

**Draft NACA Test Area Phase I RI  
Sampling and Analysis Plan/Health and Safety Plan Addenda  
Comment Resolution**

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Comment No.	Comment	Response
<b>USACE –Louisville District (J. Jent)</b>		
1	Page 1-1, last para; Planes weren't catapulted, but propelled under their own power, but guided down the center guide. (As per Mr. William Wynne)	Agreed. Text has been changed as requested.
2	Page 1-2, 2 <sup>nd</sup> para; Mr. Wynne said that he remembered most of the burned aircraft being hauled away, not buried.	Agreed. Text has been revised to note that most aircraft were removed from the site; however, some were placed within the plane burial area.
3	Figure 1-3/ Para 3.2.5; Please show north and south limits of NACA Test Area. May have to discuss. (Group exercise)	Agreed. AOC boundary has been shown on Figures 1-3 and 4-1 as discussed in comment resolution teleconference on 21Sep99.
4	Page 1-7, 1 <sup>st</sup> para; A. Please change Figure 1-2 to 1-3. B. (Last sentence) Please change "no detectable quantities of explosives, as Table 1-1 shows RDX at 4.8 ug/L.	Agreed. A. Figure number has been changed as requested. B. Text has been corrected to reflect the results in Table 1-1.
5	Figure 2-2/Para 7.0; Need to discuss time frame for liquid IDW with cold weather shortly after sampling is completed.	Agreed. As discussed in the comment resolution teleconference on 21Sep99, IDW will be staged in Bldg. 1036 in a secondary containment structure to be constructed by SAIC or provided by RVAAP. Weather proofing of the building will done to the extent possible. Drums containing liquid IDW will be filled only to 75% of capacity to allow expansion should freezing conditions occur. SAIC will expedite IDW disposition to the extent possible. This information has been added to Chapter 7.0.

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6	<p>Table 3-5, Soil Screening Guidance/10</p> <p>A. Most of the Leaching to Groundwater levels are below background. Shouldn't we at least require that the screening levels be above background.</p> <p>B. Since this criterion assumes extends all the way to the top of the aquifer, shouldn't we at least throw out any surface samples which have corresponding subsurface samples below the criterion values.</p>	<p>Clarification.</p> <p>A. The Phase I RI screening process is consistent with that employed for the Phase I RI for 11 High Priority AOCs and for Erie Burning Grounds. Comparisons to both background and groundwater leaching values (EPA 1996) are already conducted. The more conservative approach using the leaching values is more appropriate for the Phase I RI. Chapter 3.0 also notes that any parameters that are less than background are not further considered as potential site-related contaminants.</p> <p>B. Surface soil data should not be thrown out where subsurface samples exist because the inherent assumption in the soil leaching screening step is that contaminants, irregardless of where they occur, extend to the top of the water table. Elimination of a surface soil sample may result in elimination of the only identified contamination in the soil column at that station; thereby defeating the purpose of the screen.</p> <p>No text changes required.</p>
7	<p>Page 4-1, Para 4.1.1.1; Add after the first sentence, specific sample locations will be moved within the general grid pattern to any obviously disturbed or bare nearby areas.</p>	<p>Agreed. Text has been revised as requested.</p>

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8	<p>Figure 4-1;</p> <p>A. Please add dimensions to the three sets of gridded sampling locations.</p> <p>B. In legend, please add NTA = NACA Test Area</p>	<p>Agreed. Figure 4-1 has been revised as requested.</p> <p>Also, per the comment resolution teleconference on 21Sep99, stations NTA-78, NTA-80, NTA-81, and NTA-82 have been changed to surface soil samples only. Stations NTA-83, NTA-84, NTA-85, and NTA-95 have been changed to surface and subsurface soil stations to address current OHARNG use of the site for training exercises. Chapter 4.0 and Table 5-1 have been modified accordingly.</p>
9	<p>To implement Dr. Brancato's request for geotechnical parameters, please add pushing 5 Shelby Tubes (hopefully with OH NG equipment), and selecting only 3 for lab determination of dry unit weight, specific gravity of solids, pH, and redox potential.</p>	<p>Agreed. The following soil sampling stations at NACA are identified for geotechnical sampling using a shelly tube and geoprobe rig: NTA-38, NTA-57, and NTA-69 in the crash area. These samples will be submitted for geotechnical analysis of moisture content, hydraulic conductivity, Atterberg Limits, particle size, dry weight, pH, redox potential, organic carbon content, and bulk density. Geoprobe sampling will be conducted after sampling for chemical analyses is completed. Shelby tube samples will be collected from the 1.0- to 3.0-foot interval only. Additionally, station NTA-38 is selected for subsurface sampling for lithologic description using a macrocore; sampling using a macrocore will extend to the water table (estimated 20 feet) or to refusal. The geotechnical data will be used to conduct DAF calculations in the Phase I RI.</p> <p>Additionally, a temporary screen will be set in the boring at station NTA-38 in order to collect a groundwater sample for the following analyses: explosives, propellants, filtered TAL metals, cyanide, VOCs, and SVOCs. The groundwater sample will be collected using a disposable bailer.</p> <p>Chapter 4.0 and Table 5-1 of the FSP addenda, the QAPP, and the SSHP addenda have been modified accordingly.</p>

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10	To check for the presence of Ethylene Dibromide or 1,2-Dibromoethane, a common additive of aviation fuel prior to the 1970's, please add testing for this constituent to all samples which are to be subjected to VOC analyses. Use same detection limits as 1,2-Dichloroethane.	Agreed. The parameter has been added to the list of specified VOC analytes in the QAPP.
<b>USACE –Louisville District (D. Brancato)</b>		
1	SSHP Addendum, Page 7-2, rows 1 and 3 – A conflict exists in permitting PID readings at 100 ppm, where the evaluation limit is 5 ppm. Donning adequate PPE will be required. However, no mention of PPE is made.	Clarification. Two distinct hazards are being monitored. These hazards are flammability and employee exposure to toxic vapors through inhalation. The 100 ppm PID criteria as noted in Table 7-1 applies to explosive vapors at the borehole or other source and is a trigger requiring additional monitoring with a combustible gas indicator. The 5 ppm PID criteria applies to organic vapors within the breathing zone or 0.9 meter from the source and reflects worker exposure to airborne contaminants. For organic vapors in the breathing zone, evaluation of PPE upgrades has been added as requested. For explosive vapors measured at the source PPE upgrades are not relevant. It is common for concentrations at the source to be much greater than those in the breathing zone.
2	Please reinforce the chain of communication that is to occur when UXO is observed in the field, especially if UXO specialist is not physically present at the location.	Agreed. Table 2-2 has been revised to clarify the appropriate response actions for encounters with OE.
3	Page 3-1, Section 3.1 – Please re-state our intent with handling groundwater specific to each AOC. We purpose to identify surface source contamination that may be affecting groundwater. Since no surface contamination has been identified to date, impact to groundwater from this AOC is not expected. However if source contaminants occur from this phase of the investigation, then the need for monitoring wells will be re-evaluated.	Clarification. Text regarding characterization of groundwater is included in the first paragraph of Section 3.1 and is discussed in detail in Section 3.2.1. However, for additional clarification, a reference to Section 3.2.1 has been added to the second sentence of Section 3.1.

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4	Page 3-4, Section 3.3.3 – Please remove the added screening step of constituents evaluated by failing PRGs, and present under 5% of the population of samples.	Clarification. The 5% frequency of detection screen is consistent with the screening process specified for the Phase I RI for 11 High Priority AOCs and for Erie Burning Grounds. The screening step has been accepted by Ohio EPA. It is noted that a former screening step where constituents were eliminated from consideration if less than 5% of results were less than background has been eliminated based on input from Ohio EPA. The frequency of detection screening step is performed for all constituents as a general data screen to identify potential site-related contaminants. Subsequently, comparison to PRGs is done as part of the risk evaluation. No text changes required.
5	Page 3-4, Section 3.3.3 – Do not screen essential nutrients unless the screen includes methods identified in EM 200-1-4	Clarification. Section 3.3.3, page 3-5 notes that essential nutrients will not be addressed as contaminants unless grossly elevated to background. The text has been modified to indicate that screening will follow appropriate steps as specified in: Risk Assessment Handbook, Vol. I, Human Health Evaluation, EM-200-1-4, January 31, 1999.
6	Page 4-10, Section 4.1.2.3 – The following geo-technical parameters are requested.: <ul style="list-style-type: none"> <li>◆ Particle size</li> <li>◆ Dry weight</li> <li>◆ pH</li> <li>◆ Redox potential</li> <li>◆ Mineral class</li> <li>◆ Organic carbon &amp; clay content</li> <li>◆ Bulk density</li> <li>◆ Soil porosity</li> </ul>	Agreed. See response to John Jent comment 9. Note that mineral class analyses will not be conducted based on the comment resolution teleconference on 21Sep99.
7	Page 7-1, Section 7.0 – Please provide a time table for IDW removal as well as responsible party/individual for signing manifests.	Clarification. Schedule for IDW removal is denoted in Section 2.0; see response to John Jent comment number 5. A sentence has been added denoting the responsible party for manifest signatures.

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8	Part II, QAPP – Please revisit <b>all</b> quantitation limits in Table 3-1, especially the limits provided for PAHs. The quantitation limits are not low enough. Method 8310 for SVOCs will achieve the needed quantitation limits. Please respond with written assurance that for each media the quantitation limits for each chemical category will be at or below the Region 9 PRGs (face values).	Clarification. Quantitation limits equal to face value PRGs (10 <sup>-6</sup> risk levels) cannot reasonable be achieved for many SVOCs using existing methods. In order for quantitation limits to attain all PRGs, multiple analyses would have to be employed for groupings of SVOC analytes (i.e., PAHs, phthalates, etc.), which will impact analytical costs.
<b>Ohio EPA (Eileen T. Mohr)</b>		
1	General Comment: Throughout the draft workplan, it is indicated that potential impacts on the groundwater as a result of activities at the NACA Test Area and the determination of groundwater as a potential migration pathway will be evaluated based upon soil screening guidance values for leaching to groundwater. The OEPA agrees that this is a screen that can be utilized, but takes the position that it cannot be used as a replacement for installing Area of Concern (AOC)-specific monitoring wells at the NACA Test Area. The OEPA agrees that a hydrogeologic investigation at the NACA Test Area can be deferred until AOC-specific data regarding the concentration and distribution of contaminants in the soil and sediment is available. However, if soil/sediment contamination is documented, the determination as to whether a hydrogeologic investigation is to be conducted, or whether groundwater is an exposure pathway will not be made on the basis of generic leaching values alone.	RVAAP recognizes the OEPA position on the need for groundwater characterization at the NACA Test Area. It is also agreed that the use of generic leaching values alone cannot define groundwater as a migration pathway. However, the use of the screen as presented provides useful information as to whether a potential exists for groundwater to be impacted by soil source contaminants at levels that may present a human health risk. In addition, the screen is consistent with that employed for the Phase I RI for High Priority AOCs at RVAAP, which included WBG.  As noted in Section 3.2.1, should source contamination be identified above screening levels during the Phase I RI, then collection of AOC-specific hydrogeologic data will be identified as a DQO of any subsequent RI phase. If source contaminants are present, but less than Phase I RI screening criteria, then collection of AOC-specific hydrogeologic data will be collected only as necessary to verify that groundwater is not impacted and to eliminate the groundwater pathway.
2	On page 1-2, please provide the appropriate references for the historical information presented.	Agreed. References have been added as requested.

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3	The text on page 1-7 indicates that “Samples collected and analyzed from station HC-2 between 1980 to 1992 had no detectable quantities of explosives.” However, Table 1-1 indicates that RDX was detected at HC-2, at least once during this time period. Please revise the text accordingly.	Agreed. Text has been corrected as requested.
4	On page 1-7, please revise the text to read: “These compounds were not included in calculating the Contaminant Hazard Factor (CHF) because no risk standard existed for them <i>in the RRSE methodology</i> at the time.”	Agreed. Text has been corrected as requested.
5	Is there any reason to suspect the presence of ordnance and explosives (OE) on the eastern end (crash area) of the NACA Test Area? (Page 1-8)	Clarification: available operational data do not suggest that OE is present within the crash area. The project scope of work also does not require OE support for sampling within this portion of the NACA Test Area.
6	In the site conceptual model section (CSM), the soil discussion should be modified to indicate that the fueling area may also be a source of contamination. (Page 3-1)	Agreed. Text has been added to Section 3.2.1 – Soils indicating that the Refueling/Catapult Area also represents a suspected source area.
7	In the CSM section regarding groundwater, please refer to comment # 1 detailed above. In addition, it is noted that other potential site-related contaminants based on operational history are volatile organic compounds (VOCs). Please adjust the text accordingly. (Page 3-2)	Refer to the response for comment 1 regarding collection of AOC-specific hydrogeologic data. Also, VOCs have been added as a potential site-related contaminant as requested.

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8	<p>The text on page 3-10 indicates that “Screening levels based on industrial land use are also provided for reference, as the NACA Test Area will ultimately be transferred to the Ohio Army National Guard.” Please note that potential Ohio National Guard (ONG) usage of this area would more appropriately be characterized as “managed recreational,” not industrial as the text indicates. Please adjust the text accordingly.</p> <p>In addition, the text indicates that ecological risk screening will be conducted for surface water and sediment. The text should also indicate that ecological risk screening will be conducted for soil. Please adjust the text accordingly.</p>	<p>Clarification. Phase I RI human health risk screening for soils will be conducted against EPA Region IX residential criteria consistent with a conservative Tier 1-type screening approach. The use of industrial screening values is for comparative purposes only and is consistent with the approach applied in the Phase I RI for 11 High Priority AOCs and the Phase I RI for Erie Burning Grounds. EPA Region IX has not established PRGs for a managed recreational land use scenario. The text in Section 3.4.2, para. 1 has been modified to remove the reference to industrial landuse in association with current OHARNG activities at the NACA Test Area.</p> <p>Also, ecological risk screening for soil will not be conducted because, as agreed among IOC, USACE, Ohio EPA, and SAIC staff on March 18, 1998, no reliable screening data sources exist (reference Section 3.4.2.1, page 3-38 of the FSP addendum).</p>
9	<p>Please revise the text on page 3-38 to indicate that “essential human nutrients are not considered AOC-related and will not be considered potential COPCs, <i>unless they are elevated such that they may indicate a potential contaminant source.</i>”</p>	<p>Agreed. Text has been modified as requested.</p>
10	<p>On Table 4-2, please revise the sediment section to indicate that grain size analyses will be conducted on the sediment samples, not the surface water samples. (Page 4-4)</p>	<p>Agreed. Table 4-2 has been corrected as requested.</p>
11	<p>The text on page 4-17 indicates that “Contingency soil samples will be used to evaluate the horizontal extent of contaminated areas based on visual observations.” Please be advised that it is unlikely that two contingency samples will be able to accomplish this purpose.</p>	<p>Agreed. The subject sentence and the following sentence in the text have been changed as follows: “Contingency surface soil samples will be used to characterize any identified areas exhibiting obvious visual evidence of contamination. The rationale for locating...is to target areas of obvious staining or discoloration, stressed vegetation...”</p>
12	<p>Provide an explanation for the lack of monthly reports to be submitted as part of the NACA Test Area effort. (Page 5-1.</p>	<p>Clarification. Monthly reports were not part of the scope of work provided by USACE for this Phase I RI.</p>

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13	Table 5-1 indicates that several sample locations are To Be Determined (TBD). The corresponding text of the workplan should provide the rationale/criteria for the selection of these TBD samples.	Clarification. Footnote (a) to Table 5-1 states that the locations for TBD samples (PCBs, explosives, and propellants) are to be determined within the area based on field observations of stained soil or other evidence of contamination. However, the footnote has been revised to clarify that the TBD samples will be collected from the sample stations already identified within the respective sub-area and will not constitute new sample stations. Only the 2 contingency samples will be collected from additional samples stations (stations NTA-099 and NTA-100) to be located in the field.
HASP 1	On page 1-1, please provide the appropriate references for the historical information presented.	Agreed. References have been added as requested.