STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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October 19, 2005

Mr. Fred Evans
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Northern Division
Naval Facilities Engineering Command
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re: Navy Responses to MEDEP Comments dated Jan. 27, 2005 and March 2, 2005, Draft Feasibility Study for OU2, Portsmouth Naval Shipyard, Kittery, Maine.

Dear Fred:

The Maine Department of Environmental Protection has reviewed the Navy's responses referenced above. The Department's comments follow.

General Comment

1. Presently, the MEDEP's largest objection to the Navy's approach for lead-contaminated soil cleanup at OU2 is, as mentioned previously, the pickup levels for lead that range from 2,000 mg/kg to 10,000 mg/kg. The MEDEP's Division of Remediation has never allowed cleanup levels to exceed our Remedial Action Guidelines (375 ppm residential and 700 ppm trespasser/adult worker). After internal discussions and reviews of our approach to remediation of other lead-contaminated soil sites in Maine we have decided that at this time we cannot accept a cleanup number, or Remedial Action Level, for lead-contaminated soil above our Remedial Action Guidelines. Some sites in Maine with cleanup levels of 375 ppm or less for lead in soil are Brewer Junkyard (Brewer), Portland-Bangor Waste Oil (Wells), Wolman Steel (Waterville), Callahan Mining Superfund Site (Brooksville), Eastern Surplus (Meddybemps), and the Rolnick property (Brewer).

In addition, the MEDEP Voluntary Remedial Action Program requires lead-contaminated soil cleanups at their sites to adhere to the Maine Remedial Action Guidelines.

This decision should not significantly affect the potential total area to be addressed as shown on Figures 8-3, 8-6, and 8-7 of the Draft FS.

Besides straightforward excavation and disposal, the MEDEP has allowed stabilization, consolidation, covering/capping, and a combination of these approaches, along with land

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use controls, to address soil with lead concentrations above the Remedial Action Guidelines. Some examples are:

- Portland-Bangor Waste Oil site and Brewer Junkyard site – soil with lead concentrations in the thousands to tens of thousands ppm range was stabilized, consolidated on-site and capped.
- Brewer Junkyard – in addition to the above soil with lead concentrations above 375 ppm but below 1000 ppm were covered with a minimum of 12 inches of cover material, then loamed and seeded.
- Wolman Steel site – PCB-contaminated soil was separated from lead-contaminated soil and disposed of separately. The lead-contaminated soil was stabilized to prevent leaching to reduce disposal costs.

These or similar approaches, e.g., soil washing, with appropriate land use controls, may be feasible at OU2. Note that the MEDEP would also accept USEPA's residential soil guideline for lead in soil of 400 ppm at the Portsmouth Naval Shipyard.

2. Response to Comment 1: "The Navy does not agree that there are insufficient groundwater data to understand groundwater migration and risks associated with groundwater at OU2 to make a decision for the site. The Navy suggests additional discussion with MEDEP on this issue."

The MEDEP agrees additional discussion is necessary. There are a limited number of monitoring locations and only four quarters of chemical data that are nearly 10 years old. This provides no indication of longer-term trends and begs the question, "what is the groundwater quality now?"

3. RTC 9: "This section identifies the scope and objectives of the OU2 Feasibility Study. The Proposed Remedial Action Plan identifies the Navy's preferred alternative."

Please add this text to the end of Section 1.2 along with the proposed timing of submittal of the PRAP.

4. RTC 15: "The field demonstration was not conducted and therefore is no information available to provide regarding the demonstration in this section of the FS."

This is true, however, in a May 22, 2003 letter the Navy stated that they had, "...decided not to pursue this demonstration study at Site 6 because the pavement material produced from this process does not meet the EPA's definition of a 'recyclable material'...it appears the resultant pavement material from Site 6 would still be regulated under the Toxic Substances Control Act..."

This determination is important to include in the FS to inform the reader that this technology was briefly considered but rejected.

5. RTC 17: The Navy's response did not address part of our comment stating, "Please define 'residual' agriculture."

6. RTC 18: Please provide additional detail, specifically which well clusters exhibit the reversal in vertical gradient. Also, indicate where these data may be found. Again, the data are quite old and may represent an inaccurate picture of the typical vertical gradients in the area of OU2. It would be particularly useful if electronic transducers were utilized to evaluate the timing and extent of gradient changes compared to the tidal change.

7. RTC 22: "The RFI work plan...indicates that the analytical parameters were selected based on historical information; VOCs and SVOCs were not expected in the [Site 6] subsurface based on the site history."

The concentrations of VOCs and SVOCs in surface soil at Site 6 are generally low. However, it was noted that at Site 29 some concentrations of PAHs increased with depth. Therefore, it would be prudent to collect some subsurface soil samples at Site 6 regardless of the surface soil results. This should be discussed during DQO/QAPP development.

8. RTC 28: The data provided in the Navy's response are further evidence that the limited monitoring that has occurred at OU2 provides an incomplete picture of groundwater chemistry, based on the inconsistent results. These wells would benefit from a number of rounds of low-flow sampling, with filtered and nonfiltered samples to determine the influence of particulates. Current sampling methodology provides more reliable and consistent data.

9. RTC 29: In the draft FS the Navy stated, "TPH was detected in all groundwater samples..."

TPH was not an analyte listed in the groundwater database. If the Navy was not referring to TPH as a specific analyte the term should be changed to something like "petroleum compounds."

"Therefore, 27 of the 55 samples had detections of DRO and/or GRO."

We are still confused by the Navy's response. The original statement was that TPH was detected in all groundwater samples but the response indicates that DRO and/or GRO was detected in only 27 of the 55 samples. Do the other 23 samples have petroleum compounds that fall outside the GRO/DRO range? Should the original statement have indicated that petroleum was detected in all wells, but not all samples?

10. RTC 31: "Petroleum product has not been observed in groundwater at OU2."

This is true, however, monitoring is somewhat limited and free product was observed in the rock during soils excavation at the tank farm, and is still found in wells near the former tanks.

11. RTC 33: It is unclear if the Navy agrees that the features at the Former Tank Farm (including Former Tank 6 and the lower pond) must be considered as part of the conceptual model for OU2.

12. RTC 34: "The USEPA comment regarding the model results for Quarter N [that the 0 to 6 year old child is 25 to 35% more likely...to be above the 10 ug/dl blood level with an average exposure concentration] was based on the assumption that the child was exposed to the maximum concentration..."

Please clarify this. According to this statement (and the EPA's comment) the EPA used an average exposure concentration, not a maximum exposure concentration.

13. RTC 35: We may not have been clear in our original comment. We indicated that a discussion as to whether or not the reported risks are cumulative should be stated "here", meaning in Section 5.0 of the FS, not in the Navy's responses. Please indicate that the Navy will include such a discussion.

14. RTC 37: Please include a specific reference for the Assoc. of Environmental Health of Soil Study of State Soil Arsenic Regulations mentioned at the end of this response.

15. RTC 49: "The text will be clarified regarding removal of additional samples..."

Please clarify the word "removal". Does the Navy mean "collection" of additional samples?

16. RTC 51: "In addition, the OSWER guidance for dioxins does not take into account dioxin-like PCBs."

Please reference the OSWER document as we are unclear which document you refer to. We are familiar with the OSWER Directive 9200.4-26 dated April 13, 1998 "Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites." This document does not indicate one way or another how dioxin-like PCBs should be treated in relation to dioxin.

We also note that EPA's "PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures" (EPA/600/P–96/001F, September 1996, p. 48) states,

> "Some PCBs are thought to also exhibit dioxin like toxicity even though they are distinctly different compounds. When PCB congener concentrations are available, the usual PCB slope-factor approach can be supplemented by analysis of dioxin TEQs to evaluate dioxin-like toxicity. Risks from the dioxin-like congeners evaluated using TEFs would be added to risks from the rest of the mixture [of dioxin-like compounds]"

We recognize that PCB congener data are not available for the existing OU2 soil data. However, this is an issue that needs to be discussed during development of DQOs for the additional OU2 investigation.

17. RTC 54: "The use of ENCAPCO is being suggested only as a way to provide some improvement to the physical characteristics to the surface soil while incorporating it as asphalt pavement."

This contradicts the Navy's earlier statement where, as stated in Comment 4 above, in a May 22, 2003 letter the Navy stated that they had, "...decided not to pursue this demonstration study at Site 6 because the pavement material produced from this process [ENCAPCO] does not meet the EPA's definition of a 'recyclable material'...it appears the resultant pavement material from Site 6 would still be regulated under the Toxic Substances Control Act..."

"TCLP testing is conducted on soil removed from the site for determining disposal requirements."

TCLP testing should also be conducted on soil treated in any bench tests of treatment technology such as soil washing and chemical fixation/solidification. We assume this is built into the tests in order to evaluate its effectiveness.

18. RTC 62: "The nature of the restrictions is described under Component 5 of the alternatives..."

Component 5 indicates that any soil excavated from the restricted zone will need to be analytically tested to meet disposal or reuse requirements. However, such a restriction does not protect the construction worker who might come in contact with excavated soil or soil in the utility trench. Please explain how such protection will be ensured.

19. RTC 66: Please respond to the second half of our comment: "Explain why some soil will be excavated to 2 feet bgs and some to 10 feet bgs. Are lead concentrations beneath 2 feet bgs in those areas lower than 10,000 mg/kg?" This comment was in reference to the text at the bottom of p. 8-15 stating, "...an area approximately 67,500 ft^2 in size would be excavated to 2 feet bgs and an area approximately 47,250 ft^2 in size would be excavated to 10 feet bgs."

Also please note that the figure of 67,500 ft^2 given above does not match the area noted in Fig. 8-3 which indicates that an area approximately 20,250 ft^2 in size would be excavated to 2 feet bgs.

20. RTC 69: "The remedial schedule for OU2 will be based on available funding at the time it is selected."

Please note that renewal of the Shipyard's Hazardous Waste Storage Facility License is tied to the schedules of the Amended Site Management Plan. As indicated in Condition

No. 16 of the Portsmouth Naval Shipyard New Commercial Hazardous Waste Storage Facility License #O-005-HA-N-N Amendment dated May 24, 2001,

> "PNS shall comply with the schedule of compliance for Corrective Action as approved in the Amended Site Management Plan (SMP) Appendix C, for Portsmouth Naval Shipyard, Kittery, Maine, of February 2001...The draft SMP... shall be finalized according to Section 12.5 of the FFA. Upon letter approval by DEP, this final schedule shall be enforceable as a condition of this license. New site schedules as identified and developed by the Navy and approved by the Department shall also be enforceable as conditions of this license."

"The details of phasing construction would be worked out with the contractor(s) chosen to perform the selected remedy."

The general aspects of phasing construction must be discussed prior to selecting an alternative. As our original comment stated, it is difficult to envision splitting the construction discussed in Alternatives 3, 4, and 5 into separate phases over several years. Please discuss the Navy's current thinking of how this might be accomplished.

21. RTC 70: "Please provide technical support for why the MEDEP cannot accept a 2,000 mg/kg remediation level (note the PRG based on the average lead concentration would be 400 mg/kg)."

As indicated in General Comment 1 above, our lack of acceptance is primarily a policy-based decision. The averaging approach the Navy has employed builds exceedances into the cleanup standard. That is, areas of high concentrations of contaminants above the State of Maine's Remedial Action Guidelines are allowed to remain on-site.

However, other reasons include:

- As previously stated, the averaging approach leaves hotspots as high as 2000 ppm. The Navy can't ensure that one of these hotspots in a residential EU won't be used as a play area or garden.
- The residential pickup level must be based on appropriate exposure units of 0.5 acre, as indicated by EPA's Soil Screening Guidance, not the roughly 2 acre exposure units currently being evaluated.
- The existing data do not provide the information necessary for the MEDEP to accept an approach based on average site concentrations (for example, see our March 2, 2005 Comment 2).

Responses to MEDEP Comments dated March 2, 2005

22. RTC 2: "...note that while the PRGs are based on an area average, the remedial action levels are "not-to-exceed" levels."

The Navy is inappropriately using the terms "average" and "not-to-exceed" levels when applying them to a pickup level, or Remedial Action Level, approach. As indicated in USEPA, 2004 mentioned in the previous coment, "The not-to-exceed option entails treating or removing all soil with contaminant concentrations exceeding the cleanup level. The area average option involves treating or removing soils with the highest contaminant concentrations such that the average (usually the upper confidence limit of the average) concentration remaining onsite after remediation is at or below the cleanup level."

Our comment remains that the Navy must provide the rationale for selecting a remedial approach based on an area average rather than a "not-to-exceed" approach.

23. RTC 2, p. 3, 3rd bullet: "The discussion [on how dioxin concerns are addressed by the remedial alternatives] will be provided after the additional data collection when the OU2 FS is revised."

The discussion of this issue between the Navy and regulators must take place prior to data collection in case collection of dioxin samples is necessary. See Comment 16.

24. RTC 18: "...inhalation of dusts and particulates were not evaluated in the DRMO Impact Area because the maximum concentrations of all constituents were less than the USEPA inhalation SSLs."

This response is fine, however if additional investigation indicates that there are maximum concentrations greater than USEPA inhalation SSLs then this issue will need to be revisited.

25. RTC 20: "The derivation of PRGs is provided in Appendix B of the draft OU2 FS..."

Our comment may not have been clear. To rephrase, the risk calculations used to determine the exposure concentrations that were then used to derive the various PRGs should be included in this section or in an appendix.

26. RTC 38: "...verification of attainment of PRGs would be conducted as part of the remedial action level development and/or as part of the remedial action."

Verification of attainment of PRGs can occur only after verification of attainment of remedial action levels. This can occur only with confirmatory samples taken as part of the remedial action.

27. RTC 53: Figures C-3 to C-7 should be in color in the revised FS.

28. RTC 57: The Navy's response seems to address only one of the twelve bulleted items in our comment. These issues must be addressed in future discussions regarding remediation of OU2.

29. RTC 67: The MEDEP agrees that figures, tables of data, hand-written text, etc. can not be made searchable in pdf files. As the Navy indicated, portions of the appendices, such as larger sections of text, e.g. most of Appendix B, should be made searchable.

Please feel free to contact me at (207) 287-8010 if you have any questions.

Sincerely,

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