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NAS KEY WEST
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LETTER OF TRANSMITTAL AND U S EPA REGION IV COMMENTS ON COMPREHENSIVE
BACKGROUND REPORT REVISION 1 NAS KEY WEST FL
6/16/1997
U S EPA REGION IV

JUN 16 1997

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Mr. Dudley Patrick
Code 1852
Southern Division
Naval Facilities Engineering Command
2155 Eagle Dr.
Charleston, S.C. 29418

SUBJ: Naval Air Station (NAS) Key West, Florida
EPA ID# FL6 170 022 952
EPA Comments

Dear Mr. Patrick:

EPA has reviewed the following document:

- o **Comprehensive Background Report for Naval Air Station Key West, Revision 1; Brown & Root, Env., March 1997**

and has enclosed its comments with this letter. If you have any questions, please contact me at 404/562-8533.

Sincerely,

Martha Berry
Remedial Project Manager
Federal Facilities Branch

Enclosure

cc: Jorge Caspary, FDEP
Ron Demes, NAS Key West
Phillip Williams, NAS Key West
Charles Bryan, Brown & Root
Roy Hoekstra, Bechtel

EPA Comments
Comprehensive Background Report for
Naval Air Station Key West, Revision 1;
Brown & Root, Env., March 1997

GENERAL COMMENTS

1. During EPA's previous review of the Draft Supplemental RFI/RI Report prepared by Brown & Root Environmental for NAS Key West, EPA developed numerous comments regarding the sufficiency of the presentation and analysis of background data. The Draft Supplemental RFI/RI Report stated that the interpretation of the nature and extent of contamination was severely restricted by the lack of presentation of background data. The current Background Report provides an excellent response to those previous comments related to background issues, and significantly enhances the reader's ability to place the RFI/RI data in the overall context of background conditions. Some relatively minor specific comments were generated regarding the presentation of this data (see below), but in general, the Background Report presents the necessary background information in a clear and accurate manner.

SPECIFIC COMMENTS

1. **Section 1.7, Page 1-14, Paragraph 2, and Figures 1-5 through 1-12:** It appears that the numbering scheme for samples was changed between the original background sampling (sites BG 1, BG 2, and BG 3) in January 1996 and the most recent background sampling (sites BG 4, BG 5, BG 6, BG 7, and BG 8) in August through October 1997. In the first round, soil samples were apparently designated "SS", and sediment samples were designated "SD". In the second round, soil samples were designated "SB", and sediment samples were designated "SS". This change is unfortunate, especially since "SS" means one type of sample for the first round, but a different type of sample for the second round. The sample designations should not be changed to match the original data sheets. However, an explanation regarding the change in sample designation should be provided in paragraph 2 which will assist the reader in understanding Figures 1-5 through 1-12.
2. **Section 2.2.1, Page 2-13, Paragraph 1:** The text states that "Non-detect values were assigned a value of one-half the detection limit for computing the average." It is difficult to evaluate how this calculation was actually done, since the tables in Appendix A does not present detection limits except for non-detects. If a reported concentration was provided, then the average calculations should use one-half of the reported concentration rather than the detection limit.
3. **Section 2.2.2, Page 2-14, Paragraph 1:** The text states that "If a dilution or re-analysis of historical data resulted in a higher concentration than that detected in the original analysis, the higher value was included in the final data set. If the higher results were associated with the original sample, then those were maintained in the

data set....This conservative approach was necessary to ensure that a single representative result existed for each analyte associated with a given sample." The approach described in the text (choosing the higher value for use in the background data set) is not conservative when the issue is definition of background data. By choosing the higher value, the calculated representative value for the background concentration of that analyte in that medium will be maximized. This value will then be compared to site data to determine if contamination exists, and the higher the background values, the less contamination and risk will be seen. This approach will bias the investigation toward finding less contamination and lower risks, and therefore, cannot be considered conservative.

4. **Section 2.2.5, Page 2-15, Paragraph 1:** The text states that "While this assumption might not be correct for all historical data, it is conservative. Questionable historical data points (data that might otherwise have been discarded as false positives or blank contamination as a result of data quality assessment) only increases the potential for making a positive remedial determination for a particular site." Similar to the previous specific comment #3, use of data that is potentially anomalously high is conservative when it applies to site data, but has the opposite effect when considered for background data. Using potentially false positives and blank contaminant levels in developing the background data set will increase calculated representative background values, and will actually decrease the potential for making a positive remedial determination for a particular site. The text should be changed to remove the statement that this approach is conservative and the approach should be changed to eliminate potentially false positives and blank contaminants from the background data set.

5. **Section 2.3, Page 2-15, Paragraph 2:** The text states that "For results that were reported as below the detection limit, one-half of the detection limit for that sample was used in the calculation." As stated earlier, one-half of the reported value, rather than one-half of the detection limit, should be used for this calculation.

6. **Section 2.5.2, Figures 2-1 through 2-10. General:** During EPA's previous review of the Draft Supplemental RFI/RI Report, EPA suggested presenting specific SWMU maps so the relationship of the background locations to the contaminated areas could be evaluated. These maps go a long way toward satisfying this request, but can still be improved. Specifically, although the maps show the background locations, they do not always show the locations of the related contamination source. For example the following figures do not depict the areas mentioned: Figure 2-1 - the Open Disposal Area, Figure 2-2 - Mixing Area or Mixing Area ditch, Figure 2-7 - Truman Annex Refuse Disposal Area, Figure 2-8 - Truman Annex DDT Mixing Area, Figure 2-9 - Fleming Key North Landfill, and Figure 2-10 - Fleming Key South Landfill. In addition, the maps do not present any topographic or groundwater flow data which can be used to verify that the samples are unaffected by the contamination sources. Although it may be cumbersome to show topographic lines and groundwater flow arrows on these maps,

the text should at least state that field observations and topographic evaluation were used to determine that all of these locations were upgradient of contamination sources.

7. **Section 2.5.2, Figure 2-3:** The legend states that a surface water and a sediment sample were collected. However, the text in Section 2.5.2.3 states that only a surface water sample was collected. The correct sampling should be determined, and either the figure or the text should be revised.

8. **Section 7.3, Page 7-12, Paragraph 1:** The text states that "However, with very few exceptions, most values of these compounds were within the range of normal background concentrations." This statement, and several others in Sections 7.3 and 7.4, should be revised to more clearly define what is meant by "normal background concentrations." Upon first reading, it appeared that the text was referring to a comparison of the toxicity samples with the soil, sediment, surface water and groundwater background values developed in Sections 3, 4, 5, and 6. In fact, the text is referring to "background concentrations" as defined in the numerous toxicological studies referenced. Therefore, this statement should be revised to indicate that comparisons are being made to the toxicological studies referenced, not to the local soil, sediment, surface water, and groundwater information.

9. **Section 7.3, Page 7-12, Paragraph 1:** The text states that "The infrequent detection and overall low concentrations indicate that tissue toxicity due to these compounds is not a concern at background sites . . ." The reference to infrequent detections is problematic. In fact, pesticide and PCB compounds were frequently detected compared to other organic compounds. In fish, DDE was detected in 74/77 samples, DDD was detected in 58/77 samples, and Arochlor-1260 was detected in 48/77 samples. This widespread detection of pesticides and PCBs cannot be considered to be "infrequent detection". In general, the text should emphasize that contaminant concentrations detected in tissue samples are within ranges identified in the studies referenced, and should not rely on frequency of detection. Another general concern exists with respect to the comparison of tissue samples; concentrations to toxicity criteria. The purpose of this document is to establish the background concentrations (including background concentrations in tissue samples), and it is expected that these concentrations will be used in the future, along with the toxicity criteria, to compare tissue samples from contaminated areas to determine if ecological receptors are impacted. However, the emphasis on the comparison of the background data to toxicity criteria in this report does not advance the purpose of establishing representative background concentrations. If the samples are truly from background locations (i.e., are not impacted by NAS Key West operations), then the question of whether the concentrations present a risk is not pertinent to the investigation of NAS Key West. Also, there is no comparable comparison of soil, sediment, surface water, or groundwater data to toxicity, risk, or regulatory standard values. Although it does not hurt to present the toxicity values in this report, the text should be revised to remove the emphasis on whether these concentrations present a toxicity concern, and instead

should emphasize the use of this data to establish representative background concentrations.

10. **Section 7.4, Page 7-21, Copper, Paragraph 2:** The text states that "These values do not appear to be abnormally high." This statement, and others like it (such as for zinc), should be revised to state what the concentrations are being compared to. This will help them to appear to be more objective. For instance, on page 7-16, in the introduction to the inorganic comparisons, the text states "metals were . . . within the normal range of published background values." This type of statement, which directly shows the comparison, is preferred to general statements such as "concentrations do not appear to be abnormally high."

11. **Section 7.4, Page 7-25, Zinc, Paragraph 2:** The text states that "From 1976 to 1984, NCBP values of zinc in freshwater fish averaged 21.7 mg/kg, with a maximum value of 118 mg/kg (Schmitt and Brumbaugh 1989).... Zinc in freshwater fish collected nationwide averaged 21.7 mg/kg, with a maximum value of 118.4 mg/kg (Schmitt and Brumbaugh 1989)." It appears that the same information is being referenced twice. The text should be revised.