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NAS WHITING FIELD
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U S NAVY RESPONSE TO FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
COMMENTS TO TECHNICAL MEMORANDUM NUMBER FIVE FOR DRAFT REMEDIAL
INVESTIGATION/FEASIBILITY STUDY FOR GROUNDWATER ASSESSMENT NAS WHITING
FIELD FL
10/1/1995
NAS WHITING FIELD

RESPONSE TO COMMENTS**Draft RI/FS Technical Memorandum No. 5, Groundwater Assessment
NAS Whiting Field
Contract No. N62467-89-D-0317/050**

Florida Department of Environmental Protection

1. **Typographic and other minor errors have been presented to and discussed with ABB personnel in order to save time. This does not include references to the soil assessment in the Executive Summary. This should be corrected.**

Comment noted, additional editing has been completed. In addition, corrections to the third paragraph (replace the word "soils" with "groundwater") of the Executive Summary were made.

2. **On page 4-3, please include and utilize the FDEP document *Ground Water Guidance Concentrations, June 1994*.**

In the draft document, only those standards that are legally enforceable were included. However, in order to more effectively screen analyte concentrations detected in the groundwater, the Florida Ground Water Guidance Concentrations will be included.

3. **On page 4-5, the discussion of the BAT sampling results indicates that some constituents could have resulted from the sampler components or laboratory contamination. I cannot disagree; however, acetone is a common solvent and methylene chloride is commonly used for stripping paint. Since these materials are included in the contamination evaluation that we are conducting, additional use of this technique increases the difficulty of our evaluation. This idea is reinforced by one sample with a relatively high concentration of acetone-was it an artifact? In the case of acetone, since it has guidance concentration that is higher than the observed value, it is less problematic than those observed values for methylene chloride, which were determined at a level over twice the primary standard. If contamination is suspected from the components of the BAT sampler, further usage of it should be curtailed or a better equipment blank evaluation method should be adopted. These comments are also appropriate for the summary discussion of the BAT sampling in Section 5.1.**

Comment noted. The BAT sampling method is proposed for the next phase of investigation; however, corrective measures to address this sampler or laboratory-derived contamination include the use of a redesigned sampler using inert materials, including Teflon™ septa and additional method blanks.

4. **On page 4-2, it is stated that the facility does not have intermediate or deep background monitoring wells. In view of the fact that chlorinated solvents are one of the primary concerns in this investigation and they are denser than water ("sinkers"), it seems prudent that the Navy would have at least one of each of these types of wells as part of the investigation. Does the Navy intend to install such wells? If not, why?**

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Intermediate and deep background groundwater wells have not been installed. We agree that this represents a potential data gap, and it is expected that these wells will be installed in conjunction with future investigations.

5. **Related to comment 3 (above), a discussion of the general relationship of the BAT sampling zones should be presented. These comments should be correlated with the shallow, intermediate and deep zones discussed in general about the site. These zones should be defined by a depth range classification related to both NGVD and BLS datum references. Additionally, all site wells should be classified using these criteria and their type represented in tabular and graphic form.**

Section 4.2 presents a general discussion of the sampling depths for the completed BAT samplers. The text in this section and Table 2-1 provide the individual sampling depths in feet below land surface. At the time of installation, the BAT sampling locations were not surveyed because of the limited screening nature of the data; therefore, the NGVD elevations are not available. The BAT sampling depths selected correspond with the shallow zone monitoring wells screened across the water table and with the deep groundwater production zone at approximately 180 ft. below ground surface. The monitoring wells completed at the facility are referenced to the depth below land surface and additions have been made to tables that indicates the depth of the screened interval relative to mean sea level. The results section of the report discusses the wells in relation to shallow, intermediate, and deep completion zones.

6. **Table 4-3 presents the field parameters; most of the samples have conductivity below 100 umhos; however, some are quite high and even though those up to 500 umhos are suspect, those above 1000 umhos indicate the presence of dissolved constituents. I understand and generally agree that grout leakage could cause some of the high Ph values and these typically were observed with some of the high conductivity samples; however, the highest conductivity value also had a Ph value in the acid range (Ph of 5.75 at WHF 3-3D). These aspects should be considered "flags" and subsequent sampling of these sites should take this into account, and if the data are consistent, rational conclusions as to the reason should be pursued.**

Comment noted. It is agreed that the low reported pH value reflects a discrepancy in the interpretation of the data. A subsequent groundwater sample will be collected to address this issue.

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7. **In Table 4-4, several inorganic constituents exceed the MCLs, assumably as a result of acidifying turbid samples. I understand that this problem is being considered, along the lines of filtering the lines of filtering the samples, using a newer teflon pump, etc. The Navy should consider it a priority to obtain non-turbid, unfiltered samples to help assure confidence in the analytical determinations.**

Comment noted, and it is agreed that, during the next investigation, the collection of nonturbid unfiltered samples will be a priority.

8. **As discussed on page 4-15, what is proposed concerning the presence of contaminants in background well WHF-BKG-3? the presence of 4 $\mu\text{g}/\ell$ benzene (MCL - 1 $\mu\text{g}/\ell$) and 13 $\mu\text{g}/\ell$ toluene indicates contamination. Related to this, in all tables presenting background values, if the "background" values exceed MCLs, they should be shaded so as to indicate their exceedance of the MDLs. What is proposed in cases where non-natural constituents (such as benzene) exceed the MCLs by several times? What about natural constituents such as nickel (Table 4-23) with a value of 700 $\mu\text{g}/\ell$ which exceeds the MCL by seven times?**

The background monitoring well WHF-BKG-3 will be resampled to provide confirmation of the detected contaminants. If concentrations are confirmed, the investigation will be expanded to address the source of the compounds. The background values that exceeded MCLs were shaded on Table 4-4; however, all remaining tables indicate the background screening value, which is two times the arithmetic mean of the detected background concentration. The background screening criteria are independent from the MCL criteria and were separated within the report discussion. The occurrence of nonanthropogenic chemicals will be addressed by a resampling of the wells to confirm their presence, a source identification investigation will be initiated if their presence is confirmed, and additional background location(s) will be identified. The presence of anthropogenic constituents will be addressed by minimizing the turbidity of groundwater samples.

9. **In the discussion of inorganic analytes, the relationship of high sample values and turbid sample acidification is discussed repeatedly (with each site). This is not really necessary once at the beginning of the analytical discussion would suffice; repeated discussion provides little additional information. Similarly, each time the inorganic MCLs are exceeded, a table showing the MCLs of those particular analytes is presented. If this approach is retained, please at least add a column showing the analyte concentration or range of concentrations. Even better, one table showing the MCL of all the analytes, presented one time, would suffice.**

Comment noted. The text has been modified throughout the document to eliminate the repetitive nature of both the sample acidification and reporting of the inorganic MCLs.

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10. In Table 4-9, the State MCLs for toluene and ethyl benzene are in error; they are, respectively, 40 $\mu\text{g}/\ell$ and 30 $\mu\text{g}/\ell$ (secondary standards). When applied, the toluene and ethyl benzene values in WHF-32-2 and the ethyl benzene values in WHF-42-3 exceed the MCLs and should be shaded. All tables with these background screening values need correction.

Comment noted. Corrections to the tables have been completed.

11. Because of their importance in relation to the overall site contamination, the location of base potable production wells should be included on isoconcentration maps (such as Figure 4-1 to Figure 4-5). Additionally, the physical parameters for these wells (diameter, screen dimensions, etc.) and pumpage numbers should also be included in TM-5. The Navy should also obtain and utilize pre-GAC filtration (raw water) analyses for chlorinated hydrocarbon values from these wells in the assessment.

The location of the facility's potable wells have been added to the relevant figures, including Figures 4-1 through 4-5, and the physical completion details have been added in a table format to Section 1.2.3. However, the pre-GAC filtration (raw water) analysis from these wells has not been added to the text of the report. The purpose of Technical Memorandum No. 5 is to transmit and summarize the data collected during the phase IIA RI investigation. The data for the production wells have not been organized and checked. The information will be organized and included in the RI reports completed at the Facility.

12. On page 4-47 and Table 4-30, it is stated that there are no MCLs for chloromethane. This is in error; chloromethane, also known as methyl chloride (CAS 74-87-3) and has an MCL in *Ground Water Guidance Concentrations, June 1994* of 2.7 $\mu\text{g}/\ell$. This correction needs to be applied to other tables, as needed. In fact, most of the State MCLs in Table 4-30 and 4-32 are in error and should be corrected.

Agreed. The document and reported MCLs have been thoroughly reviewed and corrections were made to the tables and text.

13. In table 4-13, page 4-48, the well identifiers and the sample identifiers for the shallow and deep monitoring wells appear to be transposed. Please correct them.

Agreed. The well identifiers for ABB-ES sample identifiers WHF-6-3 and WHF-6-1D were transposed. Corrections to the text were made.

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14. **Figure 4-3 illustrates the data gap to the south and west of WHF-6 well cluster. Does the Navy intend to install additional wells in this area?**

Additional investigations are planned for the industrial areas and all identified data gaps will be addressed during these investigations.

15. **A summary map showing the chlorinated hydrocarbon plume(s) in the three aquifer zones over the entire installation is needed and should be refined as additional data are acquired. This is essential to an overall understanding of the contamination at the facility.**

Comment noted. Currently the available data makes completion of facility-wide isoconcentration maps for the three aquifer zones incomplete and speculative and, therefore, inappropriate. However, as additional data become available, particularly for the intermediate and deep aquifer zones, facility-wide interpretative maps will be completed and incorporated into documents.

16. **On Table 4-18, what do the --/-- symbols mean? Explain or correct them.**

The symbol "--/--" indicates that the compound was not detected above instrument detection limits in either the original laboratory analysis or a diluted sample reanalysis. An explanation has also been included in the comments section of the table.

17. **On pages 4-85, 4-89, 5-7 and Table 4-26 and 4-28, it is stated that there is no state MCL for acetone. This is in error; the value is 700 µg/l. this error appears throughout T -5 and should be corrected. The same similar situation exists on page 5-5 where it is stated that there is not State MCL for dieldrin; there is - it is 0.1 µg/l. On page 5-7, no MCL is given for 4-methyl-2-pentanone; this compound is also known as methyl isobutyl ketone and the MCL is 350 µg/l. The xylene MCL is 10,000 µg/l (primary) and 20 µg/l (secondary). These errors are basic and simple reference to the Guidance Concentrations publication would prevent them. All MCLs should be verified.**

Agreed. A thorough review of the document and all MCLs has been completed and corrections have been made.

18. **Please change the site numbering to correlate with the new numbering scheme. Additionally, an explanation of the changes to enable reference to older analytical data which utilize the old numbering system should be included.**

Comment noted. However, recent developments indicate that the new numbering system will not be used. Difficulties in modifying existing databases caused the rejection of the system. Therefore, the analytical data numbering system is consistent with the site numbering system and no explanations or modifications are required.

RESPONSE TO COMMENTS

Draft RI/FS Technical Memorandum No. 6, Definition of Operable Units
NAS Whiting Field
Contract No. N62467-89-D-0317/050

Florida Department of Environmental Protection

1. You may want to consider deleting figure 1-2. The information on former site numbers is covered in Table 1-3; the present site numbers are shown on Figure 1-3. Table 1-3 could also be modified by switching the old and new locations of the numbers (new column on the left); this seems more appropriate. Also, including the operable units groupings (as on Figure 2-1, 2-2, etc.) on Figure 1-3 would be useful.

Based on the August 3, 1995, partnering meeting, the new site numbering system will not be incorporated at NAS Whiting Field. The text will be modified to delete any references to the new numbering system, and Table 1-3 and Figure 1-3 will be deleted.

2. On the individual Operable Unit figures (such as Figure 2-1), please use a consistent shading for the individual sites. It is easy to confuse buildings with sites and in some cases, sites are not shaded (Figure 2-2).

Agreed, the shading has been modified to be consistent throughout the report.

3. On page 2-6, the discussion of possible NFA status for Sites 1 and 2 should be deleted. As I read the paragraph, it seems to have little bearing on the intent of this document.

Agreed, the discussion of the potential NFA status for Sites 1 and 2 has been deleted.

4. In section 2.2.7, the southern boundary of the unit is described as the Clear Creek flood plain downstream of the new "S" ditch. Figure 2-7 depicts an area approximately 1/4 mile downstream of the "S" ditch; if the intent was to include an area downstream sufficient to evaluate the effects of the "S" ditch, I am in agreement. A statement to this effect in Section 2.2.7 would be appropriate. Additionally, should portions of the Coldwater Creek flood plain analogous to the similar portion of Clear Creek be included in Operable Unit 7? It receives direct storm water discharges via a series of interconnecting ditches including one that traverses through Unit 5.

The area of investigation has been modified and will be limited to the north of the new "M" ditch. Although contamination in the area has not been fully delineated, there is no indication that contamination would extend further downstream (to the south). Potential contaminant discharge for the end of each facility surface water outfall was addressed during the RI/FS phase IIA surface water and sediment investigation. The results of the phase IIA investigation are summarized in Technical Memorandum No. 1, Surface Water and Sediment Assessment, July 1993. Big Coldwater Creek was not included in OU 7 because the drainage patterns for the two creeks are separate and there is no indication that a similar contaminant source exists for Big Coldwater Creek. Surface water and sediment samples were collected during the RI/FS phase I investigation. Interpretation of the analytical results indicated that NAS Whiting Field was not a source of contamination to Big Coldwater Creek.

RESPONSE TO COMMENTS

Draft RI/FS Technical Memorandum No. 7, Phase IIB Workplan,
NAS Whiting Field
Contract No. N62467-89-D-0317/050

Florida Department of Environmental Protection

1. **Table 5-1 should be modified to produce a new (additional) summary table to include aspects of the proposed investigative sampling. An example would be to include additional columns for gas surveys, new monitoring wells, etc. This table should then be included in Chapter 7.**

Table 5-1 will be combined with Table ES-1 and will be presented at the beginning of Chapter 7.

2. **I understand that during future ground water sampling events, if ground water turbidity is >5 NTUs, both filtered and unfiltered samples for inorganic constituent determinations will be obtained. My preference, as we have previously discussed, is that the Navy strive to obtain relatively undisturbed (non-turbid - and consequently, unfiltered, samples); in the absence of this, however, the alternated procedure is acceptable.**

Comment noted.

3. **On page 2-4, in the penultimate paragraph is stated that the ground water in the eastern half of the installation is flowing to the southeast toward Big Coldwater Creek. While this may be true, the flow contours on Figure 2-1 do not really agree with the statement. What is the correct direction of ground water flow?**

Groundwater appears to be flowing to the Southeast. "Toward Big Coldwater Creek" will be stricken from the report.

4. **Figure 2-2 is constructed at a scale, and is a type of presentation (simply modified from a pre-existing figure), that is not useful for understanding the actual well locations. I suggest that this figure encompass an area 5 miles on a side and include physical features such as communities and roads. Additionally the locations of the base production wells should be shown on a separate map constructed at a workable scale so they can be correlated with other base features. These wells should also be included on other appropriate figures whenever they are within an area of contamination. Production rates and physical parameters for these wells should also be obtained and be readily available in the various reports presented for the Navy.**

Two figures will be generated. Figure one will show more detailed locations of the production wells outside the facility, and a second figure will be created showing local features and the location of the facility supply wells.

RESPONSE TO COMMENTS (Continued)

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5. **Does the Navy intend to sample the nearby private wells (page 2-8)? What about wells east of the base boundary? Will the well inventory data be presented as part of this investigation?**

The current Statement of Work from Southern Division Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) does not include sampling of residential wells. A separate well inventory has been completed under separate cover and will be included in future remedial investigation reports for the facility.

6. **Page 3-4 refers to O.U. 7, The Clear Creek Flood plain; the report also clearly states that it has not been assigned a site number. Should the designation, at this time, of "Proposed Operable Unit 7" be used to lessen confusion?**

Agree, OU 7 will be designated as "proposed" to lessen confusion.

7. **Page 4-1 refers to the QAPP as "E.C. Jordan, 1990." Should this reference be updated or referenced to the newer ABB-ES QA documents?**

The E.C. Jordan, 1990 references are still current.

8. **Section 4.2 discusses the BAT and other DPT (direct push technology) to be used in the study. Please insure that adequate equipment blank procedures are in place before these techniques are employed so that contamination of the type being investigated at the site is not duplicated or added to by sample components. Additionally, when such data are presented, please utilize a tabular format which shows the ground water surface and the sampling zone for the samples. The reasons for this are illustrated on page 5-4, RI Phase I Investigation; I cannot tell from the presentation where (in the aquifer) the (contaminated) sample was obtained.**

Agree, adequate equipment rinsate blanks and trip blanks will be collected and analyzed to provide quality control. It is not clear which document FDEP is referencing from Phase I, but subsequent RI reports will attempt to clearly identify from which aquifer zone the sample was collected.

9. **On page 7-19, three existing wells are proposed for sampling. Only two wells are shown on Figure 7-7; where is the third well?**

The third well (WHF-9-2) is located hydraulically upgradient (north) of Site 9. Figure 7-7 will be expanded to the north to include this location.

RESPONSE TO COMMENTS (Continued)

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10. **On page 7-28, In Situ Ground Water Sampling, it is stated that sampling will occur at hydraulically upgradient and downgradient sites. Assuming that the ground water direction in Figure A-4 is correct, it appears that the upgradient direction is not proposed for sampling (Figure 7-8). Please revise this figure.**

In situ groundwater sampling locations for Site 11 serve as upgradient locations for Site 13. One sampling location proposed on the west side of Site 13 will be moved to the east to aid in covering all possible downgradient directions.

11. **On page 7-29, a new monitoring well is described for Site 14. Please show the location of this well on Figure 7-8.**

Agree, the monitoring well will be shown. It will be located hydraulically upgradient (north) from Site 14.

12. **On page 7-30, Section 7.4.1 lists Site 21C twice - make one of them 21D.**

Agree, correction will be made to the letter designation. In addition, the site number has reverted to Site 31 based on comments from SOUTHNAVFACENGCOM.

13. **I am aware that the USGS will be employed to construct a ground water computer model for the facility. I generally favor such a method for understanding the overall relationships of the water and the movement of contaminants. I strongly suggest that the Navy delineate very clearly it's needs and what it expects from such a study. This way, omissions and duplications may be reduced or eliminated. I hope that we in the agencies participating in the site investigation will be allowed to review the proposed program.**

USGS groundwater modeling efforts have been suspended due to cuts in Federal spending. The comment is noted and will be addressed when and/or if the effort is funded by SOUTHNAVFACENGCOM.