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LETTER REGARDING THE TRANSMITTAL OF DRAFT FINAL PROPOSED REMEDIAL
ACTION PLAN FOR OPERABLE UNIT 2 (OU 2) AND RESPONSE TO COMMENTS ON
DRAFT VERSION NSY PORTSMOUTH ME

06/06/2011

TETRA TECH NUS



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PITT-06-11-013

June 6, 2011

Project Number 112G00924

Mr. Matthew Audet
USEPA, Region 1
5 Post Office Square
Suite 100
Mail Code OSRR07-3
Boston, Massachusetts 02109-3912

Mr. Iver McLeod
Maine Department of Environmental Protection
State House Station 17
Augusta, Maine 04333-0017

Reference: Contract No. N62467-04-D-0055
Contract Task Order No. 444

Subject: Draft Final Proposed Remedial Action Plan for Operable Unit 2 (OU2) and Responses to
Comments on the Draft
Portsmouth Naval Shipyard (PNS), Kittery, Maine

Dear Mr. Audet/Mr. McLeod:

On behalf of the U.S. Navy, Tetra Tech NUS, Inc. is pleased to provide to the U.S. Environmental Protection Agency Region I (USEPA) and to the Maine Department of Environmental Protection (MEDEP) 2 and 3 copies, respectively, of the subject documents. Responses to MEDEP and USEPA comments, dated May 17, 2011 and May 18, 2011, respectively, on the draft Proposed Remedial Action Plan are also enclosed. Dates, times, and locations for the Public Comment Period, Informational Open House, and Public Hearing will be provided in the final document.

In accordance with the project schedule, comments are due by **June 27, 2011**.

If you have any comments or questions, or if additional information is required, please contact Ms. Linda Cole at 757.341.2011.

For the Community Restoration Advisory Board (RAB) members; if you have any comments or questions on these issues, they can be provided to the Navy at a RAB meeting, by calling the Public Affairs office at 207.438.1140 or by writing to:

Portsmouth Naval Shipyard
Public Affairs Office
Attn: Danna Eddy
Portsmouth, NH 03804-5000

Sincerely,

Deborah J. Cohen
Project Manager

DJC/clm
Enclosure

Tetra Tech NUS, Inc.
661 Andersen Drive, Pittsburgh, PA 15220-2745
Tel 412.921.7090 Fax 412.921.4040 www.ttnus.com



TETRA TECH

Mr. Matthew Audet
Environmental Protection Agency
Mr. Iver McLeod
Maine Department of Environmental Protection
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Electronic Copy via email

NAVFAC MIDLANT. (Code OPTE3-2/L. Cole)
Mr. Doug Bogen
Ms. Michele Dionne
Ms. Mary Marshall
Mr. Peter Britz
NH Fish & Game (D. Grout)
Mr. Jon Carter
Dr. Roger Wells
PNS Code 100PAO (e-mail)
Ms. Diana McNabb (e-mail)
NOAA (K. Finkelstein)
U.S. Fish and Wildlife (K. Munney)
Ms. Carolyn Lepage

Without Enclosure

Mr. Onil Roy
Y. Walker, NEHC
ATSDR (DOD-EJ/Carole Hossom)
Mr. Jack McKenna

Hard Copy

NAVFAC MIDLANT PWD ME (Code PRN4, M. Thyng)
(1 copy and email)
Mr. Tim Smith (1 copy)
ME Dept. of Marine Resources (D. Nault)

**RESPONSES TO MEDEP COMMENTS DATED MAY 17, 2011
ON THE DRAFT PROPOSED PLAN FOR OPERABLE UNIT 2
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**

1. **Comment:** How much and what types of chemicals are present, p.4. This is a good place to describe the lead concentrations and the distribution of lead in the DRMO and WDA.

Response: Additional text was added as suggested regarding lead concentrations. The text was revised to read as follows:

“Soil contaminants were found at greatest concentrations within the current DRMO Storage Yard, capped area, and waste disposal area. Detections of lead greater than 15,000 parts per million (ppm) were found in soil in these areas. Outside of these areas, lead concentrations generally were less than 2,000 ppm.”

2. **Comment:** Step 2, p.4. “Risks to industrial workers exposed to surface soil would be of concern if the asphalt or interim cap were removed.” Please indicate that this may also be the case for the as-yet-undelineated western area of the DRMO.

Response: The Navy agrees that information regarding the pre-design delineation of the western area of the DRMO should be discussed clearly in the Proposed Plan and provided the information in the section entitled, Site Characteristics, How much and what types of chemicals are present. The following was added to the end of the first paragraph in this section: “The extent of DRMO contamination in the area west of the DRMO entrance (identified as the Pre-Design Investigation Boundary on Figure 1) has not been fully delineated. The Navy is conducting a pre-design investigation to better delineate contaminant concentrations in this area. The investigation results will be used to determine the specific portions of this area that will be included in the remedy for OU2.”

3. **Comment:** Step 3, p.4. “Lead does not fall into either of these categories...” This is incorrect in that any chemical either causes cancer or it doesn't (EPA classifies lead as a probable human carcinogen). The Navy should just indicate that risk assessment of lead is not evaluated in the same manner as most other chemicals and therefore was assessed separately.

Response: The Navy revised the text as suggested for clarity. Please note for risk assessments, USEPA does not identify lead as a carcinogen or non-carcinogen because there is no consensus on a cancer slope factor or reference dose, and therefore it is not possible to calculate a classic carcinogenic or non-carcinogenic risk for lead. USEPA evaluates lead exposure using lead-blood modeling.

4. **Comment:** Why is action needed... p.6. “...contamination is present in soil at concentrations that could result in unacceptable current and future human health risks.” Please remove the word “could” as the Navy has already established that contamination in the soil does indeed present unacceptable risks.

Response: Because there is always uncertainty in risk calculations and site conditions are not such that there would be significant exposure, it would be inaccurate to state that contamination is present at concentrations that result in unacceptable risks. However, without some remedial action, there could be a risk. For clarity, the Navy revised the text to say, "...contamination is present in soil at concentrations that could result in unacceptable human health risks if action is not taken to prevent exposure to the contaminated soil."

5. **Comment:** Why is action needed...p.6, 4th paragraph. "It is the current judgment of the Navy and EPA, in consultation with MEDEP, that the Preferred Alternative is necessary to protect public health and welfare..." It is not clear what "consultation" refers to. MEDEP has not indicated a preference for the Preferred Alternative prior to this comment letter.

Also, the last sentence in this paragraph is missing language, probably "risks."

Response: The Navy appreciates MEDEP input through their comments on the various draft documents distributed for regulatory review. The draft Proposed Plan was provided to MEDEP for comment to obtain input on the wording that would be included in the Proposed Plan that will eventually be provided for public comment. The Navy understands that MEDEP was not consulted on the Proposed Plan prior to composing the draft version of the OU2 PRAP. After changes are incorporated based on these comments, the Navy believes it is valid to say that the document was prepared in consultation with MEDEP and so no text revision is necessary to the identified sentence based on this comment. To clarify the level of USEPA and MEDEP' input for choosing the preferred alternatives, please see the Navy's response to USEPA Comment No. 4, which provides proposed text revisions to this sentence based on USEPA's comment.

Also, the word "risk" was added to the last sentence of the paragraph.

6. **Comment:** DRMO Alternatives, p.7. Under alternatives DRMO-3 and -4 please indicate that the Navy will backfill excavations as is stated for alternatives WDA-3 (soil cover) and -4 (backfill).

Response: The suggested information was included. The following sentence was added under alternatives DRMO-3, DRMO-4, and DRMO-5 to indicate backfilling of excavations: "After excavation is completed, the excavation area would be backfilled to establish preconstruction grades, elevations, and surface types using clean soil and pavement where necessary."

7. **Comment:** DRMO Alternatives, p.7. Indicate the depth of excavation for DRMO-3, -4, and -5 is approximately six feet, as is stated for alternative WDA-4.

Response: The Navy added text to the description of Alternatives DRMO-3, -4, and -5 to indicate that the depth of excavation for these alternatives will extend to the top of the rock fragment fill layer, which is an average of 6 feet within the DRMO area.

In addition, the following text was added to the Site Characteristics section to provide a description of soil in relation to the underlying rock fragment fill for clarity.

“Within the DRMO area, soil with an average thickness of 6 feet overlies a rock fragment fill layer with little soil. Within the capped area and west of Building 298, soil in some areas extends deeper than 6 feet. In the waste disposal area, a soil layer ranging in thickness from 2 to 10 feet overlies waste material that ranges in thickness from 2 to 40 feet.”

8. **Comment:** DRMO-4, p.8. “LUCs...to prevent unacceptable construction worker exposure to contaminated surface and subsurface soil across the DRMO.” DRMO-4 involves excavation of surface soil associated with potentially unacceptable risk based on construction worker exposure. Does the reference to surface soil refer to isolated locations of contaminated surface soil?

In addition, the LUCs for WDA-3 do not indicate prevention of unacceptable construction worker exposure to contaminated soil as a goal. Please clarify this omission.

Response: The reference to surface soil does not refer to isolated locations. LUCs provided under DRMO-4 would prevent residential exposure to soil across the DRMO area and any exposure to soil within the Building 298 footprint. After excavation and site restoration, surface and subsurface soil in the DRMO area (excluding under Building 298), would not present a risk to construction workers. The text was revised to clarify this.

The LUCs for Alternative WDA-3 already address preventing unacceptable construction worker exposure. The description of Alternative WDA-3 says that part of the purpose of LUCs are to restrict unauthorized digging within the proposed soil cover limits. Any construction work that requires digging within the soil cover limits would need to be authorized, and it would be conducted such that the soil cover is appropriately restored, excavated material is disposed of properly, and that the construction work follows the appropriate health and safety protocols. The LUC RD would provide the requirements for digging within the soil cover limits. Text was added to the third bullet under the proposed waste disposal area alternative to also include requirements for digging within the soil cover limits.

9. **Comment:** Preferred Alternatives, p.8, 1st bullet. The Navy’s preferred alternative for the WDA includes excavation of soil from 0-2 feet bgs. Overall this is acceptable. However, we note that four of the five highest concentrations of lead in WDA soil samples, ranging from 10,100 ppm to 116,000 ppm, all occur in the same general vicinity and general depth of 4-7 feet bgs. These locations are adjacent to each other in the southwest corner of the WDA at locations TP-103, TPI-SB04 and OU2-163. MEDEP believes this area of approximately 350

square feet should be excavated to 6 feet to remove these very high concentrations of lead. MEDEP would be willing to discuss a shallower excavation provided the Navy can guarantee that land use controls would be stringent enough to ensure that no excavation whatsoever will occur in the soil cover area.

Response: The Navy reviewed the distribution of contamination in the waste disposal area, and the data do not show that there is a hot spot area in the southwestern corner of the waste disposal area. In addition, excavation to 6 feet bgs in the southwestern corner of the waste disposal area would not remove all of the waste material such that the footprint of the soil cover could be reduced. Data for this area show that the waste material extends to 10 feet bgs or greater and is within the tidally and continuously saturated zones. Excavation to 2 feet bgs with a 2-foot soil cover and appropriate LUCs as provided under Alternative WDA-3 would prevent unacceptable exposure to contaminated material remaining within the waste disposal area. LUCs for Alternative WDA-3 would include restricting unauthorized digging within the proposed soil cover limits. The following provides additional information regarding the distribution of lead concentrations at the three locations.

Lead concentrations in the vicinity of locations TP-103, TPI-SB04, and OU2-163 are variable and are not consistently elevated in a way that suggests a continuous area of highly contaminated material. In particular, the elevations at which the higher concentrations of lead were detected are not the same at these three locations. At TP-103, a sample was collected from 0 to 6 feet bgs (elevations of approximately 110 to 104 feet based on the PNS 2002 vertical datum) that had a lead concentration of 10,100 ppm. At nearby TPI-SB04, samples collected from 1 to 3 and 3 to 5 feet bgs (approximately 109 to 105 feet PNS 2002 vertical datum) had concentrations of 1,050 and 3,080 ppm, respectively. The sample at this location collected at 5 to 7 feet bgs (approximately 105 to 103 feet PNS 2002 vertical datum) had a concentration of 116,000 ppm. The three samples collected at depths below this (11 to 13, 15 to 17, and 19 to 21 feet bgs corresponding to elevations below 99 feet PNS 2002 vertical datum) had concentrations less than 7,200 ppm. At OU2-163, detections of lead of 14,500 and 14,700 ppm were at depths of 4 to 6 and 6 to 8 feet bgs, respectively (which correspond to elevations of approximately 101 feet PNS 2002 vertical datum or lower) and are at or below the mean high tide level.

10. **Comment:** Preferred Alternatives, p.8, 4th bullet. Land Use Controls for the WDA must include prevention of excavation in order to prevent damage to the soil cover and to prevent exposure to contaminated soil.

Response: LUCs to restrict unauthorized digging within the soil cover would be included in WDA-3. The text provided regarding LUCs under the description of Alternative WDA-3 was added to the description of the Preferred Alternatives section to clarify the extent of LUCs.

11. **Comment:** Preferred Alternatives, p.10, 3rd bullet. Land Use Controls for the DRMO must include prevention of excavation below backfill in order to prevent exposure to contaminated

soil. We recognize that the goal is to excavate contaminated soil down to refusal however field conditions will likely result in some contaminated soil left behind.

Response: Alternative DRMO-4 includes excavation of soil down to the rock fragment fill layer. An insignificant amount of soil may be left behind, but it would not be enough to cause risks for current industrial exposure. Therefore, LUCs would not be needed to prevent excavation below the backfill. LUCs would be necessary to prevent exposure to soil under Building 298 for any receptor and to prevent residential exposure to soil within the DRMO area. This information was added to the third bullet under the Preferred Remedy for the DRMO area.

12. **Comment:** Preferred Alternatives, p. 10, 1st column, last paragraph. "...and provide an asphalt barrier to prevent potential occupation exposure to underlying contamination." While pavement may functionally minimize/prevent exposure to underlying contamination an asphalt barrier to prevent exposure is not a specific component of Alternative DRMO-4. Please delete this phrase.

Response: The phrase was deleted and the text reworded to clarify the use of excavation and LUCs to prevent exposure to current and future site users. The following provides the revised text: "Alternative DRMO-4 would remove contaminated soil to prevent current site users from exposure to contaminated soil in the DRMO area and implement LUCs to prevent future exposure to contaminated soil under Building 298 and residential exposure to contaminated soil in the DRMO area."

13. **Comment:** Preferred Alternatives, p. 10, first paragraph. "...Alternative WDA-3 over Alternative WDA-4, which would involve removal of contamination in the top 6 feet and installation of soil cover, because Alternative WDA-4 does not provide significant additional protection to human health and the environment to warrant the higher costs..."

Please discuss the factors that were used to determine that Alternative WDA-4 does not provide significant additional protection. We note that of the 44 samples in the WDA with lead greater than 2000 ppm 22 were located at depths from 3'-6' while only 3 were located from 0'-2'.

Also, the PRAP should discuss what factors warranted excavation to 6 feet in the DRMO area.

Response: Although excavating to a greater depth in the waste disposal area does remove more contaminated soil, it does not reduce restrictions on land use for exposure to subsurface soil within the waste disposal area. Contaminants in subsurface soil would still remain at concentrations that would require LUCs to restrict unauthorized digging within the proposed soil cover limits. The language in the Preferred Alternatives section was revised to reflect this reasoning.

Alternative DRMO-4 would remove contaminated soil to prevent current site users from exposure to site contaminants by excavating soil above the rock fragment fill layer in the identified excavation areas. The top of the rock fragment fill layer is on average 6 feet bgs but may be deeper in the area with the interim cap. The Navy added text to the first bullet describing the proposed DRMO area alternative to clarify that excavation of soil above the rock fragment fill layer in the excavation areas on Figure 4 would be conducted to remove contaminated soil that poses a potential unacceptable risk to current site users.

14. **Comment:** Tables 2 and 3. “Will it protect you and the animal life...” Please add, “plant and” before “animal life.”

Response: The requested change was made to Tables 2 and 3.

15. **Comment:** Please label Building 310 in Figs. 1 and 2.

Response: Figures 1 and 2 were revised to clearly label buildings, including Building 310.

16. **Comment:** Fig.2. Please indicate the extent of LUCs for WDA-3.

Also, add symbols for asphalt and building/tank in the legend and correct the orientation of this page in the final electronic copy of the PRAP.

Response: The extent of LUCs for WDA-3 was added to the figure. The orientation and contents of the legend were also revised.

**RESPONSES TO USEPA COMMENTS DATED MAY 18, 2011
ON THE DRAFT PROPOSED PLAN FOR OPERABLE UNIT 2
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**

1. **Comment:** A significant discussion and evaluation, consistent with the DRMO and Waste Disposal Area, must be included for the DRMO Impact Area. While *no-further action* is appropriate for this sub-area of OU2 based on prior removal actions, this does not mean that the Impact Area can be overlooked. The NFA alternative must be included and evaluated in the PRAP (and ROD) as it is an equal and major component of the OU2 remedy.

Response: Alternatives for the DRMO Impact Area were evaluated in the 2009 Engineering Evaluation/Cost Analysis (EE/CA), and the removal action was selected after a public comment period on the EE/CA. The Action Memorandum was signed in November 2009. The EE/CA is provided as an attachment to the Action Memorandum. Further details about the selection of the removal action alternative and support the decision that “further action is not required” were added to the PRAP in a text box after the Summary of Site Risks section. The following is the text that was included in the text box:

“Remediation of soil contamination in the DRMO Impact Area was evaluated in a 2009 Engineering Evaluation/Cost Analysis (EE/CA) that compared removal action alternatives to address risks resulting from lead- and copper-contaminated soil. The removal action objective identified in the EE/CA was to remove contaminated soil in the DRMO Impact Area to eliminate potential unacceptable human health and environmental risks so that the property can be used without any site restrictions (i.e., unrestricted use/unlimited exposure). In the EE/CA, the Navy evaluated a “no action” alternative, as required under CERCLA, and a soil excavation alternative involving removal and offsite disposal of contaminated soil and restoration of the excavated area. The Navy recommended the soil excavation alternative, and no comments were received on the recommendation during the public comment period. The Action Memorandum for the removal action was signed in November 2009, and the removal action was implemented in 2010. With the removal of the lead- and copper-contaminated soil in the DRMO Impact Area, potentially unacceptable risks from exposure to soil at the DRMO Impact Area were eliminated; therefore, further action is not required to protect human health and the environment in the DRMO Impact Area.”

2. **Comment:** Throughout: The phrase “NFA is required” appears in several places and is difficult for an average person to parse, since it seems to imply that “NFA” *is required*, whereas the real meaning is that “FA” is *not required*. Given the importance of the point, spell out in full, either as “no further action is required” or “further action is not required.”

Response: The phrase “NFA is required” was replaced with the phrase “further action is not required” throughout the text to clarify.

3. **Comment:** Page 1, “The Cleanup Proposal”: Mention somewhere in text box that EPA concurs with proposal.

Response: The sentence after the first paragraph in “The Cleanup Proposal” box was revised to read “After careful study, the Navy, with concurrence from the United States Environmental Protection Agency (EPA), proposes:”

4. **Comment:** Page 6, column 1, 5th full paragraph: The sentence “It is the current judgment of the Navy and EPA, in consultation with MEDEP, that the Preferred Alternative is necessary to protect public health and welfare from actual or threatened releases of these hazardous substances into the environment: is overstated and perhaps misleading. EPA’s judgment is that active remediation combined with LUCs and monitoring is necessary to protect public health and welfare, but that could include not just WDA-3 and DRMO-4 but also WDA-4 and DRMO-3, which the Navy is proposing not to choose based on cost and implementability grounds. A more accurate statement would be something like: “it is the current judgment of the Navy and EPA, in consultation with MEDEP, that removal of contaminated soil, combined with LUCs and monitoring, is necessary to protect public health and welfare from actual or threatened releases of these hazardous substances into the environment, and that the Preferred Alternative are appropriate remedial alternatives for this purpose.”

Response: The wording of the statement was taken from the PRAP section of the EPA’s Decision Document guidance; however, the Navy agrees that the proposed text revision provides more clarity related to OU2. The text on Page 6 was reworded to read “It is the current judgment of the Navy and EPA, in consultation with MEDEP, that removal of contaminated soil, combined with LUCs and monitoring, is necessary to protect public health and welfare from actual or threatened releases of these hazardous substances into the environment, and that the Preferred Alternatives are the appropriate remedial alternatives for this purpose. A removal action was completed at the DRMO Impact Area that addresses all unacceptable risks; further action is not required in this portion of OU2.”

5. **Comment:** Page 8, column 1, 1st paragraph: In discussion of DRMO-4 LUCs, note that the LUCs preventing residential development would continue in force even if the property were at some future date transferred out of Navy control. This is an important point because DRMO-4’s protectiveness relies in part on the property not being used for residential purposes.

Response: LUCs would be required as long as unrestricted use and unlimited exposure have not been achieved. The Navy added text to the discussion of the Preferred Alternative to indicate that LUCs are required as long as COC concentrations exceed levels that allow unrestricted use and unlimited exposure.

6. **Comment:** Page 13, column 1, 1st paragraph: In discussion of five-year review, note that five-year review requirement would continue even if the property were at some future date transferred out of Navy control.

Response: Five-year reviews will be needed as long as COC concentrations exceed levels that allow for unrestricted use and unlimited exposure. This information was included in the section on the Five-Year Review Requirements.

7. **Comment:** Please explain or replace the following terms: dermal, predominately, carcinogen, non carcinogenic, bench-scale, slag.

Response: To clarify, the word “dermal” was revised to “dermal (skin contact).” The word “predominately” and term “bench-scale” were removed from the text. Carcinogen and non-carcinogenic are defined on page 4 under Step 3 and in the text box “What is the Potential Risk to Me?” The Navy does not recommend any additional explanation of these two terms. The word “slag” was revised to “slag (rock-like remnants of foundry operations).”

8. **Comment:** Please add email as a submittal option.

Response: An email submittal option will not be included because the Shipyard Public Affairs Office has chosen not to provide an email option for submittal of comments.

9. **Comment:** Glossary terms should be bolded in the text body.

Response: The glossary terms were bolded the first time they appear in the document.

10. **Comment:** Where possible increase the font size of the figure text. Eliminate unnecessary clutter from figures.

Response: Revisions have been made to simplify Figures 1, 2, and 4. Unnecessary items on the figures have been removed, and font sizes have been increased where necessary.