



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

October 24, 2001

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

Re: Draft Indoor Air Monitoring Work Plan  
Stratford Army Engine Plant  
Stratford, Connecticut

Dear Mr. Burselon:

The United States Environmental Protection has reviewed the draft version of the document entitled "Indoor Air Monitoring Work Plan, Stratford Army Engine Plant". The above-referenced document is dated September 28, 2001.

EPA's comments on this document are provided in Attachment I to this letter

If you have any questions regarding this matter, please contact me at (617)918-1387

Sincerely,

A handwritten signature in cursive script that reads "Meghan F. Cassidy".

Meghan F Cassidy  
Remedial Project Manager

Enclosure

cc Michelle Brock/Army Corps of Engineers  
Ken Feathers/CT DEP  
Nelson Walters/Harding ESE  
Peter Golonka/Gannett-Fleming  
RAB Members

## ATTACHMENT I

The following are EPA's comments on the document entitled "Indoor Air Monitoring Work Plan, Stratford Army Engine Plant" The above-referenced document is dated September 28, 2001

### GENERAL COMMENTS

1. Human health risks will likely to be driven by low-level concentrations of 1,1-dichloroethene and vinyl chloride. It is noted that the I/C IATC threshold concentration for 1,1-dichloroethene is 0.02 ppbv, which is less than the lower limit of detection expected for the air analyses. The I/C IATC threshold concentration for vinyl chloride is 0.36 ppbv, which is close to the lower end of the detection limit expected for the air analyses. In fact, the analyses may not be able to accurately quantify the concentrations of 1,1-dichloroethene, vinyl chloride, trichloroethene, or tetrachloroethene. Based on these facts, it is not clear that the monitoring program proposed will be effective in documenting the risks associated with low level indoor air contamination.
2. Please clarify why the work plan proposes Method TO-14/15 when TO-14 targets non-polar compounds and TO-15 targets both polar and non-polar compounds and the methods differ in the means used to concentrate the VOCs before separation on the GC column. It would appear that Method TO-15 should be preferred based on the list of COCs for this site. Please provide a more detailed description of the modifications planned or include an additional attachment to the work plan that provides this description.
1. As appropriate, the scope of work should also include a check of all buildings for potential sources of COCs within the buildings and potential sources (unsecured drums, for example) outside the buildings.

### SPECIFIC COMMENTS

1. **Section 1.0, Page 1:** The Work Plan provides some of the criteria used in selecting the proposed sampling locations, noting in particular that the focus is on occupied areas of the facility, and that the locations are constrained by such considerations as the proximity of walls. Do the proposed sampling locations take into consideration the distribution of VOCs in underlying groundwater? It is notable, for example, that no air sampling is proposed in the immediate vicinity of the former chromium plating shop in Building 2, where some of the highest TCE detections at the site were found (e.g., WP-99-33 at 830,000 micrograms per liter, WP-99-08 at 110,000 micrograms per liter).
2. **Section 2.0, Page 2, Tables:** Please include the rationale used in selecting the proposed 8-hour and 7-day sampling locations.

- 3 **Section 3.0, Page 3, Paragraph 1:** The table at the end of this paragraph lists the COCs for the Indoor Air Monitoring Program. Please include a discussion on how the COCs were selected
4. **Section 3.0 Page 3:** The work plan proposes to analyze the air samples only for 1,1,1-TCA, 1,1-DCE, PCE, TCE, and VC, based on results from previous soil gas sampling. There may be value in analyzing for cis-1,2-DCE, as well, even though previous air samples may not have yielded significant detections. This degradation product of TCE might be expected in marginal areas of the VOC plume, where microbial activity can persist, as suggested by some of the groundwater analyses. (It appears that the higher-concentration portions of the VOC plume may be sterile.) While cis-1,2-DCE may not be a large contributor to inhalation risk, its presence or absence and its distribution may shed light on transport processes in underlying groundwater, and on overall site cleanup in the long term. As concentrations of TCE ultimately decline in the subsurface, one might expect that microbial activity may increase, and cis-1,2-DCE concentrations may increase correspondingly.
5. **Section 4.0, Page 4, Paragraph 1:** QA/QC protocol should also include measurement of the vacuum in each canister at the laboratory just prior to analysis. This vacuum should be compared to the vacuum reading obtained in the field after the sample has been collected. Also, clarify that the blank collected using ultrapure air is collected with the same inlet apparatus (filter, flow controller, tubing, and fittings) as will be used in the field sampling.
6. **Section 5.1, Page 4, Paragraph 2:** Please provide the data manipulation previously used and proposed to be used in the future to complete the risk screening needs to be presented in the work plan so it can be reviewed. The more recent data, from Year 2001, should also be screened separately from the compiled data so the risk associated with the new data, which is assumed to more accurately reflect the current condition of the indoor air, can be evaluated separately. Also, risks associated with particular buildings or sections of buildings should be evaluated separately.
- 7 **Section 5.2, Page 5, Paragraph 1:** All data collected to date should also be tabulated (as indicated in the fourth paragraph). The tabulation should be such that locations in specific buildings and sections of buildings are tabulated together so the impact of the data can be more clearly understood.
- 8 **Attachment A, Section 3.0:** A 30 PSIG vacuum gauge is listed as required equipment. Since it is not possible to achieve a vacuum of greater than one atmosphere (approximately 14.7 psig) it appears that the vacuum gauge units may be incorrect. Please check to see if the gauge range should be 0 to 30 inches of mercury and correct accordingly.

It is assumed that a fixed orifice flow controller will be used such that the sample volume collected will be stable over time and will not vary with the change in vacuum within the canister as the sample is collected. If this is done, no flow rate adjustments will be made in the field so no flow meter will be required. Please clarify these points in the work plan.

The equipment list should also include a stainless steel inlet filter and Teflon 1/4 -inch tubing.

9. **Attachment A, Section 4.0:** The second sentence states that the canister will be evacuated to a pressure of -30 psig prior to sampling. Section 4.1 states that the sampler must verify a pressure of  $-30 \text{ psig} \pm 2 \text{ psig}$  before beginning sampling. Since an absolute vacuum would be approximately -14.7 psig, it appears that the instructions may not be correct. Please review the instructions considering whether inches of mercury should be the correct units rather than psig and correct as appropriate.

The second to last sentence states that the flow rate is checked periodically during sampling. A fixed orifice flow controller should be used so that flow measurements will not be required during sampling. However, even with the fixed orifice controller, the flow rate should be checked before and after sample collection. This can be done using evacuated canisters that will not be analyzed or other appropriate means.

The last sentence in Section 4.0 refers to Figure 1 as a typical canister diagram. The figure was not included in Attachment A of EPA's version of the document. Please include the figure in the next edition of the work plan.

10. **Attachment A, Section 4.1, Paragraph 1:** The third sentence refers to a pressure gauge and the possible evacuation of the canister. In fact, the gauge will be a vacuum gauge and the canister has the potential to fill not evacuate based on operator error. The same error appears in other locations in Attachment A.
11. **Attachment A, Section 4.1, Paragraph 4:** If the flow controller needs to be set in the field, how will the operator obtain the desired setting and how can the flow controller setting be calibrated or verified before using the flow controller? Please use a flow controller that does not require field adjustment or explain in more detail how the proper setting for the flow controller can be obtained and verified before using it.
12. **Attachment A, Section 4.2, Paragraph 2:** Please verify the units of the vacuum measurements to be recorded and correct the instructions in this attachment if psig is not the correct units.
13. **Attachment A, AQ Form 1:** Please verify the units of the vacuum measurements to be recorded and correct the starting and ending vacuum units used on this form, if necessary.