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NAS PENSACOLA
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October 20, 1995

U.S. Environmental Protection Agency
ATTN: Mr. Jay Bassett
345 Courtland Street, NE
Atlanta, GA 30365

SUBJECT: CTO No. 0036
Final RI/FS Work Plan Sampling and Analysis Plan
Site 41, NAS Pensacola

REFERENCE: Contract N62467-89-D-0318

Dear **Mr. Bassett:**

On behalf of the Navy, EnSafe/Allen & Hoshall is pleased to submit three copies of the Final RI/FS Work Plan/Sampling and Analysis Plan for Site 41 at the Naval Air Station in Pensacola, Florida and the responses to comments. If you should have any questions or need any additional information regarding the work plan, please do not hesitate to call me.

Sincerely,

EnSafe/Allen & Hoshall

Henry H. Beiro
Henry H. Beiro
Task Order Manager

Enclosure

cc: Contracts File: CTO No. 0036
Project File: NAS Pensacola
SOUTHDEV: Ms. Kim Reavis/Code 0233K7
Bill Hill, SOUTHNAVPACENCOM - 2 copies
EnSafe/Allen & Hoshall file - 1 copy
EnSafe/Allen & Hoshall Pensacola - 1 copy
Roy Jenner, NAS Pensacola - 9 copies
Lynn Griffin, FDEP - 1 copy
John Lindsay, NOAA - 1 copy
John Mitchell, FDEP - 2 copies
Tom Moody, FDEP - Cover letter only

Program Management Office

Shelby Oaks Plaza
5909 Shelby Oaks Dr.
suite 201
Memphis, TN 38134
Phone (901) 383-9115
Fax (901) 383-1743

EnSafe/Allen & Hoshall Branch Offices:

Charleston
935 Houston Northcutt Blvd.
Suite 113
Mt. Pleasant, SC 29464
Phone (803) 884-0029
Fax (803) 856-0107

Cincinnati
400 TechCenter Dr.
suite 301
Milford, OH 45150
Phone (513) 246-8449
Fax (513) 248-8447

Pensacola
2114 Airport Blvd.
Suite 1150
Pensacola, FL 32504
Phone (904) 479-4595
Fax (904) 479-9120

Norfolk
303 Butler Farm Road
Suite 113
Hampton, VA 23666
Phone (804) 766-9556
Fax (804) 766-9558

Raleigh
5540 Centerview Drive
Suite 205
Raleigh, NC 27606
Phone (919) 851-1886
Fax (919) 851-1013

Nashville
311 Plus Park Blvd.
Suite 130
Nashville, TN 37217
Phone (615) 399-8800
Fax (615) 399-7467

Dallas
4500 Miller Drive
Suite 100
Irving, TX 75038
Phone (214) 791-3222
Fax (214) 791-0405

US *ENVIRONMENTAL PROTECTION AGENCY*
TECHNICAL REVIEW *AND* COMMENTS
DRAFT FINAL RI/FS WORK PLAN
OPERABLE UNIT **16** (SITE 41: NASP WETLANDS)
NAVAL *AIR STATION* (**NAS**) PENSACOLA
PENSACOLA, FLORIDA

COMMENT 1:

Page 2-1, Paragraph 2

While all wetlands may have been "considered", the work plan should clearly identify "up front" (i.e., either in Section 1, or early in Section 2) which wetlands were targeted for remedial investigation and explain/justify the selection process. For example, include a figure which illustrates only those wetlands targeted for investigation.

RESPONSE:

The Site 41 Work Plan is meant to provide **general** information about NAS Pensacola and provide the framework for the investigation. The Site 41 SAP has Figure 2-1, which shows those sites potentially impacting wetlands. The text that follows this figure describes these sites and their associated wetlands.

COMMENT 2:

Page 2-17, Paragraph 3:

As commented previously, the 1987 edition of the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* should be used.

RESPONSE

This paragraph on page 2-17 describes how Parsons and Pruitt used the 1989 manual for their wetland delineation at NAS Pensacola. It is stated in Section 4.23 that E/A&H will use the 1987 *Corps of Engineers Wetland Delineation Manual* when characterizing all wetlands.

COMMENT 3:

Page 3-1, Paragraph 3

Is the Florida Administrative Code listed for ~~surface water~~ the most current version?

RESPONSE

Chapter 62-302 (1995 version) is the most current version and will be used.

COMMENT 4:

Page 3-10, Paragraph 2

Given the Tier 1 team's recent decision to transfer Site 3 to the **state UST** program, the full ecological assessment of wetlands **W1, 39, 72 and 52 should be** completed under this program (re: page 3-4, paragraph 2, final sentence).

RESPONSE

Wetlands **W1, 39, 72, and 52 will be investigated under the auspices of the state UST program. This will be stated in the text.**

COMMENT 5:

Page 4-4, Paragraph 4

"With the exception of the E&E studies, data **from** these investigations may be used to replace data planned to be collected as part of **the RI...**" clarify that **this statement** refers only to the chemical data, not the habitat and biota survey data, collected by **E&E**.

RESPONSE

The text will be clarified to state that **E&E data only refers to chemical data.**

COMMENT 6:

Page 4-11, Paragraph 4

If **benchmark** values do not exist for a **contaminant**, it may also be helpful to conduct a **literature search on the nature** of the chemical and its possible ecological effects (e.g. based on **known effects of similar contaminants**). **One possible source** of information for **surface** water is the AQUIRE database.

RESPONSE

A statement will be added explaining that a literature search will be performed on particular contaminants with little available information. Information searched will pertain primarily to ecological concerns related to a particular contaminant.

COMMENT 7:

Page 4-15, Paragraph 2

Clarify how the **FDEP (1988)** approach to evaluating metals in **estuarine sediments will be used** at Site **41**, in view of **the different digestion procedures used in** the FDEP approach and the **U.S. EPA Contract Laboratory Program.**

RESPONSE

Five percent of the total number of sediment samples **will** be duplicated for **analysis** using total digestion. This value **will be compared** to the **digestion** procedures used under the U.S. EPA Contract Laboratory Program. This **will be stated** in the text.

COMMENT 8:

Page 4-16, Paragraph 1

Revise the **final** phrase of the first sentence to read: "it must be determined **whether** they are causing, or *can* potentially cause, **an** adverse **effect**."

RESPONSE:

This sentence **will be revised** as requested.

COMMENT 9

Page 4-17, Paragraph 2 (Data Gaps):

Use of mathematical models for predicting **contaminant** bioaccumulation in the food chain is acceptable. However, depending upon **the** assumptions and **degree** of **uncertainty** associated with the models, it may **be necessary** to follow up with *chemical* analysis of tissues (particularly of lower trophic level **organisms**) as a measure of bioaccumulation.

RESPONSE:

Section 4.3.4 and Figure 4-3 detail how models will **be initially** used. If there is doubt about the **accuracy of the model**, toxicity testing and **bioaccumulation** studies may be performed to better quantify impact.

COMMENT 10:

Page 4-18, Paragraph 1

"**Once** expanded **sampling** has better *characterized* the extent of contamination and shown which **areas** have **potential** for adverse **impacts**, the investigation may **move** into Phase IIB." In some cases, particularly where **analytical results** for wetland samples are already available, it may be possible to perform Phase IIB simultaneously **with** Phase IIA. this could **serve to expedite** the investigatory process for **some** high priority wetlands.

RESPONSE:

Where possible, E/A&H **will attempt** to collect Phase IIA and IIB samples simultaneously. However, it is generally felt that Phase IIA **should be completed** and the data reviewed before moving to **Phase IIB**. By **reviewing** both the *chemical* and **physical** data of the sediment and surface water, **variations** in *toxicity* testing **and/or bioaccumulation** studies **can be** better focused for particular contaminants of concern.

By performing Phase IIA and Phase IIB simultaneously, E/A&H risks wasting resources by performing toxicity tests in areas that may not be contaminated or may be analyzed for an inappropriate organism. Although data may already be available, sediment can be a mobile media, particularly in areas such as the Yacht Basin. Since it has been at least three years since the EPA conducted its field investigation, conditions may have changed significantly since those samples were collected.

COMMENT 11:

Pages 4-19 through 4-20, section 4.3.4:

The diversity studies and toxicity tests planned for Phase IIB should also be performed for wetland vegetation where appropriate.

RESPONSE:

After consultation with the EPA Gulf Breeze Research Laboratory and other toxicity testing laboratories, organisms have already been chosen for toxicity testing. Wetland vegetation may be used for bioaccumulation studies, but these plant species must be viewed in relation to the contaminants identified in the wetland and its relationship to the assessment endpoints outlined in the Site 41 SAP.

COMMENT 12:

Page 4-24, Paragraph 2:

All but the first two sentences of this paragraph deal with risk management and remedial action decisions. While valid, these issues are not part of the risk assessment proper, and therefore should be presented in a separate section of the SAP.

RESPONSE:

The portions of this paragraph will be moved to a separate section that discusses risk management and remediation issues that may need to be addressed.

COMMENT 13:

Page 5-4, Paragraph 3:

Clarify why a two-step reporting process will be used for the FS for Site 41, while previous RI/FS work plans for other sites have specified preparation of only a single FS Report.

RESPONSE:

A single FS will be submitted, but it will be submitted separately from the RI.

US ENVIRONMENTAL PROTECTION AGENCY
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DRAFT FINAL RI/FS SAMPLING AND ANALYSIS PLAN
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NAVAL AIR STATION (NAS) PENSACOLA
PENSACOLA, FLORIDA

*Comments headed with bold text must be addressed in order for the document to be considered for approval. While EPA strongly recommends that all other comments be addressed to improve the quality and defensibility of the document, document approval is not contingent on incorporation of these comments.

COMMENT 1:
Page 1-3, Paragraph 2

"those wetlands which do not require a complete investigation will be addressed through a preliminary site characterization (PSC) instead of a risk assessment." This approach appears acceptable. However, specify what is meant by "a complete investigation.:

RESPONSE:

"Complete investigation" refers to initiating Phase IIB of the ecological risk assessment approach outlined in the Site 41 Work Plan and SAP. This will be stated more clearly in the text.

COMMENT 2
Page 2-8, Reference and screening Values

In general, the comparison of contaminant concentrations to two times the mean reference concentration is used only as a screen for naturally-occurring inorganics. However, while most organic contaminants are not naturally occurring, instances of widespread organic contaminants (e.g. sprayed pesticides) are sometimes observed. Possible approaches for dealing with such detections included: (i) carrying these contaminants through the risk assessment, in order to properly assess their contribution to overall site risk, or (ii) making an early determination to deal with such organic contaminant via a separate investigatory and remediation process, provided the data indicates that these contaminants are clearly not attributable to the site/source under investigation and that separate consideration of these contaminants will not significantly affected conclusions/decision reach for the site.

RESPONSE:

Organic contaminants that are not considered site related will be addressed in the risk assessment to evaluate their contribution to site risk. It is difficult to state at this point whether these contaminants may not significantly affect the conclusions or decisions for the site.

COMMENT 3:

Page 2-9, Paragraph 1:

Note that the **Florida Sediment Quality Assessment Guideline** were taken into account in developing the **EPA Region IV Sediment Screen Values**.

RESPONSE:

This will be mentioned in **Section 2.3.1 of the text**.

COMMENT 4:

Page 4-9, Paragraph 3

Clarify in the **text** what is meant by the expression "weight of evidence". **This** approach typically refers to the use of multiple **test results** to characterize risk (e.g. **chemical** analyses, toxicity test, diversity studies, bioaccumulation, etc.). With respect to **evaluating sediment contamination** being considered here (e.g. frequency of **detection**, number and magnitude of **SSVs exceedences**, etc.) a different terminology may be **more** appropriate.

RESPONSE:

"Weight of evidence" will be changed to "**the likelihood of impact**".

COMMENT 5

For marine sediments, a polychaete, such as *Neanthes* sp., might **also** be considered for toxicity tests.

RESPONSE:

The species listed on Table 2-2 were initially *chosen* after consultation with the EPA **Gulf Breeze Research Laboratory** and other toxicity testing laboratories. However, if other species are found to serve as good species for testing, their use will be considered.

COMMENT 6:

Page 2-10, section 2.3.2

What exactly **are the assessment endpoint?** survival and well-being of the **benthic macroinvertebrate community?** Survival and well-being of **terrestrial invertebrates?** Endangered and threatened species and **wetland plants** should **also be considered** in selecting assessment endpoints.

RESPONSE:

The initially *chosen* assessment endpoints are the **white shrimp (*Penaeus (Litopenaeus) setiferus*)**, **crayfish (*Cambarus sp.*)**, **raccoon (*Procyon lotor*)**, and the **great blue heron (*Ardea herodias*)**. These species were **selected** as organisms inhabiting the **wetlands** and best representing different levels of the food *chain*. Endangered or threatened species were evaluated, but none were identified that have sufficient information known about them to be a reliable assessment endpoint.

COMMENT 7:

Page 2-12, Paragraph 2

Clarify that this publication applies to the food chain exposure **rather than** impacts ~~from~~ direct toxicity.

RESPONSE

This will be **clarified** in Section 2.4 of the text.

COMMENT 8:

Page 3-7, Paragraph 2

Specify how the RBCs were adjusted to **account** for the assumed lower exposure frequencies.

RESPONSE:

The **RBCs** will be adjusted to reflect a **typical trespassing** scenario **with an exposure** frequency of 52 days per year unless **otherwise** instructed by the **Tier I** partnering team. The *text* will be modified to specify the adjustments made.

COMMENT 9:

Page 3-9, Paragraph 2

Specify that the twice background rule applies **only** to inorganic chemicals and may **not** be used to screen organics, since it is assumed that **most** organic chemicals found at hazardous waste sites are produced through human activities.

RESPONSE

Agreed. Background comparisons will be made **as** agreed to by the **Tier I** partnering team.

COMMENT 10:

"Including outliers **will increase** the **overall uncertainty of the calculate risks and increase the estimate of the risk** in a conservative manner." This statement is **incorrect** and should be **deleted** ~~from~~ the text due to the rationale given in the preceding **sentence**.

RESPONSE:

Agreed. This *sentence* will be deleted.

COMMENT 11:

Page 3-14, Figure 3-1

The skin surface area for ages 7-31 should be **20,000 cm²/day** to reflect total body immersion.

RESPONSE:

Typical residential *skin* surface area assumptions will be made to reflect direct **exposure** to feet, lower legs, **arms**, and head.

COMMENT 12:

Page 3-15, Figure 3-1

The Absorption Factor for metals should be 0.001.

RESPONSE:

The absorption factor will be changed to 0.001.

COMMENT 13:

Page 3-19, Paragraph 2

The U.S.EPA Region III RCB tables should not be used as a source of toxicological values. IRIS, HEAST and ECAO (phone: [513] 569-7300) are the **only** sources that should be referenced for toxicity values.

RESPONSE:

Agreed. **Only** IRIS, HEAST, and ECAO will be used as sources for **toxicity** values.

COMMENT 14:

Page 4-1, Paragraph 1

What is the **current** status of the EOA ERL - Gulf Breeze data, particularly for the **Yacht** Basin area: Is it available/ If so, it should be included and considered where **appropriate**.

RESPONSE:

The **most** recent data from EPA **Gulf** Breeze is **not** in publishable **format** and **was not** available to E/A&H. If it becomes available during a **later stage** of the **investigation**, that data will be used as appropriate.

COMMENT 15:

Page 4-6, Paragraph 1

Whenever freshwater *surface* water data are compared to the AWQC, the **criteria** for the appropriate **metals** must be **adjusted** for **hardness**. If **hardness** was not **measured**, it can be calculated based upon the **measured** concentrations of *calcium* and *magnesium*. Also, the **reason** for the reference to "risk" is unclear, since **hardness** is applied to the **surface water** contaminant screening process rather than in **risk** determination.

RESPONSE

Samples for water **hardness** will be collected during Phase **IIA** of the **investigation**. The reference to "risk" meant that **no determinations related to ecological risk were being made** based on the contaminant levels shown in the tables. Surface water hardness will be used in helping make **risk-based determinations in addition** to contaminant **screening** after the **Phase IIA** sampling has been completed. Hardness **can be an important** factor in determining contaminant bioavailability.

COMMENT 16:

Page 4-10, figure 4-1

In general, surface water samples should be paired with sediment samples whenever possible. this comment is applicable to all of Section 4. Provide the rationale for any proposed separate surface water samples.

RESPONSE

Since surface water is **such** a mobile **media**, it was not considered **necessary** to collect a surface water sample at every sediment sample location. **Enough** surface water sample locations were planned in **each wetland** to give **what is considered** an adequate representation of contaminant distribution in the **surface** water.

COMMENT 17:

Page 4-12, Table 4-3

Specify the **source** of the **marine** chronic water quality criteria for **aluminum and iron**.

RESPONSE

The values for aluminum and iron are from the **Florida Surface Water Standards**. These values will be **specified** in the **text**.

COMMENT 18:

Page 4-18, Figure 4-2

A sediment/surface water pair **should also be collected from what appears** to be a small pool based on topographic contours) west of **SW/SD-003-05**.

RESPONSE

Based on the site reconnaissance, there was no **"small pool" seen** and it will be deleted from the **figure**. **Most** of Wetland SA has **standing water**, including the **area shown as the "small pool"**. Sample locations chosen were based on **assumed sources of contamination**, topographic features, and sediment **characteristics**.

COMMENT 19:

Page 4-23, Figure 4-3

Was an effort made to bias sampling points towards any "hot spots" detected at the adjacent terrestrial sites?

RESPONSE

Sample locations were placed in relation to the nearest **terrestrial** sites and in areas of the wetlands where it was felt that **contaminants** would **most** likely have migrated or have been deposited.

COMMENT 20:

Page 4-34, Figure 4-6

- A. Include the location of EOA SW/SD-002-04.
- B. In general, it would be helpful to show the **monitoring** well locations mentioned in the text on the individual wetland maps, *along* with the detected **chemicals**. This comment is applicable to all of Section 4.

RESPONSE

- A. This location will be included.
- B. Monitoring wells in close proximity to the wetlands will be shown on **all** *figures*.

COMMENT 21:

Page 4-39, Figure 4-7

Based on the text (page 4-42, paragraph 1) it appears that one of ~~the~~ proposed **sediment** samples in the southeastern portion of this wetland should be moved to the southwestern corner, to be closer to Site 1. Please verify the proposed locations.

RESPONSE

One of the **sediment** sample locations has been moved from the southeast portion of the wetland to the **southwest** portion. This has been *shown* on **Figure 4-7**.

COMMENT 22:

Page 4-43, Figure 4-8

Illustrate the three proposed sediment sampling locations.

RESPONSE

Three **sediment** samples have been placed on *Figure 4-8*.

COMMENT 23:

Page 4053, Figure 4-11

Clarify why no samples **are** proposed for Wetlands 11 and 13.

RESPONSE:

Wetland 11 is considered far enough away and upgradient of OU 10 not to be impacted by it. Wetland 13 will be sampled because it may be impacted by OU 10.. Sample locations are shown on Figure 4-11.

COMMENT 24:

Pages 4-60 through 4-61, Figures 4-12 and 4-13

If significant **contamination** is detected in the proposed samples, additional **sediment/surface** water samples should be collected at or near any outlets to **Pensacola Bay**.

RESPONSE:

Samples will be biased towards **characterizing** the nature and extent of **contamination**. This may include collecting samples in the bay and bayou. However, sample collection in these areas will be coordinated with the sites 40 and 42 investigations.

COMMENT 25:

Page 4-63, Section 4.7

Given the Tier 1 team's recent decision to transfer Site 3 to the state UST program, the full ecological **risk** assessment of wetlands W1, 39, 72 and 52 **should** be completed under this program.

RESPONSE

Wetlands W1, 39, 72, and 52 will be studied as part of the Site 41 investigation. However, **full scan** analysis may not have to be performed.

COMMENT 26

Page 4-76, Figure 4-18

An additional sediment/surface water pair **should also be collected** in the southeastern corner of Wetland 19B, closer to Site 16.

RESPONSE:

Site 16 was **inaccurately placed** on the site map. Based on a review of aerial photographs and ground truthing, impacts to Wetland 19B are not **expected** from Site 16. Sample locations will not be **changed** in this wetland.

COMMENT 27:

Pages 4-74 through 4-80, Sections 4.8 through 4.10

The *SAP* presents a good attempt to devise appropriate samplings for these wetlands, despite the fact that no data currently exists for the associated terrestrial sites. In the absence of this data, EPA recommends delaying investigation of these wetlands until the associated terrestrial site investigations are completed. Once the investigations are complete, the *SAP* should be revisited and revised as needed prior to implementation.

RESPONSE:

The ~~Tier~~ I partnering team has decided to continue the Site 41 investigation in all wetlands shown in the *SAP*.