



# THE MEMPHIS DEPOT TENNESSEE

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## ADMINISTRATIVE RECORD COVER SHEET

AR File Number 252

**MEETING MINUTES**  
**Restoration Advisory Board**  
**June 19, 1997**  
**Defense Distribution Depot Memphis, TN**  
**Commander's Conference Room**

The Restoration Advisory Board meeting was held on June 19, 1997, at the Defense Distribution Depot, Memphis, Tennessee (DDMT) in the Commander's Conference Room. The attendance list is attached.

**Welcome and Introduction**

Mr. Glenn Kaden opened the meeting by welcoming the RAB members, community members, and giving an overview of the agenda for the meeting.

**Old Business**

**Meeting Minutes - Glenn Kaden**

The meeting minutes from the April meeting were mailed out. Mr. Kaden asked if there were any questions regarding the minutes. There were no questions or changes. The minutes were accepted into the record.

Mr. Kaden noted an error in the last newsletter. It indicated that the Depot was approved for closure in July 1995. This should be changed to September 1995.

Mr. Kaden apologized to the RAB for not providing meeting materials ahead of time due to time constraints.

**New Business**

**Depot History-Glenn Kaden**

Mr. Kaden gave a brief history of the Depot as it pertained to Chemical Warfare Materials.

The Army Chemical Corps operated a Chemical Warfare Section (CWS) at the Depot beginning in April 1942. The CWS received, stored, and shipped general supplies that included: gas masks, empty bomb casings, primacord, blasting caps, bomb nose fuses, tear gas, irritant gas, smoke pots, tear gas grenades, flame thrower fuel, chemical agent identification sets (CAIS), decontaminating agents, and protective ointment.

Between 1952 and 1956, chemical agent identification sets (CAIS) were buried in Dunn Field. In 1946, 29 captured German mustard bombs were buried at Dunn Field. This was a one time, emergency situation when three rail cars containing the bombs were found leaking during transfer from Mobile, AL to Pine Bluff Arsenal, AR. The rail cars were detoured to the Depot for neutralization and disposal of the bombs.

Depot records show five 250-kg and twenty-four 500-kg bombs were suspended over a strong bleach solution slurry pit and holes shot in the bomb noses with rifles. The mustard was drained into the slurry pit and neutralized by the bleach. To destroy any bomb detonators, another shallow pit was prepared and the drained bomb casings were placed there with dynamite strapped to the noses. The pit was covered with dirt and three layers of railroad ties, and the dynamite was exploded. Other contaminated material such as protective clothing and railroad ties were placed in either the bleach slurry pit or the detonator pit and burned.

The Chemical Supply Section, a division of the CWS, was transferred from the Depot in 1947. The CWS continued to store and dispose of general supplies until March 31, 1961.

Mr. Kaden introduced Mr. Chuck Twing to the RAB. Mr. Twing is with the U.S. Army Corps of Engineers, Engineering and Support Center, Huntsville, AL.

#### **Chemical Warfare Materiel – Chuck Twing**

The briefing topics included a history of Chemical Warfare Materiel at the Depot, Chemical Warfare Materiel background, phases of Chemical Warfare Materiel sites, and Safety Issues.

Mr. Twing explained that the Chemical Agent Identification Sets (CAIS) buried in Dunn Field were glass vials that contained chemical agents. These items were used to train soldiers to identify the odors of chemical agents. There were four agents in the CAISs: phosgene, chloropicrin, lewisite, and mustard.

Dunn Field is the only area on the Depot with the potential presence of Chemical Warfare Materiel. The main Depot area is NOT considered a Chemical Warfare Materiel area, since no evidence of burial or destruction of Conventional Ordnance or Chemical Warfare Materiel could be found.

Mr. Twing defined Recovered Chemical Warfare Materiel (RCWM) as discovered chemical agent munitions, associated equipment, and surrounding contaminated media previously disposed of as waste. The four phases of a RCWM Site include preliminary assessment, engineering evaluation/cost analysis (site characterization), implementation of selected response action, and site closure/investigation for traditional hazardous waste cleanup.

The preliminary assessment determines if there is ordnance or related hazards and the need for any further action. The preliminary assessment consists of a detailed historical record search that produces an Archive Search Report. It is not an in-depth investigation of the site.

The engineering evaluation/cost analysis is a detailed look at the project site. This stage involves a detailed archive search. Part of the search includes talking with former employees. To accomplish this, the Corps could establish an 800 telephone number and place advertisements in veteran's publications and with local newspapers and media to help acquire more knowledge about the site's history.

Fieldwork produces data (site characterization) to assess the amount of potential contamination. Next, the Engineering Evaluation/Cost Analysis evaluates and recommends response alternatives and is presented to the public for comment before a response alternative is chosen. Although public involvement is present throughout the process, it peaks at this point.

Response actions are based on the Engineering Evaluation/Cost Analysis recommendations as well as past, current, and future land uses. Response Actions could include removals, institutional controls, or no further action if no hazard exists.

Any time the Corps intends to remove or disturb potential Chemical Warfare Materiel/ordnance through removal actions, excavations, soil sampling, well installation, groundwater sampling, etc., a number of agencies are involved. These agencies include the Corps of Engineers Engineering Support Center, Huntsville, Army Technical Escort Unit, Program Manager for Chemical Demilitarization, Edgewood Research and Development Engineering Center as well as others. Additionally, removal or disturbance of Chemical Warfare Materiel/ordnance requires safety documentation and approval by the Department of the Army.

Transportation and disposal or destruction of the materials found follows excavation and recovery. Once the site is closed, the hazardous, toxic, and radioactive waste investigation occurs.

Where is the Depot in the process? A contractor has been chosen for the work, and the Corps expects the contract to be complete by mid-to-late July. The work plans should be formulated in August and fieldwork would then take place in October and November. The Engineering Evaluation/Cost Analysis is anticipated in March 1998 followed by the public comment period.

Safety requirements mandate submission of the plans for site safety, agent monitoring, protective action, transportation, and storage. The Site Safety Plan establishes the Maximum Credible Event and Downwind Hazard Methodology. The Depot should use the Maximum Credible Event and Downwind Hazard Methodology to contract for local emergency support.

A Maximum Credible Event establishes the worst single event that could occur at any time with maximum release of chemical agent from a munition, container, or process as a result of an unintended, unplanned, or accidental release (event must be realistic with reasonable probability of occurrence). In other words, what would be the worst thing that could occur and be the most likely? Emergency planning is based on this imaginary event.

Downwind Hazardous Methodology is a step beyond the maximum credible event. It takes into account the weather conditions at the time to describe what the hazards would be if an accidental release were to occur. Equipment readings are taken every hour, and if the levels are outside of the Depot's established control range, the operation would be shut down.

Procedures and precautions assure public safety. Although evacuations may be possible, they are unlikely because of the use of engineering controls such as a filtered shelter. Removal actions have been successful in Washington, D.C.; Jackson, MS; Raritan, NJ; and Fort Ord, CA without impact on public health or private property.

Mr. Twing concluded his presentation. Mr. Kaden asked for questions from the RAB regarding the presentation. He asked that the first questions from the public pertain to the presentation and then the floor would be opened for general questions and comments.

Ms. Peters asked if the mustard gas would be removed and taken elsewhere, or would it be checked out and left on the Depot?

Mr. Twing stated that the intent would probably be to remove the vials with a transportation plan in place. This removal action would only occur once a public comment period and the decision-making process were complete.

Ms. Peters asked if there is enough information to know how to get rid of the mustard gas forever?

Mr. Twing stated that because there are finite amounts of mustard gas in Dunn Field it could be removed and destroyed by neutralization or incineration.

Mr. Williams felt that the presentation was not understandable to the RAB or public. He felt that there are more hazards than what are being presented.

Mr. English stated he understood the briefing and felt as though nothing was being whitewashed or inaccurately portrayed.

Mr. Clay stated that he understood the presentation; however, he felt the scope of the presentation was too small and narrow.

Mr. Twing stressed that this presentation only pertained to a small part of the overall restoration and cleanup process underway at the Depot. He stated that the Depot does not appear on the Superfund list because of Chemical Warfare Materials alone.

Mr. Truitt asked if there had ever been a catastrophe at any of the other areas where much larger amounts of Chemical Warfare Materials were stored?

Mr. Twing answered that in stockpiles there have been instances of leaking munitions and injury over the years, but in the non-stockpile program, which has only been in existence about five years, there has not been one release, accident, or injury.

Mr. Brayon asked about the report that was due out in June? He wanted to know the status.

Mr. Kaden responded that the Data Reports have been submitted and that the BCT will discuss decision criteria for limits at its next meeting.

Mr. Williams mentioned that CH2M Hill is currently on the Depot taking groundwater samples as part of the quarterly groundwater sampling program.

#### Public Comment Period

Mr. Kaden asked if there were any comments or questions from the public.

Mr. Bradshaw stated he had some comments and questions and requested a written response to his questions. He commented that the chemicals referred to as "chemicals that are found in the home" are found in the groundwater and water table. He believed that in the groundwater, these chemicals posed a threat to humans.

He asked if any of the people in the community were exposed to the mustard gas when training was being conducted and if it was conducted outdoors? He also stated that mustard gas was a dangerous chemical that could cause cancer and that there were no safety requirements at that time. Mr. Bradshaw also commented that the Federal Facilities Agreement contained a secrecy clause. He said that the clause stated the Army or the Depot did not have to reveal anything they did not want to. He also said the clause stated that if someone else discovered something and wanted to reveal it they must have permission from the Army first. He asked why the FFA Depot contained a secrecy clause and if the Depot was being totally honest with the community about the dangers?

Mr. Kaden said that the Fluvial Aquifer has some chemicals in it. He also said the Depot was here and taking a pro-active approach to cleanup. "We are taking responsibility for what we did, but we are not the whole cause of the problems. The past practices were accepted at that time, and the Depot is now trying to correct them," he said.

Mr. Kaden also stated that chemical warfare training was not conducted at the Depot. It was used for storage of the Chemical Agent Identification Sets. He agreed that mustard gas has some long-term effects. "We have an ATSDR study pertaining to mustard gas and would be happy to make that information available to the public," he said.

Mr. Kaden stated that he was not familiar with the secrecy clause in the FFA, but that Mr. Spariosu, Mr. English, and he were bound by the agreement. "We want community involvement, and we want the public to know what is happening. If the clause does exist, we would not evoke it," he said.

Mr. Spariosu added that every region had standard FFA language. He stated he would review and respond directly to Mr. Bradshaw. He added that on some military bases, there were classified areas for national security reasons and that it was probably a standard clause. "There are no secure areas at the Depot. All information is public and in the repositories," he said.

Colonel Kennedy stated that his job at the Depot did not require a security clearance.

Ms. Gray requested that Mr. Spariosu re-read the FFA and that the topic be placed on the agenda for the next meeting.

Mr. Spariosu responded that he would work on reviewing the document for this clause.

Mr. English said that there was some type of security clause in the FFA and that before the FFA was signed the language was discussed. He also stated that the clause pertained to national security matters and not environmental matters. He said he would also look at it again.

Ms. Bradshaw stated that the chemicals were not just household cleaners. "The items that have been burned at the Depot need to be listed so people know what was in the air and what things these chemicals cause. We are seeing a health effect," she said. Ms. Bradshaw also asked if any off-site dumping occurred at any time, if there was going to be more ground testing, and where the archives were located.

Mr. Kaden stated that the report he had contained this information and that it was available to her. Ms. Bradshaw asked who did the archive report. When she was told by Mr. Kaden that the Corps of Engineers (Huntsville Division and St. Louis District) completed the report, Ms. Bradshaw stated that she did not trust the Corps of Engineers. She wanted to find out the information for herself. Ms. Bradshaw was told she was welcome to use the Archive Report as a means to determine from where the information came.

Mr. Twing stated that mustard gas was a liquid and that it was heavier than water and could stay in lower areas. Some of these chemicals are carcinogenic. The reference to Hazardous, Toxic, Radiological Waste was the way it was worded in the laws. This does not imply there were radiological wastes at the Depot. However, Chemical Warfare Materiel was not the only thing out at Dunn Field.

Mr. John Fisher, a retired Depot employee, asked about former Depot employees who may have been exposed to things. He felt that if there were problems in the community then there were probably problems with the retired employees. In his opinion there have been a lot of deaths of former Depot employees.

Mr. Williams said he had spoken with Congressman Harold Ford, Jr. about this issue. Mr. Williams stated he thought there should be physicals given to Depot employees.

Mr. Clay stated he felt the scope of the preliminary assessment was too narrow and would like to see it broadened. He wanted to have faith in the contractors who were completing the work.

Mr. Twing stated he would widen the scope as much as possible but could only do so within the chemical warfare area.

Mr. Bradshaw requested that there be a clinic on the Depot for the former employees and the community. He said it should focus on the health issues and concerns specific to the Depot.

The meeting was adjourned. The next RAB meeting will be July 17, 1997 at 6:00 p.m. in the Commander's Conference Room.

### Restoration Advisory Board Members

Mr. Glenn Kaden  
Mr. Mondell Williams  
Mr. Jordan English  
Mr. Norm Lachapelle for Mr. Carter Gray  
Mr. John Garrison  
Ms. Johnnie Mae Peters  
Mr. Kevin Clay  
Mr. Dave Bond  
Mr. Eugene Brayon  
Ms. Terri Gray  
Ms. Elizabeth Young  
Ms. Willie Mae Willett  
Mr. Dann Spariosu

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Mr. Ulysses Truitt  
Mr. James Webb

**Citizen Representative  
MLG&W**

Mr. Michael Dobbs  
Jeff McCauslin  
Colonel Joe Donnelly  
Colonel Michael Kennedy  
Mr. Eric Holladay  
Mr. Shawn Phillips  
Mr. Charles Twing

DDRE/ASCE  
DDRE/ASCE  
ASCE-D  
DDMT  
DDMT  
DDMT  
U.S. Army Corps of Engineers  
Huntsville

Ms. Karen Moran  
Ms. Juliet Denton

DLA  
U. S. Army Corps of Engineers  
Huntsville

Mr. Bob DiMichele

U. S. Army Corps of Engineers  
Huntsville

Mr. Bernie Hayes  
Mr. Benjamin Moore  
Ms. Sherrye Wheeler  
Mr. Albert E. Jones  
Ms. Janice Smith  
Mr. Emmett Jilsan  
Mr. Terrel Mays  
Mr. Sylvester Mays  
Mr. Anthony Hobse  
Mr. Kenneth Bradshaw  
Ms. Doris Bradshaw  
Ms. Annie Gooden  
Ms. Clementean Rhynes  
Ms. Irma S. Tabor  
Mr. Henry Parks  
Ms. Lois Newby  
Mr. Michael Grayson  
Ms. Anita Tate  
Ms. Sandra Bernard  
Ms. Ruby Franklin  
Ms. A. Adele Hunt

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**Others in Attendance**  
(continued)

Mr. E. Dutiye	Citizen
Mr. E. Walker	Citizen
Mr. Russell Ray Anderson	Citizen
Mr. John Fisher	Citizen
Ms. Sue Estes	ME3, L.L.C.
Ms. Kathy Brundage	ME3, L.L.C.

**Defense Logistics Agency  
Defense Distribution Depot Memphis**

**Restoration Advisory Board**

**Agenda**

**June 19, 1997**

**DDMT Commander's Conference Room  
2163 Airways Boulevard  
Memphis, Tennessee**

**Welcome and Introduction**

Glenn Kaden  
BEC. DDMT-DE  
Facility Co-Chairman

**Old Business:**

Meeting Minutes Review

Glenn Kaden

**New Business:**

Chemical Warfare Materiel

Chuck Twing  
U.S. Army Corp of Engineers  
Engineering and Support Center  
Huntsville

Public Comment Period

Meeting Adjourned

Good Evening and welcome to the June 1997 Restoration Advisory Board meeting.

Mondell and I appreciate your taking time from your busy schedules to be with us tonight.

A special welcome to the community members and the government personnel who are visiting the Depot this week.

The first order of business is to take care of OLD BUSINESS

- (1) Everyone should have received copies of the minutes from our last RAB meeting. If everyone did receive them and there are no corrections to be made, we should enter them into the record.
- (2) Everyone should have received our last newsletter. There are some extra copies at the door. Thank you Sue Estes for your efforts in putting out the newsletter. Unfortunately there is a technical error that needs to be corrected in it concerning our program history. Under the BRAC PROGRAM portion the date should read September vice July. Please make the correction on your copy and we will be sure to document this change in the minutes.
- (3) The Depot received several calls and letters this month from RAB members. I thank you for your concerns and beseech all of you to contact us if you have any questions.
- (4) The last topic of old business concerns an apology from me concerning sending out the agenda information prior to the RAB meeting. In order to ensure accurate information, the presentations you will hear tonight have been continually in revision up until a few hours ago. In the future I will continue to strive to get the information to you prior to the meeting.

# Defense Distribution Depot Memphis, Tennessee



DEFENSE DEPOT MEMPHIS

## Discussion of Chemical Warfare Materials

# Defense Distribution Depot Memphis

## History

Prior to 1942, the Depot site was used for producing cotton.

Since opening, the Depot's mission has included receiving, storing, and shipping textile products, industrial chemicals, food products, construction materials, and medical supplies.

- ◆ After opening in 1942, the Memphis General Depot provided stock control as well as storage and maintenance services for the U.S. Army (Corps of Engineers, the Chemical Corps, and the Quartermaster Corps), performed missions for the signal and ordnance technical services, and served as a Prisoner of War camp.

# Defense Distribution Depot Memphis

## History

The Army Chemical Corps operated a Chemical Warfare Section at the Depot beginning in April 1942.

During World War II, the Chemical Warfare Section (CWS) received, stored, and shipped general supplies such as gas masks, empty bomb casings, primacord, blasting caps, bomb nose fuses, tear gas, irritant gas, smoke pots, tear gas grenades, flame thrower fuel, chemical agent identification sets (CAIS), decontaminating agents, and protective ointment.

- In 1946, 29 captured German mustard bombs were decontaminated at the Depot.

# Defense Distribution Depot Memphis

## History

Chemical Warfare Section operations at the Depot (continued).

Between 1952 and 1956, chemical agent identification sets were buried in Dunn Field on several different occasions.

The Chemical Supply Section, a division of the Chemical Warfare Section, was transferred in 1947.

The Chemical Warfare Section continued to store and dispose of general supplies.

The Army Chemical Corps concluded its use of the Memphis Depot on March 31, 1961.



# Defense Distribution Depot Memphis

## 1946 German Bomb Disposal

**When:** Over the course of two weeks in July 1946. This was a one time, emergency situation.

**Why:** Three rail cars containing captured German mustard bombs were found leaking during transfer from Mobile, AL to Pine Bluff Arsenal, AR. The rail cars were detoured to the Depot for neutralization and disposal.

**How Neutralized:** Records indicate five 250-kg and twenty-four 500<sup>kg</sup> bombs were suspended over a strong bleach solution slurry pit and holes shot in the bomb noses with rifles. The mustard drained into the slurry pit and was neutralized by the supertropical bleach.

# Defense Distribution Depot Memphis

## 1946 German Bomb Disposal

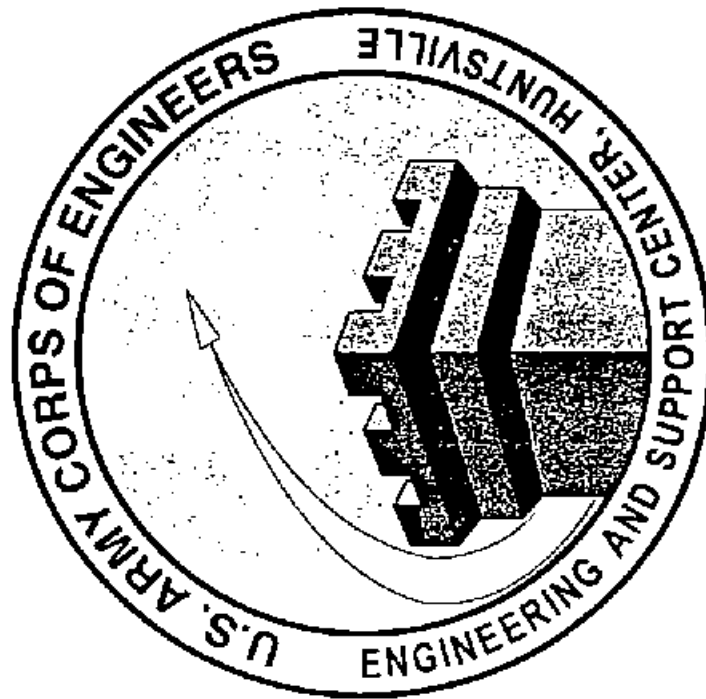
◆ How (continued): To destroy any bomb detonators, a shallow pit was prepared separate from the slurry pit, and the drained bomb casings were placed there with dynamite strapped to the noses. The pit was covered with dirt and three layers of railroad ties, and the dynamite was exploded.

◆ Other contaminated materials such as protective clothing and railroad ties were placed in either the bleach slurry pit or the detonator pit and burned.



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# Defense Distribution Depot, Memphis, Tenn.



## Huntsville Center Briefing

### June 19, 1997



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Center, Huntsville

# Defense Distribution Depot, Memphis, Tenn. Briefing Outline

- Chemical Warfare Materiel history at Defense Distribution Depot, Memphis, Tenn.
- Chemical Warfare Materiel Background.
- Phases of Chemical Warfare Materiel Sites:
  - Preliminary Assessment.
  - Engineering Evaluation/Cost Analysis.
    - public comment period.
  - Response Actions.
- Safety Issues.



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# **Chemical Warfare Section Activities**

- **The Chemical Warfare Section of the Defense Distribution Depot, Memphis, Tenn., was activated in 1942 and its missions during World War II included:**

- **Receiving, storing and distributing supplies to designated commands and for shipment overseas.**
- **Receiving and storing training ammunition for distribution to designated installations.**



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# Potential for Chemical Warfare Materiel

- Archival information indicates the remains of Chemical Agent Identification Sets were buried in the Dunn Avenue area. These are sets of glass vials that contained chemical agents. They were used to train soldiers to identify the odors of chemical agents.





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# Potential for Chemical Warfare Materiel

- A singular incident occurred in 1946.
- After discovering three railcars in Memphis at the Missouri Pacific Railroad were leaking Mustard, they were moved to the Memphis General Depot where the matter could be properly handled.
- Archival information indicates that the remnants of 250 Kilogram and 500 Kilogram Mustard Bombs may be located in a trench used to neutralize the Mustard or in a pit used to destroy the explosives.



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## **Areas of Concern**

- **The Dunn Avenue area is the only area on Defense Distribution Depot Memphis affected by the potential presence of Chemical Warfare Materiel.**
- **The Main Depot area is NOT considered a potential Chemical Warfare Materiel area. No evidence of the burial or destruction of Conventional Ordnance or Chemical Warfare Materiel on the Main Depot could be found.**





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# Basic Definition: Recovered Chemical Warfare Materiel

- Recovered Chemical Warfare Materiel  
(RCWM):

- Discovered chemical agent munitions,  
associated equipment (such as glass  
vials or metal shipping containers), and  
surrounding contaminated media (such  
as propellant) previously disposed of as  
waste.



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# Phases of a Recovered Chemical Warfare Materiel Site

- Preliminary assessment.
- Engineering Evaluation/Cost Analysis (site characterization).
- Implementation of selected response action.
- Site closure/investigation for traditional hazardous waste cleanup.





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# Preliminary Assessment

- Determines if there is an ordnance-related hazard.
- Determines need for any further action.
- Produces Archive Search Report:
  - detailed historical records search.
- Not an in-depth investigation of the site.



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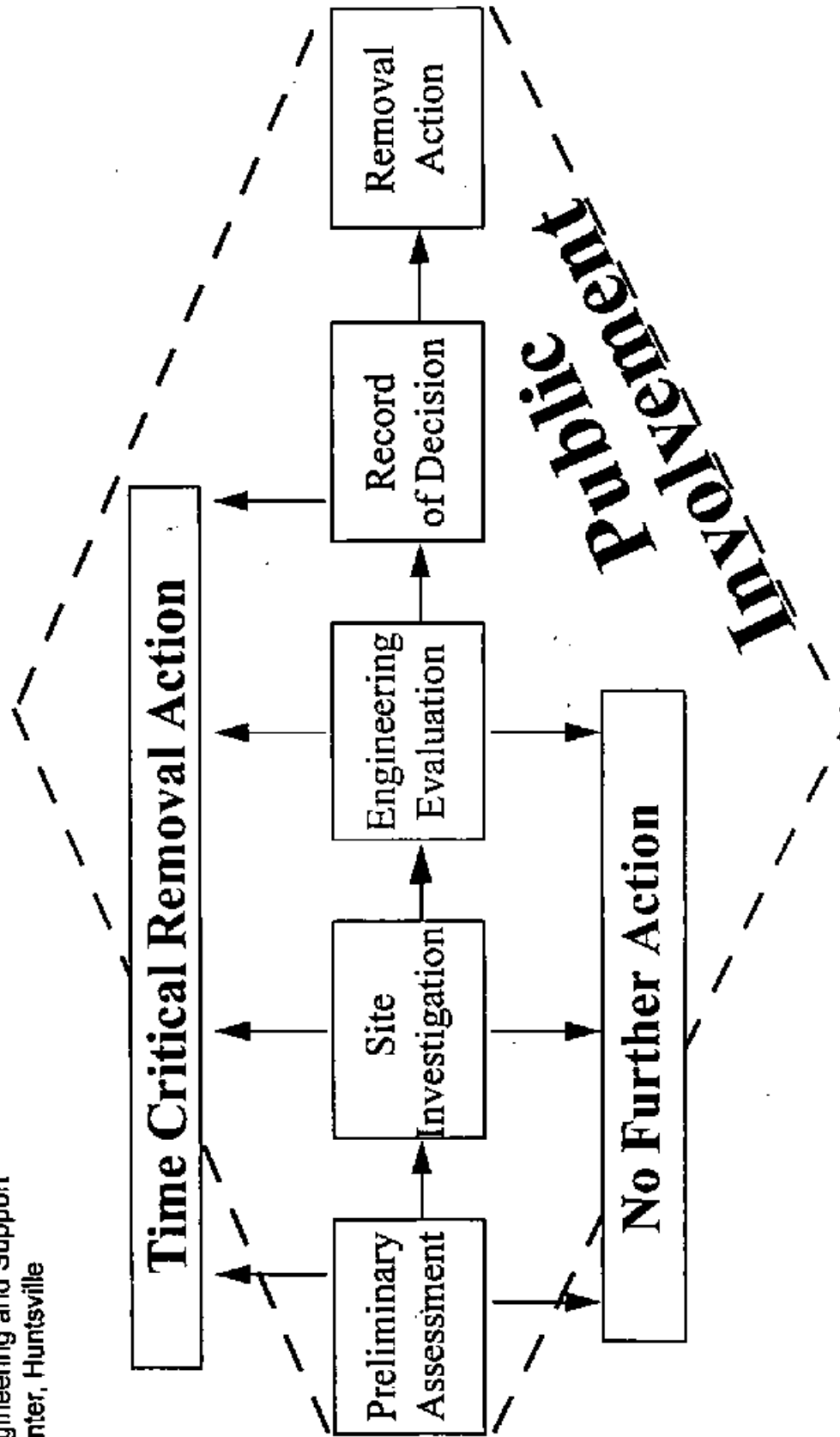
# **Engineering Evaluation/ Cost Analysis**

- Detailed look at the project site.
- Field work produces data (site characterization) to assess the amount of potential contamination.
- Produces an Engineering Evaluation/Cost Analysis that:
  - evaluates and recommends response alternatives.
  - is presented to the public for comment before a response alternative is chosen.



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# Public Involvement Process

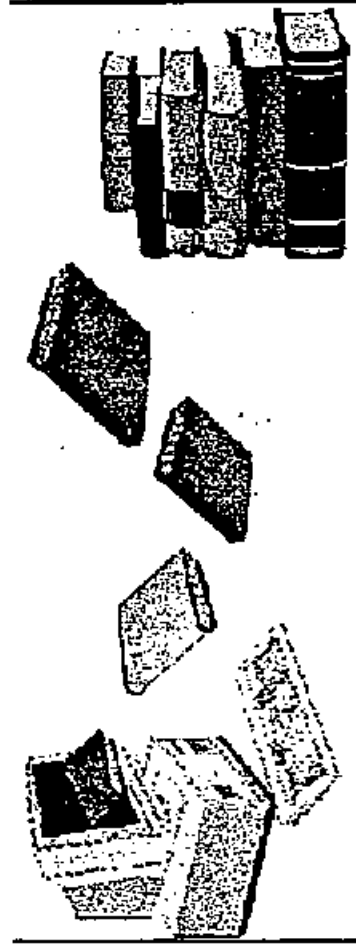




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# Response Actions

- Based on Engineering Evaluation/Cost Analysis recommendations (addresses past, current and future land use).



- Response Actions (includes removals and institutional controls).
- No further action (if no hazard exists).



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# **Excavation /Recovery**

- Intent to remove or disturb potential chemical warfare materiel/ordnance.**
  - Removal actions, excavations, soil sampling, well installation, groundwater sampling, etc.**
  - Agencies involved include Huntsville Center, Technical Escort Unit, Program Manager for Chemical Demilitarization, Edgewood (Maryland) Research and Development Engineering Center.**
  - Requires safety documentation approval by Department of the Army.**



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# Removal Action (Excavation/Recovery)

- **Excavation/Recovery.**
  - Transportation.
  - Disposal/destruction.
- **Ordnance site closure.**
- **Hazardous, Toxic,  
and Radioactive Waste  
investigation.**







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# **Where are we in the process?**

- **Currently requesting proposals from contractors to conduct the engineering evaluation/cost analysis.**
- **Expect contract in mid-July 97.**
- **Work plan scheduled for beginning of Aug 97.**
- **Field work would take place Oct.-Nov 97.**
- **Engineering evaluation/cost analysis (includes site characterization) anticipated in March 98.**
- **Public comment period.**



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# **Safety Requirements for Chemical Warfare Materiel**

- **Safety submission details site safety, agent monitoring, protective action, transportation, and storage plans.**
- **Establishes Maximum Credible Event.**
- **Establishes Downwind Hazard Methodology.**
- **Ensures local emergency support agreements.**





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# Maximum Credible Event

**The worst single event that could occur at any time with maximum release of chemical agent from a munition, container, or process as a result of an unintended, unplanned or accidental release (event must be realistic with reasonable probability of occurrence).**



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# Downwind Hazard Methodology



**Computer program describes the hazards resulting from an accidental release of chemical agent and the movement of the chemical release.**



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# Safety Issues

- Procedures and precautions assure public safety.
- Evacuations possible but unlikely because of the use of engineering controls (filtered shelter).
- Removal actions have succeeded in Washington, D.C.; Jackson, Miss.; Raritan, N. J.; and Fort Ord, Calif., without impact on public health or private property.



**FINAL PAGE**

**ADMINISTRATIVE RECORD**

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**ADMINISTRATIVE RECORD**

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