



Blue Grass Chemical Agent  
Destruction Pilot Plant

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# Neutralization Followed by Supercritical Water Oxidation

Neutralization followed by supercritical water oxidation (SCWO) is the [technology](#) selected to destroy the stockpile of nerve agent (GB or "Sarin" and VX) contained in rockets and projectiles at the Blue Grass Army Depot.

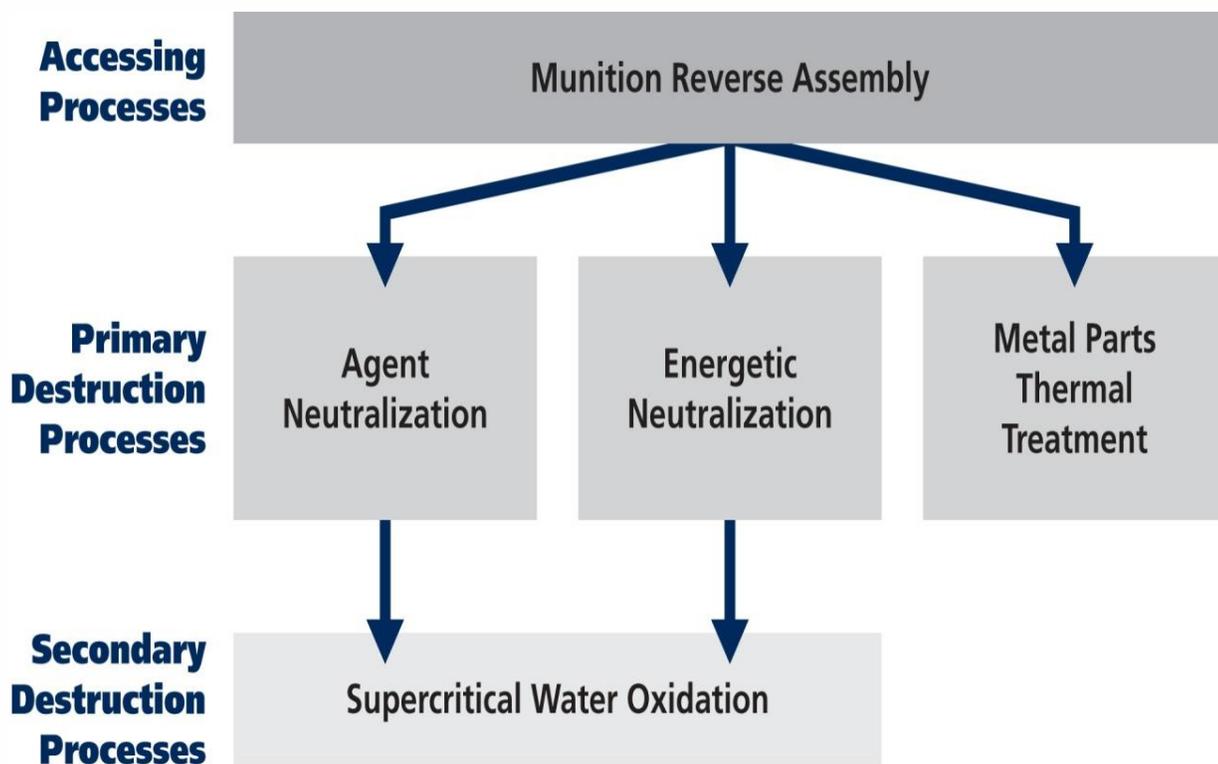
## How Neutralization Followed by SCWO Works

During the neutralization process, the munitions will be taken apart and the nerve agent drained and separated from the weapons' explosive components (energetics). The nerve agent will be mixed vigorously with hot water and sodium hydroxide to destroy, or neutralize, it. The energetics will be neutralized in a similar process. The resulting byproduct, known as hydrolysate, will be held and tested to ensure chemical agent destruction before proceeding to secondary treatment.

The chemical agent and energetic hydrolysates will be fed to the SCWO units to destroy the organic materials. [SCWO](#) will subject the hydrolysates to very high temperatures and pressures, breaking them down into carbon dioxide, water and salts.

The metal parts of the munitions will first be cleaned by a high-pressure water washout system and then heated to 1,000 degrees Fahrenheit for thermal decontamination for a minimum of 15 minutes. The metal parts can then be safely recycled.

Gases will be filtered through a series of High-Efficiency Particulate Air (HEPA) and carbon filters before being released into the atmosphere. Water will be recycled into the pilot plant and reused as part of the destruction process.



A Partnership for Safe  
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