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File: 541.460.000n
C.G.

THE MEMPHIS DEPOT
TENNESSEE

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 74

File:
C.G. 541.460.C

74 1

7.4

DEFENSE DISTRIBUTION DEPOT MEMPHIS

NO FURTHER ACTION REPORT

DRAFT

SEPTEMBER 1994

CH2MHILL

US Army Corps
of Engineers
Huntsville Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

AUG 08 1995

4WD-FFA

Commander
Attn: DDMT-DE (Frank Novitzki)
Defense Distribution Depot Memphis
2163 Airways Blvd.
Memphis, Tennessee 38114

SUBJ: Defense Distribution Depot, Memphis, Tennessee (DDMT)
TN4 210 020 570

Dear Mr. Novitzki:

EPA has completed its review of the following document:

- **No Further Action Report**, Draft - DDMT, CH2MHill, September 1994.

With the exceptions of Sites 45 and 53, EPA concurs with the No Further Action recommendations made in this report. Further details are given in the comments, which are enclosed.

If you have any questions or comments, please contact me at 404/347-3555, vmx. 6431.

Sincerely,

Martha Berry
Remedial Project Manager
Federal Facilities Branch

Enclosure

cc: Jordan English, TDEC

EPA COMMENTS
NO FURTHER ACTION REPORT
FIRST DRAFT, SEPTEMBER 1994
DEFENSE DISTRIBUTION DEPOT
MEMPHIS, TENNESSEE

Site 45 is a former temporary storage area that was used to store material from the PCP tank and vat area remediation while it awaited offsite disposal. According to the information provided, up to 39 roll-off containers were placed in the area and were filled with material and covered with plastic while awaiting transport. EPA is concerned that there may have been spillage of contaminated material when the roll-offs were being loaded. More information is needed before this site can be assigned to the NFA category.

Site 53 is the Flammable Solvents Storage Area. A 36,000 gallon spill occurred on January 19, 1988 and, according to a 1/25/88 City of Memphis memo on the subject (Appendix C in the NFA Report), 11,000 gallons were recouped and 1500 to 2000 gallons were lost. EPA disagrees with NFA recommendation for this site. This site should be classified as a Site Screening/Early Removal site.

Site 63 is a fluorspar storage area which consists of nine fluorspar stockpiles. This Site was identified by the USACE as needing NFA, but was not identified in EPA's RCRA Facility Assessment (RFA) and subsequently in the RCRA Permit as needing no further action. Fluorspar is a nonhazardous, naturally occurring commodity. Because of the nonhazardous nature of fluorspar, Site 63 does not pose a risk to human health and the environment. Therefore, EPA concurs on the NFA recommendation for Site 86.63.

Site 86 is a burial area for food supplies that have exceeded their recommended shelf life. This Site was identified by the USACE as needing NFA, but was not identified in EPA's RCRA Facility Assessment (RFA) and subsequently in the RCRA Permit as needing no further action. Because of the nonhazardous nature of the materials stored at Site 86, the site does not pose a risk to human health and the environment. Therefore, EPA concurs on the NFA recommendation for Site 86.

74 4

FYI
original filed
copy in IR Comments
Notebook
Place in NFA Report
when finished!

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
MEMPHIS ENVIRONMENTAL FIELD OFFICE
SUITE E-645, PERIMETER PARK
2510 MT. MORIAH
MEMPHIS, TENNESSEE 38115-1520

October 27, 1994

Commander
Defense Distribution Depot Memphis
Attn: DDMT-WP (Mr. Frank Novitzki)
2163 Airways Blvd.,
Memphis, Tennessee 38114-5210

Re: No Further Action Report, Defense Depot, TDSF #79-736, cc 82

Dear Mr. Novitzki:

Attached are comments for the No Further Action Report dated September 1994 and received in this office on 10/5/94. Please note that I would like to request a short re-visit to the partnering goals and objectives/priorities during our next managers meeting.

I will look forward to seeing you and the other team members on Thursday the 17th.

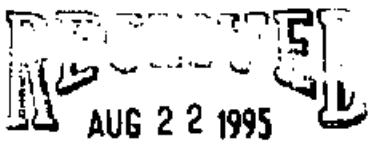
Sincerely,

Jordan English, Manager
Memphis Field Office
Tennessee Division of Superfund

Enclosure

c: TDSF, NCO
TDSF, MFO
Martha Berry
United States Environmental Protection Agency
Federal Facilities Branch
345 Courtland Street, N.E.
Atlanta, GA 30365

Tennessee Department of Environment and Conservation
Division of Superfund
Comments for
NO FURTHER ACTION REPORT
DEFENSE DEPOT
Site Number 79-736
8/11/95



General Comments:

It seems appropriate that certain pieces of information are important, some in a critical sense, as it relates to an overall understanding of the individual sites and the facility in general. In this regard, it appears reasonable to include a statement as to whether or not any sampling was undertaken relative to a proposed NFA site. This was done for some sites but not for all. Similarly, it appears reasonable to request that a statement be provided stating whether any RCRA violations have occurred specifically with regard to each site.

BRAC and eventual civilian reuse of this facility will probably require extra effort to document a condition of no further action required. Any area of subsurface disposal may require some type of deed notice/restriction unrelated to the question of hazardous substances (e.g. areas of marginal stability for structures, etc.).

References are made to Appendix C, yet no appendix labeled C is found. Please clarify or correct.

Finally, a generic response seems in order relative to the way in which the narrative section for the X-25 site was written. As indicated within the specific comments below, the verbiage within this section is directly contradictory to that included in the referenced information. TDEC suggests a partnering discussion revisiting goals and objectives relative to this section.

Specific Comments:

1. Figure 1. 2, page 1-3 –Numerous "No Further Action" sites are shown on this map that do not correspond to those listed in table ES-1. Please correct or clarify.

2. Section 2.1.2, page 2-2--Please state whether sampling was undertaken relative to this site, and if so, what the results indicate.

3. Section 2.2.2, page 2-4--Please state whether sampling was undertaken relative to this site, and if so, what the results indicate.

4. Section 2.3.2, page 2-6--The word "release" is misspelled in the second sentence of the first paragraph.

5. Section 2.4. 1, page 2-8--The next to last sentence of this section needs re-working.

6. Section 2.4.2, page 2-8--You should check and make certain of the disposal activity relative to paints. Some types of paints may not be disposed of as non-hazardous waste. Also, stating the site was "evaluated" during the RFA may tend to give the false impression that sampling was conducted. This section should more explicitly state how the evaluation was conducted. The word "During" at the beginning of the next to the last sentence appears to mean that because there were no obvious leaks during the RFA inspection that this alone was reason and justification for no further action. I believe this site will require some biased sampling to confirm it as a No Further Action site.

7. Section 2.6.2, page 2-12, 2nd paragraph--Was there any history of controlled leaks or spills? Where any RCRA violations associated with this site?

8. Section 2.7.2, page 2-14--Was confirmatory sampling conducted as a part of the dismantling/removal of the unit?

9. Figure 2.7, page 2-15--This map is confusing. The legend does not appear to relate to the drawings. The relationship of the enlarged areas to the insets is unclear. TDEC suggests providing a better figure to illustrate this site.

10. Section 2.8.2, page 2-16, last sentence--What units appeared to be in good condition? It is very likely that this site will require some confirmatory sampling before it can be accepted as NFA.

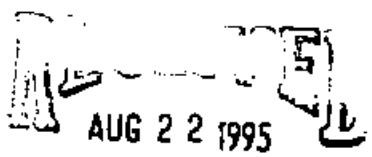
11. Section 2.8.4, page 2-16--Was the analysis conducted with all available or pertinent information. To say both available and pertinent could be misleading. Please clarify.

12. Section 2.9.3, page 2-18--The phrase "On the basis of the lack of a potential source or contaminants in a media..." is almost ludicrous. If there was sampling to indicate such, simply say so. If no sampling was conducted, clearly state so.

13. Section 2.10.2, page 2-20--The word normally as used in the first paragraph implies that other actions may have occurred abnormally. Please clarify or elaborate.

14. Section 2.11, page 2-22--The verbiage within this section is directly contradictory to that included in the appendix as it relates to indication of release. A 1,500-2,000 gal. loss is hardly rationalized as "...no indication of a release to the environment.". I question the judgement in drafting this narrative in a manner that can only be construed as misleading. This site is definitely not an NFA site. Furthermore, it will probably require a site specific characterization of the vadose zone and shallow aquifer. Further characterization may also be required if results indicate any potential for deep aquifer contamination.

15. Section 5.0, page 5-1--Why was the Environmental Science Study not utilized as a reference. Referencing for NFA is much more stringent for further actions/investigations.



Declaration for the Record of Decision
Remedial Alternative Selection

Site Names and Locations

Defense Depot
Memphis, Tennessee

Site 18—Plane Crash Residue
Site 22—Hardware Burial
Site 23—Construction Debris and Food Burial
Site 30—Paint Spray Booths
Site 40—Safety-Kleen Locations
Site 41—Satellite Drum Accumulation Areas
Site 44—Former Wastewater Treatment Unit Area
Site 45—Former Contaminated Soil Staging Area
Site 47—Former Contaminated Soil Drum Staging Area
Site 49—Expired Medical Supplies Storage Area
Site 53—X-25 Flammable Solvents Storage Area
Site 63—Fluorspar Storage: Southeast Quadrant: Dunn Field
Site 86—Food Supplies: Dunn Field

Statement of Basis and Purpose

This decision document presents the selected remedial actions for the referenced sites at the Defense Depot Memphis, Tennessee, developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and, to the extent practicable, the National Contingency Plan (NCP). The decision is based on the administrative record for the sites.

The Department of Defense (DOD) has obtained concurrence from the State of Tennessee and the United States Environmental Protection Agency (EPA), Region IV, on this action.

Description of the Selected Remedy

From an analysis of all available and pertinent information for the sites, it is concluded that future remedial actions are not necessary for the protection of human health or the environment. Therefore, the selected remedial alternative for the sites is No Action. This alternative will consist of leaving the sites as they are. No additional sampling or monitoring will be necessary (under CERCLA), because the conditions at the sites are protective of human health and the environment. This remedial alternative will have no costs associated with it.

Declaration

The selected remedy is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. Treatment is not necessary for the protection of human health and the environment. No imminent or substantial threats to human health or the environment were found at the sites. A 5-year review (under CERCLA) will not be necessary for these sites; however, Resource Conservation and Recovery Act (RCRA)-regulated sites may require future actions.

Signature (Commanding Officer/
Defense Depot Memphis, Tennessee)

Date

Executive Summary

Defense Depot Memphis, Tennessee (DDMT) is a major field installation of the Defense Logistics Agency (DLA), U.S. Department of Defense (DOD). Its primary mission is to provide material support to all U.S. military services and some civil agencies. As a result of meeting its mission, DDMT has been engaged in a variety of operations dealing with hazardous substance transportation, shipment, and disposal.

As a result of past practices and environmental contamination, DDMT was placed on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priorities List (NPL) on October 14, 1992 (199 Federal Register 47180). This action followed the issuance of a Resource Conservation and Recovery Act (RCRA) Part B Permit (No. TN4 210 020 570) to the facility on September 28, 1990. As an enforcement activity of the RCRA permit, a RCRA Facility Assessment (RFA) was conducted in January 1990 by the Environmental Protection Agency (EPA) (A. T. Kearney, Subcontractor). Other activities conducted under regulatory jurisdiction include the following:

Activity	Company
PCP Dip Vat Remediation	O.H. Materials
Remedial Investigation	Law Environmental
Feasibility Study	Law Environmental
Groundwater Removal Engineering Report	Engineering Science, Inc.
Groundwater Removal Engineering Assessment	Engineering Science, Inc.

During the previous investigations and enforcement activities, individual sites at the facility were investigated, and some sites that pose no threat to human health and the environment were identified. Table ES-1 presents a summary of identified sites that pose no threat to human health and the environment. Therefore, no further actions are proposed for the sites. This decision is the only remedial action identified for the sites. Thirteen sites are proposed for No Further Action in this document.

The facility is investigating 85 additional sites at DDMT. The DDMT investigations are broken into four distinct components addressing specific media at the facility. Each media to be investigated must be designated as an operable unit. These operable units are as follows: 1) Groundwater, 2) Sites and Sources, 3) Surface Water, and 4) Drainage and Chemical Warfare Sites. Separate remedial investigations (RIs) are being conducted for each operable unit. This Record of Decision (ROD) is applicable only to the 13 sites identified in this report.

On the basis of the information provided in this report, it was determined that the No Further Action remedy for the 13 identified sites is protective of human health and the environment and that no unacceptable short-term risks are caused. Furthermore, the

Table ES-1
No Further Action Sites
Defense Depot Memphis, Tennessee

Site No.	Description	Document Supporting NFA Recommendation
18	Plan Crash Residue	1, 2, 3, 4
22	Hardware Burial	1, 3
23	Construction Debris and Food Burial	1, 3
30	Paint Spray Booths	1
40	Safety Kleen Locations	1
41	Satellite Drum Accumulation Areas	1
44	Former WWTU Area	1
45	Former Contaminated Soil Staging Area	1, 5
47	Former Contaminated Soil Staging Area	1, 5
49	Expired Medical Supplies Storage Area	1
53	X-25 Flammable Solvents Storage Area	1
63	Fluorspar Storage: Southeast Quadrant: Dunn Field	3, 4, 6
86	Food Supplies—Dunn Field	3, 4, 6

1—RCRA Facility Assessment conducted by A. T. Kearney (January 1990)
2—Geophysical Survey conducted by USCOE (December 1993)
3—DDMT Disposal Records
4—Historical Aerial Photography, assorted dates, CH2M HILL project records
5—Dip Vat Remediation Report by O. H. Materials (February 1986)
6—NFA Report, CH2M HILL, (Draft September 1994)

selected alternative of No Further Action will attain all applicable or relevant and appropriate requirements (ARARs), and this remedy is the most cost-effective solution for the sites.

Contents

Tables

Figures

Acronyms

ARARs	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DCAS	Defense Contract Administration Services
DDMT	Defense Depot Memphis, Tennessee
DIPEC	Defense Industrial Plane Equipment Center
DLA	Defense Logistics Agency
DOD	Department of Defense
DRMO	Defense Reutilization Marketing Organization
DRMR	Defense Reutilization Marketing Region
DSA	Defense Supply Agency
DSAC	DLA Systems Automation Center
EPA	Environmental Protection Agency
FFA	Federal Facilities Agreement
FS	Feasibility Study
HpCDD	Heptachlorodibenzo-p-dioxin
HpCDF	Heptachlorodibenzofuran
HxCDD	Hexachlorodibenzo-p-dioxin
HxCDF	Hexachlorodibenzofuran
NCP	National Contingency Plan
NPL	National Priorities List
OCDD	Octachlorodibenzo-p-dioxin
OCDF	Octachlorodibenzofuran
OU	Operable Unit
PCDD	Pentachlorodibenzo-p-dioxin
PCDF	Pentachlorodibenzofuran
PCP	Pentachlorophenol
POL	Petroleum, oil, and lubricants
POTW	Publicly-owned Treatment Works
ppb	Parts per billion
PVC	Polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RI	Remedial Investigation
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act of 1986
SWMU	Solid Waste Management Unit
TCDD	Tetrachlorodibenzo-p-dioxin
TCDF	Tetrachlorodibenzofuran
TDEC	Tennessee Department of Environment and Conservation
TSDF	Treatment, Storage, and Disposal Facility
WWTU	Wastewater Treatment Unit

1.0 Introduction.

1.1 Facility. Defense Depot Memphis, Tennessee (DDMT) is a major field installation of the Defense Logistics Agency (DLA), U.S. Department of Defense (DOD). Its primary mission is to provide material support to all U.S. military services and some civil agencies. As a result of meeting its mission, DDMT has been engaged in a variety of operations dealing with hazardous substance transportation, shipment, and disposal. This section describes the activities of the installation, the background, and the objectives of this document.

1.2 Facility Description and Location. DDMT is situated on 642 acres of land in Shelby County, Memphis, Tennessee, in the extreme southwestern portion of the state. DDMT is approximately five miles east of the Mississippi River and just northeast of the Interstate 240, Interstate 55 junction. Figure 1-1 presents the facility location map, and Figure 1-2 presents the individual site locations on the facility.

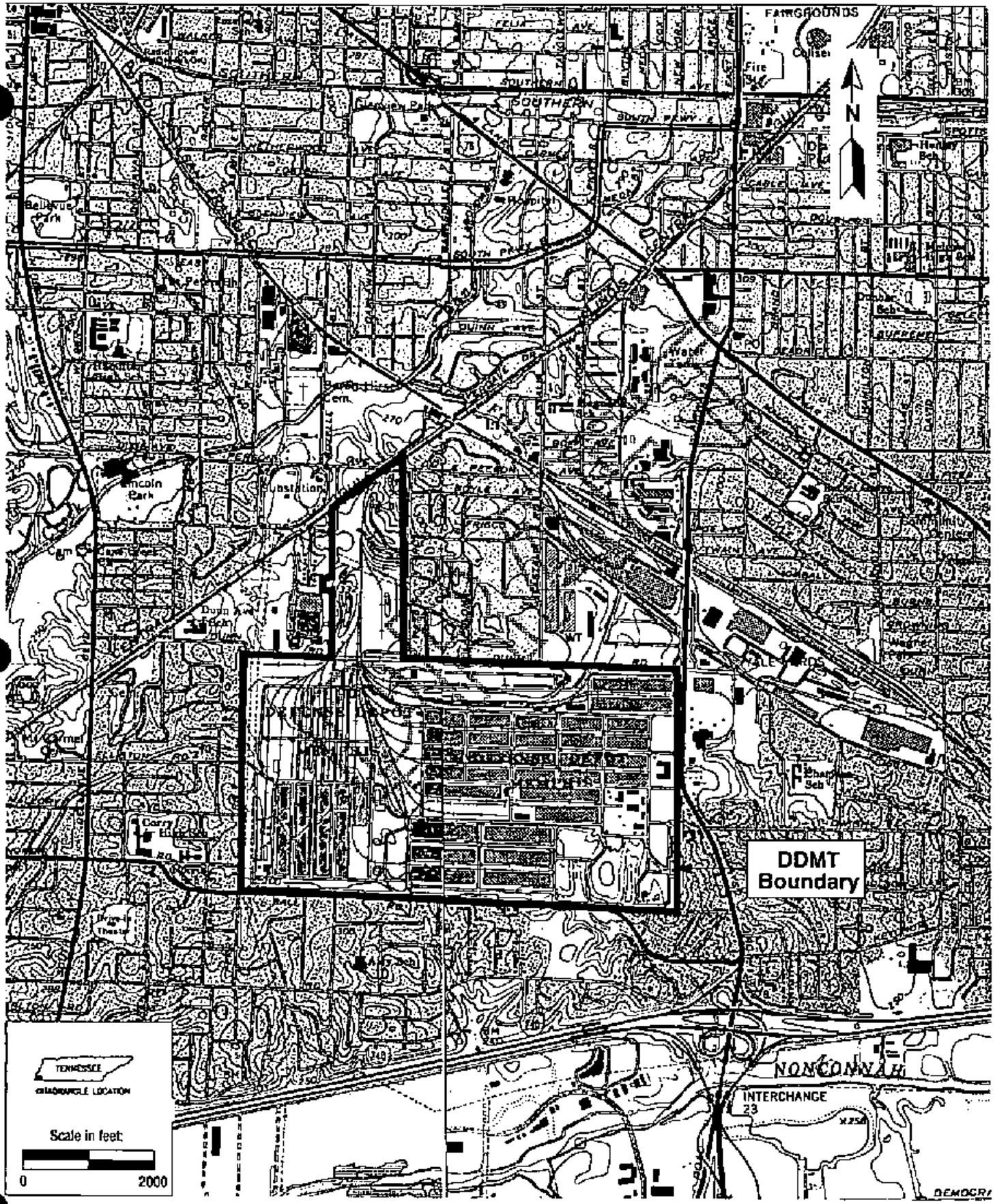
1.2.1 The Depot lies in the south-central section of Memphis, approximately 4 miles southeast of the Central Business District and 1 mile northwest of Memphis International Airport. Airways Road borders the Depot on the east and provides primary access to the installation. Dunn Road, Ball Road, and Perry Road serve as the northern, southern, and western boundaries, respectively.

1.2.2 The installation consists of 110 buildings, 26 miles of railroad track, and 28 miles of paved streets. It has about 5.5 million square feet of covered storage space and approximately 6.0 million square feet of open storage space. The land and buildings are owned by the U.S. Army and leased by DLA. Figure 1-2 illustrates the significant installation features.

1.3 Facility History. Construction of the Defense Depot Memphis, Tennessee, began in June 1941 and was completed in May 1942, on land bought from the Goodman family. The site was previously used as a cotton field. Operation of DDMT began in January 1942.

1.3.1 The initial mission and functions of DDMT were to supply and to provide stock control, storage, and maintenance services for the Army Engineer, Chemical, and Quartermaster Corps. During World War II, the Depot served as an internment center for 800 prisoners of war. The Depot also performed supply missions for the Signal and Ordnance Corps.

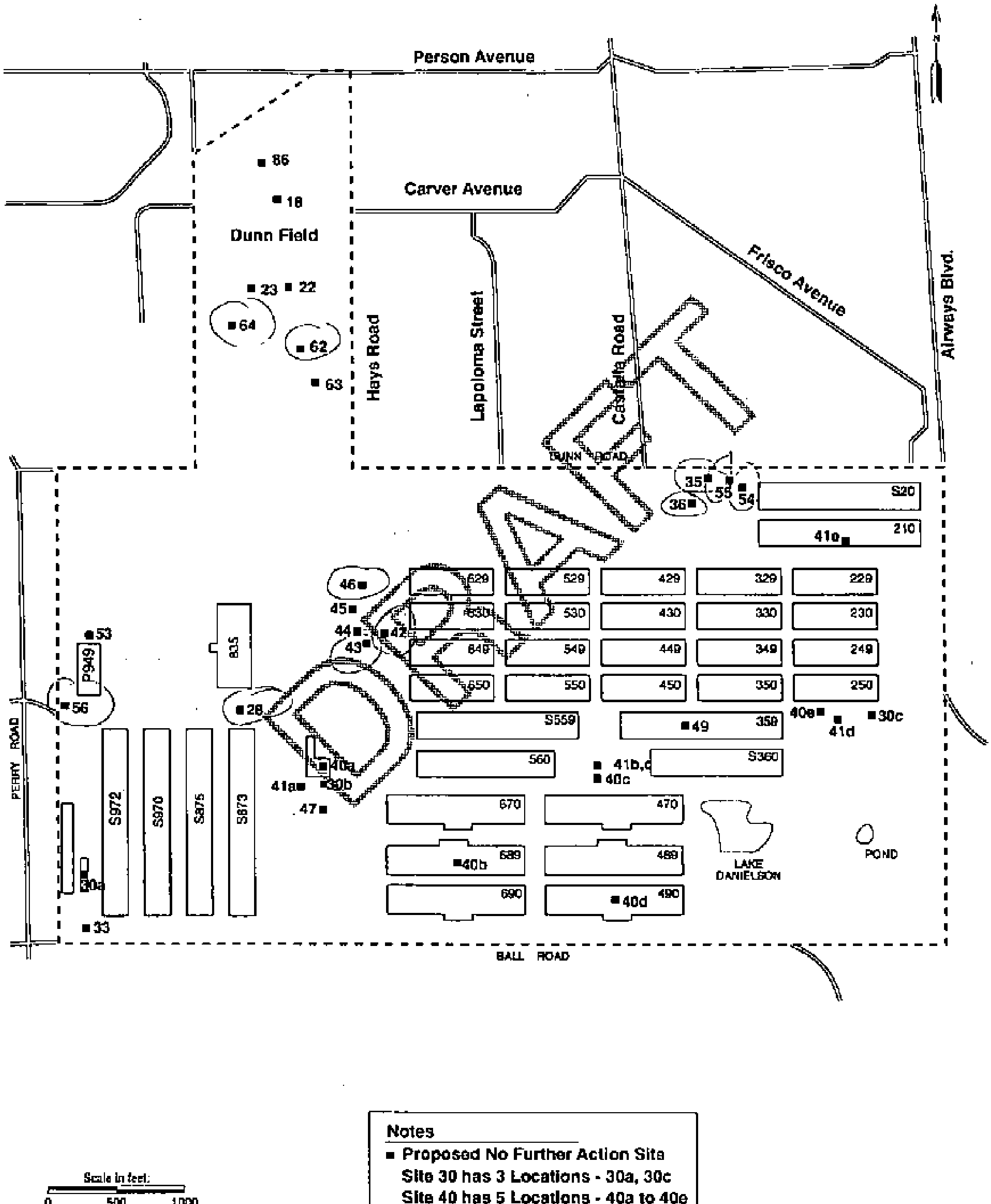
1.3.2 In 1963, the installation was chosen by the Defense Supply Agency (DSA), now the DLA, to be a principal distribution center for a complete range of DSA commodities. On January 1, 1964, the U.S. Army released the installation to DSA and the installation became the Defense Depot Memphis, Tennessee. DLA is responsible to the Secretary of Defense for providing services and supplies used in common by all the military services.



Source:
USGS Maps, Southwest and Southeast Memphis Quadrangles, Tennessee
7.5 Minute Series (Topographic)

CH2M HILL

Figure 1.1
Facility Location Map
Defense Depot, Memphis, Tennessee



Notes
- ■ Proposed No Further Action Site
- Site 30 has 3 Locations - 30a, 30c
- Site 40 has 5 Locations - 40a to 40e
- Site 41 has 5 Locations - 41a to 41e

Source: Corps of Engineers/Huntsville Division

Figure 1.2
Site Locations Map
Defense Depot, Memphis, Tennessee

CH2M HILL

1.3.3 Several other organizations are co-located at DDMT and report directly to DLA. These include the Defense Industrial Plane Equipment Center (DIPEC), Defense Reutilization Marketing Region (DRMR), Defense Reutilization Marketing Organization (DRMO), Customer Supply Assistance Center, Defense Contract Administrative Services (DCAS), and DLA Systems Automation Center (DSAC).

1.3.4 As host activity, DDMT provides administrative support to the DLA co-located activities. Services include accounting, personnel, and travel arrangements.

1.4 Enforcement Activities. DDMT was placed on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priorities List (NPL) on October 14, 1992 (199 Federal Register 47180). This action followed the issuance of a Resource Conservation and Recovery Act (RCRA) Part B Permit (No. TN4 210 020 570) to the facility on September 28, 1990. As an enforcement activity of the RCRA permit, a RCRA Facility Assessment (RFA) was conducted in January 1990. Other activities conducted under the regulatory jurisdiction include immediate response actions (pentachlorophenol [PCP] Dip Vat Remediation) and other studies (Law RI, ES Engineering Report, etc.). These studies occurred from 1985 to 1991, before placement of the facility on the NPL.

1.4.1 Additionally, the United States Environmental Protection Agency (EPA), Region IV, the Tennessee Department of Environment and Conservation (TDEC), and DDMT are planning to enter into a Federal Facilities Agreement (FFA). The primary purpose of the FFA is to ensure that environmental effects associated with past and present activities at the DDMT are thoroughly investigated and that appropriate CERCLA response/RCRA corrective action alternatives are developed and implemented as necessary to protect public health and the environment. These activities also are being performed to meet the requirements of the RCRA Permit. Furthermore, the FFA proposes a schedule for specific events to take place during the CERCLA response/RCRA Corrective Action process.

Specific activities listed in the FFA include a remedial investigation of operable units. Four distinct operable units are under investigation. Additionally, some sites at the facility have been designated for screening to determine if contamination is present as a result of previous activities.

1.5 Facility Characteristics.

1.5.1 Physiography and Climatology. DDMT and eastern Memphis are situated within the Gulf Coastal Plain Subdivision of the Atlantic Coastal Plain Physiographic Province. This area is characterized by dissected loess-covered uplands and generally lacks distinct features. The erosion-controlled land surface appears nearly level with local slopes, ranging from level to approximately 10 percent. The main installation consists primarily of highly developed, urban land that has been graded, paved, and built upon, with the major exception the facility's golf course. Undeveloped areas are used for open storage of equipment.

DDMT is located in the West Tennessee Climatic Division, with a typical climate of humid, warm summers, and cold winters. The annual mean temperature is 62 degrees; the daily mean temperature ranges from approximately 40 degrees in January to 82 degrees in July. The area receives an average of 50 inches of precipitation a year, with the heaviest periods during the winter and early spring; thunderstorms are typical during late spring and early summer. The net annual precipitation (rainfall-evaporation) estimated for the Memphis area is 9 inches. Prevailing winds are from the south at less than 11 miles per hour.

1.5.2 Soils. The predominant surface soil association found in the DDMT site before its development was the Memphis-Granda-Loring Association, characterized by yellow brown to dark brown color. The association is generally sloping, well drained to moderately well drained, and has silt deposits varying in thickness from 6 to 8 inches. Construction of the facility resulted in an altering of the surface soil to a type classified as graded land with silty materials. Exceptions include the northeast corner of Dunn Field and the southeast corner of the golf course.

The facility is located in the north-central part of the Mississippi embayment, which is a broad trough or geosyncline. The axis of the trough roughly parallels the Mississippi River and plunges to the south. The sediments in the study area are primarily Tertiary and Quaternary unconsolidated sands, silts, and clays, with minor amounts of lignite. The uppermost geologic unit is loess. Loess is an eolian deposit consisting of silt, silty clay, sand, or a mixture of the materials. The deposits at DDMT range from 6 to 40 feet.

Quaternary and possibly Tertiary-age fluvial deposits underlie the loess throughout the facility beneath the upland areas and the valley slopes. The deposits consist primarily of sand and gravel, with lenses of clay. The fluvial deposits range in thickness from approximately 45 feet to 98 feet at the Depot.

The Jackson formation and the upper part of the Claiborne Group lie beneath the fluvial deposits. These units consist primarily of clay, silt, and fine sands, with minor lenses of lignite. The clays are primarily montmorillonitic. The Jackson formation and the upper Claiborne Group form a regionally significant confining unit for the underlying Memphis Sand, which is an important drinking water aquifer in the region.

1.5.3 Groundwater. The facility is underlain by a layer of loess that varies in thickness. Terrace deposits underlie the loess. The lower, saturated portion of the terrace deposits is referred to as the Fluvial Aquifer, which is the uppermost aquifer beneath the installation. Perched groundwater also exists in the terrace deposits above small clay lenses at elevations above the Fluvial Aquifer. However, these perched water zones are temporal and are not considered part of the Fluvial Aquifer. The Fluvial Aquifer is not used as a drinking water source within the City of Memphis. The Memphis Sand Aquifer underlies the Fluvial Aquifer, and is the primary source of drinking water for the City of Memphis.

The Fluvial and Memphis Sand Aquifers are separated by the Jackson-Upper Claiborne confining unit, which generally consists of a high-plasticity clay of variable thickness. The depth to the top of the confining unit varies, and the confining unit thicknesses vary, also. The previous RI Report contains data regarding the depth to the confining layer plus the confining layer thickness.

Figure 1-3 presents the November 1993 potentiometric surface map of the Fluvial Aquifer at DDMT. The map was compiled by contouring water levels recorded by ESE in November 1993 (Reference 38). The major groundwater flow direction in the Fluvial Aquifer is toward the depression in the top of the clay unit on the northwestern portion of the facility. This portion of DDMT is a suspected area of hydraulic interconnection between the Fluvial Aquifer and the underlying Memphis Sand Aquifer. The extent of the suspected area of hydraulic interconnection is unknown.

1.5.4 Surface Water. Most of the facility is level with or above the surrounding terrain, and therefore, receives little or no runoff from adjacent properties. Storm water drainage from Dunn Field is mainly through overland flow to the north and west or through a concrete-lined storm sewer (which also conveys storm water from an adjacent, upgradient residential neighborhood) that directs flow northward to Cane Creek, a tributary of the Nonconnah Creek. The main installation's drainage is through overland flow into a storm drainage system. The system directs flow into several outfalls to one perennial and two intermittent streams that drain to Nonconnah Creek (0.75 miles south). Nonconnah Creek, in turn, discharges into McKellar Lake (approximately 4 miles from the creek), which empties directly into the Mississippi River.

In addition, there are two permanent surface waters at DDMT—Lake Danielson and the golf course pond. Lake Danielson is a 4-acre lake that receives a significant amount of storm water runoff. The lake overflows intermittently through a concrete-lined channel at the dam and, as with the overflow from the golf course pond, is directed through an unnamed tributary to Nonconnah Creek. Conversations with facility personnel indicate that overflow occurs when net precipitation is above normal.

No surface water intakes are located within 15 miles downstream of the facility; however, the streams and lake are used for recreational purposes. The facility is not located in the 100-year flood plain and no portions are subject to flooding.

1.6 Scope and Role of the Sites. During the previous investigations and enforcement activities, individual sites at the facility were investigated (EPA RFA, and Law RI/IS). As a result, some sites have been identified that pose no threat to human health and the environment. Therefore, no future actions are proposed for these sites. This decision is the only remedial action identified for the sites. The objectives of this document include the following:

- Provide background information about the proposed No Further Action Sites

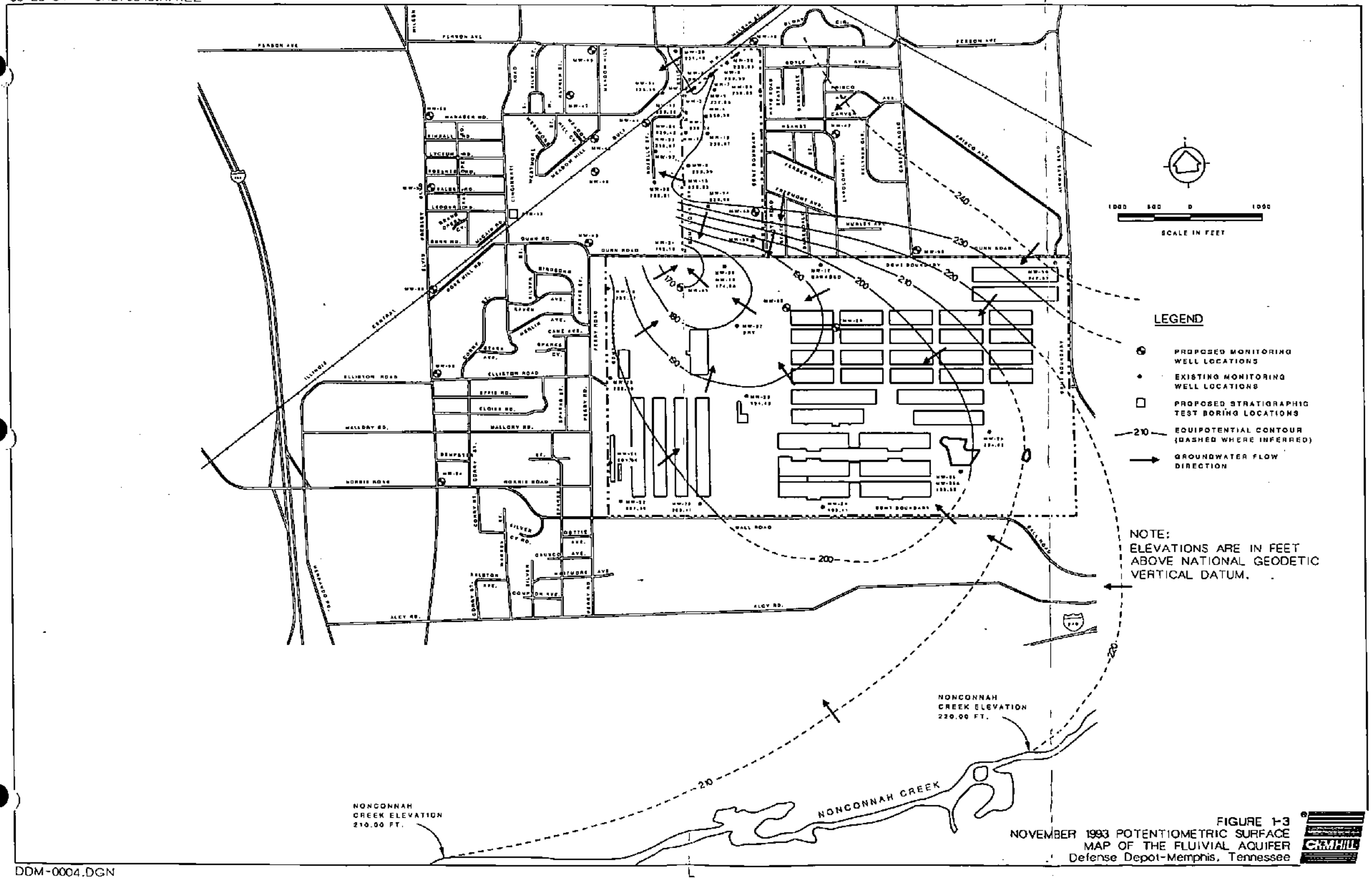


FIGURE 1-3
NOVEMBER 1993 POTENTIOMETRIC SURFACE MAP OF THE FLUIVIAL AQUIFER
Defense Depot-Memphis, Tennessee

DDM-0004.DGN

- Provide rationale for No Further Action decision for each site
- Provide information in support of the No Further Action decision

1.6.1 Note that the facility is investigating four operable units that include multiple sites at DDMT. Separate RIs are being conducted for each operable unit. This Record of Decision (ROD) is applicable only to the 13 sites identified in this report as those requiring No Further Action. Future actions considered for sites at DDMT include remedial investigation/feasibility study (RI/FS), site screening, removal action, and No Further Action.

TAB

2.0 Selected Actions

2.0 Selected Actions

Thirteen sites were reviewed with respect to alternative actions, applicable or relevant and appropriate requirements (ARARs), and risks. These sites were selected for No Further Action. The following subsections present a site description, general information, summary of site risks, and a description of the preferred alternatives for the No Further Action sites at DDMT.

Site 18

Plane Crash Residue

2.1 Site 18—Plane Crash Residue. The following subsections describe Site 18, where plane crash residue was disposed.

2.1.1 Site Description. Site 18 was generated as a result of the burial of debris from a plane crash. The aircraft was a DC-3 that crashed into a warehouse. The crash occurred in the summer of 1985 on the main facility installation. Debris from the crash was buried to an unknown depth. Typical burial depths in Dunn Field are less than 10 feet bgs. During the burial process, records were kept about the materials buried (nonhazardous materials) and the location of the burial. The area measures 363 feet in length and 45 feet in width, and is located 240 feet from the west boundary and 600 feet from the north boundary of Dunn Field. Figure 2-1 illustrates the site location.

2.1.2 General Information. Waste disposed resulting from the plane crash residue burial includes military clothing, plastic, cardboard, roofing rock, asphalt roofing, wood, decking, roof trusses, electrical conduit fittings, sprinkler pipe, air craft debris, and metal. The site is located in the area designated as Dunn Field.

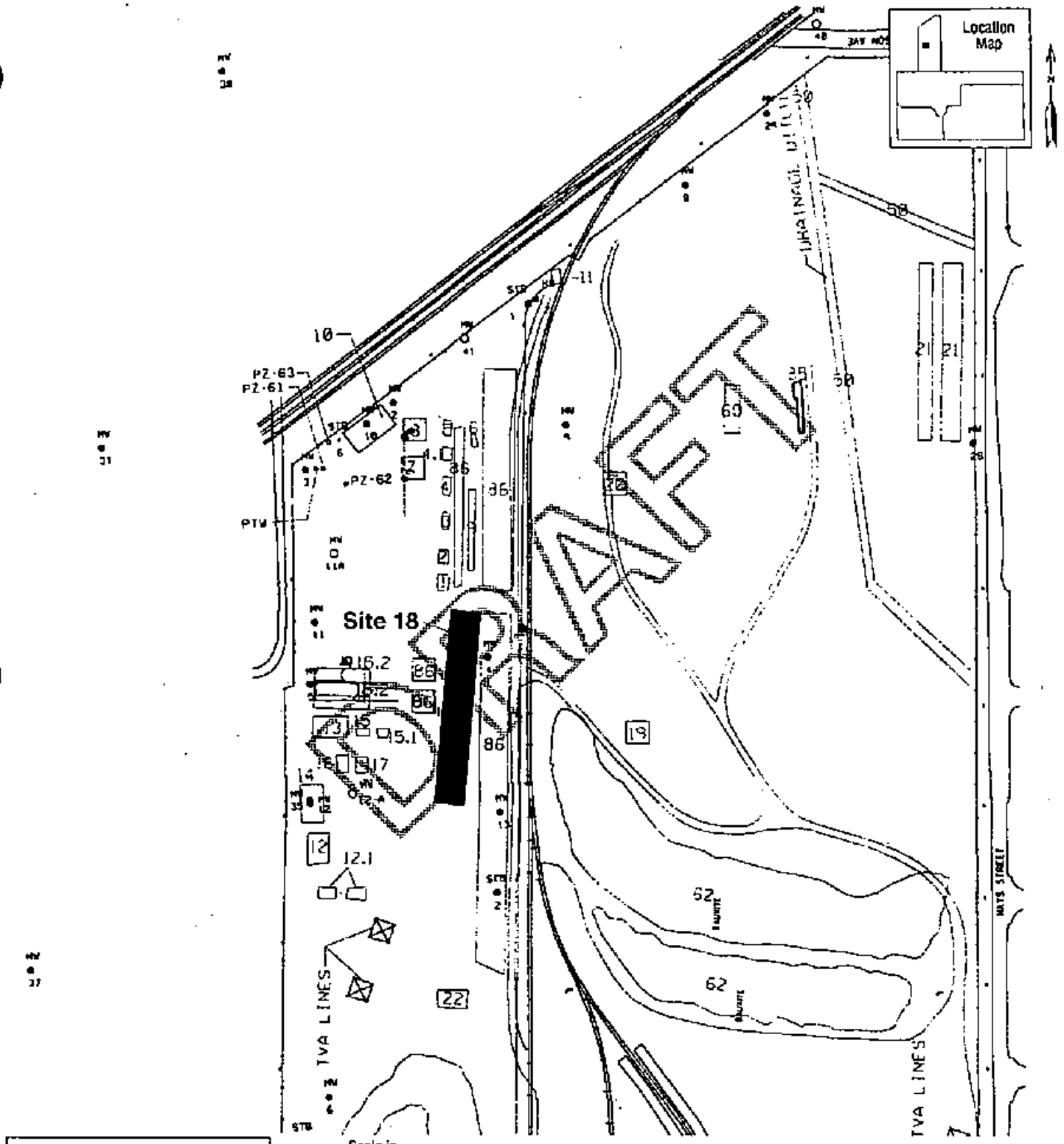
A magnetic and electromagnetic survey of the Dunn Field area was conducted in April 1993. Results of the survey verified that the plane crash residue location was accurate on the facility disposal map. Historical aerial photography (dated February 29, 1992, and April 23, 1986) also supports the location and data indicated on the facility disposal map. Also, an interview with a retired Depot employee supports the historic disposal records. No information has been identified that does not support the disposal records, geophysical survey, personnel interview, and aerial photography.

An RFA conducted in January 1990 indicated that no evidence of release (such as stressed vegetation) was observed and that a low exposure potential exists for the release pathways of air, surface water, soils, groundwater, and subsurface gas. In addition, no history or evidence of release was identified, nor was a release pathway identified.

Because the materials buried do not pose a significant environmental threat, the site has been listed for no further action in both the RFA and the FFA.

2.1.3 Summary of Site Risks. Because of the lack of hazardous or toxic materials disposed at the site, there is no source area of contamination. On the basis of the lack of a potential source or contaminants in a media, there is no risk to human health and the environment from this site.

2.1.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 18—Plane Crash Residue, it is concluded that no remedial actions are necessary for the protection of human health or the environment. Therefore, the selected remedial alternative for the site is No Action. This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.



Source: Corps of Engineers/Huntsville Division

Figure 2.1
Site 18
Plane Crash Residue
Defense Depot, Memphis, Tennessee

CH2MHILL

Site 22

Hardware Burial

2.2 Site 22—Hardware Burial. The hardware burial at Site 22 is described below.

2.2.1 Site Description. The Hardware Burial site (Site 22) is a small landfill where three truckloads of discarded nuts and bolts were placed in May 1977. The landfill is approximately 40 feet long and 10 feet wide. The site is located northwest of Dunn Field approximately 1,100 feet from the north boundary and 300 feet from the west boundary. Figure 2-2 illustrates the site location.

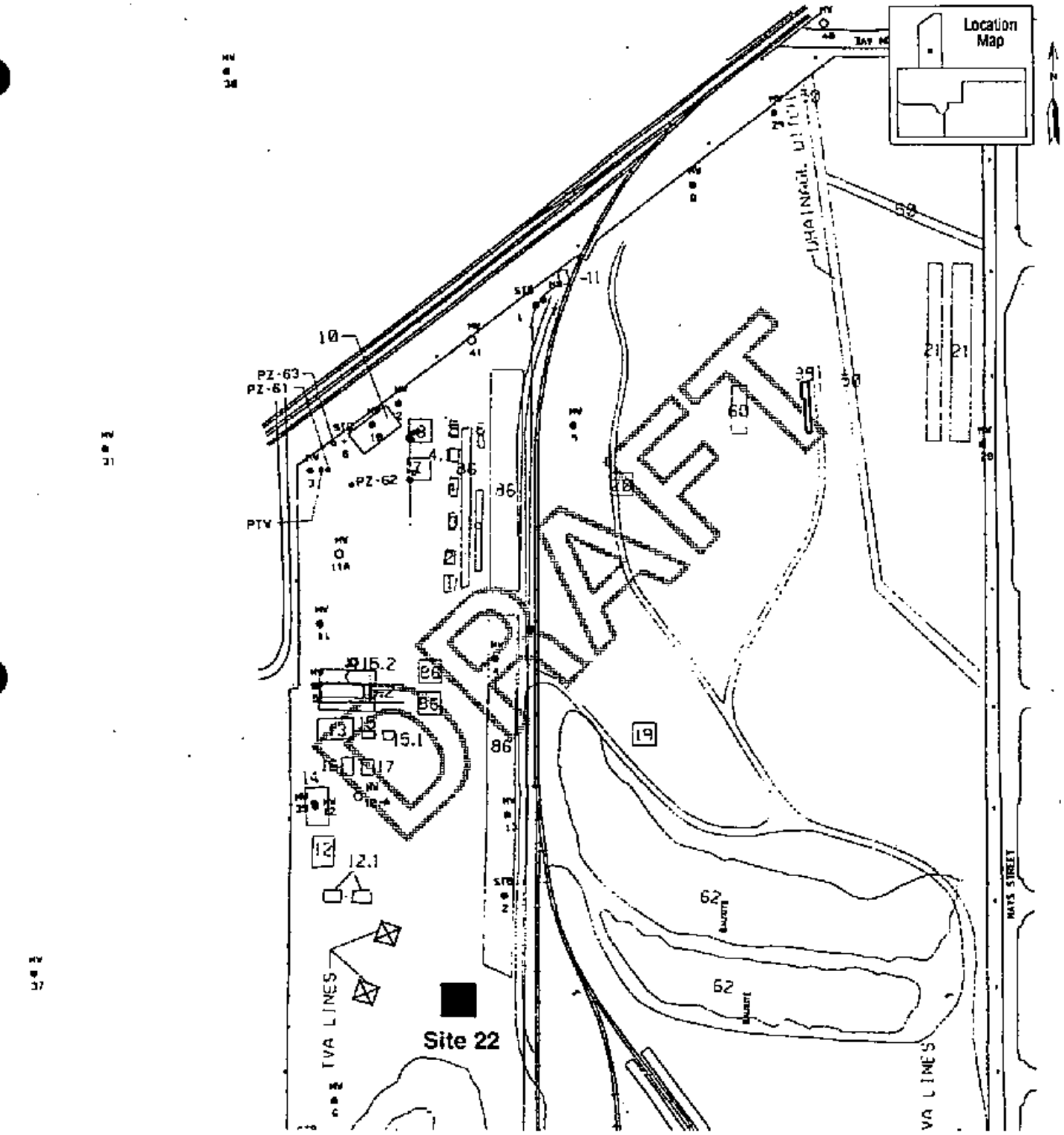
2.2.2 General Information. Materials buried in Site 22 were three truckloads of nuts and bolts that were discarded for unknown reasons. The site is located in Operable Unit 1. Historic records were retained on the Dunn Field disposal map.

An RFA was conducted in January 1990, with results indicating that no evidence of release (such as stressed vegetation) was observed and that a low exposure potential exists for the release pathways of air, surface water, soils, groundwater, and subsurface gas. In addition, no history or evidence of release was identified, nor was a release pathway identified.

Because the materials buried do not pose a significant environmental threat, the site has been listed for no further action in both the RFA and the FFA.

2.2.3 Summary of Site Risks. Because of the lack of hazardous or toxic materials disposed at the site, there is no source area of contamination. On the basis of the lack of a potential source or contaminants in a media, there is no risk to human health and the environment from this site.

2.2.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 22, the Hardware Burial Site, it is concluded that remedial actions are not necessary for the protection of human health or the environment. Therefore, the selected remedial alternative for the site is No Action. This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.



Source: Corps of Engineers/Huntsville Division

Figure 2.2
Site 22
Hardware Burial
Defense Depot, Memphis, Tennessee

Site 23

Construction Debris and Food Burial

2.3 Site 23—Construction Debris and Food Burial. The Site 23 burial area is described in the following paragraphs.

2.3.1 Site Description. The construction debris and food burial site is located in the western portion of Dunn Field. The actual dimensions of the burial area are unknown, but the material was placed in the area in 1948 as part of a routine landfilling operation for burned construction debris and discarded foods. Food materials include typical army rations, dry goods, and canned items that exceeded their shelf life. The area was later filled in with soil and used for bauxite storage. The unit is located approximately 175 feet and 1,000 feet from the west and south boundaries of Dunn Field, respectively. Figure 2-3 illustrates the site location.

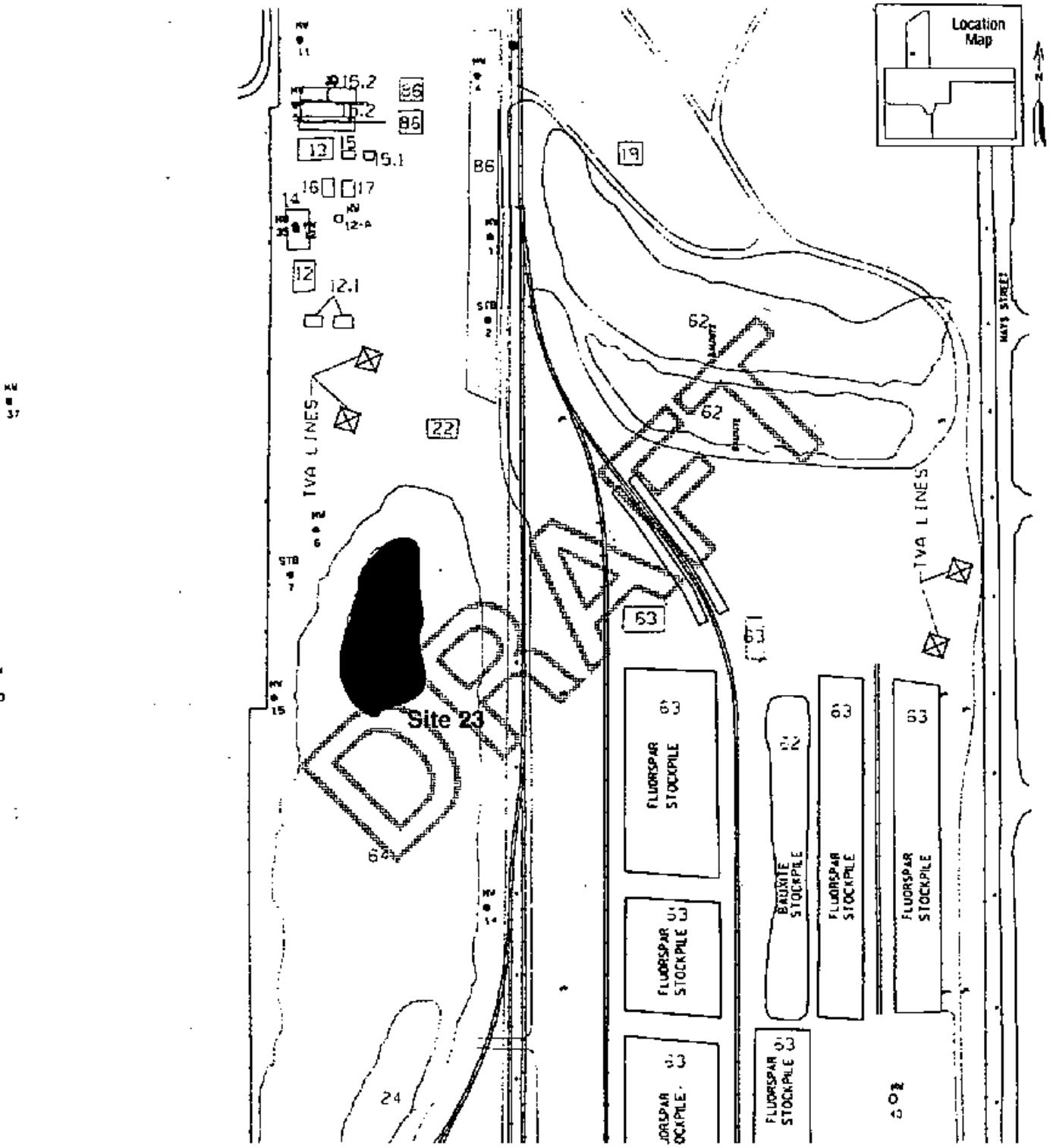
2.3.2 General Information. Site 23 has not been directly sampled. An RFA was conducted in January 1990, with results indicating that no evidence of release (such as stressed vegetation) was observed. The RFA indicated that a low release potential exists for pathways of air, surface water, and subsurface gas. In addition, no history or evidence of release was identified.

A magnetic and electromagnetic survey was conducted of the Dunn Field Area in April 1993. Results of the survey verified that the buried material location is as shown on the facility disposal map. Historical aerial photography (dated August 10, 1937, and October 11, 1953) also supports the location and date indicated on the facility disposal map. No information to date has been identified that does not support the disposal maps, geophysical survey, and the historical aerial photography.

Because of the lack of hazardous or toxic material handled or disposed at the site, the site was listed for no further action in both the RFA and the FFA.

2.3.3 Summary of Site Risks. As discussed in Sections 2.3.1 and 2.3.2, the site previously was used for disposal of nonhazardous material. Because there is no source for hazardous waste at the site, exposure to regional human and non-human receptors is incomplete. Therefore, effects on human health from the site are absent or negligible.

2.3.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 23, the Construction Debris and Foods Burial site, it is concluded that no remedial actions are necessary for the protection of human health or the environment. Therefore, the selected remedial alternative for the site is No Action. This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.



Source: Corps of Engineers/Huntsville Division

Figure 2.3
Site 23
Construction Debris and Food Burial
Defense Depot, Memphis, Tennessee

CH2M HILL

Site 30

Paint Spray Booths

2.4 Site 30—Paint Spray Booths. The Paint Spray Booths at Site 30 are described below.

2.4.1 Site Description. Site 30 consists of three Paint Spray Booths located in Buildings 1086 (OU-2), 770 (OU-2), and 260 (OU-3) that have been used for an unknown time period. Emissions from the areas are controlled by filters located on the back or side walls of the booths, which range in size from 8 ft x 10 ft to 24 ft x 10 ft. Paint from spraying operations passes through the filters as a fan, located on the opposite side of the filter, and forces air into a vent system. Figure 2-4 shows the site location.

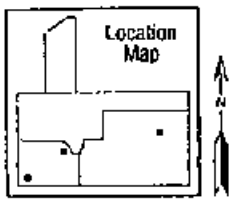
2.4.2 General Information. A variety of paints has been used in the Paint Spray Booths over time. Discarded filters are placed in dumpsters and disposed as nonhazardous waste. No history or evidence of release has been identified at the sites of the paint booths.

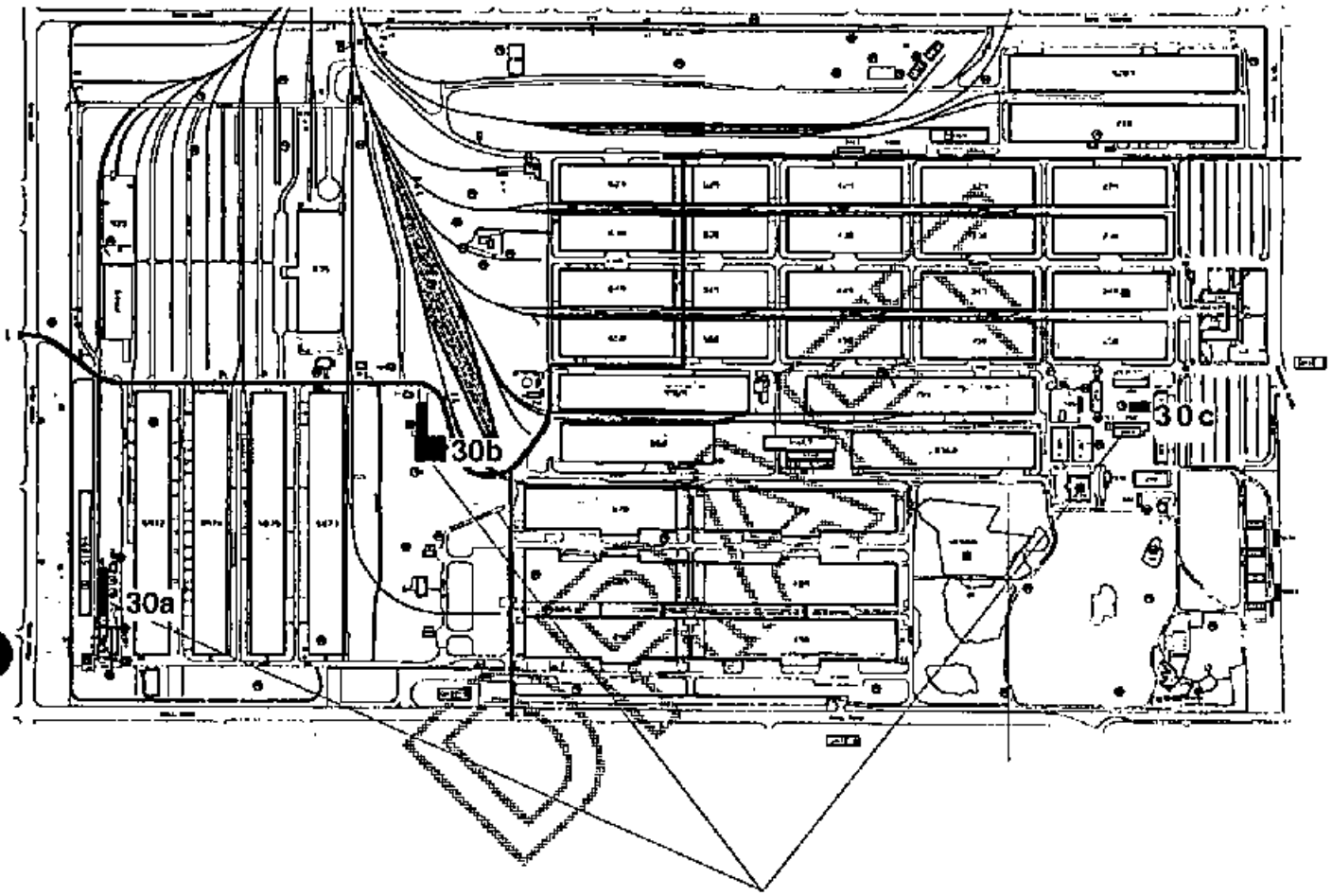
The site was evaluated during the RFA conducted in 1990, with the results indicating that the potential for release from all release pathways was low. During the RFA there was no evidence of leaks or spills noted, and the site was designated for no further action. Additionally, the site has been designated for no further action in the FFA.

No analytical data are available from the paint booth areas.

2.4.3 Summary of Site Risks. Because of the lack of hazardous or toxic materials released at the site and the pollution control equipment in use at the site (filters), there appears to be no significant risk to human health or the environment from the site.

2.4.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 30, the Paint Spray Booths, it is concluded that no remedial actions are necessary for the protection of human health or the environment. Therefore, the selected remedial alternative for the site is No Action under CERCLA. (Worker protection will continue to be regulated by OSHA.) This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.





Site 30

LEGEND

MW ● Existing Monitoring Wells

STB ● Stratigraphic Boring Locations

Scale in feet:
0 400 800

Source: Corps of Engineers/Huntsville Division

Figure 2.4
Site 30
Paint Spray Booths
Defense Depot, Memphis, Tennessee

CH2MHILL

Site 40

Safety-Kleen Locations

2.5 Site 40—Safety-Kleen Locations. The paragraphs below describe the Safety-Kleen locations (Site 40).

2.5.1 Site Description. Site 40 is comprised of nine locations where Safety-Kleen solvent parts cleaning stations are located. The units consist of steel holding tanks supported by steel legs, ranging in size from 20 to 40 gallons. The units are located in buildings and are self-contained. The spent solvent is recirculated before periodic replacement by the Safety-Kleen Corporation, which leases and maintains the units. The units have been used since 1985 in various locations. Five units are located in Building 770, and one unit is located in each of Buildings 689, 490, 253, and 469. The site locations are presented in Figure 2-5.

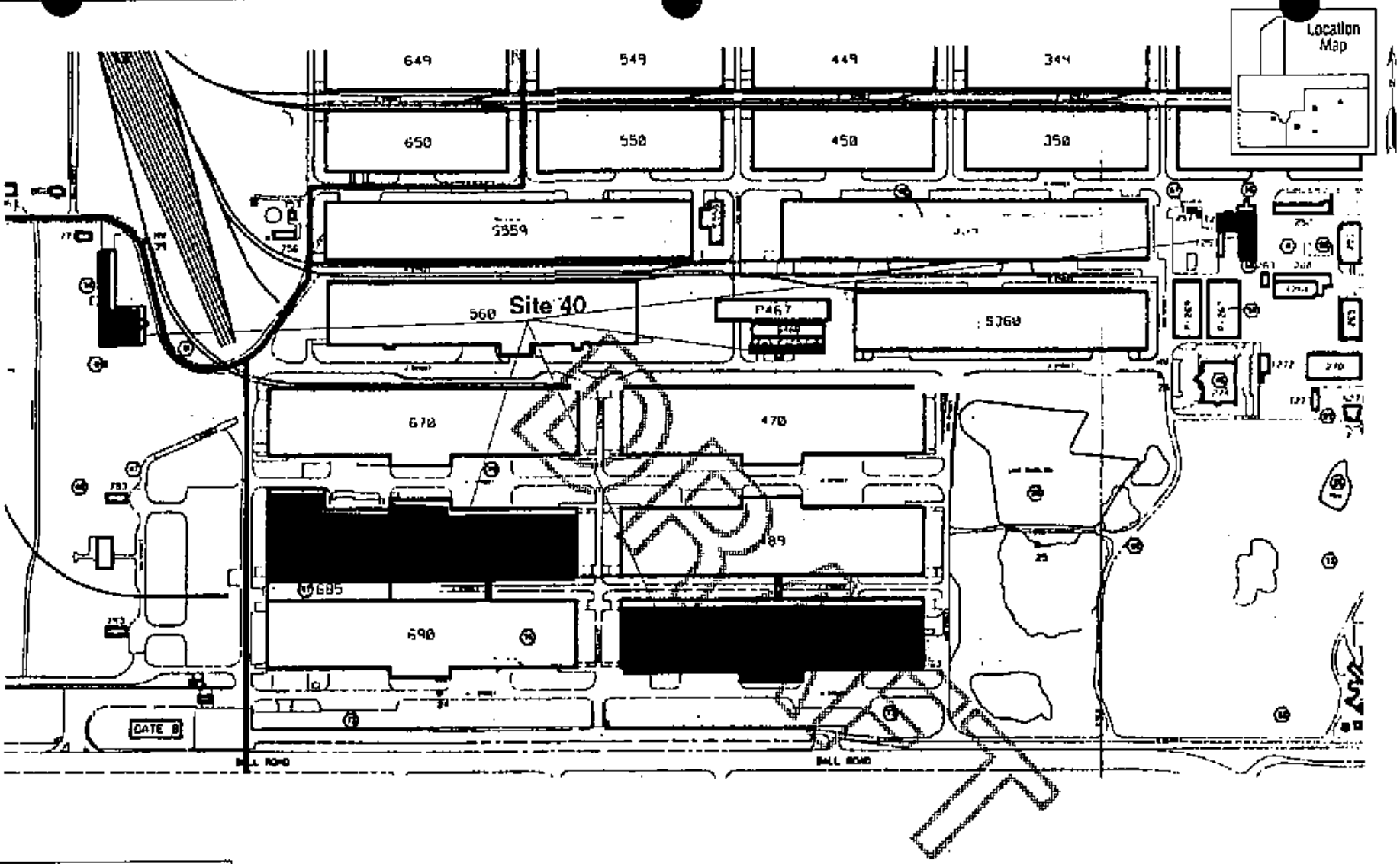
2.5.2 General Information. The Safety-Kleen units are used for carburetor and cold parts cleaning. New cleaning material contains 1.19 percent cresylic acids, 31.7 percent methylene chloride, and 81.3 percent ortho-di-chlorobenzene. Used material generally is contaminated with various oils and greases from the parts themselves. Safety-Kleen supplies the units, brings in the cleaning solutions, periodically returns to remove the used material, and provides new solution. Safety-Kleen handles the manifesting, transporting, and recycling of the material. Unusual material, by loss or gain of volume, color or odor change, or other physical change, is noted and investigated by Safety-Kleen.

The site was evaluated during the RFA conducted in 1990, with the results indicating that the potential for release from all pathways was low. There was no history or evidence of uncontrolled leaks or spills, the units appeared to be in good condition, and the site was designated for no further action. Additionally, the FFA designates this site as a No Further Action Site.

No analytical data are available for this site.

2.5.3 Summary of Site Risks. A minimal level of risk exists because hazardous materials are handled in these units. These risks are controlled through the design and handling criteria regulated under RCRA. Because of the equipment design and procedural controls, there is no significant risk to human health or the environment.

2.5.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 40, the Safety-Kleen Locations, it is concluded that no remedial actions are necessary for the protection of human health or the environment. Therefore, the selected remedial alternative for the site is No Action under CERCLA. This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.



Source: Corps of Engineers/Huntsville Division

Figure 2.5
Site 40
Safety Kleen Locations
Defense Depot, Memphis, Tennessee

CH2M HILL

Site 41
Satellite Drum Accumulation Areas

2.6 Site 41—Satellite Drum Accumulation Areas. The discussion below covers Site 41, the Satellite Drum Accumulation Areas.

2.6.1 Site Description. Five satellite drum storage areas make up Site 41, the Satellite Drum Accumulation Areas. The areas have been used since 1985 to store drums of waste materials. The units vary in the number and size of drums they contain, but all units are located on concrete floors within buildings. The buildings where the areas are located are illustrated in Figure 2-6. Table 2-1 summarizes the materials stored at the various locations.

Table 2-1
Site 41—Satellite Drum Accumulation Areas
Defense Depot Memphis, Tennessee

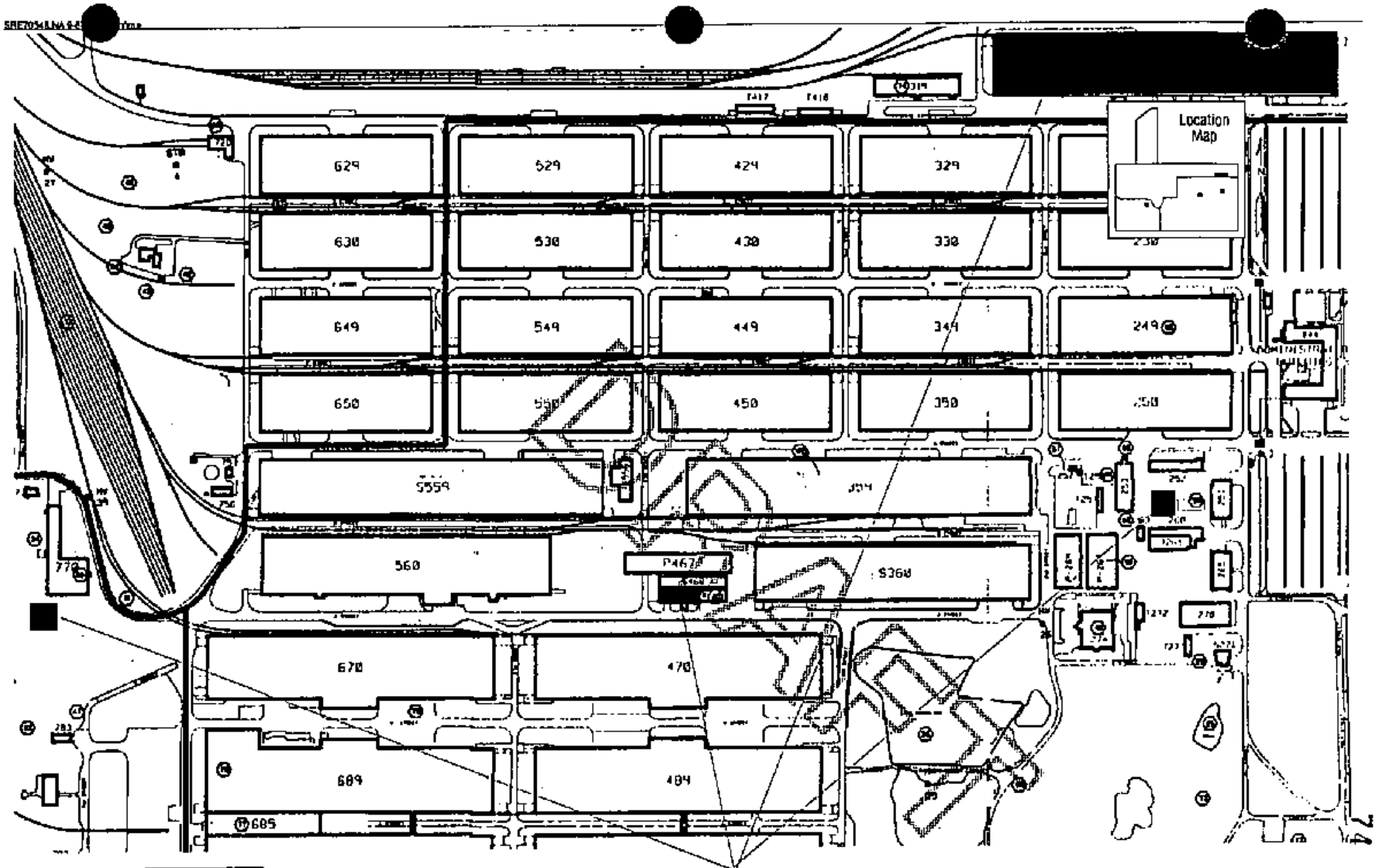
Building Number	Number of Units	Waste Stored
770	2	Solvent rags, waste solvent
S-469	1	Sulfuric acid
210	1	Waste solvents, empty product containers, solvent rags
260	1	Waste paint, paint thinner, solvent rags

2.6.2 General Information. The drums and areas are maintained in good condition and are regulated. All wastes collected in these areas are transported to the DRMO before offsite disposal.

The site was evaluated during the RFA conducted in 1990, with the results indicating that the potential for release from all pathways was low. There was no history or evidence of uncontrolled leaks or spills, the units appeared to be in good condition, and the site was designated for no further action in the RFA. No analytical data are available for this site.

2.6.3 Summary of Site Risks. A minimal level of risk exists because hazardous materials are handled in these units. These risks are controlled through the design and handling criteria regulated under RCRA. Because of the design and procedural controls, there is no significant risk to human health or the environment.

2.6.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 41, Satellite Drum Accumulation Areas, it is concluded that no remedial actions are necessary for the protection of human health or the environment. Therefore, the selected remedial alternative for the site is No Action under CERCLA. This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.



LEGEND

MW ■ Existing Monitoring Wells

STB ■ Stratigraphic Boring Locations

Scale in feet: 0 200 400

Source: Corps of Engineers/Huntsville Division

Figure 2.6
Site 41
Satellite Drum Accumulation Area
Defense Depot, Memphis, Tennessee

CH2MHILL

Site 44
Former WWTU Area

2.7 Site 44—Former WWTU Area. The following subsections present a discussion of Site 44.

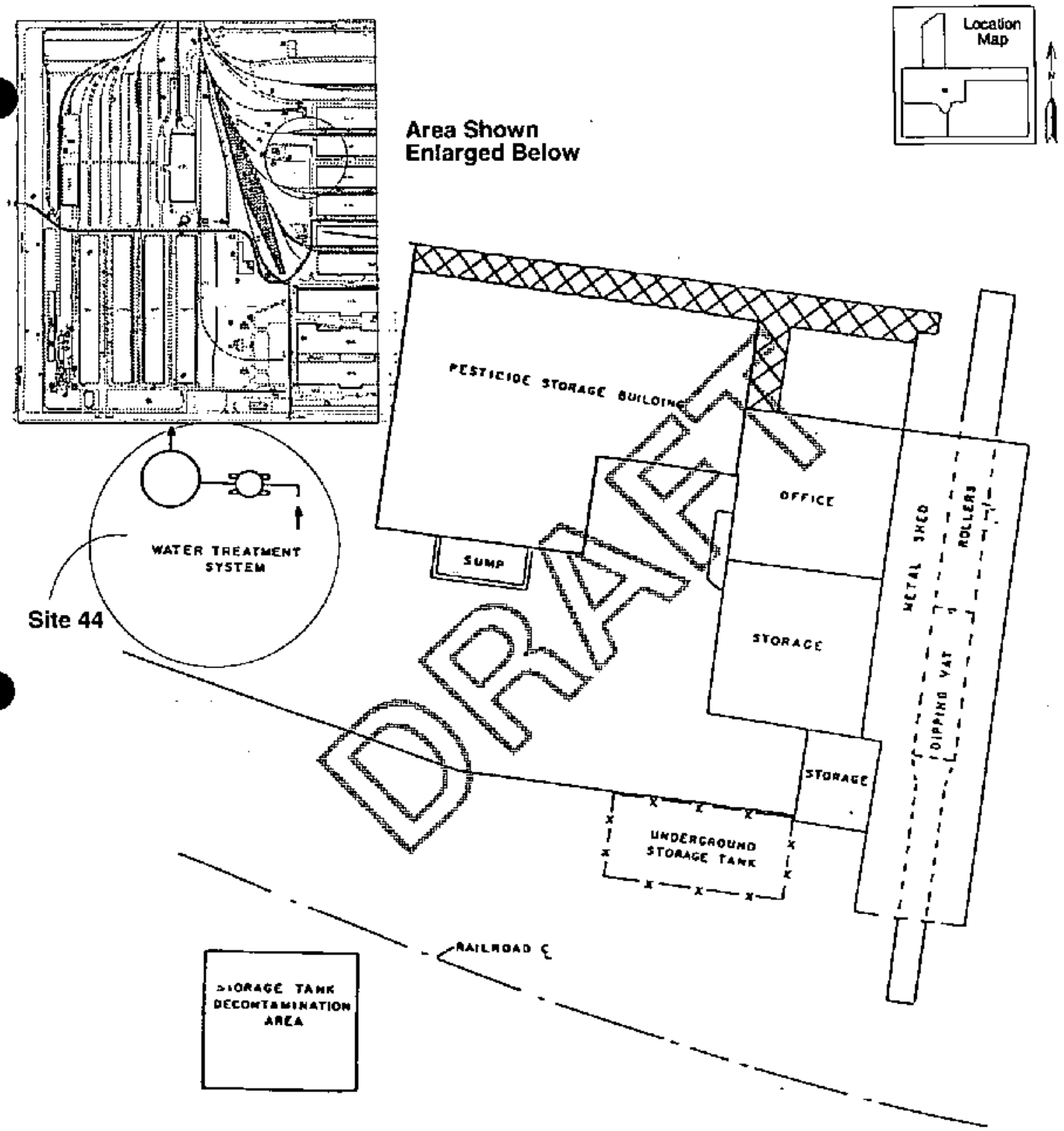
2.7.1 Site Description. The former Wastewater Treatment Unit (WWTU) Area was the location of a temporary wastewater treatment unit used in the remediation of Sites 42 and 43 in 1986. The unit was located just west of Building S-737 and consisted of a 12,000-gallon portable pool with vinyl liner, pumps, medium capacity carbon cell, and associated piping on a concrete pad. The sump, located adjacent to the pesticide storage building, was used as a holding basin until enough wastewater was retained for treatment. Figure 2-7 illustrates the site location.

2.7.2 General Information. The WWTU was used to treat rainwater mixed with PCP-contaminated oil and rinse waters from equipment decontamination during remedial actions and cleanup operations of the pesticide shop. Sample results of the treated wastewater held in the portable pool were below allowable levels for sewer discharge, and 8,000 gallons of water was discharged to the publicly owned treatment works (POTW) operated by the City of Memphis Public Works Department. Upon completion of the water treatment, 27 drums of contaminated carbon were removed. After treatment was completed, the unit was dismantled and removed.

The site was evaluated during the RFA conducted in 1990, with the results indicating that the potential for release from all pathways was low. There was no history or evidence of uncontrolled leaks or spills, the units appeared to be in good condition, and the site was designated for no further action.

2.7.3 Summary of Site Risks. Because of the lack of hazardous or toxic materials disposed or released at the site, there is no source area or contamination at the site. On the basis of the lack of a potential source or contaminants in a media, there is no risk to human health and the environment from this site.

2.7.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 44, the Former WWTU Area, it is concluded that no remedial actions are necessary for the protection of human health or the environment. Therefore, the selected remedial alternative for the site is No Action under CERCLA. This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.



LEGEND

MW 8 Existing Monitoring Wells

STB 8 Stratigraphic Boring Locations

Source: Corps of Engineers/Huntsville Division

Figure 2.7
Site 44
Former WWTU Area
Defense Depot, Memphis, Tennessee

CH2M HILL

Site 45
Former Contaminated Soil Staging Area

2.8 Site 45—Former Contaminated Soil Staging Area. In the subsections below, Site 45 is discussed.

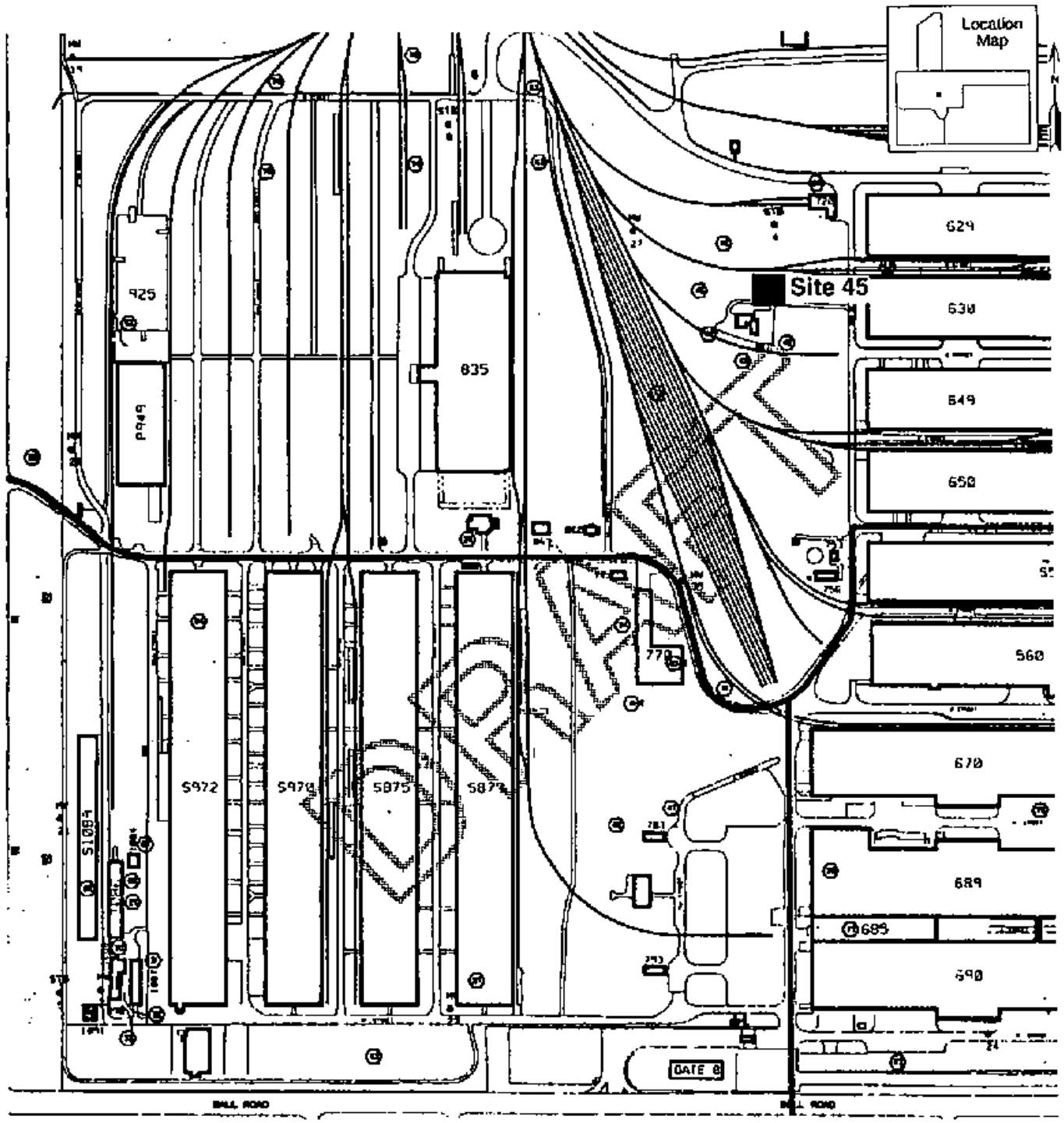
2.8.1 Site Description. The former Contaminated Soil Staging Area was a temporary storage area used from 1986 through 1988 to hold waste from the PCP tank and vat area remediation while it awaited offsite transportation and disposal. The location was a gravel area to the northwest of Building S-737 that measured approximately 200 feet by 100 feet. Roll-off containers were stored in the area; they were prepared to receive the contaminated soil by having the seams filled with a foam material and being lined with plastic. After each container was filled with contaminated soil, it was covered with plastic. Figure 2-8 illustrates the site location.

2.8.2 General Information. Up to 39 roll-off containers, each with a capacity of 24 to 30 cubic yards, were placed in the area. The containers were filled with contaminated soil (containing PCP, dioxin, and furan) from Sites 42 and 43 before shipment to a final offsite disposal facility.

The site was evaluated during the RFA conducted in 1990, with the results indicating that the potential for release from all pathways was low. There was no history or evidence of uncontrolled leaks or spills, the units appeared to be in good condition, and the site was designated for no further action.

2.8.3 Summary of Site Risks. Because of the lack of hazardous or toxic materials disposed or released at the site, there is no source area or contamination at the site. On the basis of the lack of a potential source or contaminants in a media, there is no risk to human health and the environment from this site.

2.8.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 45, Contaminated Soil Staging Area, it is concluded that no remedial actions are necessary for the protection of human health or the environment. Therefore, the selected remedial alternative for the site is No Action under CERCLA. This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.



LEGEND

MW ■ Existing Monitoring Wells

STD ● Stratigraphic Boring Locations

Scale in feet: 0 200 400

Source: Corps of Engineers/Huntsville Division

Figure 2.8
Site 45
Former Contaminated Soil Staging Area
Defense Depot, Memphis, Tennessee

CH2M HILL

Site 47

Former Contaminated Soil Drum Staging Area

2.9 Site 47—Former Contaminated Soil Drum Staging Area. In the following paragraphs, Site 47 is discussed.

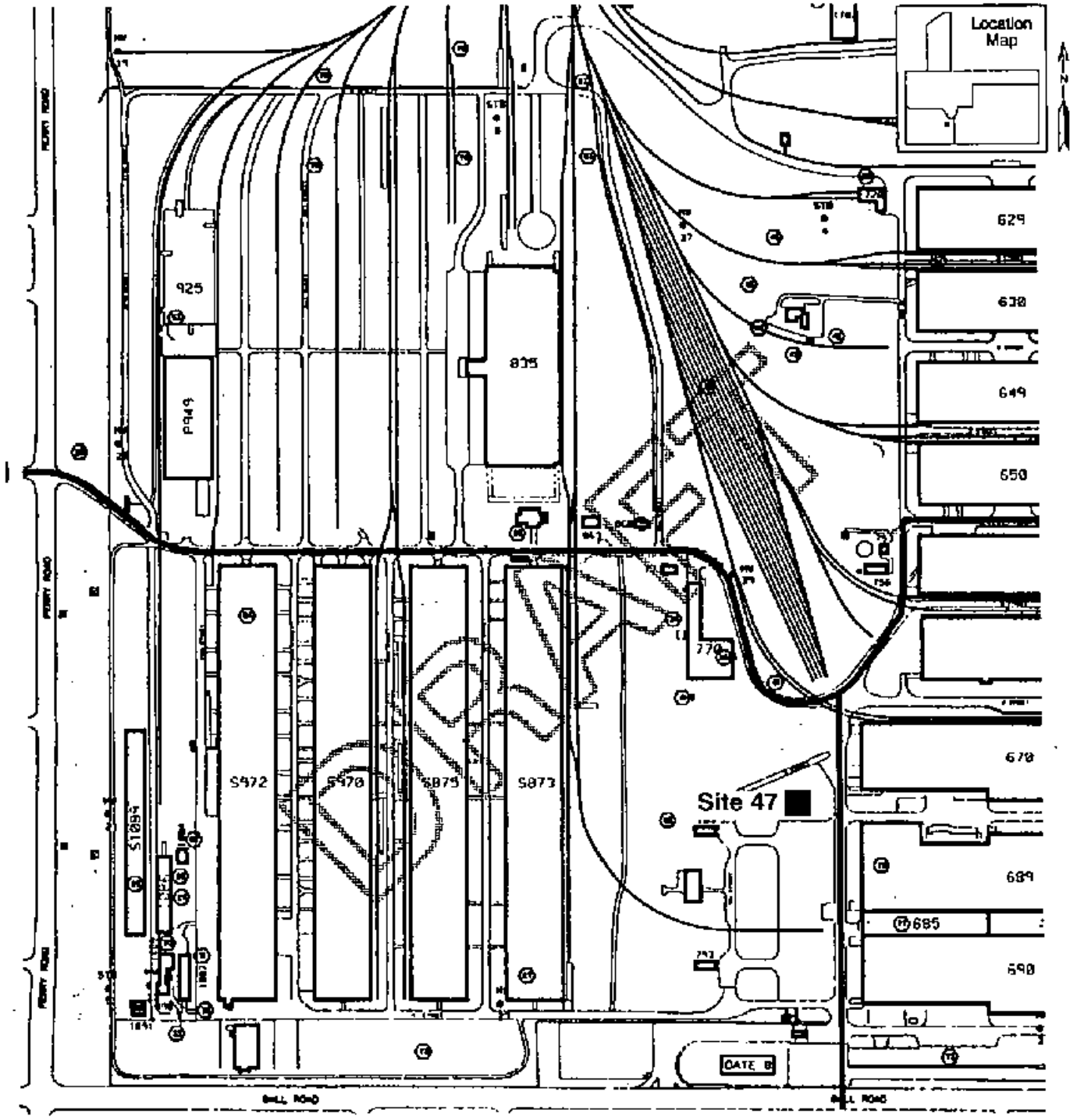
2.9.1 Site Description. The former contaminated soil drum storage area was a temporary drum storage/staging area used from 1986 to the spring of 1988 to hold materials from the remedial activities at Sites 42 and 43. The unit is located in the southwest part of the main installation, approximately 300 feet west of Building 689. The unit consisted of a dirt-covered concrete igloo building normally used for explosives storage. The igloo has a concrete floor and all drainage exits were sealed. Figure 2-9 illustrates the site location.

2.9.2 General Information. The site was used to store approximately 800 drums of various materials. Most of the drums were filled with material from remedial activities from Sites 42, 43, and the associated treatment units. This material included contaminated soil (containing PCP, dioxin, and furan), sludge from the bottom of the vat and storage tank, and contaminated carbon from a temporary treatment unit (Site 44) before shipment to an offsite facility for final disposal.

The site was evaluated during the RFA conducted in 1990, with the results indicating that the potential for release from all pathways was low. There was no history or evidence of uncontrolled leaks or spills, the units appeared to be in good condition, and the site was designated for no further action.

2.9.3 Summary of Site Risks. Because of the lack of hazardous or toxic materials disposed or released at the site, there is no source area or contamination at the site. On the basis of the lack of a potential source or contaminants in a media, there is no risk to human health and the environment from this site.

2.9.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 47, the Former Contaminated Soil Drum Storage Area, it is concluded that no remedial actions are necessary for the protection of human health or the environment. Therefore, the selected remedial alternative for the site is No Action under CERCLA. This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.



LEGEND

MW ● Existing Monitoring Wells

STB ● Stratigraphic Boring Locations

Scale in feet: 0 200 400

Source: Corps of Engineers/Huntsville Division

Figure 2.9
Site 47
Former Contaminated Soil Drum Staging Area
Defense Depot, Memphis, Tennessee

CH2MHILL

Site 49
Expired Medical Supplies Storage Area

2.10 Site 49—Expired Medical Supplies Storage Area. Site 49 is covered in the following discussion.

2.10.1 Site Description. The Expired Medical Supplies Storage Area is a warehouse storage area that has been used from an unknown date until the present for medical supplies with an expired shelf life. The unit is located near the center of Building 359 and consists of a concrete floored storage bay (approximately 50 feet by 30 feet). Materials are stored in the manufacturer's containers, on pallets or shelves throughout the unit, until transported or disposed. Figure 2-10 illustrates the site location.

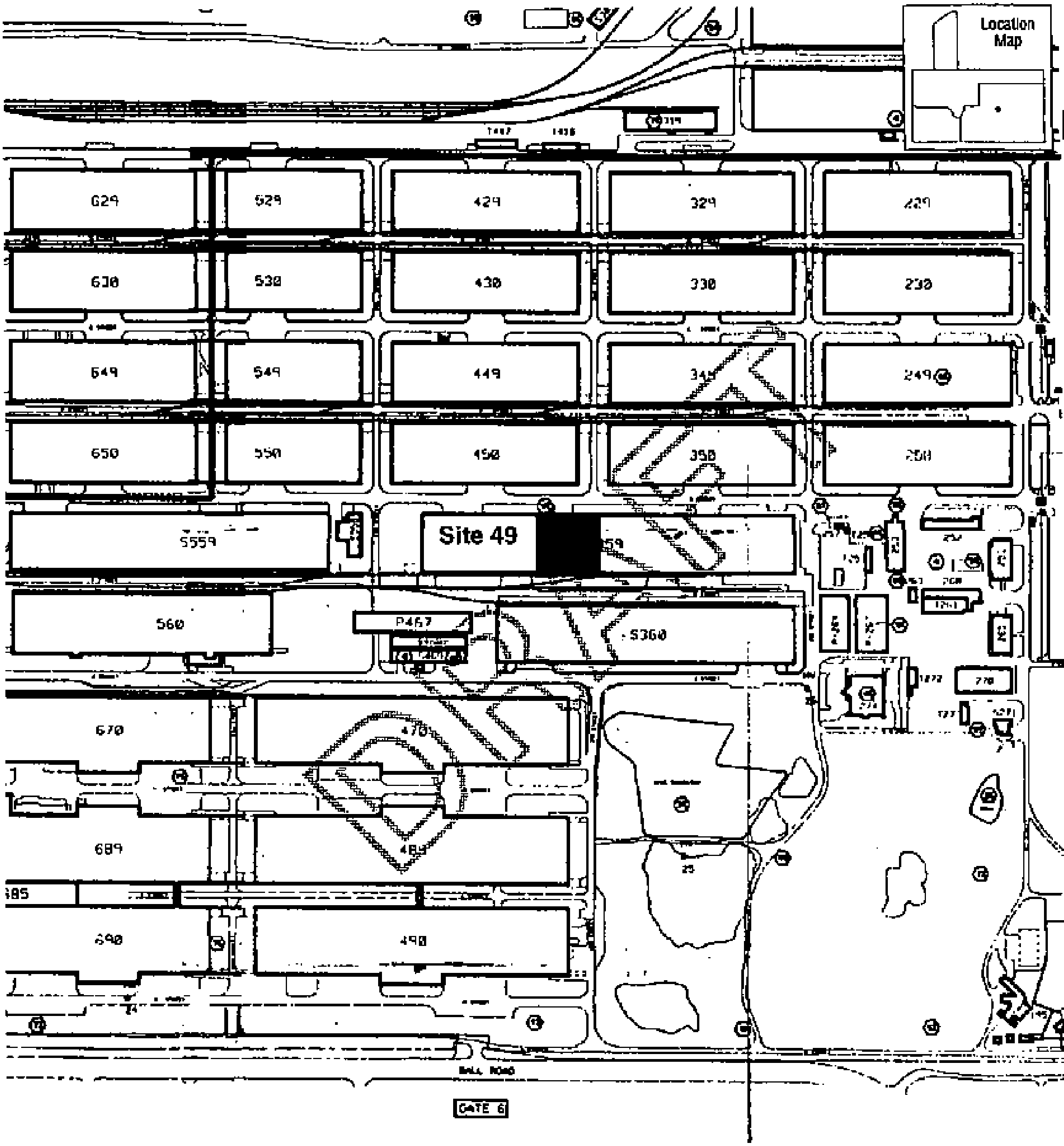
2.10.2 General Information. The storage area is used to store expired-shelf-life medical supplies in their original containers. From the unit, liquid material normally is sent to the sanitary sewer (with permission of the sewer authority), while solid material normally is crushed and sent to the sanitary sewer or sent offsite for incineration or other proper disposal.

The site was evaluated during the RFA conducted in 1990, with the results indicating that the potential for release from all pathways was low. There was no history or evidence of uncontrolled leaks or spills, the units appeared to be in good condition, and the site was designated for no further action. In addition, this site has been listed for No Further Action under the FFA.

No analytical data are available for this site.

2.10.3 Summary of Site Risks. Because of the lack of hazardous or toxic materials disposed or released at the site, there is no source area of contamination at the site. On the basis of the lack of a potential source or contaminants in a media, there is no risk to human health and the environment from this site.

2.10.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 49, the Medical Waste Storage Area, it is concluded that no remedial actions are necessary for the protection of human health or the environment. Therefore, the selected remedial alternative for the site is No Action under CERCLA. This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.



LEGEND

MW
● Existing Monitoring Wells

STB
● Stratigraphic Boring Locations

Scale in feet:
0 200 400

Source: Corps of Engineers/Huntsville Division

Figure 2.10
Site 49
Expired Medical Supplies Storage Area
Defense Depot, Memphis, Tennessee

CH2M HILL

Site 53

X-25 Flammable Solvents Storage Area

2.11 Site 53—X-25 Flammable Solvents Storage Area. The paragraphs below present a discussion of Site 53.

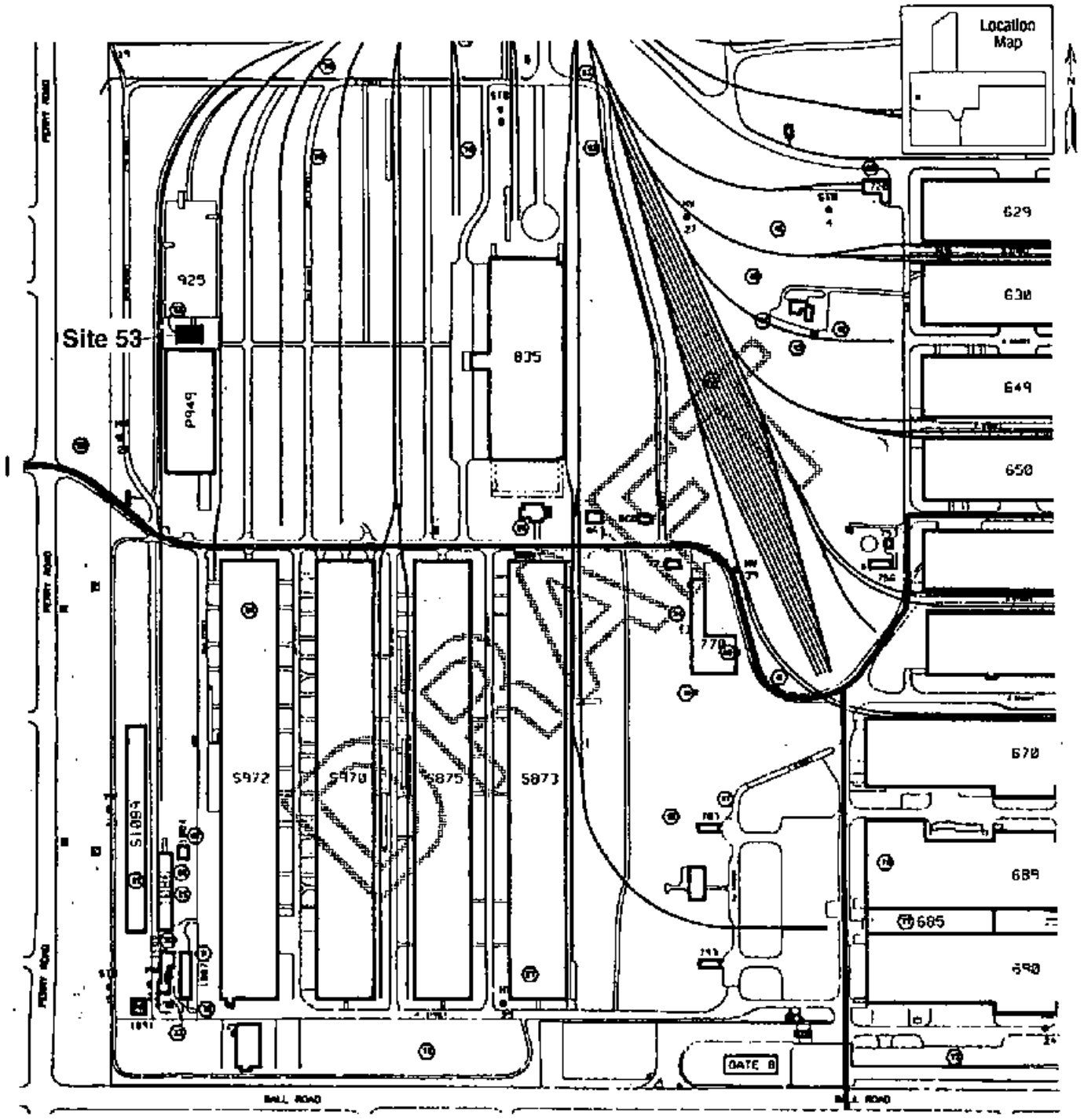
2.11.1 Site Description. The X-25 Flammable Solvents Storage Area Site is the result of a product storage area spill. The 36,000-gallon spill occurred on January 19, 1988, in the northernmost petroleum, oil, and lubricants (POL) concrete-bermed storage area, located in the northwest section of the main installation. The area measures approximately 175 feet by 125 feet. The unit is designed with a concrete floor that slopes to the south to retain material. The site location is illustrated in Figure 2-11.

2.11.2 General Information. The spill occurred inside the containment unit and consisted of a mixture of highly-flammable solvents, including xylene and toluene. The spill was cleaned up, with material recovered as possible, at the time it occurred. The unit was specifically designed to contain spills from the operational units in the storage area. Memorandums documenting the spill event and the subsequent cleanup actions are presented in Appendix C.

The site was evaluated during the RFA conducted in 1990, with the results indicating that the potential for release from all pathways was low. At the time of the site visit, the unit appeared to be in good condition with no evidence of soil staining or stressed vegetation near the unit. On the basis of the response action and the recorded history, the site was designated for no further action. No analytical data are available for this site.

2.11.3 Summary of Site Risks. Because the release was in the unit designed to contain such a release and the proper response actions were taken at the time of the release to recover and remove the material, there is no indication of a release to the environment. Therefore, there is no risk to human health and the environment from this site.

2.11.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 53, the X-25 Flammable Solvents Storage Area, it is concluded that no remedial actions are necessary for the protection of human health or the environment. Therefore, the selected remedial alternative for the site is No Action under CERCLA. This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.



LEGEND

MW ● Existing Monitoring Wells

STB ● Stratigraphic Boring Locations

Source: Corps of Engineers/Huntsville Division

Scale in feet: 0 200 400

Figure 2.11
Site 53
X-25 Flammable Solvents Storage Area
Defense Depot, Memphis, Tennessee

CH2M HILL

Site 63

Fluorspar Storage: Southeast Quadrant: Dunn Field

2.12 Site 63—Fluorspar Storage: Southeast Quadrant OU-1. Site 63, Fluorspar Storage, is covered below.

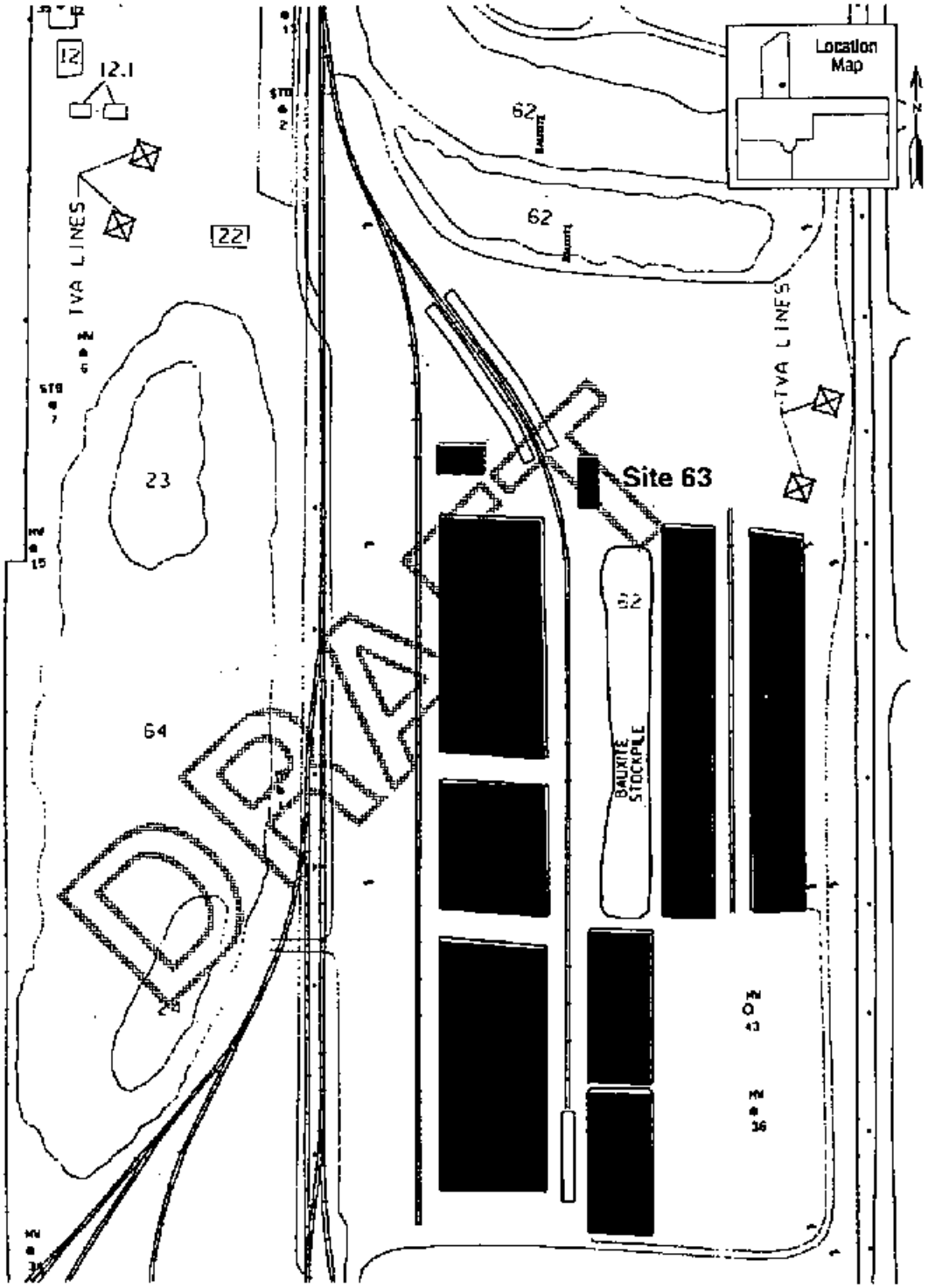
2.12.1 Site Description. Site 63 is comprised of nine fluorspar stockpiles located in the southeastern quadrant of Dunn Field. The nine areas combined cover approximately 5.2 acres. The location of the fluorspar stockpiles is illustrated in Figure 2-12.

2.12.2 General Information. The storage areas contain only fluorspar, a nonhazardous commodity. Fluorspar (commercial fluorite) is a naturally occurring mineral composed of calcium and fluoride (CaF_2). The chief deposits of fluorspar in the U.S. are located in Illinois and Kentucky. Fluorspar is used mainly as a flux in the steel production industry. Material has been stored continuously from the 1950s to the present. Currently, the nine fluorspar piles are covered with a continuous polyvinyl chloride (PVC) membrane that is solvent welded at the seams.

No analytical data are available for this site.

2.12.3 Summary of Site Risks. Because of the lack of hazardous or toxic materials disposed or released at the site, there is no source area of contamination at the site. On the basis of the lack of a potential source or contaminants in a media, there is no risk to human health and the environment from this site.

2.12.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 63, Fluorspar Storage: Southeast Quadrant of Dunn Field Area, it is concluded that no remedial actions are necessary for the protection of human health or the environment, nor is CERCLA applicable to the site because it is and historically has been a storage area for a nonhazardous commodity. Therefore, the selected remedial alternative for the site is No Action under CERCLA. This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.



LEGEND

MW ● Existing Monitoring Wells

STB ● Stratigraphic Boring Locations

Scale in feet: 0 100 200

Source: Corps of Engineers/Huntsville Division

Figure 2.12
Site 63
Fluorspar Storage: Southeast Quadrant OU-1
Defense Depot, Memphis, Tennessee

CH2M HILL

Site 86

Food Supplies: Dunn Field

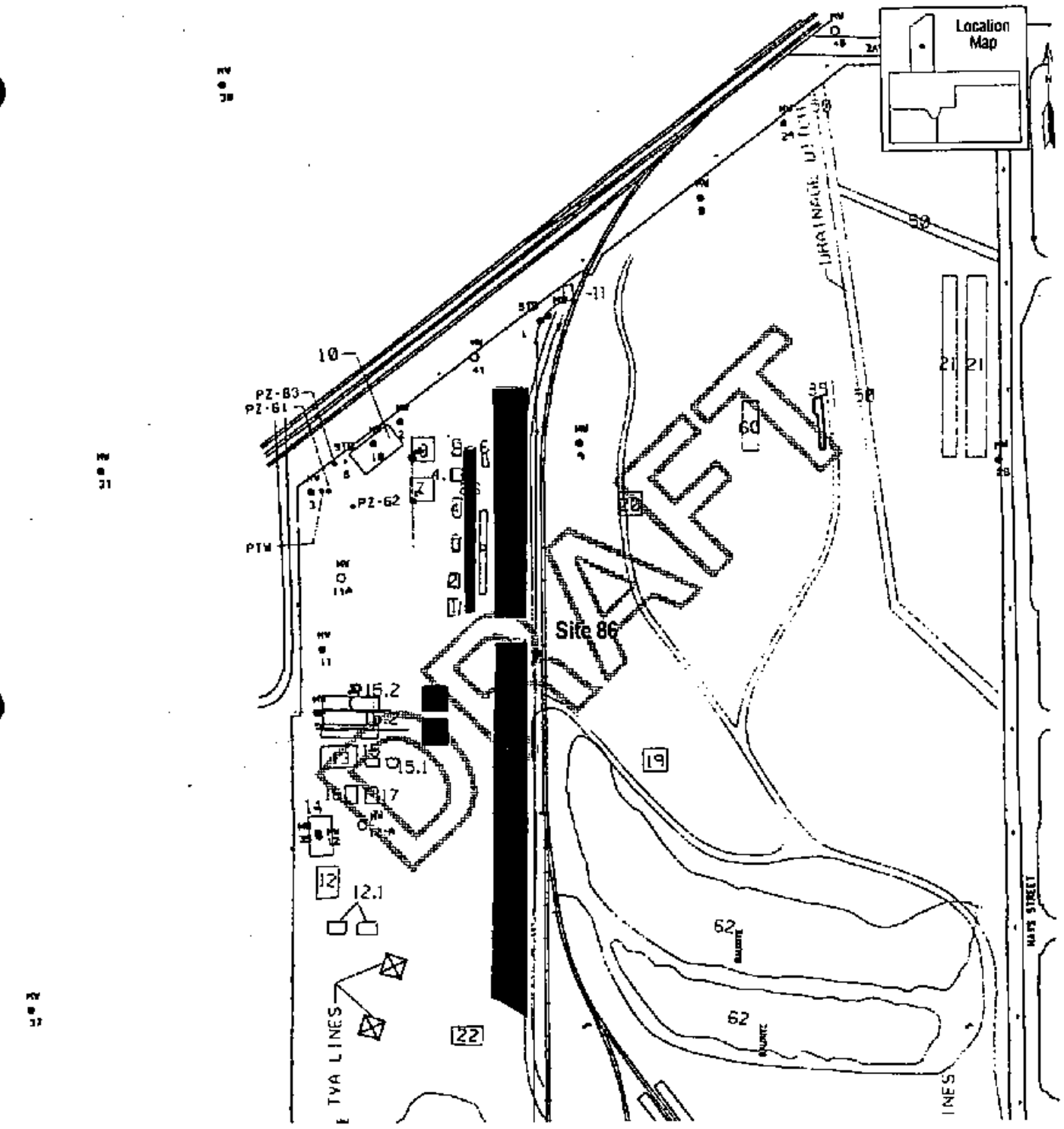
2.13 Site 86—Food Supplies: Dunn Field. The following is a description of Site 86.

2.13.1 Site Description. Food supplies are a commodity that the Depot distributes in significant quantities. Food supplies include field rations for military personnel. As a result of handling large volumes of food supplies, many of these may reach or exceed the recommended shelf life. Site 86 at Dunn field resulted from the burial of food supplies that exceeded shelf life and were no longer suitable for distribution. The site is presented in Figure 2-13.

2.13.2 General Information. A magnetic and electromagnetic survey was conducted of the Dunn Field area in April 1993. Results of the survey indicate that the buried material location was generally accurate on the facility disposal map. Additionally, an interview with a retired employee of the Depot supported the location and date of the disposed of food supplies. No information has been identified that does not support the disposed records, geophysical survey, and data obtained from personnel interviews.

2.13.3 Summary of Site Risks. Because of the lack of hazardous or toxic materials disposed or released at the site, there is no source area of contamination at the site. On the basis of the lack of a potential source or contaminants in a media, there is no risk to human health and the environment from this site.

2.13.4 Description of the Preferred Alternative. From an analysis of all available and pertinent information for Site 86, Food Supplies: Dunn Field Area, it is concluded that no remedial actions are necessary for the protection of human health or the environment. Additionally, the site historically has been a storage area for a nonhazardous commodity. Therefore, the selected remedial alternative for the site is No Action under CERCLA. This alternative will consist of leaving the site as is. No additional sampling or monitoring will be necessary, because the conditions at the site are protective of human health and the environment. This remedial alternative will have no costs associated with it.



Source: Corps of Engineers/Huntsville Division

Figure 2.13
Site 86
Food Supplies: Dunn Field
Defense Depot, Memphis, Tennessee

CH2M HILL

TAB

3.0 Statutory Determinations

3.0 Statutory Determinations.

3.1 Summary. A summary of the statutory determinations is outlined below.

3.1.1 Protection of Human Health and the Environment. The selected remedy for the sites is protective of human health and the environment as presented in Section 2.0. No unacceptable short-term risks or cross-media effects will be caused by this remedy.

3.1.2 Attainment of Applicable or Relevant and Appropriate Requirements (ARARs). A review of, and compliance with, ARARs is mandated by the Superfund Amendments and Reauthorization Act (SARA). The review of ARARs applicable to identified sites was conducted and is presented in Table 3-1. The selected alternative of No Further Action will attain all ARARs.

3.1.3 Use of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable. No alternatives were developed for the site because there was no risk to human health or the environment. The No Action alternative is protective and effective, attains ARARs, and is the most cost-effective solution for the sites. Therefore, treatment at this site is not appropriate.

Table 3-1
Summary Table for ARARS for the No Further Action Alternative
DDMT

ARARs	Requirement Synopsis	Comments/Actions to be Taken
Chemical Specific		
Safe Drinking Water Act (SDWA) - National Primary Drinking Water Standards (40 CFR 141)	This regulation establishes health based standards (MCL's) for water supplies.	The alternative will not result in the exceedence of MCLs in groundwater.
SDWA - National Secondary Drinking Water Standards (40 CFR 143)	This regulation establishes standards for aesthetic qualities of water supplies (secondary MCLs).	This alternative will not result in the exceedence of secondary MCLs in groundwater.
SDWA Maximum Contaminant Level Goals (Public Law No. 99-339, 100 Stat. 642)	This regulation establishes maximum contaminant level goals of no known or anticipated adverse health effects.	This alternative will not result in the exceedence of secondary MCLs in groundwater.
Clean Water Act (CWA) - Water Quality Criteria (40 CFR 131)	This regulation requires that the integrity of the waters of the U.S. be maintained.	No surface soil contamination which could result in degradation of water quality is present.
Water Quality Control Act (Title 69, Chapter 3), Regulations (Chapter 1200-4-1), and Standards (Chapter 1200-4, Rule 3)	The act, regulations, and standards are established to prevent the degradation of water quality through a variety of programs/policies including regulation of discharges to waters of the State.	The remedial alternative will not have activities which will degrade water quality or exceed the set standards.
Safe Drinking Water Act (Title 68, Chapter 221, Part 7) and Regulations (Chapter 1200-5-1)	The act and regulations regulate the quantity and quality of drinking water including establishment of MCLs.	The alternative is protective of the water quality of drinking water sources.
Air Quality Act (Title 74 Article 26, Chapter 2) and Air Pollution Control Regulations (Chapter 1200-3-1)	The act and rules establish requirements for ambient air quality and emissions standards for specific pollutants.	The sites does not have emissions sources that would affect ambient air quality or that would constitute a fugitive emissions or point source.
Proposed RCRA Corrective Action Rule for Solid Waste Management Units (40 CFR Part 264, Subpart S)	Proposed rules for the remediation of RCRA SWMUs including cleanup goals and numerical action levels.	The sites either meet these action goals, have previously been remediated to alternate goals agreed to by EPA and TDEC, or are below any risk based criteria.
TN Effluent Limitations and Standards (1200-4-5)	The standards provide limitation and standards for the discharge of wastewater to water of the States.	The alternative does not include discharge of water or wastewater to Waters of the State.
Action Specific		
OSHA-General Industry Standards (29 CFR 1910)	These regulations specify the 8 hour time-weighted average concentration for worker exposure to various compounds and training requirements.	Standards will be met as the sites to not pose a worker risk.
OSHA - Safety and Health Standards (29 CFR 1926) and Record keeping, reporting and related regulations (29 CFR 1904)	These regulations specifies the type of safety equipment and procedures to be followed during site remediation and outlines reporting requirements for an employer .	Actions will not be performed that will require workers to work with hazardous waste under this alternative.
RCRA - Generator Standards (40 CFR 262)	Establishes the requirements for owners/operators of facilities which generate a hazardous waste.	As a few of the sites are RCRA regulated areas for generators, the requirements will be met (listed in site specific information). The other sites do not have hazardous waste generated or managed as part of the remedy nor will the remedy result in the generation or handling of hazardous waste.
RCRA - TSD Standards (40 CFR 264-265)	General facility requirements for operators/owners of interim status and permitted hazardous waste treatment, storage, or disposal facilities.	The action for these sites will not require treating, storing, or disposing a hazardous waste under this alternative.

Table 3-1 (continued)
Summary Table for ARARS for the No Further Action Alternative
DDMT

ARARs	Requirement Synopsis	Comments/Actions to be Taken
RCRA - Standards applicable to Transporters of Hazardous Waste (RCRA Section 3003, 40 CFR 262, 263, & 170-179)	Establishes the responsibility of offsite transporters of hazardous waste.	Hazardous waste will not be transported due to the No Further Action Alternative, other than required as part of the generator requirements which will be adhered to.
DOT Rules for transportation of Hazardous Materials (49 CFR 107, 171, 172, & 558)	This regulation outlines procedures for the packaging, labeling, manifesting, and transporting of hazardous materials.	Hazardous materials will not be transported as part of this alternative.
CWA - National Pollutant Discharge Elimination System (40 CFR 122, 125), National Pretreatment Standards (40 CFR 403), and Toxic Pollutant Effluent Standards (40 CFR 129)	These regulations regulate discharge of pollutants to surface water or POTWs.	No point source surface water or POTW discharge is part of the no further action alternative.
Toxic Substances Control Act (TSCA)	The act establishes manufacturing, licensing, and handling requirements for certain toxic substances.	The alternative will not require handling of materials subject to TSCA requirements.
Clean Air Act (CAA; 40 CFR 50)	Establishes Ambient Air Quality standards to protect the public and sets emission standards for contaminants or pollutants.	Ambient air quality will not be affected as large amounts of volatile organic compounds or other airborne contaminants are not present. No action will be taken which would result in the generation of dust or particulate discharges.
Fish and Wildlife Coordination Act	This regulation requires that action must be taken to protect fish or wildlife if activities will modify stream or rivers.	No activities will be performed that will modify a stream or river.
Rivers and Harbors Act (33 CFR 320-330)	This act has substantial requirements to be met if activities affect navigation waters.	There are no navigable waters onsite.
TN Underground Injection Control Regulations (Chapter 1200-4-6)	The regulations establish requirements for the injection of fluids into natural surface or underground waters.	The alternative does not include an injection system.
TN NPDES Permit Regulations (Chapter 1200-4-10)	The regulations establish requirements for the discharge of wastewater or other water to surface water.	The alternative does not include discharge of water or wastewater to surface waters.
TN Hazardous Waste Management Acts (Title 68, Chapter 212) and Rules (Chapter 1200-1-11)	The act regulates the construction, alteration, operation, ownership, closure, or maintenance of a hazardous waste treatment storage or disposal facility and the classification, generation, and transportation of a hazardous waste.	As several of the sites are hazardous waste management units, these regulations will continue to apply, after no further action is decided under CERCLA.
TN Solid Waste Disposal Act (Title 68, Chapter 31) and Solid Waste Processing and disposal Regulations (Chapter 1200-1-7)	The act regulates the construction, alteration, or operation of solid waste processing or disposal facilities.	This alternative will not constitute construction, alteration, or operation of solid waste management units but may apply to some of the units for final closure as a non-hazardous landfill.
TN Solid Waste Management Act	The act establishes policies and procedures for planning, handling, recycling, and minimization of solid waste generation and disposal.	No solid waste will be generated or disposed under the alternative selected.
TN Sanitary Landfill Areas Act (Title 68, Chapter 213)	The act requires approval by the State prior to the construction of a landfill.	Construction of a landfill will not be initiated by the Alternative.

Table 3-1 (continued)
Summary Table for ARARS for the No Further Action Alternative
DDMT

ARARs	Requirement Synopsis	Comments/Actions to be Taken
TN Superfund Regulations (Chapter 1200-1-13)	The rules regulate hazardous substance sites (including inactive sites).	The site is listed in the rules (Site Number 79736) as an Inactive Hazardous substance site. This alternative will meet the requirement of the rules due to the nature of the contents and previous actions taken at the site.
TN Commercial Hazardous Waste Facility Rules (Chapter 1200-1-14)	The rules regulate commercial hazardous waste management facilities.	The site/facility is not a commercial hazardous waste management facility.
Marine Protection Resources and Sanctuary Act (40 CFR 230-231)	This act requires that for oceans and waters of the U.S., actions to dispose of material is prohibited without a permit.	Actions will not include ocean or waters of the U.S. activities.
Location Specific		
Executive Order on Flood Plains (11988)	Requires that actions that will occur in a flood plain must minimize potential harm to flood plains.	No action will occur in a flood plain nor is the facility in a 100 year flood plain.
National Archaeological and Historic Preservation Act (36 CFR 65); Historic Sites, Buildings, and Antiquities Act (16 USC 461-467); and the National Historic Preservation Act (16 USC 461-467)	Regulation requires that action must be taken to recover and preserve artifacts if alteration of terrain threatens significant scientific, prehistorical, historical or archeological data.	No actions will occur that will disturb historic, scientific, or archaeological sites or artifacts nor is the site a listed site.
Scenic Rivers Act (40 CFR 6.302(e))	This regulation requires that one avoid actions that will have direct adverse affects on scenic rivers.	No scenic river specified in the act is in the vicinity of the site.
Coastal Zone Management Act (16 USC Section 1451)	This act requires that activities affecting the coastal zone including lands thereunder and adjacent shorelands be conducted with approved state management programs.	The site is inland with no direct access to coastal lands.
Endangered Species Act of 1973 (50 CFR 200, 402)	This act requires that critical habitat upon which endangered species or threatened species depend must be conserved.	The sites do not include an area which is a critical habitat for a threatened or endangered species.
Executive Order on Protection of Wetlands (11990, 40 CFR Appendix 6)	This order requires that action must be taken to minimize the destruction, loss, or degradation of wetlands.	No wetlands are located in the area.
Wilderness Act (50 CFR 35.1)	This act requires that for federally owned areas described as wilderness areas, actions must be taken to preserve and leave unimpaired the wilderness areas.	The site is not a federally owned wilderness area.
National Wildlife Refuge System (50 CFR Part 27)	Establishes requirements that only certain actions are allowed for areas designated as part of the National Wildlife Refuge System.	The site is not designated as part of the National Wildlife Refuge System.

TAB

4.0 Regulatory Agency/
Public Involvement

4.0 Regulatory Agency/Public Involvement.

4.1 Decision Document. Copies of the Decision Document were made available to the EPA, Region IV, and TDEC. The public will be notified of the availability of the Decision Document through the local press announcement to the Remedial Action Board, to Technical Review Committees, or to both. This document will be made available to the public, as defined in the Communication Relations Plan, in the Memphis/Shelby County Public Library Main Branch, and at the Cherokee Branch Public Library.

5.0 References.

Kearney, A. T. *RFA Report, Department of Defense Memphis Depot.* Chicago, IL: A. T. Kearney, Inc. January 1990.

Law Environmental, Inc. *Remedial Investigation Final Report, Defense Depot Memphis, Tennessee (DDMT).* Report on Contract Number DACA87-88-C-0082/LEGS Job Number 11-8531-01. Law Environmental, Inc., Government Services Division. Kennesaw, GA. August 1990.

O. H. Materials. *Summary Report, On-Site Remedial Activities At the Defence Depot Memphis.* O. H. Materials Company Project File No. 3057. February 24, 1986.

U.S. Corps of Engineers, Waterway Experiment Station, Vicksburg District. *Electromagnetic and Magnetic Surveys at Dunn Field, Defense Depot Memphis, Tennessee.* U.S. Army Engineer Division: Huntsville, AL. December 1993.

U.S. Environmental Protection Agency. *Interim Final Guidance on Preparing Superfund Decision Documents: The Proposed Plan, The Record of Decision, Explanation of Significant Differences, The Record of Decision Amendment.* Office of Emergency and Remedial Response (OSWER) Directive 9335.3-02. Washington, D.C. October 1989.

Appendix
X-25 Spill Records

74 74

STATEMENT 19 Jan 88

SUBJECT: Collapse of Span Dome at Burm Area (X25)

TO: Whom it may concern

I Charles Wallis, as Chief Fire Inspector of Defense Depot Memphis, make these statements, true to the best of my knowledge.

On 19 January 1988, at approximately 0800, while making my hourly check of the Depot, one of my duties is to check the burm area during inclement weather (rain), to make sure the drain pipes are in down position, if there is no detection of chemicals in the water. While driving West on B St., turning South on 25th St., going to the brum area, I was observing the span dome which was standing as I turned in 25th St., a few seconds later I noticed the dome was falling. It appeared that it started to collapse from the West side and was completely collapse in a very few seconds. At this time the rain fall and winds were moderate. I did not see any lighting strike the dome or hear any thunder. The only noise I heard was the falling of metal beams/spans hitting metal cans. At this time I reported by radio to Security that the span dome had collapse on the burm area, and I detected the smell of chemicals. Shortly after the collapse of the dome, Mr. Blanchard and Mr. Hill (Supervisors of hazardous materials) drove up. I notified Security again to make the proper notifications and to call the Memphis Fire Department.

Charles Wallis
CHARLES WALLIS
Chief, Fire Inspector

Randy,
The M.F.O. made the decision to evacuate the neighbors. There maybe a report on file at the Fire Marshal's Office
Daniel

Cheryl

Bureau of Fire
Was Spill

E-1

CITY OF MEMPHIS INTER-OFFICE MEMORANDUM

TO: James C. Fleming
Chief of Training

DATE: January 25, 1988

FROM: John W. Looney, Jr.
Captain - HazMat Section

SUBJECT: Incident - Defense Logistics Agency
2163 Airways

On January 19, 1988 at 8:15 a.m., I received a call from the Watch Commander to respond with a Haz-Mat 1 assignment to the Defense Depot at 2163 Airways. A dome building made of four steel trusses and a laminate cover had collapsed onto the DLA's flammable liquid storage area with considerable spillage.

The dome structure had collapsed onto a twenty-two thousand (22,000) sq. ft. burned area for the storage of flammable liquids in one (1) gallon, five (5) gallon, and fifty-five (55) gallon containers. A companion dome equal in size, square footage, and hazardous storage was on the south burn wall of the collapsed structure. The laminate covers were actually a one-piece cover for both areas.

Information from Depot personnel and binocular observation confirmed many damaged and leaking containers. The odors of the products and gas trac readings of flammability were very high at the north perimeter of the Depot (Dunn Street), indicating much leakage. These readings and odor were surprising at this distance considering the first four to five hours of the incident occurred while heavy thunderstorms were crossing the Memphis area.

Approximately two-hundred and fifty thousand gallons of mixed products were in the burned areas. The following is a list of the impacted products and their individual OSHA permissable exposure limits (P.E.L.):

Toluene - P.E.L. 200 ppm; maximum peak 500 ppm/30 minutes
L.E.L., 1.27%; F.P. 40°F -- skin absorbable

Xylene - 10-hour TWA 100 ppm; ceiling level 200 ppm
TLV set to prevent irritant effects and CNS depression
L.E.L. 1%; F.P. -- 77°F

Methyl Ethyl Ketone - 8-hour TWA 200 ppm, causes neurotoxic effects
L.E.L. 1.8%; F.P. 20F

Methyl IsoButyl Ketone - TLV 50 ppm, CNS depressant; skin contact causes defatting
L.E.L. 1.4%; F.P. 73°F

Acetone - O.S.H.A. P.E.L. 1000 ppm, low toxicity solvent
L.E.L. 2.6%, F.P. -4°F

Isopropyl Alcohol - NIOSH 15 min ceiling 800 ppm
considered carcinogenic in quantity
L.E.L. 2.0%; F.P. 53°F

The health impact on the community was moderate to high with the materials involved. Children, old people, and semi-mobile people could be immediately effected, therefore, police traffic control, police tact, and Emergency Management were called to the scene to assess community impact and, with Fire command, devise an evacuation plan to cover contingencies.

Command personnel decided to institute the Light Water Task Force and began calling for companies to create the protection needed for the quantity involved. Light Water I was set up north east of the spillage, supplied by a high-volume pumper capable of pumping four-inch hose. Two discharge pumpers were placed to provide portable monitor foam protection of seven-hundred fifty (750) gallons each. Later, a third foam monitor was placed providing an additional five-hundred (500) gallons. Any and all entries into the damaged area were provided protection by an independent pumper with an inch and three quarters (1 3/4") foam line. An additional water monitor was placed on the west side, independent of the Light Water operation.

The command staff was aware that the incident would be long-term, two to three days, and started preparing for this fact by providing on-scene personnel protection, worker rotation, and company rotation. Personnel were provided two buses and an eventual trailer for breaks and eating areas. Personnel were rotated on their monitors regularly.

Portable sanitary facilities were brought in. A telephone was run to the command center. Medical surveillance was continually maintained. Hot food and drink were provided in adequate quantities for involved personnel by Depot staff. Chemical entry equipment was provided in quantity. Depot personnel kept fuel levels of our apparatus full. Cooperation and concern were genuine and appropriate for the massive incident and tasks that lay before us.

The following major work tasks were established in a meeting with all involved agencies and personnel:

1. Dike drainage of the already spilled material and thousands of gallons of rainwater.

2. Remove large laminate cover.

3. Remove four large box trusses and associate cables.

4. Secure and encapsulate damaged containers and any new spillage that might occur from work tasks 2 and 3.

RE: Incident Defense Logistics Agency

Safety in all operations was emphasized in this meeting. All parties were notified of working and future plans. Weather updates were broadcast hourly during work tasks.

The burned area needed to be drained to remove the contaminate and large amount of rainwater involved. State Health officials ordered the material be held and treated. The solution could not be released from the dike because of the toxic properties of the Toluene and Xylene. Depot Command contracted C.T.C. who dispatched two tanker trucks with pumps to empty the dike area. Thirty-seven thousand (37,000) gallons of solution were pumped out.

Finishing this one task shut down operations for the night at approximately 8 p.m. Provisions were made for fire protection and personnel rotation during the night. Some crane parts were brought in for the next operation scheduled to begin around 9:00 a.m. the next morning. Most of the incident command staff went home to rest.

The command staff arrived at 7:00 a.m. on Wednesday, the 20th and met with Acuff Crane management to discuss the operations of the day. Again, constant awareness of safety was emphasized. A local school had been closed for the day and bed-ridden invalid had been transported to the MED. Evacuation plans, equipment, and people were in place. The removal of the cover and steel were both possible causes of additional container damage. Stack heights were twelve feet.

Removal of the laminate cover took most of the daylight hours. Because of its sheer bulk and weight, care had to be taken as it was cut and pulled over the stacks. A minor communication hitch occurred when the crane crews left for lunch and did not advise anyone. We ordered a stand-down until operations resumed, and Depot commanders made the crane crews aware of our need for notification.

Crane crews succeeded in removing all laminate cover and made hook-ups to all four beams with individual cranes before supper break. After the supper break, lifting was begun on the eight-ton beam that was on top of the others. This one operation took almost four hours because of the large perimeter cable and other support cables involved in the structure. Once our procedures were firmed up, removal of the other beams went smoothly. Operations were finished at 1:30 a.m., Jan. 22.

I offer my congratulations to all of the company personnel involved for their endurance, professionalism, and high-level of safety that they exhibited throughout this forty-one hour incident. Command's highest priority was to achieve a neutral impact upon civilian population. Command's second priority was a successful termination of this incident at the highest level of safety and awareness that can be provided.

Cooperation by Depot management was exceptional from Colonel James M. Johnson, U.S.A.F., down through his ranks and civilian management. Their concern for mitigation of this incident and civilian impact was at the highest level of professionalism and is a credit to our armed forces and our mutual working relationship. Army Major Doug Lamont, E.N. U.S.A., was extremely helpful with his technical advice on the building's construction. Fire Chief Wallis and his staff cooperated with command staff and facilitated many of our needs in a time worthy fashion.

The safety office and Haz-Mat staff of the Depot provided in detail the technical advice on the chemicals involved and maintained our technical advice through the term of the incident.

Post-incident infomation received from Chief Wallis stated that eleven thousand (11,000) gallons of products have been re-couped and approximately one-thousand five hundred (1,500) to two thousand (2,000) gallons of product were lost.

John W. Looney, Jr., Captain
Haz-Mat Section

jj

Agencies Involved:

Memphis City Administration, Mayor's Office
Memphis Fire Department
Haz-Mat ReAct Team
Memphis Police Department
TACT Team
Defense Logistics Agency
Board of Education
M.A.T.A.
Emergency Management Agency
State Health Department
C.T.C. Corp.
Acuff Crane
Red Cross
R. F. Versluss & Assoc. Inc.
Public Works
MED

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE