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## 1 REFERENCES

- 2 United States Environmental Protection Agency, 1992, Community Relations in Superfund: A
- 3 Handbook, Directive 9230.0.03C, Office of Emergency and Remedial Response, Washington, D.C.
- 4 Department of Defense and the United States Environmental Protection Agency, 1994,
- 5 Restoration Advisory Board (RAB) Implementation Guidelines, Washington, D.C.
- 6 Department of Defense, Strategy on Environmental Justice, March 24, 1995, Washington, D.C.

## 1 1.0 Overview of the Community Relations Plan

### 2 1.1 Introduction

3 This Community Relations Plan (CRP) sets forth a program to establish 4 communication and information exchange among the Defense Distribution Depot Memphis, Tennessee (hereafter referred to as "Depot") work force; various Federal, 5 state, county, and community agencies; business people; and local citizens. Effective 6 7 communication and timely information exchanges with the public are essential for 8 maintaining community understanding and support. The CRP includes suggested 9 community relations activities to be conducted during the cleanup program based on 10 interviews with members of the Depot community.

The Community Rolations Plan will discuss the public involvement activities related 11 to planned or ongoing activities associated with the Department of Defense (DOD) 12 13 Base Realignment and Closure (BRAC) environmental activities specially associated with the Installation Restoration Program (IRP) at the Depot. Citizens are 14 encouraged to become involved by attending public meetings (including those of the 15 16 Restoration Advisory Board (RAB)), reviewing available information, and submitting ideas to either the Depot point of contact or one of the community 17 representatives on the RAB. The address and telephone number of the Depot point 18 of contact and a list of RAB members are presented in Appendix A. Additional 19 community involvement activities are discussed in Section 4 of the Community 20 **Relations Plan**. 21

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Much of the background information for this CRP was provided by the Restoration 1 2 Advisory Board; Memphis/Shelby County Health Department; Memphis Light, Gas, 3 and Water Division; Memphis Area Chamber of Commerce; City of Memphis Chief 4 Administrative Office; Memphis Office of Planning and Development; and 5 newspaper articles from the Commercial Appeal and the Tri-State Defender. The 6 primary insights for tailoring a community relations program for the Depot were the 7 result of community interviews conducted by the Depot in May 1993 with local 8 residents and representatives of citizen and environmental groups who expressed 9 interest in the facility. Since the CRP is a working document, it will be modified 10 when needed to respond to changing community concerns and/or conditions at or surrounding the Depot. 11

#### 12 1.2 Community Relations Plan Organization

13 The Community Relations Plan is organized as follows:

- Section 1 introduces the purpose of the Community Relations Plan and
  provides information about the site location, history, and environmental
  setting.
- 17 Section 2 provides an overview of the investigation processes being used at
  18 the Depot.

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1	Section 3 provides information about the community surrounding the
2	Depot, provides a summary of the community involvement history, and
3	presents a brief discussion of community concerns raised during the
4	community interviews.
5	Section 4 explains the goals of a Community Relations Plan and provides
6	examples of how these goals can be reached. This section also outlines the
7	CRP for the Depot, including planned and potential community relations
8	activities as well as a schedule for accomplishment.
9	Appendix A presents a listing of key contacts and interested parties.
10	Appendix B presents the questionnaire used in the community interviews.
11	Appendix C provides the locations of the Information Repositories.
12	Appendix D contains a list of acronyms and a glossary for use when
13	reading this plan.
14	Appendix E contains fact sheets, newsletters, or progress reports
15	distributed to the Restoration Advisory Board and the Depot's mailing list.

16 1.3 Site Location

ł The Depot is located on a 642-acre site in Memphis, Shelby County, Tennessee, approximately five (5) miles east of the Mississippi River and northeast of the 2 junction of Interstate 240 and Interstate 55. The Depot is located four (4) miles 3 4 southeast of the central business district and one (1) mile northwest of the Memphis 5 International Airport, as shown in Figure 1. The site is bordered on the north, 6 south, and west by mostly residential properties and a few industrial facilities and is 7 bordered on the east by commercial property. Some neighboring residences are 8 located within 100 yards of the Depot's boundaries.

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9 1.4 Facility Description

10 The Depot began operations in 1942 with the mission to inventory and supply 11 materials for the U.S. Army. In 1964, the Depot's mission was expanded to include a complete range of commodities for the Department of Defense under the auspices 12 13 of the Defense Supply Agency, now known as the Defense Logistics Agency (DLA). 14 The current mission of the Depot is to store and distribute supplies such as food, 15 clothing, electronic items, petroleum products, industrial chemicals, and 16 construction, industrial, medical, and general supplies to military bases, including 17 some civil agencies located in the southeastern United States, Puerto Rico, and 18 Panama.

Located underneath the Depot are groundwater aquifers. Studies show that the shallow aquifer, known as the Fluvial Aquifer, is contaminated with chlorinated volatile organic and metal compounds. This aquifer is not used for drinking water. Underneath the Fluvial Aquifer is the Memphis Sand Aquifer that is used by the

City of Memphis for its municipal water supplies. The potential threat of
 contaminants reaching the Memphis Sand Aquifer is of most concern to the Depot
 and its surrounding community. As an added complication, the location of several
 potential industrial contamination sources around the boundary of the Depot may
 make it difficult to draw conclusions about the source of groundwater contamination
 found in any underlying aquifer.

7 There are a variety of other contaminants of concern found in the soils at the Depot 8 as a result of past hazardous substances handling and disposal practices. Such 9 contaminants include pesticides, polychlorinated biphenyls (PCBs), and heavy 10 metals. While closely controlling access to these sites can eliminate immediate 11 health concerns for people working at the Depot, most of these sites will need to be 12 studied in order to determine proper cleanup processes.

Since 1981, various environmental studies and actions have been initiated at the
Depot to identify and characterize the nature and extent of contamination. These
include:

16	•	March 1981 Installation Assessment report received by the Depot
17	•	July 1982 Geohydrologic Evaluation report received by the Depot
18	٠	July 1985 Environmental Audit report received by the Depot
19	•	February 1986 Summary Report of On-Site Remedial Activities (dip vat
20		cleanup) received by the Depot

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I	•	March 1986 Water Quality Biological Study/Investigation of Fire Reservoir
2		report received by the Depot
3	•	December 1986 Groundwater Consultation report received by the Depot
4	•	April 1988 Fieldwork began on initial Remedial Investigation/Feasibility
5		Study (RI/FS)
6	•	January 1990 EPA conducted a Resource Conservation and Recovery Act
7		(RCRA) Facility Assessment of the Depot
8	٠	September 1990 Final initial RI/FS Report received by the Depot
9	٠	August 1991 EPA assigned the Depot a Hazard Ranking System score of 58.06
10	•	May 1992 DLA entered into Federal Facilities Agreement negotiations with
11		regulators
12	٠	September 1992 Groundwater pump test conducted at Dunn Field for
13		Interim Remedial Action design
14	٠	November 1993 Sampled all monitoring wells
15	•	March 6, 1995 Federal Facilities Agreement among the Depot, EPA, and
16		TDEC went into effect
17	•	June 1994 High Resolution Seismic Survey of Dunn Field completed
18	٠	January 1995 Ordnance and Explosive Waste/Chemical Warfare Material
19		Archives Search Report received by the Depot
20	•	September 1995 Defense Distribution Depot Memphis, Tennessee approved
21		for closure in accordance with the Base Closure and Realignment Act
22	•	September 1995 Regulators approved RI/FS Workplans
23	•	October 1995 Background and drainage ditch sediment sampling occurred

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I	•	November 1995 Agency for Toxic Substances and Disease Registry issued
2		the Public Health Assessment for the Depot
3	•	December 1995 BRAC Cleanup Team (BC1) formed
4	•	February 1996 Additional monitoring wells installed and sampled
5	٠	May 1996 EPA concurred with the Record of Decision (ROD) for the Interim
6		Remedial Action for groundwater at Dunn Field
7	•	October 1996 BRAC Site sampling occurred at the Main Installation
8	•	December 1996 Screening Site sampling occurred at the Main Installation
9	•	January 1997 Remedial Investigation Site sampling occurred at the Main
10		Installation
11	•	March 1997 EPA replied to the Depot's request for concurrence with
12		CERFA category 1 properties

On October 14, 1992, EPA placed the Depot on the National Priorities List (NPL) based on the Depot's Hazard Ranking System score. In response to the Depot's NPL listing, the DLA continued investigative activities at the Depot in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The EPA and TDEC play a significant role in these activities.

In September 1995, the Depot was approved for closure in September 1997 and was
placed on President Clinton's Fast-Track Cleanup Program. As part of
implementing this program, the DOD created BRAC Cleanup Teams (BCTs) at all
closing installations where property would be available for reuse. The goal of the
BCT is to speed up cleanup actions needed to prepare for property transfer and

1 reuse. The Local Reuse Authority, known as the Memphis Depot Redevelopment

2 Agency (MDRA) was established to lead the reuse of the Dopot. Since the

3 announcement of the BRAC closure of the Depot, an Environmental Assessment

4 (EA) for a Master Interim Lease (September 1996) and an Environmental Baseline

5 Survey (November 1996) have been completed.

#### 6 2.0 The Investigation Process

7 2.1 The Installation Restoration Process

In 1981, the Department of Defense initiated the Installation Restoration Program
(IRP) to evaluate and remediate the effects of past hazardous substance
management and disposal practices at its facilities. DOD also initiated the IRP to
comply with the 1980 Comprehensive Environmental Response, Compensation, and
Liability Act (CERCLA). The Depot's IRP began in March 1981 with the
Installation Assessment that identified the potential for groundwater, surface water,
and soil contamination.

The July 1982 Geohydrologic Evaluation identified the nature of groundwater
contamination under Dunn Field by installing and sampling seven monitoring wells.
In 1985, the Depot investigated the former hazardous materials recoup area and the
pentachlorophenol (PCP) dip vat area. This investigation lead to the demolition of
the dip vat and removal of soil in the dip vat area in September 1995.

The IRP continued in 1986 with the Water Quality Biological Study/Investigation of 1 Fire Reservoir performed by the U.S. Army Environmental Hygiene Agency. In 2 1988, the Depot and the U.S. Army Corps of Engineers initiated an initial Remedial 3 Investigation/Feasibility Study (RI/FS) to define the nature and extent of 4 contamination at the Depot. The Depot finalized the RI/FS reports in 1990. 5 However, the RI did not fully define the nature and extent of groundwater 6 7 contamination under Dunn Field, so the Depot, EPA, and TDEC began developing 8 workplans to fill in these data gaps.

In January 1990 EPA conducted a RCRA Facility Assessment at the Depot that
identified solid waste management units and areas of concern the Depot should
address in its IRP. In August 1991, EPA assigned the Depot a Hazard Ranking
System score of 58.06. This score prompted EPA to propose the Depot for placement
on the National Priorities List (NPL) In February 1992. On October 14, 1992, the
Depot was placed on the NPL.

15 2.2 The Comprehensive Environmental Response, Compensation, and Liability
 16 Act (CERCLA)

In 1980, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) was passed to investigate and cleanup problems resulting from past, formerly accepted, hazardous substance management practices. At sites presenting a certain level of risk to human health or to the environment, EPA uses a numerical ranking system called the Hazard Ranking System to determine whether the site

should be placed on the National Priorities List (NPL). The NPL identifies sites
warranting special consideration for identification and cleanup of hazardous
substance contamination. In 1986, Congress passed the Superfund Amendments
and Reauthorization Act defining how Federal facilities were to comply with
CERCLA. Upon the Depot's placement on the NPL, the DLA restructured the
Depot's IRP to comply with CERCLA and the Superfund Amendments and
Reauthorization Act.

8 The CERCLA process can be described simply as a set of logical steps for identifying
9 and solving contamination problems. The following is a description of the CERCLA
10 cleanup process and the Depot's progress within this process:

- Preliminary Assessment (PA) · conduct a thorough records search to identify
   locations with the potential for hazardous substance contamination. Potential
   contamination sites were identified at the Depot during the March 1981
   Installation Assessment and the 1990 RCRA Facility Assessment.
- Site Investigation (SI) take information from the PA and conduct limited
   aampling and analysis to better define potential contamination locations.
   During this phase, EPA prepares a Hazard Ranking System score. The
   Depot's SI phase began with the July 1982 Geohydrologic Evaluation and
   continued through the July 1985 Environmental Audit, March 1986 Water
   Quality Biological Study/Investigation of Fire Reservoir, and December 1986
   Groundwater Consultation.

1	•	Remedial Investigation (RI) - determine nature and extent of contamination
2		through sampling and analysis activities. The Depot began to study the
3		nature and extent of contamination in 1988 with fieldwork for the initial RI.
4		The RI report was issued in August 1990. This initial RI did not fully define
5		the nature and extent of contamination, so the Depot, EPA, and TDEC
6		developed workplans for a follow-on R1. These workplans were approved in
7		September 1995, and fieldwork began in December 1996.
8	•	Feasibility Study (FS) - develop alternative cleanup scenarios to address
9		findings from the RI. The Depot, EPA, and TDEC will work together to
10		determine the best cleanup alternatives. An FS was developed as part of the
11		1990 RI to consider alternative solutions for contamination cleanup. Due to
12		the data gaps in the 1990 RI, more investigation was necessary before
13		choosing a cleanup alternative. The Depot will produce an FS based on the
14		results of the current RI. $\overline{X}(\overline{Y})$
15	•	Remedial Design (RD) - fully design the chosen cleanup alternative. EPA
16		and TDEC must approve the design. Upon completion of the current RI/FS
17		activities, alternatives will be chosen and designs produced. Once the Depot,
18		EPA, and TDEC have approved these designs, they will be presented to the

- public as Proposed Plans during the Record of Decision public comment 19
- period. A public comment period for the proposed plan for the Interim 20
- 21 Remedial Action (IRA) for groundwater at Dunn Field was held in December

1995. The design of the chosen IRA alternative should be complete and
 approved by EPA and TDEC in 1997.

3	٠	Remedial Action (RA) $\cdot$ execute the design, accomplish cleanup, and verify
4		through sampling and analysis that the sites have been cleaned up to meet
5		the applicable cleanup standards and to the satisfaction of the EPA and
6		TDEC. To date, no Remedial Actions have occurred at the Depot. EPA and
7		TDEC have concurred with a ROD for the Interim Remedial Action for
8		groundwater under Dunn Field. Fieldwork to install a system of recovery
9		wells along Dunn Field's western fenceline will begin in 1997.

10 2.3 Base Closure and Realignment Act of 1990

11 The Base Realignment and Closure (BRAC) legislation and the President's 12 community reinvestment program established new procedures for closing or realigning military installations in the United States. The slow pace of cleanup, 13 conducted under structured regulatory programs, was seen as the most significant 14 15 impediment to the property's return to productive use. Fast-Track Cleanup, one of 16 five steps in the President's community reinvestment program, outlines an approach to accelerate environmental cleanup at closing bases to prepare property for 17 community reuse, while ensuring protection of human health and the environment. 18 When a base is slated for closure or realignment, the IRP is accelerated and 19 20 absorbed into the BRAC process. When acceleration occurs, the need for community 21 involvement also increases.

1 In order to meet the requirements of the Community Environmental Response 2 Facilitation Act (CERFA) and to identify CERFA-uncontaminated properties for 3 turnover to the community, DOD facilities slated for closure must prepare an 4 Environmental Baseline Survey (EBS). The EBS consists of a detailed record search 5 at the Federal, state, and local level, personnel interviews, and site inspections by 6 environmental specialists. The EBS is used to guide the decision making process for property transfer. DOD policy requires an EBS before property can be sold, leased, 7 8 transferred, or otherwise acquired by the community. The Depot's EBS was issued in November 1996. From the EBS, closure bases prepare a comprehensive, 9 10 interactive, and accelerated plan for base cleanup, the BRAC Cleanup Plan (BCP). The Depot issued a BCP in November 1996. This BCP will be updated as necessary 11 to reflect new data from sampling and analysis and any resulting changes in the 12 CERFA category of properties. 13

While many of the community relations techniques that the Depot plans to
implement are ongoing, several of the required activities are tied to milestones in
the BRAC process. To facilitate an understanding of the techniques and timing for
the community relations program outlined in Section 4.0, this section provides a
brief description of the BRAC Fast-Track Cleanup Program process and the Depot's
progress in it:

Establish a BRAC Cleanup Team at every base. Previous to the Depot's
 placement on the BRAC closure list, the Depot, EPA, and TDEC had

established a Remedial Project Manager (RPM) team that worked together to
 achieve environmental cleanup under CERCLA. The Depot, EPA, and TDEC
 formally converted the RPM team into the BRAC Cleanup Team (BCT) in
 December 1995.

Make clean parcels available. CERFA requires DOD to identify and make 5 available for immediate transfer or lease properties meeting CERFA's 6 7 definition of uncontaminated. CERFA requires DOD to seek EPA concurrence on the CERFA-uncontaminated properties within 18 months 8 9 after the BRAC closure announcement. The Depot's BCT has identified properties that initially met the CERFA definition. In October 1996, the 10 Depot sampled various locations identified in the EBS as requiring further 11 information or as having the potential for contamination. The analyses of 12 13 these samples will further the effort to identify CERFA-uncontaminated 14 properties as well as CERFA category 2 through 4 properties. On March 17, 15 1997, EPA provided the Depot concurrence on CERFA-uncontaminated properties. The Depot and the Army Materiel Command (AMC) have begun 16 work on an interim lease to accelerate reuse of the Depot property. 17

Accelerate the National Environmental Policy Act (NEPA) Process. NEPA
 requires Federal agencies to consider all reasonable alternatives associated
 with Federal actions and the environmental consequences of those
 alternatives. DOD directed closure bases to complete any required NEPA
 analysis and documentation within a year after the community submits its

plan for reuse of available property. The Depot did not wait until approval of
the Memphis Depot Redevelopment Agency's Depot Reuse Plan. Preparation
of NEPA documentation for the Depot began in January 1996, almost a year
prior to the reuse plan being approved by the Memphis Depot Redevelopment
Agency's board of directors, the City of Memphis, and the County of Shelby.

Provide indemnification. The 1993 Supplemental Appropriation Act provided
 perspective lessees or owners indemnity from cleaning up contamination
 found after DOD leases or transfers the property.

Protect human health and the environment. Under the Fast-Track Cleanup
Program, the BRAC Cleanup Team (BCT) cooperates to make decisions while
retaining individual agency responsibilities. At the Depot, the BCT continues
to move towards identification and cleanup of contaminated properties in
order to protect human health and the environment.

Make property available for reuse and transfer. The President's community
 reinvestment program emphasizes early community redevelopment of
 property no longer needed by DOD. To accomplish this goal, DOD, working
 with EPA and state regulators, developed two processes BCTs can use to
 determine whether BRAC property is environmentally suitable for reuse by
 lease or transfer by deed:

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1		- Finding of Suitability to Lease (FOSL) is the process to document the
2		conclusion that property can be leased, even when cleanup is still
3		underway.
4		- Finding of Suitability to Transfer (FOST) is the process to document the
5		conclusion that property is environmentally suitable for transfer by deed.
6		The Depot's BCT has prepared a FOSL for properties identified in the EBS as
7		meeting the definition of CERFA categories 1 through 4. The Army Materiel
8		Command has included this FOSL in its interim lease documentation to
9		accelerate the reuse of property that is environmentally suitable for lease.
10	•	Provide effective community involvement. In order to facilitate community
11		involvement, DOD required all closure bases to establish Restoration
12		Advisory Boards (RABs). The Depot had initiated an active community
13		relations program as part of its IRP by establishing a Technical Review
14		Committee (TRC) in February 1994. The TRC converted to a RAB in July
15		1994, a year prior to the Depot's placement on the BRAC closure list, in an
16		effort to involve more concerned community members. The RAB meets the
17		third Thursday of every month, and the public is encouraged to attend.

18 3.0 Community Background

## 19 3.1 Community Profile

1 Memphis was founded in 1819 and became an incorporated city by 1849. By 1900, the city was already a major transportation and distribution center. Today, 2 Memphis still remains one of the nation's largest distribution centers. Such 3 4 companies as Federal Express Corporation, Promus Companies, Kroger Company, . 5 Northwest Airlines, and Cleo Inc. take full advantage of Memphis' strategic location and excellent facilities to handle a wide variety of distribution, warehousing, and 6 7 transportation needs. In addition to being one of the nation's largest distribution 8 centers, Memphis is one of the South's major medical centers. The medical industry 9 contributes approximately \$2.5 billion to the economy annually. 10 The City of Memphis is approximately 300 square miles in size and has a recorded 11 1993 population of 610,275 people. Although the city is experiencing a 5.3 percent negative annual population growth, it still remains the largest city in Tennessee. 12 The three largest industries in the Memphis metropolitan statistical area are (1) 13 14 the service industry that employs approximately 134,300 people, (2), the wholesale and retail industry that employs approximately 130,500 people, and (3) the 15 16 Federal, state, and city governments that employ approximately 76,800 people. The

17 average per capita and household incomes in Memphis are estimated to be \$12,593

18 and \$33,432, respectively.

## 19 3.2 Community Involvement History

During the late 1980s, residents near the Depot became concerned about the
environmental impacts of the Depot when Memphis Light, Gas, and Water Division

(MLGWD) closed three (3) drinking water wells in the Allen Well Field. With the
 Site Investigations initiated by the DLA in 1981 came a variety of other activities
 that further aroused community concern, including people taking soil samples and
 the drilling of monitoring wells.

5 Upon its placement on the National Priorities List (NPL), the Depot conducted a press conference to provide IRP information to the public via the local media. At 6 7 this time, the Depot began preparing its Community Relations Plan (CRP). In order to prepare the CRP, the Depot conducted community interviews. During the week of 8 9 May 17, 1993, the Depot's community interview team talked one-on-one with 16 01 individuals from the surrounding community and from Memphis 11 environmental/citizen groups. Concerns expressed during the community interviews 12 included the possible relationship between the Depot's past hazardous substances handling and disposal activities and health problems in the community. The health 13 14 concerns included cancer, kidney problems, skin rashes, blood lead poisoning, 15 miscarriages, and still births. Refer to Appendix D for the Community Interview Questionnaire. 16

On May 24, 1993, at the request of the Memphis Mayor's Office, the Depot delivered a briefing on its environmental restoration process at Corry Junior High School to a group of about 150 citizens from the surrounding community. The Mayor's Office requested the briefing after receiving a call from a concerned citizen who lived in the surrounding community. Again, the main concerns voiced during this briefing centered around the Depot's impact on public health.

In June of 1993, the Depot received another letter from a concerned citizen. This
 letter expressed concerns about potential groundwater contamination and said that
 the Depot was downplaying the environmental impacts of its past hazardous
 substances handling and disposal activities. This person also requested that the
 Depot improve its methods used to convey information to the community, conduct a
 health survey, and conduct interviews with retired employees.

7	On August 10, 1993, the Depot conducted a public exhibition and discussion at
8	Hamilton High School. Representatives from the U.S. Army Environmental
9	Hygiene Agency, who conducted preliminary investigation and site assessment
10	activities at the Depot; the Agency for Toxic Substances and Disease Registry, who
11	would prepare the Public Health Assessment for the Depot; EPA; TDEC; and the
12	Depot talked one-on-one with concerned community members.

The Depot held its first Technical Review Committee (TRC) meeting on February
17, 1994. Members who attended this first TRC meeting included representatives of
the Depot, EPA, TDEC, Shelby County Commission, Memphis City Council,
Memphis/Shelby County Health Department, Shelby County and Memphis City
Mayor's Offices, and local environmental organizations.

The TRC converted to a Restoration Advisory Board (RAB) in July 1994. The RAB
was created to include community members and to act as a forum for discussion and
exchange of environmental cleanup information between the public and the

government agencies participating in the cleanup. The RAB meets every third
 Thursday of the month, unless the RAB decides otherwise. The meetings are open
 to the public, and interested citizens are encouraged to attend. The Depot
 announces each meeting in local newspapers and via mailings to the those on the
 Depot's mailing list. Refer to Appendix A for the names and addresses of the RAB
 members.

During 1994, the Depot participated in numerous public meetings including town 7 hall meetings, public hearings, and other meetings within the community. On 8 December 20, 1994, the Depot provided a public comment period and conducted a 9 public hearing regarding the Record of Decision (ROD) for the proposed Interim 10 11 Remedial Action for groundwater at Dunn Field and regarding the Federal Facilities 12 Agreement. The Depot received final regulator ROD concurrence on May 1, 1996. 13 EPA put the Federal Facilities Act into effect by signing it on March 6, 1995. The 14 Federal Facilities Act provides for the expeditious completion of necessary environmental cleanup actions. 15

The Depot, EPA, and TDEC finalized workplans to conduct Remedial Investigation fieldwork in September 1995. In October 1995, the first stages of fieldwork began with drainage ditch sediment sampling to investigate what may have migrated off the facility and background sampling to establish a baseline for environmental conditions in the Memphis area. The Depot completed the installation of 16 new monitoring wells and the sampling of all 48 installed monitoring wells. The Depot presented the findings from these sampling activities at RAB meetings and at a

June 1996 townhall meeting. At the June 1996 townhall meeting, the Agency for
 Toxic Substances and Disease Registry also presented the results of their Public
 Health Assessment of the Depot.

4 The Army conducted a scoping meeting in July 1996 to receive comments from the 5 community regarding future use of the Depot and to discuss the environmental 6 assessment process underway for the Depot's master interim lease. The Depot hosted the Defense Environmental Response Task Force (DERTF) at the September 7 8 1996 RAB meeting. At the meeting, the Depot presented information regarding the 9 cleanup and reuse of the facility as well as information from the Memphis Light. 10 Gas, and Water Division regarding Memphis drinking water. Having the DERTF present at this meeting provided RAB members an opportunity to express their 11 12 opinions of the Depot's cleanup activities to those in decision making positions.

#### 13 3.3 Key Community Concerns

14 From the community interviews and public comment periods at community meetings and at RAB meetings, the community has raised many issues of concern. 15 The primary issues of concern have been groundwater contamination and health 16 impacts from the Depot's past and present hazardous substances handling and 17 18 disposal practices. Other concerns involve the establishment of more open 19 communications and easier access to information about the process. Some members 20 of the community are concerned about the reuse of the Depot. A few community 21 members feel that the Depot is doing everything possible to take care of this

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L	situation, but the majority leel that the Depot has failed to keep them informed.
2	The community interview team received many comments that indicated the public
3	wants to see quarterly progress reports in the form of newsletters or mailers as well
4	as community information programs such as poster sessions or workgroups.
5	Other concerns identified by the majority of those participating in the community
6	interviews or providing comments included the following:
7	Possibility and effectiveness of site cleanup or containment
8	Property reuse of the Depot
9	Quality of life for people in neighborhoods near Dunn Field
10	Length of time necessary to discover true extent and characteristics of
11	contamination and to develop cleanup actions
12	Lack of information geared to non-technical readers

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13 3.4 Environmental Justice

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Environmental justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means no group of people should bear a greater share of the negative environmental effects stemming from industrial, municipal, and commercial operations or the execution of Federal, state, local, and tribal programs and policies.

The Depot is keenly aware of the importance of environmental justice issues and seeks to ensure IRP actions and activities do not disappropriately impact any segment of the population. The Depot will continue to work closely with members of the community and Federal, state, and local regulators to foster interactive dialogue that considers the needs, interests, and concerns of those most directly impacted by cleanup activities.

7	The Depot continues to stress community involvement through RAB meetings,
8	community meetings, and public hearings because providing information is so
9	essential to the environmental justice policy. The Depot has three (3) information
10	repositories at public facilities to make information readily available to the public as
11	well as making information available at the Depot. Refer to Appendix C for
12	locations and phone numbers of the information repositories.

As the Depot continues through the environmental restoration and BRAC closure
processes, documents such as Environmental Assessments, Environmental Impact
Statements, and Records of Decision will evaluate potential environmental effects on
minorities and low income populations and will be discussed at public hearings.

17 4.0 Community Relations Activities and Timing

## 18 4.1 Highlights of Program

The activities associated with this Community Relations Plan are designed to keep area residents informed of cleanup actions and allow them ongoing opportunities to participate in the decision making process. The Depot will conduct community relations activities that will coincide with technical activities on the Depot to ensure that information is received in a timely manner by the public. Timing of community relations activities is shown in Section 4.2.

The Depot's Community Relations Plan (CRP) serves as a planning document for
community relations activities designed to inform and involve. As a living document
guiding the Depot through the ongoing process of outreach and communication to
the community, the CRP activities involve several elements including the following:

Restoration Advisory Board - The Depot Restoration Advisory Board (RAB) 11 ٠ meets the third Thursday of every month, unless RAB members decide 12 otherwise, in the Depot Commander's Conference Room. The RAB welcomes 13 members of the public to attend these meetings. The Depot converted its 14 Technical Review Committee to a RAB in July 1994 to more fully involve the 15 local community. The RAB serves as a forum for discussion of environmental 16 cleanup and property reuse information between the public and the 17 government agencies involved. RAB members assist the Depot in funneling 18 information to the local community. The community is well represented by 19 leaders of local community groups, environmental groups, and local public 20 officials. Other members of the RAB include EPA, TDEC, Memphis/Shelby 21 County Health Department, and Memphis Light, Gas, and Water Division. 22

1	٠	Mailing List • A mailing list of people interested in the BRAC closure and
2		environmental cleanup activities at the Depot will be maintained by the
3		Depot's community relations contractor. The list includes RAB members,
4		local officials, and other interested parties. People may be added to the list at
5		any time during the investigation. Interested individuals should provide in
6		writing their name, title, address, and phone number to the BRAC
7		Environmental Coordinator listed in Appendix A. Individuals on the mailing
8		list will receive general information such as fact sheets outlining the status of
9		the investigation, notices of any community meetings or workshops, copies of
10		news releases, and quarterly newsletters regarding the Depot's
11		environmental activities.
12	•	<u>Community Meetings -</u> Community meetings provide an open forum for
13		information exchange among the Depot, other agencies, the media, and the
14		public. During the 1993 community interviews, most participants expressed
15		an interest in attending community meetings. After the meetings, minutes
16		will be prepared and made available to the public at future RAB meetings
17		and in the Information Repositories.

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<u>Telephone Hotline Number</u> · The Depot has established an Environmental
 Hotline that enables the public to leave messages concerning environmental
 issues. The hotline number is (901) 775 - 4569.

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Fact Sheets/News Letters/ Others - The Depot is committed to providing
 simple, clear explanations of findings, risk information, and remedial
 technologies in the form of fact sheets, newsletters, and progress reports to
 address the concerns expressed by the community. This information will also
 be placed in the Information Repositories.

Public Outreach - The Depot will continue to arrange meetings, work shops,
and special events to discuss the status of BRAC closure and environmental
cleanup on a required or as-needed basis.

9 Public Meetings - Public meetings will be held during required public 10 comment periods for BRAC closure and environmental cleanup documents U (for example a public meeting will be held during the Proposed Plan's 30-day comment period to provide the public an opportunity to comment on the 12 chosen remedy). The public will be notified of these public meetings through 13 14 the local media and through fact sheets that will be distributed to those on the mailing list. These meetings will be held at a time and place convenient 15 to the general public. Minutes of these meetings will be prepared and made 16 available to the public at RAB meetings and in the Information Repositories. 17

Public Comment Periods - Following the publication of BRAC closure and
 environmental cleanup decision documents (such as the Proposed Plan), the
 public will have a 30-day period to review and provide comments on the
 document or selected cleanup method.

1	٠	<u>Technical Assistance Grants</u> - The EPA has established a Technical
2		Assistance Grant Program that will provide a grant of up to \$50,000 per site
3		to a qualified citizen's group for up to a three (3) year period for the purpose
4		of hiring a technical advisor. The intent of this program is to ensure
5		individuals have the ability to obtain a complete and independent
6		interpretation of site-related data to enable them to contribute to the decision
7		making process.

Information Repositories - An Information Repository for the Depot is a 8 . required project file for public use that contains site information, documents 9 on site activities, and general information about the cleanup program. 10 11 Technical summaries, site reports, fact sheets, and details about the Technical Assistance Grant application process are included. The purpose of 12 the IRs is to allow the public open and convenient access to site related 13 documents so that the public may stay better informed about the cleanup 14 15 process. Refer to Appendix C for the location of the Depot's IRs.

16 4.2 Activities and Timing

17 The following community relations activities are either ongoing or planned for the18 Depot:

1	•	Maintain and update as necessary a mailing list of nearby residents and
2		businesses, local officials, interested groups, and other individuals.
3	•	Designate a spokesperson/information contact at the Depot.
4 5	•	Continue RAB meetings the third Thursday of every month, unless the RAB decides otherwise.
6	•	Maintain Information Repositorics at the Government and Law Section of
7		the Memphis/Shelby County Public Library Main Branch, the Cherokee
8		Branch Public Library, and the Memphis/Shelby County Health Department.
9		The public may also make an appointment with a Depot point of contact to
10		view information at the Depot.
11	•	Conduct information meetings in order to allow the Depot to present
12		information in a less-technical style. These meetings will be held when new
13		information is available. The Depot anticipates a frequency of two (2)
14		meetings per year.
15	•	Prepare and distribute to the mailing list quarterly newsletters containing
16		up-to-date information regarding the Depot's progress in the environmental
17		cleanup and BRAC closure process, community involvement opportunities,
18		public comment periods, public meetings, etc.

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1	•	Prepare and distribute to the mailing list fact sheets and technical
2		summaries enhancing community understanding of technical and decision-
3		making issues related to site activities, e.g. the BRAC cleanup process,
4		history of Depot activities, roles and responsibilities of involved parties,
5		community involvement in the process, and other topics as they arise during
6		the process. The Depot anticipates a frequency of six (6) times per year.
7	•	Conduct workshops for interested community groups on an as-needed basis to
8		promote understanding of technical issues through one-on-one
9		communication. 'Fopics might include the BRAC process, the risk assessment
10		process, remediation technologies, or other topics identified by interested
11		community groups or the RAB. The Depot anticipates a frequency of four (4)
12		per year.
13	•	Prepare press releases for local newspaper(s) briefly summarizing BRAC
14		closure and environmental cleanup information such as findings of the RI/FS,
15		summaries of the Proposed Plan, announcements of a public comment period,
16		decisions about lease or transfer. The Depot anticipates a frequency of six (6)
17		per year.
18	•	Monitor the Environmental Hotline (901 - 775 - 4569) to respond to public
19		inquiries and comments. The Depot anticipates a frequency of once per

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L	•	Conduct public meetings during public comment periods for BRAC closure
2		and environmental cleanup decision documents as required. The Depot
3		anticipates a frequency of two (2) per year.
4	•	Prepare responsiveness summaries following public comment periods for the
5		proposed plans. The Depot anticipates a frequency of two (2) per year.
6	•	Provide responses to written and oral comments from public comment
7		periods. Comments will be considered and incorporated, as appropriate, and
8		attached to final documents, such as Records of Decision (RODs) or
9		Environmental Assessments. The Depot anticipates a frequency of two (2)
10		per year.
11	•	Make copies of the RODs available for public review at the local Information
1 <b>2</b>		Repositories after RODs are approved and signed by the EPA and prior to the
13		commencement of the Remedial Action. A Notice of Availability for the ROD
14		will be published in local newspapers that will also summarize the basis for
15		and purpose of the selected action. The Depot anticipates a frequency of two

16 (2) per year.

Revise the Community Relations Plan (CRP) when actions have occurred
that change the Depot's approach to community relations, such as activities
appropriate for the Remedial Design/Remedial Action phase. Revisions to the
CRP should update facts and verify information; assess the community

relations program to date and indicate what approach the Depot should take;
 develop a strategy to prepare the community for a future role in the BRAC
 closure or environmental cleanup process; and conduct additional community
 interviews, if necessary.

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I.	APPENDIX A	
2	Key Contacts and Interested Parties	
3	BRAC Cle	anup Team
4	Glenn L. Kaden, R.E.M.	Dann Spariosu
5	BRAC Environmental Coordinator (BEC)	Remedial Project Manager (RPM)
6	Defense Distribution Depot Memphis	EPA Region 4 - AFC
7	2163 Airways Blvd.	Federal Facilities Branch
8	Memphis, TN 38114 - 5210	61 Forsyth Street, SW
9	(901) 775 - 4568	Atlanta, GA 30303
10	gkaden@ddmt.dla.mil	(404) 562 - 8552
11		spariosu.dann@epamail.epa.gov

## 12 Jordan English

- 13 Remedial Project Manager
- 14 Tennessee Department of Environment and Conservation (TDEC)
- 15 Division of Superfund
- 16 2510 Mt. Moriah, Suite E-645
- 17 Memphis, TN 38115-1520
- 18 (901) 368 7953

## **Other Key Contacts**

A-L

1	Shawn Phillips, P.E.	Tiki Whitfield
2	Remedial Project Manager	Community Relations
3	Defense Distribution Depot Mcmphis	EPA Region 4 - AFC
4	2163 Airways Blvd.	Federal Facilitics Branch
5	Memphis, TN 38114-5210	61 Forsyth Street, SW
6	(901) 775-6372	Atlanta, GA 30303
7	sphillips@ddmt.dla.mil	(404) 562 - 8530
8		whitfield.tiki@epamail.epa.gov
9	Terry Templeton	Julian Savage
10	TDEC	Corps of Engineers
n	Division of Superfund	Huntsville Support Center
12	2510 Mt. Moriah, Suite E-645	P.O. Box 1600
-		

- 13 Memphis, TN 38115-1520
- 14 (901) 368 7957
- 15
- 16 Kurt Braun
- 17 Corps of Engineers Mobile Division
- 18 P.O. Box 2288
- 19 Mobile, AL 36628-0001
- 20 (334) 690-3415
- 21 harold.k.braun@sam.usace.army.mil

Huntsville, AL 35807-4301

savogej@smtp.hnd.usace.army.mil

(901) 895-1462

# **Restoration Advisory Board Members**

2	Karen Blanks McGlown	Dave Bond
3	Citizen Representative	Citizen Representative
4	2680 Pershing Avenue	2410 Bridgeport Drive
5	Memphis, TN 38112	Memphis, TN 38114

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6	Eugene Brayon	Kevin Clay
7	Citizen Representative	Citizen Representative
8	2447 Rozelle	4338 Fox Hound Drive
9	Memphis, TN 38114	Memphis, TN 38141

10	Jordan English	John Garrison
13	BCT Member/TDEC Representative	Citizen Representative
12	2510 Mt. Moriah, Suite E-645	10251 Latting Road
13	Memphis, TN 38115-1520	Cordova, TN 38018-5503

14Carter GrayTerri Gray15Health Deptartment RepresentativeCitizen Representative16814 Jefferson Avenue7282 King Crest17Memphis, TN 38106Olive Branch, MS 38654

Janet Hooks

Memphis City Council

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Glenn Kaden BCT Member/RAB Facility C-Chair

I.	I 993 S. Cooper 2163 Airways Blvd.	
2	Memphis, TN 38104	Memphis, TN 38114-5210
3	Cleo Kirk	Johnnie Mae Peters
4	4 Shelby County Commission Citizen Representative	
5	1245 Semmes	3286 Norton Road
6	Memphis, TN 38111	Memphis, TN 38109
	-	
7	Veronica Smith	Dann Spariosu
8	Citizen Representative	BCT Momber/EPA Representative
9	2593 Lowell	61 Forsyth Street, SW
10	Memphis, TN 38114	Atlanta, GA 30303
11	Ulysses Truitt	James Webb

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13

14

Citizen Representative

2559 Bridgeport Drive

Memphis, TN 38114

Memphis Light, Gas, and Water Division

P.O. Box 430

Memphis, TN 38101-0430

# **Restoration Advisory Board Members (continued)**

2	Willie Mae Willet	Mondell Williams
3	Citizen Representative	Citizen Representative/RAB Community Co-Chair
4	4966 Lions Gate Drive	667 Mallory
5	Memphis, TN 38116	Memphis, TN 38106

6 Elizabeth Young

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- 7 Citizen Representative
- 8 2347 Saratoga Avenue
- 9 Memphis, TN 38114-2312

#### APPENDIX B

Community Interview Questionnaire

3 1. What is your understanding of the history of the site?

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4 2. When did you first become aware of problems at the site?

5 3. Have you had any problems on your property that you think are attributable to6 the site?

7 4. What contacts have you had with government officials about the site?

8 5. Do you feel these officials have been responsive to your concerns?

9 6. What are your current concerns about the site?

10 7. Have you participated in activities concerning the site?

11 8. How would you like to be involved in future community relations activities?

12 9. What kind of information about the site do you need?

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- 1 10. How do you want to get that information and how frequently?
- 2 11. Can you suggest other people or groups who have concerns about the site and

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3 should be interviewed?

#### APPENDIX C

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#### Information Repositories

- 3 Memphis/Shelby County Public Library
- 4 Main Branch
- 5 Government and Law Section
- 6 1850 Peabody Avenue
- 7 Memphis, TN 38104-4025
- 8 (901) 725-8877
- 9 Cherokee Branch Public Library
- 10 3300 Sharpe Avenue
- 11 Memphis, TN 38111-3758
- 12 (901) 748-3655
- 13 Memphis/Shelby County Health Department
- 14 Pollution Control Division

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- 15 814 Jefferson Avenue
- 16 Memphis, TN 38106
- 17 (901) 576-7775

1		APPENDIX D
2		List of Acronyms and Glossary
3	ВСТ	BRAC Cleanup Team
4	BRAC	Base Realignment and Closure
5 6	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
7	CRP	Community Relations Plan
8	DDMT	Defense Distribution Depot Memphis, Tennessee
9	DLA	Defense Logistics Agency
10	DOD	Department of Defense
11	EPA	United States Environmental Protection Agency
12	IRA	Interim Remedial Action

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1	NPL	National Priorities List
2	RAB	Restoration Advisory Board
3	RIAFS	Remedial Investigation/Feasibility Study
4	ROD	Record of Decision
5	TDEC	Tennessee Department of Environment and Conservation
6	TRC	Technical Review Committee

7 Information Repository: A required file of documents made available to the
8 public that contains the information used to make cleanup site management
9 decisions.

Aquifer: An underground formation composed of materials such as sand, soil, or
gravel that can store and supply groundwater to wells and springs. Most aquifers
used as a drinking water source in the United States are within a thousand feet of
the earth's surface.

Background Sample: Samples taken outside the area of interest in order to
determine normal local conditions.

D-2

I	<b>Cleanup:</b> Actions taken to deal with a release or threatened release of hazardous
2	substances that could affect public health and/or the environment. The term
3	"cleanup" is often used broadly to describe various responses such as a Remedial
4	Investigation/Feasibility Study.

5 Community Relations Plan: A formal strategy and outline of community

6 relations and public involvement activities at an installation.

- 7 Comprehensive Environmental Response, Compensation, and Liability
- 8 Act: A Federal law passed in 1980 and amended by the Superfund Amendments

9 and Reauthorization Act of 1986. CERCLA requires and regulates the investigation

10 and cleanup of abandoned or uncontrolled hazardous substance sites.

11 Contaminant: Any substance that degrades an environmental resource or makes
12 it unfit or unsafe for typical use.

Groundwater: Water found beneath the earth's surface that fills pores between
materials such as sand, oil, or gravel.

Hazard Ranking System: A scoring system used to evaluate potential relative
risks to public health and the environment from releases or threatened releases of
hazardous substances. This score is the primary factor used to decide if a hazardous
substance site should be placed on the National Priorities List.

Hazardous Substance: Any material that poses a threat to human health and/or
 the environment. Typical hazardous substances are toxic, corrosive, ignitable,
 explosive, or chemically reactive.

4 Monitoring Wells: Special wells drilled at specific locations on or off a site so
5 groundwater can be sampled at selected depths and studied to determine the
6 direction of groundwater flow and the types and amounts of contaminants present.

National Priorities List: The list compiled by EPA, pursuant to CERCLA Section
105, of uncontrolled hazardous substances releases in the United States that are
priorities for long-term remedial evaluation and response.

10 Preliminary Assessment: The process of collecting and viewing available

11 information about a known or suspected hazardous waste site or release.

12 Release: The emission of contaminants into the environment.

Restoration: The application of contaminant or decontaminant technologies to
eliminate existing public hazards or to render the property acceptable for conditional
or unconditional reuse.

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Risk Assessment: The calculation of the degree of risk posed to human health or
 the environment by specific contaminants in specific amounts at a particular
 location.

4 Record of Decision: A public document that explains which cleanup alternative
5 will be used at NPL sites. The Record of Decision is based on information and
6 technical analysis generated during the Remedial Investigation/Feasibility Study
7 and takes into consideration public comments and community concerns.

8 Remedial Action: The actual construction or implementation phase that follows
9 the Remedial Design of the selected cleanup alternative at an NPL site.

Remedial Design: An engineering phase that follows the Record of Decision when
technical drawings and specifications are developed for the subsequent Remedial
Action at an NPL site.

**Removal Action:** An immediate action taken over the short-term to address a
release or threatened release of hazardous substances.

Surface Water: Bodies of water that are above ground, such as rivers, lakes, and
 streams.

17 Technical Assistance Grant (TAG) Program: A grant program that provides
18 funds for qualified citizens' groups to hire independent technical advisors to help

I them understand and comment on technical decisions relating to cloanup actions at

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2 NPL sites.

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# Appendix E

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Fact Sheets/ Newsletters/Progress Reports

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### FACT SHEET FEDERAL FACILITY AGREEMENT DEFENSE DEPOT MEMPHIS MEMPHIS, TENNESSEE DECEMBER, 1994

This fact sheet is designed to assist residents and local officials in understanding the Federal Facility Agreement (FFA) and how it pertains to the Depot's Environmental Restoration Program.

#### INTRODUCTION

The FFA is designed to assure that the Depot conducts the work necessary to ensure that the environmental impacts associated with past and present activities at the site are thoroughly investigated in accordance with the Environmental Protection Agency and Tennessee Department of Environment and Conservation, and all provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERLA), the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), the Resource Conservation and Recovery Act (RCRA), and applicable Tennessee State Law.

#### DESCRIPTION OF AGREEMENT

The FFA is a legal and binding document between all parties to clearly define the process that will be followed to complete the restoration of the facility. The agreement includes a list of affected parties, enforceability, facility descriptions, findings of facts, background information, and other technical details. The document also includes terminology, a summary of existing studies and reports, and the Site Management Plan (SMP). The SMP describes the operable units to be investigated and proposed schedules for work completion. These schedules are enforceable and binding to ensure progress toward restoration. Negotiation on this agreement began in February 1992 and has involved months of negotiation between the Depot, EPA, and TDEC so that all parties would feel their regulations were given appropriate consideration.

#### WHY SIGN A FFA?

The FFA is designed to encourage cooperation, exchange of information and participation between the Depot, EPA and TDEC. The agreement is designed to identify the appropriate response actions necessary to protect public health, welfare, and the environment of the local community. Agreements are usually signed when there has been a release or a potential release of hazardous substances, pollutants, contaminants, solid wastes, hazardous wastes, hazardous materials from the Facility.

# WHY IS THE DEPOT SIGNING THE FFA?

The Depot poses a potential threat of releasing hazardous materials into the groundwater of the Memphis Sands Aquifer. Although testing has not shown any hazardous substances in this aquifer, the potential for exposure does exist, therefore the need exists for cleanup of the facility. The Depot is signing the agreement to assure that the cleanup occurs in a timely manner, as well as in appropriate response to EPA Regulations, and Tennessee State laws. The Depot is making this commitment to ensure that the public health and welfare is protected against any contamination that might occur.

## HOW DOES THIS AGREEMENT AFFECT YOU?

As a member of the local community the FFA will assure you that the Depot is expediting the cleanup/restoration process. The Depot in accordance with FFA will continue to solicit community comments and interaction on each of the proposed restoration activities. The FFA will assure you that the potential for contamination is removed from your community.

#### WHERE TO REVIEW THE FFA

Copies of the FFA have been placed in the following information repositories for public review and comment:

Memphis Shelby County Library Main Branch 1850 Peabody Memphis, TN (901) 725-8877 Cherokee Branch Public Library 3300 Sharpe Avenue Memphis, TN (901) 743-3655

Memphis/Shelby County Health Department Pollution Control 814 Jefferson Avenue Memphis, TN (901) 576-7775

### HOW TO COMMENT ON THE FFA:

Comments will be accepted until January 4, 1995, please send written comments on the FFA to:

Mr. Jon D. Johnston, Chief Federal Facilities Branch United States Environmental Protection Agency Region IV 345 Courtland Street NE Atlanta, GA 30365

#### FACT SHEET INTERIM REMEDIAL ACTION DEFENSE DISTRIBUTION DEPOT MEMPHIS, TENNESSEE DECEMBER 1994

The objective of the Interim Remedial Action (IRA) is to insure protection of the Memphis drinking water supply. The IRA will prevent further movement of groundwater contamination in the shallow layer of water beneath the ground's surface known as the Fluvial Aquifer.

#### HOW DID THE GROUNDWATER CONTAMINATION OCCUR?

It appears that contamination may have been caused by past burial activities at Dunn Field. That is the Depot property located just north of Dunn Road. The burials took place primarily from the 1950's through the 1970's when burying waste was common practice. Items buried included products that had reached expiration such as medical items, food and hazardous materials. Construction debris was also buried there.

#### WHAT IS THE IRA?

The IRA will consist of a series of small wells located along the leading edge of the contaminated plume. Some of these wells could be located off Depot property. Groundwater will be pumped from the recovery wells, preventing any further movement of the plume in the Fluvial Aquifer. The groundwater pumped from the wells will be filtered if necessary to remove contaminants to an approved level acceptable for disposal into the city of Memphis sanitary sewer system.

The IRA will be conducted in phases because of the uncertainty surrounding the distance the groundwater contamination plume has migrated at the Depot. Initially, one well will be installed to determine how to space and how much to pump the future wells. Additional wells will be installed and sampled to determine how far the plume has migrated.

#### FINAL RESULTS OF THE IRA

The IRA will create a barrier to contain the contaminated groundwater so that it can not migrate farther into the groundwater until a permanent solution is reached.

#### WHERE TO REVIEW THE IRA

Copies of the IRA have been placed in the following information repositories for public review and comment;

Memphis Shelby County Library Main Branch 1850 Peabody Memphis, TN (901) 725-8877 Cherokee Branch Public Library 3300 Sharpe Avenue Memphis, TN (901) 743-3655 Memphis/Shelby County Health Department Pollution Control 814 Jefferson Avenue Memphis, TN (901) 576-7775

#### HOW TO COMMENT ON THE IRA:

Comments will be accepted until January 17, 1995, please send written comments on the IRA to:

Ms. Christine Kartman Defense Distribution Depot Memphis Environmental Protection and Safery Office, DDMT-DE 2163 Airways Blvd. Memphis, TN 38114-5210

### Defense Distribution Depot Memphis, Tennessee Dunn Field Groundwater Removal Action Fact Sheet July 1994

• The objective of the Groundwater Removal Action is to prevent further movement of groundwater contamination in a shallow layer of water beneath the ground's surface known as an aquifer. The contamination of this aquifer, the Fluvial Aquifer, appears to have been caused by past burial activities at Dunn Field.

• The removal action will consist of a series of small wells located along the leading edge of the contaminant plume. The wells could be located off DDMT property. Groundwater will be pumped from the recovery wells, preventing any further movement of the plume in the Fluvial Aquifer.

• Groundwater pumped from the wells will be filtered to remove contaminants to a level considered acceptable for disposal into the sanitary sewer system. The City of Memphis must first approve the disposal which is based on the level of remaining contamination in the water.

• The removal action will be conducted in phases because of the uncertainty surrounding the distance the groundwater contamination plume has migrated from DDMT and the nature of the Fluvial Aquifer itself.

 Initially, one well will be installed in the Fluvial Aquifer to determine how to space and how much to pump the wells.

• At the same time, more wells will be installed and sampled to the west of Dunn Field to determine how far the contamination has moved from DDMT.

• After more is known about the Fluvial Aquifer and the contamination plume, and the public has an opportunity to comment on the proposed plan, a line of wells will be installed along the leading edge of the plume.

• The spacing and pumping rate of the wells will be such that no contamination can move beyond the line of wells. Groundwater and associated contamination will be "captured" by the wells.

• After the system begins operating it will be checked frequently, making any necessary changes, to be sure the wells are preventing any further movement of the plume.

### Defense Distribution Depot Memphis Tennessee Fact Sheet July 1994

This fact sheet is part of a series designed to inform residents and local officials of the Depot's ongoing installation restoration program.

## INTRODUCTION

In 1980, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) which provided the mandate to cleanup abandoned or former hazardous waste sites. Congress made the U.S. Environmental Protection Agency (EPA) the lead agency in implementing CERCLA. Facilities which pose a potential risk to the health of people or the environment are placed on the National Priorities List (NPL) and regulated under CERCLA.

## WHERE IS THE DEFENSE DISTRIBUTION DEPOT?

The Defense Distribution Depot (DDMT) covers 642 acres of federal land located in a mixed residential, commercial, and industrial land use area one mile north of the Memphis International Airport in south central Memphis. The facility is bordered on the north by Dunn Avenue, Perry Road on the west, Ball Road on the south, and Airways Boulevard on the east.

## WHAT IS THE HISTORY OF THE DEPOT?

The Depot was established in 1942 and was previously a cotton farm. In 1962 the Defense Logistics Agency assumed command of the Depot with a primary mission of the receipt, storage, and shipment of a variety of stock items such as clothing, medicines, construction supplies, and hazardous materials (i.e.bulk quantities of household cleaners). Between 1954 and 1970 solid waste and chemicals were buried in the facilities landfill area, known as Dunn Field. In 1981, DLA began evaluating their past management of hazardous waste at DLA Installations around the world. In 1988, the Depot began an investigation at their facility to test for soil and groundwater contamination. In 1992, the EPA placed the Depot on the NPL because of the potential for contamination from Dunn Field to reach the Memphis Sand Aquifer, where Memphis draws its drinking water.

## CLEANUP PROCESS

To understand the CERCLA process, it is necessary to understand the cleanup program. Under this program, EPA takes long-term actions to stop or greatly reduce releases of hazardous substances that are serious but not immediately life threatening. Interim cleanup actions are emergency actions necessary to stop releases of hazardous substances that pose an immediate threat to human health and the environment. They may be taken at any point in the process.

The cleanup process begins with a preliminary assessment/site investigation (PA/SI). This is conducted to determine whether the facility poses a significant enough hazard to warrant

further study and investigation. The facility is then ranked using the Hazard Ranking System (HRS), a numerical ranking system used to identify the facility's potential hazard to the environment and public health. A facility's HRS score determines their placement on the NPL. When a facility is added to the NPL, a remedial investigation (RI) is conducted to assess the extent and nature of the contamination and the potential risks. A feasibility study (FS) is then prepared to evaluate various cleanup alternatives. Following a public comment period on the preferred alternative and the draft FS report, the facility, with concurrence from the EPA and the State, chooses a specific cleanup plan and outlines its selection in a Record of Decision (ROD).

Once the remedial design (RD) is completed, the cleanup work, or remedial action (RA), can begin. After RD/RA activities have been completed, the facility is monitored to ensure the effectiveness of the response. Certain measures may require ongoing operation or periodic maintenance.

#### PRELIMINARY FINDINGS

In 1988, a preliminary Remedial Investigation/Feasibility Study (RI/FS) was conducted to test the soil and groundwater. The initial investigation was completed in 1990. The testing found the following:

- Low levels of volatile organic chemicals (i.e. degreasers and paint removers), heavy metals and pesticides in the sediment at the bottom of the fire reservoir and the golf course pond
- Soil samples taken at former chemical spill sites showed volatile organic chemicals, hydrocarbons and pesticides
- The groundwater monitoring wells indicated low levels of volatile organic chemicals and heavy metals in the upper aquifer, the Fluvial Aquifer
- The potential risk to human health is the contamination of the Memphis Sand Aquifer; however, the testing has found no contamination there.
- Surface water testing indicated little or no risk existed from exposure because the surface water is not used for drinking water or recreation.

#### DDMT'S RESTORATION PROGRESS REPORT

- July 1993 · began designing an Interim Remedial Action for the groundwater under Dunn Field.
- November 1993 began planning for the follow on RI/FS to determine the full extent of contamination as well as recommend appropriate cleanup actions. The follow-on RI/FS testing and reporting should be completed by late 1995.
- February 1994 DDMT established a Technical Review Committee (TRC).
- \* June 1994 DDMT established a Restoration Advisory Board using the TRC as the selection committee.

#### FUTURE PLANS

- \* Signing of Federal Facility Agreement.
- \* Completion of restoration workplans for the facility.
- \* The cleanup program will continue at DDMT until the facility is completely restored.

#### PUBLIC INFORMATION

Public information repositories have been established for public access to fact sheets, press releases, and reports regarding site investigations, studies, and other activities. The information contained in the repositories is also available in the Environmental Office at DDMT. The repositories are located at:

The Memphis/Shelby County Public Library Main Branch - Government and Law Section 1850 Peabody Avenue Memphis, TN 38104-4025 (901) 725-8877

Cherokee Public Library 3300 Sharp Avenue Memphis, TN 38111-3758 (901) 743-3655

The Memphis/Shelby County Public Health Department Pollution Control Division 814 Jefferson Avenue Memphis, TN 38106 (901)-576-7741

#### FOR FURTHER INFORMATION

To request further information, call (901) 775-4379 or write to: Defense Distribution Depot Memphis Environmental Protection and Safety Office, DDMT-DE 2163 Airways Blvd. Memphis, TN 38114-5210

# Operable Unit 1 Field Sampling Plan Executive Summary May 16, 1995

#### Introduction

In October 1992, the Defense Depot Memphis, Tennessee was placed on the National Priorities List by the U.S. Environmental Protection Agency. Therefore, Defense Depot Memphis, Tennessee must fulfill requirements under the Comprehensive Environmental Response, Compensation, and Liability Act and National Oil and Hazardous Substance Contingency Plan. A remedial Investigation/Feasibility Study will be conducted to evaluate the nature and extent of contamination, to evaluate the risk to human health and the environment, and to screen potential cleanup actions. The Generic Remedial Investigation and study will be accomplished. This field sampling plan was prepared for Operable Unit 1 as a supplement to the Generic Remedial Investigation/Feasibility Study Work Plan. The objective of this Operable Unit 1 Field Sampling Plan is to present a detailed description of the proposed sampling and analysis activities that will be performed for characterization of the remedial investigation sites in Operable Unit 1 at Defense Depot Unit 1. Tennessee.

The ultimate goal of the Remedial Investigation/Feasibility Study is to select costeffective cleanup actions that provide protection of public health and the environment. To accomplish this goal, the nature and extent of the release of hazardous substances must be identified, the source of release must be determined, and proposed cleanup actions must be evaluated. By implementing the field investigation strategies described in the Field Sampling Plans, the quantity and quality of data collected will aid in achieving the goal of the Remedial Investigation/Feasibility Study at Defense Depot Memphis, Tennessee.

#### Site Background and Location

Defense Depot Memphis, Tennessee receives, warehouses, and distributes supplies common to all U.S. military services and some civil agencies, located primarily in the southeastern United States, Puerto Rico, and Panama. The installation covers 642 acres of land in Memphis, Shelby County, Tennessee, in the extreme southwestern portion of the state. The installation contains approximately 110 buildings, 26 miles of railroad track, and 28 miles of paved streets. Approximately 5.5 million square feet of storage space is open. Stored items include food, clothing, electronic equipment, petroleum products, construction materials, and industrial, medical, and general supplies used by all military branches of the U.S. government.

#### **Description of Operable Units**

Defense Depot Memphis, Tennessee is divided into four operable units for evaluation purposes. Operable Unit 1, north of the Main Installation, is called Dunn Field. The Main Installation is divided into three areas: the southwestern quadrant, Operable Unit 2; the southeastern quadrant including Lake Danielson and the golf course area, Operable Unit 3; and the north-central area, Operable Unit 4. Sites identified in Operable Unit 1 for investigation resulted from use of the area for landfill operations, mineral stockpiles, pistol range use, and materials storage. Potential contamination of Operable Unit 2 may have resulted from spills or releases from the hazardous material storage and repouring area, sandblasting and painting activities, or both. Storage of polychlorinated biphenyls and the use of pesticides and herbicides are potential sources of contamination for Operable Unit 3. Principal contamination in Operable Unit 4 probably resulted from a wood treatment operation and hazardous material storage.

Soil samples taken in Operable Unit 1 near a pesticide storage area during previous investigations indicated the presence of pesticides. Other samples from Operable Unit 1 yielding positive results for the presence of contaminants include the open burning area, which had evidence of petrolum products and chlorinated solvents; a sample collected in the south-central portion of Operable Unit 1, which had volatile organic compounds, pesticides, and metals; and the bauxite storage area, which exhibited solvents and pesticides.

Groundwater analyses in the Fluvial Aquifer reveal contaminant migration beyond Dunn Field's boundaries. Contaminants of concern are chromium, lead, mercury, arsenic, barium, and solvents. A groundwater interim remedial action is being implemented to address the groundwater contamination.

#### Summary of Field Sampling Plan

This Field Sampling Plan describes the Defense Depot Memphis, Tennessee facility and individual operable unit history and data gaps, locations, geography, surface water hydrology, geology, hydrogeology, land use, and Operable Unit 1 data needs. Additionally, this Field Sampling Plan describes the sampling strategy and sampling plan for the remedial investigation sites at Operable Unit 1. The final section of the plan describes the data needs required to propose remedial alternatives for Operable Unit 1. The purpose of this effort is to characterize potential releases from the site, to delineate the nature and extent of soil and groundwater contamination attributable to past operations, and to gather data to evaluate the feasibility of remedial actions for this site.

# Sampling Strategy

A cost-effective, quality sampling strategy has been developed to perform an Remedial Investigation/Feasibility Study at Defense Depot Memphis, Tennessee. This Field Sampling Plan uses an observational approach to field data collection and making fieldbased decisions to achieve the goals of the facility. The approach presented is intended to support a recommendation of one of the following options for each remedial investigation site:

- Site upgrade (feasibility study activities)
- Site downgrade (support no further action)
- Interim remedial action

To support recommendations in a timely manner, soil and water samples will be collected at Operable Unit 1 and analyzed in a laboratory. Data must be of sufficient quality to support the decision-making process. A tiered approach to sampling and analysis (including field screening) will be used so that the field team can adjust the sampling effort to accommodate site-specific conditions. Three categories of data will be collected as part of this field effort, with each category having a different level of supporting quality assurance/quality control documentation. The three categories, or levels, correspond to quality control levels 1, 2, and 3. Level 1 includes field monitoring activities such as pH, temperature, conductivity, and total organic vapor monitoring. Level 2 screening activities (such as using a field gas chromatograph for volatile organic compounds) are indicative of the nature of contamination, and Level 3 analysis provides confirmation by an analytical laboratory.

There is a potential for Level 4 data to be required in the future at this facility. Samples analyzed using the same analytical methods as Level 3 samples, but different data package deliverables are provided.

Ten percent of the Level 2 samples will be sent to an offsite laboratory for Level 3 confirmational analysis. On the basis of Level 2 and Level 3 data, a comparison of regulatory levels and calculated risk levels of contamination will aid in supporting the appropriate recommendation.

## Proposed Sampling

The Operable Unit 1 Field Sampling Plan describes remedial investigation sites that have been identified on the basis of their potential for contamination as a result of past practices. Surface and subsurface soil samples have been proposed for each site. Soil borings will be installed surrounding and within the proposed site locations. Soil samples will be collected at regular intervals from each boring to assess the vertical extent of contamination. Surface and subsurface soil samples will be collected and analyzed to assess the possibility of existing soil contamination. If Level 2 soil boring data indicate that a release of contaminants has potentially occurred to groundwater, monitoring well(s) will be installed adjacent to site(s). The decision to install monitoring well(s) will be made after Level 2 soil boring data have been discussed with Defense Depot Memphis, Tennessee personnel.

By implementing the Operable Unit 1 Field Sampling Plan, the Remedial Investigation/Feasibility Study can be conducted in a cost-effective, timely manner. Additionally, quality data will be obtained that will aid in supporting an evaluation of remedial alternatives for cleanup of Operable Unit 1 at Defense Depot Memphis, Tennessee.

# Operable Unit 2 Field Sampling Plan May 16, 1995 Executive Summary

#### Introduction

In October 1992, the Defense Depot Memphis, Tennessee was placed on the National Priorities List by the U.S. Environmental Protection Agency. Therefore, Defense Depot Memphis, Tennessee must fulfill requirements under the Comprehensive Environmental Response, Compensation, and Liability Act and National Oil and Hazardous Substances Pollution Contingency Plan. A remedial investigation/feasibility study will be conducted to accomplish the following:

- Assess the nature and extent of contamination
- Evaluate the risk to human health and the environment
- Screen potential cleanup actions

The Generic Remedial Investigation/Feasibility Study Work Plan was prepared to show how the investigation and study will be accomplished. This field sampling plan was prepared for Operable Unit 2 as a supplement to the Generic Remedial Investigation/Feasibility Study Work Plan. The objective of the Operable Unit 2 Field Sampling Plan is to present a detailed description of the proposed sampling and analysis activities that will be performed for characterization of the remedial investigation sites in Operable Unit 2 at DDMT.

The ultimate goal of the Remedial Investigation/Feasibility Study is to select cost-effective cleanup actions that protect public health and the environment. To accomplish this goal, the nature and extent of the release of hazardous substances must be identified, the source of release must be investigated, and proposed cleanup actions must be evaluated. By implementing the field investigation strategies described in the Field Sampling Plans, the quantity and quality of data collected will aid in achieving the goal of the Remedial Investigation/Feasibility Study at Defense Depot Memphis, Tennessee.

## Site Background and Location

Defense Depot Memphis, Tennessee receives, warehouses, and distributes supplies common to all U.S. military services and some civil agencies, located primarily in the southeastern United States, Puerto Rico, and Panama. The installation covers 642 acres of land in Memphis, Shelby County, Tennessee, in the extreme southwestern portion of the state. The installation contains approximately 110 buildings, 26 miles of railroad track, and 28 miles of paved streets. Approximately 5.5 million square feet of storage space is open. Stored items include food, clothing, electronic equipment, petroleum products, construction materials, and industrial, medical, and general supplies used by all military branches of the U.S. government.

# **Description of Operable Units**

Defense Depot Memphis, Tennessee is divided into four operable units for evaluation purposes. Operable Unit 1, north of the Main Installation, is called Dunn Field. The Main Installation is divided into three areas: the southwestern quadrant (Operable Unit 2), the southeastern quadrant including Lake Danielson and the golf course area (Operable Unit 3), and the north-central area (Operable Unit 4). Sites identified in Operable Unit 1 for investigation resulted from use of the area for landfill operations, mineral stockpiles, pistol range use, and materials storage. Potential contamination of Operable Unit 2 may have resulted from spills or releases from the hazardous material storage and repackaging area, sandblasting and painting activities, or both. In the repackaging area, hazardous and nonhazardous materials from damaged and leaking containers were repacked. The potential sources of contamination in Operable Unit 3 are storage of polychlorinated biphenyls and the use of pesticides and herbicides. Principal contamination in Operable Unit 4 probably resulted from a wood treatment operation and hazardous material storage.

Soil samples taken in Operable Unit 2 around the repackaging area indicated metal and pesticide contamination. Low levels of toluene were also detected. In the northeastern portion of Operable Unit 2, an underground tank was used to store waste oil and has since been removed. Soil samples taken in the area have detected elevated levels of petroleum products and a few metals. Soil samples have also previously been collected in Operable Unit 2 around the area where sandblasting and painting activities occurred. In this area, the categories of contaminants that were detected included petroleum products, pesticides, and metals.

# Summary of Field Sampling Plan

This Field Sampling Plan describes the Defense Depot Memphis, Tennessee facility, history of Operable Unit 2, data gaps, and data needed for Operable Unit 2. General information is also provided on Operable Unit 2 location, geography and topography, meteorology, surface water hydrology, geology, hydrogeology, and land use. Additionally, this Field Sampling Plan describes the sampling strategy and sampling plan for the remedial investigation sites in Operable Unit 2. The final section of the plan describes the data needs required to propose remedial alternatives for Operable Unit 2. The purpose of the activities proposed in this Field Sampling Plan are as follows:

- To characterize potential releases from the site
- To assess the nature and extent of soil and groundwater contamination attributable to past operations

- To support a baseline risk assessment
- To gather data to evaluate the feasibility of remedial actions for this site

# Sampling Strategy

A cost-effective, high-quality sampling strategy has been developed to perform an Remedial Investigation/Feasibility Study at Defense Depot Memphis, Tennessee. This Field Sampling Plan uses an observational approach to collecting field data and making field-based decisions to achieve the goals of the facility. The approach presented is intended to support a recommendation of one of the following options for each remedial investigation site:

- Site upgrade (feasibility study activities)
- Site downgrade (support no further action)
- Interim remedial action

To support the development of recommendations in a timely manner, soil and water samples will be collected at Operable Unit 2 and analyzed using onsite laboratory methods and quick-turnaround methods from a laboratory. Data must be of sufficient quality to support the decision-making process. A tiered approach to sampling and analysis (including field screening) will be used so that the field team can adjust the sampling effort to accommodate site-specific conditions. Three categories of data will be collected as part of this field effort, with each category having a different level of supporting quality assurance/quality control documentation. The three categories, or levels, correspond to quality control levels 1, 2, and 3. Level 1 includes field monitoring activities such as pH, temperature, conductivity, and total organic vapor monitoring. Level 2 screening activities (such as using a field gas chromatograph for volatile organic compounds) are indicative of the nature of contamination, and Level 3 analysis provides confirmation by an analytical laboratory.

There is a potential for Level 4 data to be required in the future at this facility. Samples analyzed using Level 4 quality control are analyzed using the same analytical methods as Level 3 samples, but different data package deliverables are provided.

A minimum of ten percent of the close support laboratory and quick-turnaround samples (Level 2) will be sent to an offsite laboratory for Level 3 confirmational analysis. The Level 2 and Level 3 data will be used for comparison to regulatory levels and calculated risk levels of contamination to aid in supporting the appropriate recommendation for action at a given site.

# **Proposed Sampling**

The Operable Unit 2 Field Sampling Plan describes remedial investigation sites that have been identified on the basis of their potential for contamination as a result of past practices. Surface and subsurface soil samples have been proposed for each site. Surface soil samples will provide information to assess the horizontal extent of contamination and will provide data to evaluate risk associated with the surface soil exposure pathway. Soil borings will also be installed at the proposed site locations. Subsurface soil samples will be collected at regular intervals from the borings to assess the vertical extent of contamination.

Groundwater sampling will be conducted at each remedial investigation site in Operable Unit 2. At three of the four sites, a well is located on the upgradient side of the site. At the fourth site, an existing well is located downgradient of the site. These wells will be sampled during the field activities. Monitoring wells will be installed along the property boundary of Defense Depot Memphis, Tennessee upgradient of a number of the remedial investigation sites to evaluate whether offsite sources are contributing to contamination found at Defense Depot Memphis, Tennessee. Installing additional downgradient monitoring wells will be an optional activity that depends on the results of the soil sampling and the results from the existing wells and the wells planned for monitoring of offsite sources. A well will be installed downgradient of a remedial investigation site if contamination detected in the deepest soil boring samples is above background concentrations and preliminary remedial goals or if contamination found in wells located in the vicinity of a site cannot be attributed to offsite sources.

By implementing the Operable Unit 2 Field Sampling Plan, the Remedial Investigation/Feasibility Study can be conducted in a cost-effective, timely manner. Additionally, high-quality data will be obtained to support an evaluation of remedial alternatives for cleanup of Operable Unit 2 at Defense Depot Memphis, Tennessee.

# Operable Unit 3 Field Sampling Plan May 16, 1995 Executive Summary

#### Introduction

 In October 1992, the Defense Depot Memphis, Tennessee was placed on the National Priorities List by the U.S. Environmental Protection Agency. Therefore, Defense Depot Memphis, Tennessee must fulfill requirements under the Comprehensive Environmental Response, Compensation, and Liability Act and National Oil and Hazardous Substances Pollution Contingency Plan. A remedial investigation/feasibility study will be conducted to accomplish the following:

- Assess the nature and extent of contamination
- Evaluate the risk to human health and the environment.
- Screen potential cleanup actions

The Generic Remedial Investigation/Feasibility Study Work Plan was prepared to show how the investigation and study will be accomplished. This field sampling plan was prepared for Operable Unit 2 as a supplement to the Generic Remedial Investigation/Feasibility Study Work Plan. The objective of the Operable Unit 2 Field Sampling Plan is to present a detailed description of the proposed sampling and analysis activities that will be performed for characterization of the remedial investigation sites in Operable Unit 2 at Defense Depot Memphis, Tennessee.

The ultimate goal of the remedial investigation/feasibility study is to select cost-effective cleanup actions that protect public health and the environment. To accomplish this goal, the nature and extent of the release of hazardous substances must be identified, the source of release must be investigated, and proposed cleanup actions must be evaluated. By implementing the field investigation strategies described in the Field Sampling Plans, the quantity and quality of data collected will aid in achieving the goal of the Remedial Investigation/Feasibility Study at Defense Depot Memphis, Tennessee.

### Site Background and Location

Defense Depot Memphis, Tennessee receives, warehouses, and distributes supplies common to all U.S. military services and some civil agencies, located primarily in the southeastern United States, Puerto Rico, and Panama. The installation covers 642 acres of land in Memphis, Shelby County, Tennessee, in the extreme southwestern portion of the state. The installation contains approximately 110 buildings, 26 miles of railroad track, and 28 miles of paved streets. Approximately 5.5 million square feet of storage space is open. Stored items include food, clothing, electronic equipment, petroleum products, construction materials, and industrial, medical, and general supplies used by all military branches of the U.S. government.

# **Description of Operable Units**

Defense Depot Memphis, Tennessee is divided into four operable units for evaluation purposes. Operable Unit 1, north of the Main Installation, is called Dunn Field. The Main Installation is divided into three areas: the southwestern quadrant (Operable Unit 2), the southeastern quadrant including Lake Danielson and the golf course area (Operable Unit 3), and the north-central area (Operable Unit 4). Sites identified in Operable Unit 1 for investigation resulted from use of the area for landfill operations, mineral stockpiles, pistol range use, and materials storage. Potential contamination of Operable Unit 2 may have resulted from spills or releases from the hazardous material storage and recouping area, sandblasting and painting activities, or both. In the recouping area, hazardous and nonhazardous materials from damaged and leaking containers were repacked. The potential sources of contamination in Operable Unit 3 are storage of polychlorinated biphenyls and the use of pesticides and herbicides. Principal contamination in Operable Unit 4 probably resulted from a wood treatment operation and hazardous material storage.

In Operable Unit 3, similar types of contamination were detected during previous sampling activities at the Golf Course Pond and Lake Danielson. Sediment samples showed pesticides and metals; in fish tissue samples, pesticides and polychlorinated biphenyls were detected. Surface water samples were generally free from the analytes tested, which indicated that there is not a water quality problem associated with the sediment contamination. Another of the RI sites in Operable Unit 3 was a former storage area for electrical transformers that were found to be contaminated with polychlorinared biphenyls. Soil samples collected in the area detected petroleum products and pesticides. Polychlorinated biphenyls were not detected. The other two remedial investigation sites in Operable Unit 3 are contaminated where pesticides and herbicides were stored and mixed for application to Defense Depot Memphis, Tennessee grounds. At one site, no soil data are available, but at the other, soil sampling has detected elevated levels of petroleum products and pesticides.

In the groundwater at Operable Unit 3, the primary types of contaminants detected were volatile organic compounds and metals. In two of the three existing monitoring wells, elevated levels of solvents were detected. Metals found at elevated concentrations included lead, antimony, cadmium, and chromium. The existing wells will be sampled and new monitoring wells will be installed and sampled to investigate groundwater contamination at Operable Unit 3. The volatile organic compound contamination found in the groundwater may be from offsite sources; to investigate that possibility, groundwater will be monitored along the Defense Depot Memphis, Tennessee facility boundary upgradient of the wells that have shown volatile organic compound contamination.

The results of the sampling activities that will be conducted may indicate the need for additional monitoring wells. If required, additional wells will be installed during the next phase of field investigations at Defense Depot Memphis, Tennessee when groundwater will be addressed on a facilitywide basis.

## Summary of Field Sampling Plan

This Field Sampling Plan describes the Defense Depot Memphis, Tennessee facility, history of Operable Unit 3, data gaps, and data needed for Operable Unit 3. General information is also provided on Operable Unit 3 location, geography and topography, meteorology, surface water hydrology, geology, hydrogeology, and land use. Additionally, this Field Sampling Plan describes the sampling strategy and sampling plan for the remedial investigation sites in Operable Unit 3. The final section of the plan describes the data needs required to propose remedial alternatives for Operable Unit 3. The purpose of the activities proposed in this Field Sampling Plan are as follows:

- To characterize potential releases from the site
- To assess the nature and extent of soil and groundwater contamination attributable to past operations
- To support a baseline risk assessment
- To gather data to evaluate the feasibility of remedial actions for this site

#### Sampling Strategy

A cost-effective, high-quality sampling strategy has been developed to perform an Remedial Investigation/Feasibility Study at Defense Depot Memphis, Tennessee. This Field Sampling Plan uses an observational approach to collecting field data and making field-based decisions to achieve the goals of the facility. The approach presented is intended to support a recommendation of one of the following options for each remedial investigation site:

- Site upgrade (feasibility study activities)
- Site downgrade (support no further action)
- Interim remedial action

To support the development of recommendations in a timely manner, soil, sediment, surface water, and groundwater samples will be collected at Operable Unit 3 and analyzed using onsite close support laboratory methods and quick-turnaround methods from a fixed-base laboratory. Data must be of sufficient quality to support the decisionmaking process. A tiered approach to sampling and analysis (including field screening) will be used so that the field team can adjust the sampling effort to accommodate sitespecific conditions. Three categories of data will be collected as part of this field effort, with each category having a different level of supporting quality assurance/quality control documentation. The three categories, or levels, correspond to quality control levels 1, 2, and 3. Level 1 includes field monitoring activities such as pH, temperature, conductivity, and total organic vapor monitoring. Level 2 screening activities (such as using a field gas chromatograph for volatile organic compounds) are indicative of the nature of contamination, and Level 3 analysis provides confirmation by an analytical laboratory.

There is a potential for Level 4 data to be required in the future at this facility. Samples analyzed using Level 4 quality control are analyzed using the same analytical methods as Level 3 samples, but different data package deliverables are provided.

A minimum of 10 percent of the close support laboratory and quick-turnaround samples (Level 2) will be sent to an offsite laboratory for Level 3 confirmational analysis. The Level 2 and Level 3 data will be used for comparison to regulatory levels and calculated risk levels to aid in supporting the appropriate recommendation for action at a given site.

#### Proposed Sampling

The Operable Unit 3 Field Sampling Plan describes remedial investigation sites that have been identified on the basis of their potential for contamination as a result of past practices. Surface soil, subsurface soil, sediment, surface water, fish tissue, and groundwater samples have been proposed for each site. Surface soil and sediment samples will provide information to assess the horizontal extent of contamination and will provide data to evaluate risk associated with the exposure pathways. Soil borings will also be installed at the proposed site locations, and subsurface samples will be collected from the borings to assess the vertical extent of contamination.

Surface water sampling will help to evaluate the source of the contamination that has been detected in the sediments. It is not known whether contamination is being transported from the industrial areas of Defense Depot Memphis, Tennessee by the storm water collection system or from runoff from areas surrounding the surface water bodies.

Fish tissue samples will provide information about the contamination's effect on aquatic species in the surface water bodies.

Groundwater sampling will be conducted in Operable Unit 3 to assess whether the remedial investigation sites have affected groundwater quality. The existing wells will be sampled, as will a number of new wells that will be installed during the field activities. Monitoring wells will also be installed along the property boundary of Defense Depot Memphis, Tennessee to evaluate whether offsite sources are contributing to contamination found at Defense Depot Memphis, Tennessee.

By implementing the Operable Unit 3 Field Sampling Plan, the Remedial Investigation/Feasibility Study can be conducted in a cost-effective, timely manner. Additionally, high-quality data will be obtained to support an evaluation of remedial alternatives for cleanup of Operable Unit 3 at Defense Depot Memphis, Tennessee.

# Operable Unit 4 Field Sampling Plan Executive Summary May 16, 1995

#### Introduction

In October 1992, the Defense Depot Memphis, Tennessee was placed on the National Priorities List by the U.S. Environmental Protection Agency. Therefore, Defense Depot Memphis, Tennessee must fulfill requirements under the Comprehensive Environmental Response, Compensation, and Liability Act and National Oil and Hazardous Substance Contingency Plan. A remedial investigation/feasibility study will be conducted to evaluate the nature and extent of contamination, to evaluate the risk to human health and the environment, and to screen potential cleanup actions. The *Generic Remedial Investigation/Feasibility Study Work Plan* was prepared to show how the investigation and study will be accomplished. This Field Sampling Plan was prepared for Operable Unit 4 as a supplement to the *Generic Remedial Investigation/Feasibility Study Work Plan*. The *Operable Unit 4 Field Sampling Plan* has two objectives. The first is to present a detailed description of the proposed sampling and analysis activities that will be performed for the characterization of Operable Unit 4 at Defense Depot Memphis, Tennessee. The second is to provide a detailed description of proposed sampling and analysis activities as a part of the facilitywide groundwater investigation.

The ultimate goal of the Remedial Investigation/Feasibility Study is to select costeffective cleanup actions that provide protection of public health and the environment. To accomplish this goal, the nature and extent of the release of hazardous substances must be identified, the source of release must be determined, and proposed cleanup actions must be evaluated. By implementing the field investigation strategies described in the Field Sampling Plans, the quantity and quality of data collected will aid in achieving the goal of the Remedial Investigation/Feasibility Study at Defense Depot Memphis, Tennessee.

### Site Background and Location

Defense Depot Memphis, Tennessee receives, warehouses, and distributes supplies common to all U.S. military services and some civil agencies, located primarily in the southeastern United States, Puerto Rico, and Panama areas. The installation covers 642 acres of land in Memphis, Shelby County, Tennessee, in the extreme southwestern portion of the state. The installation contains approximately 110 buildings, 26 miles of railroad track, and 28 miles of paved streets. Approximately 5.5 million square feet of storage space is open. Stored items include food, clothing, electronic equipment, petroleum products, construction materials, and industrial, medical, and general supplies used by all military branches of the U.S. government.
# **Description of Operable Units**

Defense Depot Memphis, Tennessee is divided into four operable units for evaluation purposes. Operable Unit 1, north of the Main Installation, is called Dunn Field. The Main Installation is divided into three areas: the southwestern quadrant, Operable Unit 2; the southeastern quadrant including Lake Danielson and the golf course area, Operable Unit 3; and the north-central area, Operable Unit 4. Sites identified in Operable Unit 1 for investigation resulted from use of the area for landfill operations, mineral stockpiles, pistol range use, and materials storage. Potential contamination of Operable Unit 2 may have resulted from spills or releases from the hazardous material storage and repouring area, sandblasting and painting activities, or both. Storage of polychlorinated biphenyls and the use of pesticides and herbicides are potential sources of contamination for Operable Unit 3. Principal contamination in Operable Unit 4 probably resulted from a wood treatment operation and hazardous material storage.

Operable Unit 4 contains the former wood treatment dip vat area, which is now used for pesticide storage and hazardous materials storage. Extensive remediation of soils was conducted at this site during 1985 and 1986. Samples taken in 1990 revealed pesticides at quantitation levels. Soil samples were also taken where past spills have occurred. These samples indicated the presence of solvents, petroleum products, pesticides, and metals. Groundwater samples in Operable Unit 4 indicated the presence of solvents and metals.

# Summary of Field Sampling Plan

This Field Sampling Plan describes the Defense Depot Memphis, Tennessee facility and individual operable unit history and data gaps, locations, geography, surface water hydrology, geology, hydrogeology, land use, and Operable Unit 4 data needs. Additionally, this Field Sampling Plan describes the sampling strategy and sampling plan at Operable Unit 4. A facilitywide investigation of the Fluvial Aquifer, including onsite and offsite wells, also is presented in this Field Sampling Plan. The final section of the plan evaluates the option of installing a monitoring well in the Memphis Sand Aquifer. The purpose of this Field Sampling Plan is to characterize potential releases from the site, to delineate the nature and extent of soil and groundwater contamination attributable to past operations, and to gather data to evaluate the feasibility of remedial actions for this site.

# Sampling Strategy

A cost-effective, quality sampling strategy has been developed to perform a Remedial Investigation/Feasibility Study at Defense Depot Memphis, Tennessee. This Field Sampling Plan uses an observational approach to field data collection and making fieldbased decisions to achieve the goals of the facility. The approach presented is intended to support a recommendation of one of the following options for Operable Unit 4:

- Site upgrade (feasibility study activities)
- Site downgrade (support no further action)
- Early removal action

To support recommendations in a timely manner, soil and water samples will be collected at Operable Unit 4 and analyzed using a fixed-based laboratory. Data must be of sufficient quality to support the decision-making process. A tiered approach to sampling and analysis (including field screening) will be used so that the field team can adjust the sampling effort to accommodate site-specific conditions. Three categories of data will be collected as part of this field effort, with each category having a different level of supporting quality assurance/quality control documentation. The three categories, or levels, correspond to quality control levels 1, 2, and 3. Level 1 includes field monitoring activities such as pH, temperature, conductivity, and total organic vapor monitoring. Level 2 screening activities (such as using a field gas chromatograph for volatile organic compounds) are indicative of the nature of contamination, and Level 3 analysis provides confirmation by an analytical laboratory.

There is a potential for Level 4 data to be required in the future at this facility. Samples analyzed using Level 4 quality control are analyzed using the same analytical methods as Level 3 samples, but different data package deliverables are provided.

Ten percent of the Level 2 samples will be sent to an offsite laboratory for Level 3 confirmational analysis. On the basis of Level 2 and Level 3 data, a comparison of regulatory levels and calculated risk levels of contamination will aid in supporting the appropriate recommendation.

# **Proposed Sampling**

Some surface and subsurface soil samples are planned for Operable Unit 4. Shallow soil borings will be installed surrounding and within Operable Unit 4. Soil samples will be collected at regular intervals from each boring to assess the vertical extent of contamination. Surface soil samples will be collected and analyzed to assess the horizontal extent of contamination.

The seven existing monitoring wells at Operable Unit 4 will be sampled according to procedures outlined in the *Generic Quality Assurance Project Plan*. Two additional monitoring wells will be installed to evaluate Fluvial Aquifer groundwater quality, to further characterize the configuration of the water table, and to assess the possibility of a contaminant release from Operable Unit 4. As part of the overall groundwater quality assessment, 16 to 21 new Fluvial Aquifer wells will be installed. Water level data from these wells and the other existing monitoring wells will be used to update the potentiometric surface map. Chemical analyses from these wells will be used to evaluate the nature and extent of contamination and to provide water quality data upgradient to the facility. The optional task of installing a well in the Memphis Sand Aquifer will be evaluated after groundwater sampling results from Fluvial Aquifer wells have been discussed. The intent of this well will be to evaluate Memphis Sand Aquifer groundwater quality downgradient of the area of suspected hydraulic interconnection between the Fluvial Aquifer and the Memphis Sand Aquifer for the fluvial Aquifer and the Memphis Sand Aquifer for the fluvial Aquifer and the Memphis Sand Aquifer for fluvial for the fluvial Aquifer and the Memphis Sand Aquifer for fluvial for fluvial for the fluvial for the area of suspected hydraulic interconnection between the fluvial Aquifer and the Memphis Sand Aquifer.

The ultimate goal of the Remedial Investigation/Feasibility Study is to select costeffective cleanup actions that minimize threats and provide protection of public health and environment. To accomplish this, the nature and extent of the release of hazardous substances to the Fluvial Aquifer must be identified, the source of release must be determined, and proposed cleanup actions must be evaluated.

# Restoration Advisory Board FACT SHEET

# What is a Restoration Adviaory Board (RAB)?

A RAB's member provide individual advice to government decision makers, it is not a decision-making body. The RAB is comprised of representatives from community and government agencies. All the RAB members are equal. The community representatives are chosen by the community RAB members that are currently serving on the RAB. The government representatives are selected by their agencies.

#### Determining the Need for a RAB

The installation Commanding Officer (CO) has the responsibility to identify sufficient, sustained community interest in the cleanup program. The CO should use community involvement techniques to identify and solicit interest in a RAB. If the community does not express interest in a RAB, document efforts taken to solicit interest and follow up with procedures to monitor community interest on an ongoing basis.

## Responsibilities of the RAB

The RAB provides advice the installation and federal and state regulatory agencies. They address important issues related to cleanup, such as scope of studies, cleanup levels, waste management, and remedial action alternatives. The RAB review and evaluates documents and projected requirements. The many recommend priorities among sites or projects. The RAB will conduct regular meetings, they will be open to the public and held at convenient times and locations.

## Selecting RAB Co-Chairs

The Co-Chairs will serve in equal partnership. The installation co-chair will be selected by the CO, and they will be

empowered with the authority to implement RAB responsibilities. The Community Cochair will be selected by the community members of the RAB.

## Responsibilities of the Installation Co-Chair

Coordinate with the Community Co-chair to prepare and distribute an agenda prior to each RAB meeting. Ensure that the installation participates in an open and constructive manner. Ensure that the RAB has the opportunity to provide input into the decision process. Ensure that community issues and concerns related to cleanup are brought to the table. Provide draft documents to the RAB for review and ensure that these documents are made available to the public. Refer non-cleanup issues to appropriate installation officials for processing. Report RAB decisions/recommendations to the installation. Ensure that administrative support to the RAB is provided.

## Responsibilities of the Community Co-Chair

Coordinate with the installation Co-Chair to prepare and distribute and agenda prior to each RAB meeting. Ensure that community members participate in an open and constructive manner. Ensure that the RAB has the opportunity to provide input into the decision process. Ensure that community issues and concerns related to cleanup are brought to the table. Provide draft documents to the RAB for review and ensure that these documents are made to the public. Report back to the community.

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