

**Recommendations from the
Colorado Chemical Demilitarization
Citizens Advisory Commission
To
Program Manager
Assembled Chemical Weapons Alternatives
Concerning Acceleration Options for
The Destruction of Chemical Weapons
Stored at the Pueblo Chemical Depot**

Summary

The use of neutralization/biotreatment, with as much of the process completed on site, remains, in the opinion of the Colorado Chemical Demilitarization Citizens' Advisory Commission (CAC) and a majority of the citizens in the Pueblo community, the safest and most publicly acceptable method for the destruction of the weapons stored at the Pueblo Chemical Depot (PCD). The CAC and the Accelerated Options Working Group (AOWG) established by the CAC have reviewed numerous acceleration options proposed by the Army and their contractors. **We are persuaded that while there are acceptable acceleration options that have been utilized and others that should be explored, the bulk of the operations should be performed at PCD and that the transportation of hydrolysate off-site is an unacceptable option to the CAC and the community.**

The implementation of the recommendations made in the body of this report will assist the community, the Army and the contractor in mitigating the impacts of the facility on the community and prepare the way for PCD to become a productive part of the community in the future. We are convinced that the neutralization and biodegradation of the hydrolysate at PCD will facilitate the mutual objective of safe and expeditious destruction of the chemical weapons stored at the PCD.

The Colorado Chemical Demilitarization Citizens' Advisory Commission respectfully requests that the Program Manager for the Assembled Chemical Weapons Alternatives adopt and follow the recommendations of the CAC and the Pueblo community to implement the acceleration options proposed in this report, but not transport the agent or explosives hydrolysate to an off-site location for biodegradation. The biodegradation process should be accomplished at the Pueblo Chemical Depot.

Background

In October 1999 the CAC determined that the best technology for the destruction of the weapons at PCD would be neutralization followed by biodegradation. In March 2002 the Department of Defense (DoD) agreed with the CAC and the Pueblo community and selected chemical neutralization followed by biodegradation for the destruction of the chemical weapons stockpile stored at PCD. In this technology decision, DoD also directed ACWA to investigate ways to accelerate the destruction process at PCD. To this end the community, the CAC and the AOWG have studied numerous options and make the following recommendations.

Recommendations for Acceleration Options and Rationale

In April and June 2002 the Pueblo community participated in two forums to discuss a summary of the actions of the ACWA program to date and to look at options for accelerating the program. At the April meeting the community looked at five options presented by ACWA as potential methods for accelerating the destruction program. In June the community was provided with additional information about these options and two additional options. The options discussed were:

1. Revised acquisition strategy/contracting approach.
2. Accelerated environmental permitting.
3. Enhanced reconfiguration of the stockpile.
4. Off-site shipment of energetics.
5. Off-site shipment of hydrolysate.
6. Use of a mobile/transportable biotreatment system.
7. Use of a federally/public owned treatment (FOTW/POTW) works for treating hydrolysate.

The community expressed support for options 1-3, noted major concerns about options 4 and 5, and had little comment about options 6 and 7. Options 4-7 required more information than was available at that meeting.

Following these two meetings, the AOWG was formed through the CAC to further analyze options 4-7. The ACWA program proceeded with implementing options 1 and 2. Option 3 could not be implemented until after a contractor was chosen for the project. Option one was implemented successfully and the contract for the destruction facility at PCD was awarded in record time, even considering the protest that was filed by the losing contractor. The AOWG even recommended that accelerated contracting be pursued for sub-contracting opportunities. Option 2, which will accelerate the environmental permitting at the site by many years, is currently being implemented. Option 3 was dropped as unnecessary after the award of the contract to the Bechtel Pueblo Team.

The AOWG proceeded to look at options 4, 5 and 7 after the ACWA program dropped Option 6. During the first part of 2003, the use of an FOTW/POTW was studied extensively. After reviewing the results of the preliminary study, the AOWG, the CAC, ACWA and Bechtel agreed that the use of an FOTW/POTW in the Pueblo area was not possible due to water quality and environmental compliance concerns caused by discharges into the Arkansas River. Options 4 and 5 remained on the table for consideration by the AOWG. These off-site treatment options were expanded into 6 new options to be extensively analyzed by ACWA and the AOWG.

The six off-site disposal options under consideration are:

1. Ship uncontaminated wood pallets off-site for recycle and/or disposal.
2. Ship stable and uncontaminated propellant off-site for recycle and/or disposal.
3. Ship stable and uncontaminated bursters and propellant off-site for recycle and/or disposal.
4. Ship stable and uncontaminated bursters and propellant off-site for recycle and/or disposal and ship agent hydrolysate off-site for treatment and disposal.

5. Ship agent hydrolysate and energetic hydrolysate off-site for treatment and disposal.
6. Ship 3x munition bodies to foundries or smelters for recycling.

The AOWG met for several months in late 2002 and early 2003 to study these options. In addition they met for one and one half days in July to thoroughly review the options. Following this extensive study and review, the AOWG, including ACWA and the Bechtel Pueblo Team, agreed by consensus to drop options 3,4 & 6 from further consideration. The group expressed concerns about worker safety connected with options 3 and 4 and cost concerns with option 6.

The CAC, with the concurrence of the AOWG and community forum, makes the following recommendations concerning options 1,2 and 5.

Option 1 should be modified as follows:

1. ACWA and Bechtel, working with the Colorado Department of Public Health and Environment (CDPHE) and the Environmental Protection Agency (EPA), should continue efforts to develop and verify a method to determine whether wooden pallets and boxes are agent-contaminated.
2. If a method is not developed in a reasonable period of time, these materials should be processed onsite.
3. If a method is developed that the Army, Bechtel, the state & EPA can recommend as reliable and effective, it should be submitted to the CAC & the community for review.
4. If the CAC and the community agree, the CAC should recommend that uncontaminated wooden pallets & boxes may be:
 - a. made available for reuse as pallets & boxes, and/or
 - b. sent to a landfill for disposal.
5. Agent-contaminated wooden pallets & boxes should be processed onsite.
6. Uncontaminated wooden pallets & boxes should not be shipped offsite for incineration or for other forms of processing or other uses.

The working assumption in the baseline case for neutralization followed by biotreatment was that the wood dunnage would be contaminated with agent and that determining which pallets and boxes were contaminated and which weren't would be more trouble than it was worth. Therefore, in the base case scenario all dunnage would be destroyed on site.

In actuality, experience from other chemical demilitarization sites has shown that most of the wood dunnage is not contaminated with agent and the pallets and boxes have the potential to be used for other purposes, i.e. they don't need to be destroyed.

The first concern, however, is determining which pallets and boxes can be successfully reused and which are agent-contaminated and thus, must be destroyed on-site. ACWA and Bechtel are optimistic that a method can be developed within a reasonable length of time to distinguish between agent-contaminated and uncontaminated wood pallets and boxes and that this methodology would be accepted by CDPHE and EPA.

It's important to recognize that most, if not all, of the wood has probably been treated with a toxic chemical wood preservative, such as pentachlorophenol. Therefore, the

dunnage should be available for like reuse, but not sold for use in any manufacturing process (e.g., furniture making). If there is no reuse potential for the dunnage, they probably cannot be disposed of as ordinary solid waste and would need to be managed as hazardous waste. The CAC recommends the option of a hazardous waste landfill and not disposal at an incinerator, due to public opposition to incineration.

If destruction of wood pallets and boxes can be avoided, a modest savings in time and dollars to the government would be realized. In addition, there would be potentially an important reduction in the production of toxic pollutants and there would be benefits associated with the future use of the pallets and boxes. To offset these positives, there would be only a minimal loss of jobs and local revenues

Option 2 should be modified as follows:

1. ACWA and Bechtel, working with CDPHE and EPA, should continue efforts to develop and verify methods to determine whether bagged and sheet propellants are stable and/or agent-contaminated.
2. If methods are not developed in a reasonable period of time, these materials should be processed onsite.
3. If methods are developed that the Army, Bechtel, CDPHE and EPA can recommend as reliable and effective, they should be submitted to the CAC and the community for review.
4. If the CAC and the community agree, the CAC should recommend that stable and non-agent-contaminated bagged and sheet propellants may be shipped offsite for treatment and disposal.
5. Before any destination site is approved, it should be submitted to the CAC for review and aired in an open and public process both here in Pueblo and in communities affected by the destination site.
6. Unstable and/or agent-contaminated propellants should be processed onsite.

Arriving at a consensus concerning this option was difficult and time consuming. We ultimately achieved consensus, but not without some considerable concessions by some members of the AOWG and significant acts of faith related to the assumptions that form the basis of the recommendation.

The community was particularly troubled by the fact that if the propellants were sent off-site, they would most likely be destroyed by incineration. This is difficult to accept for many community members. At the same time, the CAC and community are very sensitive to the technology concerns expressed by the contractor, i.e. the cloth bags and threads used with the propellants do not easily dissolve in the neutralization bath and tend to clog the mechanisms of the equipment. The Army and Bechtel believe that they are unlikely to find or develop a method to process the bags and propellant separately within a reasonable length of time. This technical problem could result in significant delays in the program and significantly greater risk to workers.

There are two issues of concern with the condition of the propellant: the first is stability and the second is agent contamination. The Army and Bechtel must develop a methodology for determining both stability of the propellant and agent-contamination. This methodology must then be agreeable to CDPHE and EPA. ACWA and Bechtel are optimistic that a method can be developed within a reasonable length of time to determine agent-contamination of the propellant and that a method already exists to

determine propellant stability. The community and CAC must concur with these methodologies.

Finally, a public involvement process must be implemented in Pueblo and at the receiving site that fully outlines the process for the transportation of the stable and uncontaminated propellant to the destruction facility and its treatment there. As in all cases, propellant that is either unstable or agent-contaminated must be destroyed on-site.

One issue that was not explored by the community or the study was the use of the newly developed Explosive Detonation System (EDS) or the Donovan Chamber, both of which have been successfully used at non-stockpile sites. The use of either or both of these methods for the destruction of the propellant at PDS, may need to be explored, if this option cannot be successfully resolved as recommended by the CAC.

Option 5

The CAC and community reject option 5 as a viable acceleration alternative. They reaffirm their earlier recommendation that all hydrolysate be treated on-site through the biotreatment process. The CAC does not believe that there is a technical reason for pursuing this option and that ACWA did not make a persuasive case for the approval of the option. The CAC is concerned that should Option 5 be implemented the result will not be an acceleration of the program but a delay. The objections to this option are numerous and are explained below.

The analysis prepared by Focis Associates projected that Option 5 could result in a life cycle cost savings of about \$80 million for the project but would result in greater losses for the community of local jobs and revenue. Many community members questioned this estimated cost savings as well as the estimated numbers for lost local jobs and believed that both of these numbers would ultimately be much greater. Revenue losses for the community were estimated at \$14 million without a reflection of the economic multiplier effect. Thus the economic loss would probably be much greater than \$14 million. The loss of this economic impact is a greater percentage of the Pueblo County budget than of the DoD budget.

The analysis presented to the community did not consider several likely sources of costs and delays associated with potential opposition to this option that could result in conflict and litigation both in Pueblo and at the dozens of communities through which the hydrolysate would travel to get to its ultimate destination. Costs were not included for potential design adjustments at PCAPP should the off-site option fail for any reason. This could result in extensive program delays and is particularly important since only one off-site facility was identified to have the capability and capacity to handle the hydrolysate from PCAPP. This single TSDf that has the capacity to handle the hydrolysate was noted as a significant negative to this option in the FOCIS report.

Many environmental issues were not considered in the analysis of this option. These environmental concerns include:

1. Environmental performance differences between Colorado and New Jersey. (The assumption was made that the existence of a permit was equivalent to assurance of compliance.)
2. Cost of cleanup as a result of a transportation accident. (While this risk is low, it cannot be assumed that it is non-existent.)

3. Potential that communities along the transportation route may want to use this opportunity to improve their response to a hazardous materials spill and demand training and equipment at the Army's expense.

The transportation of hydrolysate through numerous states will become a political issue in these states as well as in Congress. The restrictions and demands placed upon the Army should the hydrolysate be shipped may be costly and result in significant time delay. Also, the community members questioned the cost, logistics, and logic of the proposal to return the trucks filled with water from outside of Colorado as not being a legitimate answer to the water shortage/recycling requirements for Colorado.

Finally, the community members pointed out that the partnership that had been forged between ACWA and the Pueblo Community revolved around the total project that had been initially envisioned: the neutralization of the chemical weapons followed by biodegradation at the PCAPP. The cost to the Pueblo Community as well as the numerous concerns, questions and issues raised demonstrated that this Option 5 is not a viable alternative to treating the hydrolysate at the PCAPP. It is believed by the Pueblo Community that this option would not result in any actual significant cost or schedule savings, but would cost the community in substantial losses of jobs and community and local government revenues.

Conclusion

The CAC and interested citizens of the community are grateful to the ACWA program and their contractors in putting before them an analysis of off-site shipment options that could result in acceleration of the destruction program. We have carefully reviewed these options and believe that we have made thoughtful recommendations that are in the best interests of the community and the ACWA program. We realize and understand that it is important that all parties involved in the destruction of the chemical weapons stored at PCD work together to understand their mission in this important national program. This goal continues to be uppermost in our minds, as we work together

Pueblo is unified in its desire to support the Depot in completion of its final mission, the destruction of the chemical weapons stored at the PCD. This is a mission of national and global importance that will make this country and the world a safer place for all of us. We pledge our cooperation with the ACWA program throughout the destruction process so that the Pueblo community will become a better place in which to live and work.