



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203-0001

February 21, 1997

James Shafer, Remedial Project Manager
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

Re: Site Assessment Screening Evaluation Report for the Former Robert E. Derecktor Shipyard at the Naval Education and Training Center, Newport, Rhode Island

Dear Mr. Shafer:

I am writing in response to your request for EPA to review the *Site Assessment Screening Evaluation Report* ("SASE") for the Former Robert E. Derecktor Shipyard at the Naval Education and Training Center dated January 1997. Detailed comments are provided in Attachment A.

The ecological contaminants of potential concern ("COPC") selection process inappropriately eliminates contaminants if a biological benchmark is not available. Detected contaminants should be retained as COPC if biological benchmarks, including surrogates, are not available. Also many organic contaminants are dropped from the COPC list because they are common laboratory contaminants. Since the data has not been validated, "B" qualifiers are not available. Organic contaminants detected at concentrations exceeding biological benchmarks should be retained as COPC.

The ecological assessment risk characterization inappropriately calculates hazard quotients from non-receptor specific (EPA Region 3) screening benchmarks. As discussed at several ecological advisory board meetings, Region I does not support use of these benchmarks. Toxicity reference values for selected receptors should be derived and a dose should be calculated in order to characterize risk by the hazard quotient method. The EPA Region 3 BAG screening levels are not appropriate for calculating hazard quotients. Please delete the hazard quotients and the hazard index within Tables 7-3 A to D and rename the table. Screening benchmarks from primary literature sources may be used to compare detected concentrations in order to identify COPC.

The April 1996 Work Plan specifies that only a preliminary Human Health Risk Assessment would be done at this point. The Preliminary Assessment was to include a risk-based selection of COPCs, a qualitative exposure assessment, an abbreviated toxicity assessment and a qualitative risk characterization. The risk assessment provided in this document is beyond the scope outlined

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in the Work Plan. Many of the deficiencies noted would not be present in a complete baseline risk assessment.

I look forward to working with you toward the cleanup of Derecktor Shipyard. Please do not hesitate to contact me at (617) 573-5777 should you have any questions or wish to arrange a meeting.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kymberlee Keckler', written over a horizontal line.

Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachment

cc: Paul Kulpa, RIDEM, Providence, RI
Brad Wheeler, NETC, Newport, RI
Susan Svirsky, USEPA, Boston, MA
Jennifer Hayes, Gannet Fleming, Harrisburg, PA
Steven Parker, Brown & Root, Wilmington, MA

ATTACHMENT A

<u>Page</u>	<u>Comment</u>
p. 2-4, §2.3	The first paragraph of page 2-4 states that many areas on Aquidneck Island have wells for residential water use. Please provide residential well locations and distances from the site.
p. 2-10, §2.6	Recommendation 4E from the Preliminary Assessment specified that all above ground storage tanks (“ASTs”) should be inventoried. The text states that all ASTs have been removed from Derektor. The location, date of removal, contents, and condition of these ASTs have not been provided in the SASE. Did any of the ASTs contain hazardous substances? Have the former AST locations been sampled? Were there indications of hazardous substance releases at the time of AST removal?
p. 3-4, §3.1.2	Fifteen sub-floor equipment boxes with unconsolidated bottoms were observed in the floor of Building 234. Table 3-1 notes that samples were randomly collected from only four of the 15 boxes. The text incorrectly references Table 3-2 as the summary table for all eight potential discharge points.
p. 3-4, §3.2	Section 3.3.3 of the Work Plan states that if during the investigation activities of drainage systems underground discharge areas, including catch basins and floor drains with unconsolidated bottoms, were identified, samples would be collected. A total of 22 potential contaminant discharge points or “outfalls” were identified. Please specify if any of the drainage systems have unconsolidated bottoms.
p. 4-1, §4.1	Since sump 234-8 has been identified as a possible potential discharge point in Table 4-2, the text should include a discussion of investigation findings.
p. 4-2, §4.1	Section 4.10.2 of the April 1996 Work Plan for this study states that all data will be validated “Level D” using the “National Functional Guidelines for Organic/Inorganic Data Review,” USEPA December 1990, revised February 1994 (organic) and February 1993 (inorganic). Section 4.1 of this document states that the data has not been validated. It is critical that all data are appropriately validated. If permanent remediation steps are being proposed based on this data, then all data should undergo a Tier III validation.
§4.3, <i>et seq.</i>	Section 4.10.2 of the April 1996 Work Plan for this study states that all data will be validated “Level D” using the “National Functional Guidelines

for Organic/Inorganic Data Review,” USEPA December 1990, revised February 1994 (organic) and February 1993 (inorganic). However, all “Chemistry” subsections of Section 4.3 of this document state that the data has not been validated. It is critical that all data are appropriately validated. If permanent remediation steps are being proposed based on this data, then all data should undergo a Tier III validation.

- p. 4-14, §4.3.2 This section states that analytical data for the Upgradient Off-Site Area are presented in Section 4.3.6.2, however, Section 4.3.6 discusses the South Waterfront Area. The correct reference for the analytical data for the Upgradient Off-Site Area is 4.3.2.2.
- p. 4-16, §4.3.3 This section states that analytical data for the North Waterfront Area are presented in Section 4.3.2.2, however, Section 4.3.2 discusses the Upgradient Off-Site Area. The correct reference for the analytical data for the North Waterfront Area is 4.3.3.2.
- p. 4-16, §4.3.3.1 Should “Central Shipyard area” be corrected to read “North Waterfront area?”
- p. 4-19, §4.3.4 This section states that analytical data for the Central Shipyard Area are presented in Section 4.3.3.2, however, Section 4.3.3 discusses the North Waterfront Area. The correct reference for the analytical data for the Central Shipyard Area is 4.3.4.2.
- p. 4-25, §4.3.6 This section states that analytical data for the South Waterfront Area are presented in Section 4.3.5.2, however, Section 4.3.5 discusses the Building 234 Area. The correct reference for the analytical data for the South Waterfront Area is 4.3.6.2.
- p. 4-27, §4.4.1 Section 4.10.2 of the April 1996 Work Plan for this study states that all data will be validated “Level D” using the “National Functional Guidelines for Organic/Inorganic Data Review,” USEPA December 1990, revised February 1994 (organic) and February 1993 (inorganic). However, Section 4.4.1 of this document states that the data has not been validated. It is critical that all data are appropriately validated. If permanent remediation steps are being proposed based on this data, then all data should undergo a Tier III validation.
- p. 4-35, §4.5.2.2 Why was a flora list is provided if the report states that the central shipyard was devoid of vegetation during the ecological investigation?

Figure 4-13

The legend on Figure 4-13 should define each symbol. The areas without hatching or pattern are not defined. Generally, habitat maps will denote in the legend that areas without hatching are barren. It is not clear which areas are concrete, barren, or asphalt. The distinction between barren soil and an impervious surface of concrete or asphalt is important in the habitat characterization and the exposure assessment. Several test pits and soil sample locations are located in the areas with no hatching or pattern, but it cannot be determined from the figures which sample locations are located on exposed soil. The following soil sample locations are depicted on the figure in the unhatched areas and are listed in Tables 7-2 A-D: TP16, TP18, TP28 (N. Waterfront), TP12, TP14, TP15, TP17, MW5 (Central Shipyard), and MW-9, TP7, TP8, TP9, TP10 (Building 234). Specify whether sample locations depicted in the unhatched areas and not listed on the tables (*e.g.*, TP-27) are located in areas covered by concrete or asphalt.

p. 3-14, §3.5.3

The time of year that the ecological field visit was conducted (August) was not a good time to conduct an audible survey for birds, reptiles or amphibians. For example, an audible amphibian survey in the spring would have been better. Therefore, conclusions regarding their presence or absence should be caveated accordingly.

Table 4-7

The ring-billed gull species name is spelled incorrectly. It should be *delawarensis*. The genus of the tree swallow should be *Iridoprocne*. A typographical error is present in the common name of the double crested cormorant. The black-capped night heron species name should be *nycticorax*.

p. 6-2, §6.1.1

This section states that the COPC selection was based on comparison to risk-based criteria using a Hazard Quotient (HQ) of 1.0 for noncarcinogenic risks. The correct HQ value to be used for screening is 0.1 for noncarcinogenic risks. Screening levels in tables 6-12 through 6-22 must be adjusted for all media and data must be reevaluated.

This section states that essential nutrients, including calcium, magnesium, potassium, and sodium, were eliminated as COPCs if they were not present at “high enough concentrations.” Supporting documentation for eliminating essential nutrients as COPCs should be provided.

It appears that several compounds, such as lead, phenanthrene, and others, were eliminated as COPCs because of a lack of screening values. Please screen these compounds using other sources, such as EPA Action Levels or Surrogate Toxicity Values. If a particular compound cannot be

addressed quantitatively, discuss these compounds qualitatively and address them in the Uncertainties section of the risk assessment.

- p. 6-4, §6.1.4 Tables 6-12 through 6-22 are "Selection of COPCs" tables for detected chemicals in each medium at each site. The Navy must expand these tables to include a description of the rationale used to select COPCs. The rationale should include a discussion of the ARARs used in COPC selection and evaluation.
- p. 6-3, §6.1.2 This section states that rejected values and blank contaminated (R and B) values were eliminated from further consideration. Blank data was not provided with the rest of the analytical data, therefore EPA could not evaluate whether "B-data" was appropriately eliminated. Please include blank data in order to facilitate this evaluation.
- p. 6-7, §6.2.4 The Navy should verify the source of the default ABSEFF's being used. More recent EPA Region III guidance, "Assessing Dermal Exposure from Soil," EPA (December 1995) provides specific absorption efficiency data for arsenic, other metals, pesticides/PCBs, SVOCs, and VOCs.
- p. 6-10, §6.3.3.3 The Geology/Hydrogeology section indicates that many areas of Aquidneck Island, obtain their water supply from wells and that wells exist throughout the Island. This section indicates that groundwater is currently used for domestic needs, in addition to industrial and commercial needs. The shallow depth (10 feet below the surface in most areas) of the groundwater makes it susceptible to contamination from the site. However, the study does not consider current or future intakes of the groundwater at the site as a drinking water source. The study only considers incidental ingestion of the groundwater which may not be a conservative approach to the risk considerations for groundwater.
- p. 6-13, §6.3.4.3 The equation for Intake via Dermal Contact includes a variable, "EV," that is not identified in the key.
- p. 6-14, §6.3.5 Toxicity Profiles may have to be expanded pending reevaluation of COPC based on corrected Screening Values with regard to an HQ of 0.1.
- §6.4 Many of the scenario evaluations in this section site arsenic as the principal COPC, but then state that arsenic levels are only slightly above background levels. This study included only two background samples. Generally, two samples are not enough to generate a statistical evaluation of background levels for use in a human health risk assessment. To evaluate how site-

related arsenic concentrations compare to background, the background must be adequately characterized.

Subsections of 6.4.3 discuss carcinogenic and noncarcinogenic risks for current and future scenarios at each of the four sites of primary concern. Tables 6-31 through 6-39 provide summaries of cumulative carcinogenic and noncarcinogenic risks for current and future scenarios at each of these sites. Summary tables that clearly identify Intake factors, HQs, and Incremental Cancer Risks for each COPC in each scenario. These tables should also demonstrate the proportion of risk attributed to each COPC.

§6.5

The existing Uncertainty Analysis section does not fully discuss site-specific uncertainties. The Uncertainty section should address specific uncertainties in sampling, analysis, data evaluation, toxicity assessment, exposure assessment, and risk characterization. This section should qualitatively address risks relating from chemicals that could not be evaluated quantitatively.

Table 7-3

According to the text of the SASE, only data from soil sample locations considered “exposed” were included in the ecological assessment data. Therefore, adjusting the hazard index for the “percent of exposed surface soil” is unwarranted.

§7

The following contaminants of concern were deleted from consideration even though detected concentrations exceeded off-site ranges: N. Waterfront, Acetone, 2-Butanone, 2,2'Oxybis(1-chloropropane); Central Shipyard 2,2 Oxybis(1-chloropropane), and Carbazole; Near Building 234, Acetone, Acenaphthene, and Carbazole; S. Waterfront, acetone.

p. 7-8, §7

The first paragraph on page 7-8 states that the “potential presence” qualifier given to many of the listed potential ecological receptors was “based mostly on their reported geographical distribution ranges and not on the availability of habitat at the site.” Many of the listed potential ecological receptors do not have strict habitat requirements. Discuss whether the area has adequate cover, food, or nesting/breeding qualities that could satisfy habitat requirements.

p. 7-39, §7.4

The ecological conclusions are not consistent with the toxicity assessment, exposure evaluation, and risk characterization. For example, the toxicity assessment states on page 7-12 that induction of mixed-function oxidase activity has been reported to occur in the liver of the garter snake as a result of exposure to benzo(a)pyrene, garter snakes were identified onsite and benzo(a)pyrene was detected in surface soils in concentrations

exceeding the biotic benchmark. Therefore, the site poses a potential ecological risk that warrants further analysis.

§8

Complete exposure pathways exist for ecological receptors within the Derektor Shipyard on-shore study area. Page 5-5 of the Work Plan states that additional data requirements and an approach for conducting a terrestrial ecological risk assessment will be determined in the SASE if complete ecological exposure pathways associated with the site are identified. The southern waterfront has a complete ecological ingestion of soil exposure pathway and ingestion of prey exposure pathway. Ecological benchmarks were exceeded for several contaminants. A terrestrial ecological assessment is warranted. Since the southern waterfront appears to have an appropriate habitat for a deer mouse (*e.g.*, dunes and cover), the deer mouse is recommended as a receptor for a quantitative risk assessment.

§8

Based on subsection 8.4, recommendations for permanent remediation options are being proposed. While, we agree that these options are reasonable alternatives, further data collection and evaluation are necessary to develop human health remedial action objectives.

p. 8-4, §8.3

This section identifies arsenic as the prime contributor to carcinogenic risk. However, the text implies that the arsenic concentrations obtained results from background rather than site-related activities. Until this assertion can be verified, the Navy should modify the text in their conclusions to acknowledge the potential contribution of site-related activities to observed arsenic concentrations. This section may have to be reevaluated after corrections to the screening levels are made and COPCs are reevaluated.