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NAS WHITING FIELD
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LETTER AND COMMENTS FROM U S EPA REGION IV REGARDING DRAFT BASELINE RISK ASSESSMENT WORK PLAN NAS WHITING FIELD FL
12/12/1995
U S EPA REGION IV

UNITED STATES ENVIRONMENTAL PROTECTION
REGION 4
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

DEC 12 1995

4WD-FFB

Mr. Jeff Adams
Southern Division
Naval Facilities Engineering Command
Code 18510
P.O. Box 190010
North Charleston, SC 29419-9010

SUBJ: NAS Whiting Field Baseline Risk Assessment Workplan

Dear Jeff:

The United States Environmental Protection Agency (EPA) has reviewed the Draft Baseline Risk Assessment Workplan for NAS Whiting Field in Milton, Florida.

Enclosed please find EPA's comments based on the review. The document was reviewed from both a human health risk and ecological risk prospective.

If you should have any questions, please feel free to contact me at (404) 347-3555, ext. 6456.

Sincerely yours,

Craig A. Benedikt
Remedial Project Manager
Federal Facilities Branch

Enclosure

cc: Jim Cason, FDEP
Terry Hansen, ABB

EPA COMMENTS FOR
NAS WHITING FIELD
BASELINE RISK ASSESSMENT WORKPLAN

Human Health Risk Comments:

General Comments:

It appears as though the workplan is comprehensive and adequate to meet the objectives of the risk assessment process. However, one item related to identification of exposure pathways and receptors needs clarification. The document preparer has discounted groundwater as being a possible drinking water exposure pathway under the future residential use scenario. No reason is given in the text section of the document as to why this is the position taken on this issue.

Specific Comments:

Section 4.3.2, Identification of Exposure Pathways and Receptors, Page 4-7: In Table 4-2, a summarization of the proposed human health receptors for future land use list the groundwater as being a point of nonexposure for the future resident scenario. There is no justification given in the text for not evaluating this exposure pathway. Potential household use of site groundwater should be included in the evaluation for future land use at this site. Please provide clarification.

Ecological Risk Comments:

General Comments:

This workplan contains most of the elements required in the EPA draft Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments. Organizational deficiencies exist in the areas of Preliminary Risk Calculation, Problem Formulation and Conceptual Model Development (see Figures 3 and 4 of the draft guidance). Once these deficiencies are corrected, the workplan will be more focused on operable units of ecological concern, and it will be more useable as a model for future ecological risk assessment workplans at other Operable Units (OU) at Whiting Field.

Authorization and funding considerations aside, it would be much more practical and efficient to include OU 7 (Clear Creek Flood plain) in this risk assessment workplan. Sites in OUs 3 and 4 have the potential for impacting Clear Creek and its floodplain, and a more comprehensive assessment would result in a better definition of on- and off-site conditions, cumulative impacts and ecological receptors at risk.

Use the EPA draft "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments" (draft ERA guidance), as an organizational model for this work plan. Emphasis should be placed on Steps 1-4: Preliminary Site Characterization, Preliminary Exposure Estimate, Problem Formulation and Conceptual Model Development. These steps in the process are necessary for the workplan to be more focused on actual and potential problem areas, and for there to be a clearer understanding of potential ecological contaminants of concern, exposure pathways, ecological receptors at risk, assessment endpoints and measurement endpoints at the various Operable Units (OU).

Specific Comments:

1. Section 5.0, last sentence - add amphibians to the list of terrestrial wildlife and add amphibians and reptiles to the list of aquatic life.

2. Section 5.1, first bullet - Change this bullet to conform with Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A), Section 5.5. Analytes may be excluded as Ecological Chemicals of Potential Concern if: 1) they are common laboratory contaminants and site concentrations are less than ten times the maximum detected in any blank, or 2) they are not common laboratory contaminants and site concentrations are less than five times the maximum amount detected in any blank.

3. Move Appendix B (Ecological Risk Problem Formulation) to the text of the workplan and expand it in accordance with the draft ERA guidance cited above. Include development of testable hypotheses and rationale for assessment endpoint selections at each OU of concern. It is stated in Appendix B of the workplan that several of the sites pose little if any ecological threat based on comparisons of site contaminant levels to appropriate screening values. In those cases, please provide the site concentrations and screening levels for the contaminants of concern. The overview of Sites 21E and 21F in OU6 is incomplete. Please provide additional information.

4. Include a Section on Conceptual Model Development in accordance with the draft ERA guidance cited above. Be sure to include conceptual models, rationale for measurement endpoint selection and study design for each OU of concern.

5. Section 5.2.1 - In the first paragraph please clarify the descriptions of ecological receptors. The two broad categories of ecological receptors are terrestrial and aquatic biota. Within these two categories, the various classes (not species) of receptors can be identified. Some "Wetland Receptors" may fall into either or both of these categories depending on their habitat requirements. For

example, amphibians inhabiting wetlands spend time in both terrestrial and aquatic habitats, while fish inhabiting wetlands occupy aquatic habitats only. Conceptual site models for the various OUs would help to define which ecological receptors are potentially at risk.

6. Table 5-1 - This table should be changed to reflect the ecological receptors in Table 5-3. At this point in the process generic ecological receptors (i.e., terrestrial vertebrates, fish, terrestrial plants, aquatic plants, etc.) should be used, and a limited number of surrogate species identified for each group to be considered. Species listed in Table 5-1 for toxicity testing are not ecological receptors, but are surrogates. This information is repetitious of the information in Table 5-2, and thus should be deleted. The sub heading under Receptor Evaluated indicates that food web modeling will be performed for the terrestrial vertebrate species listed, but there is no mention in the text of the model(s) to be used. Please delete this sub heading. Consideration of food webs should be included in the Preliminary Risk Calculation and Problem Formulation sections in order to define surrogate species to be used in the risk calculation, but food web modeling would add little if any value to the risk assessment.

7. Section 5.2.2 - In the second paragraph heading and the first sentence, add "and aquatic" after "wetland", and change the sentence to read "...include Clear Creek and its floodplain...". Add algae to the list of potential receptors in the second sentence. In the third paragraph, change the third sentence to read "...ingestion of contaminated surface water or surface soil, and ingestion of food items that are contaminated as a result of accumulation from the soil or sediments."

8. Section 5.2.2.1 - In the third sentence, change "wildlife" to "receptor".

9. Section 5.2.3 - In the second paragraph identify criteria for selection of soils to be used for the toxicity testing (i.e., soils from areas of stressed vegetation, soils from areas exhibiting staining, etc.). In the last sentence on page 5-9, add "identification and" before "evaluation". Make the same change in the Aquatic section, second paragraph, last sentence. Also in the aquatic section, identify criteria for selection of sediments to be used for toxicity testing.

10. Section 5.3 - Change the last sentence to read "...aquatic and terrestrial receptors described in...".

11. Section 5.3.1 - Refer to Framework for Ecological Risk Assessment, EPA/630/R-92-001, February 1992 (page 12) for the accepted definitions of assessment and measurement

endpoints. In the second paragraph, last sentence, delete "as well as aquatic toxicity benchmark values" since screening levels are not measurement endpoints. In the third paragraph, the assessment endpoint for terrestrial wildlife conflicts with that presented in Table 5-3. In addition, terrestrial wildlife measurement endpoints have been omitted from this paragraph. In the last paragraph, delete "as well as terrestrial plant and invertebrate benchmark values", since benchmark values are not measurement endpoints.

12. HQs for individual receptors should be summed only if they are for ECPCs with similar toxicity mechanisms or effects. The discussion and interpretation of HQs and HIs should conform with information in Section 2.3 of the draft ERA guidance. The correct interpretation is that a HQ or HI of 1 or greater should be interpreted as a level at which adverse ecological effects are likely to occur. A HQ or HI of less than 1 does not indicate a lack of risk, but should be interpreted based on the severity of the effect reported and the magnitude of the calculated quotient. Please use this description in any discussions or interpretations of the HQs and HIs calculated in this risk assessment.

Editorial Comments:

1. Figure 5-1 - Please make this figure more legible. The copy in the draft workplan, as submitted, is so dark that some of the words in the figure are unreadable.

2. Section 5.1, last paragraph - Please spell out TIC the first time it is used. It is assumed that TIC stands for Tentatively Identified Compound.

3. Section 5.2.1 - In the first paragraph, fifth sentence, change "ephemeral" to "intermittent", which better describes the hydrology of a drainage ditch. Insert the word "review" at the end of the next to last sentence of the second paragraph. In the fifth paragraph, change the first sentence to read "At those sites with complete exposure pathways, qualitative belt...". In the sixth paragraph, third sentence, delete the word "other". In the last paragraph, first sentence, change "species" to "populations". In the second sentence, add "threatened".

4. Section 5.2.3 - Change the last sentence on page 5-12 to read "Statistical analyses shall be performed to assess....sediment samples."

5. Section 5.3.1 and Table 5.3 - Ensure that assessment and measurement endpoints agree between the text and table.

6. Section 5.4 - In the second paragraph, first sentence, capitalize "hazard index" and add (HI) after "Hazard Index".

Same paragraph, third sentence, spell out Hazard Quotient, and follow with (HQ). In the bullets on pages 5-17 and 5-18, use the acronym ECPC rather than CPC.