



# Pueblo Chemical Agent-Destruction Pilot Plant Overview

## Summary

The Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) completed destruction of the U.S. chemical weapons stockpile at the U.S. Army Pueblo Chemical Depot (PCD) in Colorado in 2023 and is currently in the closure phase. After extensive decontamination and cleaning activities, the U.S. Army has determined there is no chemical-agent liability at the PCAPP site.

The plant destroyed more than 2,613 U.S. tons of mustard agent contained in projectiles and mortar rounds using neutralization followed by biotreatment and was augmented by Explosive Destruction Technology (EDT) to destroy problematic munitions.



PCAPP Facility Aerial Perspective

On June 22, 2023, the last munition in the chemical weapons stockpile in Colorado, an overpacked 155mm projectile, was destroyed at PCAPP. The Blue Grass Chemical Agent-Destruction Pilot Plant in Kentucky destroyed the final munition in the nation's declared chemical weapons stockpile July 7, 2023.

The Program Executive Office, Assembled Chemical Weapons Alternatives (PEO ACWA), a Department of War organization originally established by Congress under Public Law 104-208, oversaw the safe and environmentally compliant destruction of the nation's chemical weapons stockpile stored in Colorado and Kentucky and is now responsible for closing both sites.

In Colorado, PEO ACWA selected the Bechtel Pueblo Team, consisting of Bechtel National, Inc., Amantum, Battelle Memorial Institute and GP Strategies, to design, build, pilot-test, operate and close PCAPP. At the peak of operations, more than 1,600 employees worked at PCAPP.

## Background

In the 1950s, the 23,000-acre Pueblo Ordnance Depot (later redesignated as PCD), began storage of chemical weapons containing mustard agent and accounted for approximately 8% of the original declared U.S. chemical weapons stockpile. PCD was deactivated Sept. 12, 2024, after completing its 82-year storage mission, but the site continued to operate as the U.S. Army Chemical Materials Activity-West to support the closure of PCAPP.

Destruction of the stockpile was a requirement of the Chemical Weapons Convention, a global multilateral arms control treaty enforced by the Organisation for the Prohibition of Chemical Weapons (OPCW) in The Hague, the Netherlands, which oversaw the destruction process at PCAPP international inspectors.

## Chemical Weapons Overview

### *Chemical Weapons in Colorado*

The Colorado chemical weapons stockpile originally comprised 2,613.2 U.S. tons of mustard agent in 778,078 155mm and 105mm projectiles and 4.2-inch mortar rounds. In addition to munitions, the stockpile included Department of Transportation (DOT) bottles of mustard agent.

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## Destruction of the Stockpile in Colorado

PCAPP used neutralization followed by biotreatment to destroy the mustard agent. Biotreatment consisted of breaking down the product of neutralization, called hydrolysate, by microbial digestion. Some hydrolysate was also shipped to a permitted hazardous waste facility near Port Arthur, Texas, for final destruction. An EDT called the Explosive Destruction System (EDS) augmented the plant to destroy problematic munitions that could not be easily destroyed by automated equipment, and Static Detonation Chamber (SDC) technology was used to destroy mortar rounds and projectiles that were found unsuitable for processing through the main plant. Non-contaminated energetics removed from the munitions as part of the destruction process were destroyed in an SDC at the Anniston Field Office at the Anniston Army Depot in Alabama.

## Environmental Protection

PEO ACWA's highest priority has been and always will be to ensure the protection of the workforce, community and environment. The PCAPP team fulfilled its commitment by adhering to local, state and federal laws and regulations. These include the Resource Conservation and Recovery Act (RCRA), which gives the U.S. Environmental Protection Agency (EPA) authority to control hazardous waste, including generation, transportation, treatment, storage and disposal, to protect human health and the environment.

PCAPP operated under a RCRA hazardous waste permit issued by the Colorado Department of Public Health and Environment (CDPHE), as well as other applicable environmental regulations and permits administered by state regulatory agencies and the EPA, including the Clean Air Act, National Environmental Protection Act and Toxic Substances Control Act. PCAPP's closure phase continues to be governed by local, state and federal laws and regulations.

## Major Program Milestones

- 2004** – Groundbreaking ceremony marked start of site construction
- 2010** – Systemization began
- 2012** – Construction completed
- 2015** – Chemical stockpile destruction began with EDS
- 2016** – Main plant operations began
- 2022** – Static Detonation Chamber destruction operations began
- 2023** – Destruction operations completed with final munitions destroyed at the main plant June 16 and SDC complex June 22
- 2024** – Closure phase began
- 2025** – Decontamination, disassembly, packaging, and transport of the three SDC units occurred for reuse by U.S. Army organizations in Alabama and Maryland



Illustration of chemical weapons of the U.S. stockpile formerly in Colorado

Munition	Agent Type	Quantity	Destruction Technology
4.2-inch Mortar Round	HD	76,722	EDS*/SDC**
4.2-inch Mortar Round	HT	20,384	EDS*/SDC**
105mm Projectile	HD	383,418	EDS*/SDC**/ Neutralization Followed by Biotreatment
155mm Projectile	HD	299,554	EDS*/SDC**/ Neutralization Followed by Biotreatment
DOT*** Bottle	HD/HT	11***	EDS*
<b>TOTAL</b>		<b>780,078</b>	

\* Explosive Destruction System

\*\* Static Detonation Chamber

\*\*\* Department of Transportation (DOT) bottles are not included in the original declaration quantities, since they contain samples/waste from declared stockpile



### Closure

Following the completion of chemical weapons destruction operations in 2023, PCAPP entered the closure phase when state environmental regulators approved the PCAPP closure plan March 29, 2024. Closure is the final phase of the project and is sequenced to occur in compliance with all permits, regulations and requirements. Closure encompasses disposal of agent-contaminated and non-contaminated secondary waste; facility and equipment decontamination; and decommissioning and demolition of facilities in accordance with public law and U.S. Army direction. The last stage of closure is the closeout of contracts and environmental permits.

Any buildings used directly for chemical agent destruction, such as the main plant Agent Processing Building, will be decontaminated and demolished. Other buildings and infrastructure may be retained by U.S. Army Base Realignment and Closure (BRAC) for transfer to PuebloPlex, the local redevelopment authority. Buildings and infrastructure not retained will be demolished. As part of the disposition process, personal property, such as uncontaminated or decontaminated equipment, tools, excess parts and office furniture, will follow government dispositioning regulations.

Closure activities at PCAPP are expected to conclude in Fiscal Year 2028.

### Partners

Many organizations worked in partnership with the PCAPP team to successfully complete the destruction mission and several continue to assist with the safe and environmentally protective closure of the facility. Those organizations include:

- BRAC
- CDPHE
- Centers for Disease Control and Prevention
- Chemical Stockpile Emergency Preparedness Program
- Defense Threat Reduction Agency
- Department of Defense (now DoW)
- EPA
- Joint Project Manager for Elimination
- OPCW
- PCD
- PuebloPlex
- U.S. Army Chemical Materials Agency (now Activity)
- U.S. Army Combat Capabilities Development Command Chemical Biological Center (formerly Edgewood Chemical Biological Center)
- U.S. Army Joint Munitions Command
- U.S. Congress
- U.S. Department of State
- U.S. Department of the Army

### Public Involvement

In accordance with Public Law 102-484, the Colorado Chemical Demilitarization Citizens' Advisory Commission (CAC), serves as a bridge between the community and the government by previously providing a forum for exchanging information about chemical weapons destruction and currently the same for the closure phase. For decades, the CAC conducted public meetings to represent community and state interests and facilitate consistent public participation in the program. The commission will remain active through closure at the discretion of the governor of Colorado.

### After PCAPP

PuebloPlex is transitioning the closing CMA-West military base, eventually to include the PCAPP property, to a community asset through redevelopment of the property, support of job creation and enhancement of the tax base. Through BRAC, PuebloPlex is securing from the U.S. Army excess land, buildings and equipment for the development of new economic resources in Pueblo County.