

# Blue Grass *exchange*

A Partnership for Safe Chemical Weapons Destruction



Spring 2008

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Blue Grass Chemical Agent-  
Destruction Pilot Plant

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**Eric McCulley, a subcontractor on the Blue Grass Chemical Agent-Destruction Pilot Plant construction site, connects steel trusses over the vehicle inspection area for the access control building. After the steel is placed, subcontractors will install the roof by placing sheet metal on the trusses. The canopy will provide weather protection for the Blue Grass Army Depot guards performing security operations.**

Photo by Stephanie Parrett

## Message From the Managers



By JIM FRITSCHÉ  
Blue Grass Chemical  
Agent-Destruction  
Pilot Plant Site Project  
Manager



By MARK SEELY  
Bechtel Parsons Blue  
Grass Project Manager

The mission to destroy the chemical weapons stockpile stored at the Blue Grass Army Depot continues to move forward with Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) team members strongly focused on safety and quality.

Thus far, our team has worked more than 2.6 million job hours without a lost-time injury. This is a major accomplishment for a project with more than 400 employees. Our team both on and off the construction site is focusing on making the work environment safe

and taking preemptive steps to eliminate the risks of injuries. The project team is working with the Kentucky Department of Transportation to ensure that community members driving by the site, as well as the workforce entering and exiting the site, are safe. Widening the traffic lanes at the site entrance and installing a traffic light are two steps currently being considered to ensure a high level of safety.

The total plant design is more than 82 percent complete with design packages for three main processing buildings currently under government review. We've recently completed construction of the new badging facility located at the pilot plant entrance on Highway 52, as well as the road network, fencing and lighting projects. In addition, the site is busy with activity as more than 100 local workers are installing underground utilities and beginning the erection and fabrication of the personnel support and maintenance buildings. Upcoming work on the facility includes placing the foundation of the control support building and installing a 138Kv electrical substation.

We are also looking ahead to plan and prepare for the future. We recently arranged for the shipment of 44 M60 training rockets from the U.S. Army Edgewood Chemical Biological Center at Aberdeen Proving Ground, Md., to the Blue Grass Chemical Activity. The training rockets will be used to test a rocket cutting machine and a rocket shear machine, prior to systemization and operations.

Finally, we are excited to welcome several new staff members. New government staff members include Dave Easter, public affairs officer, and Terry Stroschein, resident engineer. Debra Hogan has joined the staff at the Blue Grass Chemical Stockpile Outreach Office as an administrative professional.

The next Chemical Destruction Community Advisory Board meeting is scheduled for June 10, 2008 at 1:30 p.m. at Eastern Kentucky University's Perkins Building. We invite you to stop by for an update and provide us with your feedback on the project.

### News Brief

#### Officials to Meet on Chemical Weapons Destruction Acceleration Options

The Assembled Chemical Weapons Alternatives (ACWA) team continues to examine realistic approaches for speeding up the destruction of the Colorado and Kentucky chemical weapons stockpiles. Once these approaches are validated, their costs and technical risks identified, and Defense Department officials discuss them with Congress, additional information will be forthcoming on how the current destruction schedules might be revised. Section 8119(a) of Public Law 110-116 mandates completing destruction of the chemical weapons stockpiles in accordance with the deadline established by the Chemical Weapons Convention (April 27, 2012), but no later than Dec. 31, 2017.

## Major Designs for Destruction Facility Completed

By JOHN SCHLATTER  
Bechtel Parsons Blue Grass

The Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) team reached a major milestone at the end of February when Bechtel Parsons Blue Grass (BPBG), the systems contractor responsible for the design, construction, testing, operations and closure of the destruction facility, delivered final design packages for the plant's three main processing buildings.

"These three facilities are on the critical path, so it was imperative that we design them first. Our team did an outstanding job of completing these packages," said Rick Rife, the BPBG deputy project manager.

The three main processing buildings are the munitions demilitarization building, control and support buildings, and the supercritical water oxidation building.

With a peak staffing of more than 200, the design team was led by Rife and Ron Hink, design-build manager. The team designed the most complex parts of the plant at the Parsons offices in

Pasadena, Calif., taking advantage of the expertise there, and then moved to Richmond, Ky.

"We have approximately 50 engineers on staff in Richmond now," said Hink. "Some of them came from Pasadena, bringing their knowledge of the design, while others were hired locally or transferred from other company locations."

"We have four major focus areas," Hink said. "We're supporting construction, responding to government comments on the three major design packages, requisitioning engineered equipment and designing the balance of the plant."

In addition, the BPBG team is also supporting the BGCAPP project's response to the Department of Defense Explosives Safety Board (see related article on Page 7).

Hink said the design team will peak at approximately 65 people. They are currently located in the White House Clinic Building in the Highland Park business center in Richmond.



Photo by Stephanie Parrett

The Blue Grass destruction project team employs a design-build strategy to increase project efficiency. Rather than designing the entire facility first, the team is designing and building individual structures simultaneously. Kevin Flamm, left, Assembled Chemical Weapons Alternatives program manager; Gary Cough, BPBG; Sen. Ed Worley, owner of WG&T Builders; and Mark Seely, BPBG, discuss the progress being made on the construction of the maintenance building at the pilot plant site.

## Local Team to Finalize Designs

### 82% of Designs Are Complete for Blue Grass Pilot Plant

- Munitions demilitarization building
- Control and support buildings
- Supercritical water oxidation process building
- Laboratory
- Underground utilities
- Access control building
- Gas mask storage building
- Specification for subcontracted maintenance and personnel support buildings

### 18% of the Facility to Be Designed Locally

- Site utility systems (aboveground)
- Hydrolysate storage area
- Container handling building specification
- Munitions demilitarization building filter area
- Integrated control systems
- Utility block
- Entry control facility
- Standby diesel generators



## Operation *Swift Solution*: Steps in the Process

By AMY GETZ  
ACWA Public Affairs Team

Assembled Chemical Weapons Alternatives (ACWA) is the Department of Defense organization responsible for destruction of the Blue Grass Army Depot (BGAD) chemical weapons stockpile. ACWA initiated Operation *Swift Solution* to safely eliminate three deteriorating steel containers and wastes associated with the management of these steel containers currently in storage at the depot near Richmond, Ky. These steel containers have also been commonly referred to as “one-ton containers,” or simply “ton containers.”

The steel containers contain a mixture of chemical agent GB and its breakdown products that have occurred over time. One of the containers has leaked in the past and the other containers are showing signs of corrosion. For health and safety reasons and as a measure to prevent future potential leaks and/or releases, Operation *Swift Solution* will eliminate the risks associated with the long-term storage of the containers. ACWA is coordinating the effort with the following partners: BGAD, Blue Grass

Chemical Activity (BGCA), the U.S. Army Chemical Materials Agency, the U.S. Army Edgewood Chemical Biological Center (ECBC), the Kentucky Department for Environmental Protection (KDEP) and local stakeholders.

To complete destruction operations, a trained team from ECBC will deploy to BGAD from Maryland with a system known as the Chemical Agent Transfer System, or CHATS, to destroy the contents of the steel containers. The system will drain and neutralize the contents of the containers, which will then be decontaminated and recycled. The specific steps required to prepare for and carry out destruction operations are described below.

- **Permitting:** This first step involves coordination between ACWA, BGAD and BGCA to obtain approval of a Temporary Authorization Request from KDEP.
- **Site Preparation:** BGCA will initiate site preparation for the general purpose operations shelter, which will house the CHATS equipment.
- **Mobilization:** The CHATS and all additional support equipment will be transported from Aberdeen Proving Ground, Md., to BGAD.
- **Operational Readiness Review:** A thorough review of all equipment and standard operating procedures will be performed to ensure safe operations.
- **Destruction Operations:** The contents of the steel containers and associated wastes will be destroyed using the CHATS. Destruction operations are expected to take approximately three months to complete.
- **Decontamination of Residual Waste:** Both liquid and solid residual waste, including cleaned steel containers, will either be shipped off site to a permitted disposal facility or stored at the BGCA until treatment and regulatory permitting options are identified.
- **Demobilization:** The Operation *Swift Solution* site will be decommissioned.



**General Purpose Operations Shelter:** This multi-purpose shelter, which is 60 feet long and 30 feet wide, will house the CHATS and will be under negative pressure.

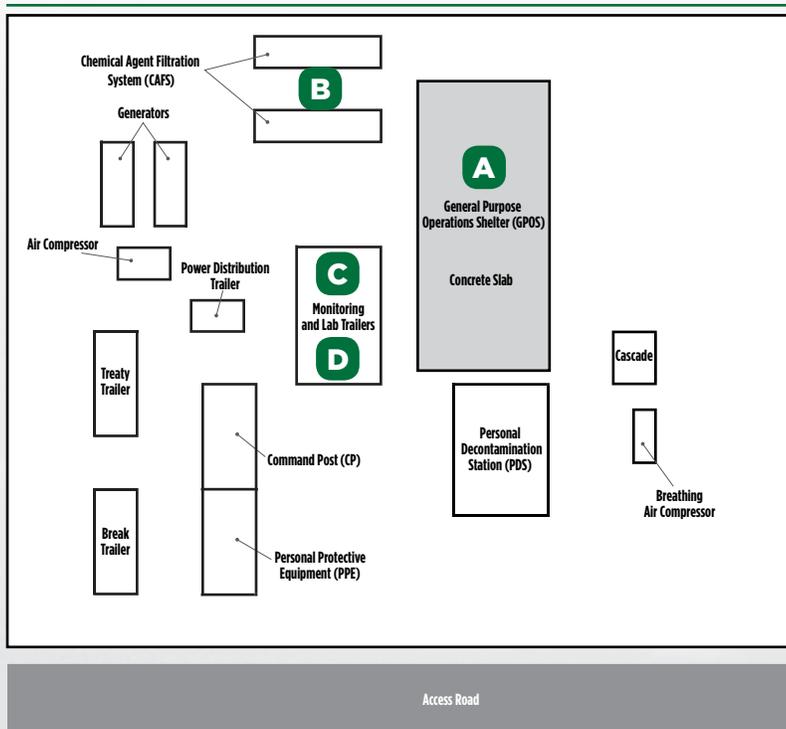


**Chemical Agent Filtration System:** Two units will be used – one that will filter air from the CHATS and one that will filter air from the general purpose operations shelter. Each will consist of multiple carbon filters along with HEPA filtration to remove chemicals and particulates from the air.

Photos courtesy of U.S. Army Edgewood Chemical Biological Center



### Chemical Agent Transfer System Site Layout



Current as of Jan. 15, 2008

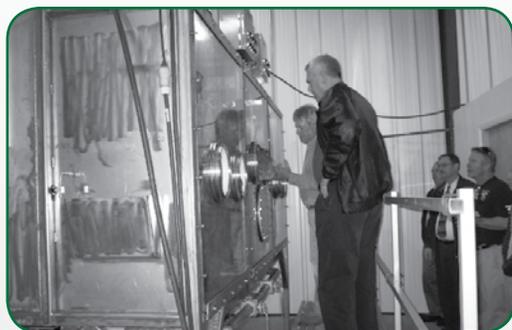


Photo by Kathy DeWeese

ACWA Program Manager Kevin Flamm, center, discusses the results of an equipment test with Tim Blades, left, of the U.S. Army Edgewood Chemical Biological Center.

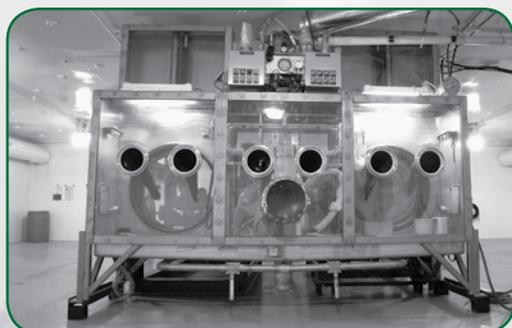


Photo courtesy of U.S. Army Edgewood Chemical Biological Center

The Chemical Agent Transfer System that will be used during Operation *Swift Solution* employs a glove box system to transfer the contents of the container to neutralization reactors.

The green labels on the site layout correlate with the photos on the bottom of this center spread. The photos depict the appearance of future site facilities.



**Mobile Analytical Platform:** As part of the monitoring and lab trailers, this laboratory contains analytical equipment to allow chemists to conduct tests that will verify the destruction of the chemical agent.



**Monitoring Shed:** As part of the monitoring and lab trailers, the shed will employ near real time detectors (MINICAMS™) to detect the presence of agent in the workspace air prior to exiting the filters. The MINICAM™ will automatically conduct an analysis and report every six minutes.

## Tailored Equipment to Meet the Needs of Blue Grass Pilot Plant

By JOHN SCHLATTER  
Bechtel Parsons Blue Grass

While the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) team in Richmond, Ky., moves ahead with designing and building the demilitarization plant, project team members in California and Washington are busy fabricating equipment for the plant.

“The BGCAPP facility includes several specialized pieces of equipment to dismantle the munitions and treat the chemical agent and wastes,” explained BGCAPP Site Project Manager Jim Fritsche. “Although we use the term ‘first of a kind equipment,’ this is not the first time the components have been used. This equipment has been used successfully in the same or similar applications at other chemical demilitarization sites, and we are taking advantage of their experience and lessons learned.”

Over the past few years, these components have undergone extensive testing through the project’s “Technical Risk Reduction Program.” Now that testing has been successfully completed, fabrication has started on two of seven major pieces of process equipment – the metal parts treater and the energetics batch hydrolyzer.

The metal parts treater electrically heats munitions bodies and other metal parts to ensure all traces of agent are destroyed after the agent has been removed and neutralized. At a facility in Pasco, Wash., Parsons, a member of the systems contractor team responsible for designing, building, testing, operating

and closing the plant, is managing the testing and fabrication of this equipment. The metal parts treater is scheduled for delivery in late 2009.

The energetics batch hydrolyzer, which looks like a series of concrete mixers, is used to neutralize the explosive components of the munitions by tumbling them in caustic solution. It is being fabricated by General Atomics at a facility in San Diego, Calif., and is scheduled for delivery in early 2010.

Fabrication will begin on five other components over the next few years, and exact schedules will be based on funding. Parsons will fabricate the rocket cutter machine and rocket shear machine, which will dismantle rockets before the agent is removed, and the munitions washout system that will remove the agent from the munitions using high-pressure hot water.

General Atomics will fabricate the energetics neutralization reactor, which neutralizes explosives, and the supercritical water oxidation unit that will treat “hydrolysate,” the liquid that remains after chemical agent is neutralized.

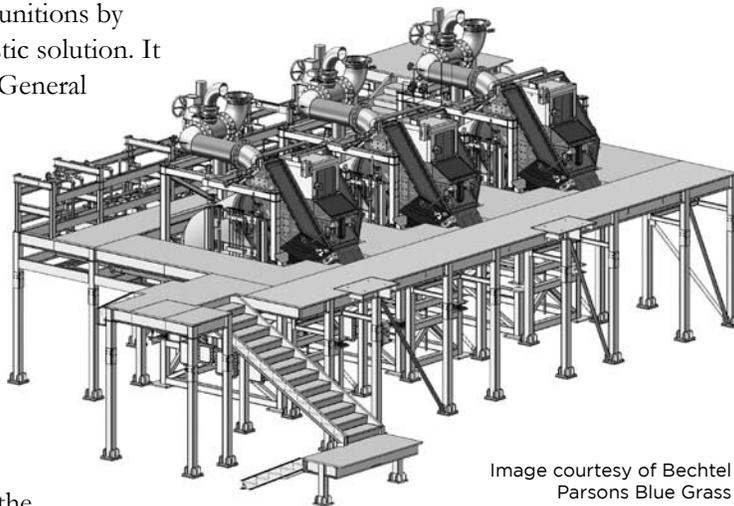


Image courtesy of Bechtel Parsons Blue Grass

**The energetics batch hydrolyzer will neutralize explosive components of the chemical weapons stored at the Blue Grass Army Depot.**

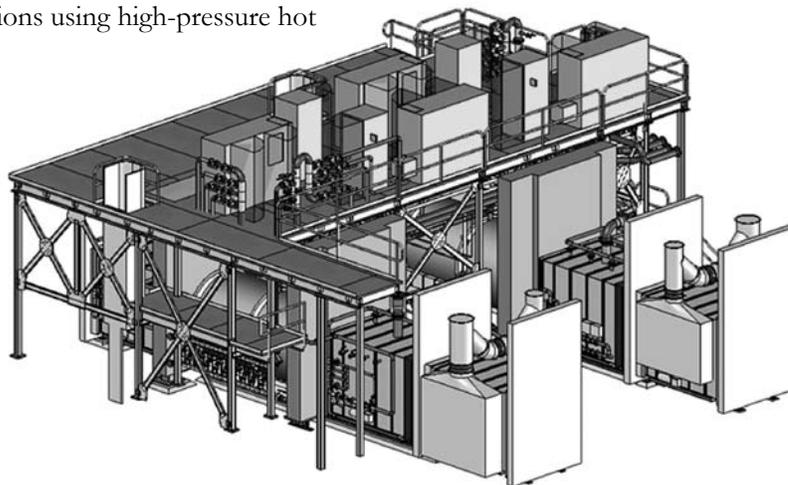


Image courtesy of Bechtel Parsons Blue Grass

**The metal parts treater will heat munitions bodies and other metal parts of the chemical weapons to ensure that all traces of agent are destroyed after the agent has been removed and neutralized.**

## Blue Grass Team Works With Defense Safety Board to Ensure Safety of the Workforce and Community

By STEPHANIE PARRETT  
Blue Grass Chemical Stockpile Outreach Office

Construction work continues at the Blue Grass pilot plant site as Assembled Chemical Weapons Alternatives (ACWA) leadership and project team members work closely with the Department of Defense Explosives Safety Board (DDESB) to resolve questions concerning current designs for the munitions demilitarization building.

In March, ACWA received notification from the DDESB that it will formally reject the munitions demilitarization building structure design portion of the site safety plan for the Blue Grass facility. The safety board's questions stem from insufficient supporting data for an alternative design used for the total explosive containment sections of the building. Bechtel Parsons Blue Grass (BPBG) submitted this alternative design as a result of construction problems experienced with rebar reinforcement and concrete pours at other chemical destruction facilities.

"We welcome DDESB's involvement with ensuring the safety of our team," said Mark Seely, BPBG project manager. "We are working to minimize any impact on the construction schedule by responding to DDESB's request for data and testing as quickly as we can, and by evaluating options for revising the construction sequence."

Together with ACWA, BPBG is working with the U.S. Army Corps of Engineers and the Army Technical Center for Explosive Safety to supply additional data in order to better evaluate the design. If DDESB

agrees the data is adequate, a final plan package will be submitted for approval. If DDESB's concurrence with the proposed design cannot be obtained in a timely manner, then a redesign of the explosive containment room will be executed.

The safety board's approval must be obtained before foundations can be poured for the munitions demilitarization building, the facility where explosive components will be separated from chemical munitions before the chemical agent is removed and neutralized.

"The safety board is one of many agencies that we work closely with to ensure that our facilities are safe," said Jim Fritsche, BGCAPP site project manager. "The safety of our workforce, the community and environment take precedence over cost and schedule at all times."

DDESB provides impartial and objective advice to the military services on safety aspects of ammunition and explosives development, manufacturing, testing, handling, transportation, storage, maintenance, demilitarization and disposal. As part of this mission, the DDESB team must review and approve the safety aspects of all plans for construction of facilities that will handle explosives. For the Blue Grass destruction plant, the board must review and approve the overall site plan, with a special emphasis on the munitions demilitarization building.



Photo by Stephanie Parrett

Members of the community receive a construction update on the pilot plant and information regarding the Department of Defense Explosives Safety Board's review of the design for the munitions demilitarization building for the Blue Grass facility at a recent Chemical Destruction Community Advisory Board meeting.

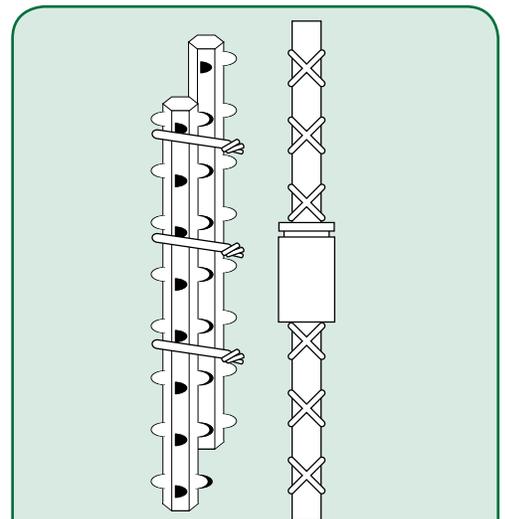


Image courtesy of Bechtel Parsons Blue Grass

The Department of Defense Explosives Safety Board has concerns related to the adequacy of certain walls, specifically how reinforcement steel is connected in the explosive containment rooms of the munitions demilitarization building. In the traditional method of connecting reinforcing steel, left, the pieces are overlapped and tied together with wire. The Blue Grass design uses a coupler, right, to join the pieces end-to-end, which is an innovative approach designed to make the horizontal concrete placement of the building more efficient.

## Information | *Exchange*

The Blue Grass *Exchange* is designed to keep you up to date on the chemical weapons destruction project. The *Exchange* newsletter welcomes feedback and story ideas. Contact the editor, Stephanie Parrett, by phone at (859) 626-8944 or e-mail at [bgoutreach@bah.com](mailto:bgoutreach@bah.com).

## Virtual Information | *Exchange*

Find out more about ACWA's mission to safely destroy the chemical weapons stockpiles located at Blue Grass Army Depot, Ky., and Pueblo Chemical Depot, Colo., by visiting [www.pmacwa.army.mil](http://www.pmacwa.army.mil).

Current and past editions of the Blue Grass and Pueblo *Exchange* can also be found online. To locate the newsletters, click on the Information Products link and then on the word "Newsletters."

### *Mark Your Calendar*

Your involvement is essential to the success of the project. Please share your views at the Chemical Destruction Community Advisory Board meetings. The meetings in 2008 are scheduled for **June 10, September 9** and **December 9** at **1:30 p.m.** in the **Carl D. Perkins Building, rooms A and B** at **Eastern Kentucky University**.

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