



DEPARTMENT OF THE NAVY

SOUTHERN DIVISION

NAVAL FACILITIES ENGINEERING COMMAND

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CHARLESTON, S. C. 29411-0068

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03.01.02.0009

COMMANDING OFFICER, NOT TO
THE SIGNER OF THIS LETTER.

REFER TO:

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1851

CERTIFIED MAIL- RETURN RECEIPT REQUESTED

Ms. Allison Drew
Remedial Project Manager
Department of Defense Remedial Unit
RCRA & Federal Facilities Branch
Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

APR 22 1992

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NAS PENSACOLA
5090.3a

Dear Ms. Drew:

Enclosed for your review are the Navy's Responses to EPA, and FDNR review comments for the Draft Workplans Phase 11: Groups A-E (OU1-5) for the Naval Air Station Pensacola, Pensacola, Florida. The Navy did not receive any comments requiring responses from FDER. The Draft/Final Phase II Workplan submittals for Groups A-E are due for transmittal no later than July 7, 1992.

Please contact Ms. Suzanne O. Sanborn at (803) 743-0574, if you should have any questions concerning the Navy's response to your review comments.

Sincerely,

JAMES B. MALONE, JR.; P.E.
MANAGER, INSTALLATION
RESTORATION, EAST SECTION

Encl:

- (1) Navy Responses to EPA comments
- (2) Navy Responses to FDER comments

copy to:

NAS Pensacola (Mr. Ron Joyner) w/ encl
FDNR (Mr. Mitchell) w/out encl
FDER (Mr. Eric Nuzie) w/out encl

Attachment A

RESPONSES TO COMMENTS FROM
ENVIRONMENTAL PROTECTION AGENCY, REGION IV (EPA)
TECHNICAL REVIEW DRAFT RI/FS WORK PLANS FOR GROUPS A THROUGH E
NAVAL AIR STATION (NAS), PENSACOLA
PENSACOLA, FLORIDA

GROUP A (Operable Unit 1) - SITE 1 (Sanitary Landfill)

Comment 1; General Comment:

a) Notwithstanding the information in Section 14.2 of this document, which has been extensively revised, the RI/FS Work Plan for Group A contains few significant revisions over the July 1990 version. Given the very similar format of all RI/FS work plans submitted for NAS Pensacola to date, many of the comments submitted for the Group H, I, P, and Q Work Plans are expected to apply to the present work plan. For instance, references to the phased approach presented in Section 1. and throughout the text must be revised in accordance with Comment 1 for the Group H, I, P and Q Work Plans. In general, all comments on the H, I, P and Q work plans which are applicable to the Group A Work Plan must be addressed in revision of the latter document.

b) Of further note, the format of this revised document is somewhat confusing to the reviewer, The footnote which states "bold items enclosed in brackets denote changes to the last version of document" appears at the bottom of every page in Section 14.2. Yet none of this section has been bold-faced or placed in brackets. In order to determine that the section has been revised, the reviewer must read the first paragraph of the section which states that it "has been entirely revised". This leads the reader to wonder if similar statements have not been inserted in other sections of the document, and seems to defeat the purpose of using bold-faced text and brackets to indicate document revisions.

Response:

a) The Navy believes that the phased approach and the efficiency and benefits it offers in both time- and cost-effectiveness are ideal for the NAS Pensacola investigation. To date, the results of Phase I investigations on 22 sites are working well for their intended purpose, which is to "focus" Phase II sampling. The Navy will continue to employ the phased approach; however, every effort will be made to shorten the time between phases. Furthermore, the Navy intends that all of the work required to complete a RI/FS at a given site, or to provide evidence that contamination does not exist at a site, will be conducted during Phase II. Additionally, the EPA's objection to the phased approach would seem to be contradictory to the EPA's Document 87-76, the Remedial Project Managers (RPM) Primer, which advocates a phased investigative approach on agency-led investigations. Please refer to the responses to

the applicable EPA comments on the '100% draft work plans for Groups H, I, P, and Q.

b) The Navy did not feel it prudent nor appropriate to bold and bracket an entire work plan section. Rather, it seemed a more logical idea to simply state at the beginning of the section that it had been completely revised. There are no other statements similar to this anywhere in the document.

Comment 2; Page 3-4:

The author points out several inconsistencies in the groundwater data. Probable or possible reasons for these inconsistencies must be included in the text (e.g. any sampling difficulties, groundwater fluctuations, rainfall variations, etc.).

Response :

This is an interpretive statement regarding the Geraghty and Hiller (G & M) 1984 investigation results. The reasons for the apparent inconsistencies are unknown; however, this points out the need for more recent, reliable data to conduct a Remedial Investigation/Feasibility Study (RI/FS) on sites where it is required.

Comment 3; Pages 14-12 through 14-13:

a) As stated on page 14-10, while surface water and sediment contamination was detected at Site 1 during Phase I, "it is not clear whether the nature, magnitude and distribution of the detected contamination are sufficient to constitute an environmental threat...". The work proposed in the RI/FS Work Plan must be clearly directed towards providing an answer to this question. The text later in this section indicates that only a habitat/biota survey will be performed. Wasn't the survey performed during Phase I? What assurance can be made that this survey will provide adequate information to answer the preceding question?

b) The work plan must clearly identify data gaps which must be filled in order to an ecological assessment. If, in the Navy's opinion, it is more appropriate to postpone the "filling" of some of these data gaps to the investigation of Operable Units 15 through 17, adequate justification for this approach must be provided. Regardless of how the work is divided between the current work plans (dealing with individual sites) and Operable Units 15-17 (dealing with larger ecosystems), all work must be proposed and performed in a manner which will permit accomplishment of the final goal (i.e. to complete an ecological assessment) as effectively and efficiently as possible.

Response :

a) The work proposed in the revised work plan for this site group is clearly directed towards initiating and completing the RI/FS; this point is stated on page 14-12 as one of the objectives of the Phase II investigation. The habitat/biota survey and biota sampling for this site have been deferred to the Operable Units (OUs) 15-17 ecological assessments. The appropriate section of the work plan have been, deleted.

b) Before an ecological assessment can be performed, the full spectrum of potential contamination must be defined. The work proposed in the revised work plan is clearly directed towards this end. By defining potential contamination, the sampling of flora/fauna can be streamlined, and directed in the most time- and cost-effective manner. It is possible that all of the "data gaps" that need to be filled to perform an ecological assessment will not be identified until the nature and extent of potential chemical contamination is fully understood. The Navy has reviewed all of the EPA/FDER/NOAA comments to date as to the minimum type of sampling required. It is the Navy's intent to meet those minimum requirements necessary to fully characterize the contamination associated with the NAS Pensacola sites, and does not intend to conduct a regional assessment of environmental conditions to satisfy closing broad data gaps.

Comment 4; Pages 14-13 through 14-14:

Text pertaining to the Baseline Risk Assessment (BRA) and Feasibility Study (FS) must be reworded to more clearly indicate the intent to complete the RI/FS and BRA during Phase II.

Response :

The text on page 14-13 has been revised to indicate the intent of the Navy to complete the RI/FS and the BRA during Phase II.

Comment 5; Pages 14-14 through 14-15:

Why wasn't the Contaminant Source Survey completed during Phase I? This activity should be completed at the beginning of an investigation so that a cost-effective sampling program can be planned.

Response:

Evaluation of each site in terms of potential sources of contamination is done as part of the historical data analysis, and the various tasks encompassed in Phase I. The Phase II contaminant source survey, however, is intended to be an all-encompassing survey required for full site characterization, and it will supplement and greatly expand the Phase I evaluation.

Comment 6; Page 14-16:

Locations for all proposed background samples must be provided so that they can be evaluated. Will these samples be used as background for all sites?

Response :

For the purposes of comparing background data for soils and for groundwater in the shallow, intermediate, and deep zones of the Sand-and-Gravel Aquifer, the proposed background soil borings, and shallow and intermediate wells, will be clustered with the three existing inactive deep zone supply wells on NAS Pensacola. A figure showing the locations of these wells has been added to the work plan. In addition, as agreed between the Remedial Project Managers (RPMs) at the January 1992 meeting in Atlanta, one background sediment/surface water sample will be collected at a point west of Site 1, in the western arm of Bayou Grande. These samples are intended to be used as background for all sites, as well as to aid in the evaluation of potential, base-wide, ambient contaminant sources.

Comment 7; Pages 14-18 through 14-19:

The logic behind the biased sampling plan must be presented. There are large areas of the landfill, some as big as 1000' x 500', with no sampling.

Response :

The rationale for all proposed sampling is based on the results of the Geraghty and Hiller 1984 and 1986 studies, and E & E's Phase I investigation for this site. The rationale for the sampling plan is presented in Tables 14-3, 14-4, and 14-5. Soil sampling locations were determined based on the results of the preliminary surveys (surface emissions, geophysics, etc.) and the Phase I analytical results, and were located in areas which clearly indicated that concentrated waste disposal had occurred. Likewise, the locations of wells were determined based on Phase I results, and are located immediately underlying or downgradient of areas that exhibited evidence of concentrated waste disposal. The Phase II Contaminant Source Survey will focus on identifying additional areas of concentrated waste disposal that were not revealed during Phase I. Should similar areas be present, appropriate media sampling will be included in the investigation of those areas.

Comment 8; Page 14-18:

Additional surface water and soil samples must be collected from the intermittent creek west of the 1950 dump area, southwest of monitoring well TW021.

Response:

Two sediment/surface water sample pairs collected in this creek, one at the head of the creek (presumed point-of-entry) and the other at the outlet to Bayou Grande, should be sufficient to determine: a) contamination in the head of the creek attributable to Site 1; and b) the resultant contaminant contribution to Bayou Grande. More extensive sediment/surface water sampling will be conducted in this area of Bayou Grande, and possibly in the intermittent creek, as part of the Site 40 (Bayou Grande) and Site 41 (NASP wetlands) investigations.

Comment 9; Page 14-19:

Because of the degree of contamination detected in the Phase I monitoring wells at Site 1, additional shallow wells penetrating the surficial zone must be installed at the following locations to determine the horizontal extent of the contaminant plume. These locations include one well west of monitoring well TW001 near Bayou Grande, a well approximately 1,000 feet east of monitoring well TW013, and one well approximately 1,000 feet east of monitoring well TW011.

A well cluster must be installed approximately 400 feet south of monitoring well TW015. A shallow well is necessary here to delineate the extent of the lead plume that is present at well TW015. A well penetrating the major producing zone is necessary at this location because the potential horizontal direction of ground-water flow is toward the south in the major producing zone. The proposed locations of wells penetrating the major producing zone do not include areas downgradient of site 1.

Response:

The EPA's justification for each of these additional wells is not clearly stated. The Navy's position on each suggested well is as follows:

One well west of TW001 near Bayou Grande - This location is not justified based on the Phase I results from TW001. The Phase I analytical results of well TW001 indicate that metals were the only significant type of contamination present. The Phase I metals results of permanent monitoring well samples, when compared to those of the temporary wells, strongly suggest that the turbidity in the temporary wells, and the sample preservation process, are the cause of the high metals in the temporary well samples. In comparison to the temporary wells, the metals results from the existing wells exhibit low total metals concentrations, and even lower dissolved metals concentrations. One of the purposes of the proposed Phase II wells is to confirm the high metals concentrations detected in the Phase I temporary wells; consequently it is not valid at this point to install additional wells in an attempt to delineate a metals plume which available evidence suggests may not exist.

A well approximately 1,000 feet east of monitoring well TU013 - This well is not justified for delineation purposes. This location is across-gradient from TW013, (for which the Phase I results indicated high total metals as the only significant contaminant) and a disproportionate distance outside of the perimeter of site contamination as defined by Phase I results. Please see the applicable portions of the response to the preceding suggested well.

4 well approximately 1,000 feet east of monitoring well TW011 - Again, the Phase I results of this well indicated high total metals as the only significant contaminant present. In addition, the suggested location is a disproportionate distance outside of the perimeter of site contamination as defined by Phase I results. See the applicable portions of the Navy's position on the two preceding suggested wells.

A well cluster 400 feet south of TW015 - For the purpose of providing downgradient control at Site 1, a deep (main-producing zone) well has been added to the work plan. In addition, for vertical control, a shallow well is proposed to be clustered with the deep well. The groundwater samples from the shallow and deep wells will be analyzed for Analytical Suite A. ~~Given that there is no reason to suspect shallow zone contamination in this area, no intermediate well has been proposed.~~ The shallow well will serve a dual purpose in that it can also be used as downgradient control for the investigation of Sites 8 and 22 (Group H).

Comment 10; Page 14-28:

Surface water and sediment samples must be collected in pairs unless adequate justification is provided.

Response:

Given the ability of generally fine-grained organic-rich sands and muds (the type found at NAS Pensacola) to absorb and effectively demobilize

metals and hydrophobic organic contaminants, sediment samples should represent a record of cumulative and inhomogeneous contaminant concentrations. In contrast, surface water mixes much more rapidly than sediment, and the contaminant concentrations are consequently more homogenous. Generally, because of these reasons, fewer surface water samples are proposed than sediment samples. This was adequately explained in the work plan. At Site 1, there was no significant surface water contamination detected in the Phase I samples, whereas contamination was detected in the sediment samples. Consequently, the potential impact of landfill activities appears to be recorded more in the sediments than in surface waters.

Comment 11; Page 14-30:

The number of soil samples proposed for analytical suite A analysis (177) seems somewhat excessive. Some type of field screening procedure should probably be used to limit the number of laboratory analyses required.

Response:

It seems that the EPA is presenting contradictory requests for the NAS Pensacola investigation. Review comments from the Interim Data Reports for Groups A-E indicated that the EPA wanted the full TAL/TCL list on all samples, and now they propose a screening procedure to limit these. At any rate, the Navy did use a field screening procedure (Phase I) which has focused the Phase 11 sampling plan. The number of soil samples represents the least amount of sampling necessary to fully characterize the site.

Comment 12; Page 14-33:

All monitoring well construction must be performed in accordance with ESD's 1991 Standard Operating Procedures and Quality Assurance Manual.

Response:

The 1990 GQAPP was approved by the EPA for this investigation, and contains all the SOPs for monitoring well construction. Where there is not a conflict with this document, every effort will be made to comply with the SOPs in the ESD's 1991 Standard Operating Procedures and Quality Assurance Manual.

Comment 13; Page 14-35:

If groundwater modeling is to be performed for this site (as per Section 16.), more extensive aquifer testing must be performed during the (Phase 11) RI/FS. Please refer to pertinent comments for the Group H, I, P and Q Work Plans.

Response:

If groundwater contamination that requires remedial action is detected, then more formal aquifer testing will be conducted to provide the modeling data needed for the remedial design. Please see the responses to EPA comments nos. 38 and 44 for the Group E 100% draft work plan.

Comment 14; Page 14-38:

There is no EPA approval of these Interim Remedial Measures (IRMs). EPA must be notified and approval received before any IRMs are undertaken.

Response:

There will not be IRMs for any of these sites initiated without prior approval from the EPA. The text has been changed on page 14-38 to indicate this.

Comment 15; Page 14-40:

The topographic survey proposed here must be conducted simultaneously with the Engineering Survey discussed in Section 14.2.5.

Response :

The topographic survey proposed in Section 14.5 of the work plan is a duplication of a portion of the effort required for the Engineering Survey and has been deleted from the work plan.

Comment 16; Page 20-1:

Following completion of the Remedial Investigation, a single, Operable Unit-specific Draft RI/FS and Baseline Risk Assessment report shall be prepared and submitted for review. No other formal reports shall be prepared prior to transmittal of these documents. In the event that investigation beyond the proposed work (as modified in accordance with our comments) is needed to complete the RI, an addendum or supplement to the present work plan shall be submitted. The supplement shall include adequate explanation/justification for all proposed additional sampling (including presentation and interpretation of applicable data and any other pertinent information). It shall also provide clear assurance that the proposed sampling is intended to complete the investigation (i.e. provide adequate information to allow preparation of a Baseline Risk Assessment and selection of a Remedial Alternative).

Response :

This comment is noted.

Comment 17; Appendix A:

A map and directions to the nearest hospital should be included in the Site-Specific Safety Plan.

Response:

There are explicit directions to the nearest hospital in the Site-Specific Safety Plan. A map illustrating the route has been added.

GROUP B (Operable Unit 2) - SITE 11 (North Chevalier Disposal Area);
SITE 12 (Scrap Bins) and SITE 26 (Supply Department Outside
Storage)

Comment 1:

The following comments on the Group A Work Plan are also applicable to this work plan:

1, 3, 4, 5, 6, 11, 12, 13, 14, 15, 16 and 17.

Response:

Please see the response to EPA comment nos. 1, 3, 4, 5, 6, 11, 12, 13, 14, 15, 16, and 17 for the Group A work plans.

Comment 2; Page 1-1:

Based on Phase I investigative results, decision was made to proceed with a full-scale RI/FS for screening Site 12. This decision must be clearly stated somewhere in the present work plan.

Response:

The work plan text in Section 14.1 has been changed to clearly indicate this decision.

Comment 3; Page 2-1:

Site 26 is located northwest of Chevalier Field.

Response:

The work plan text on page 2-1 has been modified accordingly.

Comment 4; Page 2-5:

The west side of the site is bounded by a paved road and the east side is bounded by a wooded area, according to Figure 14-4.

Response:

The work plan text on page 2-5 has been modified accordingly.

Comment 5; Page 3-2:

The location of well GM-27 and its construction details are not provided in this document. Please provide.

Response:

Monitoring well GM-27 was found to have been destroyed during Geraghty and Hillers (G & M) 1986 study. The well location was added to Figure 2-2, and the construction details were added to Table 2-1.

Comment 6; Page 14-22:

To fully delineate the extent of the contaminant plume in the surficial zone at site 11, additional monitoring wells must be installed along with those proposed for Phase 11. The locations, based on Phase I ground-water data, are as follows: one well approximately 400 feet southwest of building 3445; one well west of soil boring B009 on the west side of the abandoned road; one well west of monitoring well TW005 on the west side of the road; and one well east of soil boring 8030.

Response :

The EPA's justification for these additional wells is not clearly stated. The Navy's position on each of these wells is as follows:

One well 400 feet southwest of Building 3445 - A shallow well has been added in this location, and the groundwater sample will be analyzed for Analytical Suite A.

One well west of soil boring B009 - The proposed Phase II shallow well location no. 9 has been shifted approximately 40 feet to the northwest to accommodate this suggestion.

One well west of TW005 - The Phase I results from well TW005 indicated that high metals were the only significant contaminant present. Additionally, the Phase I results for permanent well GM-28 (which is directly upgradient of TW005) indicated the presence of only low levels of metals, suggesting that the turbidity of the TW005 sample, and the sample preservation process, are a factor in the high metals detected in the TW005 sample. GM-28 is located in the area suggested by the EPA, and will be ideal for delineating the western extent of contamination in the TW005 area. In addition, Phase II proposes intermediate and deep wells be clustered with GM-28 for vertical control.

One well east of soil boring B030 - Existing well GM-76 is located in this general area, and will be sampled as part of the Group 0 investigation.

Comment 7; Page 14-23:

At site 12 additional monitoring wells must be installed along with those proposed for Phase 11. The locations, based on Phase I ground-water data, are as follows: one well northwest of monitoring well TW002 on the northwest side of Asphalt Road; one well south of the chemical storage shed; one well north of building 1870; and one well west of boring B015 on the west side of the road.

Response:

The Navy assumes the wells proposed by the EPA are shallow wells. The EPA's justification for these additional monitoring wells is not clearly stated. The Navy's position on each of these wells is as follows:

One well northwest of monitoring well TW002 - For delineation purposes, a shallow well approximately 150 feet northwest (upgradient) of TW002 has been added to the work plan. The groundwater sample will be analyzed for Analytical Suite A.

One well south of the Chemical Storage Shed - This area is actually Site 26. A shallow well has been added immediately to the south-southeast (downgradient) of the Chemical Storage Shed. The groundwater sample will be analyzed for Analytical Suite A.

One well north of Building 1870 - The EPA reviewer should be more specific as to the location of the suggested well. However, assuming the suggested location is inside the fenced area around building 1870, Phase I temporary well TW016 on Site 12 is located directly upgradient of this area. The Phase I results of this well sample indicated relatively low levels of metals contamination only, which may be the

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result of the sample preservation process. In addition, Phase II well locations nos. 18 and 20 for Site 11 are located generally downgradient to the building 1870 area, and should provide sufficient downgradient control for delineation purposes.

Comment 8; Page 14-25:

A monitoring well must be installed at site 26 in addition to the monitoring wells proposed for Phase II. The well should be located northeast of TW002 on the east side of the unpaved road. The proposed Phase II shallow monitoring wells 2 and 5 are located adjacent to monitoring wells TW002 and TW003. The rationale given for the locations of wells 2 and 5 is that contaminants were detected in TW002 and TW003. The depths that the wells will penetrate for Phase II are not discussed. However, it is assumed that wells TW002 and TW005 will be sampled during Phase II, and the new wells 2 and 5 will penetrate a deeper discrete interval so that the vertical extent of the contaminant plume in the surficial zone may be delineated.

Response:

One well northeast of TW002 on the east side of the paved road - The EPA's justification for this additional well is not clearly stated. The area suggested for an additional well is actually Site 11. Given this, the lateral and downgradient extent of the contamination detected in the TW002 sample (primarily arsenic) can be delineated by the proposed Phase II well locations 18 and 9 for Site 11, and by the Phase I results from existing well GM-15. GM-15 is located directly downgradient from TW002, and no arsenic was detected in the Phase I sample collected from this well.

The proposed Phase II wells 2 and 5 are designed to confirm contamination detected in temporary Phase I wells TW002 and TW003. Although they will penetrate a similar depth interval as the Phase I temporary wells, (the proposed depths are included in Section 14.2.2.3) the locations of the Phase II wells have been optimized using Phase I results. The Phase I wells were temporary and cannot be resampled. Until contamination in the surficial zone is confirmed, it is inappropriate to install wells deeper into the aquifer searching for contamination.

Comment 9; Page 14-41:

Surface water samples must be collected directly into sampling containers whenever possible.

Surface water and sediment samples must be collected in pairs whenever possible.

Response:

The text in the work plan on page 14-41 has been modified accordingly.

Please see the response to EPA comment no. 10 for the Group A work plan.

Comment 10; Page 14-43:

What is the rationale for analyzing a significantly smaller percentage of the soil samples collected at Site 12 (36 of 74) for analytical suite A parameters?

Response :

The Phase I results indicated that volatile organic compound (VOC) and/or base-neutral extractables (BNAs) species were the only significant contaminants in the soils on-site. However, 36 samples will be analyzed for the full TAL/TCL list (analytical suite A) to confirm that these are indeed the only contaminant species present on-site.

Comment 11; Page 14-45:

Does existing information/data indicate that the potential for deeper groundwater contamination at Sites 12 and 26 can be conclusively eliminated? If not, why have no intermediate or deep wells been proposed for Phase II investigations at these sites?

Response:

The shallow zone at these sites has not been fully characterized as to the nature and magnitude of groundwater contamination that is present. Given this, it is inappropriate at this point to propose the installation of additional intermediate or deep wells. Once the shallow zone has been fully evaluated, the need for and the optimum locations for deeper wells can be identified. In short, it would seem inefficient to propose expensive deeper wells which may or may not be needed, and even more inefficient to install these wells in an improper location.

GROUP C (Operable Unit 3) - SITE 2 (Waterfront sediments); SITE 13 (Magazine Point Rubble Disposal Area) and SITE 14 (Dredge Soil Fill Area)

Comment 1:

The following comments on the Group A Work Plan are also applicable to this work plan:

1, 3, 4, 5, 6, 12, 13, 14, 15, 16 and 17.

Comment 2 on the Group B Work Plan is also applicable to this work plan.

Response :

Please see the response to EPA comment nos. 1, 3, 4, 5, 6, 12, 13, 14, 15, 16, and 17.

Comment 2; Page 1-1:

As stated in EPA's specific comment 1 on the Interim Data Report for Site 13, and as agreed to by the Navy in their response, future investigation of Site 13 must be performed in conjunction with the investigation of Operable Unit 0. EPA recommends that revision and finalization of a work plan for Site 13 proceed on an expedited schedule so that field work at these sites may proceed simultaneously and in accordance with the present investigative schedule for Operable Unit 10.

Response:

The Navy agrees with the EPA's comment. According to the expedited schedule shown in the March 31, 1992, Site Management Plan submitted to the EPA, the fieldwork for Group 0 (OU 10) will begin May 29, 1992, and end November 9, 1992. The fieldwork for Site 13 is scheduled to begin August 6, 1992 and end June 3, 1993. These time schedules allow for significant overlap that would allow at least a partly concurrent investigation.

Comment 3; Pages 2-3 and 2-5:

Do the shaded areas in Figures 2-2 and 2-3 represent the believed boundaries of fill material at these sites? Said boundaries must be determined as accurately as possible and identified in these figures.

Response:

The shaded areas on Figures 2-2 and 2-3 represent the area(s) believed to be affected by filling activities.

Comment 4; Page 2-3:

The information contained in Section 2.1, paragraph 3, must be shown on Figure 2-2.

Response:

The location of all NAS Pensacola sites are included in the Site Management Plan and the Project Management Plan. Due to the close proximity of Sites 11, 14, 32, 33, and 35 to Site 13, the inclusion of them on Figure 2-2 defeats the purpose of having a site-specific map for Site 13 only. Additionally, the location, of these sites in relation to Site 13 is explicitly described on page 2-4.

Comment 5; Page 2-7:

The information contained in Section 2.3, paragraph 4, must be shown on Figure 2-4.

Response:

Please see the applicable portions of the response to EPA comment no. 4 for this work plan.

Comment 6; Page 7-5:

The sampling rate of 1.987 million gpm appears to be an error, based on the 46 gpm mentioned earlier.

Response:

This is a recovery rate for the groundwater recovery system in operation at the IWTP. The reference to 1.987 million gpm was to gallons per month; the text on page 7-5 has been modified accordingly.

Comment 7; Page 14-22:

An additional well must be installed at site 13 along with the proposed wells for Phase 11. The source of contaminants at site 13 is from the industrial waste treatment plant toward the west. A monitoring well must be installed west of TW002 to delineate the westward extent of the contaminant plume.

Are the proposed monitoring wells believed to be adequate for the purposes of determining the full (i.e., lateral and vertical) extent of groundwater contamination at this site? If so, adequate justification must be provided.

Response -

The only significant contamination detected during Phase I at Site 13 was in the sample from TW002, and it is almost certain that the contamination detected in this well is a result of IWTP-related activities. The area west of TW002 is intended to be evaluated as part of the Group 0 investigation. What the Navy proposes for Phase I at Site 13 is adequate to confirm the absence of groundwater contamination at the site attributable to sources other than the IWTP.

The Navy as the lead agency has provided adequate justification. Every effort has been made to determine the location of wells which will be adequate, in 'the case of Site 13, to confirm the absence of contamination attributable to sources other than the IWTP. The justification for each well is included in Table 14-8.

Comment 8; Page 14-23:

New wells will be installed at Site 14 adjacent to Phase I wells TW015, TW002, TW012, and TW008. The depths of these Phase II wells must be provided. It is assumed that these wells will penetrate a deeper discrete interval in the surficial zone than the Phase I wells, and ground water from all the wells installed during Phase I and Phase II will be sampled to determine the horizontal and vertical extent of the contaminant plume.

Response :

The EPA reviewer should acquaint himself with the appropriate portions of the work plan, and not review material out of context. The depths of the Phase II wells proposed for Site 14 are given in Section 14.2.3.3. Although these wells will be penetrating a similar interval as the Phase I wells, their locations have been optimized using the Phase I results and the samples collected from them will be used for characterization rather than screening purposes. Samples will be collected from all proposed Phase II wells; the Phase I wells were temporary and cannot be resampled.

Comment 9; Page 14-38:

Surface water and sediment samples must be collected in pairs whenever possible, unless adequate justification is provided.

Response :

Please see the response to EPA comment no. 10 for the Group A work plan.

Comment 10; Page 14-39:

Why will triplicate samples be collected and analyzed for all shallow sediment samples?

Also, the total number of sediment samples proposed for Analytical Suite A analyses (103) seems rather large. Some type of field screening procedure should probably be used to limit the number of required laboratory analyses.

Response :

Triplicate sediment samples will be collected to conform with FDER methodology and to enable comparison with FDER sediment data for Pensacola Bay. This is clearly stated on page 14-38 of the work plan.

Please see the applicable portions of the response to EPA comment no. 11 for the Group A work plan.

Comment 11; Page 14-42:

Five shallow wells will be installed at site 14 during Phase II: three to a depth of 30 feet, and two to a depth of 15 feet. The rationale for these depths must be provided, as well as clarification of which wells will penetrate which depths.

Response :

It would be more helpful if the reviewer would simply acquaint himself with the appropriate portions of the work plan. Proposed well locations 15, 16 and 18 will be approximately 30 feet deep (because they are located at the top of the Dredge Spoil pile) and Locations 11 and 21 will be approximately 15 feet deep (because they are at the base of the Dredge Spoil pile).

GROUP D (Operable Unit 4) - SITE 15 (Pesticide Rinsate Disposal Area)
and SITB 24 (DDT Mixing Area)

comment 1:

The following comments on the Group A Work Plan are also applicable to this work plan:

1, 3, 4, 5, 6, 12, 13, 14, 15, 16 and 17.

Comment 2 on the Group B Work Plan is also applicable to this work plan.

Response:

Please see the response to EPA comment nos. 1, 3, 4, 5, 6, 12, 13, 14, 15, 16, and 17 for the Site 1 work plan, and no. 2 for the Group B work plan.

Comment 2; Page 14-18:

In addition to the proposed Phase II wells, the following wells must be installed at site 15 for the purpose of delineating the horizontal extent of contamination in the surficial zone: (i) one well northwest of well TW021, (ii) one well northeast of boring B015, and (iii) one well south of boring B010.

The potential vertical direction of ground-water flow at site 15 is from the surficial zone to the underlying major producing zone. Therefore cluster wells monitoring the surficial, intermediate, and major producing zones must be installed at site 15 to monitor and/or delineate the vertical extent of the contaminant plume. It is assumed that Phase II wells 1, 3, and 12 will penetrate discrete intervals deeper than adjacent wells TW021, TW019, and TW027 so that the vertical extent of the contaminant plume in the surficial zone may be determined. In addition, cluster wells must be installed at monitoring wells TW019, TW026, and TW024 in order to monitor for potential contamination in all three zones.

Response:

The EPA's justification for each of the requested additional wells is not clearly stated. The Navy's position on each well is as follows:

One well northwest of well TU021 - This location is not justified. The location suggested by the EPA is outside of the perimeter of site contamination as defined by Phase I results, and would not serve to further delineate the extent of contamination. To emphasize again, the Phase I results from TW021 indicated that high metals were the only significant contaminants present in the area of TW021. The low total metals from the permanent well GM-59 strongly suggest that, with the exception of arsenic, the high metals in TW021 may be the result of sample turbidity and the sample preservation process. One of the purposes of the Phase II wells is to confirm the presence of elevated metals in the Phase I temporary wells. It is inappropriate at this point to install additional wells in an attempt to delineate a metals plume which the data suggests may not exist.

One well northeast of B015 - The Phase I groundwater results indicate that this location is not justified for delineation purposes. It is both across gradient from the area of the site that exhibits groundwater contamination and outside of the perimeter of site contamination as defined by Phase I results.

One well south of boring B010 - To provide a clean, upgradient well, a surficial well located approximately 50 feet south/southeast of B010 has been added to the work plan. The groundwater sample will be analyzed for Analytical Suite A.

Surficial, intermediate, and major producing zone wells at TW019, TW026, and TU024 - Please refer to the response to EPA comment no. 11 for the Group B work plan. Although the use of surface casing provides some measure of safety, the Navy does not feel it is a sound idea to breach confining units until adequate justification is established. The depths of the Phase II permanent wells proposed for Site 15 are given in Section 14.2.3.3. Although these wells will be penetrating a similar interval as the Phase I temporary wells, their locations have been optimized using Phase I results, and the analytical results will be used for characterization rather than screening purposes.

Comment 3; Page 14-19:

To delineate the horizontal extent of the contaminant plume at site 24 additional wells must be installed at the following locations: (i) one well between boring B003 and B006, (ii) one well 100 feet northeast of B001, and (iii) one well north of B012 on the north side of the road.

The potential vertical direction of ground-water flow at site 24 is from the surficial zone to the underlying major producing zone. Therefore cluster wells monitoring the surficial, the intermediate, and the major producing zones must be installed at wells TW015, TW016, and TW019.

Response:

The Navy's response to each well suggested by the EPA reviewer is as follows:

One well between boring B003 and B006 - a shallow well has been added in this area.

One well 100 feet northeast of B001 - Shallow well has been added in this area.

One well north of B012 on the north side of the road - a shallow well has been added to this area.

Surficial, intermediate, and major producing zone wells at TW015, TW016, TW019 - Please see the response to the applicable portions of EPA comment no. 2 for this work plan.

GROUP E (Operable Unit 5) - SITE 30 (Buildings 649 and 755)

Comment 1:

The following comments on the Group A Work Plan are also applicable to this work plan:

1, 3, 4, 5, 6, 12, 13, 14, 15, 16 and 17.

Response:

Please see the response to EPA comment nos. 1, 3, 4, 5, 6, 12, 13, 14, 15, 16, and 17 for the Site 1 work plan.

Comment 2; Page 3-2:

The reference to EPA toxicity is incorrect and must be replaced with EP toxicity.

Response :

The text on page 3-2 of the work plan has been modified accordingly.

Comment 3; Page 3-3:

The locations of these samples must be shown in some figure (possibly as an appendix). The text indicates that the samples were taken from a ditch east of the buildings, but this ditch is not indicated in any of the figures.

Response:

The "ditch" referred to here is actually the small creek that discharges from the wetlands south of the building complex. A figure showing the locations of these samples has been added to this section of the work plan.

Comment 4; Page 14-16:

The potential vertical direction of ground-water flow at site 30 is from the surficial zone to the major producing zone of the Sand-and-Gravel aquifer. Therefore cluster wells penetrating these zones must be installed to monitor and/or delineate the extent of the vertical contaminant plume at site 30. Wells monitoring the major producing zone must be installed adjacent to proposed Phase II monitoring wells that will monitor the intermediate zones. These wells include 15, 22, 28, and 30.

Response :

Main producing zone wells adjacent to proposed well locations 15, 22, 28, and 30 - Until contamination in the intermediate zone at Site 30 is confirmed, it is inappropriate and inefficient to install deeper wells searching for contamination. Even though the use of surface casing provides a safety measure, the Navy does not view it as a sound idea to breach confining units until some justification for it is established.

Comment 4; Page 14-30:

In order to collect comprehensive data that ascertains the vertical and horizontal extent of the contaminant plume, ground-water samples must be collected from existing wells and from all wells installed during Phase I and Phase II.

Response:

The Navy takes the EPA review comments seriously. However, this comment indicates that the EPA reviewer is not familiar enough with the Site 30 work plan to know that: a) there are no existing wells on Site 30; and b) all Phase I wells were temporary and cannot be resampled. This comment shows that the review has been done out of context, and brings into question the credibility and validity of other review comments. The Navy would like to express serious concerns about the EPA review process, as this type of comment brings into question the ability of the EPA to provide adequate technical review.

RESPONSES TO COMMENTS FROM
THE ENVIRONMENTAL PROTECTION AGENCY, REGION IV (EPA)
ECOLOGICAL ASSESSMENT REVIEW
DRAFT REVISED WORK PLANS FOR GROUPS A - B
NAVAL AIR STATION (NAS) PWSACOLA
PWSACOLA, FLORIDA

GENERAL COMMENTS

Comment 1; Work Plan Strategy/Approach:

a) Since Bayou Grande, Pensacola Bay, and NASP Wetlands are also Operable Units, further explanation must be included in the current documents as to how the present site-specific sampling plan relates to, and will be integrated into, studies of these larger areas. Appropriate discussions on this topic must be included in the "Introduction", "Initial Evaluation" and "Work Plan Rationale" sections of the revised work plan (sections required as per comment 3 submitted on the RI/FS Work Plans for OUs 11-14).

b) The following information must be kept in mind when defining an ecological assessment strategy. Based upon the Phase I screening data and the length of time that these sites have been in existence, bioaccumulation studies and bioassays will probably be needed for at least some of the sites. However, in order to obtain useful information from these studies, the following information must be obtained prior to conducting said studies:

- (i) determination of the contaminants of concern for the particular area;
- (ii) identification of all biological receptors in order to determine;
 - a. which receptors are at risk from exposure to these contaminants; and
 - b. which representative species are present in sufficient quantity and biomass to conduct chemical analysis of tissues.

The proposed field work needs to be designed with these goals in mind, so that the investigation can be completed as efficiently and cost-effectively as possible.

Response:

a) The manner in which all of the data generated for individual sites can be integrated into studies of the larger Operable Units (OUs) 15, 16, and 17 (Bayou Grande Area, NASP Wetlands, and Pensacola Bay Area, respectively) will be decided during the various scoping meetings held between the concerns involved, and will be integral to the development of the work plans for OUs 15-17. Currently, the Navy is compiling a comprehensive summary of all the data from the 22 sites on which Phase I studies have been performed, and this will be used as a scoping/planning

tool for the OUs 15-17 work plans and any necessary, base-wide biota sampling. Per the request for new work plan sections, please refer to the response to EPA comment no. 3 for OUs 11-14.

b) The Phase I and Phase II investigations will accomplish (i). The Phase II ecological assessments of OUs 15, 16, and 17 will accomplish (ii) for all sites. On sites where it does not, and where it is deemed necessary based on the Phase I and II investigations, terrestrial species sampling will be conducted during Phase III after (i) has been accomplished. The field work proposed for Phase II is clearly designed with the goals of (i) in mind.

Comment 2; Regional Biological Resources, Section 5.1:

This section must be updated with more current information. Apparently, there has been further identification of species present since the limited 1986 studies mentioned in the report. If additional work has not already been done, then some should be in order to generate more complete species lists and a more complete characterization of biological resources.

Response :

A complete, base-wide accounting of species and biological resources will be conducted as part of the OUs 15-17 ecological assessments, and will be supplemented by the results of the Phase I habitat/biota surveys. These results of the Phase I habitat/biota surveys will be used as a scoping/planning tool for the development of the OUs 15-17 work plans. Given that the Phase I habitat/biota survey results are readily available in the Interim Data Report for each site, and that formal quantitative biota sampling is not proposed for Phase II on any of the Groups A-E sites, the Navy fails to understand why Section 5.1 needs to be updated for these work plans.

Comment 3; Habitat/Biota Survey & Sampling, Sections 14.2 & 14.3:

a) The habitat/biota maps generated during Phase I must be included as part of the results/findings summary presented at the beginning of this section. This will facilitate evaluation of the proposed Phase II sampling locations. Also, the habitat/biota maps must be revised to show more detail, particularly the information which was included in the text of Interim Data Reports. (Example: the Interim Data Report for Site 14 (Group C) mentions ground cover on the berms and sea oats, a state-protected species, on the back beach, but these are not shown on the habitat/biota map.)

b) More detail is needed on the methodologies to be used in conducting the surveys. The habitats and their-related biota (both flora and fauna) must be sufficiently characterized during the survey to permit determination of the receptor organisms at risk. (Example: the Interim Data Report for Group C, Site 13 mentions that the dominant beach fauna were ghost crabs. No mention is made of organisms living in the intertidal (surf) zone, which may be food sources for the shore birds and ghost crabs.

c) More detail is needed on the biota sampling to be performed in the upcoming field work. For instance, the methods used for sampling of aquatic biota (including qualitative sampling) must be provided, since

different sampling equipment and mesh or net sizes can yield different information about the biota. Results of the Phase I habitat/biota survey must be used to formulate appropriate sampling methodologies for each site to the maximum extent practicable. The specifics of these proposed methodologies must be included for review in the present work plans. Contingencies pertaining to some sampling specifics (e.g. number, location of samples) must also be included as appropriate.

Response:

a) The Phase II sampling is directed primarily towards the chemical characterization of site contamination. The ecological characterization of contamination will be the primary focus of the OUs 15-17 investigations. Consequently, the inclusion of the Phase I habitat/biota maps in the Group A-E work plans would serve no real purpose, particularly since they are readily available in the Interim Data Reports. However, they will serve as a scoping tool in the work plans currently being developed for OUs 15-17, and can be briefly summarized in those work plans.

b) The habitat/biota surveys and sampling has been deleted from the appropriate Phase II work plans. This work will be conducted as part of the OUs 15-17 ecological assessments. This comment is more appropriate for those work plans, and will be deferred to these documents.

c) See the response to EPA general comment no. 3b for revised Groups A-E work plans - Ecological Assessment Review.

Comment 4; Soil/Surface Water/Sediment Samples, Section 14.2:

a) One of the concerns at NASP is the protection of endangered/threatened species (including candidate species, species of special concern, etc.). If one of these species, or a suitable habitat for one of these species, is identified either on the site or along a contaminant migration pathway associated with the site, then the appropriate media must be sampled in the vicinity of the identified location.

b) Regarding the collection of background surface water and sediment samples, if no appropriate upstream locations for surface water and sediment samples exist for a site (e.g., ponds at Sites 1 and 14, sites with storm drains), then a proposed area-wide background/control location must be located.

c) Background/control locations must be proposed for Bayou Grande and Pensacola Bay. Since these water bodies are subject to tidal influence, two background/control locations should be designated, with respect to the direction of tidal flow.

d) Wherever sufficient surface water is present, a surface water sample must be collected in conjunction with the collection of a sediment sample. In response to the statement that "the relatively rapid mixing of surface waters would tend to distribute contaminants in a more homogenous fashion than that typically found in sediments..." (Group E Work Plan, p. 14-26), while mixing would be greater in surface water than in sediment, the rapidity of surface water mixing will depend upon the hydrodynamics of the water body. Furthermore, both inland and

coastal water bodies are potentially affected by ground water discharge; since the extent of site-related ground-water plumes has not yet been determined, it is important to include the surface water samples.

e) In areas of surface water deeper than 3 feet, both surface (1' below surface) and bottom (1' above bottom) water samples should be collected, to check for surface-to-bottom gradients (such as a salt wedge).

f) Sediment type plays a major role in determining the composition of the benthic community. Particularly for Bayou Grande and Pensacola Bay, the type of sediment found at each station must be characterized (e.g. by performing grain size analysis). The resulting data should be used to generate a map showing the sediment type at each station. Depth contours should also be provided through use of a nautical map and/or field measurements.

g) When surface water and sediment data are reported, the appropriate field data (temperature, pH, dissolved oxygen, salinity or specific conductance, etc.) should be presented along with the results (e.g. in table form) to facilitate interpretation of the data.

Response -

a) This comment is noted. However, the mere presence of one of these species does not justify collecting a media sample. Rather, some objective evidence that potential contamination of that media exists in that area should be required for a sample to be collected.

b) and c) The selection of background locations for surface water and sediments will be addressed during the scoping meetings between the Navy/EPA/FDER for the development of the work plans for OUs 15-17.

d) Please see the response to EPA comment no. 10 for Site Group A - Technical Review. The Phase II surface water samples are located in areas of potentially impacted surface waters, which have been determined using Phase I results. While it is true that surface water mixing is dependent on the hydrodynamics of the surface water body, the shallow depths and estuarine/back-barrier island environment of most of these surface waters are characterized by relatively strong, consistent currents and consequently relative rapid mixing. It is highly unlikely that this mixing is at a rate slow enough that justifies collecting a surface water sample at every sediment sample location.

e) The proposed methodology of collecting a sample 1-foot above the bottom has previously been agreed to by the EPA. Although it is an interesting natural phenomenon, the relationship between a salt wedge and contamination is unclear. However, the recommended sampling methodology can be included in the work plans for OUs 15-17 for cases when that type of sampling may be appropriate.

f) All Phase II sediment samples will be analyzed for grain size. If during data evaluation, it is determined that the recommended map will aid in the characterization of the site, then it will be prepared and submitted with the RI report.

g) This comment is noted.

Comment 5; Contaminant Source Survey, Section 14.2:

The results of the contaminant source survey should be used to modify the list of analytes in order to be certain that the list is complete and adequate to define site contamination.

Response:

The proposed Phase II parameter list comprises the full Target Analyte List/Target Compound List (TAL/TCL) at full Data Quality Objective (DQO) Level IV. In addition, samples from each media will be analyzed for remediation parameters. If the contaminant source surveys indicate the potential presence of a contaminant not on the proposed list, it will be added for analysis.

Comment 6; Baseline Risk Assessment, Section 18:

For environmental concerns, the Baseline Risk Assessment should follow USEPA's Risk Assessment Guidance for Superfund, Volume 11: Environmental Evaluation Manual, (1989).

Response:

The Baseline Risk Assessment (BRA) will follow the EPA's Risk Assessment Guidance for Superfund: Volume I - Human Health Manual (Part A) and Volume II - Environmental Evaluation Manual. This information has been added to the text in each revised work plan.

Comment 7; Contaminant Identification, Section 18.1:

Further explanation must be provided as to how the contaminants of concern will be identified or excluded from consideration, once the data are in hand. Contaminants of concern must not be identified based only on human health considerations.

Response :

The selection of chemicals of concern will be as specified in Volume I, Part A of the EPA's guidance document for conducting risk assessments. The concept and selection of "indicator" chemicals has been deleted from each revised work plan.

Comment 8; Toxicity Assessment, Section 18.3:

While it is true that a toxicity assessment for human health concerns generally relies upon existing toxicity information, a toxicity assessment for the biota could involve toxicity testing (e.g., bioassays or chemical analysis of tissues) if the existing toxicity information is insufficient.

Response:

This comment is noted. The evaluation of the suitability of the data can be done during the BRA. However, bioassays will be conducted during the ecological assessment of OUs 15, 16, and 17.

SPECIFIC COMMENTS

GROUP A (Operable Unit 1) - SITE 1 (Sanitary Landfill)

Comment 1; Page 14-10:

Please insert the requested habitat/biota map. Also, more detail must be added to map, including information from ESD's Uetlands Inventory of NASP, the location of the gopher tortoise burrows, and the different vegetation communities mentioned in Section 5.2, page 5-9.

Response :

Site-specific, detailed biota sampling, if required based on Phase I and II results, will be conducted during the Phase II investigation of OUs 15-17. Thus, the inclusion of habitat/biota maps in this section of the revised work plan serves no real purpose. However, it is appropriate that these habitat/biota maps be included in the ecological assessment work plans for OUs 15, 16, and 17. Please see the response to EPA's General Comment no. 3a for Groups A-E - Ecological Assessment Review .

Comment 2; Page 14-13, Section 14.2:

Biota sampling must be conducted as part of the upcoming field investigation. Although the full TCL/TAL scan was not conducted during Phase I, the screening data indicate elevated levels of metals, PAHs, TRPHs, and/or phenols in the sediments of several inland water bodies. Quantitative biota sampling must be conducted in these water bodies, along with the sampling of surface water and sediment, to determine the community structure in relation to contaminants present in the water bodies. Additionally, this information can be used to focus on food chain relationships at the site, leading to subsequent chemical analysis of tissues of representative species.

Response:

Surface water and sediment samples are proposed for the Phase II investigation for these inland water bodies. However, the quantitative biota sampling of these areas will be conducted during the investigation of OU 16.

Comment 3; Page 14-16, Section 14.2.2:

Specify the methods to be used in qualitatively sampling the benthic and neritic habitats in the nearshore aquatic environment of Bayou Grande and which taxonomic level will be used in determining floral and faunal composition.

Response:

This section of the work plan has been deleted. It is more appropriate to present this information in the OU 15 work plan and to conduct this work as part of the OU 15 investigation.

Comment 4; Page 14-18, Figure 14-4:

a) A surface water and sediment sample must be collected from the intermittent creek located west of the southernmost portion of the landfill (below the bottom of the figure), since a high TRPH concentration was found in soil in the southwest part of the landfill (S012, Phase I).

b) Surface water and sediment samples must also be collected in the wetland areas, either as a part of this investigation or in conjunction with sampling for Site 42 (NASP Wetlands).

c) The Wetland Inventory map generated by ESD indicates an emergent wetland between the Golf Course Pond and another golf course pond to the south. The Phase I data shows that high concentrations of total metals were found in temporary wells west of this southern pond. If it is determined that the ground-water plume extends to this area, two surface water and sediment samples should be collected from this pond.

d) What is the significance of the hatched area at the southwest end of Beaver Pond?

Response :

a) The head of this intermittent stream is a disproportionate distance from S012 (approximately 1,000 feet), and it is highly unlikely that the sediment and surface water that far away has been impacted by the soil contamination around S012. Phase II proposes four soil borings around S012 to delineate the extent of soil contamination, and should it be determined that the intermittent stream may be impacted, a sediment and surface water sample will be collected there either during the later stages of Phase II or during the OU 16 investigation.

b) This sampling will be included in the OU 16 investigation.

c) This comment is noted.

d) The hatching signifies that is a marshy area. This information has been added to the map key.

Comment 5; Page 14-19, Figure 14-5:

A soil boring sample must be collected from the forested wetland near S012 (Phase I), south of proposed Phase II intermediate monitoring well 38.

Response :

See the response to EPA comment no. 4a for this work plan's ecological assessment review.

Comment 6; Page 14-21, Table 14-3:

Surface water/sediment sample location 11 is not a good background location, given that (i) the net flow in Bayou Grande is to the east, and (ii) the sample location is also proximate to Site 15 (Pesticide Rinsate Disposal).

A better background location would be west of Site 1 (possibly west of the Bayou Grande arm located west of Site 1). However, since water flow is tidally influenced in this area, the flow direction at the time of sampling must be considered in choosing a background location. Inclusion of two backgrounds, one west and one east of the site, would address both flow directions.

Response:

As discussed and agreed to at the January 1992 RPM meeting in Atlanta, one background sediment/surface water sample will be collected in the western area of Bayou Grande, west of Site 1. Consequently, the reference to background control for location 11 has been deleted from Table 14-3.

Comment 7; Interim Data Report:

Based on the results presented in this report, the following additional samples are recommended:

- a) soil boring south of North Pond, in the vicinity of the "marshy-appearing depression" that was filled in with rubble and soil (Sec. 3.1, p. 3-2)
- b) surficial soil samples in the vicinity of the stressed vegetation in the central portion of the 1970s landfill (Sec. 3.2, p. 3-6)
- c) surficial soil sample in the dry stream bed located parallel to the northeastern landfill boundary and emptying into the southern end of Bayou Grande Pond (Sec. 3.2, pp. 3-6 to 3-7)
- d) surface water and sediment from the circular pool near the bed of the intermittent stream that empties into the southwestern end of Beaver Pond (Sec. 3.2, p. 3-8)
- e) surface water and sediment from the vicinity of the flowing spring (leachate seep) that discharges into the intermittent stream bed that empties into the southwestern end of Beaver Pond (Sec. 3.23, p. 3-8).

Response:

- a) A soil boring has been added approximately 250 feet south of North Pond in this area.
- b) Phase I samples S007 and S008 were located in this area. In addition, numerous Phase II soil borings (which will have 0- to 6-inches as the first sampling interval) are proposed for this area.
- c) The land surface in this area has been altered by recent construction (primarily filling activities). However, a soil boring has been added in the general area of the dry streambed, and if it can be identified in the retrieved split-spoon sampler, a sample of the "native" soil will be collected.
- d) A sediment and surface water sample has been added in this area.
- e) A Phase I sediment and surface water sample was collected in this area, and a low level of Total Recoverable Petroleum Hydrocarbons (TRPHs) was the only contamination. Consequently, a Phase II sediment/surface water sample was not proposed for this area.

GROUP B (Operable Unit 2) - SITE 11 (North Chevalier Disposal Area)

Comment 1; Page 5-9, Section 5.2:

This section indicates a lack of information concerning the presence of freshwater or estuarine marshes along the onsite creek and/or nearby Bayou Grande. The proposed upcoming work should clarify the habitat/biota information contained in the Interim Data Report for Group B, Site 11. Section 3.3, page 3-4 of that report mentions a Juncus marsh at the boundary of Site 11, along the western side of the arm of Bayou Grande, yet the habitat/biota map (Figure 3-1, page 3-5) shows forested wetland on the western side and an emergent marsh only on the eastern side. Sediment samples (and surface water, if present) should be collected in the western marsh, if it exists.

Response:

The western arm of Bayou Grande is bordered by both forested wetlands and a Juncus marsh. This information will be included on the habitat/biota maps that will be used as scoping tools for the OUs 15, 16, and 17 work plans. For site characterization purposes, sediment and surface water samples from this general area of Bayou Grande will be collected as part of the Site 30 investigation. For ecological assessment purposes, additional sampling will be conducted in this area (including the Juncus marsh) as part of the OUs 15 and 16 investigations.

Comment 2; Page 14-21, Figure 14-5:

A soil boring must be installed and sampled at a more central location in the "filled potential wetland area" (as shown in the Interim Data Report for Group B, Site 11) between soil sample locations 15 and 21.

Response :

Phase I soil boring B015 was located at a "more central location" of this area; based on the results of samples from this boring, Phase II locations 15 and 21 will be used to determine the extent of soil contamination detected in this specific area.

Comment 3; Page 14-40, Section 14.2.2.1:

Although the concern is expressed that contaminants found east of the creek might be related to a source other than Site 11, the contribution of the two outfalls from Building 3644 must be considered when sampling the creek and the arm of Bayou Grande, in conjunction with Site 30.

Response:

This comment is noted.

SITE 12 (Scrap Bins)

No specific comments.

SITE 26 (Supply Department Outside Storage)

No specific comments.

GROUP C (Operable Unit 3) - SITE 2 (Waterfront Sediments)

Comment 1; Page 3-6, Section 3.3:

a) This section mentions possible bioaccumulation of sediment contaminants by shellfish in the nearshore area adjacent to the NAS facility, and the possible consumption of these shellfish by people. The Phase I habitat/biota survey of Site 2 (Interim Data Report) mentions the occurrence of blue crabs, shrimp, and oysters throughout Pensacola Bay but does not indicate the existence of a shellfishing area at or near Site 2. More specific information is needed concerning the occurrence of shellfish at or near areas of contaminated sediments.

b) Most of the information presented in the habitat/biota survey was taken from studies of Pensacola Bay as a whole. While this general information is useful, more site-specific information is needed. For example, the August 1986 U.S. Navy Gulf Coast Strategic Homeporting Draft Environmental Impact Statement (Appendix IV, Pensacola, Florida) states that the benthic communities near the NAS would be subject to somewhat higher salinities than those found in more inland areas of the bay; the benthos near the NAS might include some species that occur only at higher salinities. The benthic communities in vicinity of Site 2 must be sampled quantitatively and compared to those in a background or control area, to determine whether sediment contaminants have affected the composition of these communities. Knowledge of the specific communities near the site will also aid in the selection of appropriate species for subsequent bioaccumulation and toxicity studies.

Response:

a) There is no authorized collection of shellfish in the waters immediately adjacent to NAS Pensacola. This referenced section of the work plan merely states that the potential for human consumption of shellfish exists. More specific information concerning fauna in the areas of contaminated sediments will be collected during the OUs 15-17 ecological assessments.

b) This comment is more appropriate for the development of the OU 16 work plan, and will be deferred to that document.

Comment 2; Page 5-9, Section S.2:

This section mentions a concern about the production and survival of invertebrate larvae in relation to the contaminated sediments. Plankton tows must be included as part of the biota sampling to be conducted either in this study or during the investigation of Operable Unit 41 (Pensacola Bay).

Response:

See the response to EPA comment no. 1b for this work plan's Ecological Assessment Review.

Comment 3; Page 6-2, Section 6.2:

This section states that the currents would tend to move wastes to the southwest, out of Pensacola Bay through Pensacola Pass. It also states that the "influence of tidal currents along the bay bottom is unknown at this time," but that tidal currents might carry wastes farther up into

Pensacola Bay. The water flow patterns around the NAS must be determined, especially in relation to nearshore structures, dredged areas, etc. that would affect transport of contaminants.

Response :

See the response to EPA comment no. 1b for this work plan's Ecological Assessment Review.

Comment 4; Pages 14-38 through 14-39, Section 14.2.3.1:

a) Indicate how the offshore sampling for this site differs from the sampling to be conducted for Site 41 (Pensacola Bay).

b) If there are depositional areas in the Bay where sediment samples are going to be taken, sampling to a depth of only 1 foot may not be adequate for delineating the area of contamination.

Response:

a) The Phase II sediment and surface water sampling will be conducted according to the approved 1990 GQAPP for this investigation. The sampling methodology and locations for Pensacola Bay sampling is currently being developed in the OU 17 work plan, thus the difference between methodologies and locations is not yet known.

b) This comment is noted. If significant levels of contamination are detected at 1 foot in depth, samples from deeper intervals will be collected at a later stage of the Phase II investigation, or incorporated as part of the OU 17 investigation.

SITE 13 (Magazine Point Rubble Disposal Area)

No specific comments.

SITE 14 (Dredge Spoil Fill Area)

Comment 1; Page 14-40, Section 14.2.3.1:

If sufficient water is present in the two settling basins, surface water and sediment samples must be collected from each basin in order to investigate possible contaminant migration offsite via movement of surface water through the water control (overflow) structures.

Response:

The Phase II soil borings inside the two settling basins will be sufficient to characterize potential contamination of the interior sediments. Given that surface water inside of the basins is actually rainfall accumulation that is perched on top of these sediments, surface water samples do not need to be collected until contamination in these sediments is confirmed.

GROUP D (Operable Unit 4) - SITE 15 (Pesticide Rinsate Disposal Area)

No specific comments.

SITE 24 (DDT Mixing Area)

No specific comments.

GROUP E (Operable Unit 5) - SITE 30 (Buildings 649 and 755)

Comment 1; Page 3-2:

While summarizing some previous work, the text states that sediment samples were "analyzed for EP toxicity", and then provides data only for the concentration of metals in the sediment. Did this work include toxicity testing or bioassay work? If so, please include the results.

Response:

It does not seem to be time- and cost-effective for the EPA to review portions of a revised work plan which have undergone multiple stages of review and approval since early 1989, and perhaps partly explains why the review process moves so slowly. Again, the Navy expresses serious concerns about the EPA review process, especially the apparently new review of older approved material, and would like to point out that this hinders the overall progress of the project. In this case, EP toxicity methods were used (materials were filtered and subjected to an extraction procedure as specified in the Federal Register, Volume 45, No. 98, 1980) to analyze for metals and cyanide. No bioassay work was included.

Comment 2; Page 14-13, Section 14.2.1:

Given that the paved ditch is potentially influenced by 8 sites, efforts must be taken to assure that the contaminants for each site have been identified and that the list of analytes for the Site 30 samples takes this information into account.

Response:

The Phase II analyte list is comprised of the full TAL/TCL list, and specific media remediation parameters. Based on historical information, this list of analytes effectively covers the full spectrum of potential contamination that can be expected at NAS Pensacola.

Comment 3; Page 14-15, Figure 14-4:

Indicate the outfall locations on this figure. (See Interim Data Report, Group E, Site 30, Figure 1-2, page 1-3 and Section 3.2, pages 3-2 to 3-3.)

Response:

The locations of outfalls have been added to the figure.

Comment 4; Page 14-26, Section 14.2.2.1:

a) The following additional surface water and sediment samples must be collected:

- a) near the Building 649 outfall, especially since stressed vegetation was noted in this area .
- b) the marsh adjacent to the creek near Site 11 (See review comments for Group B, Site 11.)
- c) outfall water near areas of known contamination.

b) How will the contribution of oily runoff from Chevalier Field and the oily material trapped by the oil boom near Pat Bellinger Road will be addressed in interpreting the surface water and sediment data?

c) Quantitative biota sampling must be conducted along the surface water pathway for Sites 30 and 11 in this next field effort, since the Phase I screening data indicate the presence of site-related contaminants along this pathway. It is especially important to describe the sampling locations and report the field measurements, since the biota will differ along the pathway from the wetland near Building 649 to the arm of Bayou Grande.

Response :

a)-a) Proposed Phase II location no. 11 is near the Building 649 outfall.

a)-b) See the response to EPA comment no. 1 for the Group B work plan's Ecological Assessment Review.

a)-c) Sampling outfall water is beyond the scope of this work; however, every effort has been made to sample potentially impacted surface water downstream of all outfalls.

b) There are upstream (pre point-of-entry) and downstream (post point-of-entry) sediment and surface water locations proposed for Phase 11. Although the data for the water course will be addressed as a whole, every effort will be made to interpret the contribution to detected contamination from individual sites.

c) This comment is more appropriate to the development of OUs 15 and 16 work plans, and will be deferred to those documents.

Attachment C

RESPONSES TO COMMENTS FROM
THE FLORIDA DEPARTMENT OF NATURAL RESOURCES (FDNR)
DRAFT REVISED WORK PLANS FOR GROUPS A - B
NAVAL AIR STATION (NAS) PENSACOLA, FLORIDA

Group A

Section 14.3.1 (Phase III - Biota Sampling)

The plan should specify the type of analysis (bioassay; tissue analysis; etc.). It only includes marine sampling and ignores terrestrial species.

Response:

Terrestrial biota sampling will be conducted at Site 1 only if deemed necessary following Phases I and II, and only if there are significant data gaps in the biota sampling which will be conducted as part of the Operable Units (OUs) 15, 16 and 17 ecological assessments. As stated in the workplan, if this is required, a separate biological, sampling plan (including specific types of analyses) will be prepared and submitted as an addendum to the work plan. The work plan does not ignore terrestrial species, but simply states biota sampling may potentially include marine species.

Group B

Section 14.2 (Phase II - Characterization/Extent Delineation)

Comment 1; Page 14-13:

The plan states that Site 11 is probably of primary impact to this section of Bayou Grande. Why not focus surface water and sediment sampling in the bayou with this study plan rather than for the plan for Site 30.

Response:

Given that Site 30 has a direct impact on Bayou Grande, and Phase II sediment/surface water sampling is proposed for this site in addition to that in the Bayou Grande, it was deemed appropriate that the sampling in Bayou Grande be conducted as part of the Site 30 investigation.

Comment 2; page 14-15:

Under Site 11, paragraph 2, Bayou Grande is referred to as Site 30, while it is actually Site 40.

Response:

This reference was to the area of Bayou Grande that is in the vicinity of the Site 30 creek outlet. The text has been modified to avoid confusion.

Comment 3; page 14-16:

To identify the impact to on-site and off-site components by contaminants, we need tissue sampling of biota in Phase 11, not Phase 111. Due to the length of time these sites have been present, there is a high probability of residual damage to biota.

Response:

This comment is more appropriate for the development of the OU 15 and 16 work plans, and will be deferred to those documents.

Section 14.2.2.1 (Surface Water/Sediment Sampling)

Comment 4; page 14-40:

Surface water and sediment sampling should be performed more relative to Site 11, rather than Site 30, as this site has a more likelihood of primary impact.

Response:

Please see the response to FDNR comment no. 1 for this work plan.

Comment 5; page 14-41:

The location of the drainage outfall from Site 12 needs to be shown on the Site 12 map, as well as the SW/SD sampling location?' so we can better evaluate this proposal.

Response :

The location of this outfall is known to be off-site (based on Phase I evaluations); however, the delineation of the specific location of the outfall is included as one of the objectives of the Phase II Contaminant Source Survey for this site.

Group C

Section 14.2 (Characterization/Extent Delineation)

Comment 1; page 14-14:

Under Sites 13 and 14, the objectives should characterize the flora, as well as the fauna, in the bay area adjacent to the site.

Response:

The habitat/biota sampling, and thus the objective of characterizing flora and fauna in Pensacola Bay adjacent to this site, has been deferred to the ecological assessment of OU 17. The appropriate portions of the work plan have been deleted.

Comment 2; page 14-15:

For Site 2, 13 and 14, to meet the objectives of determining "the presence, nature, magnitude, and extent of near shore and on-site" contamination, biota sampling and analysis needs to be performed.

Response:

Base-wide biota sampling will be conducted as part of the ecological assessment of OUs 15, 16 and 17. If it is deemed necessary following Phase 11, site-specific, on-site biota sampling will be conducted during Phase 111.

Group D
No specific comments.

Group B
Section 14.2 (Characterization/Extent Delineation)

Comment 1; page 14-10:

For Site 30, the objectives should characterize the flora, as well as the fauna, in Bayou Grande and the marsh area.

Response:

This was not listed as an objective of the Site 30 Phase II investigation. The flora and fauna in the Bayou Grande area will be characterized as part of the OU 15 investigation.

Comment 2; page 14-11:

To meet the objectives of determining "the presence, nature, magnitude, and extent of near shore and on-site" contamination, biota sampling and analysis needs to be performed.

Response:

Please see the response to FDNR comment no. 2 for the Group C work plan.

General Comments

Comment 1:

As we stated in our previous letter commenting on study Groups E, I, L, P and Q, the phased approach of the remedial investigations appears to prolong the investigative process. In this phased approach, if contamination above background levels is determined within a site location, then further study will be performed laterally from the site. This seems to be a short-sighted strategy. Many of these sites have been in existence for a long history. The likelihood of off-site migration is therefore amplified. It is possible contamination would not be found on-site, yet could be found further from the site. Even though initial cost may be more to examine more parameters off-site, it would be less than the multi-phased technique which allows for possible redundancy and added costs.

Response:

The phased approach is necessary to: a) provide screening data which will be used to focus Characterization/Extent Delineation sampling, and b) to efficiently delineate those sites which will require a full scale RI/FS. Every effort will be made to complete all of the necessary tasks to complete a site investigation during Phase II. Additionally, all phase II investigations will include the installation of monitoring wells that are situated downgradient from a site to determine if groundwater contamination has migrated off-site, and will address sampling of areas that receive direct surface drainage from that site.

Comment 2:

Also, due to the long time frame in which many of these sites have been in existence, uptake of contaminants by the fauna and flora is likely to have occurred and is ongoing. Rather than postpone biological sampling and analysis until Phase III (based upon contaminants of concern determined from surface water and sediment analysis), sampling and analysis of yet to be determined species should be performed in Phase II.

Response:

See the response to FDNR comment no. 2 for the Group C work plan.

Comment 3

A topographical survey will not be performed until the last phase of the plan. This phase will only be performed if problems are found in earlier stages. We believe the topography should be identified in the beginning to accurately address surface water drainage which is a more pronounced source for off-site migration of contaminants in the soils than is the groundwater. During heavy rainfalls, rapid flowing surface water is more likely to transport contaminants or contaminated soil off-site.

Response:

The Navy believes that surface water drainage can be adequately addressed during the site investigations using both physical observations and a standard 7 1/2-minute quadrangle topographic map available from the United States Geological Survey. The topographic survey proposed in Section 14.5 of the work plans is for the requirements of remedial planning.

Comment 4

We also have a problem with only addressing site-specific biological resources (Section 5.2). Due to the likelihood of off-site migration of contaminants, biological resources need to be identified and later sampled beyond the site boundaries. Faunal species (marine and terrestrial) may not reside at a particular site, but use the resources at that site.

Response:

> The large scale nature of the biota sampling to be conducted as part of the OUs 15-17 investigations should satisfy these concerns. However, detailed site-specific biological sampling, should it be required, will be conducted at a site following an evaluation of DQO level III and IV (Phase 11) data. If it is appropriate, based on the Phase II data evaluation, [biological sampling will be performed on-and-off-site to characterize biota which may be exposed to contamination from the site.] A detailed site-specific biological sampling plan will be presented to the EPA/FDER and Technical Review Committee (TRC) for review prior to conducting the sampling.

Comment 5

At those sites which are the least disturbed and most natural, the flora and fauna should be analyzed for possible uptake of contaminants should contaminants be found above ARAR. This should also be performed in the marine and terrestrial communities adjacent to these less disturbed areas.

Response:

Please see the response to FDNR general comment no. 4. The sampling of marine communities will be addressed for NAS Pensacola during the investigation of OUs 15-17.

Comment 6:

We realize work plans have yet to be established for Site 40 (Bayou Grande), Site 41 (NASP Wetlands), and Site 42 (Pensacola Bay), as these areas were only recently established as actual sites of Potential Source of Contamination (PSC). In the work plans for these sites, our concerns for biota sampling and analysis can be addressed, however, due to the potential for current natural resource damage from the other sites, these concerns should be addressed now, rather than be postponed.

Response :

FDNR's concerns for biota sampling and analysis can and will be addressed in the work plans for OUs 15, 16 and 17. In addition, FDNR will be an involved concern at each of the scoping meetings held for the OUs 15-17 work plan development. As far as the time frame for biota sampling is concerned, all work performed on these OUs will be in accordance with the schedule presented in the Federal Facilities Agreement Site Management Plan.