DEPARTMENT OF THE ARMY
US ARMY CHEMICAL MATERIALS AGENCY
5183 BLACKHAWK ROAD
ABERDEEN PROVING GROUND MD 21010-5424

REPLY TO
ATTENTION OF

AMSCM-RDE

MEMORANDUM FOR Commander, Deseret Chemical Depot, 11500 Stark Road, Building 5108, Stockton, UT 84071-0250

SUBJECT: Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for Proposed Modifications to Support the Destruction of Mustard Agents and Munitions at the Tooele Chemical Agent Disposal Facility (TOCDF)

1. The subject EA and Draft FONSI are provided for your review and approval (enclosure 1). The EA and Draft FONSI have been coordinated with your staff and their comments have been incorporated.

2. A signature sheet requiring your signature and the signature of the TOCDF Site Project Manager is provided at enclosure 2. Subsequent to your approval and signature, the Draft FONSI will be published in your local news media and the public notified of the 30-day comment period. Copies of the EA will be available at the TOCDF Outreach Office. Comments will be considered in preparation of the Final FONSI.

3. If you have any questions or concerns regarding the EA or the Draft FONSI, the point of contact at the Environmental Office is Ms. Penny Robitaille at DSN 584-4178 or (410) 436-4178.

2 Encls

DALE A. ORMOND
Acting Director

DRAFT
FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Proposed Modifications to Support the Destruction of Mustard Agents and Munitions at the Tooele Chemical Agent Disposal Facility (TOCDF) in Utah

Description of Proposed Action: The U.S. Army Chemical Materials Agency (CMA) has determined that a portion of the inventory of mustard agents [i.e., the blister (or vesicant) agents H, HD, and HT] and munitions in storage at the Deseret Chemical Depot in Utah may contain elevated levels of mercury and/or accumulations of solids. The unanticipated presence of these materials could complicate the ability of the Tooele Chemical Agent Disposal Facility (TOCDF) to destroy the munitions and mustard agents with the existing baseline incineration technology while maintaining compliance with applicable emissions limits and regulations. There are over 120,000 items (including 6,397 steel cylinders, known as "ton containers") holding over 12 million pounds of mustard agent at the depot. Up to 30% of these ton containers are suspected of having high levels of mercury and/or excessive solids content, thus requiring special processing.

The CMA proposes to install alternative technologies to augment the baseline incineration process at the TOCDF to provide greater operational flexibility for destroying those mustard agents and munitions which have elevated levels of mercury contamination and/or a large solids content. As identified below, two technologies are being considered under this Proposed Action. The first technology addresses the mercury contamination, and the second addresses the excessive solids content in ton containers.

- *Pollution Abatement System (PAS) filtration system (PFS).* To control atmospheric emissions of mercury from the TOCDF, three new PFSs would be installed on the existing PASs: one new PFS on each of the TOCDF's two liquid agent incinerators, and one new PFS on the metal parts furnace (where drained munition bodies and empty ton containers are thermally decontaminated). Each new PFS would include an activated carbon filtration stage with sulfur-impregnated carbon, which would remove mercury from the stack gases. These new PFSs would be capable of reducing mercury emissions to prescribed regulatory levels.

- *Ton container washout capability.* The proposed new ton container washout capability would consist of three parts:
  (1) A rinse and drain station (RDS), in which jets of hot water would be used to scour the solids from inside each ton container after it has been drained of mustard agent.
  (2) A rinsate pre-treatment (RPT) system, in which any residual mustard agent in the rinsate from the RDS would be destroyed via a water hydrolysis reaction. The resulting liquid by-product (called "hydrolysate") would be filtered to remove solids.

(3) A hydrolysate disposal system (HDS), which would be used to transport the filtered hydrolysate to one of the TOCDF's two liquid incinerators for destruction or transported off-site to a permitted disposal facility. The HDS would include the necessary piping and pumps for moving the hydrolysate from the RPT area into the incinerators or to the existing off-site transfer station.

The Proposed Action would apply only to those items that cannot be processed by the TOCDF baseline facility. Upon the completion of the Proposed Action, and in conjunction with baseline processing, the entire inventory of mustard munitions and agents in storage at the Deseret Chemical Depot would be destroyed. The TOCDF would then begin decommissioning activities.

Project Alternatives: The alternatives to the Proposed Action include (1) the No-Action Alternative of continuing to store the estimated 30% of the ton containers which could not be processed with the TOCDF's baseline technology, (2) controlling the munition and agent feed rates into the incinerators so as to maintain compliance with regulatory emission levels and to remain within the TOCDF's operational control limits, (3) adding only new filtration to the existing PAS to remove/contain excessive mercury emissions from the TOCDF (i.e., not installing the proposed ton container washout equipment), (4) conducting drain and washout activities for those ton containers which contain an elevated mercury content or a large solid content, followed by chemical treatment to remove the mercury from the ensuing by-products, and (5) employing other technologies to remove mercury from stack gases.

The technological alternatives enumerated above would address either the mercury-contamination problem or the excessive solids content, but would not address those ton containers with both mercury contamination and excessive solids accumulations. Furthermore, some of these alternatives may require lengthy procurement and installation periods before the equipment would be ready to operate. Neither the No-Action Alternative nor any of the other alternative actions listed above would allow the Army to meet international treaty obligations and Congressional directives which require the destruction of the chemical warfare materiel by April 2012.

Under Item 5, above, the U.S. Army has examined four technologies for controlling mercury emissions from incinerators: activated carbon injection, wet scrubbing of mercury, sodium sulfide injection, and adsorption onto sulfur-impregnated carbon filters. Because of technical immaturity, process complexity and/or inability to meet regulatory emissions limits with elevated-mercury munitions, the study recommended against all these technologies except sulfur-impregnated filtration (which is part of the Proposed Action).

Anticipated Environmental Effects: The Proposed Action would have positive impacts on the environment by destroying the mustard-filled munitions and ton containers stored at the Deseret Chemical Depot. The destruction of these items would also eliminate the continued commitment of resources necessary for conducting surveillance, monitoring, and maintenance activities while the items remain in storage.

The Proposed Action of installing the three new filtration systems to control mercury emissions from the TOCDF would have no significant environmental impacts. In addition, the option of installing and operating new washout equipment [including the proposed rinse and drain station (RDS), the rinsate pre-treatment (RPT) system, and the hydrolysate disposal system (HDS)] for ton containers with high solids content would likewise have no significant environmental impacts. Installation and operation of the PAS filtration systems would ensure the emissions from the TOCDF would be in compliance with applicable regulatory limits. The emissions from the TOCDF with these new filters in operation would not result in significant impacts to human health or to ecological resources. Consumption of additional resources, such as water, to support the Proposed Action would involve incremental quantities that are mere fractions of the TOCDF's baseline consumption requirements. The additional waste streams to be created by the Proposed Action are likewise only small, incremental amounts of the wastes normally generated by baseline operation of the TOCDF. The relatively small quantities of these wastes would have a negligible impact on the capacity of commercial waste management facilities in the region.

Facts and Conclusions Leading to a FONSI: On reviewing the environmental assessment and other project information, the Commander of the Deseret Chemical Depot has concluded that installing and operating the proposed equipment to destroy the mustard agents and munitions currently stored at the depot would have no significant adverse impact on land use, air quality, water use and/or water quality, ecological resources, socioeconomic resources in the area, cultural (i.e., archaeological and historic) resources, human health, minority or low-income populations in the area, or on waste management practices. The cumulative impacts of the Proposed Action in relation to the impacts of past, present and reasonably foreseeable actions at the TOCDF and in the general area would likewise not be significant. Therefore, an environmental impact statement will not be prepared.

Administration of Environmental Documentation: Persons wishing to comment may do so within 30 days of the date of publication of this notice in the *Salt Lake Tribune* and the *Deseret News.* All comments received during the comment period will be considered in developing the final decision on the Proposed Action.

Requests for copies of the EA and this Draft FONSI are available from:

Public Affairs Officer
Deseret Chemical Depot
Tooele, Utah 84074