Response to Ohio Environmental Protection Agency Comments
on the Draft
Volume II -- Baseline Human Health Risk Assessment
TNT Areas A and C Remedial Investigation
Former Plum Brook Ordnance Works
Sandusky, Ohio

Comments received August 31, 2001 from Ron Nabors, Site Coordinator, Division of Emergency and Remedial Response.

General Comment

Comment 1: **The report was well written and clearly described the methods used in the evaluation of potential risks to human health and ecological receptors. Ohio EPA was pleased to see that comments and issues raised and ultimately resolved during previous document reviews (ie. TNT Area B, Redwater Ponds) were carried over and applied in this risk assessment report. This resulted in a faster review, reduced the number of comments, and promoted overall consistency between documents.**

Response: USACE and IT Corporation are grateful for the kind words and for the timeliness and quality of the review.

Human Health Risk Assessment Specific Comments:

Comment 1: **Executive Summary, page ES-3, third paragraph, last sentence: This sentence states "The PAHs were attributed to erosion and runoff from a nearby highway, and sediment from Plum Brook was not evaluated in the risk assessment." What criteria were used to make the determination that detected PAHs were attributed to erosion and runoff from a nearby highway?**

Response: The author of this section notes that both comments on the human health risk assessment pertain to the level of detail in the Executive Summary. This identifies a minor source of tension that pertains to most executive summaries: provide sufficient information to establish credibility, but do not burden the summary with detail that bogs the reader down or obscure the conclusions. The reviewer suggests in Comment 2 that the combination of increased detail and reference to the location where a complete explanation can be found is a sound and practical approach. The reviewer's suggestion will be applied to both comments.

The rationale used to determine that the PAHs in sediment arise from runoff from a nearby highway are presented in the last paragraph before ***Surface Water*** on page 2-16. The paragraph in question will be revised as follows:

"Contamination in on-site surface water and sediment at TNT Area A was considerably less than contamination in soil. The sediment samples from Plum Brook, however, had levels of PAHs substantially higher than those observed on site, suggesting that their presence is unrelated to the Army activities. Furthermore, Plum Brook crosses beneath two major highways and flows past two filling stations and a large parking lot frequently occupied by large trucks, all of which are known to be significant sources of PAHs. Therefore, the PAHs in the sediment were attributed to erosion and runoff from the highway, filling stations and parking lot, and sediment from Plum Brook was not evaluated in the risk assessment. Further details regarding the PAHs in sediment are presented in Section 2.3.1."

Comment 2: **<u>Executive Summary, page ES-3, fifth paragraph and page ES-4, fourth paragraph</u>: The rationale for re-combining the data to form exposure units based on the former building locations may not be apparent and clear. The rationale for doing this may need to be discussed in more detail so that the reader has a better and more clear understanding of why this approach was taken. The explanation that is provided in *Section 2.1.1 Sorting the Analytical Data* that is found in the second paragraph on page 2-4 is good. One suggestion is to add a reference to the executive summary that directs the reader to this section of the report for a more detailed explanation of this approach.**

Response: Please see response to previous comment. It appears that clarification of the paragraph in question on page ES-3 should be sufficient, since the paragraph on page ES-4 refers to the paragraph on page ES-3. The paragraph on page ES-3 will be revised as follows:

"Because the risk results for the construction worker and resident exceeded acceptable levels, the soil data were re-combined to form exposure units (EU) based on each of the former building locations at TNT Area A. An EU is an area over which a receptor is expected to be uniformly and randomly exposed. The EU approach reduces the likelihood that analytical data from uncontaminated or lightly contaminated areas could obscure the data from more heavily contaminated areas where receptors are more likely to be exposed (see Section 2.1.1 for more detail). Several building areas passed the re-evaluation; i.e., adverse effects were not expected to be experienced by these receptors. However, several other building areas did not pass."

<u>Ecological Risk Assessment Specific Comments:</u>

Comment 3: **Section 2.2.1 Data Organization, page 2-9 and Section 3.1 Exposure Analysis, Soil Exposure Pathway, page 3-8: The rationale for selecting the soil interval of 0-6 feet should be included in this discussion. The reasoning for this interval is not apparent in the report at this stage. This information would help the reader understand why this interval was selected.**

Comment 4: **Section 2.2.6 Summary of COPEC Selection, page 2-16: Explain how samples with elevated detection limits were handled in the ecological risk assessment when developing exposure point concentration for ecological receptors.**

Comment 5: **Section 7.0 Conclusions and Recommendations, page 7-1, last sentence in first paragraph: The acceptable risk level (ARL) for ecological risk is defined as the following:**

i) Environmental Hazard Quotient (EHQ), or environmental hazard index (EHI) where appropriate of less than or equal to one (rounded to one significant figure); and,

ii) No other observed significant adverse effects on the health or viability of the local individuals or populations of species are identified.

If both criteria (i and ii above) are not exceeded, then the site is highly unlikely to present significant risks to endpoint species and a recommendation for no further ecological investigations should be made. If any criterion (i or ii above) is exceeded, then the site could present significant risks to endpoint species and a recommendation to move to the next step should be made. In this instance, the analyses should identify:

(1) the COPECs that clearly pose risks below the ARL and thus require no further action,
(2) the COPECs that currently constitute risks above the ARL and thus should be subject to remediation,
(3) the COPECs that may or may not pose a significant ecological risk but, because of elevated uncertainty, should also be subject to further investigation, monitoring, and/or remediation.

COPECs in (2) or (3) above are termed ecological contaminants of concern (ECOCs) and are the focus of either further investigations or remedial actions.

Therefore, based on the criteria stated above and on the results of risk evaluation based on NOAEL-based hazard index results for aquatic receptors, Ohio EPA does believe a recommendation for no further action on

impacted sediment and surface water can be made based only on this information as presented in this report.