

7/28/04 - 00265

**Response to BTAG Comments dated July 28, 2004**  
***Draft Technical Memorandum - Evaluation of Phase I BERA Sediment Data:  
Evaluation of Mercury Risks to Aquatic-Based Wildlife and Potential  
Exposure Pathways to Subsurface Sediment (CH2M HILL, June 2004)***

1. Comment: Section 3.2 Evaluation of Food Web Model Outcomes on page 4 states that consistent with the approach used in the Final Sites 3, 4, 5, and 6 RI and the objective of protecting wildlife population viability, chemicals were selected for detailed evaluation only when they equaled or exceeded the LOAEL. BTAC does not support this as a routine approach in the ERA process nor has any relevance to wildlife population viability been established.

Response: The text indicating that only chemicals equaling or exceeding the LOAEL are further considered in the BERA and the objective of relevance to wildlife population viability was deleted from Section 3.2. The food web models do in fact present risk results determined by comparing estimated doses to wildlife NOAELs, MATCs, and LOAELs. Mercury, however, remains the focus of the subsequent investigation because it has consistently indicated the greatest potential for adverse effect to wildlife receptors and warrants further detailed evaluation.

2. Comment: Section 3.2 Evaluation of Food Web Model Outcomes on page 5 states that, based on the Watershed Contaminant Source Document (WCSD) being completed for the Southern Branch of the Elizabeth River, mercury is widespread and at similar concentrations throughout many locations in the Elizabeth River system. BTAG has not been provided with the opportunity to review the WCSD and therefore cannot agree with or support any evaluations based on this document.

Response: Agreed, the original sources from which the mercury data were derived will be provided in the Final Technical Memorandum.

3. Comment: Section 3.3 on page 6 and Section 4.2 on page 10 provide recommendations for the investigation of Blows Creek. Based on the information provided, BTAG agrees that the collection of fish tissue to refine risk to avian piscivores, and the collection of sediment at the mouth of Blows Creek will provide useful information to refine risk estimates and further characterize the nature and extent of contamination. The fish tissue data should also be used to refine risk estimates to fish as well.

Response: Direct risks to fish based on body burden will be considered to the extent possible, based on the availability of applicable toxicity data. However, the primary objective of collecting fish tissue will remain; to evaluate risks to higher trophic-level species via the ingestion of fish.

4. Comment: Section 4.1.1 Potential for Exposure Resulting from Biological Activity on page 8 states that observational data suggests that fiddler crab populations are maintained with Blows Creek and that the subsurface pathway does not warrant further evaluation. This observation does not address whether exposure and bioaccumulation of mercury occurs in fiddler crabs when they are in the subsurface sediments.

Response: Surface and subsurface sediment concentrations were evaluated in Blows Creek as part of the *Final Background Investigation Report for St. Juliens Creek Annex* (CH2M HILL, October 2001). Ten samples were collected from an interval of 0 to 6 inches below sediment surface and ten samples were collected from 1 to 3 feet below sediment surface from Blows Creek and analyzed for TCL PAHs, TCL pesticides, and TAL metals. The detected concentrations were used in a statistical comparison to establish 95% UTLs for the Bohicket soil type and to determine the differences, if any, in chemical concentrations between surface and subsurface intervals. The statistical comparisons determined that there is no statistical difference in mercury concentrations between surface and subsurface sediment intervals in Blows Creek and that average detected mercury concentrations were higher in surface sediment than in subsurface sediment.

Although fiddler crabs could be exposed to mercury if it is present in subsurface sediment, ingestion is expected to be the primary exposure pathway and they are expected to have their greatest potential exposure in surface sediments, where they spend their time foraging. Based on the homogeneity of surface and subsurface sediment in Blows Creek, the evaluation of mercury exposure and bioaccumulation to fiddler crabs based on surface sediment will conservatively estimate exposure and bioaccumulation in subsurface sediment.

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## 16 Data Certification Checklist

The following information is included in the Decision Summary section of this ROD (Section 2). Additional information can be found in the Administrative Record file for SJCA Site 4.

- a Chemicals of concern (COCs) and their respective concentrations (Section 2.7 and associated tables);
- a Baseline risk represented by the COCs (Section 2.7);
- a Current and reasonably anticipated future land use assumptions and current and potential future beneficial uses of groundwater used in the baseline risk assessment and ROD (Section 2.6);
- a The drainage ditches at Sites 4 reflect site soil conditions and therefore, the background 95% upper tolerance limits (UTLs) for the associated soil type will be used as the cleanup levels for COCs in the eastern drainage ditch (Section 2.12.2);
- a Site 4 does not contain "principal threat waste," that is, highly toxic or highly mobile waste that cannot be reliably contained or would pose a significant threat to human health or the environment if containment failed. Accordingly, this ROD does not discuss a remedy for principal threat waste (Section 2.11);
- a Potential land and groundwater use that will be available at the site as a result of the Selected Remedy (Section 2.12.4);
- Estimated capital costs, annual maintenance and performance costs, and total present-worth costs; discount rate; and the number of years over which the remedy cost estimates are projected (Section 2.12.3 and Table 2-27); and
- Key factors that led to selecting the remedy (i.e., a description of how the Selected Remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decision) (Section 2.12.1).

## 1.7 Authorizing Signatures



F. F. Aucremanne, CAPT, CEC, USN  
Chief of Staff  
By direction of the Commander  
Navy Region Mid-Atlantic



Date

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Abraham Ferdas, Director  
Hazardous Site Cleanup Division  
EPA (Region 111)

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Date