

**Responses to Comments for the
Draft Final Remedial Investigation Report for Camp O'Ryan Rifle Range, New York
Remedial Investigation through Decision Document for Six Army National Guard Munitions Response Sites**

Response Code: A = Agree with comment D = Disagree with comment C = Comment requires clarification

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TECHNICAL COMMENTS									
1	E.Melnyk-DEC	Cover, ES-1, 1-1	Cover, Executive Summary, Section 1	Cover, ES-7, section 1 line 4	Add NYSDEC Site No. 961012	A	The site number has been added to the Executive Summary and Section 1.		
2	E.Melnyk-DEC	2-8	2.4 Previous investigations	187-194	Data from previous investigations was not utilized in assessing site conditions or in the risk assessments. The final RI for this MRS unit should be a comprehensive document that integrates data tables, figures, findings, conclusions and all relevant appendices such as any data logs, photo logs and other relevant information from previous investigations into one comprehensive document where all available data is utilized to characterize the site for contaminants of concern and for the risk assessment in this document.	A, D	Information from previous investigations, including historical training descriptions, range descriptions, and sample data was used to form the sampling design for this RI, such as DU selection and sampling strategy, but does not meet the data quality objectives for this RI. Section 2.4 (lines 209-222) has been revised to summarize soil sample results from the 2009 NYSDEC Site Investigation at the Camp O'Ryan MRS 2 Rifle Range, and shallow groundwater and surface water sample results from the 2011 Woods Hole Group Preliminary Site Investigation at the adjacent Pistol Range and Maneuver Training Area MRSs. This data has also been included in Section 2.6 (lines 266-269, 275-280) and Section 6.1 (lines 8-12, 34-33) to describe contaminant fate and transport. We respectfully decline appending data tables, photo logs, and other components of previous investigations to the RI report because past data does not meet the Data Quality Objectives of the current RI and	The final RI for this MRS unit should be a comprehensive document that integrates data tables, figures, findings, conclusions and all relevant appendices such as any data logs, photo logs and other relevant information from previous investigations into one comprehensive document where all available data is utilized to characterize the site for contaminants of concern and for the risk assessment in this document. References to previous investigations and evaluations have been noted; however, the data from the previous investigations have not been compiled and utilized in the human and ecological risk assessments because it did not meet RI data quality objectives. Though this may be factor to consider, it is still relevant data that requires consideration in the evaluations. Some of this data represents Maximum Detected Concentrations (MDCs) particularly for the target hill-side DU and the 100 yard firing berm DU which is relevant for human health risk assessments and will be a factor in assessing remedial action goals and objectives for the site.	Appendix I has been created to collect relevant data, tables, figures and findings from previous investigations, including the 2009 NYSDEC SI Report, the 2011 Woods Hole Group Preliminary Site Investigation Report, and the 2012 Parsons Final SI Report. Flysheets are inserted in the appendix to give context to the respective data that has been aggregated. Brief summaries of the data had already been included in Section 2.4 of the RI Report but a reference to new Appendix I was added. As stated in the UFP QAPP and agreed upon by NYSDEC and NYSDOH, we will not be considering old data into the risk assessment calculations. We understand there will not be concurrence from NYSDEC or NYSDOH. Regardless, please note that the MRS is advancing in the CERCLA process to evaluate potential remedial actions. We are now preparing the Feasibility Study and will be sending a Stakeholder Draft for your review in the next 60 to 90 days.
3	E.Melnyk-DEC	2-9	2.6 - Preliminary Conceptual Site Model	244-269	This section notes that there are no water bodies present in MRS-2, however, the report does note that the Target Berm-Ponded decision unit (DU) consists of an inundated drainage swale and is periodically wet. The water data results from the WHG investigation must be included and considered in the pathway analysis. Additionally, the pore water data from the WHG may offer some relevant data on impacts, or lack of, to groundwater from MRS-2.	A, C	This section describes the preliminary conceptual site model for the MRS. No surface water bodies were believed to be present onsite during the planning stage site visit; however, the inundated Target Berm - Ponded DU and the Wet Meadow DU, which were encountered during field work and subsequent expansion of the MRS boundary, are described in the Contaminant Fate and Transport section (Section 6) as well as the HHRA as findings during the RI. Discussion of WHG surface water and porewater data have been added to		

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4	E.Melnyk-DEC	5-1	5 - RI Results	2-6	Data from the NYSDEC and WHG investigations must be added to the report as necessary for a comprehensive summary of available data for use in assessing the levels and extent of contaminants of concern at the site and the subsequent risk analysis and feasibility evaluation.	A, D	Soil, surface water, and porewater data from the NYSDEC and Woods Hole Group investigations have been incorporated into Section 2.4 (Previous Investigations), Section 2.6 (Preliminary Conceptual Site Model), and Section 6.1 (Contaminant Migration; where applicable) to demonstrate how previous investigation data aided in forming the preliminary CSM and sampling approach and assessing contaminant fate and transport for this RI Report.	See response to comment response 10 using 2009 NYSDEC data for the target berm hillside DU and 100 yard firing berm for completing the risk assessments.	See response to comment 2 above.
5	E.Melnyk-DEC	5-2	5.3 - Incremental Sampling Results	68-78	This section should be retitled as Soil Sampling Results and include the soil sample results from 2009 NYSDEC investigation. The discussion of data results from incremental sampling can be included in a new subsection. An additional subsection containing the soil sampling results from 2009 NYSDEC investigation must be added to this report.	A, D	Data from the 2009 NYSDEC investigation has been summarized in the added text in Section 2.4 (lines 209-222) and Section 2.6 (lines 266-269, 275-280). Section 5.3 strictly presents data from samples collected under this RI. We respectfully suggest no change to Section 5 text.		
6	E.Melnyk-DEC	5-4	5.4.1 - 100-Yard Firing Berm DU	54-68	The soil sampling results from 2009 NYSDEC investigation for this DU must be added and utilized in this report. Figure 4.25-2 and Table 4.25-2 from the 2012 Parsons report provides a visual and tabular summary of the 2009 NYSDEC sample results.	A	See response to comment #5. Section 2.4, Section 2.6, and Section 6.1 have been revised to include data from the 2009 NYSDEC and 2011 WHG investigations to summarize how that data assisted in forming the sampling approach, preliminary		
7	E.Melnyk-DEC	5-15	5.4.3 Target Berm-Hillside DU	86--177	The soil sampling results from 2009 NYSDEC investigation for this DU must be added and utilized in this report. Figure 4.25-2 and Table 4.25-2 from the 2011 Parsons report provides a visual and tabular summary of the 2009 NYSDEC sample results.	A	See response to comment #5 and #6.		
8	E.Melnyk-DEC	5-18	New Section 5.6 Water Results	140	A subsection discussion the 2011 Woods Hole Group pore water and surface water results downgradient of MRS-2 must be added to this report as necessary since this data can be used to assess potential surface and groundwater impacts and to support the conclusions on impacts to water quality. Otherwise, surface and groundwater samples from these DUs will be needed to complete the risk assessment with any degree of	A, C	See response to comment #3. Text describing the surface water and porewater data from the Woods Hole Group investigation has been added to Section 2.6 (Preliminary CSM) and Section 6.1 (Contaminant Migration) to describe contaminant fate and transport section.		

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9	E.Melnyk-DEC	6-1	6 - Contaminant Fate and Transport	2-6	The fate and transport evaluation should be re-analyzed to include the data from the 2009 NYSDEC investigation and the 2011 WHG investigation. The surface and pore water data from the WHG investigation can be used to either affirm or revise the conclusions for water. Conceptual site model (CSM) Figure 6-1 may require revision based upon re-evaluation that includes data from the	A	A description of the soil sample data from the 2009 NYSDEC investigation has been added to Section 2.4 (lines 209-213) to better demonstrate how previous investigations informed the sampling strategy for this RI, and a description of the surface water and shallow groundwater data from the 2011 WHG investigation has been added to Section 2.4 (lines 214-223).		
10	E.Melnyk-DEC	7-1	7 - Risk Assessment	2-7	The risk assessment evaluation must be re-analyzed to include the data from the 2009 NYSDEC investigation and the 2011 WHG investigation. The surface and pore water data from the WHG investigation could potentially affirm or revise the conclusions for water at the DU.	A/D	Per the UFP-Work Plan/QAPP for this RI, the RI report will use only data collected during the RI for risk assessment purposes (see response to comment #4). The Work Plan establishes that RI collected data, specifically ISM sample data, would be used to assess risk at the Camp O'Ryan MRS 2. Worksheet #11 of the QAPP states "For this RI, the risk-based assessment will use results from incremental samples collected from each DU." Secondary data limitations preclude using data from previous investigations in the quantitative risk assessment because these data do not meet the data quality objectives of the RI. Past data have been used to inform the Preliminary CSM (Section 2.6) and support the sampling approach (as per the Work Plan/QAPP). Discussion of surface water and porewater data collected from the referenced investigations has been added to Section 2.4 (Previous Investigations), Section 2.6 (Preliminary CSM), and Section 6 (Contaminant Fate and Transport).	References to previous investigations and evaluations have been noted in section 2.4; however, the data from the previous investigations have not been compiled and utilized in the human and ecological risk assessments because it was noted that the data did not meet RI data quality objectives. Though this may be factor to consider, it is still relevant data that requires consideration in the human health risk evaluations. Some of this data represents Maximum Detected Concentrations (MDCs) for lead as it contains results indicating hazardous levels of leachable lead at the target hill-side DU and the 100 firing berm DU. Additionally, since the RI was not fully implement on the target berm hillside DU due to steep terrain and safety concerns during field sampling, a significant area likely containing the greatest level of contamination from small arms fire activity is not accounted for leaving a large gap in the site data. Using the 2009 NYSDEC data for the target berm provides information to partially fill the data gap. This is relevant for human health risk assessments and will be a factor in assessing remedial action goals and objectives for the site.	See response to comment 2 above.

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11	E.Melnyk-DEC; S. Lawrence-DOH	7-1	7.1 - Human Health Risk Assessment	29-142	The human health risk assessment evaluation should be re-analyzed to include the data from the 2009 NYSDEC investigation and the 2011 WHG investigation. The secondary screening evaluation for using mean concentrations for each DU instead of NYS background screening levels does not conform to health risk assessment criteria and requirements contained in NYSDEC DER-10 Appendix 3B. Therefore, the use of mean concentrations is not accepted and the human health risk assessment should be revised using actual levels when comparing to NYS action levels and DER-10 health risk assessment methodology. The NYSSCOs must be considered ARARs for the site. Given unrestricted nature of the site, unrestricted use SCOs are the ARARs considered for the site	A, D	As previously stated in comment #4, data from previous investigations will not be used for quantitative risk assessment purposes in this RI report; however, the secondary screening step used for lead was removed from the HHRA and the NYSDEC background soil SCO was used to determine which DUs were carried forward for lead modeling. The HHRA (Appendix E) and Section 7 (Risk Assessment) have been modified to state that risk-based screening using the UCL (ISM surface soil) and maximum detected concentration (discrete sediment) were compared to the NYSDEC background soil SCO of 63 mg/kg for lead to determine what DUs are carried forward for lead modeling. With the adoption of the NYSDEC SCO for soil, the secondary screening step was eliminated from the HHRA as it was redundant to the initial screening; as a result, all DUs were carried forward to lead modeling. USEPA's Adult Lead Methodology (ALM) was used to	See response to comment response 10 using 2009 NYSDEC data for the target berm hillside DU and 100 yard firing berm.	See response to comment 2 above.
12	E.Melnyk-DEC	7-6	7.2 Ecological Risk Assessment	2-68	The ecological risk assessment evaluation should be re-analyzed to include the data from the 2009 NYSDEC investigation and the 2011 WHG investigation, and updated as necessary.	D	Please see response to comment #4. Per the Work Plan/QAPP, data from previous investigations will not be used for quantitative risk assessments in this RI report; however, the data has been incorporated into Section 2.4 (Previous Investigations), Section 2.6 (Preliminary CSM), and Section 6 (Contaminant Fate and Transport).	See response to comment response 10 using 2009 NYSDEC data for the target berm hillside DU and 100 yard firing berm.	See response to comment 2 above.
13	E.Melnyk-DEC	8-2	8.3 Health Hazard Evaluation	68-97	The health hazard evaluation model should be re-analyzed to include the data from the 2009 NYSDEC investigation and the 2011 WHG investigation, and update the evaluation as necessary.	A, D	Surface water and porewater data from the 2011 Woods Hole Group Preliminary Site Investigation Report has been added to the MRSP HHE module tables, specifically Tables 21, 22 and 24. ISM data continues to be used for the surface soil HHE module	See response to comment response 10 using 2009 NYSDEC data for the target berm hillside DU and 100 yard firing berm..	See response to comment 2 above.

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14	E.Melnyk-DEC	9-1	9 - Summary and Conclusion	2-20	General Comment: The summary and conclusions may require revision following re-analysis that includes data from the 2009 NYSDEC investigation and the 2011 WHG investigation. Following the review of the data and conclusions for the 100 firing berm, the investigation of the 200 yard firing berm appears necessary and the investigation of MRS-2 is incomplete.	A, D	Data from previous investigations has not been used for quantitative risk assessment purposes (see response to comment #4); however, the data has been summarized to support the Preliminary CSM and fate and transport discussions (Sections 2.6 and 6.1 respectively). Additionally, the HHRA has been revised per response to comment #11. The conclusions of the updated HHRA did not change the conclusions of the RI. Section 9.1.6 of the Summary and Conclusions Section was updated in include the results of the updated HHRA. The 200 yard Firing Berm DU has been	See response to comment response 10 using 2009 NYSDEC data for the target berm hillside DU and 100 yard firing berm..	See response to comment 2 above.
15	E.Melnyk-DEC	9-1	9.1.1 100 Yard Firing Berm DU	27 - 34	The summary and conclusions may require revision following re-analysis that includes data from the 2009 NYSDEC investigation.	A, D	The HHRA and SLERA will not be revised to use data from previous investigations per the UFP-WP/QAPP; however, the HHRA was revised per response to comment #11. Although additional DUs were assessed using lead modeling, the RI conclusions remain unchanged.	See response to comment response 4 using 2009 NYSDEC data for the target berm hillside DU and 100 yard firing berm.	See response to comment 2 above.
16	E.Melnyk-DEC	9-2	9.1.2 Target Area DU	36 - 44	The summary and conclusions may require revision following re-analysis that includes data from the 2009 NYSDEC investigation.	A, D	Please see response to comment #15.	See response to comment response 4 using 2009 NYSDEC data for the target berm hillside DU and 100 yard firing berm.	See response to comment 2 above.
17	E.Melnyk-DEC	9-2	9.1.3 Target Berm - Hillside DU	46 - 59	The summary and conclusions may require revision following re-analysis that includes data from the 2009 NYSDEC investigation.	A, D	Please see response to comment #15.	See response to comment response 4 using 2009 NYSDEC data for the target berm hillside DU and 100 yard firing berm.	See response to comment 2 above.
18	E.Melnyk-DEC; S. Lawrence-DOH	ES 1 - 19	Executive Summary	2 - 210	The Executive Summary should be revised based upon the above comments and revision to the body of the report. The NYSSCOs must be considered ARARs for the site. Given unrestricted nature of the site, unrestricted use SCOs are the ARARs considered for the site	A, C	Although the HHRA was revised to perform lead modeling for all the DUs, the conclusions of the RI remain unchanged. The Executive Summary was revised to include the findings of the updated HHRA. NYSSCOs will be considered for ARARs during the forthcoming FS for this MRS.		

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19	E.Melnyk-DEC; S. Lawrence-DOH	Appendix E	Human Health Risk Assessment	2 - 119+++	The human health risk assessment must include the data from the 2009 NYSDEC investigation and the 2011 WHG investigation, and update the assessment as necessary. The secondary screening evaluation for using mean concentrations for each DU instead of NYS background screening levels does not conform to health risk assessment criteria and requirements contained in NYSDEC DER-10 Appendix 3B. Therefore, the use of mean concentrations is not accepted and the human health risk assessment should be revised using actual levels when comparing to NYS action levels and DER-10 health risk assessment methodology. The NYSSCOs must be	A, D	See response to comment #11. NYSSCOs will be evaluated as ARARs during the forthcoming FS for this MRS.	See response to comment response 10 using 2009 NYSDEC data for the target berm hillside DU and 100 yard firing berm..	See response to comment 2 above.
20	E.Melnyk-DEC	Appendix F	Screening Level Ecological Risk Assessment		The ecological risk assessment must include the data from the 2009 NYSDEC investigation and the 2011 WHG investigation, and update the assessment as necessary. Section 3.4 notes that the surface soil data from the 2020 sampling were used in this evaluation.	D	Please see response to comment #4.	See response to comment response 10 using 2009 NYSDEC data for the target berm hillside DU and 100 yard firing berm..	See response to comment 2 above.
21	E.Melnyk-DEC	Appendix G Table 21	HHE Model Groundwater Data Element		This table should be revised to include groundwater data collected during the 2011 Woods Hole Group investigation.	A	Metals concentrations in shallow groundwater samples collected from adjacent downgradient MRSs as a part of the 2011 Woods Hole Group Preliminary Site Investigation have been added to Table 21 of the MRSPP and a note added		
22	E.Melnyk-DEC	Appendix G Table 22	HHE Model Surface Water - Human Endpoint Data Element		This table should be revised to include surface water data collected during the 2011 Woods Hole Group investigation.	A	Metals concentrations in surface water samples collected from adjacent downgradient MRSs as a part of the 2011 Woods Hole Group Preliminary Site Investigation have been added to Table 22 and Table 24 of the MRSPP and a note added regarding the source of the data. Section 8.3 of the main RI text (Health Hazard Evaluation Module) has been revised accordingly.		
23	E.Melnyk-DEC	Appendix G Table 24	HHE Model Surface Water - Ecological Endpoint Data Element		This table should be revised to include surface water data collected during the 2011 Woods Hole Group investigation.	A	See response to comment #22.		

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24	E.Melnyk-DEC	Appendix G Table 26	HHE Model Surface Soil - Data Element Contaminant Hazard Factor		This table must be revised to include surface soil data collected during the 2009 NYSDEC investigation as hazardous levels of lead were detected	D	Because soil data was collected from DUs during the RI using ISM, a method that provides a best estimate of realistic exposure point concentrations, the RI report ISM data are more appropriate and has been retained for use in Table 26.	NYSDEC does not agree with that position. The 2009 NYSDEC data provides realistic data from areas that pose an exposure concern and is from areas not sampled during the target berm hillside DU. See response to comment response 10 using 2009 NYSDEC data for the target berm hillside DU and 100 yard firing berm.	The MRSPP table has been revised to include surface soil data collected during the 2009 NYSDEC SI. The changes are reflected in the scores on Table 26, 28 and 29. The overall MRSPP priority score changed from a 5 to a 4.
25	E.Melnyk-DEC	Appendix G Table 28	Determining the HHE Module Rating		This table should be re-evaluated based upon re-evaluations of preceding table revision noted above.	A	MRSPP Table 28 was updated to include the revisions made in response to comments #21, 22, and 23. The HHE module rating remains a D.		
26	E.Melnyk-DEC	Appendix G Table 29	MRS Priority		This table should be re-evaluated based upon re-evaluations of preceding table revision noted above.	A	Because the rating of the HHE module did not change as a result of the revisions made, the overall MRS priority rating remains unchanged as a 5.		
EDITORIAL COMMENTS									
1	E.Melnyk-DEC	9-1	9.1.1 100 Yard Firing Berm DU	26	The title needs to be corrected (change "target" to "firing").	A	The title has been changed to read, "100-yard Firing Berm DU"		
2	E.Melnyk-DEC	Appendix G, Table A	Description of Receptors		The last paragraph of the "Description of Receptors" notes that MRS is primarily used for debris storage. This should be corrected to note that a small portion of the MRS that resides on the subdivided parcel owned by King Brothers Masonry Contracting is used for debris storage.	A	The sentence has been changed to read, "A small portion of the MRS is located on the subdivided parcel owned by King Brothers Masonry Contracting and is used primarily for debris storage; the remainder of the revised MRS is part of a larger, undeveloped and forested swath of land. Given these conditions, there is potential for the following receptors..."		
3	E.Melnyk-DEC	Appendix G, Table 6	EHE Module - Population Density		Correct the notation to note that the rural community of Wethersfield is a town (not a city).	A	"City" has been changed to "Town"		
4 (new)	E.Melnyk-DEC	General	Data Deliverable		NYS requires an electronic data deliverable (EDD) of environmental data for upload to the NYS EQUIS database. Please submit an EDD package for laboratory data for soil and sediment samples collected during the RI. This comment was provided in the 2/28/2021 NYSDEC comment letter, and a response was not provided in writing or in this comment-response matrix table.	D	Worksheet #36 of the approved Final Work Plan/UFP-QAPP identifies Environmental Restoration Information System (ERIS) and comma separated value (.csv) EDDs as the data deliverable requirements for this remedial investigation. Thus, the EDD will not be re-formatted for upload into the NYS EQUIS database. The EDD is available upon request as is.		