

Destroying WWI chemical weapons in Belgium

During the past two years, employees have been helping the Belgium Ministry of Defense destroy hundreds of chemical weapons—unearthed at freshly excavated construction sites and in farmers' fields—that date back to World War I. Corroded artillery shells loaded with arsenic, mustard gas, chloropicrin and other chemical agents are frequently found at former battle sites. The problem is prevalent enough that it is common to see newly discovered unexploded shells lying on roadsides waiting to be picked up by the Belgian Army.

"When you're driving around Belgium's countryside seeing firsthand the munitions that continue to be found, it is startling," said DeMil project manager Brint Bixler. "But each time I hear a shell explode in our detonation chamber, it's a good feeling knowing that there is one less chemical weapon to threaten the people of Belgium."

CH2M HILL's DeMil International has destroyed more than 1,000 asphyxiant and blistering agent munitions to date at Belgium's Poelkapelle Army Base.

Bixler's team and base personnel use DeMil's mobile detonation chamber, called the *Controlled Detonation Chamber (CDC)*, to explode one shell at a time. Each shell is individually wrapped in plastic explosives to ensure that it is completely destroyed.

The detonation chamber is attached to an expansion chamber and a series of filtering equipment to capture the emissions. All that's left after an explosion are a few metal shards. The detonation chamber can be reloaded and another shell can be immediately detonated.

DeMil has now developed a new CDC system for destroying recovered chemical munitions in the United States. Aketon Technologies, another CH2M HILL company, has developed low-cost

and efficient emissions abatement equipment for this CDC system.

"Aketon is a really important partner in this work," said Mark Morris, president of DeMil International. "Because our CDC system is less complicated and incredibly efficient, we can help clients worldwide in destroying chemical weapons."

The Aketon equipment is helping thrust DeMil's technology to a new level. It is currently being tested by the U.S. Army in the United Kingdom at Porton Down, where, coincidentally, the British government first worked on chemical warfare during WWI.

Successful testing of the equipment by the U.S. will qualify it for use in destroying chemical weapons at locations throughout the nation.

DeMil is also vying for a large contract with the French government to do work similar to what is being done in Belgium.



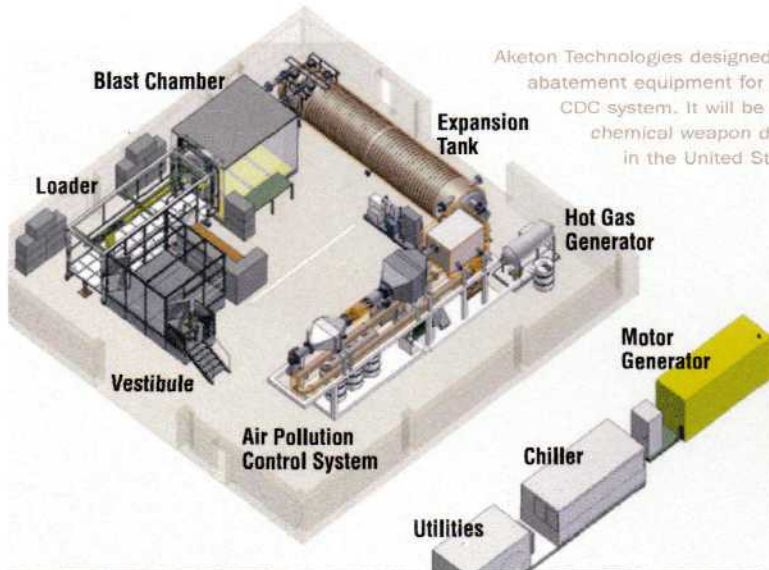
Belgian army personnel remove German World War I munitions from a cache unearthed in an agricultural area.



Munitions are brought to the Poelkapelle Army Base to be destroyed using CH2M HILL's Controlled Detonation Chamber.



The mobile detonation chamber arrives at Poelkapelle Army Base where it will destroy thousands of chemical weapons leftover from World War I.



Aketon Technologies designed pollution abatement equipment for DeMil's CDC system. It will be used for chemical weapon destruction in the United States.

Once detonated in the blast chamber, a bomb, such as this WWI German-made 77 mm shell, is reduced to a few pieces of shard.



Environmental Services bolstering bottom

The Johnston Atoll project and the work by DeMil International are done under CH2M HILL's Environmental Services, a business group that has weathered quite successfully the past few lackluster years for the industry.

Cutbacks on government spending for environmental work have had a

significant impact, but Environmental Services is well ahead of projected revenues.

"Our success is because we've taken market share," said Gene Lupia, president of Environmental Services. "For example, we are now the prime