Blue Grass Chemical Agent-Destruction Pilot Plant

# Chemical Weapons Destruction at Blue Grass

The Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) is being built to safely destroy a chemical weapons stockpile stored at the Blue Grass Army Depot. BGAD, located near Richmond, Ky., provides conventional ammunition services, chemical defense equipment management and manufacturing capabilities for the Department of Defense. The Blue Grass Chemical Activity, a tenant of the 15,000-acre depot, is responsible for the safekeeping of the portion of the nation's chemical weapons stockpile stored at the depot. Together, the Army and the community surrounding BGAD are working in a committed partnership to support the safe destruction of the Blue Grass chemical weapons stockpile.

## What chemical weapons are stored at BGAD?

The Blue Grass chemical weapons stockpile comprises more than 500 tons of weaponized blister and nerve agent in rockets and artillery projectiles. Contrary to popular belief, these chemicals are not gases. In their original form, they are liquids. When stored for a long period of time, they can become thick and sludge-like. X-rays have found the mustard agent in some projectiles to have solidified into what is called a "heel."

## What is BGCAPP?

The Blue Grass pilot plant will be a state-of-the-art, full-scale pilot plant designed to safely and efficiently neutralize the Blue Grass chemical weapons nerve agent stockpile. In June 2003, a contract was awarded to Bechtel Parsons Blue Grass (BPBG) to design, construct, test, operate and ultimately close this facility.

BGCAPP will separately design, permit, construct, systemize, operate and close an Explosive Destruction Technology (EDT) facility at the Blue Grass Army Depot to destroy the entire stockpile of mustard projectiles. A Static Detonation Chamber (SDC), manufactured and provided by UXB International, Inc., was selected by Bechtel Parsons Blue Grass as the EDT best suited to augment the BGCAPP in the accomplishment of this task.

## How will the weapons be destroyed?

After a comprehensive evaluation process, on Feb. 3, 2003, the U.S. Department of Defense selected neutralization followed by supercritical water oxidation (SCWO) as the method of agent destruction. During the neutralization process, munitions are disassembled using modified reverse assembly. After the agent and energetics are separated, they are chemically decomposed and neutralized by caustic or water hydrolysis. The resulting chemical compounds are known as "hydrolysate." The hydrolysates from the agent and energetic neutralization processes are destroyed using SCWO units. The SCWO process subjects the hydrolysates to very high temperature and pressure, breaking them down into carbon dioxide, water and salts. Metal parts and contaminated dunnage, which consists of materials such as the contaminated wooden pallets upon which the weapons are stored, are thermally decontaminated in a metal parts treater. Non-contaminated dunnage is shipped off site for disposal in permitted landfills. Water is recycled back into the pilot plant and reused as part of the destruction process. Gas effluents are treated, filtered and monitored.

Because solidification of the mustard agent was found in a significant number of mustard projectiles, rendering them unsuitable for the automated neutralization process described above, the SDC system will be employed to destroy the entire Blue Grass mustard stockpile. The SDC is a spherical, fully-contained and armored, high alloy stainless steel vessel that uses electrically-generated heat at more than 1,000°F to detonate or deflagrate the munitions, thus destroying the mustard agent and energetics. The equipment will use a fully monitored pollution abatement system, which includes a thermal oxidizer and scrubbers to remove particulates, sulfur-dioxides, chlorine and any heavy metals. The equipment also will use a robust filtration system to ensure air released back to the environment is clean.

**FOR MORE INFORMATION CONTACT:**

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A Partnership for Safe Chemical Weapons Destruction

www.peoacwa.army.mil

## Who will destroy the weapons?

The Program Executive Office, Assembled Chemical Weapons Alternatives, headquartered at Aberdeen Proving Ground, Md., is responsible for safely disposing of the Blue Grass stockpile. BPBG, the systems contractor, will operate the chemical agent destruction facility and SDC system. Many other organizations are working in partnership with PEO ACWA and the BPBG team to complete this mission successfully, including the Department of the Army, U.S. Army Chemical Materials Activity, Chemical Stockpile Emergency Preparedness Program, Kentucky Department for Environmental Protection (KDEP), Kentucky Division of Emergency Management and the Madison County Emergency Management Agency.

## How will the environment be protected?

Protection of the unique environment surrounding BGAD is one of the project's top considerations. Therefore, the environmental permits for the pilot plant are based on special environmental studies conducted locally. Additionally, the environment will be continually monitored during disposal activities to ensure that operations are protective of the area. Oversight will be provided by the U.S. Environmental Protection Agency and KDEP during the entire process.

## What will happen to the pilot plant and depot once the weapons have been destroyed?

The areas of the pilot plant that have come in contact with chemical agent will be decontaminated and the equipment dismantled in accordance with regulatory requirements. The disposition of the remainder of the pilot plant has not yet been determined and will be negotiated among the Department of the Army, Commonwealth of Kentucky, PEO ACWA and BGAD. The depot will continue with its missions of supplying munitions, chemical defense equipment and Special Operations support to the Department of Defense.

## What are the Kentucky Chemical Demilitarization Citizens' Advisory Commission and the Chemical Destruction Community Advisory Board?

In accordance with Public Law 102-484, the Kentucky Chemical Demilitarization Citizens' Advisory Commission, or CAC, serves as a bridge between the community and the government by providing a forum for exchanging information about chemical weapons disposal. The governor of Kentucky appoints nine members to the CAC, including seven private citizens and two representatives of state agencies who work closely with the chemical weapons destruction program. The CAC conducts public meetings to facilitate consistent public participation in the program. Local citizens can receive meeting notices and minutes by mail or email. The Chemical Destruction Community Advisory Board, known as the CDCAB, is an independent subcommittee of the CAC. The CDCAB is made up of a diverse group of community leaders who organized to represent the views and concerns of all sectors of the local community on issues regarding Kentucky's chemical weapons disposal program. With input from many interested parties, the board's primary objective is to share information with the community and provide input to government decision-makers.

As the chemical weapons destruction project moves forward, the topics addressed by the CAC and its CDCAB are as important as they are varied. For information on current topics the commission is considering, to learn the upcoming meeting schedule or to be added to the mailing list, please contact the CAC secretary, Valerie Merlin, at (859) 625-1528 or kycac@gmail.com. For information on the board, please contact co-chair Craig Williams at (859) 986-7565.

## How can I learn more?

The Blue Grass Chemical Stockpile Outreach Office provides the community with an information source for chemical weapons destruction at BGAD. It supports the program's commitment to openness and public involvement. The staff develops and provides information papers, brochures and exhibits, makes available technical documents and reports and provides speakers to local groups and organizations to address program-related topics. The office also serves as a communication channel for the community to provide input to program-related issues. Contact the office at (859) 626-8944 or at bgoutreach@iem.com. You are also invited to visit the office at 1000 Commercial Drive, Suite 2, in Richmond. The office is open weekdays from 8:30 a.m. to 5 p.m. Additional office hours are available upon request. For more information, visit www.peoacwa.army.mil.