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March 17, 1997

U.S. EPA
ATTN: Gena Townsend
345 Courtland Street, NE
Atlanta, GA 30365

RE: Site 38 and OU-2 Remedial Investigation Report, NAS Pensacola
Contract #N62467-89-D-3 18/0059

Dear Ms. Townsend:

On behalf of the Navy, EnSafe/Allen & Hoshall is pleased to submit one copy of the response to comments for the Site 38 and OU-2 Remedial Investigation Report at the Naval Air Station Pensacola. If you should have any questions or need any additional information regarding this document, please do not hesitate to call me.

Sincerely,

EnSafe/Allen & Hoshall

Henry H. Beiro, P.G.
Task Order Manager

Enclosure

cc: Bill Hill, SOUTHNAVFACENGCOM - **2** copies
Ron Joyner, NAS Pensacola - **2** copies
John Mitchell, FDEP - 1 copy
Denise Klimas, NOAA - 1 copy
Judeth Walker, NAS Pensacola - 1 copy
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Site 38 Remedial Investigation Report
NAS Pensacola, Florida
Response to EPA Region IV Comments

(Gena Townsend comments December **4,** 1996)

GENERAL COMMENTS

COMMENT:

1. Section 1.0, Page 1-1, Paragraph **4,** Bullet 1, states that the objectives of the RI are to "determine the source, nature and to the degree practical for an acceptable **FS,** the extent of soil and groundwater contamination.'' However, this statement is unclear and does not adhere to EPA guidance. EPA guidance clearly describes the objectives of an RI report, and the text should be revised accordingly.

RESPONSE

The Navy disagrees based on current EPA OSWER Directive 9335.3-01 , page 1-7 which states; "The RI continues to serve **as** the mechanism for collecting data for site and waste characterization and for conducting treatability testing as necessary to evaluate the performance and cost of the treatment technologies and support the design of selected remedies." The statement in the RI rnay not be the rote "nature and extent" statement usually seen, but it does meet the intent of the guidance. Since there are no active streams at Site 38 or Bldg. 604, surface water and sediment are not a concern. The only media remaining that are of concern are soil and groundwater which we specified in Section 1.0.

COMMENT

2. Section 7.0, Page 7-1, Paragraph 3, indicates that the State of Florida and/or USEPA risk-based concentrations, general guidance concentrations, and promulgated standards have been defined as PRGs for this investigation. According to this statement, PRGs appear to be a screening value for COPC because the risk-based concentrations are used. Therefore, the COPC selection should be presented in the section on the nature and extent

of contamination. In addition, the PRG, as the screening criteria, should also include the background concentrations (reference concentrations), The report should be reorganized accordingly, and the background concentration should be included in the PRGs for inorganics in soil and groundwater.

RESPONSE

The Navy is certain that if text "appears" clear, then it is not clear and should be rewritten. The Navy disagrees with reorganizing the document. The reorganization suggested is not consistent with previously produced reports for NAS Pensacola nor with past EPA reviewer requests to keep COPC selection in the risk assessment section of the report.

COMMENT

3. Section 7.0, Page **7-9,** Paragraph **2,** states that a detected inorganic will be discussed in the following sections relative to reference concentrations only when a specific inorganic exceeds PRG or when no PRG is available for it. However, this approach does not appear to be logical. The detected inorganic should be compared to the reference concentration first, and then to the PRG only when it exceeds the reference concentration. It has been noted that the values of the **PRGs** for a number of inorganics, such as As, are lower than the reference concentrations. Normally, the reference concentrations should be used as the first screening criteria unless the difference between the PRGs and the reference concentration is significant (the value of the reference concentration is unusually high). The approach regarding the use of reference concentration and the PRGs for the inorganic screening process may need to be reconsidered.

RESPONSE

The Navy agrees and welcomes this approach.

COMMENT

4. Section 7.0, Figures 7-5 through 7-42, show Buildings 71 and 604 study area soil and groundwater sample parameters exceeding PRGs. However, the figures do not clearly depict the migration of the plume. Isoconcentration lines contouring the horizontal distribution of contamination and the most widely distributed contaminant should be developed for groundwater.

RESPONSE

The "plume" mentioned is not supported by the data collected. Most of the contamination found is isolated not lending well to contouring. The Navy agrees however that the distribution of contaminants should be graphically portrayed so as to facilitate the determination of remedial alternatives. The Navy will provide additional figures shading the contaminated areas.

COMMENT

5. Section 7.0, Page 7-75, Figure 7-29, shows Building 71 study area total VOC concentrations in shallow groundwater samples with the shaded areas indicating the approximate extent of groundwater contamination based on PRG exceedances. However, it is difficult to determine the extent of groundwater contamination with inadequate wells around areas with PRG exceedances. There should be more wells placed around areas with PRG exceedances to delineate the plume.

This comment also applies to Figure 7-40. In addition, the term "total VOC" in this figure is inappropriate. Only specific VOCs should be referenced.

RESPONSE

The Navy disagrees. When and if volatile organics are remediated, they will be remediated based on their like chemical characteristics, such as volatility. Air sparging or vacuum extraction will remove numerous VOCs, not single species. In this respect it is useful to understand which areas have general VOC contamination regardless of chemical speciation. Additionally, the individual chemical species did not lend well to contouring because of their seemingly random appearance and concentrations. In order to contour, some type of relationship must be drawn between two points must be assumed. The relationship is often assumed to be linear or logarithmic. This data did not lend well to contouring because the relationship between the point was not evident. A good example of this can be seen on Figure 7-29. Notice the appearance of Total VOC in 38GS11 and no Total VOCs in downgradient wells 38GS04 and 38GS10 yet Total VOCs are found

downgradient of those wells in 38GS02! The Navy recognizes this may not be clear in the text and will review the text for clarity.

COMMENT

6. Section **7.2.3,** Page **7-110,** Paragraph **2,** Sentence **1,** states that the investigation at Site **38** has adequately assessed the nature and extent of contamination for use in developing the **FS** and for preliminary remedial design alternatives. In assessing the nature and extent of contamination for the soil and groundwater, soil and groundwater samples were taken. The sampling results are supposed to be used to clearly delineate the extent of contamination for the development of the **FS.** However, the extent of contamination has not been clearly delineated because an inadequate amount of soil and groundwater samples were collected. The decision to do a **FS** can only be made after completion of a risk assessment. Therefore, a conclusion regarding the **FS** can not be made. Any discussion regarding the **FS** should be presented in the final section of this report.

RESPONSE

The reviewer is not clear in exhibiting how the extent of contamination was not assessed. The Navy agrees the reference to an FS is premature and will remove the statement.

COMMENT

7. Section **12,** Page **12-1,** Paragraph **1,** states that if groundwater remediation is determined necessary, more quantifiable hydrologic testing should be performed as part of a predesign phase. However, Section **7.2.3** states that the investigation of soil and groundwater at Site **38** has adequately assessed the nature and extent of contamination at Site **38** for use in developing the **FS.** The statement in Section **7.2.3** contradicts the statement in the conclusion of the RI report. If the nature and extent of contamination in groundwater has been adequately assessed, then there would be no need for hydrologic testing. The purpose of the RI is to delineate the extent of contamination so that the boundaries can be determined for calculating the feasibility of a clean-up; however, this RI has not clearly delineated the boundaries as implied in the text conclusions.

RESPONSE

The reviewer is not clear in communicating how the extent of contamination was not assessed. The Navy agrees the reference to an **FS** is premature and will remove the statement.

SPECIFIC COMMENTS

COMMENT:

1. Section **1.0,** Page **1-1,** Paragraph **2,** Sentence **3.**

   The text states that contamination in the soil **is** underlain by concrete. However, the concrete is not below but above the soil. Consequently, the soil cannot be underlain by the concrete. The text should be revised accordingly.

RESPONSE:

Actually, the soil is underlain by concrete. The Navy agrees to clarify the text.

COMMENT:

2. Section **2.1.1,** Page **2-5,** Figure **2-2.**

Figure **2-2** shows the study areas on Site **38.** Although there are sewer lines depicted on the figure, these lines are not pronounced. The sewer lines should be more prominently reflected on the figure.

RESPONSE:

The Navy agree to make the change.

COMMENT:

3. Section 2.1.2, Page 2-9, Figure **2-3.**

Figure 2-3 shows the drainage trench system, Building 71, and surrounding areas. However, the figure does not have a legend. **A** legend should be added to the figure.

RESPONSE:

The Navy agrees to make the change.

COMMENT:

4. Section 2.1.2, Page 2-13, Paragraph 3, Sentence **4.**

The text states that silver, cadmium, mercury, and lead were detected in background samples. However, Table 2-1 shows additional contaminants found in the background. The text should explain why the additional contaminants were not mentioned.

RESPONSE:

These were the only metals found in the rinsate samples that corresponded to metals found in background. The Navy agrees to clarify the text.

COMMENT:

5. Section 2.1.2, Page 2-15, Table 2-2.

Table 2-2 makes reference to background soil versus detected concentrations for Building 71 and tabulates the concentrations for Bays **3, 4** and **6** and the Apron. However, Figure 2-4 does not identify the apron where these areas are depicted. Figure **2-4** should be revised to identify the Apron that is referred to in Table 2-2.

RESPONSE:

The Navy agrees to make the change.

COMMENT:

6. Section **2.2.1,** Page **2-21,** Paragraph **1,** Sentence **2.**

The text states that the construction of a fuel line along Radford Boulevard will be discussed in the RI report. However, there is no discussion on the construction **of** the fuel line. This discrepancy should be corrected, and the text should be revised accordingly.

RESPONSE:

The Navy agrees to modify text in Section **4.3** Contaminant Source Survey and delete the text concerning the jet fuel line in Section **2.3.1** as this is inappropriate in this context.

COMMENT:

7. Section **2.3.1,** Table **2-3.**

Table **2-3,** "Ecology and Environment, Inc. Screening Results for Soil, Site **38** Associated Sewer Line", shows different sampling locations at the site; however, the locations are not identified on a map. The sampling locations should be identified on a map.

RESPONSE:

The Navy agrees to provide **a** map of these locations.

COMMENT:

8. Section **2.3.1,** Page **2-33,** Figure 2-7.

Figure **2-7** identifies Building ***604*** operations, but the boundaries are not defined on the figure. The boundaries of Building 604 should be clearly outlined on the figure to distinguish **this** building from the others.

RESPONSE:

The Navy agrees the figure could be enhanced to exhibit buildings.

COMMENT:

9. Section **2.3.1,** Page **2-37,** Table **2-7.**

Table 2-7 identifies hazardous materials stored in Building **609.** However, the title of the table is incorrect. The title of the table should be corrected to reflect Building 604 instead of Building 609 (see page **2-31,** paragraph 0, sentence **3).**

RESPONSE:

The Navy agrees to make this typographical change.

COMMENT:

10. Section **2.3.2,** Page **2-39,** Paragraph 1.

The text states that twelve soil borings were advanced **and** completed as monitoring wells and that the analytical results are provided in Appendix C. However, the figure in Appendix ***C*** shows 11 wells instead of **12.** Therefore, the discrepancy between the text and figure in Appendix C should be resolved.

RESPONSE:

The Navy found one missing well completion log for MW-7, but finds data for 12 borings converted to wells in appendix C. The missing well completion log will be provided.

COMMENT:

11. Section 2.3.2, Page 2-39, Paragraph 1, Sentence 1

The text states that an underground storage tank (UST) next to Building 604 and in Figure 2-2 was investigated. However, Figure 2-2 does not outline the location of the UST. The figure should be revised to depict the UST.

RESPONSE:

A figure depicting the approximate location of the UST will be provided.

COMMENT:

12. Section 2.4.3, Page 241, Figure 2-8.

The figure shows the existing storm drainage system at the site. However, the figure does not distinguish the storm sewer line from the sanitary sewer line. The figure should be revised to show a distinction between the storm sewer line and the sanitary sewer line.

RESPONSE:

The Navy agrees to clarify the legend for storm and sanitary sewers.

COMMENT:

13. Section **4.5.2,** Page **4-15,** Paragraph **1,** Sentence **2.**

The text states that volatile emissions above reference concentrations were not measured at any sampling locations. However, the text does not specify the reference concentrations. The text should be revised accordingly.

RESPONSE:

The Navy believes this sentence to be incorrect and will delete it from the text.

COMMENT:

14. Section **4.5.4,** Page **4-19,** Paragraph **1,** Sentence 1.

The text references Figure **4-1** regarding soil-gas samples. However, soil-gas samples are found in Figure **4-2.** The text should be revised accordingly.

RESPONSE

The Navy agrees to make the editorial correction.

COMMENT:

15. Section **4.5.4,** Page **4-21,** Figure **4-3.**

The figure shows the preliminary survey total VOCs for Site **38.** However, there are no units for the concentration of VOCs. The figure should add a note specifying the units of concentration. In addition, giving a value for total VOCs is inappropriate.

RESPONSE

The Navy agrees the figure and text needs editing to correct the misunderstanding that total VOCs are inappropriate. The Navy provides this **data** as a screening tool for well placement during the

field event. The placement and subsequent analysis of soil and groundwater data confirm or deny the total volatiles found in a given location. The units are in ppb but are not necessary nor quantitative for well placement.

COMMENT:

16. Section **4.5.4,** Page **4-23,** Paragraphs **3** through 5.

The text discusses the groundwater results in the Soil-Gas Survey (Section **4.5.4,** page **4-15).** However, a separate section for groundwater results should be added.

RESPONSE:

The Navy disagrees to create another section. Groundwater screening results were discussed. The comment is not clear as to why groundwater screening results need to be partitioned.

COMMENT:

17. Section **4,** Page **4-25,** Table **4-3.**

Table **4-3** presents groundwater screening results by showing highest/lowest detection, mean value, and frequency of detection. However, for benzene, C-1, **2-DCE,** $CHCl_3$, TCE, and PCE, it **is** unclear how their mean values are calculated. For example, in the table, the highest detection of benzene is **593** μg/L with a frequency **of 1/11.** Based on these data, the mean value should **be 593** μg/L. However, the mean value shown in the table is 53.9 μg/L. The text should explain how the **mean** values for the above compounds are calculated.

RESPONSE

The Navy does not understand the reviewers point, with the exception that the text and table fail to explain how censored data was handled. In this case nondetects were assigned a value of zero, therefore the mean **is** represented by: **593/11 = 53.9.** Please keep in mind, this is a field GC being used for field screening.

COMMENT:

18. Section 4.5.4, Page 4-26, Paragraph 1, Sentence 1.

The text states that groundwater collected at Location **638** had the greatest frequency of chlorinated compound detections. However, according to the results in Table **4-3,** the term "greatest frequency" implies a comparison. For example, PCE and $CHCl_3$ detected at Location **638** have a frequency of detection as 1/11 which is **only** greater **than** the nondetection. The text should be revised to use appropriate words to replace the word "greatest".

RESPONSE:

The Navy agrees this term requires editing.

COMMENT:

19. Section 5.7.1, Page 5-42, Paragraph 2, Sentence 2.

The text states: "All level IV groundwater samples were analyzed for pesticides, but only 21 of the **73** soil samples because pesticides were anticipated to be present only from application, not disposal, mixing, etc." However, this statement is unclear and grammatically incorrect. The sentence needs to be re-written.

RESPONSE:

The Navy agrees the sentence needs to be edited.

COMMENT:

20. Section 6.1.3, Page 6-10, Table 6-1.

Table 6-1 tabulates soil physical properties. However, for sample **boring Number** 38S43, the superscript **"b"** is missing. The superscript **"b"** should be added to the sample boring number.

RESPONSE:

The Navy agrees to make the typographical correction.

COMMENT:

21. Section **6.3,** Figures **6-9** through 6-11.

The figures show the total cyclic potentiometric surface at 9 **a.m.,** noon, and 3:00 p.m. Although there is a legend for this figure, the legend is missing the symbol for the shoreline for Pensacola Bay. The symbol for the shoreline for Pensacola Bay should be added.

RESPONSE:

The shoreline will be added to the figure.

COMMENT:

22. Section 7.0, Page **7-5,** Paragraph **2,** Sentence 1.

The text states that analytical results for background soil and groundwater samples are in Appendix G. However, Appendix G **does** not present these background analytical results. The text should be revised accordingly.

RESPONSE:

Background analytical **data** will be added to the appendix supporting the text.

COMMENT:

23. Section 7.1.1.1, Page **7-15,** Figure **7-5.**

This figure shows Building 71 study area inorganic parameters exceeding **PRGs** in surface soil. The figure has a table showing the parameters, concentration and **PRGs.** However, it is not clear what the table **is** intended to show. The table should be revised for clarity. In addition, the symbols for the elements are incorrect.

RESPONSE:

The Navy agrees to the editorial changes

COMMENT:

24. Section 7.1.1.1, Page 7-17, Paragraph 0, Sentence 9.

The text states that three borings: 38S38, 38S39, and 38S40 were analyzed for hexavalent chromium (Figure 7-4). However, these borings are not shown on Figure 7-4. The figure should be revised to show the missing borings.

RESPONSE:

The Navy agrees to revise the figure.

COMMENT:

25. Section **7.2.2.2,** Page 7-103, Paragraph **2,** Sentence **2.**

The text states that exceedances are coincident with halogenated aliphatics in the shallow groundwater. However, aliphatics is misspelled. The misspelling should be corrected.

RESPONSE:

The Navy agrees to make the typographical change.

COMMENT:

26. Section 9.2.1.1, Page 9-3, Table 9-2.

The table shows the constituent characteristics based on chemical and physical properties. However, in the table notes, 'g/cm' is incorrectly written. The notes should reflect 'g/cm^3'.

RESPONSE:

The Navy agrees to make the typographical change.