

**RESPONSES TO EPA COMMENTS DATED 16 AUGUST 2004 ON THE
DRAFT STREAMLINED HHRA FOR AOC 83 OF OCTOBER 2004
FORMER NAVAL AIR STATION SOUTH WEYMOUTH
SOUTH WEYMOUTH, MASSACHUSETTS**

GENERAL COMMENTS

1. The *Final Streamlined Human Health Risk Assessment Work Plan (EA 2001)* indicates that onsite groundwater is a potential exposure point for the future adult and child resident and the construction worker. Groundwater exposure is not included in this streamlined human health risk assessment. From the prior work plans and decision documents from this site, it is clear that groundwater has not been considered to be a media of concern for AOC 83. Nonetheless, this report should provide some discussion on why groundwater is not considered to be a media of concern for this AOC. In this discussion please provide the following at a minimum: 1. Depth to groundwater; 2. The potential for COPCs from this site migrating to groundwater; and 3. The AOC or RIA under which groundwater from this site is being investigated. Present any groundwater risks if it is possible to obtain a drinking water supply from the groundwater that underlies this AOC.

Response: The Navy will revise the HHRA to include a discussion of the rationale for eliminating groundwater as a medium of concern at the Site. The rationale is based on the fact that PCBs were encountered in the surface soil layer, but not in soil at depth, indicating an incomplete pathway to groundwater. PCBs have a strong affinity for soil and do not readily migrate to or in groundwater. Three wells installed for the environmental baseline, MW06-003, MW06-017, and MW06-018 were tested for PCBs; all were non-detect. These wells are in the general downgradient direction from AOC 83. This area is not in a potentially productive aquifer zone and would not be used as a drinking water source.

2. A number of sampling results were indicated as not analyzed, not usable or rejected. In some cases, such as thallium, this resulted in only one or two valid sampling results to use in the risk assessment. Generally, one sampling point is not adequate to characterize the site or calculate an exposure point concentration. To address this data limitation, the analytes with very few valid sampling results should be addressed in the uncertainty analysis for the risk assessment. Discuss with EPA why some of the data was unusable or rejected.

Response: A brief discussion will be added to the Uncertainty section to identify where the number of sample was limited, and that NU, as noted in the Appendix, indicates that data were not used because the detection limit is greater than 2x the maximum detected value.

3. The risks from exposure to PCBs in surface and subsurface soils were calculated accurately and do not result in cumulative risks in excess of EPA's carcinogenic risk threshold of 1E-4 to 1E-6. However, it is unclear whether TSCA may be an ARAR for this site. TSCA was

not identified as a potential ARAR in Tables 2.1 through 2.4, yet is possible that TSCA is at least a potential ARAR for this site. Please include a discussion of the status of the PCBs at this site in the context of TSCA PCB disposal requirements.

Response: The Streamlined HHRA Work Plan does not require the evaluation of ARARs in the risk assessment. ARARs will be discussed in the Proposed Plan and in the ROD.

4. Hazard Quotients (HIs) are supposed to be cumulated for effects on the same target organ and the Hazard Indices presented as specific for that target organ. In the case when it is difficult or impossible to reliably identify a target organ from the IRIS file, one might be justified in cumulating the effects from different target organs. Change the Hazard Indices to make them specific for target organ (Table 7.1 and others, text presenting the results).

Response: Since total HIs are less than EPA's target of 1.0, the risk assessment does not need to address cumulative HIs for individual target organs. Therefore, target organ HIs will not be presented. A statement will be added to the text stating that individual target organ HIs are less than 1.0 when cumulative HIs are less than 1.0.

SPECIFIC COMMENTS

1. *Section 2.2, Page 2-1.* Identify the dimensions of the receptors' exposure areas assumed near AOC 83.

Response: The exposure area is illustrated in Figure 2. The investigation area is approximately 41,000 sq ft, or less than an acre. This figure will be cited in Section 2.2.

2. *Section 3.3.3.1, Page 3-11.* The residential direct contact Region IX PRGs are not necessarily protective for gardening. Remove "gardening" as an example of residential activities, Page 3-11 and others. The residential numbers refer to the risks from incidental ingestion of soil-derived dust.

Response: The Navy will remove the reference to gardening.

3. *Section 3.3.3.3, Page 3-11.* Please mention that air exposures via the fugitive emissions of particulates from dust are estimated in the Region IX PRGs.

Response: This information will be added.

4. *Section 3.4, Page 3-15 and 3-16.* This section discusses the toxicity assessment. The section indicates that if toxicity values were not available from the U.S. Environmental Protection Agency (EPA) Integrated Risk Information System (IRIS) then values from Health Affects Summary Tables (HEAST) or the National Center for Environmental

Assessment (NCEA) were used as secondary sources. Please note that on December 5, 2003, EPA revised its hierarchy of human health toxicity values for risk assessments, establishing Provisional Peer-Reviewed Toxicity Values (PPRTVs) as the second tier of risk values to be consulted if risk values are not available in IRIS. Thus, PPRTVs should be consulted before HEAST and NCEA values.

Response: The toxicity assessment was performed in accordance with the methodology presented in the Streamlined Human Health Risk Assessment Work Plan, Areas of Concern at NAS South Weymouth, South Weymouth, Massachusetts (EA 2001) (HHRA Work Plan). The hierarchy of human health toxicity values is in accordance with the HHRA Work Plan. The revised hierarchy will be considered in future HHRAs.

5. *Section 3.6.1, Page 3-23.* This section discusses the sites-specific uncertainties. The first paragraph indicates that because the small number of samples resulted in use of maximum concentrations for several of the exposure point concentrations (EPCs) that the calculated risks likely overestimate the actual risks at the site. Even using the maximum detected concentration, it is just as likely that the small number of samples results in an underestimation of the EPC and associated calculated risk. Thus, the true effect is not known. The paragraph should be revised.

Response: The Navy will revise the Uncertainties Section to discuss the metals with only 1 or 2 useable results. The statement will be edited to state that risks “may be overestimated” rather than “likely to be overestimated.”

6. *Table 3.5.* The table presents the backup EPC statistics. It is unclear why the units were changed for the organic analytes from the values reported in Tables A-1 and A-2. Changing the units results in difficulty reviewing the tables and increases the likelihood of errors. The units should be consistent throughout the report.

Response This comment will be considered in preparing future HHRAs. The tables will not be changed for AOC 83.

7. *Table 3.4.* This table provides the backup statistics for the EPC calculations. The statistics in the table were checked using ProUCL Version 3.0. The following discrepancies between the information in Table 3.5 and the results of statistical analysis using ProUCL were noted:
 - § The distribution for Aroclor 1260 in subsurface soil was found to be neither normal nor lognormal by ProUCL, not lognormal as indicated. Please confirm that these data were found to be lognormally distributed and not simply not normally distributed.
 - § The distribution for arsenic in subsurface soil and manganese in surface soil were found to be normal by ProUCL not lognormal as indicated. Please check the Shapiro-Wilk calculations for this analyte.

- § The 95% UCL was not reproducible for arsenic or Aroclor 1260 for subsurface soil and manganese, dibenz[a,h]anthracene and Aroclor 1260 in surface soil. Please verify the calculation of the 95% UCLs for these analytes.

It is acknowledged that slight differences may occur among different programs used to calculate EPCs, and in most instances where differences were found, these differences were not major. However, to ensure accuracy in this risk assessment, input values for the statistical calculations should be checked to verify that the proper procedures for the use of undetected and duplicate results was followed. Furthermore, the statistics should be verified and recalculated if needed. Tables 3.5 and any tables using inputs generated from Table 3.5, such as all tables in Appendix C, should be revised.

Response: The calculation of EPCs was performed in accordance with the methodology presented in the Stone & Webster report *Final Summary Report of Background Data Summary Statistics for NAS South Weymouth, February 2000*.

The Navy elected to follow the same method in order to be able to compare the site data to the background data set that Stone & Webster had compiled. Non-detect records where one-half the SQL is greater than the maximum detected for the site/matrix were excluded. Non-detects were estimated at a concentration one-half the SQL. Duplicate samples were averaged. For duplicate samples with a detect/non-detect pair, the average was calculated as the detected concentration plus one-half the SQL, then divided by two. The text will be modified to state this.

8. *Appendix Table 83-2 (and other tables)*. The risk calculations or screenings for the carcinogenic PAHs that EPA has determined to be similar to benzo(a)pyrene should be based on the concentration of benzo(a)pyrene and equivalents rather than on the individual carcinogenic PAHs. Throughout the document, provide calculations that sum benzo(a)pyrene and equivalents (with the appropriate multipliers) and compare the resulting concentrations to the screening values for benzo(a)pyrene.

Response: The assessment of PAHs was performed in accordance with the methodology presented in the HHRA Work Plan, and is consistent with all HHRA's already completed, and approved by EPA, for NAS South Weymouth.

REFERENCES

EA Engineering, Science and Technology (EA). 2001. *Final (Revised) Streamlined Human Health Risk Assessment Work Plan*. September.