UNITED STATES ENVIRONMENTAL PROTECTION
REGION IV
345 COURTLAND STREET. N.E.
ATLANTA, GEORGIA 30365

AUG 2 1993

4WD-FFB

Commanding Officer
Attn: Ms. Linda Martin - Code 1851
SOUTHNAVFACENGCOM
P.O. Box 190010
North Charleston, South Carolina 29419-9010

Re: Review of Draft RI/FS Work Plan for Site 41 (NASP Wetlands)
(Investigative Category 4);
NAS Pensacola, Florida
EPA Site ID No.: FL 9170024567

Dear Ms. Martin:

The Environmental Protection Agency (EPA) has completed its review of the the Navy's Draft RI/FS Work Plan for Category 4 Site 41 (NASP Wetlands). Our comments are enclosed. Please feel free to contact me if you have any questions or require further clarification on these issues. In accordance with the schedules in the FY93 Site Management Plan, the reviaed Draft Final RI/FS Work Plan which incorporates our comments is due in this office within 120 days of your receipt of this letter.

Sincerely yours,

Allison W. Drew, RPM
Department of Defense Remedial Section
Federal Facilities Branch

Enclosure

cc: Ron Joyner, NAS, Pensacola
Eric Nuzie, FDER
Henry Beiro, Ensafe/Allen & Hoshall

TECHNICAL REVIEW *AND* COMMENTS
DRAFT RI/FS WORK PLANS FOR
OPERABLE UNIT 41 (NASP WETLANDS)
NAVAL AIR STATION (NAS) PENSACOLA
PENSACOLA, FLORIDA

1. Page 1-1, Section 1.0, Paragraph 2:
The Florida Department of Environmental Regulation (FDER) is also a Party to the Federal Facilities Agreement. Please make the necessary correction.

2. Page 1-1, Section 1.0, Paragraph 3:
This paragraph must also briefly summarize plans to conduct and prepare a Baseline Risk Assessment for the Operable Unit.

3. Pages 1-1 through 1-2, Section 1.0, Paragraph 4:
The components described in this paragraph (i.e. the SAP (including FSP and QAPP) and the HSP) are essential components of the RI/FS Work Plan. Consequently, the RI/FS Work Plans for the subject Operable Units cannot be considered for approval until these components are received and approved.

4. Page 2-2, Figure 2-1:
This figure is good for presenting all existing wetlands at the facility. However, the following information must also be provided on this, or some other figure:

a. Complete the outline of NAS Pensacola, and make any other necessary corrections, in the inset location map

b. Indicate which wetlands, or portions thereof, are planned €or investigation

c. Illustrate the sampling locations planned for each wetland

5. Pages 2-11 through 2-15. Section 2.3.5:
A map depicting the direction of groundwater flow for NASP for each zone of the Sand-and-Gravel aquifer must be included in this section. The results of the forthcoming well inventory, together with existing hydrogeologic data and information which has been collected during previous investigations (E&E, Geraghty & Miller, etc.) should provide adequate information on which to base such maps.

6. Page 2-12, Paragraph 2:
The EPA Groundwater Classification for the Sand-and-Gravel aquifer must be provided in this description as well.

7. Page 2-16, Section 2.4, Paragraph 2:
As of January 4, 1993, U.S.EPA reverted back to use of the 1987 manual for the identification and delineation of jurisdictional wetlands, pending Congressional review of the 1989 manual. Therefore, the 1987 manual must be used in place of the 1989 manual.

8. Page 2-18, Paragraphs 3 through 4 and Appendix C:
For purposes of this investigation, a better presentation of the detected contamination having the potential to impact NASP wetlands is needed.

Specifically, a figure should be prepared for each wetland illustrating the location and nature of all contamination (i.e. that detected for each PSC) which has the potential to impact that wetland. Individual PSC locations and potential pathways (e.g. groundwater and surface water flow) should also be illustrated on a wetland-specific basis. Such a presentation should form the basis for development of a conceptual model for each wetland, and facilitate the identification of data gaps and justification of planned sampling locations. If the Navy feels that development of such a presentation could be better accomplished upon collection of additional data from individual PSCs, this approach may be presented to EPA for consideration. However, any such plans, including justification, proposed means (e.g. submittal format) and schedules for completion, must be clearly stated in the work plan text.

9. Pages 2-18 through 2-26, Section 2.5:
A. Paragraph 1 - The originally-designated wetland 14 is actually a non-wetland sand pit. Since the originally-designated wetland 59 (now a ball field) is shown on Figure 2-1, wetland 14 should also be shown on this figure.

B. The wetland inhabitants noted in this section are primarily invertebrates, or, in general, higher trophic level organisms. During the planned field investigation, information should also be obtained on invertebrates/lower trophic level organisms, as potential ecological receptors for both palustrine and estuarine wetlands.

C. Pleaee provide information on the current status of the following wetlands:

Wetland 15: has the extent or shape of this wetland been altered by golf course construction activities? If so, this should be shown in Figure 2-1.

Wetland 13(?): during a recent EPA overview at OU 10, it was noted that a wetland area adjacent to the wastewater treatment plant received waste (bilge water) from a drain pipe when an overflow pipe to the waste storage tank was mistakenly left open. The vegetation in the immediate area of the waste storage tank was highly stressed. Have appropriate steps (e.g. soil, surface water sampling; appropriate remedial measures) been taken to address this situation?

10. Page 3-1, Section 3.1:
The text states that the scope of proposed work for the RI/FS will be discussed in Sections 5 and 6. However, Section 6 is a list of references and does not include such a discussion. Please clarify this point.

11. Pages 3-2 through 3-10, Section 3.2 and Table 3-1:
A. The statement is made that Phase I contamination assessments have not been performed for several sites which could potentially affect the NASP wetlands. EPA's Environmental Services Division (ESD) conducted a field investigation at NASP in July of 1992, to help fill data gaps for some of these sites and wetland areas. This data should be viewed as a valuable resource and must be utilized in the revision and resubmittal of this work plan.

B. The text and table discuss/list sites which have a minimal potential to impact some NASP wetlands. The following sites should be added to this discussion unless adequate documentation for their omission can be provided:

SITE	POTENTIALLY IMPACTED WETLANDS
7 (Firefighting School Training Area)	79
25 (Radium Spill Area)	6, 7, 8 & 64
26 (Supply Dept. Storage Area)	7, 8 & 64
27 (Radium Dial Shop Sewer)	6, 7, 8 & 64

12. Page 3-3, Figure 3-1:
A. Although Site 36 is an extensive site, it must be included in this figure (perhaps as a blown-up insert).

B. To clarify the relationship between NASP Wetlands and individual PSCs at NASP, the information contained in Figures 2-1 and 3-1 must either be combined into a single figure or overlain as two separate figures. It would also be helpful to enlarge these maps. Perhaps a separate map could be prepared for each of the three general contaminant discharge areas mentioned in Section 3.2 (page 3-2).

13. Page 3-7, Paragraph 1:
A. The probable contaminant source in wetland 5 which was identified by EPA's Environmental Services Division during the field effort performed during July 1992 must be evaluated to determine whether a removal action is appropriate before initiating further field investigations.

B. The Chevalier Field Pipe Leak Area (Site 23) is one of several UST sites at NASP. The UST sites fall under state (FDER) jurisdiction and are not part of EPA's Superfund program. A determination should be made as to how the impacts of these UST sites on the wetlands, and other ecological areas of concern (e.g. the Bay and Bayou), will be addressed. EPA recommends that the impacts of all sites (UST and non-UST) on ecological areas be addressed in a single investigation. Such an investigation will require the coordination of programmatic issues, schedules and data collection efforts in order to ensure that the requirements of both programs are adequately addressed.

14. Pages 3-10 through 3-13, Section 3.3:
This section presents a reasonable preliminary, or conceptual, identification of potential contaminant migration pathways and potential impacts on public health and/or the environment. However, while comprehensive, the information presented is too general to be of extensive use in directing and refining sampling plans. While it is recognized that most of the available data is questionable due to the use of lower DQO analytical levels and lese than rigorous QA/QC methods, some focusing of sampling efforts should still be possible through (i) an identification of likely contaminant pathways (GW,SW), (ii) the use of available survey results, site histories and (iii) conservative use of the available chemical data. In addition, given that higher DQO Level data for individual sites will be forthcoming prior to actual implementation of the "Wetlands" work plan, an addendum to this work plan aimed at focusing the proposed sampling scheme should be submitted following receipt and evaluation of this new site-specific data.

15. Pages **3-11** through **3-12,** Section **3.3** and Figure **3-2:**
If applicable to the estuarine wetlands, also mention adsorption of contaminants onto suspended particulate matter (e.g., suspended organic matter, such as detritus), and include this in the Conceptual Model (Figure **3-2).**

16. Page **3-12,** Figure **3-2:**
Please make the following additional changes to this figure:

A. Under Primary Release Mechanisms, change "AST" to "UST".

B. Delete "terrestrial biota" from the "Secondary Sources" heading. Contaminants in NASP Wetlands would first bioaccumulate in aquatic organisms; ingestion of these organisms by terrestrial biota could then lead to bioaccumulation in the terrestrial biota.

C. Draw a direct line from the "Bioaccumulation" box (Secondary Sources) to "Consumption of Affected Ecological Resources" (Pathways), since wetland plants and many macroinvertebrates (e.g., infauna) are sessile and do not migrate.

17. Page **3-13,** Section **3.4:**
Although the wetlands can be considered as possible receptors of contaminants that have migrated from other source areas, an area of such contaminants present in the wetlands (e.g., in sediments) could act as a source of contaminants having the potential to migrate elsewhere (e.g., via water movement, food chains, etc.). This is shown in the conceptual model (Figure **3-2).** Therefore, where applicable, remedial alternatives should **be** proposed for the wetlands. (The statement that "Remediation may cause as much damage to biota as the contamination" is valid and should be retained.)

18. Page **4-1,** Section **4.0,** Paragraph **3:**
Please delete the first two sentences of this paragraph and replace them with more general terminology regarding the biological effects, such as the following:

> "Biological effects will be investigated through the collection and taxonomic analysis of the benthic macroinvertebrate community."

The EMAP approach as contained in the document Ecoloaical Indicator8 (EPA/600/3-90/060) **is** not appropriate, per se, for this site. The focus of the **EMAP** program is the ecological health of an area, while the focus of a Superfund investigation is cause and effect (i.e., determining whether ecological effects are related to site contaminante). Although **some** of the elements contained in this document can be applied to the investigation of **OU 16,** reference to the **EMAP** program, the Ecoloaical Indicators document, and the **EMAP** terminology should be deleted to avoid confusion.

19. Pages **4-2** through **4-3,** Table **4-1** and Section **4-1:**
Change the objectives for Sediment/Soil Chemistry and Surface Water Chemistry in Table **4-1** to be consistent with those given in the text.

20. Page 4-3, Section 4.1:
A. "Given the limitations of the previous investigations completed for the NASP wetlands, the objectives for this RI/FS are comprehensive." This general field sampling objective must be accompanied by, and supported with, figures and tables illustrating approximate sample locatione, numbers of samples/ analyses, etc. Without this information, EPA cannot complete an adequate review of this work plan, or consider it for approval. Specifically, the available information (as discussed in comments 8. and 14.) muet be used to formulate sampling plans, including a statement of, and justification for:

1. Which wetlands require sampling, and
2. Specific sampling plans for each wetland

21. Page 4-3, Section 4.1, Sediment Chemistry Data Quality Objectives:
A. The term "chronic effects" usually refers to effects on biological receptors, not on sediment/soil. Clarify this point.

B. Although sediment standards are currently being developed by the etate of Florida and U.S.EPA, they might not yet be available. Therefore, analytical results for sediment samples should be compared to the sediment screening values used by the U.S.EPA Region IV Waste Management Division and to any ecological toxicity information available in the literature. (Please eee comment 26B.).

22. Page 4-3, Section 4.1, Surface Water Chemistry Data Quality Objectives:
A. The term "acute effects" usually refers to effects on biological receptors, not on surface water. Clarify this point.

B. Since surface water bodies also have a vertical dimension, the vertical extent of contamination must be determined.

23. Page 4-4, Section 4.1, Biological Effects Data Quality Obiectives:
A. Some of the activities planned for this portion of the investigation must be performed during a particular season or time of day in order to be accomplished successfully (e.g. the observation of migratory birds). An adequate field investigation schedule must be included in the final work plan in order to assure that the planned objectives are met.

B. This section should also note that additional biological investigations (e.g., sediment toxicity testing, bioaccumulation studies) may be needed at a later point in the investigation in order to provide sufficient information for the ecological risk assessment.

24. Pages 4-4 through 4-8, Section 4.2:
As mentioned above, this investigation is being conducted under the Superfund program, not the EMAP program. Several of the "indicators" presented in this section and the following subsections are applicable to the proposed investigation, but the terminology is not applicable. Please delete Section 4.2 and the indicated subsections and incorporate applicable portions under Section 5.0 (RI/FS Tasks) subheadings as follows:

Section 4.2 - Delete.

Subsection 4.2.1 - As indicated by the final paragraph of this subsection, this task is inappropriate for use in characterizing and delineating wetland contamination. However, given the potential for natural attenuation of contaminants, information on sedimentation and subsidence rates may be retained for use in the evaluation of remedial alternatives. Regarding data collection for purposes of completing the RI, analyses for sediment TOC and grain size should be added to Section 5.2.1. The collection of sediment samples from more than one depth may also be appropriate.

Subsection 4.2.2 - Combine this section with Section 5.2.1 (page 5-10). Also, while data on the dominant animal species in important, relative abundance information (e.g. common, infrequent, rare) should be collected for the other animal species observed. Finally, clarify the difference between "relative abundance" and "abundance and diversity" (Section 5.2.1: page 5-4). Under which circumstances will each of these sampling methods be performed.

Section 4.2.3 - "changes in vegetative patterns and species composition to denote ecological impact on a wetland" can be obtained within the scope of this investigation by examining historical aerial photographs (particularly infra-red) in conjunction with current information (species composition, abundance, diversity) collected during this study. Combine appropriate portions of this section with Section 5.2.1.

Section 4.2.4 - Combine appropriate portions of this section with Section 5.2.1 (page 5-4).

Section 4.2.5 - Combine appropriate portions of this section with Sections 5.1.2 or 5.2.1. Also, the use of staff gages and piezometers to monitor surface water/ground water levels and determine the volume of groundwater discharge/recharge to wetlands during tidal cycles and seasons is good. However, specific locations for collecting this data must be proposed. Rain gages should also be installed near wetlands, since precipitation data are necessary to determine the extent of recharge to ground water and wetlands.

Section 4.2.6 - Combine appropriate portions of this section with Section 5.2.1 (pages 5-2 through 5-3).

Section 4.2.7 - Delete. The same basic information is contained in Sections 4.1 (page 4-3) and 5.2.1 (pages 5-2 and 5-3).

Section 4.2.8 - Combine this section with Section 5.2.1 (page 5-1).

Section 4.2.9 - Delete.

25. Page 4-11, Section 4.3:
The information contained in this section is overly general. Please provide wetland-specific sampling plana and/or strategies.

26. Page 4-11, Section 4.4:
A. DQO Level IV TCL/TAL analyses must also be performed for surface water samples.

B. Whenever possible, detection limits used in the chemical analyeis of sediment samples should be sufficiently low that the data can be compared to the NOAA Effects Range-Low and Effects Range-Median values used as ecological sediment screening values by the U.S.EPA Region IV Waste Management Division. Likewise, detection limits used in the chemical analysis of surface water samples should be sufficiently low that the data can be compared to the Florida Surface Water Standards and the ecological surface water screening values (including the Ambient Water Quality Criteria) used by the U.S.EPA Region IV Waste Management Division.

27. Pages 4-12 through 4-13, Data Gaps:
The Navy should contact the authors of the U.S.EPA/ESD wetland study to see if any of the missing information listed here is available in the form of a more extensive wetlands report, field notes, etc.

28. Page 4-13, Section 4.5.1:
A. Please see comment 7.

B. The reassessment must focus on validating existing data and filling the remaining data gaps, rather than redoing the complete inventory from scratch. Also, before beginning this reassessment, the Navy must prepare a list of the wetlands which are potentially affected by Contaminants from the individual PSCs at NASP (e.g. only 32 of the 81 wetlands may be affected by individual PSCs (p. 2-18, paragraph 2)). Only those wetlands which are potentially impacted by a PSC should be reassessed. This will ensure that available resources are concentrated most effectively, and permit EPA review and approval of the Navy's proposal to delete any wetland from further consideration.

29. Page 4-13, Section 4.5.2, Paragraph 1:
As stated in Section 4.5.2, the first goal of "Step 2" is to perform "extensive soil and water chemistry analysis, to establish background...and to identify the nature and magnitude of contamination..". Step 3 appears to 2repeat (and expand upon) this task. Step 3 must therefore be combined with this first goal of Step 2. The second goal of Step 2, i.e. "to ascertain overall biological quality", should be broken out into Step 3, to be performed only upon the identification of contamination. Step 3, however, should be performed in conjunction with the determination of contaminant pathways and extent.

30. Pages 4-14 through 4-15, Section 4.5.4:
A. While it is true that wetlands can act as a sink for contaminants, and that wetland vegetation can bioaccumulate some contaminants, not all dead wetland vegetation becomes buried in the wetland sediments. For example, in an estuarine wetland, dead vegetation in the form of detritus can be transported out of the wetland into the estuary via tidal action, serving as a potential food source for estuarine animals. Clarify this point.

B. The last paragraph contains a good observation regarding evaluation of the pros and cons of wetland remediation.

31. Page **5-1,** Paragraph **1:**
A. While it is understood that the "methods and procedures for...site characterization tasks [will be] described in the ***SAP***", this work plan must include more information on the proposed sampling design. For instance, although detailed field sampling methods and procedures will be contained in the ***SAP,*** the appropriate sections of the work plan (e.g. **5.2.1)** must still include such information as:

1. the type of sampling equipment to be used
2. the timing of sampling events (e.g. relative to tides, etc.)
3. the coordination of soil/sediment, surface water and biota sampling for individual wetlands

B. Towards the end of this paragraph, please revise the phrase "health risk assessment" to read "human health risk assessment".

32. Page **5-2,** Paragraph **1:**
Please see comment **7.**

33. Page **5-2,** Section **5.1.3:**
A. Please check the dictionary definition of "cadastral". Its use in this context appears inappropriate.

B. The establishment of sampling grids **or** transects must be based upon **known** migration pathways from source areas into wetlands.

34. Page **5-2,** Section **5.2.1:**
A. TCL/TAL analyses must also be performed for any soil samples collected.

B. TOC and grain size analyses must be performed for sediment samples.

C. EPA recommends that sediment samples for chemical analysis **be** collected at both the **0-0.5** ft. interval and the **0.5-2.0** ft. interval.

35. Page **5-4,** Paragraph **2:**
A. The first line of this paragraph should be revised to read "benthic macroinvertebrate abundance and diversity".

B. How will the presence of "juvenile and adult commercially/recreationally important fish species" be determined? Shellfish species should be noted along with these fish species.

C. Include more information on how the abundance and diversity of plants and aquatic animals will be determined.

36. Page **5-6**, final paragraph:
As discussed previously in this work plan (pages **3-11** through 3-12) the wetlands can serve not only as receptors of contaminants from source areas, but as actual contaminant sources. **It is** understood that the Feasibility Studies for the individual PSCs will focus on potential remedial alternatives **for** those sources and their contaminant transport **mechanisms.** However, **please** clarify that the **FS** for **NASP** Wetlands should focus on potential remedial alternatives for the wetlands themselves.