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Commander, Southern Division
Naval Facilities Engineering Command
ATTN: Anthony Robinson, Code ES31
Remedial Project Manager
2155 Eagle Drive
North Charleston, South Carolina 29406

Reference: Clean Contract Number N62467-94-D-0888
Contract Task Order Number 0100

Subject: Response to Comments
Draft – Final Remedial Investigation/Feasibility Study, Revision 1
Potential Source of Contamination 51
Naval Air Station Jacksonville
Jacksonville, Florida

Dear Mr. Robinson:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this letter responding to the comments on the Draft-Final Remedial Investigation/Feasibility Study (RI/FS), Revision 1 for Potential Source of Contamination (PSC) 51 from the various Naval Air Station (NAS) Jacksonville Partnering Team members. Revision 1 of the PSC 51 RI/FS was submitted on May 10, 2002. The questions and/or comments that have been received by TtNUS from the other Partnering Team members by letter are addressed below.

Naval Air Station Jacksonville, Facilities and Environmental Department

Tim Curtin

My only comment is that I would like the team to reconsider removing the contaminated soil. With other sites where we leave contamination behind, it has been organic contamination, which will eventually naturally attenuate. However at PSC 51, the contamination is metals which will always be those metals making this site worthless to NAS JAX forever.

Response: The team has discussed this issue further since Tim's question and has agreed that although use of the site is restricted without remediation of the surface soil contamination, it remains useable by the station for industrial scenarios.



United States Environmental Protection Agency

Tim Woolheater

General Comments

1. **The comment responses were reviewed and all appear to have been implemented appropriately into the text. There are several specific comments below that should be addressed. The ecological risk comments do not affect the overall decision for this site. There are no human health risk assessment comments.**

Response: The specific comments are addressed below.

Specific Comments

1. **Table 5-2. The State of Florida has a value for total Chromium, which must be considered in this table. The residential value is 210 and the industrial level 420. It would appear that there is a need to review the 95% confidence interval to determine the need for further action with respect to this contaminant. Please integrate this into your feasibility analysis.**

Response: The State of Florida does not have a value for total Chromium, but does have a value for hexavalent chromium. However, often the total chromium results are compared to the hexavalent chromium SCTLs as a conservative approach. Communications amongst the team and preliminary statistical analyses of the total chromium values resulted in TtNUS remobilizing to the site to collect additional soil samples from the locations where total chromium results exceeded the industrial SCTL. Three soil samples were collected and submitted to our laboratory for hexavalent chromium analysis in July 2002. The soil sample results indicated hexavalent chromium was below the laboratory method detection limit in all samples. Therefore, chromium was retained as a COC, but at concentrations less than FDEP industrial SCTLs.

2. **Page 5-16, Section 5.3.4. Based upon the data presented in the tables for this section and the data presented in the Figures 5-3 through 5-18 (except 5-15 and 5-16), there appears to be an area of unbound groundwater contamination to the north and northeast. Granted, this area is upgradient of the highest concentrations but there are concentrations of groundwater cleanup standards. The groundwater contamination in this area should be delineated as part of the Remedial Design. Please integrate this into the feasibility study analysis.**

Response: In TtNUS' opinion if the groundwater contamination is considered with respect to its flow axes, then adequate delineation has occurred. However, based on NAS Jacksonville Partnering Team conversations, TtNUS has modified the FS so that groundwater remedial alternatives will include the installation and sampling of a new monitoring well northeast of the groundwater plume as part of the monitoring response action for each alternative.

3. **Page 6-7, Section 6.2.2. This section has a very brief mention of naphthalene in the first sentence but no other mention of the fate and transport of this compound. As a semi-volatile compound, it would be expected to be fairly long lasting and less amenable to breakdown. It was reported in only one well, MW-4, above the GCTL in 1999 and was below the GCTL for that well in the 2001 sampling event. However, it was detected in 22 of 80 direct push samples and was significant enough to warrant two separate figures, 5-17 & 5-18. Please review and report turbidity values for the direct push samples, which detected naphthalene. Specifically, is there**



a correlation between the naphthalene detected and turbidity readings? If the turbidity readings are similar for all samples, including the four locations, which reported it above the GCTL, then there may be a groundwater problem that needs to be investigated further. A maximum reported concentration six times the GCTL should not be dismissed simply because it was from a temporary location.

Response: Turbidity readings were not collected during direct-push sampling so a comparison can not be conducted. However, based on previous site assessment experience and the chemical characteristics of SVOCs such as naphthalene, groundwater analytical results from direct push sampling points are typically much higher than from monitoring wells due to the absence of a filter pack. In addition, naphthalene was not dismissed, but retained as a COC in the FS and included during remedial consideration. Additionally naphthalene is included in the monitoring program for all remedial alternatives.

- 4. Page 6-7, Section 6.3. Section 6.3 goes into a considerable discussion of natural attenuation results for the groundwater sample analyses. There is no reference to a specific protocol followed to demonstrate that natural attenuation processes are occurring. Certainly, all of the various analyses performed and the results discussed mirror the discussions found in the guidance document Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater, EPA/600/R-98/128, September 1998. The report would be strengthened by stating that the natural attenuation evaluation followed this or equivalent protocol. Additionally, the report would be strengthened if the natural attenuation parameters were scored using the scoring method summarized in Table 2.3 of the Guidance. This would also strengthen the conclusion of the Feasibility Study to employ Natural Attenuation as the selected remedy for the groundwater and provide a protocol for the Remedial Design and Remedial Action phases of this project.**

Response: The natural attenuation analysis was conducted using the guidance document Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater, and the text has been amended to signify this. Section 6.3.12 has been added discussing the scoring of the site in accordance with the guidance document.

- 5. Page 10-28, Section 10.3. The area of arsenic contamination described is not delineated to residential criteria for the FFTA portion of the site. A removal action for this portion of the site would require additional sampling before an exact number for the volume of soil to be removed is ascertained.**

Response: The text has been modified to indicate that further delineation would be required prior to soil removal.

- 6. Page 12-14, Section 12.2.2.1. The technical basis regarding the frequency of sampling should be developed in a MNA work plan or remedial design document. These remain adequate for the feasibility analysis; however, may change should the work plan dictate the need for greater frequency.**

Response: Noted. The current MNA sampling frequency is based on the MNA sampling that was conducted at Operable Unit 1 at NAS Jacksonville, and is being used for cost estimating and comparison purposes. Once the Proposed Plan and Record of Decision are final and the site has entered into a monitoring program, the NAS Jacksonville Partnering Team will review the work plans and approve the sampling frequency proposed.



- 7. Page 13-9, Section 13.2.2.3. This section includes the summary and recommendations. As an additional recommendation, it is suggested that three contingency remedial actions be considered for inclusion in the Record of Decision. Please provide a contingency plan for surface water action, should, in the future, the surface water feature indicate detections in excess of screening criteria. As to groundwater, please provide a contingency plan should the contamination reach and discharge to the surface water body and a contingency plan should the Five Year Review indicate that the chosen groundwater remedial action is not performing, as specified. By providing these contingencies, the need for amending the ROD in the future is reduced.**

Response: A contingency actions section has been added to the FS (Section 13.2.2.4). However, TtNUS only will address two contingency action scenarios, ineffectiveness of the monitored natural attenuation and surface water analytical results exceeding surface water Remedial Action Objectives. The scenario listed above where groundwater contamination reaches and discharges into the surface water body is assumed to be an issue only if the measured concentrations in the surface water body exceed the RAOs established in the FS.

- 8. Appendix M. In evaluation the indirect costs for a simple removal action as seen in Alternative S-3, it appears that the percentages used in calculating the indirect costs are elevated which may provide an appearance of an overall cost which is biased high.**

Response: The percentages used to calculate the indirect costs were intentionally elevated because soil was delineated to FDEP industrial SCTLs as opposed to FDEP residential SCTLs. Since the removal action would be to residential SCTLs the indirect cost percentages were increased due to uncertainties with the actual extent of contamination and the additional cost incurred for soil delineation.

General Ecological Risk Assessment Comments

- 1. The ecological risk assessment was appropriately revised as indicated in the May 13, 2002 response to EPA comments.**

Response: Noted

- 2. The food chain model is not necessarily as conservative as it should be since it does not include metal concentrations in plant material or invertebrate prey. This, however, should not affect the ecological risk assessment conclusion.**

Response: Since the EPA agrees that their comment and any changes associated with it would not affect the conclusions of the risk assessment, TtNUS will not alter the document.

Specific Ecological Risk Assessment Comments

- 1. Page 8-25, Section 8.6.3.5. The incidental soil ingestion factors presented in this section, except for the meadow vole, are not consistent with those presented on the spreadsheets (i.e., Table FCM-6 in Appendix K). This discrepancy; however, should not affect the ecological risk assessment conclusion.**

Response: Some values in Appendix K were incorrect. The document will be revised to correct the discrepancy.



Florida Department of Environmental Protection

Jorge Caspary

General Comments

In general the document is well written and follows the results of numerous team meetings regarding this site.

Specific Comments

- 1. As discussed, the proposed soil removal effort will have to address the Chromium exceedances unless the Navy wants to resample soil and request specification of Cr.**

Response: See USEPA comment 1.

- 2. I concur with EPA in that an attempt should be made to evaluate the groundwater Natural Attenuation parameters against the EPA's scoring method.**

Response: See USEPA comment 4.

- 3. Additional delineation for arsenic in the FFTA is warranted if the soil is to be excavated. This delineation effort can be accomplished prior to the soil removal stage.**

Response: See USEPA comment 5.

If you have any questions regarding this correspondence or if I can be of assistance, please contact me at (904) 636-6125.

Sincerely,

Gregory S. Roof, P.E.
Task Order Manager

cc: Jane Beason, NAS Jacksonville
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