# Blue Grass exchange

A Partnership for Safe Chemical Weapons Destruction

**Fall 2008**

**IN THIS ISSUE**



BGCAPP

Blue Grass Chemical Agent-Destruction Pilot Plant


**Blue Grass Chemical Stockpile Outreach Office**
1000 Commercial Drive, Suite 2
Richmond, KY 40475
(859) 626-8944
bgoutreach@bah.com
Hours 8:30 a.m.–5 p.m., M–F
Other hours by appointment

**Blue Grass Army Depot Public Affairs**
(859) 779-6221

**Blue Grass Chemical Activity Public Affairs**
(859) 779-6897

**Bechtel Parsons Blue Grass Public Communications**
(859) 625-1291

**www.pmacwa.army.mil**


Johnnie Allen, left, and Dennis Bolt, Army employees at the Blue Grass Chemical Activity and Maryland's Edgewood Chemical Biological Center, respectively, use a scale model to show construction workers how three nerve agent containers will be destroyed as part of Operation *Swift Solution*. For more information on the operation, see page 3.

Photo by Stephanie Parrett


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# Message From the Managers

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

By MARK SEELY
Bechtel Parsons Blue Grass Project Manager

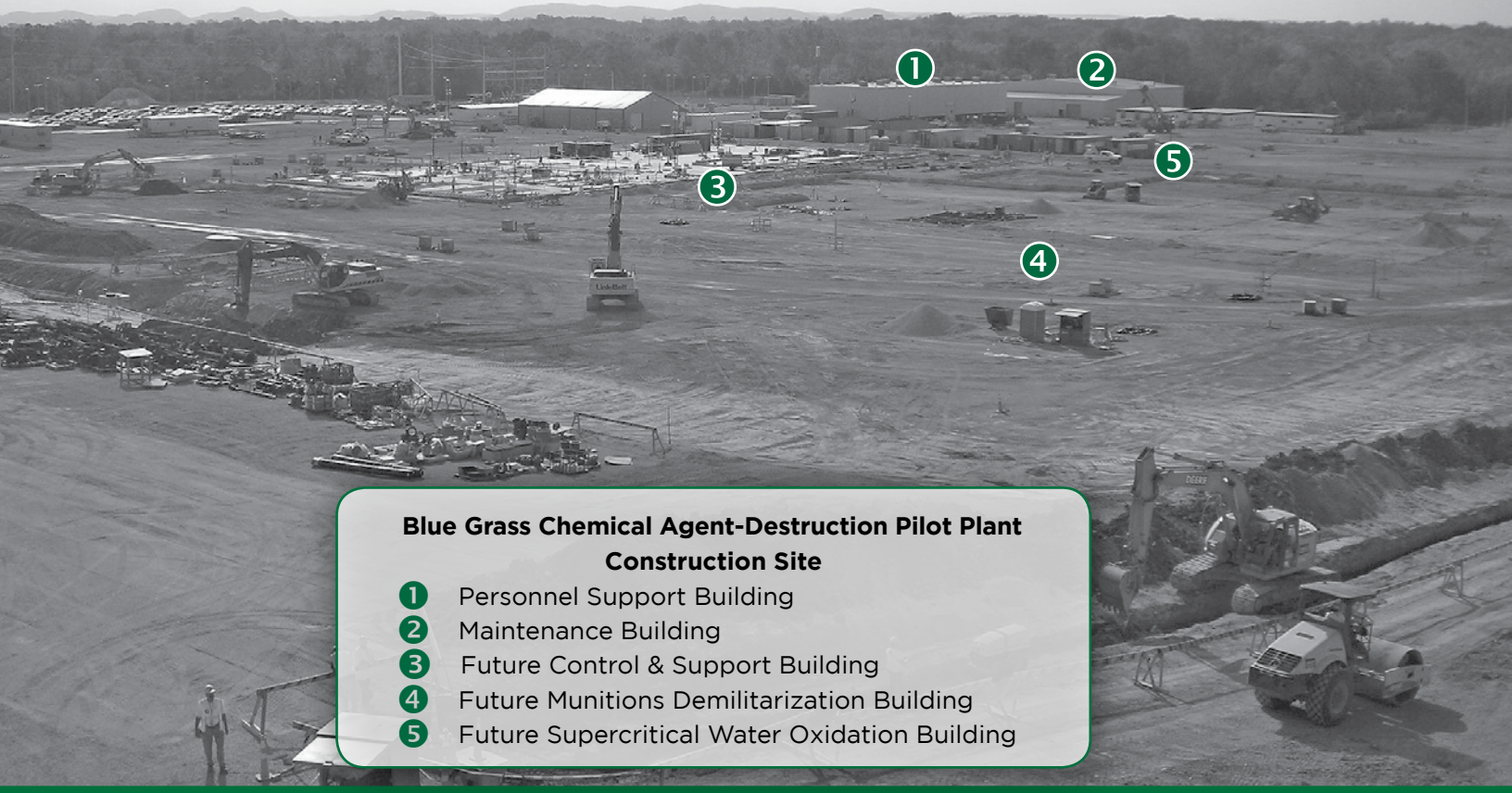
With every foundation placed, wall constructed and beam installed, the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) team made 2008 all about vertical construction. The maintenance building, which will be used for receiving, storing and servicing equipment for the plant, now has an erected structural steel skeleton and exterior walls.

Work on the personnel support building is also progressing. A series of concrete piers have been installed, and a crane was used to place 28 modules that will make up the walls of the building. Throughout this activity, the team maintained its high safety standards, reaching 3 million job hours without a lost-time injury in August.

Some of our stakeholders recently saw this progress first hand. During the late summer and early fall, BGCAPP site tours were facilitated for elected officials as well as for members of the Kentucky Citizens' Advisory Commission (CAC) and the Chemical Destruction Community Advisory Board (CDCAB). These tours are part of our ongoing public outreach program to ensure the community has access to up-to-date project information and has opportunities to provide feedback. During the course of the year, you might have seen our team at events like the SpoonBread Festival, CityFest or even Richmond and Berea Chambers of Commerce meetings, working to reach you and your neighbors.

In regards to design, the BGCAPP team submitted design packages for the three critical structures that will house the chemical demilitarization equipment – the munitions demilitarization building (MDB), the control and support building and the supercritical water oxidation process building. Design packages for the hydrolysate storage area, entry control facility and the MDB filter area are currently in development.

We are looking forward to another dynamic year of progress in 2009 and thank you for your continued support. In the meantime, we hope to see you at the final CAC/CDCAB meeting of the year, which is scheduled for Dec. 9, 2008, at Eastern Kentucky University's Carl D. Perkins Building on Kit Carson Drive.




**Blue Grass Chemical Agent-Destruction Pilot Plant Construction Site**

1. Personnel Support Building
2. Maintenance Building
3. Future Control & Support Building
4. Future Munitions Demilitarization Building
5. Future Supercritical Water Oxidation Building

# Destruction Operations for Deteriorating Containers Begin

By STEPHANIE PARRETT
Blue Grass Chemical Stockpile Outreach Office

On Nov. 14, 2008, the Operation *Swift Solution* team began operations for the destruction of three deteriorating steel containers, which hold a mixture of nerve agent GB (sarin) and its breakdown products, as well as wastes associated with the management of these containers currently stored at the Blue Grass Army Depot.

The U.S. Army Element, Assembled Chemical Weapons Alternatives (ACWA) partnered with the Blue Grass Army Depot, the Blue Grass Chemical Activity, the U.S. Army Chemical Materials Agency and the Edgewood Chemical Biological Center for Operation *Swift Solution*.

The team completed an operational readiness review and worked with the Kentucky Department for Environmental Protection and the U.S. Environmental Protection Agency on finalizing permitting documents and for approval for destruction operations.

"An operational readiness review is like a dry run," said Kevin Flamm, ACWA program manager. "It allows us to evaluate our site setup and standard operating procedures, which in turn helps ensure that the entire team is ready to begin destruction operations."

"Safety is the number one consideration for this mission," said Lt. Col. David Musgrave, Blue Grass Chemical Activity commander. "The safety of the workers and the community is foremost in our minds as we destroy the contents of the steel containers."

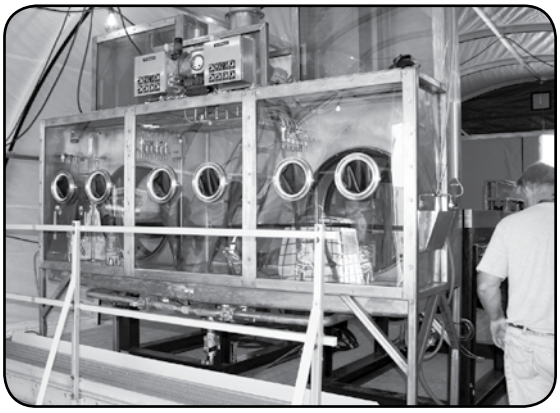


Photo by Richard Sloan, Blue Grass Chemical Activity

**The Chemical Agent Transfer System (above), known as the CHATS, is the technology that will destroy the contents of the steel containers and associated wastes.**

Construction activities associated with preparing for Operation *Swift Solution* were completed in September, which included site clearing, placement of a concrete pad and road work. Temporary structures were erected, and the equipment needed for the destruction operations was subsequently put in place. This included the Chemical Agent Transfer System, or CHATS, which will destroy the nerve agent GB (sarin) and its breakdown products currently stored in three steel containers. The CHATS is housed in a general purpose operations shelter and is being set up for operations.

Various other materials and structures that were brought on site include the operations shelter; chemical agent filtration system; analytical lab; trailers for command; personnel and treaty activities; and the radio communication system. Other items that have been transported to the site include the isotainers that will store hydrolysate, the caustic waste water produced during destruction operations.

"Eliminating the threat that these steel containers pose is a priority for everyone involved in this project," said Flamm. "We're very excited about the immediate progress that has been made and look forward to when the containers are no longer a risk."

**The Operation *Swift Solution* site was busy with activities this fall as the team placed materials and structures required for the destruction process, such as the general purpose operations shelter; chemical agent filtration system; analytical lab, command, personnel and treaty trailers; and on-site radio communication system.**

**Photo by Richard Sloan, Blue Grass Chemical Activity**

# Blue Grass Team Will Settle Into Permanent Home

By JOHN SCHLATTER
Bechtel Parsons Blue Grass

When the Blue Grass Chemical Agent-Destruction Pilot Plant construction team moves into the new personnel support building (PSB) in the next few months, they will complete a transition that took them through two sets of temporary offices before finally settling into a permanent home.

After ground was broken for the project in October 2006, the construction team set up shop in temporary trailers just inside the Highway 52 gate. When the 1.5-mile access road was completed and the plant site began taking shape, they moved to trailers on the construction site.

For the past several months, they've been watching subcontractor Futron, Inc. build their new home, the 23,000-square-foot, two-story PSB. Modules for the building were lifted into place during the summer, and interior finish work is under way.

Jill Abner has seen the transition from the very start. As the field administrative assistant, Abner provides administrative support to Construction Manager Gary Cough and his management team.

A native of the Richmond area, she started with Bechtel Parsons in 2004 in the outreach office, then became front desk receptionist at the Highland Park Drive office before joining the construction staff. Abner said the moves "have been hectic at times, but we've learned to go with the flow."

The PSB will be home to the construction team until the plant is completed. As they finish construction, the plant operations staff will move in to begin systemization and operations.

In addition to the PSB, the new maintenance building will also be ready for occupancy in the near future. Built by local contractor WG&T Builders, this 28,000-square-foot facility will be used for equipment storage and maintenance.

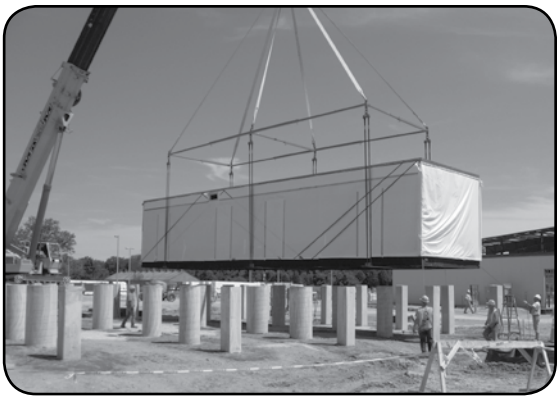


Photo courtesy of Bechtel Parsons Blue Grass

**A crane places one of the modules that make up the walls of the personnel support building.**

Photo courtesy of Bechtel Parsons Blue Grass

**The personnel support building is a two-story modular office building that will provide work space for the plant operations staff during systemization and operations.**

# Design Ensures Buildings Are Weather- and Blast-Proof

By JOHN SCHLATTER
Bechtel Parsons Blue Grass

"Structural engineering is the science and art of designing and making, with economy and elegance, buildings, bridges, frameworks and other similar structures so that they can safely resist the forces to which they may be subjected."

That's a textbook definition from the Structural Engineering Association International. For Richard Jones, lead structural engineer on the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) design team, it means designing the plant to withstand all the forces that could affect the buildings, such as earthquakes, wind, snow loads, thermal forces and explosions.

Currently much of the work in the structural engineering group involves portions of the munitions demilitarization building where explosives will be handled. Design of these "blast areas" will undergo extensive review by the U.S. Army Corps of Engineers and the Department of Defense Explosives Safety Board.

Another job of the structural group is to design the facility to withstand potential earthquakes. Jones says the BGCAPP site is located in Zone One, classified as a "low to moderate" earthquake zone as defined in the project Geotechnical Investigation Report. The plant is designed in accordance with the International Building Code (IBC), developed by an organization called the International Code Council. The IBC is used by most U. S. cities, counties and states.

Seismic design affects all aspects of the buildings, according to Jones. That includes the thickness of foundations, connections between structures and the foundation; and installation of equipment, piping and conduit, platforms, stairs and other features.

A key element of seismic design is soils analysis. A detailed geotechnical study of the BGCAPP site was conducted before design began. In order to support the weight of the processing buildings, parts of the site were excavated and backfilled with dense grade aggregate (DGA), crushed stone that is compacted into place. The BGCAPP seismic design takes into account the characteristics of the DGA and the naturally occurring soils.

Photo courtesy of Bechtel Parsons Blue Grass

**Seismic design affects all buildings being constructed on the pilot plant site.**

Jones is no stranger to seismic design. He's a graduate of California Polytechnic State University at San Luis Obispo and has 15 years' experience designing buildings to the high standards required by California's earthquake-prone geology.

According to the U. S. Geological Survey, the largest recorded earthquake centered in Kentucky occurred in 1980 in Bath County, about 45 miles northeast of Richmond. Measuring 5.2 on the Richter scale, it was felt in 15 states.

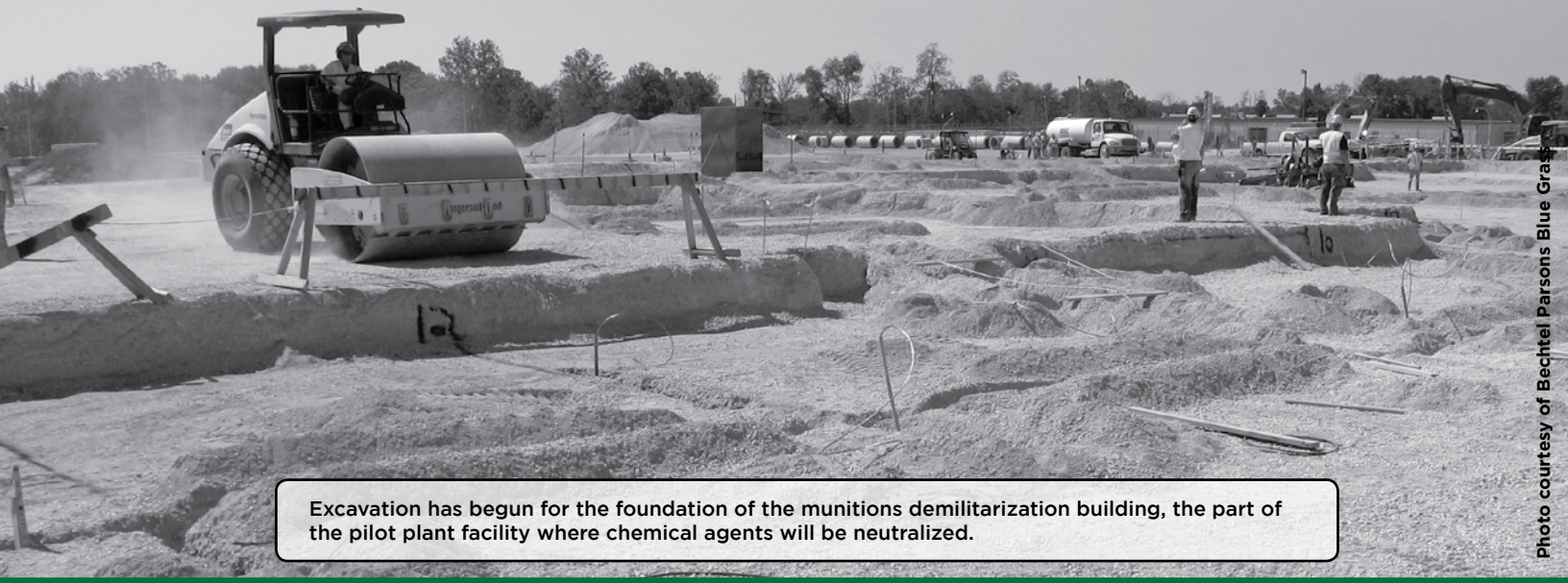


Photo courtesy of Bechtel Parsons Blue Grass

**Excavation has begun for the foundation of the munitions demilitarization building, the part of the pilot plant facility where chemical agents will be neutralized.**

# New Citizen Group Members Stand Ready to Serve

By STEPHANIE PARRETT
Blue Grass Chemical Stockpile Outreach Office

Eight Kentuckians recently signed on as new members of the citizens groups involved in the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) project.

The Kentucky Chemical Demilitarization Citizens' Advisory Commission (CAC) and its independent subcommittee, the Chemical Destruction Community Advisory Board (CDCAB), were formed to foster the exchange of information between the citizens of Kentucky and the Department of Defense regarding the destruction of the chemical weapons in storage at the Blue Grass Army Depot near Richmond. CAC positions are governor-appointed, and CDCAB members are selected through an application process.

"Citizens volunteering to ensure local concerns and issues are incorporated into decisions impacting the entire community and region deserve everyone's appreciation," said Craig Williams, CDCAB co-chair. "Without compensation, and often with busy schedules, these commission and advisory board members represent the best of democratic principles of a participatory government where citizens play a critical role in issues that directly affect them, their families and their neighbors."

The CDCAB also has several working groups that meet separately to focus on specific areas of community interest, including chemical stockpile monitoring, secondary waste produced during chemical weapons destruction operations and ways in which the community can work with the BGCAPP team to positively impact the local economy.

"We look forward to getting to know all of these new faces," said Jim Fritsche, BGCAPP site project manager. "Working with these groups is a critical element of upholding our commitment to keeping citizens informed of and involved in this important national project that is right in their backyard."

The CAC and CDCAB hold joint meetings on a quarterly basis at Eastern Kentucky University's Carl D. Perkins Building on Kit Carson Drive. The meetings are open to the public.

Photo by Stephanie Parrett

**Members of the Chemical Destruction Community Advisory Board's Secondary Waste Working Group (SWWG) received information on secondary waste treatment options for Operation *Swift Solution.* Pictured above are from left, Craig Williams, SWWG; Ralph Collins, U.S. Army Element, Assembled Chemical Weapons Alternatives (ACWA); Carl Richards, Madison County Emergency Management Agency; Mitch Osbourne, Veolia Environmental Services; Leasue Meyers, Kentucky Department for Environmental Protection; Ramesh Melarkode, Blue Grass Army Depot; Jeff Krejsa, ACWA; and Lt. Col. David Musgrave, Blue Grass Chemical Activity.**

## New Citizens' Advisory Commission Members

Kentucky Chemical Demilitarization Citizens' Advisory Commission

Brig. Gen. John Heltzel
Director, Kentucky Division of Emergency Management

Sheila Pressley
Assistant Professor, Eastern Kentucky University

Nora Shepherd
Partner, Sword, Floyd & Moody, PLLC

## New Chemical Destruction Community Advisory Board Members

CDCAB CHEMICAL DESTRUCTION COMMUNITY ADVISORY BOARD

David Benge
Member, Richmond Chamber of Commerce

Mitch Brown
Member, Madison County Ministerial Association

Tammy Clemons
Sustainability Coordinator, Berea College

Steve Gamble
Director of District Services, Madison County Schools

Brig. Gen. John Heltzel
Director, Kentucky Division of Emergency Management

Dr. Charles Hickox
Dean of Continuing Education and Outreach, Eastern Kentucky University

*For a complete list of commission and advisory board members, please visit www.pmacwa.army.mil.*

## 2009 Kentucky Citizens' Advisory Commission and Chemical Destruction Community Advisory Board Meeting Dates

- March 10, 2009
- June 9, 2009
- Sept. 8, 2009
- Dec. 8, 2009

# Secondary Waste at Blue Grass: The Basics

*Note: The U.S. Army Element, Assembled Chemical Weapons Alternatives, the Department of Defense organization responsible for the destruction of the chemical weapons stockpile in storage at the Blue Grass Army Depot, tasked the National Research Council and Noblis to complete independent technical analyses regarding the treatment of secondary waste and hydrolysate generated during Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) operations. This is the first of a series of articles to help educate readers about secondary waste and hydrolysate, as well as the findings in these reports and their implications for BGCAPP and the local community.*

By STEPHANIE PARRETT
Blue Grass Chemical Stockpile Outreach Office

BGCAPP will produce secondary waste as a result of chemical weapons disposal operations, regular pilot plant maintenance and closure activities. Together with federal, state and local environmental regulators, the pilot plant team is in the process of characterizing secondary wastes and establishing procedures for processing them in compliance with all applicable laws. Lessons learned from other chemical weapons destruction facilities are also being applied to ensure BGCAPP's approach to handling and treating secondary waste is as safe and efficient as possible.

"We are working to finalize our approaches for handling and disposing of both agent-contaminated and non-agent contaminated secondary waste," said Jim Fritsche, BGCAPP site project manager. "Our goal is to ensure that all waste is thoroughly evaluated for agent contamination and disposed of in a manner that is safe for workers, the community and the environment."

Some secondary waste material will be treated on site when it can be done safely, efficiently and in accordance with Kentucky environmental permits. For example, at BGCAPP, two metal parts treaters will be built to process certain permitted waste material, such as agent-contaminated personal protective equipment. However, when safety, efficiency and cost savings can be achieved, the BGCAPP team may partner with regulatory agencies, community stakeholders and commercial treatment, storage and disposal facilities to determine how wastes can be safely treated and disposed of off site.

Photo courtesy of Edgewood Chemical Biological Center

## Types of Secondary Waste

Personal protective equipment, which is shown to the left, is used to protect workers during chemical weapons destruction operations and is considered a secondary waste because it could become contaminated with chemical agent. As a result, the BGCAPP team is required to properly dispose of contaminated personal protective equipment in accordance with Resource Conservation and Recovery Act hazardous waste regulations.

Other examples of secondary waste that will be generated at BGCAPP include, but are not limited to:

- Metal parts from munitions
- Concrete from maintenance and closure activities
- 30 percent of the effluent solution generated during the supercritical water oxidation process
- Decontamination solution used during operations of pilot plant
- Energetics (rocket motor propellant)
- Oils used during maintenance activities

Blue Grass *exchange*

## 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.

## 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.

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. Upcoming meetings are scheduled for **Dec. 9, 2008** and **March 10, 2009** at **1:30 p.m.** in the **Carl D. Perkins Building, rooms A** and **B** at **Eastern Kentucky University.**

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