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October **21, 1994**

Allison Humphris
U.S. EPA
345 Courtland Street, **NE**
Atlanta, GA **30365**

RE: Responses to Technical Review Comments, Technical Memorandum for Sites **10 & 14,** Pensacola Naval Air Station, Pensacola, **FL;** Contract **#N62467-89-D-0318, CT0-0070.**

Dear Ms. Humphris:

On behalf of the Navy, EnSafe/Allen & Hoshall is pleased **to** submit responses **to** technical review comments on the Technical Memorandum for Sites **10 & 14.** Specifically, **this** submittal includes responses to comments provided **to** the Navy by **U.S.** Environmental Protection Agency - Region IV and the Florida Department of Environmental Protection. The Navy reiterates that the above-referenced technical memorandum is a secondary document, thus a revised version will not be submitted for review.

Should you have any questions or comments regarding this submittal, please feel **free** to contact me at **(904)479-4595.**

Sincerely,

EnSafdAllen & **Hoshall**

Brian E. Caldwell

Brian **E.** Caldwell, P.G.
Task Order **Manager**

Enclosure

cc: Bill Hill
Bill Gates
David Clowes
EnSafdAllen & Hoshall file
EnSafe/Allen & Hoshall file - Pensacola

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL REVIEW AND COMMENTS
TECHNICAL MEMORANDUM: SITES 10 & 14
NAVAL AIR STATION (NAS) PENSACOLA
PENSACOLA, FLORIDA

GENERAL COMMENTS:

COMMENT:

1. The text should not refer to the values presented for comparison with the analytical data (e.g. Region III RBCs, FDEP CGs) as ARARs. The correct term for these values is Preliminary Remediation Goals (PRGs). Of the values referenced, only EPA's MCLs and FDEP's FPDWSs are promulgated standards. Also, the term "background standards" should not be used in discussing the analytical results for background samples, since the term "standard" has a regulatory connotation.

RESPONSE:

The requested corrections will be made in the draft site reports.

COMMENT:

2. Comparison of soil analytical results to USEPA RBCs and FDEP CGs for the aggregate residential scenario will address the potential for exposure through direct physical contact, but not the potential for ground water contamination through leaching. In accordance with EPA Region IV policy, if ground water contamination, or the potential for soil contaminants to leach to ground water, exists, then Site-specific soil action levels must be developed for each detected contaminant. The methodology used to derive these numbers must also be provided for review. If the existing data clearly indicate that ground water contamination, or the potential for ground water contamination via soil leachability, does not exist (thereby alleviating the need to calculate soil action levels), this conclusion should be clearly documented and justified in the text.

   In keeping with the above comment, the presentation of analytical results should distinguish more clearly between surface and subsurface soil samples.

RESPONSE

The Navy is currently evaluating the possibility of developing soil leachability values on a facility-wide basis. This includes compiling an inventory of soil types encountered to date. If this approach proves too time consuming for CAT V *sites,* then soil leachability values will be developed on a site-specificbasis. The procedure for developing these levels will be as follows:

1. Delineate soil contamination;
2. Complete a continuously sampled soil boring in the area of highest soil contamination;
3. Analyze the discrete soil samples for Total Organic Carbon (TOC) and leachability using TCLP, column, or batch tests;
4. Using the above results, determine the soil-water partitioning coefficients;
5. Determine the dilution-attenuation factor using a model appropriate for the site (models include Summers, Multimed, Ritz, and Pestan).

Surface and subsurface samples will be clearly identified in the draft site reports.

COMMENT:

3. Groundwater data should be compared to the Safe Drinking Water Act (SDWA) Maximum Contaminant Levels (MCLs), MCLGS, SMCLS and health-based numbers, not the U.S.EPA RBCs for Tap Water or RALs for Contaminated Drinking Water Sites.

   Also, in order to evaluate a "worst-case" scenario for ecological concerns with respect to potential ground water discharge to wetlands or other surface water bodies, ground water concentrations should be compared to surface water screening numbers and standards.

RESPONSE:

Groundwater data will be compared to SDWA MCLs, MCLGs, SMCLs, and health-based numbers in the draft site reports. Given that this is groundwater, and not surface water, the results will not be compared to surface water screening numbers and standards. This would be an unrealistic "worst case" comparison, as such a comparison makes no account for attenuation of potential groundwater contamination prior to discharge to surface water. Numerous factors (dispersion, adsorption, degradation, etc.) affect this attenuation and eventual quality of discharge.

COMMENT:

4. All references to the RBCs should clearly indicate which of the Region III RBCs are "applicable" (i.e., residential or industrial). The text should also clearly indicate which RBC table was used (i.e. Hazard Index of 1 or 0.1, date of table preparation).

RESPONSE

The requested information will be included in the *draft* site reports.

COMMENT:

5. Use of the term "Contaminants of Concern" in these documents is not appropriate. This term, or preferably "Chemicals of Concern" (COC), should be reserved for chemicals which exceed a 10^{-6} risk level or HI of 0.1 in baseline risk assessment scenarios which exceed lob risk level or HQ of 1. Please revise the text accordingly.

RESPONSE

The requested revision will be included in the draft site reports.

COMMENT:

6. The groundwater background sampling data is suspect due to the high (above MCLs) concentrations of many inorganic chemicals (e.g. beryllium, cadmium, chromium, lead (action level), manganese, mercury, nickel). Unless adequate documentation supporting the representativeness of this data (e.g. collected from a contaminant-free area using adequate field sampling techniques), this data cannot be used to discount the presence of ground water contamination and/or the need for mediation at these sites.

RESPONSE

Resampling of the background wells using the quiescent sampling methodology has resulted in significantly decreased inorganic concentrations. This data set will be used for comparison in the draft site reports.

COMMENT:

7. According to the text on page 4, 4.25" ID augers were used to install wells. These augers are too small. In the future, 6.25' augers must be used, as specified in the ECBSOPQAM.

RESPONSE

4.25 inch augers result in an approximately 8-inch borehole. This provides more than adequate annular space; Florida Statutes require a 2-inch annulus between the "borehole wall" and the outside of the casing, and the CSAP for NAS Pensacola provides an identical requirement. The Navy realizes that the purpose of using an oversize auger as requested by EPA is to prevent bridging of annular fill. However, the Navy utilizes well installation methodology that prevents this likelihood, and does not result in unnecessary waste cuttings nor cost associated with annular fill of a larger borehole.

SPECIFIC COMMENTS - SITE 10:

COMMENT:

1. Page 7, Paragraph 1:
"[The] results [of a geophysical survey of the area containing buried drums] will be an appendix to the site investigation report." During recent Partnering meetings, the Parties discussed the possibility of addressing these buried drums through a removal action. What is the status of this proposed removal action? Also, the preceding quote indicates that the Navy is planning to expand Site 10 to include the buried drum area. If this is the case, this should be more clearly indicated in the present document and the FY95 Site Management Plan.

RESPONSE

During a September 1994 meeting, the Tier 1 group decided to address the buried drum area as a separate site; this will be clearly stated in the *draft* site report. The Navy's remedial action contractor, Bechtel Environmental, will be preparing a removal work plan for this site.

COMMENT:

2. Page 9, Paragraph 2:
Phenols were detected in both soil and ground water samples during E&E's Phase I investigation., Yet during the current sampling round, no *organics* were detected in ground water samples, and only pesticides and PCBs were detected in soils. An explanation for this discrepancy in analytical results must be provided.

RESPONSE

The E&E data was designed to screen only, utilizing a single column GC method (no mass spectroscopy (MS) or second column confirmation). The advantage *to* the GC method is the detection of low levels of analytes. However, the disadvantage is that this method is subject to interferences; as a result there is always some question as to whether a detected compound has been identified correctly. GC analyses are prone to both false positives and false negatives, as was apparently the *case* with E&E's Phase I data.

The analytical methods utilized in the current data set were GC/MS. The primary advantage of this method is the ability to have a high level of confidence in the data *since* mass spectral information is provided in the analysis. Unlike the GC method, confirmation past the initial analysis is usually not required.

A summary of previous analytical results, and an explanation of analytical discrepancies between historical and current data *sets*, will be provided in the draft site reports.

COMMENT:

3. Page 14, Paragraph 1:
The mean background concentrations for soils should be calculated using only the detected concentrations; they should not include one-half the detection level for non-detected parameters.

RESPONSE:

There are numerous methods for dealing with multiply-censored data. The vast majority of these utilize nonparametric statistics (for example, Millard and Deverel [1988] and Helsel and Cohn [1988]; Water Resources Research, Vol.24). However, a common practice of dealing with this type of data nonparametrically is to use one-half the detection limit (Parker, William; Geostatistics Professor, Florida State University, pers.comm.). This is based on the simple

premise that because an analyte was not present at a given detection limit does not ensure its absence or its presence below that level; thus, the risk of it being present or absent is equally shared. Furthermore, this type of treatment does not require a determination of the data distribution trend. Given that this is a commonly accepted statistical practice, the Navy will continue to utilize it in determination of mean background concentrations. For the record, the use of an arithmetic mean for the measurement of central tendency is valid only for normally or log-normally distributed data; perhaps for interpretive discussion EPA would agree that use of the range of values detected in background would be a more valid approach.

COMMENT:

4. Page 14, Paragraph 3:
The apparent purpose of collecting the sediment sample in the drainage ditch was to evaluate possible Contaminant migration from Site 10 to the nearby wetland. If so, this should be clearly stated, and the results evaluated accordingly, in the text.

RESPONSE

The requested change will be included in the draft site report.

COMMENT:

5. Page 18, Paragraph 1:
The recommended action is poorly worded. The detected pesticides and PCBs in subsurface soil samples are clearly related to past site activities, specifically, the filling and reworking of the site described on page 17. Please revise the text accordingly.

EPA concurs with the Navy's recommendation of no further action for screening site 10. A Preliminary Site Characterization Report which addresses the above comments should be prepared and submitted for Agency review and concurrence.

RESPONSE:

The requested revisions will be included in the *draft* Preliminary Site Characterization report.

SPECIFIC COMMENTS - SITE 14:

COMMENT:

1. Page 21, Paragraph 4:
As was the case for Site 10, phenols were detected in both ground water and soils during the E&E Phase I investigation. Yet phenols were not detected in either medium during the present investigation. An explanation for this discrepancy in analytical results must be provided.

RESPONSE

Please see the response to EPA specific comment n0.2 for Site 10.

COMMENT:

2. Page 23, Paragraph 3:
It is quite possible that the berm blocking the creek in the south wetland is a temporary feature which is dependent upon the nearshore hydrodynamics of the Pensacola Bay system. If so, then the creek in the south wetland might be connected to Pensacola Bay during some portion of the year. This point should be addressed, and the potential impact on the Bay evaluated, in the text.

RESPONSE

The requested revision will be included in the draft site report.

COMMENT:

3. Pages 24-25, Figures 5 & 6:
One or both of these figures should illustrate the location of: (i) the creek outlet for the north wetland, and (ii) the creek for the south wetland and the berm blocking the creek outlet.

A potentiometric surface map should not be generated using only two well points. The general direction of ground water flow was determined during E&E's Phase I investigation through the sampling of multiple temporary wells. The text should refer to this data in order to illustrate the direction and gradient of ground water flow. The

potentiometric surface from the interim data report should be included in the present document.

RESPONSE

The requested revisions will be included in the draft site report. It should be noted however, that in addition to the two wells, measurements included a staff guage in Pensacola Bay, which is in direct hydraulic contact with shallow groundwater; thus the general direction of groundwater flow is quite obvious.

COMMENT:

4. Page 27, Paragraph 4:
See comment 3 for Site 10.

RESPONSE

Please see the response to EPA specific comment no.3 for Site 10.

COMMENT:

5. Page 28-29, Soil:
The settling basins contain water at least part of the time, as evidenced by the presence of drainage control structures. The dredge spoil samples from these basins must therefore be evaluated as sediments, particularly for ecological concerns. Please compare the analytical results for samples collected from within the basins with U.S.EPA Region IV draft sediment screening values.

RESPONSE

The requested revision will be included in the draft site report.

COMMENT:

6. **Pages 30-31,** Conclusions and Recommendations for Further Action: The following additional tasks must be performed in order to complete the investigation for this site:

   A. This section should evaluate the potential for ecological risk posed by the contaminants contained in the dredge spoils, and the potential for migration of these contaminants into Pensacola Bay and/or the adjacent wetlands. In particular, what are the potential pathways from the basins to the wetlands? Are these pathways viable? What would the potential impact on the Bay be in the event of catastrophic failure of the berms (the berms are quite high and reinforced only with rip rap)?

   B. Surface water in the basins *can* act as both an exposure medium and a means of contaminant migration (e.g. dissolved and suspended particulate fractions). In order to assess these potential exposure pathways, surface water samples for chemical analysis must be collected from (i) the upgradient side of each culvert (4 samples total), and (ii) midway between the two culverts in each basin (2 samples total).

   C. Due to differences in physical conditions between basin centers and peripheries (e.g. depositional patterns, frequency/duration of submergence), it is possible that contaminants have been deposited inhomogenously throughout these basins. In order to characterize the spatial variability of contamination, one additional sediment sample for chemical analysis must be collected from as close to the center of each basin as possible.

   D. One sediment sample from each basin outfall will not provide adequate characterization of contaminant variability at these locations. In order to obtain this information, EPA recommends that at least one additional sample and a replicate be collected from each basin outfall for chemical analysis (4 samples total).

   E. Sediments in the "mudflat" or flatlands area of the western basin represent a potential exposure pathway to shorebirds (food chain transfer). In order to characterize these sediments, two sediment samples must be collected from this area. Both chemical and taxonomic analyses must be performed on these samples. Taxonomic analyses should determine which macroinvertebrates may be living in these sediments (i.e. food source for the shorebirds). If possible, the relative abundance of different species should also be determined.

RESPONSE:

A. Ecological risk evaluation will be included in the draft site report.

B. The requested surface water samples will be collected.

C. The requested sediment samples will be collected.

D. A composite sample will be collected at each outfall to supplement the two discrete samples and one duplicate already collected: each composite will consist of a five-node cluster, and will cover an approximately 25 ft. by 25 ft. area. One duplicate of one of the composites will also be collected.

E. The requested sediment samples will be collected.

COMMENT:

7. Page 32, Recommended Action:
EPA agrees with the Navy's decision to upgrade screening site 14 to RI status and perform a Baseline Risk Assessment. Additional field activities should be performed as needed and an RI Report which addresses all of the above comments should be prepared and submitted for Agency review and concurrence.

RESPONSE:

EPA misunderstood the Navy's intention: the Navy does not wish to upgrade this site to RI status. However, the Navy does wish to conduct a baseline risk assessment utilizing all of the collected data; should the BRA indicate a significant risk is present then the site *can* be upgraded to RI status. Otherwise, the report will be prepared as a Preliminary Site Characterization Report.

APPENDICES:

COMMENT:

1. Appendix B:
It is unclear from Tables 10-2 and 14-2 which samples are sediment and which are soil. The depth of soil samples should also be included.

Tables 10-2, 10-3, 14-2 and 14-3 appear to present the data in more significant figures than the data would indicate is appropriate. Please revise as needed.

RESPONSE

The requested revisions will be included in the draft site report.

COMMENT:

2. Appendix C:
It is inappropriate to present data which the laboratory has reported as 39 ug/l as 39.0000 ug/l, even with the added caveat that "data are not shown in significant digits." Data should be presented as reported from the laboratory. Please revise as needed.

A key which includes all data qualifiers presented in the appendix should be provided.

RESPONSE

The requested revisions will be included in the draft site report.