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# Demil Dispatch

## Recent Progress on the Blue Grass Army Depot Demilitarization Effort.

*Kentucky Department for Environmental Protection  
 Division of Waste Management  
 Hazardous Waste Branch  
 Blue Grass Army Depot Section*

### Regulators View Demilitarization Equipment in Alabama

The Kentucky Hazardous Waste Branch (HWB) is responsible for ongoing Resource Conservation and Recovery Act (RCRA) permitting activities related to the Blue Grass Army Depot (BGAD) including storage and demilitarization of conventional and chemical weapons. In mid-October representatives from the HWB BGAD Section visited a portion of the Anniston Chemical-Agent Disposal Facility (ANCDF) in Alabama to become more familiar with the operation of specific chemical agent disposal equipment.

One part of the ANCDF site tour included the Linear Projectile Mortar Disassembly Machine (LPMD). This machine will also be used as part of the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP). The LPMD consists of a six-axis robot with a double-pneumatic gripper to shuttle projectiles between conveyor systems and various parts removal stations. When finished with these operations, the weapons will move to a munitions washout station where mustard agent will proceed toward neutralization. Lessons learned, reliability, and maintenance data from Anniston will be provided to the Pueblo Chemical Agent-Disposal Facility (PCAPP) and eventually to the BGCAPP facility in Kentucky.

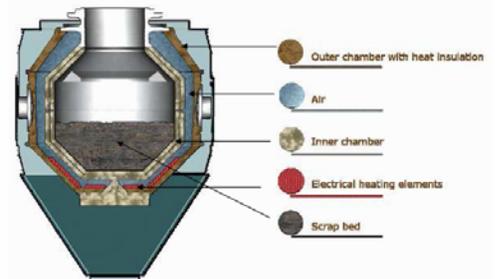
Another project of interest in Anniston is the Static Detonation Chamber (SDC). This chamber will be used to destroy over 3,000 problem mustard agent munitions at the ANCDF. Studies are currently ongoing to determine whether a similar type of technology will be proposed for the BGCAPP facility. The SDC is comprised of a double-walled chamber with electrical resistance heating, an offgas treatment system including a thermal oxidizer, baghouse, scrubber, and a charcoal filter bank. The SDC system is remotely controlled and monitored for all process parameters and also has a separate facility for chemical agent monitoring.

ANCDF has destroyed over 230,000 mustard filled munitions to date and over 350, 000 nerve



The Static Detonation Chamber

agent munitions since 2008. ANCDF is one of three remaining operating sites managed by the Chemical Materials Agency (CMA). Facilities in Oregon and Utah are also conducting ongoing operations while the Pine Bluff Chemical Disposal Facility recently processed its last container of mustard agent. Although sites in Kentucky and Colorado are managed by the Assembled Chemical Weapons Alternatives (ACWA), continued support is drawn from the CMA sites in terms of lessons learned, and resources with the shared goal of protection for human health and the environment.



A cut-away view of the Static Detonation Chamber

## What is a Mustard Heel?

What is a heel? For you chemists - the main constituents of these heels have been identified as a cyclic six-membered ring sulfonium ion, S-(2-chloroethyl)-1, 4-dithianium chloride, entrained HD, and dissolved iron. For the rest of us, a heel basically is the solids inside of a mustard projectile or container that have formed during long term storage. Their formation is partially due to the freezing point of mustard (~57 degrees F) and the reaction of the mustard with the steel container. When a mustard projectile is opened, the liquid drains out and what is left, sticking to the bottom/sides of the projectile is the heel.

Heels are difficult to remove with the current neutralization based demilitarization that will be utilized at BGCAPP, as the high pressure rinse in the munitions washout station (MWS) doesn't always remove 100 percent of the heel. This is why EDT is being considered, because explosive destruction will thermally treat the munitions and any agent and heels. If the MWS doesn't work, then personnel will have to go in and physically remove the residual or the munitions will undergo thermal treatment in the metal parts treater (MPT), both of which are not optimal. The mustard x-ray campaign will give us a much better idea of what we are dealing with so we know how to move forward.



Mustard heels, but not the right kind....

## Meet the BGAD Section Supervisor

The Division of Waste Management (division) is proud to announce that Bill Lunsford P.E. is the new supervisor for the Blue Grass Army Depot (BGAD) Section of the Hazardous Waste Branch (HWB). The Demil Dispatch took a little time to interview Lunsford to see what's in store for the BGAD permitting section.

**DD:** *Congratulations on your new position.*

**BL:** Thank you very much. I am looking forward to the progression of such an exciting and important project.

**DD:** *This project has experienced significant progress. What will be your first official action as the BGAD section supervisor?*

**BL:** My first official action will be to build a set of section goals for 2011. Our section from inception is only a few years old and needs some basic organization and also site specific work instruction guidance.

**DD:** *Can you describe a past experience that you feel will help you fulfill your role as supervisor?*

**BL:** I have learned much in my short time with the division as an acting supervisor, but I feel that my background as an engineer in the automotive and capital equipment industries will help as we get closer to the systemization phase of the chemical weapons destruction plant.

**DD:** *Do you anticipate any challenging issues to face the permitting team in the near future. If so, what are your plans to remedy them?*

**BL:** In the near future we will be working toward resolution of the Subpart X portions of our facility

permit which include the industrial supercritical water oxidation system (iSCWO) and open burn open detonation (OB/OD) for conventional munitions. We plan to work with the Environmental Protection Agency (EPA) to ensure that the latest guidance is utilized in order to effectively permit the conventional operations at BGAD.

**DD:** *What about long term challenges?*

**BL:** Our long term challenges are probably going to be similar to the challenges of the core permitting section in that our permits need to be rock solid and comprehensive.

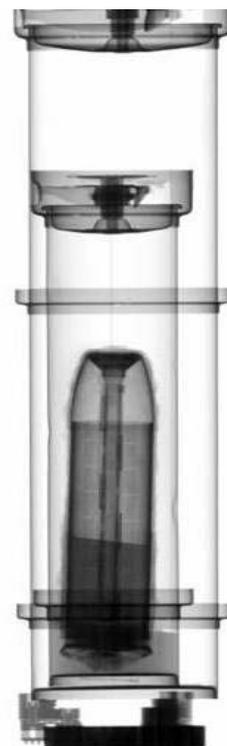
**DD:** *Do you have any specific plans to enhance the efficiency of the BGAD permitting section?*

**BL:** Our efficiency as a section will naturally be enhanced by our individual and collective growth as we strive to meet our goals.

**DD:** *Goals and growth are very important to the development of an effective team. If you had one sentence to sum up the work expectations of your team, what would it be?*

**BL:** I will never expect more out of a fellow team member than I am willing to give myself. This philosophy drives me to give my best. I find that co-workers are generally very receptive to taking on tasks when he or she knows that someone else is willing to pave the way, or to help knock down barriers.

**DD:** *Thank you, that sounds like a very good philosophy. We appreciate your time and anticipate the direction your leadership takes the BGAD permitting team.*



"X-ray" image of over-packed munitions



Bill Lunsford P.E. getting acclimated to his new office.

## One Year Closer to Completion

December 2010 marks the end of an exceptional year of development for the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP). We have seen many great achievements for the facility and much appreciated contributions to the local economy.

Current work in progress at the BGCAPP facility includes ongoing construction of the munitions demilitarization building (MDB) and control building, construction of the fire water pump house, installation of interior walls and electrical systems for the utility building, and concrete placement for the supercritical water oxidation (SCWO) Building.

The MDB has been one of the primary focuses on site for some time. The complexity of

the building's design creates an intense and unique project for the construction crews. After months of rigorous work assembling the MDB's heavy-duty foundation and frame, the team was excited to complete the first concrete lift for the energetics batch hydrolyzer (EBH) room. Crews are continuing to lay structural steel and prepare for the second lift soon to come.

An exciting phase of construction has also begun on the control building. Crews are currently placing the electrical system and piping systems on the building. Construction of the interior walls is moving along quickly and workers are already making progress on the roofing and siding. The control building is approaching completion.

As construction continues, BGCAPP development employs 623 workers in Richmond, Kentucky, 52 percent of which are from the local area. Another 125 staff members exist in locations outside of Richmond including Pasco, Washington, San Diego, Columbus, Ohio, and Frederick, Maryland. In addition to creating a great deal of local jobs, the project has contributed over \$66.7 million to Kentucky companies with 60 percent being spent in Madison and surrounding counties. Projected economic contributions for the remainder of the project are very promising.

As the new year approaches, the community and other interested parties reflect on the successes of 2010 and look forward to an equally congratulatory year of 2011.



Fire water pump house and tanks



Equipment pads being placed for SCWO Processing Building

## How the Public Notice Process Works

Keeping the public informed is one of the most important roles in the permitting process. A public notice is issued to give stakeholders a chance to engage the decision making process whenever the state intends to issue or deny a permit, major modification, or work plan.

A fact sheet, public notice, and radio announcement are drafted explaining the principal facts and technical issues considered in the preparation of the draft permit. The public



notice is then placed as a legal ad in the local newspaper and e-mailed or mailed to concerned stakeholders on the facility's distribution list. Agency contacts as well as information repository locations are offered in the public notice for anyone who may wish to know more about the draft permit being considered. Found at the permitting agency's offices and stakeholders' public libraries, the repositories will hold copies of the draft permit, public no-

of the draft permit, public notice, fact sheet, and administrative record.

If there are any questions or issues requiring clarification then stakeholders may submit comments to the agency for consideration or request a public hearing to discuss the issues. All comments submitted to the agency in writing or at a hearing must be evaluated and addressed before a final decision can be made to approve or deny the permit.

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The mission of the Kentucky Division of Waste Management is to protect human health and the environment by minimizing adverse impacts on all citizens of the Commonwealth through the development of fair, equitable, and effective waste management programs.



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200 Fair Oaks from the Buffalo Trace Trail