



Pueblo Chemical Agent-Destruction Pilot Plant

# Monthly Status Briefing

*October 2011*



**PCAPP**

Pueblo Chemical Agent-Destruction Pilot Plant

A PARTNERSHIP FOR SAFE CHEMICAL WEAPONS DESTRUCTION

# Project Background

- The Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) will safely destroy 2,611 tons of mustard agent in mortar rounds and artillery projectiles stored at the U.S. Army Pueblo Chemical Depot (PCD).
- Neutralization followed by biotreatment is the technology selected by the Department of Defense to destroy the Pueblo chemical weapons stockpile.
- The Program Manager, Assembled Chemical Weapons Alternatives (ACWA), headquartered at Aberdeen Proving Ground, Maryland, is responsible for managing all aspects of the safe and environmentally sound destruction of the chemical weapons stockpiles in Colorado and Kentucky.
- The Bechtel Pueblo Team (BPT) is a partnership of Bechtel National, Inc., URS, Parsons, and Battelle Memorial Institute. The BPT functions as the systems contractor selected to design, build, systemize, pilot test, operate, and close the PCAPP.



# Bechtel Pueblo Team

## Systems Contractor

- Project management
- Business services
- Safety and quality



- Design/engineering
- Procurement/subcontracting
- Construction

## Teaming Subcontractors



- Systemization
- Pilot testing
- Operations
- Closure



- Process design
- Process equipment fabrication
- Support to systemization and operations



- Environmental permitting and compliance
- Laboratory management
- Pilot testing

# Staffing

- Bechtel Pueblo Team non-manual: **578**
  - Pueblo: 570 (173 local hires)
  - Other locations: 8
- Construction Workers: **719**
  - Bechtel direct-hire craft workers: 569
  - Subcontractor personnel: 150



# Employment Opportunities

## Hotline

(719)549-4003

## Website

<http://pueblo.bechtel.com>



As of September 2011,  
PCAPP Project staff accomplished:

- 212 Safe Work Days
- 1,278,500 Safe Work Hours



# Subcontract Awards

## Inception to date, as of September 30

**\$453.4 Million**

**\$86.1 Million to Pueblo County Businesses (19%)**

**\$150.7 Million to Colorado Businesses (Outside Pueblo County, 33%)**

**\$216.6 Million to Businesses Outside Colorado (48%)**

■

Pueblo County  
Colorado  
Outside Colorado



# Acquisition Awards Status

## Upcoming Opportunities for Requests for Proposals (RFPs):

- The PCAPP Project is approximately 98% complete with procurements for the construction phase
- RFPs will be limited until the project is in the systemization phase

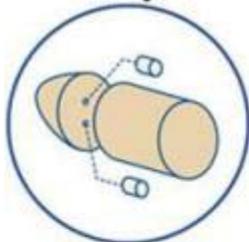
## Remaining RFPs for Construction:

- Lab Annex Facility
- Misc. construction and architectural materials
- Misc. Piping & Valves
- Misc. Bulks & Consumables
- Ambulance



# Destruction Technology

## Step 1



### REMOVAL OF ENERGETICS

Robotic equipment removes energetics (explosives) from the weapon. The energetics will be disposed of at a permitted facility off site.

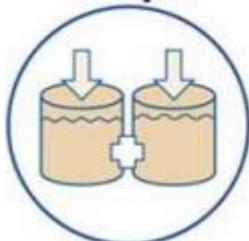
## Step 2



### REMOVAL OF MUSTARD AGENT

The inside of the weapon is remotely accessed, and mustard agent is washed out with high-pressure water.

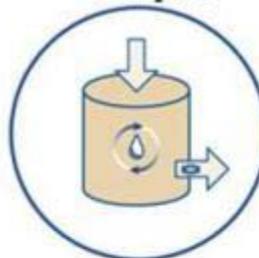
## Step 3



### NEUTRALIZATION OF MUSTARD AGENT

The mustard agent is neutralized with caustic solution and hot water. The byproduct is called hydrolysate.

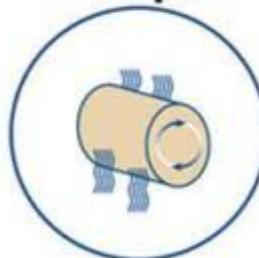
## Step 4



### BIOTREATMENT

The hydrolysate is treated with microbes that break down the solution into water and biosludge. Water is recycled in the plant, and biosludge is shipped for disposal at a permitted facility.

## Step 5

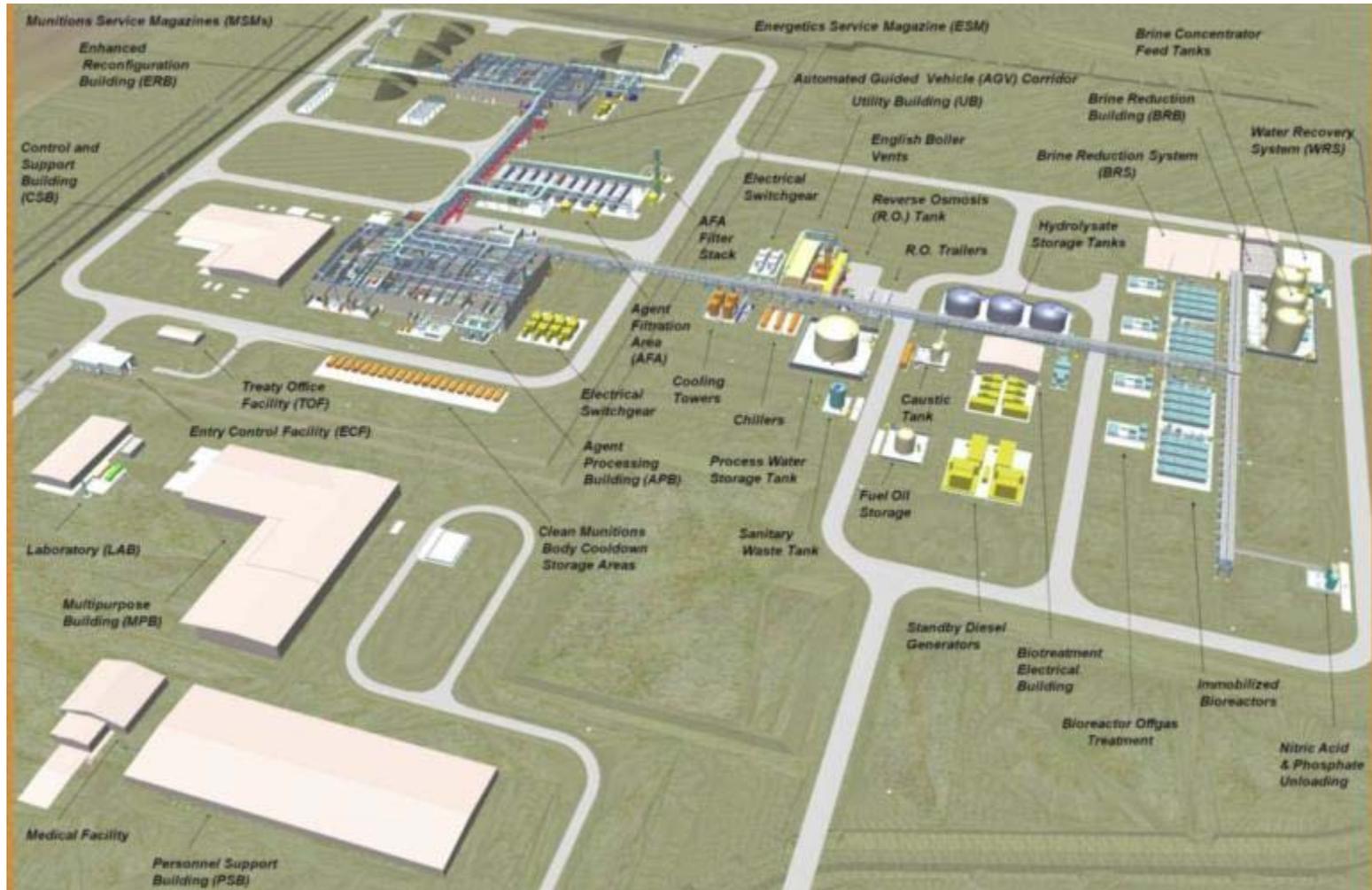


### DISPOSAL OF METAL PARTS

Metal parts are heated to 1,000 degrees Fahrenheit for 15 minutes and can then be recycled.

**Neutralization followed by biotreatment will be used to destroy the Colorado chemical weapons stockpile.**

# Pueblo Chemical Agent-Destruction Pilot Plant—Site Plan



# PCAPP Site Overview



Northwestern Corner - Observation Point

- |          |  |          |  |
|----------|--|----------|--|
| <b>1</b> | <b>Enhanced Reconfiguration Building</b> | <b>5</b> | <b>Agent Filtration Area</b>               |
| <b>2</b> | <b>Automated Guided Vehicle Corridor</b> | <b>6</b> | <b>Munitions Service Magazine</b>          |
| <b>3</b> | <b>Agent Processing Building</b>         | <b>7</b> | <b>Control and Support Building</b>        |
| <b>4</b> | <b>Biotreatment Area</b>                 | <b>8</b> | <b>Munitions Service Magazine corridor</b> |



# Construction Status – In Progress

- **Enhanced Reconfiguration Building**— electrical conduit, cable & wire pulling, equipment setting and terminations, installation of robotics and conveyors in the explosion and vapor containment rooms
- **Agent Processing Building**—electrical conduit, cable and wire pulling, process piping, electrical and mechanical equipment setting
- **Balance of Facilities**—cable raceway, underground duct banks, pipe rack piping and supports, various mechanical equipment setting, final site grading
- **Control and Support Building**—final system and facility turnover, including prep for beneficial occupancy
- **Biotreatment Electrical Building**—terminations for Facility Control System and uninterrupted Power Supply system, support 13.2 KVA energization
- **Brine Reduction System**—platform steel, tank/vessels setting, coatings, piping, electrical
- **Subcontractors**—HVAC, fire protection, insulation and heat trace, coatings, architectural finishes
- **Immobilized Cell Bioreactors**—electrical and piping bulk installation and equipment insulation
- **Filter Press Building**—preparation of building installation



# Systemization

**As the project transitions from construction to systemization, the following systems have been turned over to the start-up group to begin the systemization process:**

- Utility Building 480V Substation
- Agent Processing Building (APB) 480V substation
- Site Water—Underground Loop and Above Ground Feeds
- Natural Gas—Underground Header and Above Ground Feeds
- Fire Protection—Underground Loop and Hydrants
- APB Non-Essential motor control center power
- APB essential motor control center power
- Control and Support Building essential motor control center power
- Agent Filtration Area (AFA) instrument air
- AFA plant air
- Utility Building non-essential control center power
- Utility Building essential motor control center power
- Biotreatment Area (BTA) Non-Essential motor control center
- BTA Essential motor control center
- AFA critical power panels monitoring houses



To learn more about Systemization, watch the video at  
[http://www.pmacwa.army.mil/info/video/systemization\\_yt.html](http://www.pmacwa.army.mil/info/video/systemization_yt.html)



# Systemization (cont.)

- Control and Support Building (CSB) Non-Essential power panels
- NETA (International Electrical Testing Association) testing for power calibration
- 13.2 kV Switchgear
- Utility Building Critical power panels
- BTA Critical power panels
- CSB Critical power panels
- APB Critical power panels
- HVAC exhaust filter units 07 thru 16, common ductwork, and stack
- BTA 480V Substations
- Agent Filtration Area (facility)
- Plant Air System—Enhanced Reconfiguration Building (ERB) Distribution
- Site Water: Existing potable water pumps and tie-ins

- Existing Potable water pumps and tie-ins\*
- 2 ERB Non-essential Motor Control Centers (MCC's)\*
- 2 ERB Essential MCC's\*
- 1 BTA Non-essential MCC's\*
- 1 BTA Essential MCC's\*
- Standby diesel generator 1A\*



To learn more about Systemization, watch the video at [http://www.pmacwa.army.mil/info/video/systemization\\_yt.html](http://www.pmacwa.army.mil/info/video/systemization_yt.html)

\*Newly added

# Biotreatment Area



The large diameter piping connects the Immobilized Cell Bioreactors in the Biotreatment Area.



**A rock retaining wall is installed to keep the dirt, covering the Energetics Service Magazine, from washing into the roadway.**

# Enhanced Reconfiguration Building



**The First-Of-A-Kind Linear Projectile Mortar Disassembly system, which will be used to remove the explosive parts from the munitions, is pictured here. The robot that will load the machines is covered with plastic on the left side of the photo.**



**PCAPP Plant Manager Jerry Tiller (right) explains to the media what will happen in the toxic area of the Agent Processing Building during the Sept. 22 U.S. Army Pueblo Chemical Depot/PCAPP Media Day event.**



# Contact Information



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U.S. Army Element, Assembled  
Chemical Weapons Alternatives

