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LETTER REGARDING U S NAVY RESPONSES TO REGULATORY COMMENTS ON TECHNICAL MEMORANDUM ON FOCUSED RISK ASSESSMENT AT STUDY AREAS 39 AND 40 NTC ORLANDO FL
8/13/1997
ABB ENVIRONMENTAL

ABB

03.01.39.0001
ID 00114

August 13, 1997

Document No.: 08545.451

Commanding Officer
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Subject: Response to Comments
Technical Memorandum
Focused Risk Assessment - SA's 39 & 40
NTC, Orlando, Florida
Contract; N62467-89-D-0317/CTO 107

Dear Wayne:

Attached are the comment Responses for the Study Areas 39 and 40 Focused Risk Assessment. These responses have been incorporated into the final document which was issued today under separate cover.

Should you have any questions, please call me at (407) 895-8845.

Very Truly Yours,
ABB ENVIRONMENTAL SERVICES, INC.

John Kaiser

John P. Kaiser
Installation Manager

JK/cp

cc: W. Hansel (SDIV)
G. Whipple (NTC, Orlando)
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Focused Risk Assessment for Surface Soil
at Study Areas 39 and 40, NTC Orlando
Orlando, Florida
USEPA Region 4 and FDEP Response to Comments

The following responses are to comments from the Florida Department of Environment and USEPA Region 4 on the human health risk assessment.

FDEP General Comment:

I have completed the technical review of the above referenced memorandum dated April 1997 and it is adequate for its intent. However, I do not agree with the recommendation based on Central Tendency risk scenario which does not show a risk above 1×10^{-6}.

As per a personable conversation with our toxicologist, I can only accept risk base upon the Reasonable Maximum Exposure (RME). The risk for potential future residents indicates a combined adult and child RME risk of 1×10^{-5}. Individual adult and child scenarios for dermal contact and incidental ingestion indicate summary cancer risk of 5×10^{-6} and 8×10^{-6}, respectively. The individual contaminants which exceed 1×10^{-6} are benzo(a)pyrene and arsenic. Industrial and recreational use scenarios do not pose a risk greater than 1×10^{-6}. Unless the City of Orlando wants to change the reuse of this area from residential to commercial, recreational, or industrial, then we will have to remediate the site for residential use.

Response:

FDEP comment is noted. The Focused Risk Assessment will present the Central Tendency risk evaluation per USEPA Region 4 guidance and to provide the risk decision makers with a perspective of the true potential risk range to future residents. ABB will also submit to the Orlando partnering team a report summarizing the potential remedial action alternatives and associated costs.

USEPA Region 4 General Comments

Comment I Organization of the document. The first twelve pages of the document provided a well written and concise overview. However, all of the details of the risk assessment were buried in the voluminous appendix containing tables and calculations. The reviewer recognizes that removing these items from the body of the risk assessment tends to simplify the reading of the document; however, in this case simplification was carried to such an extreme that it hindered effective critical review of the document.

Response:

ABB-ES will organize the document appendix into multiple appendices to simplify technical review. The concise format of the report was by design. The objective of the Focused Risk Assessment was to provide a brief memorandum summarizing the risks from soils under the proposed reuse scenario of office/residential in the absence of remediation and/or to assist decision makers in evaluating land reuse alternatives and determining the need for further remedial action. This abbreviated risk assessment was not intended to serve as a complete baseline risk assessment of Study Areas 39 and 40 in that all receptors and exposure pathways were not addressed. A baseline risk assessment of soil and groundwater will be submitted at a later date and will provide the comprehensive details of the risk assessment methodology that is typical of a RI/FS risk assessment.

II. Specific Comments

1) **Page 2, Definition of surface soil**. The Navy should be aware that Region 4 considers surface soil to be the top 12 inches whereas the FDEP considers surface soil to be the top 2 feet. The COPCs, arsenic and PAHs, would tend to occur preferentially in the top several inches of soil. Thus, Region 4 believes that the soil sampling depth used here may result in an underestimate of risk. This fact should be mentioned in the uncertainty section.

Response:

Uncertainty associated with sampling the top 12 inches of soil instead of the top several inches will be addressed in the uncertainty section (Section VIII). Additionally, ABB will submit a sampling plan designed to characterize the depth of the contamination for use in the remediation.

2) **Page 9, Uncertainty.** It should be mentioned that PAHs may be related to automobile use and that arsenic may be related to historical widespread use of pesticides.

Response:

Comment will be addressed as indicated.

3) **Page 9, Conclusions.** It says:

The potential future residential RME residential scenario results in ...

Please change to:

The potential future RME residential risk from soil exposure results in ...

Response:

Comment will be addressed as indicated.

4) **Page 9, bottom of the page.** It says:

Due to the large size of the site and the definition of surface soil as the top 2 feet of soil, a comprehensive cleanup of the arsenic and PAHs at SAs 39 and 40 is economically impractical.

A statement such as this bears on risk management rather than risk assessment and should be removed from this document.

Response:

Comment will be addressed as indicated.

5) **Table 4b and elsewhere.** A discussion of the CT exposure assumptions should be presented. For example, how is the 9 year Exposure Duration apportioned into 2 years as a child and 7 years as an adult.

Response:

A discussion of the CT exposure assumptions will be added to the Focused Risk Assessment.

6) **Table 4c and elsewhere, EF for the recreational user.** Region 4 considers the value of 45 days per year to be low. 45 days per year is appropriate for a trespasser but not a recreational user. For example, suppose a jogging trail were placed on the base in the future. A receptor might use this facility between 100 and 300 days per year. In addition, the climate in Orlando is conducive to outdoor activity year round. Therefore, 150 days per year (3 times per week) is appropriate to use for a recreational receptor.

Response:

Although a recreational user receptor exposure frequency for a jogger would be appropriate at 150 days per year this receptor would be exposed primarily through the inhalation route. In this HHRA, the inhalation of particulates in soils is insignificant; therefore, to more conservatively assess a recreational use of a potential future park scenario (picnicing, sports, etc.), ABB evaluated ingestion, dermal contact, and inhalation of particulates in soils to a recreational user at a lower frequency but a higher intensity (higher ingestion rate and with dermal contact). ABB feels it would be inappropriate to assume that a jogger would be exposed at an ingestion rate equal to one half of the default residential ingestion rate or to more than minimal dermal contact. Therefore, the exposure frequency will be increased to 100 days per year to reflect USEPA's comment concerning the climate in Orlando being conducive to outdoor activity.

7) **Table 5 and elsewhere, Use of TEFs for PAHs.** Throughout the document, toxicity equivalence factors (TEFs) were applied to both the oral, inhalation, and dermal cancer slope factors for benzo(a)pyrene. This is incorrect. Toxicity

equivalence factors should be applied to concentrations to arrive a toxic equivalents of B(a)P. Region 4 guidance states in this regard:

> *These TEFs are based on the relative potency of each compound relative to that of B(a)P. The following TEFs should be used to convert each cPAH concentration to an equivalent concentration of BaP.*

Response:

ABB agrees with this comment. The risk calculation spreadsheets will be modified to reflect an adjustment of the carcinogenic PAH concentrations rather than toxicity values per Region 4 guidance. However, it should be noted that there is no resulting change to the risk assessment results.

8) **Table 7 and elsewhere.** It was clear that slope factors for PAHs were corrected with an absorption value for dermal use. The slope factor for arsenic was not corrected. The source of these absorption factors was not clear.

Regarding PAHs, Region 4 guidance is quite specific:

> *Dermal contact with cPAHs should be assessed using the appropriate oral CSFs and their TEFs with a default absorption efficiency of 50% (SVOCs).*

The reviewer calculated that an absorption efficiency of 91% was used for PAHs and an absorption efficiency of 100% was used for arsenic. Again neither these numbers nor their source was presented in the document. It was only in Table A-4, in the last four pages in the voluminous appendix that the source of the absorption values were presented. This issues harks back to the general comment about the organization of the document.

Response:

Although Region 4 guidance does state that a *default* absorption efficiency should be used, ABB would prefer to use a benzo(a)pyrene specific absorption efficiency that is available in the literature. ABB feels that the use of 91% as an absorption efficiency for PAHs is scientifically defensible, whereas the use of the default absorption efficiency for SVOCs would be more uncertain.

In response to the second part of the comment, the concerning the organization of the document please refer to the response to general comment 1.

9) **Table A-6, Inhalation Slope Factor for arsenic.** The inhalation CSF is 15 per (mg/kg-day). The use of the value of 50 per (mg/kg-day) requires concomitant use of 30% absorption. The value of 15 was used correctly in the risk tables.

Response:

The inhalation toxicity table will be corrected to reflect the value of 15 per (mg/kg-day).