

**Rocky Mountain Arsenal Superfund Site
Adams County, Colorado
Fifth Five-Year Review Report**

Protectiveness Statements

The protectiveness of the remedial actions in both the On-Post and Off-Post OUs in terms of human health and the environment are discussed below. All controls are in place to adequately minimize risks.

On-Post Operable Unit

The remedy for the On-Post (OU3) currently protects human health and the environment because remedial activities completed to date have adequately addressed all exposure pathways that could result in unacceptable risks. Placement of contaminated soils and debris in the Hazardous Waste Landfill (HWL), Enhanced Landfill (ELF), and Basin A has been completed with engineered cap/cover systems in place. These sites have specific groundwater monitoring and ongoing cover Operation & Maintenance (O&M) programs that monitor remedy effectiveness. Fences and signs are maintained around these areas and institutional controls prohibiting intrusive activities are in place to prevent exposure. Groundwater contamination is being treated to remediation goals at the RMA boundary (NWBCS and NBCS) and at the Basin A Neck System, and operation and maintenance plans are in place to ensure long-term protection.

The long-term and operational groundwater and surface water monitoring programs effectively monitor contaminant migration pathways on-post and ensure effective operation of the treatment systems as well as track off-post contamination trends. Monitoring programs were completed for emerging contaminants. Groundwater treatment system containment system remediation goals (CSRGs) and long-term monitoring requirements were revised for 1,4-dioxane and n-Nitrosodimethylamine (NDMA) to maintain protectiveness.

Monitoring for perfluorooctanoic acid (PFOA)/perfluorooctanesulfonic acid (PFOS) indicates that RMA is not a significant source and no drinking water sources are impacted. The long-term biomonitoring program was completed during the FYR period and review of the tissue and soil sample results demonstrate the remedy is protective of wildlife. Completion of the Monitoring Completion Report is pending. Risks to human health and the environment are also minimized through implementation of land use controls (LUCs) restricting land and groundwater use to prevent exposures. The Land Use Control Plan (Navarro 2013) requirements were effectively implemented and monitoring of LUCs to ensure protectiveness continued during this FYR period. To be protective in the long-term, further evaluation of potential bypass at the NWBCS Northeast Extension needs to be completed and system adjustments made as necessary, and the Prairie Gateway Planned Unit Development (PUD) needs to be revised to resolve conflicts with the existing land use restrictions.

Off-Post Operable Unit

The remedy for the Off-Post (OU4) currently protects human health and the environment because remedial activities completed to date have adequately addressed all exposure pathways that could result in unacceptable risks in these areas. Groundwater contamination is being treated

to Off-Post ROD remediation goals at the RMA boundary as well as at the Off-Post Groundwater Intercept Treatment System (OGITS). Chloride and sulfate concentrations are attenuating toward their CSRGs. Groundwater monitoring plans and system operation and maintenance plans are in place to ensure long-term protection. The required institutional control, notifying well permit owners of potential groundwater contamination, remains effective in its implementation. To be protective in the long-term, monitoring adjustments are needed for the off-post monitoring network, particularly downgradient of the NWBCS, to maintain adequate coverage for monitoring contaminant plumes. The Northern Pathway System (NPS) needs to be upgraded to address the existing dieldrin plume and revised easement. Contamination present in private well 359D needs to be further evaluated.

Issues and Recommendations Identified in the Five-Year Review:

OU(s): On Post (3)				
Issue Category: Remedy Performance				
Issue: Dieldrin is present above the practical quantitation limit in the Northwest Boundary Containment System Northeast Extension downgradient performance wells. System bypass could be a contributing factor for these exceedances.				
Recommendation: Additional evaluation of system performance and potential flow north of the slurry wall to identify potential system modifications necessary to maintain plume capture.				
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	Federal Facility	EPA/State	June 30, 2023

OU(s): On Post (3)				
Issue Category: Remedy Performance				
Issue: Uses identified in the Prairie Gateway PUD are inconsistent with the land use restrictions.				
Recommendation: Continue coordination with Commerce City to ensure appropriate changes are made to the Prairie Gateway PUD to resolve apparent conflicts with the LUCs.				
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	Federal Facility	EPA/State	September 30, 2024

Issues and Recommendations Identified in the Five-Year Review (Continued):

OU(s):Off Post(4)	Issue Category: Monitoring			
	Issue: Dieldrin is present above the practical quantitation limit in the off-post area downgradient of the Northwest Boundary Containment System. A permanent monitoring network has not been identified.			
	Recommendation: Review the off-post monitoring network to determine locations suitable for long-term monitoring of the dieldrin plume downgradient of the Northwest Boundary Containment System.			
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	Federal Facility	EPA/State	March 31, 2022

OU(s): Off Post(4)	Issue Category: Institutional Controls			
	Issue: Diisopropylmethyl phosphonate (DIMP) concentrations exceed the Colorado Basic Standard for Groundwater in private drinking water well 359D.			
	Recommendation: Additional evaluation of well 359D and other private wells in the area to determine the most appropriate action for providing an alternate water source.			
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	Federal Facility	EPA/State	December 31, 2021

OU(s): Off-Post (4)	Issue Category: Monitoring			
	Issue: Dieldrin was identified above the practical quantitation limit in the gap between modified Northern Pathway System extraction wells 37817 and 37818. The lease is expiring for the area where original system wells capture this portion of the plume.			
	Recommendation: Construct system upgrades for extraction and recharge to address dieldrin plume in the gap area. Finalize lease for modified Northern Pathway System location.			
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	Federal Facility	EPA/State	June 1, 2022

Issues and Recommendations Identified in the Five-Year Review (Continued):

OU(s): Off-Post (4)	Issue Category: Monitoring			
	Issue: Off-post monitoring wells have been damaged or are unsafe to sample due to road construction or increased traffic.			
	Recommendation: Review off-post monitoring network to ensure adequate coverage for monitoring off-post contaminant plumes and identify appropriate safe locations for replacement wells.			
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	Federal Facility	EPA/State	December 31, 2021