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ENSAFE INC.

ENVIRONMENTAL AND MANAGEMENT CONSULTANTS

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5724 Summer Trees Drive • Memphis, Tennessee 38134 • Telephone 901-372-7962 • Facsimile 901-372-2454 • www.ensafe.com

January 20, 1999

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U.S. Environmental Protection Agency

NAS PENSACOLA

Attn: Ms. Gena Townsend

5090.3a

Atlanta Federal Center

100 Alabama Street SW

Atlanta, Georgia 30303-3104

Re: Final Remedial Investigation Report  
Site 40, NAS Pensacola  
Contract # N62467-89-D-0318/036

Dear Ms. Townsend:

On behalf of the Navy, EnSafe Inc. is pleased to submit one copy of the Final Remedial Investigation Report for Site 40, Bayou Grande at the Naval Air Station Pensacola in Pensacola, Florida. Responses to comments are also enclosed. FDEP comments were received verbally and have been incorporated into the document.

If you should have any questions or need any additional information regarding the document, please do not hesitate to call me.

Sincerely,

EnSafe Inc.

Allison L. Harris  
Task Order Manager

Enclosure

cc: Bill Hill, Code 1851 SOUTHNAVFACENGCOM without enclosure  
Ron Joyner, NAS Pensacola - 3 copies  
Tom Dillon, NOAA - 1 copy  
EnSafe Inc file - 1 copy  
EnSafe Inc. Knoxville - 1 copy  
EnSafe Inc. Library - 1 copy  
Administrative Record

**U.S. Department of Commerce/National Oceanic and Atmospheric Administration  
(NOAA)**

**Response to Comments  
Draft Remedial Investigation Report  
Operable Unit 15 - Site 40 (Bayou Grande)  
NAS Pensacola**

**Major Comments and Recommendations:**

**Comment 1:**

Risks to higher trophic level fish (e.g., sea trout) are inadequately characterized. Protection of this fish guild is one of the assessment endpoints in the ERA. The **only** measurement endpoint is comparison of **SW** concentrations to **AWQC**. Two chemicals (copper and endrin) exceeded criteria (Table 10-8) suggesting elevated risks. However, comparison to **AWQC** is inadequate. Persistent bioaccumulative compounds (e.g., PCBs, tDDT, mercury) are among the site-related contaminants. When these chemicals are present, one must consider the ingestion pathway to properly assess ecological risk to higher trophic level consumers. Risks may be evaluated by examining residue-effects data, dietary TRVs or both. Risks to both forage fish and higher trophic level piscivorous fish must be evaluated.

Evaluating risks to fish via the ingestion pathway would also benefit the human health risk assessment. Currently, human health risks are based in part on higher trophic level fish residues derived from the TBP model. This fugacity model estimates maximum concentration of neutral, non-polar organic compounds biota can accumulate from sediment assuming sediment is the only direct source. The latter assumption is critical. The TBP model does not account for biomagnification. Results presented in this ERA suggest the TBP model underpredicts tissue residues even for forage fish (compare tables 10-12 and 1-15). Estimates for higher trophic level fish are likely to be more underpredictive and thus less protective.

**Response:**

**A trophic transfer model has been developed and incorporated into Section 10 of the report based on the ingestion of contaminated tissue from foraging fish.**

**Comment 2:**

Forage fish contaminant residues results are inadequate. Table 10-12 suggests only two fish samples were collected for residue analysis (i.e., only two ID numbers). Text at the bottom of page 10-46 suggests these two samples represent different species (killifish and pinfish). No information is reported regarding the numbers or size of fish in these samples. This descriptive

information is needed to help judge the adequacy and representativeness of residue data derived from these samples. [I'm assuming composited samples although the report is not clear on this point.]

As it stands now, ecological and human health risks for the entire Bayou Grande are based solely on two poorly described fish samples collected at the headwaters of one small water body (Redoubt Bayou). The report must better justify the adequacy and representativeness of these two samples. It must also thoroughly discuss the uncertainties associated with risk estimates based on two samples.

Delete the conclusion on page 10-46, "exposure to these contaminants [tPCB and tDDT] may be widespread, within Bayou Grande and outside it." Without additional residue data within Bayou Grande and other parts of Pensacola Bay, one cannot reach this conclusion.

The forage fish residue data should be reported when first discussed (i.e., in the baseline ERA). The reader doesn't encounter these data until much later in Chapter 10.

**Response:**

**The fish collection results have been better described to reflect that each sample represents several fish.**

**This conclusion has been deleted from the text.**

**Forage fish tissue residue data has been moved to Section 10.2.8, Phase IIB results.**

**Comment 3:**

Evaluate risks to the benthic macroinvertebrate community using the Sediment Quality Triad (SQT) approach. Protection of the benthic macroinvertebrate community is an assessment endpoint in this ERA (Table 10-4). **Two** of the corresponding measurement endpoints involve sediment toxicity and benthic community analysis. To complete the SQT, add sediment chemistry as a third measurement endpoint. Express the chemistry results as HQ and, if appropriate, HIs. Compare and contrast these three lines of independent evidence from the SQT when evaluating risks to the benthic community.

**Response:**

**The sediment quality triad approach was used in evaluating risk in each assessment zone.**

**Comment 4:**

More fully describe/explain/justify the phased approach. The reader needs to be told early in the report how the investigation was phased. Suggest a section in the Introduction describing Phases I, II and III. Consider including Phase I, II, or III in chapter titles to help guide the reader. This was done in the Site 41 RI report and was quite helpful.

Throughout the report explain the relationship between the phases. That is, indicate how results of one phase were used to guide work in subsequent phases. For example, Phase III samples were supposed to represent high, medium and low bulk sediment concentrations observed in Phase II (Section 10.2.2.1). This was never verified nor discussed in the report. **Also**, Chapter 4 indicates four "Assessment Zones" were created to purportedly facilitate analysis and interpretation of risk. Yet, the AZ concept is not carried through to the risk assessment. Delete the concept or use it.

**Response:**

**The phased approach is described in greater detail and the use of assessment zones has been carried throughout the report.**

**Comment 5:**

Indicate location of reference site(s) and how they were used in data analysis.

**Response:**

**All contaminant comparisons were made to sediment and surface water screening values. Reference locations were not established in Bayou Grande.**

**Comment 6:**

Link RI results to IRP sites. When doing this, consider and discuss the hydrodynamics and sediment transport characteristics of Bayou Grande.

**Response:**

**These links between source and receptor have been detailed in Sections 7 and 9.**

**Miscellaneous Comments:**

**Comment 1:**

Chapter 10 Report summary statistics for sediment TOC and grain size early in the chapter.

Response:

TOC and grain size data is included in the Site **40** Sampling and Analysis Plan. Reference to this data is made early in Chapter **10**.

**Comment 2:**

10.1 Cite **EPA Region 4** ecological risk assessment guidelines.

Response:

These guidelines will be cited.

**Comment 3:**

10.2.1.4 Delete the last two sentences in the first paragraph which conclude metals don't pose risk to benthic macroinvertebrate community. Instances of metal HQ > 1 were common in both the Phase II and Phase III chemistry data. Wait until results of the **SQT** are in to assess risk to this receptor group.

Response:

These sentences have been deleted.

**Comment 4:**

10.2.1.4 Delete or justify statement in the second paragraph attributing source of PAHs to past practices or current activities. Also, delete subjective conclusion regarding "moderate" risk posed by **PAHs**. **HQS** for individual PAHs were elevated (in the hundreds).

Response:

This statement has been modified to state that these high HQ values indicate a potential risk to receptor organisms, although this contamination is not expected to be related to impacts from an IR site.

**Comment 5:**

Tables 7-1, 7-2, 7-3 Cite specific sources for sediment screening values.

**Response:**  
**The references for the sediment screening values are cited.**

**Comment 6:**  
Table 10-4     The measurement endpoint for the second assessment endpoint should be the food web model not tissue residues in forage fish. Throughout this table and the report, always clearly distinguish between forage fish and higher trophic level fish such as sea trout, redfish or drum.

**Response:**  
**This change will be made.**

**Comment 7:**  
Fig. 10-2     Indicate values in this figure are sediment HIs reflecting risk to the benthic community.

**Response:**  
**This figure has been deleted based on the evaluation of effects by assessment zone. HI values are now reported in a tabular form.**