

ROCKY MOUNTAIN ARSENAL 2015 FIVE-YEAR REVIEW



Prepared for :
City Council of Commerce City
August 15, 2016



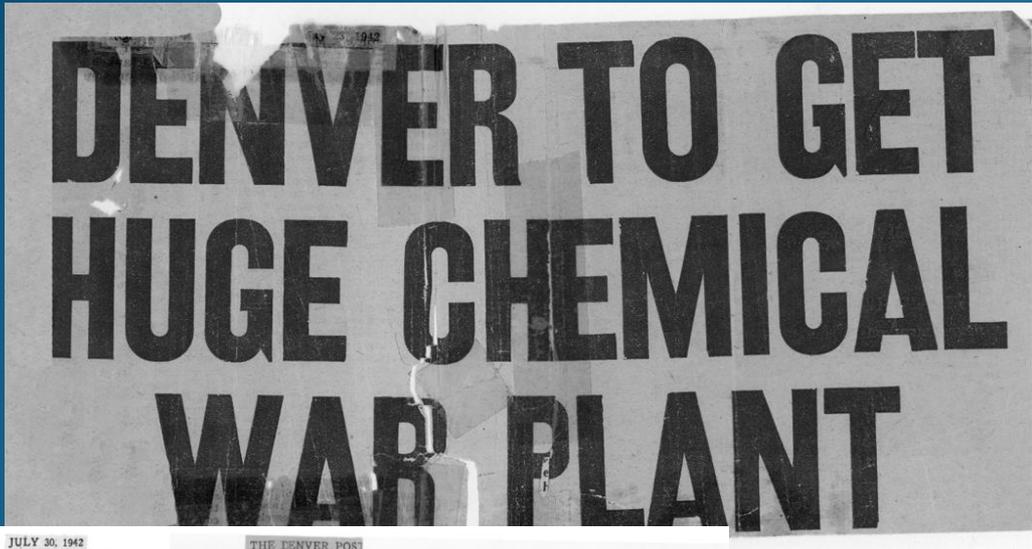
AGENDA

- Rocky Mountain Arsenal (RMA) history and cleanup
- Current status
- Five-Year Review
 - Purpose
 - Components
 - Issues
 - Protectiveness determination
 - Next steps
- Questions



RMA HISTORY

- Built following attack on Pearl Harbor
- Produced chemical weapons as deterrent
- Private companies, such as Shell Chemical Co., later leased some facilities to produce agricultural chemicals



JULY 30, 1942 THE DENVER POST

FIRST OF 200 FAMILIES MOVING FROM ARSENAL

FORTY ARE BUSY CLEARING WAY FOR WRECKERS

It's Moving Day for Residents on Site of Rocky Mountain Arsenal

When Uncle Sam decided to build a \$6-million-dollar war plant in Adams county, north of Denver's municipal airport, he notified those who lived in one part of the area they must move by Aug. 1. Thursday, with only six more days to go before the deadline, the exodus was up in full swing. About forty families had to leave their homes. Some of the moving day scenes are shown here. Every manner of conveyance was brought into use. Some moved in one load, some piecemeal, some together from, some to the city, and some to live with relatives until they could find a new home. The area to be cleared by Saturday approximates 5,000 acres right in the heart of the arsenal site. Others among the 441 owners and tenants affected will go later as construction spreads to other parts of the arsenal location.

Adams County Residents For Years Quit Homes In Project Area.

In the path of rising construction crews at the army's huge Rocky Mountain arsenal in Adams county, the first forty of more than 200 families have been busy this week with the task of reducing their belongings and moving to new homes.

They vacated from an area of eight acres within the scope of the arsenal project but many of the owners of a few nearby residences, moved that in their case it is a gradual exodus that will take them long periods to quit their homes.

Mr. and Mrs. George O'Neil and their two daughters, Martha, 24, and Ethel, 17, are among those who have moved to the arsenal. The family from the nearby town of Aurora, Colo., is also moving to more like this. "We have three boys, four girls, and have about every one so it will be hard to find a place to live."

Mr. O'Neil and his two daughters had to do the work of the moving the day's work as a makeshift conveyance to the arsenal place. They will move to live with his family.

"We have been driving all week," the mother said, "I worked at a



RMA HISTORY

- Production ends (1982)
- EPA places site on National Priorities (Superfund) List (1987)
- Remedial Investigation / Feasibility Study (1983-1995)
- RMA National Wildlife Refuge Act passed (1992)
- Off-Post and On-Post Records of Decision (1995, 1996)
- Surface remedy completed (2010)



RMA REMEDY DESIGN

Rocky Mountain Arsenal and the National Wildlife Refuge



Groundwater Treatment

Structures Demolition



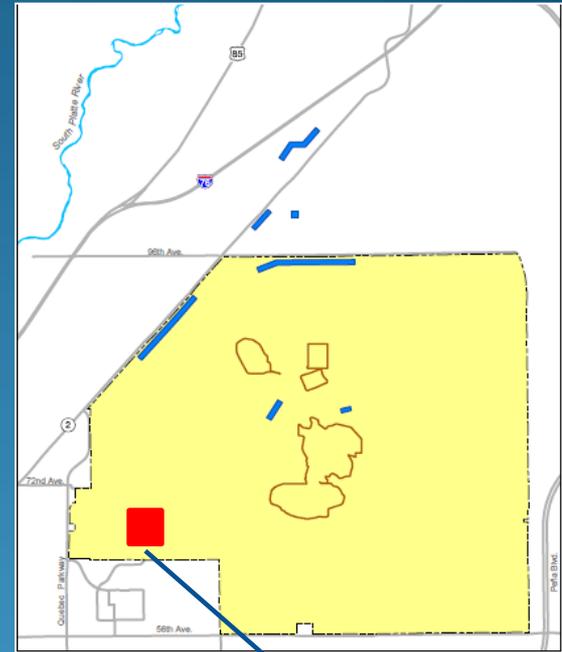
Soil Remediation

Revegetation

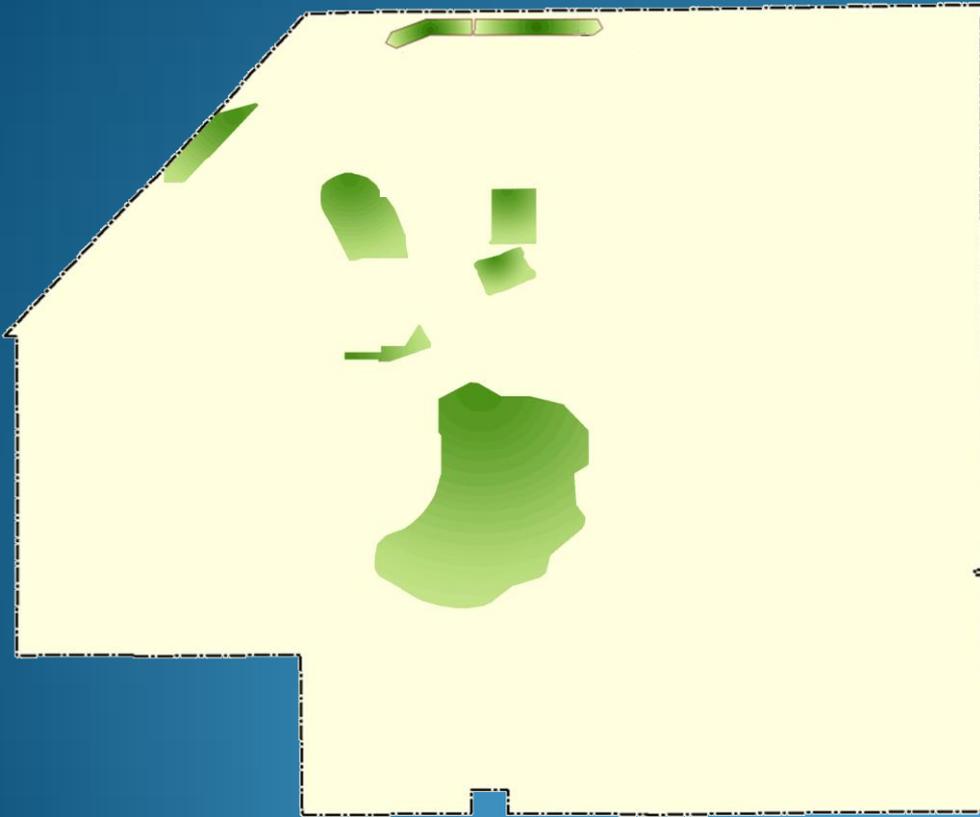


RMA REMEDY SUCCESSES

- Highest OSHA workplace safety honors
- On-time completion
- 15,000+ acres removed from Superfund List
- Refuge vision fulfilled:
 - 300,000+ visitors annually
 - Conservation of bison, black-footed ferrets, bald eagles, etc.
- Groundwater treatment progress (e.g., Railyard Treatment System closure)



CURRENT STATUS



- Operate groundwater intercept and treatment systems
- Manage and maintain landfills and covers
- Ongoing monitoring and collaboration with Regulatory Agencies

PURPOSE

- Comprehensive review, supplements ongoing monitoring
- Required for all Superfund sites where waste left on site
- Ensures remedy still protective of human health, environment
- Army-led with participation from:
 - Environmental Protection Agency
 - Colorado Department of Public Health and Environment
 - Tri-County Health Department
 - Shell Oil Co.
 - U.S. Fish and Wildlife Service

SCOPE

Designed to answer three questions:

1. Is the remedy functioning as intended?
2. Are the assumptions used at the time of the remedy selection still valid?
3. Has any other information come to light (e.g., new environmental standards) that could call into question the protectiveness of the remedy?

COMPONENTS

Covers period from 2010 to 2015 and includes six components:

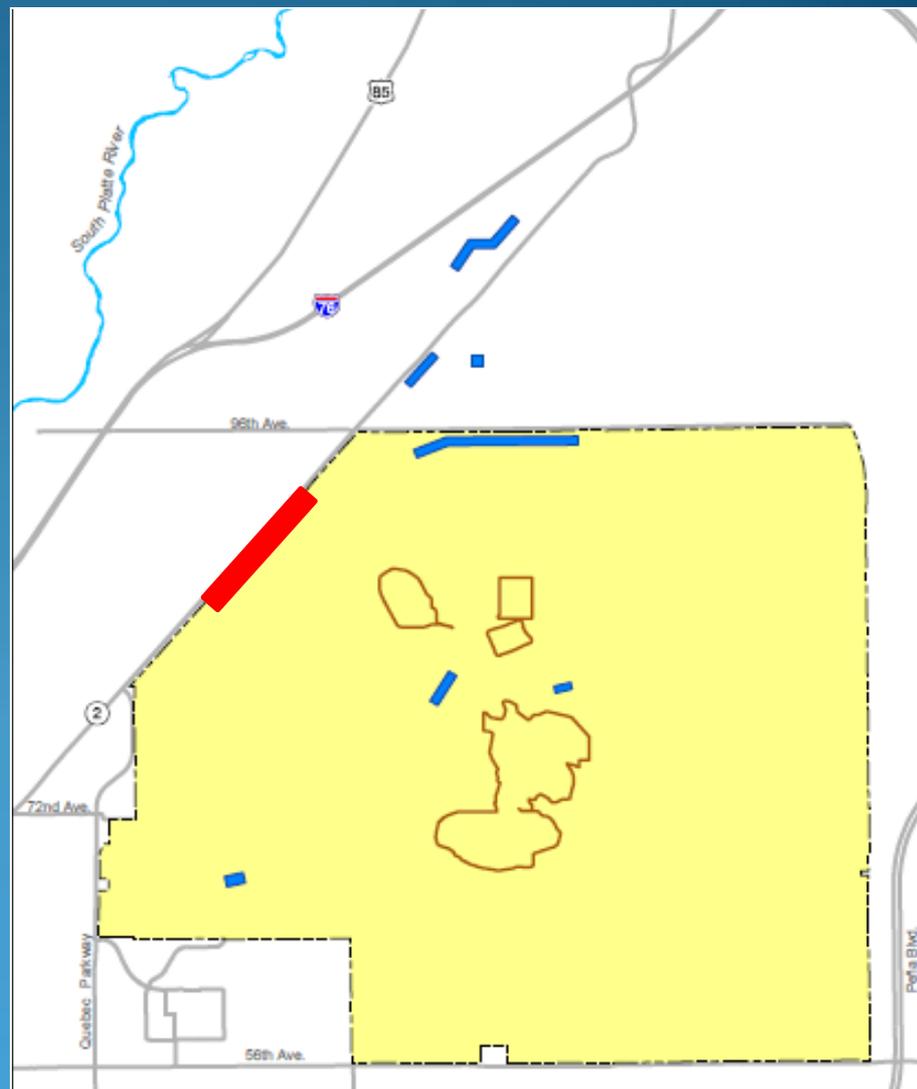
1. Community involvement
2. Document review
3. Data analysis
4. Site inspection
5. Interviews
6. Protectiveness determination

ISSUES

- Traditionally defined as items that could affect current or long-term protectiveness of the remedy
- Seven issues identified in previous Five-Year Review (2010)
 - Five resolved
 - Two carried forward (1,4-Dioxane, land-use controls)
- Fifteen issues identified in 2015 Five-Year Review
 - No issues affect current protectiveness
 - Seven issues do not impact protectiveness but included for tracking purposes
 - Eight issues could affect future protectiveness

ISSUES: GROUND AND SURFACE WATER

- Detections of Dieldrin above treatment goal at Northwest Boundary Containment System



ISSUES: GROUND AND SURFACE WATER

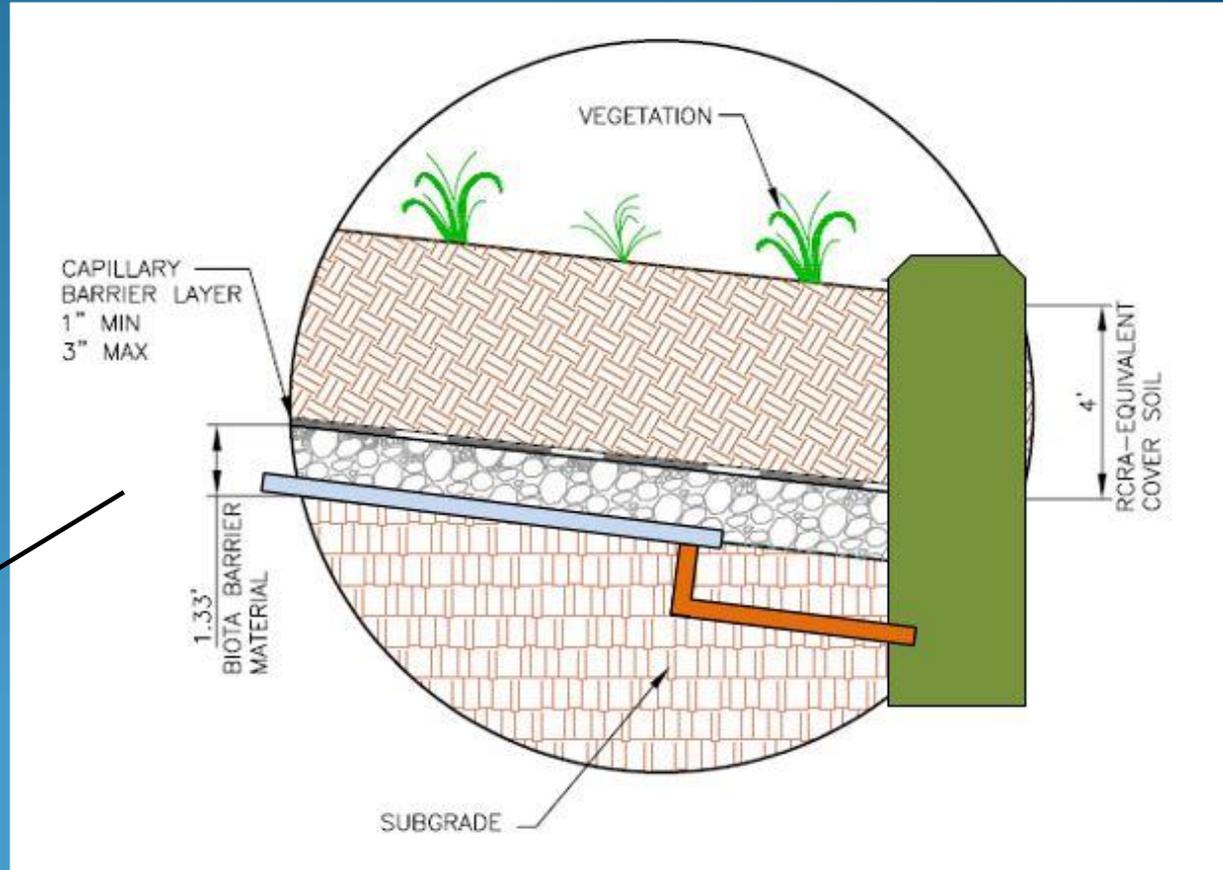
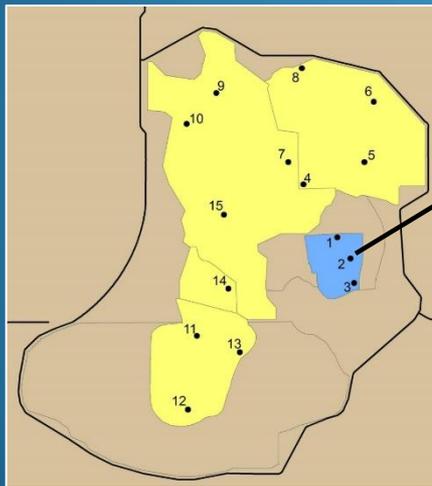
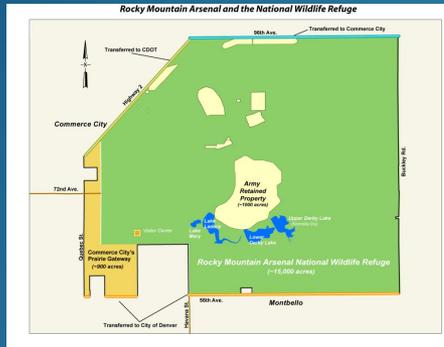
- Replacement of off-site drinking water well
- New contaminants identified for evaluation
 - 1,4-Dioxane (site-wide)
 - n-Nitrosodipropylamine (site-wide)
 - 1,1,2,2-Tetrachloroethane (Basin A Neck Treatment System)
- Effectiveness of Bedrock Ridge Extraction System
- Detections of metals in some RMA surface water

ISSUES: COVER SYSTEMS MANAGEMENT

- Small sinkholes (most less than 1 cubic foot) in northern portion of the Integrated Cover System
- Groundwater levels have not met design goals for following portions of Integrated Cover System:
 - Shell Disposal Trenches
 - Army Disposal Trenches
 - Lime Basins

ISSUES: COVER SYSTEMS MANAGEMENT

- Percolation through Shell Disposal Trenches Cover



ISSUES: OTHER

- Land-use controls:
 - Consistency between RMA land-use restrictions and land uses included in Prairie Gateway Planned Unit Development (PUD)
 - Maintenance of signs around Site SSA-3b to meet Land-Use Control Plan requirements
 - Further evaluation of some RMA land transfers outside federal ownership and their consistency with Federal Facility Agreement and Record of Decision (ROD)
- Detection of Dieldrin in former Basin C soil above ROD criteria
- Completion of Biota Monitoring Program (starlings, kestrels)

PROTECTIVENESS DETERMINATION

Determination selected from these options:

1. Not protective, unless follow-up actions taken
2. Protectiveness cannot be determined until more information obtained (deferred protectiveness)
- 3. Protective in short-term, with follow-up actions needed to remain protective long-term**
4. Protective

NEXT STEPS

- Public comment period (July 11-Aug. 24)
- Army responds to public comment and prepares final report (Aug. 25-Sept. 30)
- EPA issues its concurrence or separate protectiveness determination (Oct. 5)



Questions?

**Contact the RMA:
303.289.0300**

