

# ACWA

A PARTNERSHIP FOR SAFE CHEMICAL WEAPONS DESTRUCTION

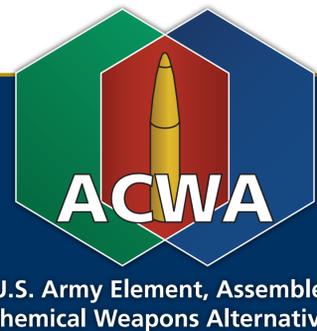
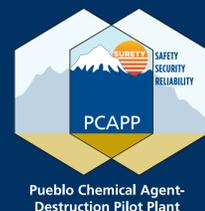
## U.S. CHEMICAL WEAPONS DESTRUCTION ISSUE

Schedule in Calendar Years	2010				2011				2012				2013				2014				2015				2016				2017				2018				2019				2020				2021				2022				2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
 <b>Chemical Materials Agency Projected Schedule</b>	OPERATIONS																																																							
 <b>Pueblo Chemical Agent-Destruction Pilot Plant Current Course of Action</b>	CONSTRUCTION/SYSTEMIZATION				OPERATIONS*				CLOSURE																																															
 <b>Blue Grass Chemical Agent-Destruction Pilot Plant Current Course of Action</b>	CONSTRUCTION/SYSTEMIZATION				OPERATIONS				CLOSURE																																															

**Two potential periods of destruction inactivity exist in the U.S. chemical weapons destruction program:**

- 1** Destruction inactivity between end of U.S. Army Chemical Materials Agency destruction operations and start of Colorado destruction operations (2012 - 2015)
- 2** Destruction inactivity between end of destruction in Colorado and start of operations in Kentucky (2018)

\* NOTE: January 2015 projected start of PCAPP operations reflects Systems Contractor current estimate.



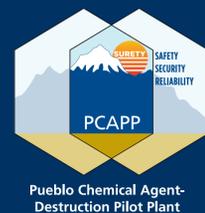
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## ALTERNATIVES CONSIDERED

Schedule in Calendar Years	2010				2011				2012				2013				2014				2015				2016				2017				2018				2019				2020			
PUEBLO, CO	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>ACWA SYSTEMS CONTRACTOR Projected Schedule</b>	CONSTRUCTION/SYSTEMIZATION																PCAPP OPERATIONS								CLOSURE																			
<b>ALTERNATIVE A: EDS, EDT &amp; PCAPP</b>									EDS 538 Overpacks				EDT 16.1%								PCAPP OPERATIONS 83.9%																							
<b>ALTERNATIVE B: EDS &amp; PCAPP</b>									EDS 538 Overpacks				EDS .25%				PCAPP OPERATIONS 99.75%																											
<b>ALTERNATIVE C: EARLY EDT &amp; PCAPP</b>													EDT 16.1%								PCAPP OPERATIONS 83.9%																							
<b>ALTERNATIVE D: ORIGINAL PLAN - PCAPP &amp; EDT for overpacks and rejects</b>																					EDT								PCAPP OPERATIONS															
<b>CHEMICAL MATERIALS AGENCY Projected Schedule</b>	CMA OPERATIONS								DESTRUCTION INACTIVITY																																			

\* NOTE: January 2015 projected start of PCAPP operations reflects Systems Contractor current estimate.



U.S. Army Element, Assembled  
Chemical Weapons Alternatives



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## EXPLOSIVE DESTRUCTION SYSTEM (EDS) AND EXPLOSIVE DESTRUCTION TECHNOLOGY (EDT) APPROACH

**Use Explosive Destruction System (EDS) beginning in 2012 to destroy overpacked chemical munitions; Use Explosive Destruction Technology (EDT) to destroy chemical munitions while PCAPP is coming on line (2014/2015)**

- Two EDS units would be employed in 2012 in advance of PCAPP operations to destroy overpacked munitions and a number of 105mm munitions
- EDT would be constructed earlier than originally planned, concurrent with EDS operations
- Upon start-up of EDT, EDS would close
- EDT would begin destroying 105mm and 4.2 inch munitions and any newly generated overpacked munitions and would continue during PCAPP operations



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## PATH FORWARD

**Environmental assessment concluded all options considered have no significant increase of impact to the environment compared to current mission**

### **EDS/EDT Approach**

- **Increases confidence of completing destruction effort by the 2017 deadline**
- **Reduces risk to the community by destroying the stockpile sooner**
- **Shortens the destruction schedule**



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## CONGRESSIONAL LANGUAGE

### Public Law 99-145

- Destroy U.S. stockpile of lethal chemical agents and munitions while providing
  - maximum protection for the environment, the general public, and personnel involved in the destruction process
  - adequate and safe facilities designed to destroy lethal chemical agents and munitions



Pueblo Chemical Agent  
Destruction Pilot Plant



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## EXPLOSIVE DESTRUCTION TECHNOLOGY (EDT)

EDTs use heat or small controlled detonations inside hardened chambers to destroy the munitions without requiring their disassembly. The three different types of EDT are:

- **Static Detonation Chamber (SDC)**

A nearly spherical, armored, high-alloy stainless steel vessel that uses thermal destruction methods to destroy chemical munitions. The electric heat generated in this containment vessel detonates the munitions in order to destroy the agent and the energetics.



- **Transportable Detonation Chamber (TDC)**

A self-contained system consisting of a detonation chamber, an expansion chamber and an emission control system. Chemical munitions are destroyed in the fully-enclosed chamber by detonation of donor explosives in which each munition is wrapped.



- **DAVINCH (Detonation of Ammunition in a Vacuum-Integrated Chamber)**

A double-walled steel vacuum detonation chamber with an off-gas system. Donor explosives within the near-vacuum chamber are used to detonate and destroy chemical munitions through shock and heat.



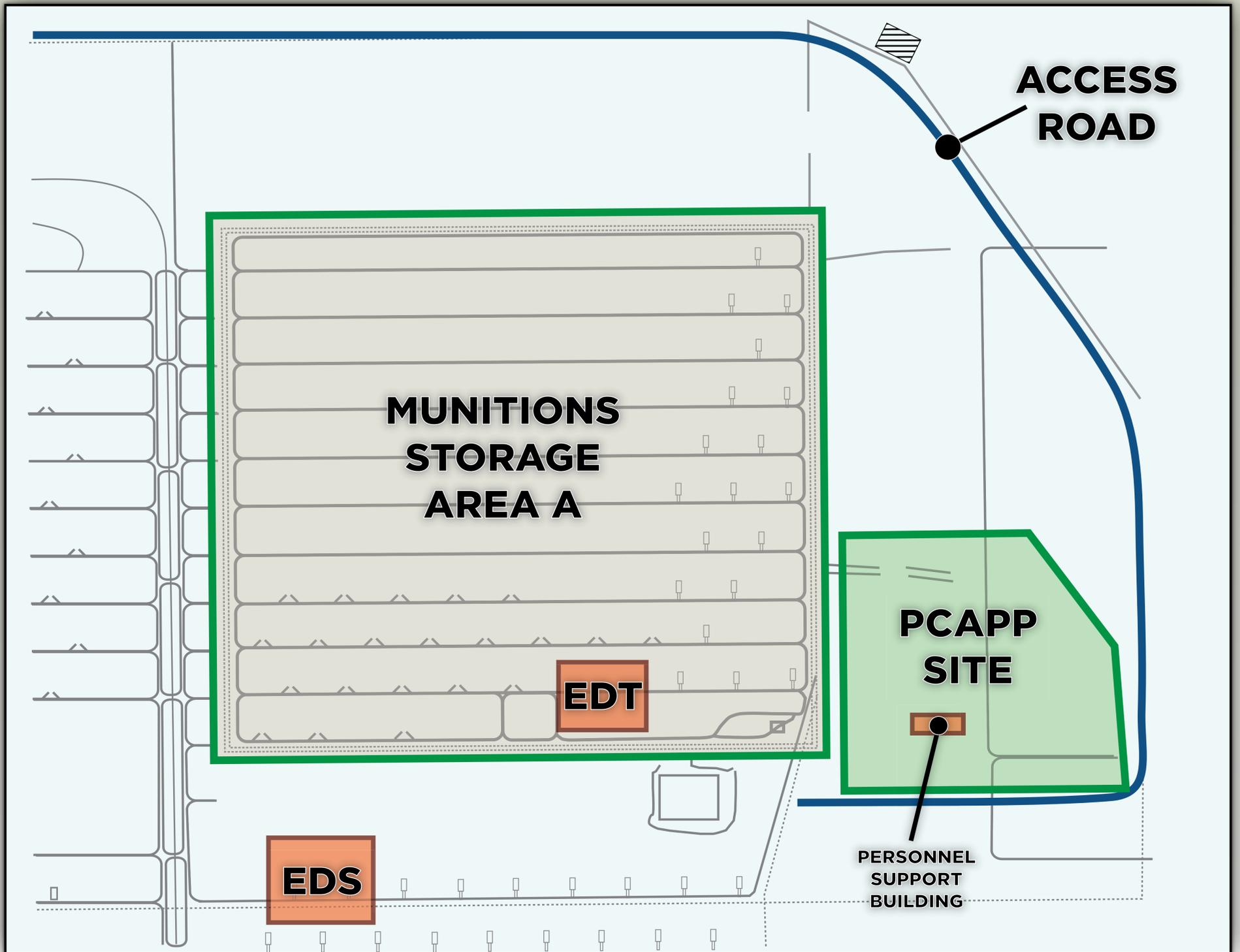
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## EXPLOSIVE DESTRUCTION SYSTEM (EDS)/ SYSTEM (EDS)/ EXPLOSIVE DESTRUCTION TECHNOLOGY (EDT) SITE MAP



Pueblo Chemical Agent  
Destruction Pilot Plant



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# Transportable Treatment Systems

U.S. ARMY CHEMICAL MATERIALS AGENCY

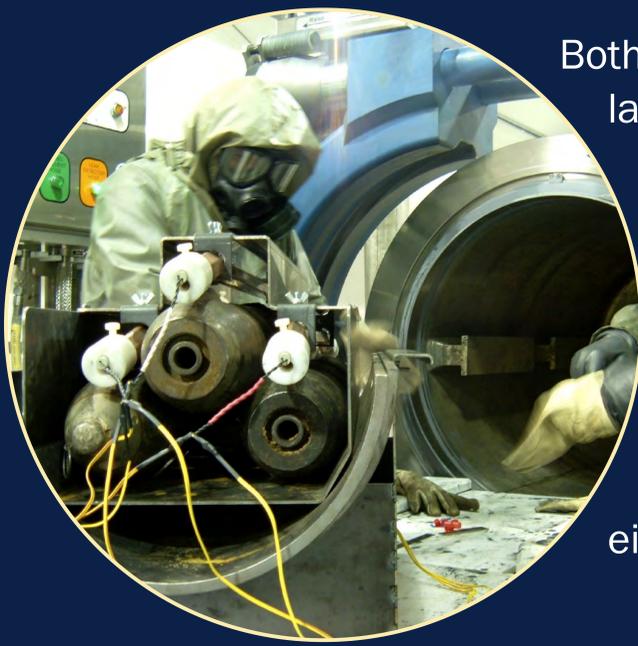
U.S. ARMY NON-STOCKPILE CHEMICAL MATERIEL PROJECT

# EDS

Explosive Destruction System

The Explosive Destruction System (EDS) can support both planned and emergency recovery missions. Since 1999, the U.S. Army Chemical Materials Agency's Non-Stockpile Chemical Materiel Project has built a solid environmental performance and safety record with the EDS through successful missions.

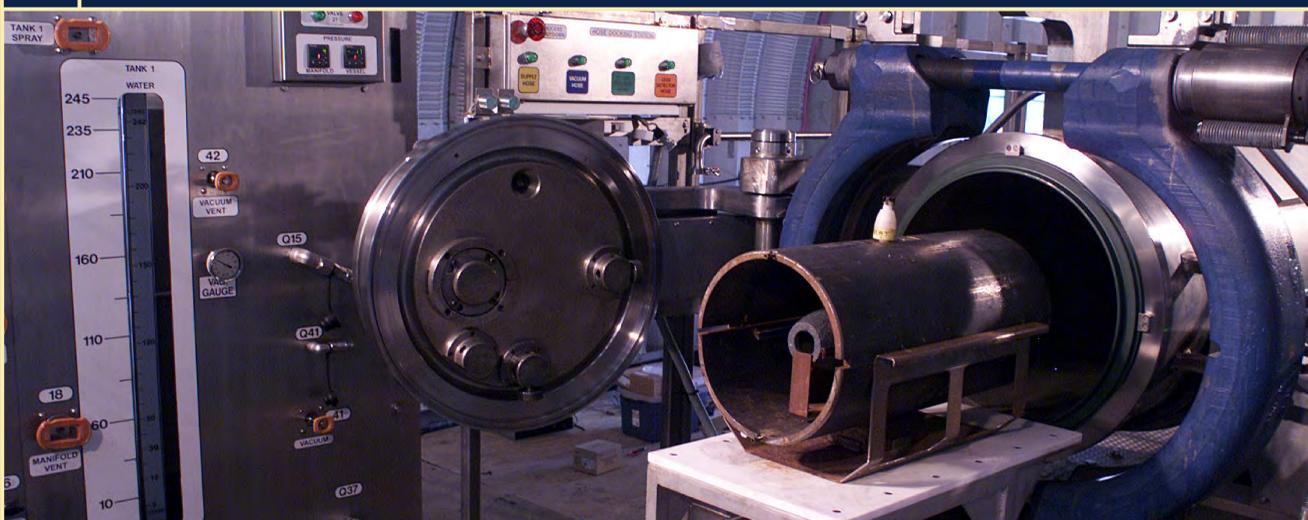
The EDS uses cutting charges to explosively access chemical munitions, destroying their explosive elements and chemically neutralizing agent in the munition. The system's main component, a sealed, stainless steel containment vessel, contains all the blast, vapor and fragments, protecting the surrounding environment.



Both the original EDS 1 and the larger EDS 2 can treat up to six items simultaneously. Both can treat bomblets, 75 mm and Livens projectiles and 4.2-inch mortar shells. EDS 2 also can treat larger items such as 155 mm and eight-inch projectiles.

## How it works

- Before processing, items are placed inside a fragment suppression shield, which enables the chamber to withstand repeated detonations.
- Operators close and seal the 7-inch-thick door.
- After a helium leak test confirms the door is properly sealed, linear shaped charges are remotely detonated, to access the munition body.
- After adding neutralization chemicals, the chamber is heated and rotated to mix the contents and neutralize the agent.
- When complete, waste products are disposed of in accordance with applicable federal, state and local laws.



For more information, please contact the public affairs office at **(800) 488-0648** or **(410) 436-3629**, or visit our Web site at [www.cma.army.mil](http://www.cma.army.mil)

# Explosive Destruction System

U.S. ARMY CHEMICAL MATERIALS AGENCY

U.S. ARMY NON-STOCKPILE CHEMICAL MATERIEL PROJECT

The Explosive Destruction System (EDS) destroys recovered chemical warfare materiel while protecting workers and the environment.

EDS: How It Works

1



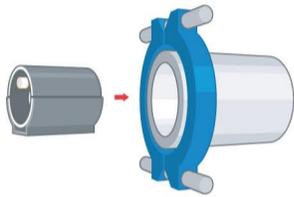
Operators bring the overpacked munition into the environmental enclosure, unpack the munition, and place it in the munition holder

2



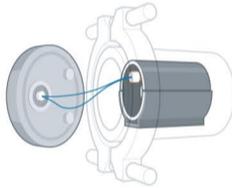
Linear shaped charges are attached along the munition body and the item is placed in the Fragment Suppression Shield

3



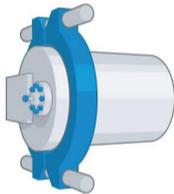
Operators slide the item into the EDS vessel

4



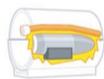
Operators attach electrical components

5



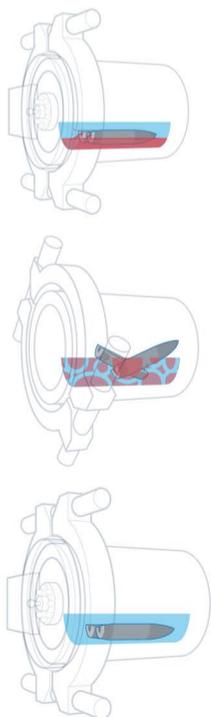
The door is closed and sealed, confirmed by a helium leak test

6



Operators remotely detonate the linear shaped charges to access the munition body and its chemical fill, while eliminating its explosive capacity

7



After neutralization chemicals are added, the vessel is heated, if needed, and rotated to mix the contents and neutralize the chemical fill

A liquid neutralant sample is analyzed in the onsite laboratory to ensure treatment is complete. After successful treatment is confirmed, waste is put into 55 gallon drums. Waste products are shipped to an approved disposal facility and disposed of in accordance with applicable federal, state and local laws.



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## POTENTIAL ENVIRONMENTAL IMPACTS CONSIDERED

- Land Use
- Air Quality
- Water Resources
- Ecological Resources
- Socioeconomic Resources
- Cultural, Archaeological and Historic Resources
- Minority and Low-Income Populations
- Waste Management Issues
- Human Health and Safety
- Noise
- Energy Resources



Pueblo Chemical Agent-Destruction Pilot Plant



U.S. Army Element, Assembled Chemical Weapons Alternatives



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## HOW TO COMMENT ON THE DRAFT FINDING OF NO SIGNIFICANT IMPACT

Community members and interested stakeholders may submit comments on the draft Finding of No Significant Impact via:

- **In Person:**

Place your completed comment form in the box on the information table.

- **Online Submission Form:**

Accessible via [www.pmacwa.army.mil](http://www.pmacwa.army.mil)

- **E-mail:**

[ACWAHQ.environmental@conus.army.mil](mailto:ACWAHQ.environmental@conus.army.mil)

- **Fax:**

410-436-1992

- **Mail:**

USAE ACWA

5183 Blackhawk Road

ATTN: AMSAW-RM

Aberdeen Proving Ground, MD 21010-5424

**For More Information Contact:**

Pueblo Chemical Stockpile Outreach Office at  
(719) 546-0400 or [PuebloOutreach@bah.com](mailto:PuebloOutreach@bah.com)



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