for sediments in regards to ecological risk needs further refinement in regards to the use of background values and analysis of data. These issues may be resolved in the PRG process. Please include in the report to be carried to the PRG process the COCs (including TPH) which exceeded the screening values.

32. Page 6-4, Section 6.5, Refinement of COPCs, Table 6-6.

The following contaminants were listed as “Chemicals Retained as Chemicals of Concern” in the Phase 1 RI in Table 6-38; however, they are not included in Table 6-6:

Soil: Arsenic, Naphthalene, Total Aroclors; “Carcinogenic PAHs” should be listed instead of “Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, and Indeno(1,2,3-cd)pyrene”

Groundwater: Bromomethane, Chloroform, Benzo(b)fluoranthene, Dieldrin, Aluminum, Antimony, Arsenic, Barium, Beryllium, Chromium, Copper, Iron, Manganese, Thallium and Zinc

Sediment: Arsenic and Carcinogenic PAHs

Please retain these COCs forward to the FS/PRG stage for further evaluation.

