UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

January 21, 2000

Mr. John Burleson
BRAC Environmental Coordinator
Stratford Army Engine Plant
550 Main Street
Stratford, CT 06497

Re: Draft Remedial Investigation
Human Health Problem Formulation
Technical Memorandum
Stratford Army Engine Plant

Dear John:

The United States Environmental Protection Agency (EPA) has reviewed the draft document entitled "Remedial Investigation, Human Health Problem Formulation, Technical Memorandum". The document was relates to the Stratford Army Engine Plant in Stratford, Connecticut. The document is dated November 1999 and was received in this office on December 16, 1999.

EPA's comments on the above-mentioned document are provided in Attachment I to this letter.

Should you have any questions regarding the comments provided, please contact me at (617)918-1387.

Sincerely,

Meghan F. Cassidy
Remedial Project Manager

Enclosure

cc Ken Feathers/CT DEP
Michelle Brock/Corps of Engineers
Tim Corley/Corps of Engineers

ATTACHMENT I

The following are EPA's comments on the draft document entitled "Remedial Investigation, Human Health Problem Formulation, Technical Memorandum". The document was relates to the Stratford Army Engine Plant in Stratford, Connecticut. The document is dated November 1999 and was received in this office on December 16, 1999.

General Comments

1. The purpose and scope of this document are not clear. First, the use of the term baseline risk assessment (BRA) is somewhat confusing. In Section One, the BRA is mentioned as the predecessor to the document and that in combination these two documents will support the Remedial Investigation (RI) report (1st paragraph, page 1-1). Later (e.g., 1st paragraph, page 2-1) in various other portions of the text, the 11/99 document is referred to as the BRA. Second, the scope of this document is to select the potential contaminants of concern (PCOCs) and formalize the exposure scenarios and intake values. Apparently another document will present the toxicity factors and the risk estimates. Third, the reason for initiating a risk assessment effort after the initial BRA is not clear. Answers to the questions, such as the following, should be clarified in the text:
   - Is this risk assessment a supplement or refinement of the former BRA?
   - If this is a refinement of the former BRA, what are the differences between the former BRA and the current document (e.g., new data, same/different exposure scenarios, etc.)?

2 A future residential exposure scenario is not part of the assessments described in this document. If unrestricted use of this property is required, then the potential future residential risk must be calculated. Otherwise, the risk managers will not have information necessary to determine if the property(s) can be used without restrictions. In addition, the exposure scenarios evaluated here appear to presume that the property(s) will be restricted to use as commercial/industrial usage. While this approach is acceptable, it limits the ability to thoroughly evaluate the cost differences between the two land uses. Therefore without including the residential scenario, the Army assumes the cost of implementing and monitoring institutional controls for the long-term.

Specific Comments

1. **Section 2.1.1, Page 2-1, bullets** Please note in the text the reason that the number of analytes is different for each medium in the volatile organic compounds (VOCs) bullet and not for the other three analytical categories. Later in the text the combination of *cis* and *trans* compounds is discussed. If this is the reason for the variation, please provide a short note in this section and refer to the later discussion.

2. **Section 2.3.6, Page 2-5** Please explain how the various health-based standards were applied. For instance, if the most conservative of the standards was used as a screening

value, then discuss this process and provide a list of the screening values with references.

3. **Section 2.3.6, Page 2-5, 1st paragraph, 1st line** Why are both EPA Region IX and III risk based screening concentrations (RBCs) being used for screening values? Since they are both EPA RBC lists, only one value for each contaminant is necessary. The preference in Region I is to use the Region IX RBCs (re: Risk Update 9/99).

4. **Table 2-12** dibenz(*a,h*)anthracene and indeno(*1,2,3-cd*)pyrene are listed as having screening criteria of 1000 ug/Kg cited as CTDEP RSRs. The Region IX RBCs for dibenz(*a,h*)anthracene and indeno(*1,2,3-cd*)pyrene are 56 ug/Kg and 560 ug/KG, respectively. Since the Region IX RBCs are more conservative than the CTDEP RSRs they should be used as health-based screening criteria for these chemicals. Please correct this issue that appears throughout the Section 2 tables.

5. **Section 3.1, page 3-1** Are these exposure scenarios the same as the exposure scenarios evaluated in the previous BRA? Please note any differences between the two risk assessments and the technical reasons for any changes. If the exposure scenarios are the same as the previous BRA, please note this in the text.

6. **Section 3.1.1, Page 3-1** As discussed in the general comments, the future residential exposure scenario should be evaluated if unrestricted future use of the property is intended or if the Army intends to fully evaluate the cost-effectiveness of implementing and monitoring institutional controls.

7. **Section 3.2.2, page 3-3, 5th paragraph** Please present the groundwater classification along with a definition of use in the text.

8. **Section 4.1** some of the terminology listed in the text seems to vary from the tables in this section. For instance, the text describes a *dermal absorption factor* while the table notes a s *dermal absorption fraction*, and the text describes a *permeability constant* and the table notes a *permeability coefficient.* For clarity, please ensure consistent use of terms occurs throughout the document.

9. **Section 4.1.6, 4th line** The body weight cited for the child should be 45.3 not 43.5 (re: EPA Exposure Factors Handbook - cited in this section- Table 7-3).

10. **Section 4.1.10** Please provide the formula for calculating the pore water volume. Please also describe the type of soil to which the given density and porosity values correspond. Also note if the soil descriptive values are measured or reference values

11 **Section 4.1.10, last sentence** How is the amount of water incidentally ingested through water removal going to be evaluated? Please clarify the text

12 **Section 4.1.11** The fish ingestion rates do not correspond to the those recommended in the cited reference and the populations used for reference appear to vary from the

reference. For instance, the mean and 95% recommendations in EPA's Exposure Factors Handbook, Volume II (EFH), Table 10-83 for recreational marine anglers - Atlantic are 5.6 g/day and 18 g/day not 13.5 g/day and 20.1 g/day. In addition, the values for the commercial fisherman appear to be derived in part from the EFH Table 10-85 for Native American Subsistence Populations - Columbia Tribes. Please correct the text and specifically cite the type of population used as a reference.

13. **Section 4.1.11** Please provide more support for the assumption that the average and RME fish/shellfish fraction ingested are 0.01 and 0.1, respectively. While finfish may not spend much time in the tidal flats, would they only spend 1% to 10% in those areas? Please provide information on what types of fish are commercially gathered in this area (i.e., bottom feeders, fast moving school fish, etc.) and any other appropriate support of these assumptions. In addition, since shellfish may more likely reside in tidal flats, please provide support of how these assumptions apply to shellfish (i.e., evidence of harvesting/digging or traps).

14. **Section 4.1.12** According to the reference cited, 3.3 is the upper percentile for outdoor workers. The value cited in text is the mean for heavy activity. Please correct the text and corresponding tables.

15. **Section 4.3** Please cite the references for the lead model. Also, please note if the child lead model will be run.

16. **Table 4-3, Adherence Factors** The adherence factors (AF) listed are low as compared with those in the current EPA Dermal Guidance. The dermal guidance recommends an average AF of 0.1 and a RME AF of 0.3 for construction workers. The dermal guidance should be finalized by the beginning of February (this reference can be provided by EPA if this is going to be used) The irrigation installer AF is also an order or magnitude lower than the AF for the commercial fisherman and recreational receptors. Construction workers would seem more likely to be exposed to more damp soil than a recreational receptor and less water than the commercial fisherman. Since the current AFs are about an order of magnitude lower than EPA's current recommendation and the construction worker AF is approximated by an irrigation installer (re: Table 4-21) please review the support for these AFs and change the text as appropriate.

17. **Table 4-7, Absorbed Fraction** The note that these factors are chemical-specific does not correspond to what is written in the text in Section 4.1.9. Please correct the text and/or the table