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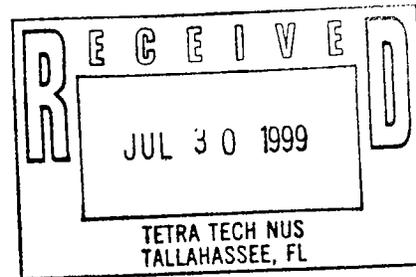
LETTER AND COMMENTS FROM U S EPA REGION IV REGARDING RCRA FACILITY
INVESTIGATION AND CONFIRMATION ASSESSMENT WORK PLAN FOR AREA OF
CONCERN C NS MAYPORT FL
7/14/1999
U S EPA REGION IV



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

July 14, 1999



4WD-FFB

Ms. Adrienne Wilson
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
Charleston, South Carolina 29419-9010

SUBJ: NAVSTA Mayport, Florida
EPA ID# FL9 170 024 260

Dear Ms. Wilson:

The United States Environmental Protection Agency (EPA) has received and reviewed the following document:

- **RCRA Facility Investigation and Confirmation Assessment Work Plan for Area of Concern C (Tetra Tech NUS, April 1999).**

Enclosed are EPA's review comments based on a general technical review as well as a human health and ecological risk assessment review. If you have any questions, please contact me at (404) 562-8555.

Sincerely,

A handwritten signature in cursive script that reads "Craig A. Benedikt".

Craig A. Benedikt
Remedial Project Manager
Federal Facilities Branch

Enclosure

cc: Jim Cason, FDEP
Randy Bishop, NAVSTA Mayport
Terry Hansen, TtNUS

**EPA REVIEW COMMENTS
RFI/CS WORK PLAN FOR
AOC-C
NAVSTA MAYPORT, DATED APRIL 1999**

GENERAL COMMENTS

1. Section 3.0, Technical Approach, contains numerous deficiencies and inadequacies in the monitoring well installation and sampling activities as indicated in the specific comments below. Section 3.0 should be carefully reviewed to ensure EPA Region IV standard operating procedures are followed.
2. In Section 3.1.3.4, there appears to be discrepancies concerning which monitoring wells will have surface casings installed and how the determination of the depths at which the casings will be installed will be made. These concerns are reflected in specific comments 6 and 7.

SPECIFIC COMMENTS

3. **Cover Spline, Outside Cover Page and Inside Cover Page.** The cover spline is titled, "Resource Conservation and Recovery Act Facility Investigation and Confirmation Assessment Work Plan for Area of Concern C, NAVSTA Mayport Mayport, Florida." The outside cover page is titled, "RCRA Facility Investigation and Confirmation Assessment Work Plan for Area of Concern C Naval Station Mayport Mayport, Florida." The inside cover page is titled, "Resource Conservation and Recovery Act (RCRA) Confirmation Assessment and RCRA Facility Investigation Work Plan for Area of Concern C U.S. Naval Station Mayport Mayport, Florida." The cover spline, the outside cover page and the inside cover page should all be consistent titled. This discrepancy in titles should be addressed.
4. **Page 3-1, Section 3.0.** The last sentence in the first paragraph of this section states that the RFI will determine recommendations to remediate AOC C. It is a function of the Corrective Measures Study (CMS) to present remedial alternatives not the RFI. The text should be clarified on this point.
5. **Page 3-7, Section 3.1.3.1, Fourth Paragraph.** The text states, "If a liner is used, it is separated into four 6-inch-long sections (along perforations in the brass liners), and the exposed soil is screened with a flame ionization detector (FID). Samples selected for laboratory analyses will immediately be placed into laboratory-supplied containers. If liners are used, the open ends will be covered with clean, Teflon™ tape, capped, and sealed with exterior tape. The samples will be labeled, preserved on ice, and transported to the laboratory." The preceding statements, concerning using liners for sample collection, are contradictory. Either the samples collected in liners will be separated into

6-inch sections and screened with an FID and then placed in laboratory containers or the samples will remain in the liners and the open ends will be sealed with Teflon™ tape, capped and sealed with exterior tape and shipped to the laboratory. The text should clarify which method shall be used during soil sample collection.

6. **Page 3-9, Section 3.1.3.4.** The text states, “A fine sand seal at least 4 feet thick, will be installed on top of the 20/30 silica sand. The remainder of the annulus of the borehole will be grouted by pumping a cement/bentonite slurry through a tremie pipe up to 2 feet bls.” According to Region IV EPA standard operating procedures, a minimum two foot vertical thick bentonite seal shall be placed on top of the filter pack. This seal shall consist of 30 % solids bentonite pellets which should be allowed to hydrate for a minimum of hours or the manufacturer’s recommended hydration time, whichever is greater. This bentonite seal prevents grout from contaminating the sand packed screened interval of the monitoring well. The monitoring well installation procedure in the text should be changed to include the installation of a bentonite seal in all shallow, intermediate and deep wells installed at the facility.
7. **Page 3-9, Last Paragraph.** The text states, “The need for 6-inch PVC surface casings will be evaluated from data collected during the CA. If necessary, the intermediate and deep well locations will be completed with surface casings to prevent cross contamination of dissolved constituents from the upper to lower zones.” However, the text does not provide sufficient information concerning the lithologic data that will be evaluated. Additionally, the text does not describe the manner of soil data collection. Soil test borings should be drilled to determine subsurface lithology, such as confining units and abandoned upon completion. The text should provide further information concerning the use of surface casing for intermediate and deep wells.
8. **Page 3-10, Section 3.1.3.4.4, Bullet 6.** The text states, “At each well nest location, lithologic soil samples will be taken continuously by using 5-foot continuous samplers or at 5-foot intervals using 2-foot split spoons at the deep well location only. Installation of the shallow and intermediate surface casings wells will then be based on the lithologic description of the deep boring.” However, on Page 3-9, the text states, “If necessary, the intermediate and deep well locations will be completed with surface casings to prevent cross contamination of dissolved constituents from the upper and lower zones.” The discrepancy between installing surface casings in the shallow and intermediate well in one statement and installing surface casings in the intermediate and deep well in the other statement should be addressed. Both statements should state that surface casings will be installed in the intermediate and deep wells. An exploratory boring should be drilled to characterize the subsurface lithology, such as confining units, to determine the depths to install the surface casings for the intermediate and deep monitoring wells.

9. **Page 3-11, Section 3.1.3.4.5.** The text states, “Wells will be developed until the following criteria are achieved:

- Stabilization of the following parameters occurs:
 - temperature plus or minus 1 °C,
 - pH plus or minus 1 unit, and
 - electrical conductivity plus or minus 5 percent of scale; and
- Turbidity remains within a 10 Nephelometric Turbidity Unit (NTU) range for 2 consecutive readings;
- Accumulated sediment is removed from the well.

The Region IV EPA standard operating procedures recommend that, in addition to stabilization of these parameters, a minimum of 3 well volumes should be removed from the monitoring well during development. The text should include these items as part of the well development procedure.

9. **Page 3-14, Section 3.4.3.7.** The text states, “All measurements will be collected within a 48-hour period of consistent weather conditions to minimize atmospheric/precipitation effects on groundwater conditions.” However, groundwater levels should all be collected within a time frame as short as possible, such as within an 8-hour work day or less to allow for the accurate representation of the potentiometric surface. Since the site is adjacent to the St. Johns River and the Atlantic Ocean, groundwater is most likely under tidal influence. Therefore, tidal influence should be taken into consideration when water levels are measured at the site. Section 3.4.3.7 should be amended to address the potential impact of tidal influences on water level measurements.

Additionally, the text states, “If floating hydrocarbon is detected in the monitoring wells, the thickness of free product will be measured with an electronic interface probe.” The text should also state that if free product is detected, a corrected water level will be calculated for the well in which the free product is discovered.

10. **Page 3-16, Section 3.1.3.13.** The text states, “Soil samples will be analyzed for their total hydrocarbon content using an organic vapor analyzer (OVA) equipped with an FID.” However, according to the instrument description in this section, the FID measures response to general organic vapors in parts per million but is not capable of detecting total hydrocarbon content solely. The text should be changed to address this discrepancy.

11. **Page 3-28, Section 3.3.1.2.** The first bulleted item of this section suggests that the CA will serve to identify the source of 1,1-DCA; however, the second part of the sentence implies that only a site walkover inspection will be conducted with no sampling. The text should be revised to clarify this task for the CA.

12. **Page 3-36, Section 3.3.3.** The table contained in Section 3.3.3 indicates that one trip blank per cooler will be included in the sample shipment to the laboratory only if ten or more groundwater samples are collected for VOC analysis and shipped. Therefore, if nine or less samples are collected and shipped to the laboratory no trip blanks are required. However, according to EPA Region IV standard operating procedures, at least one trip blank per shipment should be included in the coolers if ground water samples are to be analyzed for VOCs. The text should be revised to reflect this guidance.

The following comments relate to the human health and ecological risk review:

GENERAL COMMENTS

13. Section 5.1.3.2 presents the identification of the exposure pathways and receptors. The text says that the human receptors that will be considered include a recreational user who may come into contact with either contaminated surface water or sediment while swimming or wading. The work plan, however, does not discuss plans to sample either the surface water or the sediment. Since surface water and sediments near the pier may have been impacted by contaminants, it seems reasonable to sample these media in the areas around the pier. The work plan should be modified to include sampling of the surface water and sediments, or a rationale should be given for not sampling these media. For consistency, Tables 5-1 and 5-2 should also be expanded to include the recreational receptor.

In addition, a resident may also come into contact with the waters around the pier area, the surface water and sediment pathways should also be considered for the current and future residents.

Also, according to the Work Plan, the only environmental media that will be evaluated in the Ecological Risk Assessment (ERA) are soil and groundwater. It is unclear why surface water and sediment samples are not being analyzed at this site. According to Figure 1-2, Mayport Turning Basin is very close to AOC C and migration of contaminants from the site to the water in the basin and from the water to the sediment in the basin seems highly possible. In addition, Section 5.2.4.1 on page 2-22 states that aquatic organisms may be exposed to groundwater discharging into the Turning Basin. This indicates that surface water and sediment contamination may be occurring. Therefore surface water and sediment should be sampled and analyzed in support of the ERA.

14. A figure presenting the “conceptual site model” for AOC C has not been prepared for this work plan. A graphical presentation of exposure pathways and exposure scenarios by media is a useful tool to present and evaluate human health risk assessment information at a given site. Section 5.1.3.2 discusses the exposure scenarios and pathways that will be evaluated in the human health risk assessment. Many of the specific comments generated may have been eliminated if the basis for pathway selection were made clear. A

conceptual site model figure may help to describe the process used to select pathways for evaluation. A conceptual site model figure should be prepared for this work plan that identifies all human health receptors, exposure pathways, and rationale for selecting/eliminating exposure pathways.

15. As per the December 22, 1998 memo from Dr. Ted Simon on implementing the ecological risk assessment process in EPA Region 4, a screening level ecological risk assessment should be developed prior to the development of the work plan for an RFI. This memo can be obtained from at:
<http://www.epa.gov/region4/wastepts/oftecser/otsguid.htm>
Therefore, if data from prior sampling rounds are available, a screening-level ERA should be developed as an addendum to this work plan, and included in the next version of this document. The Screening-Level ERA should be limited to Step 1, the preliminary problem formulation and ecological effects evaluation and to Step 2, the preliminary exposure estimate and preliminary risk calculation, which includes a direct comparison of the maximum concentration of each chemical in each abiotic medium to the Region 4 screening values. Chemicals exceeding their screening values should be carried through to Step 3, Problem Formulation. Chemicals without screening values should also be carried through to Step 3. These chemicals will represent the COPCs for the site. Toxicity profiles should be developed for the screening level ERA. These toxicity profiles should be developed for classes of chemicals rather than individual COPCs and should indicate whether any of the selected COPCs will tend to bioaccumulate, or whether direct toxicity would be the major environmental concern. The Screening-Level ERA should be used to focus RFI field sampling efforts.
16. As per the December 22, 1998 memo from Dr. Ted Simon on implementing the ecological risk assessment process in EPA Region 4, Steps 3 and 4 of the ERA process should also be performed prior to the development of the work plan for the RFI. In practice, a general version of these steps should be developed and included in the work plan as part of the scoping process for field activities. Step 3 should represent the thought process for scoping the RFI field activities, which takes into account the ecotoxicity and potential ecological receptor information for the site. Step 4 is the actual work plan, as it relates to ecological risk assessment concerns. The Step 3, Problem Formulation, to be included in the work plan, should discuss whether the COPC list, determined from the screening level ERA, should be modified, or may potentially be modified based on factors such as background. A discussion of fate and transport including the linkage of potential source areas through drainage pathways to surrounding surface water complexes should be developed. Generic assessment endpoints should be developed. Finally, the Work Plan-level Step 3 to be included in the work plan should present a provisional conceptual site model, to be refined in the RI with receptor groups such as "aquatic receptors" or "terrestrial receptors" listed. It is not anticipated that the Step 3 to be included in the work plan would include foodchain modeling. For sites such as AOC C where little data are available prior to the RFI, Step 4 may be limited to defining the abiotic media sampling needs.

17. As per the December 22, 1998 memo from Dr. Ted Simon on implementing the ecological risk assessment process in EPA Region 4, food chain modeling should not be performed in a screening-level ecological risk assessment. If food chain modeling is warranted, it should be conducted as part of Step 3 of the ERA process, and included in the RFI report. COPC screening, as described in Steps 1 and 2 of the 8 step process, should be performed on the data collected from this sampling effort in order to determine the site COPCs. Generic toxicity profiles will be need for any classes of COPCs which were not identified in the Screening-Level ERA for this site. Food chain modeling should only be performed on bioaccumulative chemicals. The tasks listed under sections 5.2.2.4 through 5.2.2.6 and 5.2.3.2, 5.2.4 and 5.2.5 should be performed in Step 3 of the ERA in the RFI report. This work plan should be re-formatted to correspond with Region 4 guidance on implementing EPA's 1997 *Process for Designing and Conducting Ecological Risk Assessments* document.

SPECIFIC COMMENTS

18. **Table of Contents, Page iii.** A references section is provided in the Work Plan after Section 7.0. However, the reference section is not included in the Table of Contents. References should be added in the Table of Contents after Section 7.0.
19. **Section 1.3, Page 1-4 and Figure 1-2.** Section 1.3 is a description of the AOC C site. Figure 1-2 is referred to in this section when describing AOC C, Echo Pier, Building 191 and the SIMA Building (Building 1488). However, AOC C and the SIMA Building (Building 1488) are not marked on Figure 1-2. This discrepancy should be addressed.

In addition, many of the items described in section 1.3 are not marked on Figure 1-2 or any other figure. The following items discussed in Section 1.3 should be marked on Figure 1-2: AOC C, the two Quonset Buildings (Buildings 264 and 281), the SIMA Building (Building 1488), Building 191-A, and Building 191-C. Since these buildings are discussed in Section 1.3 they should also be clearly identified in Figure 1-2.

20. **Section 5.1.2, Page 5-4.** This section discusses the identification of human health chemicals of potential concern (COPCs). The text of this section states that USEPA risk based comparison values (RBCs) along with other Florida values (like FDEP Soil Cleanup target Values and Florida guidance concentrations for groundwater) will be used for the screening process. The text, however, does not identify which set of values will be used to screen each media. The most conservative screening values for each contaminant should be used for COPC screening, and this should be reflected in the text of this section.

21. **Section 5.1.3.2, Page 5-6, First Bullet.** In this section, the military resident receptor is only considered for the groundwater pathway. It is reasonable to assume that these receptors may also be exposed to contaminants in soil. Soil exposure pathways should be evaluated for the military resident exposure scenario. The text along with Table 5-1 should be changed to include soil exposure pathways. If this pathway is not to be evaluated in the risk assessment, a rationale for excluding the pathway should be presented in the text.
22. **Section 5.1.3.2, Page 5-6, Second Bullet.** The text states, "future residents are individuals that may currently reside near AOC C or may do so in the future." This definition is confusing and appears to actually define two specific exposure groups, current residents and future residents. Current residents appear to be accounted for in the military resident scenario, i.e. those that "currently reside" near AOC C. Future residents are, by definition, those who may live in or near the area in the future. The text should be clarified.
23. **Section 5.1.3.2, Page 5-6, Third Bullet.** The text indicates that trespassers are "individuals who may from time to time enter a contaminated site without proper authorization and come into contact with contaminated soil." It seems reasonable that trespassers may also contact contaminated surface water and sediments. Surface water and sediment pathways should be evaluated for the trespasser scenario. If surface water and sediment pathways will not be considered for this exposure scenario in the risk assessment, a compelling rationale for not evaluating the pathway should be presented in the text.
24. **Section 5.1.3.2, Page 5-6, Fourth Bullet.** Under the construction worker scenario, the text states that construction workers may come into contact with surface water and sediment. However, these exposure pathways are not shown in Tables 5-1 and 5-2. The text should be changed to include exposure to surface water and sediment by the construction worker, if these are in fact reasonable exposure media.
25. **Section 5.2.3.1, Page 5-20.** The first sentence of the second paragraph of this section states that USEPA Region IV has not promulgated its own surface soil guidelines. However, in the December 22, 1998 memo from Ted W. Simon, a toxicologist for the USEPA Region IV Office of Technical Services, new surface soil guidelines for Region IV are introduced. These newly issued Region IV ecological surface soil screening values or their updates should be used in this ERA. The Work Plan should be changed to state that these values will be used and the text should be revised to acknowledge that Region IV has promulgated its own surface soil guidelines.