



THE MEMPHIS DEPOT TENNESSEE

ADMINISTRATIVE RECORD COVER SHEET

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**ANNUAL OPERATIONS REPORT – 2006
DUNN FIELD GROUNDWATER INTERIM REMEDIAL
ACTION – YEAR EIGHT**

Defense Depot Memphis, Tennessee



Defense Logistics Agency



**AFCEE Contract FA8903-04-D-8722
Task Order No. 0016**

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LIST OF ACRONYMS AND ABBREVIATIONS

AFCEE	Air Force Center for Environmental Excellence
bgs	below ground surface
BRAC	Base Realignment and Closure
BCT	BRAC Cleanup Team
cDCE	cis-1,2-Dichloroethene
CF	Chloroform
CT	Carbon tetrachloride
CVOCs	Chlorinated Volatile Organic Compounds
DCE	1,1-Dichloroethene
DDMT	Defense Depot Memphis, Tennessee
DLA	Defense Logistics Agency
DoD	Department of Defense
DQE	Data quality evaluation
DQO	Data quality objectives
ETC	Environmental Testing and Consulting
gpm	Gallons per minute
IRA	Interim Remedial Action
MACTEC	MACTEC Engineering and Consulting, Inc.
MCL	Maximum contaminant level
MDL	Method Detection Limit
MI	Main Installation
ml	milliliter
msl	mean seal level
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MW	Monitoring Well
O&M	Operation and maintenance
PCA	1,1,2,2-Tetrachloroethane
PCE	Tetrachloroethene
PDB	Passive diffusion bag samplers
QC	Quality control
RA SAP	Remedial Action Sampling and Analysis Plan
RL	Reporting Limit
ROD	Record of Decision

RW	Recovery Well
STL	Severn Trent Laboratories
SVOCs	Semi-volatile organic compounds
TC	Target Concentrations
TCA	1,1,2-Trichloethane
TCE	Trichloroethene
tDCE	trans-1,2-Dichloroethene
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
VC	Vinyl Chloride
VOCs	Volatile organic compounds

1.0 INTRODUCTION

c²M has prepared this Annual Operations Report for the Groundwater Interim Remedial Action (IRA) under Contract FA8903-04-D-8722, Task Order 19 to the Air Force Center for Environmental Excellence (AFCEE). This report summarizes the operations and maintenance activities for the groundwater recovery system and the results of system monitoring for 2006, Year Eight of the Groundwater IRA on Dunn Field at the Defense Depot Memphis, Tennessee (DDMT).

1.1 SITE DESCRIPTION AND BACKGROUND

DDMT, which originated as a military facility in the early 1940s, received, warehoused, and distributed supplies common to all U.S. military services and some civil agencies located primarily in the southeastern United States, Puerto Rico, and Panama. Stocked items included food, clothing, petroleum products, construction materials, and industrial, medical, and general supplies. In 1995, DDMT was placed on the list of the Department of Defense (DoD) facilities to be closed under Base Realignment and Closure (BRAC). Storage and distribution of material continued until the facility closed in September 1997.

DDMT is located in southeastern Memphis, Shelby County, Tennessee approximately 5 miles east of the Mississippi River and just northeast of Interstate 240. The property consists of approximately 642 acres and includes the Main Installation (MI) and Dunn Field. The MI contains approximately 578 acres with open storage areas, warehouses, military family housing, and outdoor recreational areas. Dunn Field contains approximately 64 acres and includes former mineral storage and waste disposal areas. Dunn Field is located across Dunn Avenue from the north-northwest portion of the MI. Figure 1-1 shows locations of the monitoring and recovery wells at Dunn Field.

In 1992, DDMT was added to the National Priorities List. The lead agency for environmental restoration activities at DDMT is the Defense Logistics Agency (DLA). The regulatory oversight agencies are the United States Environmental Protection Agency Region 4 (USEPA) and the Tennessee Department of Environmental Conservation. DDMT's USEPA Identification Number is TN4210020570.

1.2 GEOLOGY AND HYDROGEOLOGY

The geologic units of interest at Dunn Field are (from youngest to oldest) loess, including surface soil; fluvial deposits; Jackson Formation/Upper Claiborne Group; and Memphis Sand.

The Quaternary-aged loess consists of wind-blown deposits, brown to reddish-brown, and low-plasticity clayey silt to silty clay. The loess deposits are about 20 to 30 feet thick and are continuous throughout the Dunn Field area.

The Quaternary- and possibly Pliocene-aged fluvial (terrace) deposits are composed of two general layers. The upper layer is a silty, sandy clay that transitions to a clayey sand and ranges from about 10 feet to 36 feet thick. The lower layer is composed of interlayered sand, sandy gravel, and gravelly sand, and has an average thickness of approximately 40 feet.

The late Eocene-aged Jackson Formation/Upper Claiborne Group consists of clays, silts, and sands. The upper clay unit appears to be continuous except in the southwestern area of Dunn Field. Offsite, to the west and northwest of Dunn Field, there are possible gaps in the clay. Where present, these gaps create connections to the underlying intermediate aquifer from the fluvial deposits.

The Early to Middle Eocene-aged Memphis Sand is composed primarily of thick-bedded, white to brown or gray, very fine-grained to gravelly, partly argillaceous and micaceous sand. Lignitic clay beds constitute a small percentage of the total thickness. Regionally, the Memphis Sand ranges from 500 to 890 feet in thickness and is at a depth of approximately 120 to 300 feet below ground surface (bgs). The only monitoring well completed in the Memphis Sand at DDMT is MW-67. The top of the Memphis Sand was identified at a depth of 255 feet bgs (elevation of 21 feet above mean sea level [msl]).

Three aquifers of interest underlying Dunn Field correspond to the geologic units described previously. The uppermost aquifer is an unconfined fluvial aquifer consisting of saturated sands and gravelly sands in the lower portion of the fluvial deposits. Recharge is primarily from the infiltration of rainfall. Discharge is generally directed toward underlying units in hydraulic communication with the fluvial deposits or laterally into adjacent stream channels. The saturated thickness of the fluvial aquifer near Dunn Field ranges from 1 foot at MW-91 to 49 feet at MW-168 and is controlled by the configuration of the uppermost clay in the Jackson Formation/Upper Claiborne Group. Water level elevations range from approximately 235 feet msl at MW-130 to 180 feet msl at MW-40.

The intermediate aquifer is locally developed in deposits of the Jackson Formation/Upper Claiborne Group, which contain laterally extensive, thick deposits of clay. Water level elevations in the intermediate aquifer, away from areas of recharge from the fluvial aquifer, are approximately 160 feet msl.

The Memphis aquifer contains groundwater under strong artesian (confined) conditions regionally. The City of Memphis obtains the majority of its drinking water from this unit; the Allen Well Field is located approximately 2 miles west of Dunn Field. The Memphis aquifer is confined by overlying clays and silts in the Cook Mountain Formation (part of the Jackson/Upper Claiborne Group). This aquifer receives most of its recharge from an outcrop area several miles east of Memphis. Some recharge is derived from overlying or hydraulically communicating units. The top of the Memphis aquifer potentiometric surface at MW-67 is approximately 155 feet msl.

1.3 GROUNDWATER CONTAMINATION

Nine volatile organic compounds (VOCs) have been persistently detected in the fluvial aquifer during past sampling events: carbon tetrachloride (CT); chloroform (CF); 1,1-dichloroethene (DCE); cis-1,2-dichloroethene (cDCE); trans-1,2-dichloroethene (tDCE); 1,1,2-trichloroethane (TCA); trichloroethene (TCE); tetrachloroethene (PCE) and 1,1,1,2-tetrachloroethane (PCA). Three primary VOC plumes underlie Dunn Field: a northern plume, a west-northwest (central) plume, and west-southwest (southern) plume. Mixing and intermingling of the plumes has occurred due to the active groundwater extraction system and natural groundwater flow; the plumes appear to merge west of Dunn Field.

The primary constituents in the northern plume are PCE, TCE, and DCE. There is an apparent offsite source(s) of these compounds northeast of Dunn Field; however, the disposal sites in the northwest corner of Dunn Field are also apparent source areas. The central plume contains high concentrations of PCA and TCE and also contains PCE, cDCE, tDCE, TCA, CT, and CF. The southern plume is principally composed of PCA, CT, TCA, and CF, although TCE, tDCE, PCE, and cDCE are also present. The central and southern plumes appear to result from disposal sites on Dunn Field.

1.4 SYSTEM DESCRIPTION

The IRA Record of Decision (ROD) for groundwater at Dunn Field was signed in April 1996 with the objectives of hydraulic containment to: (1) prevent further contaminant plume migration; and (2) reduce contaminant mass in groundwater. The final design for Phase 1 of this groundwater extraction system was completed in August 1997 and included the installation of seven groundwater extraction wells (RW-3 through RW-9), one pre-cast concrete building, an underground conveyance system, and flow measurement and control systems. The system was constructed from January 1998 through October 1998 and began operation in November 1998.

The Phase II design was completed in January 2000 and included four additional extraction wells and associated electrical, mechanical, and instrumentation/controls components. The Phase II system update was due to the detection of additional groundwater contamination in the southern portion of Dunn Field. Installation of new recovery wells (RW-1, RW-1A, RW-1B and RW-2) south of recovery well RW-03 and construction of other components was completed by March 2001. The expanded system was in full operation in June 2001.

The Five Year Review for Dunn Field (CH2M HILL, 2003) concluded that over 300 pounds of VOCs had been removed by the IRA from 1998 to 2002. However, the extraction system did not adequately control groundwater flow and plume migration in the fluvial aquifer. Potentiometric surface maps indicated that groundwater was captured in the immediate vicinity of each recovery well, but the capture zones were not connected between wells, and portions of the groundwater plume were able to pass through the recovery system. An increase in chlorinated volatile organic compounds (CVOC) concentrations was observed in monitoring wells west of Dunn Field.

The IRA was found to be protective in the short term, because there is no current or planned use of the fluvial aquifer as a drinking water supply and local ordinances restrict installation of private wells. The Five Year Review stated that monitoring data from the IRA and the remedial investigation (CH2M HILL, 2003) suggested that aquifer restoration could be accomplished effectively by other technologies rather than expanding the groundwater extraction system. Fully protective remedies for all media were selected in the Dunn Field ROD (CH2M HILL, 2004).

1.5 SCOPE OF WORK

c²M assumed the operation and maintenance (O&M) activities for the Groundwater IRA system on 01 October 2006. The goals for O&M are to:

- Maintain system operations through regular field inspections, maintenance, and repairs
- Monitor system effectiveness through the measurement of water levels and the collection and analysis of system effluent samples and groundwater samples from monitoring wells and recovery wells

The following sections briefly describe the field activities performed to support these objectives. During the performance of the O&M activities, c²M reviewed the *Operations and Maintenance Manual* for

Instrumentation and Controls (OHM Remediation Services, 1999) and the *Construction Report* (Jacobs Engineering Group, 2001) for Phase II.

The scope for the Groundwater IRA included the following activities:

- Weekly system inspections with repair or replacement of components, as required.
- Annual system calibration.
- Monthly discharge reports to document O&M activities, system status, and performance.
- Water levels measured weekly in recovery wells and quarterly in monitoring wells. Water level data from pressure transducers in recovery wells and selected monitoring wells downloaded quarterly.
- Semi-annual groundwater samples collected from monitoring wells using passive diffusion bag samplers (PDB) and from recovery well samples using wellhead sampling ports. Samples analyzed for VOCs.
- Quarterly effluent samples analyzed for pH and VOCs with semi-annual effluent samples analyzed for semi-volatile organic compounds (SVOCs) and metals in accordance with the wastewater discharge agreement (Appendix A).

2.0 SYSTEM OPERATIONS ACTIVITIES

System O&M requirements were evaluated during semi-monthly visits from January through September (MACTEC) and weekly visits from October through December (c²M). Observations and system data were presented in monthly discharge reports, which are included in Appendix B.

2.1 SYSTEM PERFORMANCE

The system performed well in 2006 with an average operational run time for all recovery wells of 94.6 percent. Recovery wells RW-4 and RW-7 had extended downtimes in early 2006 resulting in annual average operational run time below 90 percent.

Recovery Well ID	Operational Run Times (Percent)												
	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
RW-1	100	100	100	100	100	100	100	100	100	100	100	100	100
RW-1A	100	100	100	100	100	100	100	100	100	100	100	88	99
RW-1B	100	100	100	100	100	100	94	100	100	100	30	100	94
RW-2	100	100	100	100	100	100	100	100	100	100	20	89	92
RW-3	100	100	100	100	100	100	100	100	99	100	100	100	100
RW-4	6	38	52	100	100	100	100	77	99	100	100	96	81
RW-5	100	100	58	100	100	100	94	100	100	100	100	100	96
RW-6	100	100	100	100	100	100	100	100	100	100	100	100	100
RW-7	100	93	0	57	100	100	100	100	100	66	97	100	84
RW-8	74	100	100	65	100	100	100	100	99	100	100	100	95
RW-9	100	100	100	100	100	100	100	100	100	100	100	100	100

Approximately 30,174,971 gallons of groundwater was discharged to the sanitary sewer from 1 January 2006 through 31 December 2006. Flow rates collected during the weekly visits were used to calculate the groundwater recovery rates. When flow meters were not operational during the visits, historical flow rates were used to calculate the groundwater volume extracted. The average monthly pumping rate for each well is shown below.

Recovery Well ID	Average Monthly Pumping Rate (Gallons Per Minute) and Total Volume (Gallons)													
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Avg. 2006	Total Volume
RW-1	0.2	0.2	0.2	0.2	0.2	0.4	0.6	0.3	0.2	0.2	0.2	0.4	0.3	144,720
RW-1A	1.9	1.5	1.6	1.5	1.2	1.3	1.3	1.8	2.0	1.9	2.3	2.4	1.9	897,686
RW-1B	2.6	2.5	2.5	3.0	4.0	2.1	0.6	3.4	3.4	3.4	3.4	3.4	2.8	1,296,705
RW-2	3.0	2.4	2.4	2.4	2.5	2.5	3.1	3.2	2.8	2.8	2.7	2.7	2.7	1,415,897
RW-3	5.6	5.6	5.6	5.2	2.0	2.0	2.8	1.9	3.6	4.1	3.6	2.9	3.7	1,956,717
RW-4	3.8	3.1	2.5	3.1	7.5	6.3	4.9	4.8	7.0	3.2	4.9	5.0	4.7	2,394,975
RW-5	1.6	1.5	1.6	3.1	1.5	1.5	0.2	1.3	1.5	1.1	1.1	1.0	4.6	742,216
RW-6	9.2	8.3	8.4	6.5	6.3	10.7	11.2	11.1	10.8	11.1	10.9	9.8	9.5	5,014,303
RW-7	3.5	1.8	0.0	4.6	5.0	2.0	5.0	8.4	0.6	5.6	8.6	6.7	4.3	2,077,428
RW-8	3.8	10.6	13.5	10.7	7.8	2.8	5.6	11.7	11.7	12.7	13.3	13.8	9.8	5,094,222
RW-9	7.4	14.3	15.5	8.2	20.4	20.4	20.5	20.3	20.5	20.4	20.3	20.2	17.3	9,140,102
System Total	42.6	51.8	53.8	48.5	58.4	52	55.8	68.2	64.1	66.5	71.3	68.3	58.4	30,174,971

2.2 RECOVERY WELL MAINTENANCE

System calibration was performed by MACTEC in April. Recovery well houses were cleaned out in October. The heat trace wiring on the effluent line was repaired in November. The main control building door was severely rusted and no longer secure; the door and frame were replaced in November.

Maintenance activities at individual recovery wells are described below.

- RW-1 was 100 percent operational. The flow meter was recalibrated in April.
- RW-1A was 99 percent operational. The flow meter was recalibrated in April and rebuilt in July. The galvanized coupling connecting the pump to the flex hose was replaced with a stainless steel coupling in late December.
- RW-1B was 93 percent operational for the year. The flow meter was recalibrated in April. The pump was replaced in July. The pump was down due to an undetermined cause in November; the pump was re-started and operates at pre-shutdown flowrates.
- RW-2 was 92 percent operational for the year. The doors on the recovery well cabinets were repaired in February. The check valve, level relay and wiring (400 milliamps loop) were repaired in April. The flow meter was recalibrated in April and rebuilt in July. The galvanized coupling connecting the pump to the flex hose was replaced with a stainless steel coupling in late December.

- RW-3 was 99 percent operational for the year. The flow meter was recalibrated in April, repaired in May and rebuilt in July. The ball valve was repaired in September.
- RW-4 was 80 percent operational. Impeller bearings were repaired on the flow meter in April. The flow meter was recalibrated in April. Electrical components were repaired in August.
- RW-5 was 96 percent operational. The doors on the recovery well cabinets were repaired in February. The flow meter was recalibrated in April. The pump, motor starter, and overload relay were replaced in July. The flow meter was rebuilt in July.
- RW-6 was 100 percent operational. The flow meter was recalibrated in April.
- RW-7 was 84 percent operational. The pump was replaced in March. Electrical components were replaced in April and in July. The doors on the recovery well cabinets were repaired in February. Impeller bearings were repaired on the flow meter in April. The flow meter was recalibrated in April. Pump motor and groundwire were replaced in October.
- RW-8 was 94.8 percent operational. The pump and motor were replaced in January. The doors on the recovery well cabinets were repaired in February. Impeller bearings were repaired on the flow meter in April. The flow meter was recalibrated in April. The power cable and level relay were replaced in July. Pipe leaks in the well housing were repaired in November.
- RW-9 was 100 percent operational. Impeller bearings were repaired on the flow meter in April. The flow meter was recalibrated in April. The actuator was repaired in July.

3.0 SYSTEM MONITORING ACTIVITIES

The system monitoring activities consist of water level measurements, sampling and analysis of groundwater samples from recovery wells and monitoring wells, and analysis of effluent samples from the recovery system discharge. The activities are performed in accordance with past practice and the *Remedial Action Sampling and Analysis Plan* (RA SAP) (MACTEC, 2004). The wells included in the monitoring program are listed on Table 3-1.

3.1 WATER LEVEL MEASUREMENTS

Water level measurements were collected to evaluate the capture zone of the recovery system and groundwater flow direction. Water level measurements were made in 104 monitoring wells and 1 piezometer by MACTEC on 10 to 11 April 2006 and by e²M on 26 October 2006 using a Solinst Model 101 water level meter with an electronic sensor and tape graduated in 0.01-foot increments. In recovery wells, April water levels were taken from transducer measurements recorded 9 April and October water levels were measured with the meter during the weekly inspection on 27 October. The water level measurements are shown on Table 3-2.

3.2 GROUNDWATER SAMPLING

3.2.1 Monitoring Wells

Groundwater samples were collected from monitoring wells to evaluate system effectiveness in restricting plume migration. Sampling procedures were performed in general accordance with the *User's Guide for Polyethylene-based Passive Diffusion Bag Samplers to Obtain Volatile Organic Compound Concentrations in Wells* (U.S. Geological Survey, 2001) and the RA SAP. Groundwater samples from monitoring wells have been collected using PDBs since October 2001. Prior to that time, the samples are believed to have been collected using low-flow sampling methods.

A total of 76 PDB samples were collected from 50 wells in both semiannual sampling events; samples were collected by MACTEC in April 2006 and by e²M in October 2006. During each sampling event, two samples were collected from the 26 wells indicated on Table 3-1 to evaluate variations in concentrations over the screened aquifer thickness. In wells with a single sample, the PDB is placed near the center of the saturated screen. In wells with two samples, the upper PDB is placed approximately 1 foot below the top of the screen (or water level if not fully saturated), and the lower PDB is placed

approximately 3 feet above the bottom of the screen. PDB midpoint depths for April and October in each monitoring well are shown on Table 3-3. After the October samples were collected, the number of wells with multiple PDBs was reduced from 26 to 7, as indicated on Table 3-3. The single replacement PDB was placed midway between the previous upper and lower sampling points.

Upon removal from each monitoring well, a sample of water from the PDB was transferred to 40-milliliter (ml) vials preserved with hydrochloric acid and submitted for VOC analysis by USEPA Method SW8260B. Following sample collection, new PDBs were filled with deionized water and placed in the wells. Groundwater samples collected by MACTEC were sent to Environmental Testing and Consulting, Inc., (ETC) and samples collected by e^2M were sent to Kemron Environmental Laboratories.

Based on the water level measurements in October, the midpoint depths for PDBs in several wells were near the water surface, as shown on Table 3-3. The potentially affected samples were the single PDBs in wells MW-32 and MW-144 and the upper PDBs in MW-150, MW-154, MW-155, MW-156, MW-165A, MW-167 and MW-169. The midpoint depths for replacement PDBs in several wells were increased by the following amounts: MW-32 (0.5 ft); MW-144 (0.5 ft); MW-148 (0.5 ft); MW-150 (1.0 ft); MW-155 (1.5 ft); MW-156 (1.5 ft); MW-157 (1.5 ft); and MW-161 (0.5 ft). Wells MW-154, MW-165A, MW-167 and MW-169 were changed to a single PDB and the depths were adjusted accordingly.

3.2.2 Recovery Wells

Groundwater samples were collected from recovery wells for comparison to monitoring well sample results and for evaluation of system effectiveness in reducing contaminant mass. Samples were collected on 11 April 2006 by MACTEC and on 8 November 2006 by e^2M (Table 3-1).

For the e^2M sampling event, the recovery well pumps were shut down prior to collecting samples to prevent the pumps from cycling. During sampling each pump was restarted, allowed to run for a few minutes prior to sample collection and shut down after sampling. Samples were collected from the sample port on the recovery well heads. The valve was slowly opened and the extracted groundwater was allowed to slowly fill 40-ml vials preserved with hydrochloric acid. After sampling was completed, all recovery well pumps were re-started. The samples were sent to Kemron Laboratories for VOC analysis by USEPA method SW8260B.

3.3 EFFLUENT SAMPLING

Effluent samples were collected to comply with the discharge permit requirements and to estimate contaminant mass removal. The effluent samples were collected from the groundwater extraction system at the discharge loop located adjacent to Person Avenue at the north property line of DDMT. The valve on the sample port is slowly opened and the system discharge is allowed to slowly fill the required sample containers.

Effluent samples were collected on 27 February, 4 April and 27 July by MACTEC and on 8 November 2006 by e²M. The February and July samples were submitted for VOC analysis by USEPA method SW8260B and the April and November samples were submitted for VOC analysis by USEPA method SW8260B, SVOCs by USEPA method SW8270C, and metals by USEPA method SW6010B. Samples collected by MACTEC were sent to Environmental Testing and Consulting, Inc., (ETC) and samples collected by e²M were sent to Kemron Environmental Laboratories.

3.4 QUALITY ASSURANCE/QUALITY CONTROL SAMPLES

Field and laboratory quality control (QC) samples were collected during each sampling event. Although groundwater was the only matrix analyzed, samples were collected from three sources: monitoring wells, recovery wells, and effluent discharge.

QC samples consisted of duplicates, and matrix spikes and matrix spike duplicates (MS/MSD). Trip blanks were included in coolers delivered from the laboratory. One duplicate was collected for approximately every 10 samples and 1 MS/MSD was collected for every 20 samples. Laboratory QA/QC included surrogate spikes, method blanks, laboratory control samples, and MS/MSD analysis. The sampling and analytical methods are described in the RA SAP (MACTEC, 2004). A duplicate and MS/MSD was also collected from the recovery wells and an additional duplicate and MS/MSD was collected from the effluent discharge.

Documentation was completed in the field to ensure that the samples collected, labels, chain-of-custody, and request for analysis were in agreement. Custody seals were placed on each cooler before shipment by common carrier. Samples were typically shipped the day collected for overnight delivery to the laboratory.

4.0 SUMMARY OF MONITORING RESULTS

The results of the water level measurements and analysis of groundwater and effluent samples for system monitoring are discussed below.

4.1 WATER LEVEL MEASUREMENTS

Water level measurements collected on 10 to 11 April 2006 by MACTEC and on 26 October 2006 by c²M are shown with resulting groundwater elevations on Table 3-2. Groundwater elevations in the fluvial aquifer are highest northeast of Dunn Field (240 feet msl at MW-128) and decrease to the southwest (209 feet msl at MW-127). The groundwater elevations in the intermediate aquifer ranged from approximately 174 feet msl in MW-38 south of Dunn Field to 154 feet msl in MW-37 west of Dunn Field. Groundwater elevations in MW-67, which is screened in the Memphis Sand, were approximately 155 feet msl. The variation in water levels in the fluvial aquifer monitoring wells is primarily due to the elevation of the underlying clay of the Jackson Formation/Upper Claiborne Group. The variation in water levels between wells screened in the intermediate aquifer is likely due to higher water levels near areas of recharge from the overlying fluvial aquifer.

The groundwater elevations at monitoring wells screened in the fluvial aquifer decreased approximately 2 feet from April to October 2006. This is likely due to the low precipitation in the summer and fall of 2006. Wells screened in the intermediate aquifer and the Memphis aquifer decreased approximately 10 feet.

Groundwater elevation contour maps for the April and October measurements are shown on Figures 4-1 and 4-2. Groundwater flow is to the west in the area of the Groundwater IRA system. The maps show a trough in groundwater elevations approximately 1,000 feet west of Dunn Field, with flow apparently diverging to the north and south.

4.2 ANALYTICAL RESULTS

Analytical results for groundwater samples from monitoring wells and recovery wells and effluent samples collected during the second half of 2006 are presented in Appendix C. The analytical results for samples collected during the first half of 2006 were presented in the *Semi-Annual Status Report - 2006, Year Eight First Half Rev. 1* (MACTEC, 2006).

Positive results summaries for the October groundwater samples, including analytical results for all constituents detected above the reporting limit in one or more samples, are shown on Table 4-1 for monitoring wells and on Table 4-2 for recovery wells. Analytical results for the effluent samples, with the applicable permit limits, are shown on Table 4-3.

e²m performed data quality evaluation (DQE) of the laboratory data packages for the October-November samples to qualify data relative to the data quality objectives (DQOs) in accordance with the RA SAP. Qualification of the analytical data is shown in the tables and discussed in the following sections. DQE of the laboratory data packages for samples collected in April was performed by MACTEC. The DQE narratives are presented in Appendix D.

4.2.1 Groundwater

The following discussion of groundwater analytical results focuses on concentrations detected above the reporting limit for the nine CVOCs detected persistently at Dunn Field: CT, CF, DCE, tDCE, cDCE, PCA, PCE, TCA, and TCE. Vinyl chloride (VC), a significant CVOC degradation product, is also discussed.

The analytical results were compared to the maximum contaminant levels (MCLs) and groundwater target concentrations (TCs) from Table 2-21G of the *Dunn Field Record of Decision* (CH2M HILL, 2004), as listed on Tables 4-1 and 4-2. The April 2006 and October 2006 analytical results for these nine VOCs are presented on Figures 4-3 and 4-4, respectively. The historical results for these nine VOCs in all the wells in the current sampling program are included in Appendix E.

4.2.1.1 Monitoring Wells

During the October 2006 semiannual sampling event, 76 groundwater samples were collected from 50 monitoring wells. Samples were analyzed for VOCs only. The October 2006 data are usable with qualifications as described below (refer to Table 4-1 and Table C-1):

- Two samples were “B”-qualified for methylene chloride based on method blank results. The “B”-qualified data were reported at very low levels and therefore should not adversely impact data quality.
- TCE results in one sample, bromodichloromethane in one sample, and 1,1,2,2-PCA in one sample were qualified as estimated and flagged “J” based on MS/MSD performance.
- Bromodichloromethane detects in ten samples and acetone detects in five samples were qualified as estimated and flagged “J” based on high LCS recovery.

Any result reported below the RL but above the method detection limit (MDL) was flagged “J” and considered an estimated result (unless overridden by other QC flags). Analytical results for groundwater samples from monitoring wells with concentrations above the reporting limit are summarized below.

- CT was reported in 13 monitoring wells, with a maximum concentration of 37.8 micrograms per liter (µg/L) in MW-71. The MCL (5 µg/L) was exceeded in 9 wells. The TC (3 µg/L) was exceeded in 13 wells.
- CF was reported in 29 monitoring wells, with a maximum concentration of 303 µg/L in MW-71. The MCL for trihalomethanes (80 µg/L) was exceeded in 3 wells. The TC (12 µg/L) was exceeded in ten wells.
- DCE was detected in 10 monitoring wells, with a maximum concentration of 61.6 µg/L at MW-130. The MCL (7 µg/L) was exceeded in 4 wells. The TC was also 7 µg/L.
- tDCE was detected in 21 monitoring wells, with a maximum concentration of 22.8 µg/L in well MW-158AB. The detected concentrations did not exceed the MCL of 100 µg/L or TC of 50 µg/L.
- cDCE was detected in 27 monitoring wells, with a maximum concentration of 151 µg/L in well MW-77. The MCL (70 µg/L) was exceeded in 6 wells. The TC (35 µg/L) was exceeded in 16 wells.
- PCA was detected in 28 monitoring wells, with a maximum concentration of 14,300 µg/L in well MW-77. An MCL has not been set for PCA. The TC (2.2 µg/L) was exceeded in 26 wells.
- PCE was detected in 31 monitoring wells, with a maximum concentration of 112 µg/L at MW-130. The MCL (5 µg/L) was exceeded in 16 wells. The TC (2.5 µg/L) was exceeded in 30 wells.
- TCA was detected in 13 monitoring wells, with a maximum concentration of 77.4 µg/L in MW-155T. The MCL (5 µg/L) was exceeded in 8 wells. The TC (1.9 µg/L) was exceeded in 14 wells.
- TCE was detected in 35 monitoring wells, with a maximum concentration of 6,500 µg/L at MW-77. The MCL (5 µg/L) was exceeded in 32 wells. The TC is also 5 µg/L.
- VC was detected in two monitoring wells (MW-70 and MW-163) at concentrations of 64.2 and 3.63 µg/L, respectively. The MCL (2 µg/L) was exceeded in both wells. A TC has not been set for VC.

4.2.1.2 Recovery Wells

Eleven groundwater samples were collected from 11 recovery wells. Samples were analyzed for VOCs only. The November 2006 data are usable with the following qualifications (refer to Table 4-2 and Table C-2):

- 1,1,2,2-PCA, in one sample (RW-7) was flagged “J” and qualified as estimated based on MS/MSD performance.

- Any result reported below RL but above MDL was flagged “J” and considered an estimated result (unless overridden by other QC flags).

Analytical results for groundwater samples from recovery wells with concentrations above the reporting limit are summarized below.

- CT was detected in 8 recovery wells, with a maximum concentration of 24.5 µg/L in RW-1. The MCL (5 µg/L) was exceeded in 5 wells. The TC (3 µg/L) was exceeded in five wells.
- CF was detected in 11 recovery wells, with a maximum concentration of 650 µg/L in RW-1A. The MCL for trihalomethanes (80 µg/L) was exceeded in 2 wells. The TC (12 µg/L) was exceeded in five wells.
- DCE was detected in 2 recovery wells, with a maximum concentration of 18 µg/L in RW-9. The MCL (7 µg/L) and TC (also 7 µg/L) were exceeded only in RW-9.
- tDCE was detected in 10 recovery wells, with a maximum concentration of 43.7 µg/L in RW-8. The detected concentrations did not exceed the MCL of 100 µg/L or TC of 50 µg/L.
- cDCE was detected in 11 recovery wells, with a maximum concentration of 162 µg/L in RW-8. The MCL (70 µg/L) was exceeded in 2 wells. The TC (35 µg/L) was exceeded in four wells.
- PCA was detected in 10 recovery wells, with a maximum concentration of 230 µg/L in RW-4. An MCL has not been set for PCA. The TC (2.2 µg/L) was exceeded in 8 wells.
- PCE was detected in 11 recovery wells, with a maximum concentration of 20.4 µg/L in RW-9. The MCL (5 µg/L) was exceeded in 7 wells. The TC (2.5 µg/L) was exceeded in nine wells.
- TCA was detected in 6 recovery wells, with a maximum concentration of 5.91 µg/L in RW-4. The MCL (5 µg/L) was exceeded in 2 wells. The TC (1.9 µg/L) was exceeded in five wells.
- TCE was detected in 11 recovery wells, with a maximum concentration of 294 µg/L in RW-4. The MCL (5 µg/L) and TC (also 5 µg/L) were exceeded in all 11 wells.
- VC was not detected in any of the recovery wells sampled.

4.2.2 Effluent Samples

Effluent discharge samples were collected in 11 April 2006 by MACTEC and on 8 November 2006 by e²M. The November 2006 data are usable with the following qualifications (refer to Table 4-3 and Table C-3):

- 1,1,2,2-PCA, chloroform, cDCE, and tDEC results in the Main Discharge sample were flagged “J” and qualified as estimated based on MS/MSD performance.
- The Main Discharge sample was “B”-qualified for antimony based on method blank results. The “B”-qualified data were reported for a non-CVOC and therefore, should not adversely impact data quality.

- The iron result in the Main Discharge sample was flagged “J” and qualified as estimated based on high MS recovery indicating a potential for high bias.
- Any result reported below RL but above MDL was flagged “J” and considered an estimated result (unless overridden by other QC flags).

The analytical results are compared with the permit discharge limits in Table 4-3. All results were below the permit limits.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 SYSTEM OPERATIONS

The system operated as intended during most of 2006 with an average operational run time of 94.6 percent. System repairs are summarized in Table 5-1.

The average system extraction/effluent discharge rate ranged from 42.6 gallons per minute (gpm) in January to 71.3 gpm in November. The total discharge was approximately 30.2 million gallons (a decrease of 2.3 million gallons from 32.5 million gallons discharged in 2005). This 2006 discharge quantity was calculated using twice monthly recorded flow rates from individual wells. Approved one-time discharges from well installation/development and sampling activities at DDMT totaled 40,484 additional gallons.

Figure 5-1 shows the TCE and total VOC concentrations measured at the effluent metering station since 1998. In 2006, the concentrations decreased in February and May, increased in August and decreased in November. The effluent discharge limits were not exceeded during the reporting period. Approximately 40.5 pounds of TCE and 96.4 pounds of total VOCs were removed from the fluvial aquifer in 2006, as calculated using the estimates in the monthly reports. This compares with 51.6 pounds of TCE and 126.6 pounds of total VOCs calculated as removed in 2005. The reduction in mass removal in 2006 resulted from the decrease in TCE and total VOCs in the effluent samples and, to a lesser extent, the reduction in total discharge volume.

5.2 SYSTEM MONITORING

The analytical results for the monitoring wells are summarized in Table 5-2, which shows the nine persistent CVOCs detected above the reporting limit for PDBs in each well. Of the 50 wells sampled in October 2006, 39 wells contained one or more of the nine CVOCs above reporting limits and 35 wells had concentrations above the MCL or TC. Total CVOC concentrations for the wells sampled in October and November 2006 are shown on Figure 4-4.

Table 5-2 shows the variation in concentrations in the wells with multiple PDBs. Multiple PDB samplers were limited to 21 recently installed wells and 4 wells (MW-31, MW-68, MW-69 and MW-70) that previously had observable variation in concentration with depth.

Of the 21 recently installed wells with multiple PDBs, eight wells (MW-145, MW-153, MW-154, MW-156, MW-167, MW-168, MW-169 and MW-171) had very low concentrations or little variation with depth. These eight wells were reduced to a single PDB for 2007. Five wells (MW-149, MW-152, MW-158, MW-165 and MW-166) had moderate to high concentrations (50 to 5000 µg/L) with little variation between samples. In wells with greater variability, four wells (MW-148, MW-158A, MW-168A, and MW-170) had higher concentrations in the shallower samples and five wells (MW-150, MW-151, MW-155, MW-159, and MW-165A) had higher concentrations in the deeper samples.

Of the four wells with previously observed variability, MW-70 had high concentrations (>5000 µg/L) in both samples, with higher concentrations reported in the shallower samples. Well MW-31 had relatively low concentrations (<50 µg/L), with slightly higher concentrations in the deeper sample. Wells MW-68 and MW-69 had low concentrations (<10 µg/L) with slightly higher concentrations in the shallower samples. Wells MW-68 and MW-69 were reduced to a single PDB for 2007.

Analytical results for the monitoring wells in the Early Implementation of Selected Remedy area are shown in Table 5-3, which also includes the baseline and post zero-valent iron injection results. In the three wells on the upgradient edge of the injection area, the October 2006 CVOC concentrations were less than half the baseline concentrations in MW-54, while concentrations in MW-150 and MW-160 were similar to the baseline results. CVOC concentrations in MW-150 were significantly higher in October than in April. The October CVOC concentrations in MW-155, the only monitoring well in the central area of injections, had results approximately twice that of the baseline readings. Of the three wells on the downgradient edge of the injection area, CVOC concentrations in MW-158A and MW-158 were similar to the baseline results, while concentrations in MW-159 remain somewhat lower.

Time trend plots are included in Appendix F for monitoring wells in the current sampling program where constituents have been detected above MCLs or TCs. Where multiple sample results were available for a sampling event (i.e., for wells with multiple PDB samplers), the higher result was plotted.

No modifications to the O&M or system monitoring program are being recommended.

6.0 REFERENCES

CH2M HILL, 2003. Five Year Review. Prepared for the U.S. Army Engineering and Support Center, Huntsville. January 2003.

CH2M HILL, 2004. Dunn Field Record of Decision Revision 2. Prepared for the U.S. Army Engineering and Support Center, Huntsville. February 2004.

Jacobs Engineering Group, 2001. Construction Report. Prepared for the U.S. Army Corps of Engineers, Mobile District. August 2001.

MACTEC, 2004. Remedial Action Sampling and Analysis Plan, Rev. 0. Prepared for the Air Force Center for Environmental Excellence. September, 2004.

MACTEC, 2006. Semi-Annual Summary Report, Year Eight First Half, Revision 1. Prepared for the Air Force Center for Environmental Excellence. October, 2006.

OHM Remediation Services Corp., 1999. Operation and Maintenance Manual for Instrumentation and Controls. Prepared for the U.S. Army Corps of Engineers, Mobile District, Tennessee Area Office. May 1999.

U.S. Geological Survey, 2001. "Users Guide for Polyethylene-Based Diffusion Bag Samplers to Obtain Volatile Organic Compound Concentrations in Wells Part 1, Deployment, recovery, data interpretation, and quality control and assurance," USGS, Columbia, SC, 2001.

TABLES

TABLE 3-1
WELL ACTIVITY SUMMARY
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well	Aquifer Screened	Water Level Measurement	Groundwater Samples	Groundwater Samples
			11-13 April 2006	18-20 October 2006 ⁽¹⁾
MW-02	Fluvial	X		
MW-03	Fluvial	X		
MW-04**	Fluvial	X		
MW-05	Fluvial	X		
MW-06	Fluvial	X		
MW-07	Fluvial	X	S	S
MW-08	Fluvial	X		
MW-09	Fluvial	X		
MW-10	Fluvial	X		
MW-11	Fluvial	X		
MW-12	Fluvial	X		
MW-13**	Fluvial	X		
MW-14	Fluvial	X		
MW-15	Fluvial	X		
MW-19	Fluvial	X		
MW-28	Fluvial	X		
MW-29	Fluvial	X		
MW-30	Fluvial	X		
MW-31	Fluvial	X	M	M
MW-32	Fluvial	X	S	S
MW-33	Fluvial	X	S	S
MW-34	Intermediate	X		
MW-35	Fluvial	X		
MW-36	Intermediate	X		
MW-37	Intermediate	X	S	S
MW-38	Intermediate	X		
MW-40	Transitional	X	S	S
MW-42	Fluvial	X		
MW-43	Intermediate	X	S	S
MW-44	Fluvial	X	S	S
MW-45**	Fluvial	X		
MW-51	Fluvial	X		
MW-53	Fluvial	X		
MW-54	Fluvial	X	S	S
MW-55**	Fluvial	X		
MW-56	Fluvial	X		
MW-57	Fluvial	X	S	S
MW-58	Fluvial	X		
MW-59	Fluvial	X		
MW-60	Fluvial	X		
MW-61	Fluvial	X		
MW-62	Fluvial	X		
MW-65	Fluvial	X		
MW-67	Memphis	X	S	S
MW-68	Fluvial	X	M	M
MW-69	Fluvial	X	M	M
MW-70	Fluvial	X	M	M

TABLE 3-1
WELL ACTIVITY SUMMARY
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well	Aquifer Screened	Water Level Measurement	Groundwater Samples	Groundwater Samples
			11-13 April 2006	18-20 October 2006 ⁽¹⁾
MW-71	Fluvial	X	S	S
MW-73	Fluvial	X		
MW-74	Fluvial	X		
MW-75	Fluvial	X		
MW-76	Fluvial	X	S	S
MW-77	Fluvial	X	S	S
MW-78	Fluvial	X		
MW-79	Fluvial	X	S	S
MW-80	Fluvial	X		
MW-84**	Fluvial	X		
MW-87	Fluvial	X		
MW-89	Intermediate	X		
MW-90	Intermediate	X		
MW-91	Fluvial	X		
MW-95**	Fluvial	X		
MW-126	Fluvial	X		
MW-127	Fluvial	X		
MW-128	Fluvial	X		
MW-129	Fluvial	X		
MW-130	Fluvial	X	S	S
MW-131	Fluvial	X		
MW-132	Fluvial	X		
MW-133	Fluvial	X		
MW-134	Fluvial	X		
MW-135	Fluvial	X		
MW-144	Fluvial	X	S	S
MW-145	Fluvial	X	M	M
MW-147	Fluvial	X	S	S
MW-148	Fluvial	X	M	M
MW-149	Fluvial	X	M	M
MW-150	Fluvial	X	M	M
MW-151	Fluvial	X	M	M
MW-152	Fluvial	X	M	M
MW-153	Fluvial	X	M	M
MW-154	Fluvial	X	M	M
MW-155	Fluvial	X	M	M
MW-156	Fluvial	X	M	M
MW-157	Fluvial	X	S	S
MW-158	Fluvial	X	M	M
MW-158A	Fluvial	X	M	M
MW-159	Fluvial	X	M	M
MW-160	Fluvial	X	S	S
MW-161	Fluvial	X	S	S
MW-162	Fluvial	X	S	S
MW-163	Fluvial	X	S	S
MW-164	Fluvial	X	S	S
MW-165	Fluvial	X	M	M

TABLE 3-1
WELL ACTIVITY SUMMARY
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well	Aquifer Screened	Water Level Measurement	Groundwater Samples	
			11-13 April 2006	18-20 October 2006 ⁽¹⁾
MW-165A	Fluvial	X	M	M
MW-166	Fluvial	X	M	M
MW-166A	Fluvial	X	S	S
MW-167	Fluvial	X	M	M
MW-168	Fluvial	X	M	M
MW-168A	Fluvial	X	M	M
MW-169	Transitional	X	M	M
MW-170	Fluvial	X	M	M
MW-171	Fluvial	X	M	M
PZ-02	Fluvial	X		
RW-01	Fluvial	X	G	G
RW-01A	Fluvial	X	G	G
RW-01B	Fluvial	X	G	G
RW-02	Fluvial	X	G	G
RW-03	Fluvial	X	G	G
RW-04	Fluvial	X	G	G
RW-05	Fluvial	X	G	G
RW-06	Fluvial	X	G	G
RW-07	Fluvial	X	G	G
RW-08	Fluvial	X	G	G
RW-09	Fluvial	X	G	G

Notes:

** Indicates a pressure transducer is installed in the monitoring well.

G Grab samples from recovery well

M Multiple samples; Permeable Diffusion Bag (PDB) samplers at top and bottom of saturated screened interval (two samples per well).

S Single sample; one PDB sampler at mid-point of saturated screened intervals

X Water level measurement obtained

(1) Grab samples from recovery wells collected 8 November 2006

TABLE 3-2
WATER LEVEL MEASUREMENTS
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well ID	Aquifer Screened	Top of Casing Elevation (ft, msl)	Groundwater		Groundwater	
			Depth to Water	Elevation	Depth to Water	Elevation
			10 to 11 April 2006 ⁽⁴⁾ (ft, btoc)	26 October 2006 ⁽⁴⁾ (ft, msl)	26 October 2006 ⁽⁴⁾ (ft, btoc)	26 October 2006 ⁽⁴⁾ (ft, msl)
MW-02	Fluvial	292.04	30.49	261.55	--	--
MW-03	Fluvial	292.35	68.58	223.77	71.37	220.98
MW-04	Fluvial	301.61	74.78	226.83	77.65	223.96
MW-05	Fluvial	304.64	Dry	Dry	Dry	Dry
MW-06	Fluvial	289.11	63.64	225.47	65.95	223.16
MW-07	Fluvial	295.10	66.68	228.42	69.37	225.73
MW-08	Fluvial	292.59	62.17	230.42	64.60	227.99
MW-09	Fluvial	304.32	76.00	228.32	78.66	225.66
MW-10	Fluvial	288.79	63.81	224.98	66.59	222.20
MW-11	Fluvial	299.47	74.79	224.68	77.75	221.72
MW-12	Fluvial	301.30	76.40	224.90	77.45	223.85
MW-13	Fluvial	300.01	73.11	226.90	75.79	224.22
MW-14	Fluvial	302.22	74.23	227.99	76.10	226.12
MW-15	Fluvial	295.12	68.91	226.21	71.31	223.81
MW-19	Fluvial	290.57	85.04	205.53	87.16	203.41
MW-28 ⁽¹⁾	Fluvial	--	55.82	--	58.21	--
MW-29	Fluvial	273.22	38.77	234.45	41.46	231.76
MW-30	Fluvial	275.14	46.64	228.50	47.50	227.64
MW-31	Fluvial	290.37	69.73	220.64	70.66	219.71
MW-32	Fluvial	285.38	63.32	222.06	63.63	221.75
MW-33	Fluvial	280.71	55.49	225.22	55.88	224.83
MW-34	Intermediate	299.97	130.51	169.46	140.84	159.13
MW-35 ⁽²⁾	Fluvial	301.65	76.85	224.80	79.61	222.04
MW-36	Intermediate	310.24	144.73	165.51	157.11	153.13
MW-37	Intermediate	284.91	120.01	164.90	130.45	154.46
MW-38	Intermediate	307.45	127.00	180.45	133.73	173.72
MW-40	Transitional	262.23	77.39	184.84	82.60	179.63
MW-42	Fluvial	274.83	53.32	221.51	54.08	220.75
MW-43	Intermediate	284.99	119.10	165.89	128.08	156.91
MW-44	Fluvial	269.07	54.14	214.93	55.60	213.47
MW-45	Fluvial	293.22	55.02	238.20	57.31	235.91
MW-49 ⁽¹⁾	Fluvial	310.49	78.60	231.89	81.00	229.49
MW-51	Fluvial	275.23	40.55	234.68	40.75	234.48
MW-53	Fluvial	306.38	73.45	232.93	75.12	231.26
MW-54	Fluvial	295.35	79.67	215.68	80.18	215.17
MW-55	Fluvial	292.08	70.96	221.12	72.30	219.78
MW-56	Fluvial	293.60	67.27	226.33	68.96	224.64
MW-57	Fluvial	290.77	63.40	227.37	65.55	225.22
MW-58	Fluvial	290.51	63.31	227.20	65.09	225.42
MW-59	Fluvial	300.13	74.21	225.92	77.06	223.07
MW-60	Fluvial	296.86	70.69	226.17	73.56	223.30
MW-61	Fluvial	294.04	67.43	226.61	70.21	223.83
MW-62	Fluvial	293.65	93.23	200.42	93.50	200.15
MW-65	Fluvial	263.22	5.83	257.39	14.65	248.57
MW-67	Memphis	278.21	113.25	164.96	123.25	154.96
MW-68	Fluvial	291.69	67.80	223.89	68.95	222.74
MW-69	Fluvial	307.02	82.84	224.18	84.01	223.01
MW-70	Fluvial	304.99	80.44	224.55	81.52	223.47
MW-71	Fluvial	294.40	70.68	223.72	70.26	224.14
MW-73	Fluvial	300.65	75.08	225.57	78.80	221.85
MW-74	Fluvial	303.68	78.79	224.89	81.55	222.13
MW-75	Fluvial	303.61	79.96	223.65	81.75	221.86
MW-76	Fluvial	302.71	83.43	219.28	84.30	218.41

TABLE 3-2
WATER LEVEL MEASUREMENTS
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DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well ID	Aquifer Screened	Top of Casing Elevation (ft, msl)	Groundwater		Groundwater	
			Depth to Water	Elevation	Depth to Water	Elevation
			10 to 11 April 2006 ⁽⁴⁾ (ft, btoc)	26 October 2006 ⁽⁴⁾ (ft, msl)	26 October 2006 ⁽⁴⁾ (ft, btoc)	26 October 2006 ⁽⁴⁾ (ft, msl)
MW-77	Fluvial	304.42	81.60	222.82	82.50	221.92
MW-78	Fluvial	275.00	48.05	226.95	48.84	226.16
MW-79	Fluvial	285.03	70.45	214.58	70.94	214.09
MW-80	Fluvial	273.81	59.37	214.44	59.62	214.19
MW-84	Fluvial	311.15	81.74	229.41	83.71	227.44
MW-87	Fluvial	294.93	70.08	224.85	72.21	222.72
MW-89	Intermediate	303.98	111.90	192.08	116.48	187.50
MW-90	Intermediate	304.19	112.31	191.88	116.71	187.48
MW-91	Fluvial	291.99	66.53	225.46	69.11	222.88
MW-95	Fluvial	259.43	27.24	232.19	29.00	230.43
MW-126	Fluvial	252.22	17.11	235.11	21.20	231.02
MW-127	Fluvial	268.71	58.33	210.38	60.10	208.61
MW-128	Fluvial	284.14	40.06	244.08	44.58	239.56
MW-129	Fluvial	293.01	55.78	237.23	57.00	236.01
MW-130	Fluvial	293.20	54.96	238.24	57.70	235.50
MW-131	Fluvial	300.64	74.79	225.85	77.48	223.16
MW-132	Fluvial	300.73	75.18	225.55	77.91	222.82
MW-133	Fluvial	300.89	75.28	225.61	78.04	222.85
MW-134	Fluvial	300.81	75.43	225.38	78.16	222.65
MW-135	Fluvial	300.53	75.10	225.43	77.84	222.69
MW-144	Fluvial	291.60	73.21	218.39	73.97	217.63
MW-145	Fluvial	284.72	69.48	215.24	71.61	213.11
MW-147	Fluvial	289.72	70.38	219.34	71.25	218.47
MW-148	Fluvial	294.71	77.60	217.11	78.26	216.45
MW-149	Fluvial	287.18	71.85	215.33	72.35	214.83
MW-150	Fluvial	296.81	80.69	216.12	81.35	215.46
MW-151	Fluvial	284.27	69.12	215.15	69.60	214.67
MW-152	Fluvial	289.59	74.62	214.97	76.83	212.76
MW-153	Fluvial	279.17	64.76	214.41	66.92	212.25
MW-154	Fluvial	273.81	56.31	217.50	56.78	217.03
MW-155	Fluvial	291.65	75.94	215.71	76.54	215.11
MW-156	Fluvial	269.15	55.89	213.26	56.28	212.87
MW-157	Fluvial	286.78	69.65	217.13	71.32	215.46
MW-158	Fluvial	294.07	79.10	214.97	81.20	212.87
MW-158A	Fluvial	293.95	79.01	214.94	81.09	212.86
MW-159	Fluvial	286.33	71.27	215.06	71.69	214.64
MW-160	Fluvial	294.00	77.95	216.05	80.24	213.76
MW-161	Fluvial	296.40	77.18	219.22	77.90	218.50
MW-162	Fluvial	299.70	80.84	218.86	81.68	218.02
MW-163	Fluvial	290.63	72.68	217.95	75.08	215.55
MW-164	Fluvial	287.48	68.99	218.49	69.63	217.85
MW-165	Fluvial	287.06	72.16	214.90	72.40	214.66
MW-165A	Fluvial	287.26	72.44	214.82	72.86	214.40
MW-166	Fluvial	283.44	68.31	215.13	69.78	213.66
MW-166A	Fluvial	283.45	68.31	215.14	68.75	214.70
MW-167	Fluvial	284.82	70.24	214.58	70.80	214.02
MW-168	Fluvial	283.95	69.26	214.69	71.31	212.64
MW-168A	Fluvial	283.2	68.54	214.66	70.60	212.60
MW-169	Transitional	261.90	71.86	190.04	74.96	186.94
MW-170	Fluvial	273.75	57.53	216.22	58.10	215.65
MW-171	Fluvial	271.02	55.14	215.88	57.35	213.67
PZ-02	Fluvial	284.39	40.08	244.31	45.60	238.79

TABLE 3-2
 WATER LEVEL MEASUREMENTS
 ANNUAL OPERATIONS REPORT - 2006
 DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
 Defense Depot Memphis, Tennessee

Well ID	Aquifer Screened	Top of Casing Elevation (ft, msl)	Groundwater		Groundwater	
			Depth to Water	Elevation	Depth to Water	Elevation
			10 to 11 April 2006 ⁽⁴⁾ (ft, btoc)	(ft, msl)	26 October 2006 ⁽⁴⁾ (ft, btoc)	(ft, msl)
RW-01	Fluvial	295.71	68.5	227.21	70.52	225.19
RW-01A	Fluvial	295.42	69.5	225.92	71.32	224.10
RW-01B	Fluvial	289.17	66.8	222.37	68.12	221.05
RW-02	Fluvial	289.92	65.9	224.02	68.70	221.22
RW-03	Fluvial	299.34	74.7	224.64	75.39	223.95
RW-04	Fluvial	305.11	78.2	226.91	82.82	222.29
RW-05	Fluvial	307.13	84.1	223.03	90.00	217.13
RW-06	Fluvial	304.56	79.0	225.56	85.20	219.36
RW-07	Fluvial	297.44	--	--	74.55	222.89
RW-08	Fluvial	292.99	72	220.99	72.50	220.49
RW-09	Fluvial	290.67	66.4	224.27	69.31	221.36

Notes:

ft, msl feet mean sea level

ft, btoc feet below top of casing

NA Not Applicable, well installed following water level measurements.

-- Not Measured

(1) Probable measurement error

(2) The top of casing at MW-28 was lowered on 7 August 2005 due to road construction and has not been resurveyed.

(3) The MW-35 top of casing elevation has been revised to 301.65 ft, based on the Well Installation Diagram; the previous elevation of 300.46 ft. is believed to be in error.

(4) Depths to groundwater in recovery wells are from transducer measurements obtained on 9 April and from manual readings made during the weekly inspection on 27 October.

TABLE 3-3
PDB SAMPLE INTERVALS - OCTOBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Monitoring Well	Date Collected	Measured Well Depth (ft bgs)	Depth to Water (feet btoc)	Sample Midpoint Depth	Sample Midpoint Depth
				Interval - 1 (feet btoc)	Interval - 2 (feet btoc)
MW-07	10/18/2006	73.18	67.63	68.9	NI
MW-31	10/18/2006	83.28	70.71	71.6	77.1
MW-32	10/19/2006	68.08	65.32	65.1	NI
MW-33	10/20/2006	62.70	NA	58.0	NI
MW-37	10/19/2006	184.68	133.03	173.2	NI
MW-40	10/19/2006	95.53	84.41	90.0	NI
MW-43	10/19/2006	171.71	130.85	165.5	NI
MW-44	10/19/2006	74.36	56.33	69.0	NI
MW-54	10/19/2006	97.18	81.88	89.5	NI
MW-57	10/20/2006	70.21	63.94	66.6	NI
MW-67	10/19/2006	>200	124.26	267.5	NI
MW-68 ⁽¹⁾	10/19/2006	81.56	70.78	74.5	80.5
MW-69 ⁽¹⁾	10/20/2006	95.58	84.13	86.2	90.1
MW-70	10/20/2006	93.73	81.53	83.3	88.8
MW-71	10/20/2006	78.10	70.30	72.3	NI
MW-76	10/20/2006	93.98	84.33	88.2	NI
MW-77 ⁽³⁾	10/20/2006	89.18	82.45	84.9	NI
MW-79	10/18/2006	104.78	71.00	92.0	NI
MW-130	10/20/2006	81.02	56.10	69.5	NI
MW-144	10/19/2006	76.28	74.00	74.4	NI
MW-145 ⁽¹⁾	10/19/2006	96.66	69.99	78.6	94.6
MW-147	10/18/2006	77.91	71.25	73.7	NI
MW-148	10/18/2006	87.87	78.29	79.5	85.5
MW-149	10/19/2006	99.96	72.42	83.6	98.5
MW-150	10/19/2006	91.57	81.35	82.2	90.5
MW-151	10/18/2006	96.69	69.70	78.5	94.5
MW-152	10/18/2006	108.82	75.19	92.9	107.9
MW-153 ⁽¹⁾	10/18/2006	96.03	65.30	79.1	95.1
MW-154 ⁽¹⁾	10/19/2006	66.84	56.85	57.6	65.5
MW-155	10/18/2006	95.07	76.56	75.5	93.5
MW-156 ⁽¹⁾	10/19/2006	69.41	56.27	57.2	66.8
MW-157	10/19/2006	77.11	70.32	73.3	NI
MW-158	10/19/2006	106.60	79.59	93.1	104.1
MW-158A	10/19/2006	93.28	79.50	81.5	91.4
MW-159	10/18/2006	99.31	71.73	81.1	97.1
MW-160	10/18/2006	85.77	78.52	80.8	NI
MW-161	10/19/2006	81.39	77.92	79.9	NI
MW-162	10/19/2006	86.69	81.66	83.7	NI
MW-163	10/19/2006	76.77	73.42	74.9	NI
MW-164	10/19/2006	75.28	69.56	72.6	NI
MW-165	10/18/2006	103.01	72.71	89.9	100.4
MW-165A	10/18/2006	86.40	72.95	73.9	84.5
MW-166	10/20/2006	100.05	68.97	87.3	97.8
MW-166A	10/20/2006	83.29	68.94	75.3	NI
MW-167 ⁽¹⁾	10/18/2006	82.68	71.90	72.3	80.7
MW-168 ⁽¹⁾	10/19/2006	120.50	69.74	108.6	119.1
MW-168A	10/20/2006	88.22	69.09	76.4	86.9
MW-169 ⁽¹⁾	10/19/2006	88.15	80.41	77.4	86.2
MW-170	10/19/2006	79.78	58.14	61.7	77.7
MW-171 ⁽¹⁾	10/19/2006	68.32	55.80	57.2	67.5

Notes:

NI Not installed

bgs Below ground surface

btoc Below top of casing

- (1) These monitoring wells had the second PDB deleted and replaced with a new PDB midway between the original sampling points after sample collection
- (2) Based on the measured water levels in October, the midpoint depth for the replacement PDBs in the upper interval was increased in the following wells: MW-32 (0.5 ft), MW-144 (0.5 ft), MW-148 (0.5 ft), MW-150 (1.0 ft), MW-155 (1.5 ft), MW-156 (1.5 ft), MW-157 (1.5 ft), and MW-161 (0.5 ft)
- (3) Replacement PDBs were 18 inches in length, except in MW-77 which has a 24-inch PDB due to availability

TABLE 4-1
 POSITIVE RESULTS SUMMARY - MONITORING WELLS, OCTOBER 2006
 ANNUAL OPERATIONS REPORT - 2006
 DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
 Defense Depot Memphis, Tennessee

Sample ID	Analyte ⁽¹⁾	Maximum Contaminant Levels ⁽²⁾	Target Concentration ⁽³⁾	MW-07 L0610605-03 10/18/2006	MW-31B L0610611-10 10/18/2006	MW-31T L0610611-11 10/18/2006	MW-32 L0610629-03 10/19/2006	MW-33 L0610633-07 10/20/2006	MW-37 L0610629-04 10/19/2006	MW-40 L0610629-05 10/19/2006	MW-43 L0610629-06 10/19/2006
Lab ID	Date	Units									
1.1.1.2-Tetrachloroethane		µg/L	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1-Trichloroethane		µg/L	200	0.543 J	0.451 J	<1	<1	<1	<1	<1	<1
1.1.2.2-Tetrachloroethane		µg/L	--	<0.5	<0.5	<0.5	21.7	<0.5	<0.5	<0.5	<0.5
1.1.2-Trichloroethane		µg/L	5	<1	<1	<1	0.594 J	<1	<1	<1	<1
1.1-Dichloroethane		µg/L	--	0.862 J	0.644 J	0.233 J	<1	<1	<1	<1	<1
1.1-Dichloroethane		µg/L	7	18.5	30.6	23.2	<1	<1	<1	<1	<1
1.2-Dichloroethane		µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone		µg/L	--	<10	<10	<10	<10	<10	<10	<10	<10
Benzene		µg/L	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride		µg/L	5	0.273 J	<1	<1	12.3	0.278 J	<1	<1	<1
Chlorobenzene		µg/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.05	<0.5
Chloroform		µg/L	80	4.49	<0.3	0.131 J	86	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	70	<1	<1	<1	3.53	<1	<1	<1	<1
Hexachlorobutadiene		µg/L	--	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
MEK (2-Butanone)		µg/L	--	<10	<10	<10	<10	<10	<10	<10	<10
Methylene chloride		µg/L	5	<1	0.537 J	0.307 J	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	5	34.5	7.58	0.714 J	1.63	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	100	<1	<1	<1	0.613 J	<1	<1	<1	<1
Trichloroethene		µg/L	5	19.6	12	3.85	38	<1	<1	<1	<1
Vinyl chloride		µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

- (1) Samples analyzed for volatile organic compounds by Method 8260B
 - (2) Drinking Water Standards and Health Advisories (USEPA, 2004)
 - (3) Target Concentration (TC) from Dunn Field ROD, Table 2-21G
- µg/L micrograms per liter
- Not listed or not analyzed
- < Not detected above Reporting Limit (RL)
- Results detected at or above RL shown in bold

DOE Flags:

- J Estimated result based on QC data or reported below RL
- B Estimated result possibly biased high or false positive based on blank data

TABLE 4-1
 POSITIVE RESULTS SUMMARY - MONITORING WELLS, OCTOBER 2006
 ANNUAL OPERATIONS REPORT - 2006
 DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
 Defense Depot Memphis, Tennessee

Sample ID	Analyte ⁽¹⁾	Maximum Contaminant Levels ⁽²⁾	Target Concentration ⁽³⁾	MW-44	MW-54	MW-57	MW-67	MW-68B	MW-68T	MW-69B	MW-69T
Lab ID	Date	Units		L0610629-07	L0610629-08	L0610633-08	L0610628-07	L0610629-09	L0610629-10	L0610633-09	L0610633-10
				10/19/2006	10/19/2006	10/20/2006	10/19/2006	10/19/2006	10/19/2006	10/20/2006	10/20/2006
1,1,1,2-Tetrachloroethane		µg/L	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	--	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	200	<0.5	572	<0.5	<0.5	0.457 J	5.67	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	5	<1	2.54	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	--	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	7	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone		µg/L	--	<10	<10	<10	<10	<10	<10	<10	<10
Benzene		µg/L	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride		µg/L	5	1.2	1.9	31	<1	<1	0.951 J	<1	<1
Chlorobenzene		µg/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform		µg/L	80	0.467	1.45	5.67	<0.3	0.165 J	1.57	0.169 J	0.261 J
cis-1,2-Dichloroethene		µg/L	35	<1	19.6	0.294 J	<1	<1	1.06	<1	0.348 J
Hexachlorobutadiene		µg/L	--	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
MEK (2-Butanone)		µg/L	--	<10	<10	<10	<10	<10	<10	<10	<10
Methylene chloride		µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	5	<1	2.78	4.02	<1	<1	1.63	0.688 J	2.03
trans-1,2-Dichloroethene		µg/L	100	<1	3.88	0.659 J	<1	<1	0.544 J	<1	<1
Trichloroethene		µg/L	5	0.366 J	604	28.7	<1	0.485 J	5.76	2.09	9.84
Vinyl chloride		µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

- (1) Samples analyzed for volatile organic compounds by Method 8260B
 (2) Drinking Water Standards and Health Advisories (USEPA, 2004)
 (3) Target Concentration (TC) from Dunn Field ROD, Table 2-21G
 µg/L micrograms per liter
 -- Not listed or not analyzed
 < Not detected above Reporting Limit (RL)
 Results detected at or above RL shown in bold

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 B Estimated result possibly biased high or false positive based on blank data

TABLE 4-1
 POSITIVE RESULTS SUMMARY - MONITORING WELLS, OCTOBER 2006
 ANNUAL OPERATIONS REPORT - 2006
 DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
 Defense Depot Memphis, Tennessee

Sample ID	Maximum	Target	Concentration ⁽³⁾	MW-70B	MW-70T	MW-71	MW-76	MW-77	MW-79	MW-130	MW-144
Lab ID	Contaminant			L0610633-11	L0610633-12	L0610633-13	L0610633-16	L0610633-17	L0610611-12	L0610633-01	L0610624-01
Date	Units			10/20/2006	10/20/2006	10/20/2006	10/20/2006	10/20/2006	10/18/2006	10/20/2006	10/19/2006
Analyte ⁽¹⁾	Levels ⁽²⁾										
1,1,1,2-Tetrachloroethane	µg/L	--		1.12	2.4	<0.5	<0.5	2.99	<0.5	<0.5	<5
1,1,1-Trichloroethane	µg/L	--		<1	<1	<1	<1	<1	<1	3.64	<10
1,1,2,2-Tetrachloroethane	µg/L	2.2		5850	9200	22.9	2.58	14300	<0.5	<0.5	2520
1,1,2-Trichloroethane	µg/L	1.9		25.7	10.1	1.16	<1	17.4	<1	<1	60.4
1,1-Dichloroethane	µg/L	--		<1	<1	<1	<1	<1	<1	2.9	<10
1,1-Dichloroethene	µg/L	7		1.89	<1	<1	<1	<1	10.6	61.6	<10
1,2-Dichloroethane	µg/L	5		0.526	0.416 J	0.628	<0.5	0.511	<0.5	0.736	<5
Acetone	µg/L	--		<10	<10	<10	<10	<10	<10	<10	88.5 J
Benzene	µg/L	--		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<4
Carbon tetrachloride	µg/L	3		<1	0.575 J	37.8	<1	0.922 J	<1	<1	<10
Chlorobenzene	µg/L	100		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
Chloroform	µg/L	80		2.42	3.79	303	0.208 J	4.77	<0.3	0.256 J	1.45 J
cis-1,2-Dichloroethene	µg/L	70		122	101	11.7	0.263 J	151	<1	0.766 J	98.2
Hexachlorobutadiene	µg/L	--		<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<6
MEK (2-Butanone)	µg/L	--		<10	<10	<10	<10	<10	<10	<10	<100
Methylene chloride	µg/L	5		<1	<1	<1	<1	<1	<1	<1	3.43 J
Tetrachloroethene	µg/L	5		12.7	29.5	7.34	1.84	46.9	0.47 J	112	11.4
trans-1,2-Dichloroethene	µg/L	100		17.4	19.7	3.07	<1	19.1	<1	<1	19.2
Trichloroethene	µg/L	5		2180	3390	158 J	4.9	6500	1.63	60.5	1890
Vinyl chloride	µg/L	2		64.2	<1	<1	<1	<1	<1	<1	<10

Notes:

- (1) Samples analyzed for volatile organic compounds by Method 8260B
 - (2) Drinking Water Standards and Health Advisories (USEPA, 2004)
 - (3) Target Concentration (TC) from Dunn Field ROD, Table 2-21G
- µg/L micrograms per liter
- Not listed or not analyzed
- < Not detected above Reporting Limit (RL)
- Results detected at or above RL shown in bold

DOE Flags:

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- B Estimated result possibly biased high or false positive based on blank data

TABLE 4-1
 POSITIVE RESULTS SUMMARY - MONITORING WELLS, OCTOBER 2006
 ANNUAL OPERATIONS REPORT - 2006
 DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
 Defense Depot Memphis, Tennessee

Sample ID	Analyte ⁽¹⁾	Units	Maximum Contaminant Levels ⁽²⁾	Target Concentration ⁽³⁾	MW-145B L0610630-02 10/19/2006	MW-145T L0610630-03 10/19/2006	MW-147 L0610605-04 10/18/2006	MW-148B L0610605-05 10/18/2006	MW-148T L0610605-06 10/18/2006	MW-149B L0610630-04 10/19/2006	MW-149T L0610630-05 10/19/2006	MW-150B L0610624-02 10/19/2006
1,1,1,2-Tetrachloroethane	µg/L	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.628
1,1,1-Trichloroethane	µg/L	200	--	--	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	--	2.2	2.2	<0.5	<0.5	87.9	0.789	3.72	23.1	21.3	8480
1,1,2-Trichloroethane	µg/L	5	--	1.9	<1	<1	1.39	<1	0.316 J	0.686 J	0.425 J	14.6
1,1-Dichloroethane	µg/L	--	--	--	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	--	7	<1	<1	0.657 J	<1	<1	<1	<1	0.619 J
1,2-Dichloroethane	µg/L	5	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.252 J
Acetone	µg/L	--	--	--	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	µg/L	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	µg/L	5	--	3	<1	<1	0.364 J	<1	0.267 J	12.2	12.9	<1
Chlorobenzene	µg/L	100	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	µg/L	80	--	12	<0.3	<0.3	2.66	0.146 J	1.74	95.5	81	2.22
cis-1,2-Dichloroethene	µg/L	70	--	35	<1	<1	41.2	<1	34.3	7.81	3.15	77.1
Hexachlorobutadiene	µg/L	--	--	--	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
MEK (2-Butanone)	µg/L	--	--	--	<10	<10	<10	<10	<10	<10	<10	<10
Methylene chloride	µg/L	5	--	--	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5	--	2.5	<1	<1	3.92	0.481 J	7.53	1.27	1.44	13
trans-1,2-Dichloroethene	µg/L	100	--	50	<1	<1	10.3	<1	10.7	1.13	0.794 J	13.9
Trichloroethene	µg/L	5	--	5	<1	<1	81.3	2.28	74.1	45.4	40	2910
Vinyl chloride	µg/L	2	--	--	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

- (1) Samples analyzed for volatile organic compounds by Method 8260B
 - (2) Drinking Water Standards and Health Advisories (USEPA, 2004)
 - (3) Target Concentration (TC) from Dunn Field ROD, Table 2-21G
- µg/L micrograms per liter
- Not listed or not analyzed
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- J Estimated result based on QC data or reported below RL
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TABLE 4-1
POSITIVE RESULTS SUMMARY - MONITORING WELLS, OCTOBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample ID Lab ID	Analyte ⁽¹⁾	Units	Maximum Contaminant Level ⁽²⁾	Target Concentration ⁽³⁾	MW-150T L0610624-03 10/19/2006	MW-151B L0610605-07 10/18/2006	MW-151T L0610605-08 10/18/2006	MW-152B L0610605-09 10/18/2006	MW-152T L0610605-10 10/18/2006	MW-153B L0610611-13 10/18/2006	MW-153T L0610605-11 10/18/2006	MW-154B L0610628-01 10/19/2006
		µg/L	--	--	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,1,1,2-Tetrachloroethane	µg/L	200	--	<10	<1	<1	<1	<1	1.18	1.04	<1
	1,1,1,2-Trichloroethane	µg/L	--	2.2	2040	1.42	<0.5	3.86	4.87	<0.5	<0.5	<0.5
	1,1,2,2-Trichloroethane	µg/L	5	1.9	5.31 J	<1	<1	<1	<1	<1	<1	<1
	1,1-Dichloroethane	µg/L	--	--	<10	<1	<1	<1	<1	0.514 J	0.477 J	<1
	1,1-Dichloroethene	µg/L	7	7	<10	<1	<1	<1	<1	4.87	4.19	<1
	1,2-Dichloroethane	µg/L	5	--	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Acetone	µg/L	--	--	<100	<10	<10	<10	<10	<10	<10	<10
	Benzene	µg/L	--	--	<4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
	Carbon tetrachloride	µg/L	5	3	<10	6.19	0.558 J	<1	<1	<1	<1	<1
	Chlorobenzene	µg/L	100	--	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Chloroform	µg/L	80	12	<3	16.9	0.287 J	1.14	1.2	<0.3	<0.3	<0.3
	cis-1,2-Dichloroethene	µg/L	70	3.5	38.1	1.45	<1	12.7	10.9	0.368 J	<1	<1
	Hexachlorobutadiene	µg/L	--	--	<6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
	MEK (2-Butanone)	µg/L	--	--	<100	<10	<10	<10	<10	<10	<10	<10
	Methylene chloride	µg/L	5	--	<10	<1	<1	<1	<1	<1	<1	<1
	Tetrachloroethene	µg/L	5	2.5	7.13 J	0.621 J	<1	10.8	13.4	<1	<1	<1
	trans-1,2-Dichloroethene	µg/L	100	50	9.79 J	0.282 J	<1	5.96	5.48	<1	<1	<1
	Trichloroethene	µg/L	5	5	1430	10.5	0.502 J	116	12.5	<1	<1	<1
	Vinyl chloride	µg/L	2	--	<10	<1	<1	<1	<1	<1	<1	<1

Notes:

- (1) Samples analyzed for volatile organic compounds by Method 8260B
 - (2) Drinking Water Standards and Health Advisories (USEPA, 2004)
 - (3) Target Concentration (TC) from Dunn Field ROD, Table 2-21G
µg/L micrograms per liter
- Not listed or not analyzed
< Not detected above Reporting Limit (RL)
Results detected at or above RL shown in bold

DOE Flags:

- J Estimated result based on QC data or reported below RL
B Estimated result possibly biased high or false positive based on blank data

TABLE 4-1
 POSITIVE RESULTS SUMMARY - MONITORING WELLS, OCTOBER 2006
 ANNUAL OPERATIONS REPORT - 2006
 DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
 Defense Depot Memphis, Tennessee

Sample ID	Analyte ⁽¹⁾	Units	Maximum Contaminant Levels ⁽²⁾	Target Concentration ⁽³⁾	MW-154T L0610628-02 10/19/2006	MW-155B L0610605-12 10/18/2006	MW-155T L0610605-13 10/18/2006	MW-156B L0610628-03 10/19/2006	MW-156T L0610628-04 10/19/2006	MW-157 L0610624-04 10/19/2006	MW-158AB L0610630-06 10/19/2006	MW-158AT L0610630-07 10/19/2006
1,1,1,2-Tetrachloroethane		µg/L	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	200	--	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	--	2.2	<0.5	4090	3190	<0.5	<0.5	2.64	36.2	410
1,1,2-Trichloroethane		µg/L	5	1.9	<1	58.5	77.4	<1	<1	<1	0.618 J	14.9
1,1-Dichloroethane		µg/L	--	--	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	7	7	<1	0.559 J	<1	<1	<1	<1	0.818 J	0.622 J
1,2-Dichloroethane		µg/L	5	--	<0.5	<0.5	0.297 J	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone		µg/L	--	--	<10	<10	<10	<10	<10	<10	<10	<10
Benzene		µg/L	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride		µg/L	5	3	<1	<1	<1	<1	<1	9.25	0.754 J	<1
Chlorobenzene		µg/L	100	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform		µg/L	80	12	<0.3	2.1	1.57	<0.3	<0.3	30.1	3.64	1.22
cis-1,2-Dichloroethene		µg/L	70	35	<1	72.2	67	<1	<1	13.3	58.3	60.7
Hexachlorobutadiene		µg/L	--	--	<0.6	<0.6	<0.6	<0.6	<0.6	0.65	<0.6	<0.6
MEK (2-Butanone)		µg/L	--	--	<10	<10	<10	<10	<10	<10	<10	<10
Methylene chloride		µg/L	5	--	<1	<1	0.365 J	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	5	2.5	<1	13.8	10.4	<1	<1	2.19	16.1	6.64
trans-1,2-Dichloroethene		µg/L	100	50	<1	20.4	19.3	<1	<1	2.7	22.8	19.1
Trichloroethene		µg/L	5	5	<1	1810	1310	<1	<1	148 J	301	678
Vinyl chloride		µg/L	2	--	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

- (1) Samples analyzed for volatile organic compounds by Method 8260B
 - (2) Drinking Water Standards and Health Advisories (USEPA, 2004)
 - (3) Target Concentration (TC) from Dunn Field ROD, Table 2-21G
- µg/L micrograms per liter
 -- Not listed or not analyzed
 < Not detected above Reporting Limit (RL)
 Results detected at or above RL shown in bold

DOE Flags:

- J Estimated result based on QC data or reported below RL
 B Estimated result possibly biased high or false positive based on blank data

TABLE 4-1
POSITIVE RESULTS SUMMARY - MONITORING WELLS, OCTOBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample ID	Maximum Contaminant Levels ⁽¹⁾	Target Concentration ⁽²⁾	MW-158B L0610630-08 10/19/2006	MW-158T L0610630-09 10/19/2006	MW-159B L0610611-01 10/18/2006	MW-159T L0610611-02 10/18/2006	MW-160 L0610611-03 10/18/2006	MW-161 L0610624-07 10/19/2006	MW-162 L0610630-10 10/19/2006	MW-163 L0610630-13 10/19/2006
Analyte ⁽¹⁾	Units									
1,1,1,2-Tetrachloroethane	µg/L	--	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	200	<1	<1	<1	<1	<1	<10	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	--	3.73	4.41	357	276	9.08	1950	162 J	538
1,1,2-Trichloroethane	µg/L	5	<1	<1	19.6	10.7	<1	3.55 J	0.36 J	17.3
1,1-Dichloroethane	µg/L	--	<1	<1	<1	<1	<1	<10	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<10	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	2.1
Acetone	µg/L	--	<100	<100	<10	<10	<10	<100	<10	18 J
Benzene	µg/L	--	<0.4	<0.4	<0.4	<0.4	<0.4	<4	<0.4	0.843
Carbon tetrachloride	µg/L	5	<1	<1	0.493 J	0.252 J	0.575 J	<5	<1	<1
Chlorobenzene	µg/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5
Chloroform	µg/L	80	0.691	0.673	1.02	0.807	3.35	<3	0.988	0.446
cis-1,2-Dichloroethene	µg/L	70	5.96	5.6	55.4	37	42.5	38.5	18.3	98.6
Hexachlorobutadiene	µg/L	--	<0.6	<0.6	<0.6	<0.6	<0.6	<6	<0.6	<0.6
MEK (2-Butanone)	µg/L	--	<10	<10	<10	<10	<10	<100	<10	10.1
Methylene chloride	µg/L	5	<1	<1	<1	<1	<1	<10	<1	<1
Tetrachloroethene	µg/L	5	8.49	7.22	2.63	0.93 J	19.8	10.1	7.81	4.35
trans-1,2-Dichloroethene	µg/L	100	3.13	2.62	11.2	6.37	17.8	<10	5.05	17.2
Trichloroethene	µg/L	5	77.4	69.3	1400	935	307	1640	445	527
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<10	<1	3.63

Notes:

- (1) Samples analyzed for volatile organic compounds by Method 8260B
 - (2) Drinking Water Standards and Health Advisories (USEPA, 2004)
 - (3) Target Concentration (TC) from Dunn Field ROD, Table 2-21G
- µg/L micrograms per liter
-- Not listed or not analyzed
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Results detected at or above RL shown in bold

DOE Flags:

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TABLE 4-1
 POSITIVE RESULTS SUMMARY - MONITORING WELLS, OCTOBER 2006
 ANNUAL OPERATIONS REPORT - 2006
 DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
 Defense Depot Memphis, Tennessee

Sample ID Lab ID	Analyte ⁽¹⁾	Units	Maximum Contaminant Levels ⁽²⁾	Target Concentration ⁽³⁾	MW-164 L0610624-08 10/19/2006	MW-165AB L0610611-04 10/18/2006	MW-165AT L0610611-05 10/18/2006	MW-165B L0610611-06 10/18/2006	MW-165T L0610611-07 10/18/2006	MW-166A L0610633-02 10/20/2006	MW-166B L0610633-05 10/20/2006	MW-166T L0610633-06 10/20/2006
	1,1,1,2-Tetrachloroethane	µg/L	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,1,1-Trichloroethane	µg/L	200	--	<1	<1	<1	<1	<1	<1	<1	<1
	1,1,2,2-Tetrachloroethane	µg/L	--	2.2	3.05	1.65	0.188 J	3.5	2.63	5.15	9.59	10.2
	1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	0.655 J	0.343 J	<1	0.385 J	0.422 J
	1,1-Dichloroethane	µg/L	--	--	<1	<1	<1	<1	<1	<1	<1	<1
	1,1-Dichloroethene	µg/L	7	7	<1	<1	<1	<1	<1	<1	<1	<1
	1,2-Dichloroethane	µg/L	5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Acetone	µg/L	--	--	<10	<10	<10	<10	<10	<10	<10	<10
	Benzene	µg/L	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
	Carbon tetrachloride	µg/L	5	3	16.8	4.91	0.505 J	<1	3.85	7.06	14	16.5
	Chlorobenzene	µg/L	100	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Chloroform	µg/L	80	12	52.6	7.98	1.95	0.332	7.48	27.7	56.9	68.5
	cis-1,2-Dichloroethene	µg/L	70	35	8.79	10.3	5.06	14.6	12.9	2.14	4.44	5.41
	Hexachlorobutadiene	µg/L	--	--	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
	MEK (2-Butanone)	µg/L	--	--	<10	<10	<10	<10	<10	<10	<10	<10
	Methylene chloride	µg/L	5	--	0.276 J	<1	0.363 B	<1	<1	<1	<1	<1
	Tetrachloroethene	µg/L	5	2.5	2.03	1.35	0.436 J	1.23	1.1	0.792 J	1.44	1.68
	trans-1,2-Dichloroethene	µg/L	100	50	1.49	2.22	0.89 J	2.67	2.84	0.433 J	0.935 J	0.937 J
	Trichloroethene	µg/L	5	5	92.6	165	86.7	146	187	24.3 J	35.6	43.7
	Vinyl chloride	µg/L	2	--	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

- (1) Samples analyzed for volatile organic compounds by Method 8260B
 - (2) Drinking Water Standards and Health Advisories (USEPA, 2004)
 - (3) Target Concentration (TC) from Dunn Field ROD, Table 2-21G
- µg/L micrograms per liter
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TABLE 4-1
POSITIVE RESULTS SUMMARY - MONITORING WELLS, OCTOBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample ID	Maximum Contaminant Level ⁽²⁾	Target Concentration ⁽³⁾	NW-167B 10/18/2006	NW-167T 10/18/2006	MW-168A B 10/20/2006	MW-168A T 10/20/2006	MW-168B 10/19/2006	MW-168T 10/19/2006	MW-169B 10/19/2006	MW-169T 10/19/2006
Lab ID	Date	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
1,1,1,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	<1	<1	0.471 J	12.5	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	<1	0.396 J	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	1.99	22.1	0.941 J	1.07	<1	<1
1,2-Dichloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone		µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Benzene		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride		µg/L	<1	<1	<1	0.257 J	<1	<1	<1	<1
Chlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.46	4.44
Chloroform		µg/L	<0.3	<0.3	<0.3	0.85	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	0.281 J	0.282 J
Hexachlorobutadiene		µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
MEK (2-Butanone)		µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Methylene chloride		µg/L	<1	<1	<1	0.836 J	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	<1	0.289 J	1.32	0.509 J	0.467 J	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

- (1) Samples analyzed for volatile organic compounds by Method 8260B
 - (2) Drinking Water Standards and Health Advisories (USEPA, 2004)
 - (3) Target Concentration (TC) from Dunn Field ROD, Table 2-21G
- µg/L micrograms per liter
 -- Not listed or not analyzed
 < Not detected above Reporting Limit (RL)
 Results detected at or above RL shown in bold

DOE Flags:

- J Estimated result based on QC data or reported below RL
 B Estimated result possibly biased high or false positive based on blank data

TABLE 4-1
 POSITIVE RESULTS SUMMARY - MONITORING WELLS, OCTOBER 2006
 ANNUAL OPERATIONS REPORT - 2006
 DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
 Defense Depot Memphis, Tennessee

Sample ID	Analyte ⁽¹⁾	Units	Maximum Contaminant Levels ⁽²⁾	Target Concentration ⁽³⁾	MW-170B L0610628-05 10/19/2006	MW-170T L0610628-06 10/19/2006	MW-171B L0610624-13 10/19/2006	MW-171T L0610624-14 10/19/2006
1,1,1,2-Tetrachloroethane	µg/L	--	--	--	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	200	--	--	<1	1	<1	0.33 J
1,1,2,2-Tetrachloroethane	µg/L	--	2.2	2.2	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	µg/L	5	1.9	1.9	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	--	--	--	<1	2.15	<1	<1
1,2-Dichloroethane	µg/L	7	7	7	<1	3.52	<1	0.544 J
Acetone	µg/L	5	--	--	<0.5	<0.5	<0.5	<0.5
Benzene	µg/L	--	--	--	<10	<10	<10	<10
Carbon tetrachloride	µg/L	--	--	--	<0.4	<0.4	<0.4	<0.4
Chlorobenzene	µg/L	5	3	3	<1	<1	<1	<1
Chloroform	µg/L	100	--	--	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	µg/L	80	12	12	<0.3	<0.3	<0.3	<0.3
Hexachlorobutadiene	µg/L	70	35	35	<1	<1	<1	<1
MEK (2-Butanone)	µg/L	--	--	--	<0.6	<0.6	<0.6	<0.6
Methylene chloride	µg/L	--	--	--	<10	<10	<10	<10
Tetrachloroethene	µg/L	5	2.5	2.5	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	100	50	50	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	5	<1	<1	<1	<1
Vinyl chloride	µg/L	2	--	--	<1	<1	<1	<1

Notes:

- (1) Samples analyzed for volatile organic compounds by Method 8260B
 - (2) Drinking Water Standards and Health Advisories (USEPA, 2004)
 - (3) Target Concentration (TC) from Dunn Field ROD, Table 2-21G
- µg/L micrograms per liter
 -- Not listed or not analyzed
 < Not detected above Reporting Limit (RL)
 Results detected at or above RL shown in bold

DOE Flags:

- J Estimated result based on QC data or reported below RL
 B Estimated result possibly biased high or false positive based on blank data

TABLE 4-2
POSITIVE RESULTS SUMMARY - RECOVERY WELLS, NOVEMBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Analyte ^a	Sample ID		Maximum Contaminant Levels ^(b)	Target Concentration ^(c)	RW-01		RW-01A		RW-01B		RW-02		RW-03		RW-04	
	Lab ID	Date	Units		L0611238-07 11/8/2006	RW-01	L0611238-08 11/8/2006	RW-01A	L0611238-13 11/8/2006	RW-01B	L0611238-09 11/8/2006	RW-02	L0611238-11 11/8/2006	RW-03	L0611238-10 11/8/2006	RW-04
1,1,1,2-Tetrachloroethane			µg/L	--	<0.5	1.79	0.878	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.792
1,1,2,2-Tetrachloroethane			µg/L	--	<1	2.2	202	0.303 J	<1	<1	99.5	26.7	230	26.7	230	230
1,1,2-Trichloroethane			µg/L	5	<1	1.9	5.55	<1	<1	<1	3.4	1.09	5.91	1.09	5.91	5.91
1,1-Dichloroethene			µg/L	7	<1	7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane			µg/L	5	--	--	0.626	<0.5	<0.5	<0.5	0.268 J	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane			µg/L	--	<0.5	<0.5	0.762	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride			µg/L	5	24.5	12	18.1	15.4	15.4	15.4	9.05	5.03	5.03	5.03	1.56	1.56
Chloroform			µg/L	80	120	12	650	79.1	79.1	79.1	34	2.22	1.96	2.22	1.96	1.96
cis-1,2-Dichloroethene			µg/L	70	2.93	35	8.64	3.86	3.86	3.86	75.1	19.4	18.9	19.4	18.9	18.9
Tetrachloroethene			µg/L	5	6.35	2.5	9.83	3.68	3.68	3.68	1.82	1.24	7.13	1.24	7.13	7.13
trans-1,2-Dichloroethene			µg/L	100	1.67	50	2.47	0.807 J	0.807 J	0.807 J	3.69	1.73	3.97	1.73	3.97	3.97
Trichloroethene			µg/L	5	88	5	209	53.4	53.4	53.4	65	62.7	593	62.7	593	593

Notes:

- (1) Samples analyzed for volatile organic compounds by Method 8260B
(2) Drinking Water Standards and Health Advisories (USEPA, 2004)
(3) Target Concentration (TC) from Dunn Field ROD, Table 2-21G

µg/L micrograms per liter

-- Not listed or not analyzed

< Not detected above Reporting Limit (RL)

Results detected at or above RL shown in bold

DQE Flags:

- J Estimated result based on QC data or reported below RL
B Estimated result possibly biased high or false positive based on blank data

TABLE 4-2
POSITIVE RESULTS SUMMARY - RECOVERY WELLS, NOVEMBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Analyte ⁽¹⁾	Sample ID Lab ID Date	Maximum Contaminant Levels ⁽²⁾	Target Concentration ⁽³⁾	RW-05 L0611238-12 11/8/2006	RW-06 L0611238-01 11/8/2006	RW-07 L0611238-02 11/8/2006	RW-08 L0611238-05 11/8/2006	RW-09 L0611238-06 11/8/2006
1,1,1,2-Tetrachloroethane	µg/L	--	--	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	µg/L	--	2.2	51	0.772	90.3 J	174	3.25
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	1.94	3.3	<1
1,1-Dichloroethane	µg/L	7	7	<1	<1	<1	3.45	18
1,2-Dichloroethane	µg/L	5	--	<0.5	<0.5	0.351 J	<0.5	<0.5
Bromodichloromethane	µg/L	--	--	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	1.14	<1	0.762 J	1.22	0.846 J
Chloroform	µg/L	80	12	1.8	1.87	7.16	12.1	5.51
cis-1,2-Dichloroethene	µg/L	70	35	8.12	18	62.6	162	8.61
Tetrachloroethene	µg/L	5	2.5	6.68	20.7	6.06	4.56	20.4
trans-1,2-Dichloroethene	µg/L	100	50	2.66	6.58	14.7	43.7	3.54
Trichloroethene	µg/L	5	5	290	68.8	153 J	294	40.8

Notes:

- (1) Samples analyzed for volatile organic compounds by Method 8260B
 - (2) Drinking Water Standards and Health Advisories (USEPA, 2004)
 - (3) Target Concentration (TC) from Dunn Field ROD, Table 2-21G
- µg/L micrograms per liter
- Not listed or not analyzed
- < Not detected above Reporting Limit (RL)
- Results detected at or above RL shown in bold

DOE Flags:

- J Estimated result based on QC data or reported below RL
- B Estimated result possibly biased high or false positive based on blank data

TABLE 4-3
EFFLUENT SAMPLE RESULTS
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample Site ID Date Collected	Industrial Permit Discharge Limits		EFFLUENT-0206 2/27/2006	EFFLUENT-0406 4/11/2006	EFFLUENT-0706 7/27/2006	EFFLUENT-1106 11/8/2006
	Monthly Average Maximum Level	Instantaneous Daily Maximum				
<u>pH - F150.1</u>						
pH			6.0	6.5	6	NC
<u>Volatile Organic Compounds - SW8260B µg/L</u>						
1,1,1-Trichloroethane	10	20	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	500	1000	82.8	74.9	130	60.9 J
1,1,2-Trichloroethane	50	100	1.91	1.83	1.73	1.21
1,1-Dichloroethene	50	100	10.3	7.51	7.15	6.79
Carbon tetrachloride	20	40	3.26	2.24	4.06	1.08
Chloroform	100	400	30	21.9	32.2	7.66 J
cis-1,2-Dichloroethene	80	100	60.9	50.5	70.6	66.9 J
Methylene chloride	10	20	ND	ND	1.93	ND
Tetrachloroethene	60	120	17.3	12.6	15.9	15.9
Toluene	20	40	ND	ND	ND	ND
trans-1,2-Dichloroethene	50	100	14.8	11.6	15.5	17.7 J
Trichloroethene	400	800	153 J	127 J	187	151 J
<u>Total Metals - SW6010B µg/L</u>						
Aluminum	1000	2000	-	ND	-	ND
Arsenic	40	100	-	ND	-	ND
Barium	NS	NS	-	103	-	100
Cadmium	10	20	-	ND	-	ND
Calcium	NS	NS	-	24,100	-	21,600
Chromium	200	400	-	3.6 J	-	ND
Copper	200	400	-	23	-	ND
Iron	10,000	20,000	-	588 J	-	138 J
Lead	150	300	-	6.4	-	ND
Magnesium	NS	NS	-	12,300	-	11,300
Manganese	NS	NS	-	38.4	-	6.61 J
Mercury	1	2	-	ND	-	ND
Nickel	100	300	-	8.5	-	ND
Potassium	NS	NS	-	823	-	774 J
Sodium	NS	NS	-	25,100	-	22,000
Zinc	300	1000	-	508 J	-	44.7
<u>Semi-volatile Organic Compounds - SW8270B µg/L</u>						
Bis (2-ethylhexyl) Phthalate	10	20	-	ND	-	ND
Di-n-butyl Phthalate	30	60	-	8.53 J	-	ND
Naphthalene	10	20	-	ND	-	ND
Phenol	10	20	-	ND	-	ND

Notes:

- J Estimated result based on QC data or below the reporting limit.
 ND Not detected above the reporting limit
 NS Discharge limit not established in agreement
 NC Not Collected
 - Not Analyzed

TABLE 5-1
SYSTEM REPAIRS, 2003 THROUGH 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Recovery Well	Year	Percent Operational	REPAIRS/REPLACEMENT						
			Pump	Flowmeter	Flowmeter Actuator	Pressure Transducer	Level Relay	Flow Relay	Controller
RW-1	2003	67	1	1					
	2004	95		1					
	2005	100	1		1	1	1	1	
	2006	100							
RW-1A	2003	100							
	2004	97							
	2005	100	1		1	1	1		
	2006	99		1					
RW-1B	2003	100							
	2004	85							
	2005	52	1	1	1	1	1		
	2006	94	1						
RW-2	2003	100							
	2004	83							
	2005	42	2	1		1	1		3
	2006	92		1			1		
RW-3	2003	100							
	2004	98		1					2
	2005	100			1	1	1		
	2006	100		2					
RW-4	2003	75							
	2004	78	1						2
	2005	87	1	2			1		
	2006	81		1					
RW-5	2003	100		2					
	2004	95		1					
	2005	55	1	1	2	1	1		1
	2006	96	1	1					
RW-6	2003	100							
	2004	97							
	2005	100							
	2006	100							
RW-7	2003	100							
	2004	92	1						
	2005	80	2	2	1				
	2006	84	2	1					
RW-8	2003	100							
	2004	88	1						
	2005	100							
	2006	95	1	1					
RW-9	2003	100	1						
	2004	98		1					
	2005	96	1	2					
	2006	100		1	1				

TABLE 5-2
ANALYTICAL RESULTS BY SAMPLE INTERVAL
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		Top	Bottom
MW-07	DCE	18.5	-
	CF	4.49	-
	PCE	34.5	-
	TCE	19.6	-
MW-31	DCE	23.2	30.6
	PCE	0.714 J	7.58
	TCE	3.85	12
MW-32	PCA	21.7	-
	CT	12.3	-
	CF	86	-
	cDCE	3.53	-
	PCE	1.63	-
	TCE	38	-
MW-33	None	ND	-
MW-37	None	ND	-
MW-40	None	ND	-
MW-43	None	ND	-
MW-44	CT	1.2	-
	CF	0.467	-
MW-54	PCA	572	-
	TCA	2.54	-
	CT	1.9	-
	CF	1.45	-
	cDCE	19.6	-
	PCE	2.78	-
	tDCE	3.88	-
MW-57	TCE	604	-
	CT	31	-
	CF	5.67	-
	PCE	4.02	-
MW-67	TCE	28.7	-
	None	ND	-
MW-68	PCA	5.67	0.457 J
	CF	1.57	0.165 J
	cDCE	1.06	ND
	PCE	1.63	ND
	TCE	5.76	0.485 J
MW-69	PCE	2.03	0.688 J
	TCE	9.84	2.09

TABLE 5-2
ANALYTICAL RESULTS BY SAMPLE INTERVAL
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		Top	Bottom
MW-70	PCA	9200	5850
	TCA	10.1	25.7
	DCE	ND	1.89
	CF	3.79	2.42
	cDCE	101	122
	PCE	29.5	12.7
	tDCE	19.7	17.4
	TCE	3390	2180
	VC	ND	64.2
MW-71	PCA	22.9	-
	TCA	1.16	-
	CT	37.8	-
	CF	303	-
	cDCE	11.7	-
	PCE	7.34	-
	tDCE	3.07	-
	TCE	158 J	-
MW-76	PCA	2.58	-
	PCE	1.84	-
	TCE	4.9	-
MW-77	PCA	14300	-
	TCA	17.4	-
	CF	4.77	-
	cDCE	151	-
	PCE	46.9	-
	tDCE	19.1	-
	TCE	6500	-
MW-79	DCE	10.6	-
	TCE	1.63	-
MW-130	DCE	61.6	-
	PCE	112	-
	TCE	60.5	-
MW-144	PCA	2520	-
	TCA	60.4	-
	cDCE	98.2	-
	PCE	11.4	-
	tDCE	19.2	-
	TCE	1890	-

TABLE 5-2
ANALYTICAL RESULTS BY SAMPLE INTERVAL
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		Top	Bottom
MW-145	None	ND	ND
MW-147	PCA	87.9	-
	TCA	1.39	-
	CF	2.66	-
	cDCE	41.2	-
	PCE	3.92	-
	tDCE	10.3	-
	TCE	81.3	-
MW-148	PCA	3.72	0.789
	CF	1.74	0.146 J
	cDCE	34.3	ND
	PCE	7.53	0.481 J
	tDCE	10.7	ND
	TCE	74.1	2.28
MW-149	PCA	21.3	23.1
	CT	12.9	12.2
	CF	81	95.5
	cDCE	3.15	7.81
	PCE	1.44	1.27
	tDCE	0.794 J	1.13
	TCE	40	45.4
MW-150	PCA	2040	8480
	TCA	5.31 J	14.6
	DCE	ND	0.619 J
	CF	ND	2.22
	cDCE	38.1	77.1
	PCE	7.13 J	13
	tDCE	9.79 J	13.9
	TCE	1430	2910
MW-151	PCA	ND	1.42
	CT	0.558 J	6.19
	CF	0.287 J	16.9
	cDCE	ND	1.45
	TCE	0.502 J	10.5

TABLE 5-2
ANALYTICAL RESULTS BY SAMPLE INTERVAL
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		Top	Bottom
MW-152	PCA	4.87	3.86
	CF	1.2	1.14
	cDCE	10.9	12.7
	PCE	13.4	10.8
	tDCE	5.48	5.96
	TCE	125	116
MW-153	DCE	4.19	4.87
MW-154	None	ND	ND
MW-155	PCA	3190	4090
	TCA	77.4	58.5
	CF	1.57	2.1
	cDCE	67	72.2
	PCE	10.4	13.8
	tDCE	19.3	20.4
MW-156	TCE	1310	1810
	None	ND	ND
MW-157	PCA	2.64	-
	CT	9.25	-
	CF	30.1	-
	cDCE	13.3	-
	PCE	2.19	-
	tDCE	2.7	-
	TCE	148 J	-
MW-158A	PCA	410	36.2
	TCA	14.9	0.618 J
	CF	1.22	3.64
	cDCE	60.7	58.3
	PCE	6.64	16.1
	tDCE	19.1	22.8
MW-158	TCE	678	301
	PCA	4.41	3.73
	CF	0.673	0.691
	cDCE	5.6	5.96
	PCE	7.22	8.49
	tDCE	2.62	3.13
	TCE	69.3	77.4

TABLE 5-2
ANALYTICAL RESULTS BY SAMPLE INTERVAL
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		Top	Bottom
MW-159	PCA	276	357
	TCA	10.7	19.6
	CF	0.807	1.02
	cDCE	37	55.4
	PCE	0.93 J	2.63
	tDCE	6.37	11.2
	TCE	935	1400
MW-160	PCA	9.08	-
	CF	3.35	-
	cDCE	42.5	-
	PCE	19.8	-
	tDCE	17.8	-
	TCE	307	-
MW-161	PCA	1950	-
	TCA	3.55 J	-
	cDCE	38.5	-
	PCE	10.1	-
	TCE	1640	-
MW-162	PCA	162 J	-
	CF	0.988	-
	cDCE	18.3	-
	PCE	7.81	-
	tDCE	5.05	-
	TCE	445	-
MW-163	PCA	538	-
	TCA	17.3	-
	CF	0.446	-
	cDCE	98.6	-
	PCE	4.35	-
	tDCE	17.2	-
	TCE	527	-
	VC	3.63	-
MW-164	PCA	3.05	-
	CT	16.8	-
	CF	52.6	-
	cDCE	8.79	-
	PCE	2.03	-
	tDCE	1.49	-
	TCE	92.6	-

TABLE 5-2
ANALYTICAL RESULTS BY SAMPLE INTERVAL
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		Top	Bottom
MW-165A	PCA	0.188 J	1.65
	CT	0.505 J	4.91
	CF	1.95	7.98
	cDCE	5.06	10.3
	PCE	0.436 J	1.35
	tDCE	0.89 J	2.22
	TCE	86.7	165
MW-165	PCA	2.63	3.5
	TCA	0.343 J	0.655 J
	CT	3.85	ND
	CF	7.48	0.332
	cDCE	12.9	14.6
	PCE	1.1	1.23
	tDCE	2.84	2.67
MW-166	TCE	187	146
	PCA	10.2	9.59
	CT	16.5	14
	CF	68.5	56.9
	cDCE	5.41	4.44
	PCE	1.68	1.44
MW-166A	TCE	43.7	35.6
	PCA	5.15	-
	CT	7.06	-
	CF	27.7	-
	cDCE	2.14	-
MW-167	TCE	24.3 J	-
	NONE	ND	ND
	DCE	1.07	0.941 J
	DCE	22.1	1.99
MW-168A	CF	0.85	ND
	TCE	1.32	0.289 J
MW-169	None	ND	ND
MW-170	DCE	3.52	ND
MW-171	None	ND	ND

Notes:

(1) Passive Diffusion Bag Sample Interval, refer to Table 3-3 for depth

ND No COCs detected above reporting limits

Bold Concentrations above MCL or Target Concentration (PCA only)

TABLE 5-3
ANALYTICAL RESULTS, EISR AREA
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well ID	Sample Date	Sample Depth	Sample Event	PCE (µg/L)	TCE (µg/L)	Cis-1,2-DCE (µg/L)	Trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	1,1,2,2-PCA (µg/L)	1,1,2-TCA (µg/L)	Carbon Tetrachloride (µg/L)	Chloroform (µg/L)
UPGRADIENT													
MW-147	8/17/2004	76.1	Baseline	5.3 J	120	57	20	2.2 B	<5.6	56	<5.6	4.3 J	12
	1/27/2005	73.9	1st Post ZVI Injection	3.4	77	48	12	1.2	<1	140	1.8	0.36 J	3.4
	3/22/2005	75.0	2nd Post ZVI Injection	3.4	73	39	15	2.7	<1	180	2.2	0.45 J	3
	6/17/2005	73.7	O&M PDB Sample	4.44	124	65.1	15.9	2.07	<1	251 J	2.62	<1 J	5.94 B
	11/18/2005	73.7	O&M PDB Sample	4.83	121	95	20.5	3.32	<1	185	3.9	1.27	5.1 B
	4/12/2006	73.7	O&M PDB Sample	3.61	106	74.8	14.4	1.76	<1	311	4.36	<1	5.53 B
	10/18/2006	73.7	IRA Semi-annual Event	3.92	81.3	41.2	10.3	0.657 J	<1	87.9	1.39	0.364 J	2.66
MW-144	8/12/2004	74.0	Baseline	<250	2800	68 J	<250	<250	<250 J	7700	<250	<250	<250
	1/27/2005	75.0	1st Post ZVI Injection	10 J	2100	69	15	<12	<12	4600	10 J	<12	3.2 J
	3/23/2005	75.0	2nd Post ZVI Injection	13 J	4500	74	15 J	<25	<25	7700	14 J	<25	4.3 J
	6/12/2005	74.4	O&M PDB Sample	<10 J	2610	70.2	14.1	<10	<10	5810	<10 J	<10	<10
	11/14/2005	74.4	O&M PDB Sample	10.2	2280	54.3	<20	<20	<20	4970	14.1 J	<20	<20
	4/12/2006	74.4	O&M PDB Sample	19.9 J	2650	83.9	7.28 J	<1	<1	5040	9.04	1.03	2.72 B
	10/19/2006	74.4	IRA Semi-annual Event	11.4	1890	98.2	19.2	<10	<10	2520	60.4	<10	1.45 J
MW-157	8/18/2004	75.5	Baseline	1.9 J	120	11	1.9 J	<6.7	<6.7	5.7 J	<6.7	9.4	14
	1/27/2005	73.4	1st Post ZVI Injection	2	160	13	2.4	<1	<1	3.8	0.33 J	9.9	12
	3/23/2005	73.0	2nd Post ZVI Injection	1.6	200	11	1.9	<1	<1	3.6	0.26 J	5.2	7.5
	6/15/2005	73.3	O&M PDB Sample	1.32	157	10.9	2.58	<1	<1	3.18 B	<1	<1	10.2
	11/17/2005	73.3	O&M PDB Sample	1.49	117	9.35	1.3	<1	<1	2.22	<1	4.56	8.18
	4/12/2006	73.3	O&M PDB Sample	1.59	132	9.75	2.2	<1	<1	2.28	<1	5.61	10.8
	10/19/2006	73.3	IRA Semi-annual Event	2.19	148 J	13.3	2.7	<1	<1	2.64	<1	9.25	30.1
MW-148	8/17/2004	86.5	Baseline	3.7	31	13	4.9	<1	<1	0.72 J	<1	0.73 J	0.6 J
	1/27/2005	84.0	1st Post ZVI Injection	4.5	27	12	3.8	<1	<1	0.63 J	<1	0.19 J	0.88 J
	3/22/2005	83.5	2nd Post ZVI Injection	3.3	13	4.8	1.9	<1	<1	0.37 J	<1	<1	0.58 B
	6/17/2005	79.1	O&M PDB Sample	6.44	160	95.2	26.8	<1 J	<1	15.4	1.03	<1 J	3.07 B
	6/17/2005	85.8	O&M PDB Sample	<1	1.17 B	<1	<1	<1	<1	<1 J	<1	<1	<1
	11/18/2005	79.5	O&M PDB Sample	3.93	42	23.2	6.4	<1	<1	2.87	<1	<1	1.3 B
	11/18/2005	85.8	O&M PDB Sample	<1	1.01	<1	<1	<1	<1	<1	<1	<1	<1
	4/12/2006	79.5	O&M PDB Sample	2.88	21.1	10.4	3.18	<1	<1	2.47	<1	<1	0.861 B
	4/12/2006	85.8	O&M PDB Sample	0.351 J	1.12	<1	<1	<1	<1	0.416 J	<1	<1	<1
	10/18/2006	79.5	IRA Semi-annual Event	7.53	74.1	34.3	10.7	<1	<1	3.72	0.316 J	0.267 J	1.74
UPGRADIENT EDGE OF INJECTION ZONE													
MW-160	10/13/2004	82.0	Baseline	12	240	31	17	<10	<10	30	<10	<10	<10
	1/28/2005	81.8	1st Post ZVI Injection	21	290	38	18	<1	<1	53	0.23 J	0.79 J	2.7
	3/22/2005	82.0	2nd Post ZVI Injection	15	190	21	10	<1	<1	29	<1	0.48 J	1.7
	6/17/2005	80.8	O&M PDB Sample	14.7	448	35.7	16.3	<1	<1	35.4	<1	<1 J	2.33 B
	11/18/2005	80.8	O&M PDB Sample	14.7	161	30.8	12.2	<1	<1	13.4	<1	1.01	2.26 B
	4/12/2006	80.8	O&M PDB Sample	13	278	45	18.1	0.538 J	<1	23.1	<1	0.729 J	3.29 B
	10/18/2006	80.8	IRA Semi-annual Event	19.8	307	42.5	17.8	<1	<1	9.08	<1	0.575 J	3.35
MW-150	8/18/2004	90.4	Baseline	<250	3000	74 J	<250	<250	<250	8000 J	<250	<250	<250
	1/27/2005	86.0	1st Post ZVI Injection	<20	690	84	22	<20	<20	6700	6.9 J	<20	<20
	3/23/2005	85.5	2nd Post ZVI Injection	6.4 J	2100	52	9.6 J	<20	<20	6600	5.1 J	<20	3.3 J
	6/17/2005	82.2	O&M PDB Sample	<10	983	44.7	<10 J	<10	<10	3050	<10	<10	<10
	6/17/2005	92.7	O&M PDB Sample	<10 J	2060	57	13.8	<10	<10	4790	<10 J	<10	<10
	11/19/2005	82.2	O&M PDB Sample	2.47	639	32.7	5.78	<1	<1	284	11.3	<1	1.36 B
	11/19/2005	92.7	O&M PDB Sample	10.6	1700	64.3	16.7	<10	<10	3080	16.3	<10	<10
	4/12/2006	82.2	O&M PDB Sample	4.09	747	74.2	8.66	<1	<1	1090	10.5	<1	0.871 B
	4/12/2006	92.7	O&M PDB Sample	10.1	1150	54.1	11.1	<1	<1	2940	5.7	0.413 J	2.09 B
	10/19/2006	92.7	IRA Semi-annual Event	13	2910	77.1	13.9	0.619 J	<1	8480	14.6	<1	2.22

TABLE S-3
ANALYTICAL RESULTS, EISR AREA
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Well ID	Sample Date	Sample Depth	Sample Event	PCE (µg/L)	TCE (µg/L)	Cis-1,2-DCE (µg/L)	Trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	1,1,2,2-PCA (µg/L)	1,1,2-TCA (µg/L)	Carbon Tetrachloride (µg/L)	Chloroform (µg/L)
MW-54	8/14/2004	92.5	Baseline	<100	2200	65 J	<100	<100	<100	2300	<100	<100	<100
	1/27/2005	89.0	1st Post ZVI Injection	<10	300	23	2.9 J	<10	<10	3000	6 J	<10	<10
	3/23/2005	89.5	2nd Post ZVI Injection	5.8 J	1300	41	6.5 J	<8.3	<8.3	2100	6.1 J	<8.3	3 J
	6/17/2005	89.5	O&M PDB Sample	2.77	729	35.8	5.94	<1	<1	1220	3.68	<1 J	1.52 B
	11/18/2005	89.5	O&M PDB Sample	4.42	478 J	25.4	4.18	<1	<1	853	3.44	1.3	1.46 B
	4/13/2006	89.5	O&M PDB Sample	2.98	671	19.1	4.38	<1	<1	605	3.91	0.944 J	1.14 B
	10/19/2006	89.5	IRA Semi-annual Event	2.78	604	19.6	3.88	<1	<1	572	2.54	1.9	1.45
INJECTION ZONE													
MW-155	8/16/2004	93.7	Baseline	<77	1000	48 J	<77	<77	<77	2100	<77	<77	<77
	10/13/2004	79.0	Baseline	<100	1000	55 J	<100	<100	<100	2000	<100	<100	<100
	10/13/2004	86.8	Baseline	<100	950	35 J	<100	<100	<100	1500	<100	<100	<100
	1/26/2005	87.0	1st Post ZVI Injection	<1	32	1.8	0.29 J	<1	<1	470 J	0.59 J	<1	<1
	3/23/2005	87.0	2nd Post ZVI Injection	0.6 J	550	27	4.5	<2.5	<2.5	690	1.7 J	<2.5	0.68 B
	6/17/2005	78.6	O&M PDB Sample	3.04	1750	67.5	15.1	<1	<1	2220	4.54	<1	1.5 B
	6/17/2005	94.6	O&M PDB Sample	1.01	1410	50.5	10.9	<1	<1	1650	3.24	<1	1.08 B
	11/19/2005	78.6	O&M PDB Sample	11.2	1560	53.9	14.5	<10	<10	3530	9.95 J	<10	<10
	11/19/2005	94.6	O&M PDB Sample	8.11	1130	38.5	9.91	<1	<1	1680	7.91	<1	1.64 B
	4/13/2006	78.6	O&M PDB Sample	5.93	865	35.1	8.66	<1	<1	1880	7.5	<1	1.51 B
	4/13/2006	94.6	O&M PDB Sample	5.06	572	29	7.06	<1	<1	581	7.1	<1	1.21 B
	10/18/2006	93.5	IRA Semi-annual Event	13.8	1810	72.2	20.4	0.559 J	<1	4090	58.5	<1	2.1
DOWNGRADE EDGE OF INJECTION ZONE													
MW-159	10/11/2004	89.0	Baseline	<150	1700	100 J	<150	<150	<150	3500	<150	<150	<150
	1/26/2005	90.5	1st Post ZVI Injection	4 J	830	62	12	<6.2	<6.2	2000 J	6.3	<6.2	2.9 J
	3/24/2005	90.4	2nd Post ZVI Injection	7.1	1700	80	15	<7.1	<7.1	2200	7.8	<7.1	4.2 J
	6/17/2005	81.1	O&M PDB Sample	1.82	691	39.4	9.78	<1	<1	1830	3.27	<1 J	1.04 B
	6/17/2005	97.1	O&M PDB Sample	1.56	531	26.7	6.57	<1	<1	659	1.76	<1 J	1.27 B
	11/19/2005	81.1	O&M PDB Sample	2.33	552	46.7	5.76	<1	<1	421	2.25	0.927	1.6 B
	12/8/2005	97.1	O&M PDB Sample	0.935	120	10.5	1.73	<1	<1	1.25	<1	4.13	12.1
	4/13/2006	81.1	O&M PDB Sample	1.71	1520	36.4	7.64	<1	<1	847	10.4	<1	1.22 B
	4/13/2006	97.1	O&M PDB Sample	1.33	594	20.4	4.14	<1	<1	549	2.5	<1	1.14 B
	10/18/2006	97.1	IRA Semi-annual Event	2.63	1400	55.4	11.2	<1	<1	357	19.6	0.493 J	1.02
MW-158	10/9/2004	92.5	Baseline	1.2	20	2.2	1.1	<1	<1	15	<1	<1	0.47 B
	10/13/2004	99.0	Baseline	1.8	30	3	1.3	<1	<1	21	<1	<1	0.29 J
	1/25/2005	96.0	1st Post ZVI Injection	2.3	33	3.1	1.3 J	<1.4	<1.4	24	<1.4	<1.4	0.38 J
	3/21/2005	98.5	2nd Post ZVI Injection	3.3	30	3.3	1.6	<1	<1	11	<1	<1	0.41 B
	6/17/2005	93.1	O&M PDB Sample	3.67	30.7	5.13	2.32	<1	<1	4.39	<1	<1	<1
	6/17/2005	104.1	O&M PDB Sample	1.93	32	5.16	2.52	<1	<1	3.74	<1	<1	<1
	11/18/2005	93.1	O&M PDB Sample	6.05	77.8	9.31	3.38	<1	<1	5.54	<1	<1	1.07 B
	11/18/2005	104.1	O&M PDB Sample	5.05	74.6	7.17	2.99	<1	<1	5.44	<1	<1	<1
	4/13/2006	93.1	O&M PDB Sample	7.19	52.6	4.87	2.4	<1	<1	6.36	<1	<1	0.738 B
	4/13/2006	104.1	O&M PDB Sample	9.28	76.3	7.74	3.62	<1	<1	3.78	<1	<1	1 B
	10/19/2006	104.1	IRA Semi-annual Event	8.49	77.4	5.96	3.13	<1	<1	3.73	<1	<1	0.691

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Well ID	Sample Date	Sample Depth	Sample Event	PCE (µg/L)	TCE (µg/L)	Cis-1,2-DCE (µg/L)	Trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	1,1,2,2-PCA (µg/L)	1,1,2-TCA (µg/L)	Carbon Tetrachloride (µg/L)	Chloroform (µg/L)
MW-158A	10/10/2004	80.0	Baseline	<20	340	27	9.1	<20	<20	560	<20	<20	<20
	10/12/2004	86.0	Baseline	5.7J	360	43	17	<15	<15	270	<15	<15	<15
	1/24/2005	85.0	1st Post ZVI Injection	3.2	58	11	4.3	<2	<2	77	<2	<2	0.88 J
	3/21/2005	85.0	2nd Post ZVI Injection	12	200	33	15	<1	<1	96	0.24 J	0.55 J	2.4
	6/16/2005	80.8	O&M PDB Sample	2.32	470	37.1	9.54	<1 J	<1	736	2.5	<1	1.12 B
	6/16/2005	91.4	O&M PDB Sample	5.63	185	28	7.26	<1	<1	193	<1 J	<1	1.28 B
	11/18/2005	80.8	O&M PDB Sample	<10	492	38	<10	<10	<10	844	4.5	<10	<10
	11/18/2005	91.4	O&M PDB Sample	17.8	374	45.5	13.6	<10	<10	64.4	<10	<10	3.47 B
	4/13/2006	80.8	O&M PDB Sample	4.69	689	49.7	14	<1	<1	681	<1	<1	1.47 B
	4/13/2006	91.4	O&M PDB Sample	15	273	32.6	13.8	<1	<1	43.1	<1	<1	2.62 B
	10/19/2006	81.5	IRA Semi-annual Event	6.64	678	60.7	19.1	0.622 J	<1	410	14.9	<1	1.22
DOWNGRADE													
MW-149	8/18/2004	98.7	Baseline	1.6 J	38	3.8 J	<5	<5	<5	27 J	<5	12	110
	1/27/2005	91.0	1st Post ZVI Injection	1.8	45	4	0.81 J	<1	<1	37	0.87 J	14	140
	4/12/2005	91.4	2nd Post ZVI Injection	1.6	35	3.1	0.63 J	<1	<1	27	0.64 J	16	79
	6/17/2005	83.6	O&M PDB Sample	1.01	23.1	2.57	<1 J	<1	<1	18.1	<1 J	10.7	64
	6/17/2005	99.6	O&M PDB Sample	<1 J	68.1	20.4	2.37	<1	<1	50.4	1.66	15.7	167
	11/19/2005	83.6	O&M PDB Sample	1.84	44.5	4.36	0.894	<1	<1	29.2	0.83	15.1	102
	11/19/2005	99.6	O&M PDB Sample	2.13	75.4	16.6	2.21	<1	<1	38.3	1.62	22	159
	4/13/2006	83.6	O&M PDB Sample	1.3	32.1	3.42	<1	<1	<1	11.4	<1	10.3	50
	4/13/2006	99.6	O&M PDB Sample	1.02	57.1	11.3	1.48	<1	<1	30.3	1.23	12.6	122
	10/19/2006	98.5	IRA Semi-annual Event	1.27	45.4	7.81	1.13	<1	<1	23.1	0.686 J	12.2	95.5
MW-166	11/18/2004	92.4	Baseline	0.79 J	12	4.3	0.49 J	<1	<1	4.2	0.32 J	0.83 J	30
	1/27/2005	92.5	1st Post ZVI Injection	0.68 J	10	3.4	0.41 J	<1	<1	3.7	<1	2.9	24
	3/23/2005	90.6	2nd Post ZVI Injection	0.87 J	11	2.6	0.63 J	<1	<1	3.5	<1	1.9	11
	6/17/2005	87.3	O&M PDB Sample	<1	6.27	1.27	<1	<1	<1	<1	<1	1.68	9.01
	6/17/2005	97.8	O&M PDB Sample	<1	5.78	1.51	<1	<1	<1	1.2	<1	<1	1.03 B
	11/19/2005	87.3	O&M PDB Sample	0.498	6.67	3.43	<1	<1	<1	1.48	<1	1.17	7.54
	11/19/2005	97.8	O&M PDB Sample	0.561	6.92	2.49	0.438	<1	<1	0.822	<1	<1	5.27
	4/13/2006	87.3	O&M PDB Sample	1.24	38	4.41	0.826 J	<1	<1	13.4	<1	10.6	79.3
	4/13/2006	97.8	O&M PDB Sample	<1	35.8	5.21	1.17	<1	<1	12.5	<1	8.54	65.8
	10/20/2006	87.3	IRA Semi-annual Event	1.68	43.7	5.41	0.937 J	<1	<1	10.2	0.422 J	16.5	68.5
MW-166A	11/19/2004	75.7	Baseline	0.24 J	5.2	0.77 J	<1	<1	<1	1.4	<1	<1	13.3
	1/27/2005	96.5	1st Post ZVI Injection	0.8 J	19	2.6	0.52 J	<1	<1	3.9	<1	6.1	37
	3/23/2005	75.8	2nd Post ZVI Injection	0.9 J	24	2.8	0.65 J	<1	<1	3.9	<1	8.3	38
	6/17/2005	75.3	O&M PDB Sample	<1 J	19.8	3.08	<1 J	<1	<1	3.08	<1	6.91	31.3
	11/19/2005	75.3	O&M PDB Sample	0.516	17.6	1.89	0.482	<1	<1	1.89	<1	3.5	17.2
	4/13/2006	75.3	O&M PDB Sample	1.06	25.8	2.33	<1	<1	<1	13.6	<1	9.75	57
	10/20/2006	75.3	IRA Semi-annual Event	0.792 J	24.3 J	2.14	0.433 J	<1	<1	5.15	<1	7.06	27.7
MW-151	8/16/2004	95.1	Baseline	<1	2.2	0.22 J	<1	<1	<1	<1	<1	2.7	3.3
	1/25/2005	80.0	1st Post ZVI Injection	0.4 J	6.3	0.92 J	<1	<1	<1	0.23 J	<1	4.7	10
	3/22/2005	87.0	2nd Post ZVI Injection	0.48 J	7.2	0.96 J	0.25 J	<1	<1	0.28 J	<1	5.3	11
	6/17/2005	78.5	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/17/2005	94.5	O&M PDB Sample	<1	1.31	<1	<1	<1	<1	<1	<1	<1 J	2.69 B
	11/19/2005	78.5	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/19/2005	94.5	O&M PDB Sample	0.415	4.67 B	1	<1	<1	<1	<1	<1	4.78	8.04
	4/13/2006	78.5	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	4/13/2006	94.5	O&M PDB Sample	<1	8.75	1.22	<1	<1	<1	<1	<1	4.47	11.4
	10/18/2006	94.5	IRA Semi-annual Event	0.621 J	10.5	1.45	0.282 J	<1	<1	1.42	<1	6.19	16.9

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Well ID	Sample Date	Sample Depth	Sample Event	PCE (µg/L)	TCE (µg/L)	Cis-1,2-DCE (µg/L)	Trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	1,1,2,2-PCA (µg/L)	1,1,2,2-TCA (µg/L)	Carbon Tetrachloride (µg/L)	Chloroform (µg/L)
MW-165	11/21/2004	96.0	Baseline	2.3 J	64	7.1 J	<9.1	<9.1	<9.1	24	<9.1	11	140
	1/25/2005	95.2	1st Post ZVI Injection	1.8 J	48	10	1.3 J	<2	<2	8.9	0.74 J	8	64
	3/21/2005	96.1	2nd Post ZVI Injection	2.1	53	11	2.2	<1	<1	12	0.55 J	7.8	58
	6/16/2005	89.9	O&M PDB Sample	<1	37.2	6.22	1.13	<1	<1	21.8	1.16	1.67	77
	6/16/2005	100.4	O&M PDB Sample	<1	28.1	7.64	2.49	<1	<1	12.3	<1 J	<1	26.5
	11/18/2005	89.9	O&M PDB Sample	0.916	46.5	8.06	0.991	<1	<1	21.8	1.48	2.68	65.4
	11/18/2005	100.4	O&M PDB Sample	1.04	42.3	7.75	1.64 J	<1	<1	21.2	1.58	<1	101 B
	4/13/2006	89.9	O&M PDB Sample	0.892 J	60.4	8.65	1.64	<1	<1	5.81	1.51	<1	<1
	4/13/2006	100.4	O&M PDB Sample	1.27	54.2	10.9	2.07	<1	<1	8	1.24	<1	<1
	10/18/2006	89.9	IRA Semi-annual Event	1.1	187	12.9	2.84	<1	<1	2.63	0.343 J	3.85	7.48
MW-165A	11/18/2004	79.5	Baseline	1.3 J	69	13	1.7 J	<2	<2	7.8	<2	6.4	24
	1/24/2005	79.0	1st Post ZVI Injection	1.1 J	53	9.3	1.3 J	<2	<2	5.4	<2	6.9	15
	3/21/2005	78.0	2nd Post ZVI Injection	1.4	64	10	1.8	<1	<1	5.5	0.37 J	9.8	24
	6/16/2005	73.9	O&M PDB Sample	<1	17.9	1.83	<1	<1	<1	<1 J	<1	<1 J	3.7 B
	6/16/2005	84.5	O&M PDB Sample	<1	46.7	6.05	<1 J	<1	<1	12	<1	4.63	48.5
	11/18/2005	73.9	O&M PDB Sample	<1	28.5	2.41	<1	<1	<1	<1	<1	1.35	3.52 B
	11/18/2005	84.5	O&M PDB Sample	0.955	88.7	13.5	1.31	<1	<1	4.42	<1	6.69	12.7
	4/13/2006	73.9	O&M PDB Sample	<1	48	3.09	0.73 J	<1	<1	<1	<1	1.16	1.96 B
	4/13/2006	84.5	O&M PDB Sample	0.608 J	69.8	6.05	1.15	<1	<1	1.14	<1	1.93	5.72 B
	10/18/2006	84.5	IRA Semi-annual Event	1.35	165	10.3	2.22	<1	<1	1.65	<1	4.91	7.98
MW-152	8/15/2004	107.4	Baseline	5.4	76	9.2	4.1	<3.3	<3.3	11	<3.3	2.1 J	0.97 J
	10/10/2004	98.5	Baseline	4.1	70	6.9	3.4 J	<5	<5	<5	<5	<5	<5
	10/11/2004	91.3	Baseline	3.1 J	78	7.7	4.6 J	<5	<5	15	<5	<5	<5
	10/14/2004	98.8	Baseline	5.9	92	9	4.1 J	<5	<5	12	<5	<5	<5
	10/14/2004	91.3	Baseline	--	--	--	--	--	--	--	--	--	--
	1/26/2005	99.0	1st Post ZVI Injection	7.8	110	14	6.6	<1	<1	9.3 J	<1	0.39 J	1.5
	3/22/2005	101.0	2nd Post ZVI Injection	5.8	59	10	5.1	<1	<1	6.5	<1	0.24 J	0.98 B
	6/16/2005	92.9	O&M PDB Sample	1.06	17.6	2.97	1.12	<1	<1	5.32	<1	<1	<1
	6/16/2005	108.9	O&M PDB Sample	1.74	19.3	4.22	1.87	<1	<1	3.4	<1	<1	<1
	11/18/2005	92.9	O&M PDB Sample	11.7	159	29	13.5	<1	<1	12	<1	1	2.19 B
	11/18/2005	108.9	O&M PDB Sample	5.27	71	12.2	4.43	<1	<1	4.95	<1	<1	1.08 B
	4/13/2006	92.9	O&M PDB Sample	11.3	161	18.7	9.62	<1	<1	8.16	<1	<1	1.76 B
	4/13/2006	108.9	O&M PDB Sample	10.4	147	15.6	7.1	<1	<1	12.4	<1	<1	1.36 B
	10/18/2006	92.9	IRA Semi-annual Event	13.4	125	10.9	5.48	<1	<1	4.87	<1	<1	1.2
MW-145	8/16/2004	95.2	Baseline	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1/27/2005	86.0	1st Post ZVI Injection	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	3/23/2005	90.0	2nd Post ZVI Injection	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/16/2005	78.6	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/16/2005	94.6	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/17/2005	78.6	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/17/2005	94.6	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	4/13/2006	78.6	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	4/13/2006	94.6	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/18/2006	78.6	IRA Semi-annual Event	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.3

TABLE S-3
ANALYTICAL RESULTS, EISR AREA
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Well ID	Sample Date	Sample Depth	Sample Event	PCE (µg/L)	TCE (µg/L)	Cis-1,2-DCE (µg/L)	Trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	1,1,2,2-PCA (µg/L)	1,1,2-TCA (µg/L)	Carbon Tetrachloride (µg/L)	Chloroform (µg/L)
MW-167	11/21/2004	78.0	Baseline	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.1 B
	1/25/2005	77.0	1st Post ZVI Injection	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.47 J
	3/22/2005	77.6	2nd Post ZVI Injection	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.82 B
	6/16/2005	72.3	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/16/2005	80.7	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/18/2005	72.3	O&M PDB Sample	<1	0.96 J	<1	<1	<1	<1	2.67	<1	<1	<1
	11/18/2005	80.7	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	4/13/2006	72.3	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	4/13/2006	80.7	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/18/2006	72.3	IRA Semi-annual Event	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.3
MW-79	8/13/2004	100.0	Baseline	1.7	14	1.9	1.6	7.6 B	<1	<1	<1	0.77 J	<1
	1/26/2005	92.5	1st Post ZVI Injection	1.2	7.5	1	1.1	9.1	<1	<1	<1	0.22 J	<1
	3/22/2005	92.5	2nd Post ZVI Injection	1.2	16	2.4	2.3	10	<1	<1	<1	0.3 J	0.28 B
	6/16/2005	92.0	O&M PDB Sample	1.17	9.99	1.59	1.28	13.1	<1	<1	<1	<1	<1
	11/18/2005	92.0	O&M PDB Sample	1.01	3.69	<1	<1	16.6	<1	<1	<1	<1	<1
	4/13/2006	92.0	O&M PDB Sample	<1	1.94	<1	<1	11.4	<1	<1	<1	<1	<1
	10/18/2006	92.0	IRA Semi-annual Event	0.47 J	1.63	<1	<1	10.6	<1	<0.5	<1	<1	<0.3
MW-168	11/19/2004	115.9	Baseline	<1	0.71 J	<1	<1	1.9	<1	<1	<1	<1	<1
	1/26/2005	113.0	1st Post ZVI Injection	<1	0.53 J	<1	<1	1.7	<1	<1	<1	<1	<1
	3/21/2005	113.7	2nd Post ZVI Injection	<1	0.5 J	<1	<1	1.6	<1	<1	<1	<1	<1
	6/16/2005	108.6	O&M PDB Sample	<1	<1 J	<1	<1	<1 J	<1	<1	<1	<1	<1
	6/16/2005	119.1	O&M PDB Sample	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/18/2005	108.6	O&M PDB Sample	<1	<1	<1	<1	0.858	<1	<1	<1	<1	<1
	11/18/2005	119.1	O&M PDB Sample	<1	<1	<1	<1	0.889	<1	<1	<1	<1	<1
	4/13/2006	108.6	O&M PDB Sample	<1	<1	<1	<1	0.905 J	<1	<1	<1	<1	<1
	4/13/2006	119.1	O&M PDB Sample	<1	<1	<1	<1	0.842 J	<1	<1	<1	<1	<1
	10/19/2006	119.1	IRA Semi-annual Event	<1	0.509 J	<1	<1	0.941 J	<1	<0.5	<1	<1	<0.3
MW-168A	11/17/2004	80.0	Baseline	1.1	0.36 J	<1	<1	11	<1	<1	<1	<1	0.6 B
	1/25/2005	81.0	1st Post ZVI Injection	0.8 J	0.49 J	<1	<1	10	<1	<1	<1	<1	0.52 J
	3/21/5	81.3	2nd Post ZVI Injection	0.98 J	0.52 J	<1	<1	11	<1	<1	<1	<1	0.55 B
	6/16/2005	76.4	O&M PDB Sample	<1 J	<1 J	<1	<1	19.3	<1	<1	<1	<1	<1 B
	6/16/2005	86.9	O&M PDB Sample	<1 J	<1	<1	<1	6.12	<1	<1	<1	<1	<1
	11/18/2005	76.4	O&M PDB Sample	0.888	<1	<1	<1	27.6	<1	<1	<1	0.825	0.883 B
	11/18/2005	86.9	O&M PDB Sample	<1	<1	<1	<1	7.56	<1	<1	<1	<1	<1
	4/13/2006	76.4	O&M PDB Sample	<1	1	<1	<1	19.4	<1	<1	<1	<1	0.957 B
	4/13/2006	86.9	O&M PDB Sample	<1	<1	<1	<1	3.72	<1	<1	<1	<1	<1
	10/20/2006	76.4	IRA Semi-annual Event	0.836 J	1.32	<1	<1	22.1	<1	<0.5	<1	0.257 J	0.85

Notes:

- Samples analyzed for volatile organic compounds by method 8260B
µg/L micrograms per liter
-- Not analyzed
Results equal to or above reporting limit shown in **bold** type
J Estimated result based on QC data or reported below RL
B Estimated result possibly biased high or false positive based on blank data
R Unusable data
I Estimated result, concentration exceeds calibration range

FIGURES



Figure 1-1
MONITORING
AND
RECOVERY WELL
LOCATION MAP
ANNUAL OPERATIONS
REPORT 2006

DUNN FIELD
GROUNDWATER IRA
YEAR EIGHT
DEFENSE DEPOT
MEMPHIS, TENNESSEE

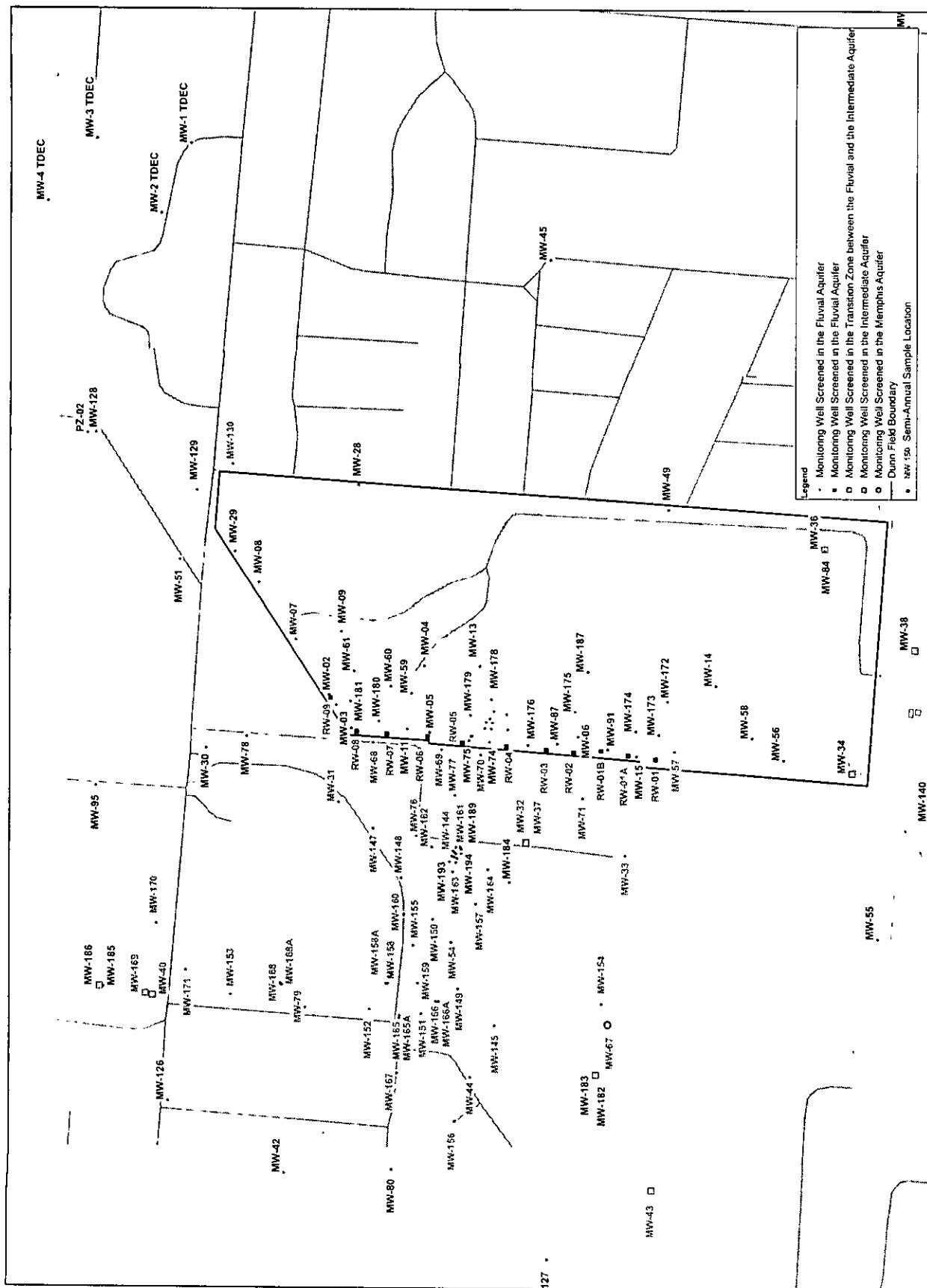
Projection: NAD 1983 StatePlane Tennessee
Datum: WGS 84
Units: Feet

1:5,000

0 100 200 300 400 Feet
0 50 100 150 Meters



Date: January 2007
Revision: 0001



- Legend**
- Monitoring Well Screened in the Fluvial Aquifer
 - Monitoring Well Screened in the Fluvial Aquifer
 - Monitoring Well Screened in the Transition Zone between the Fluvial and the Intermediate Aquifer
 - Monitoring Well Screened in the Intermediate Aquifer
 - Monitoring Well Screened in the Memphis Aquifer
 - Dunn Field Boundary
 - Year 150 Semi-Annual Sample Location



Figure 4-1

GROUNDWATER ELEVATION CONTOUR MAP

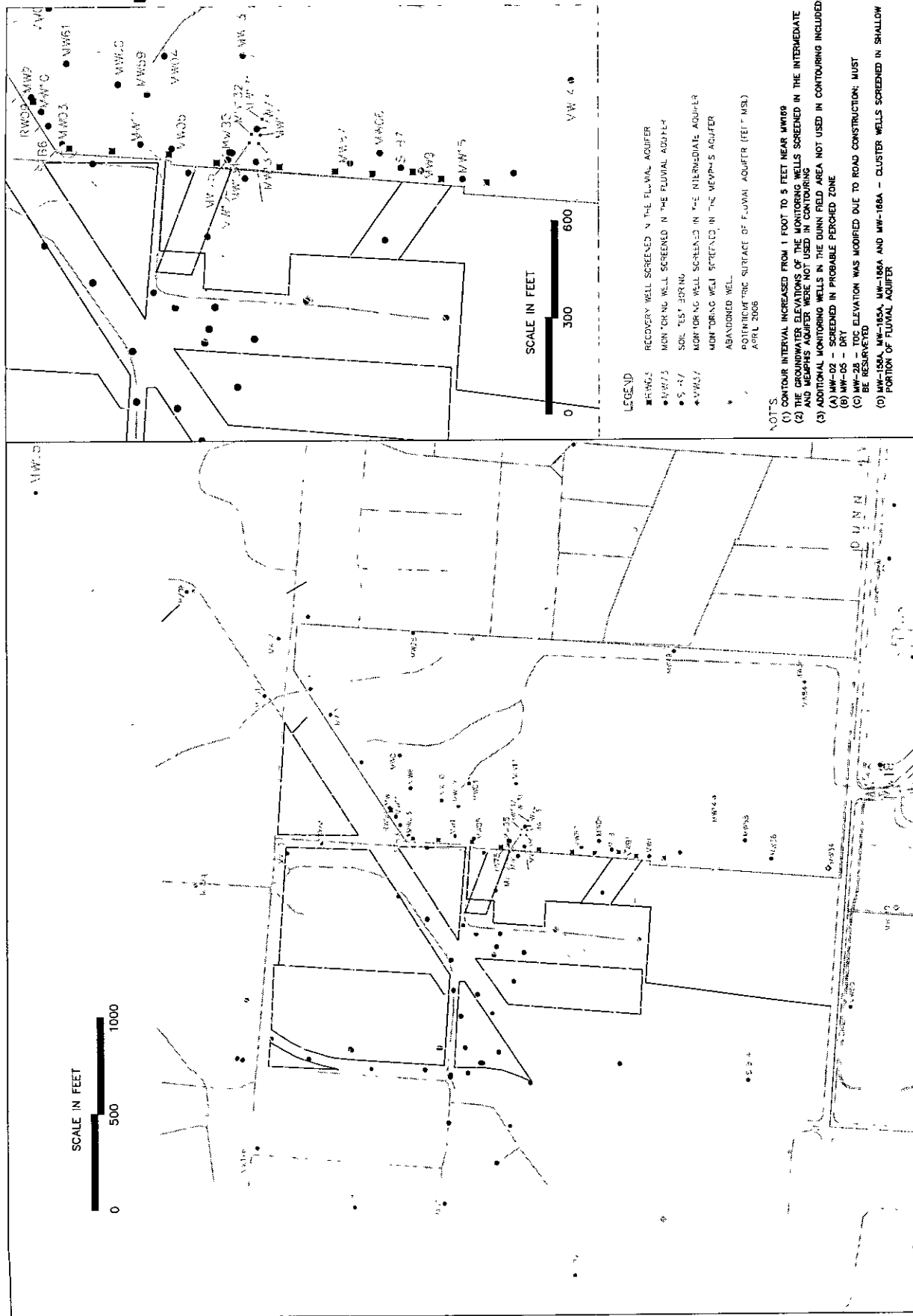
10 - 11 APRIL, 2006

ANNUAL OPERATIONS
REPORT 2006

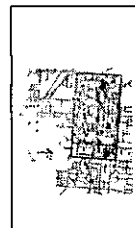
DUNN FIELD
GROUNDWATER IRA
YEAR EIGHT

DEFENSE DEPOT
MEMPHIS, TENNESSEE

NOTES
FIGURE CREATED FROM MACIHC
FIGURE 4-1 OF THE
SEMI-ANNUAL OPERATION
REPORT - 2006



Installation Location
Memphis, Tennessee



DATE PREPARED: 2007
DRAWN BY: [Name]



Figure 4-2
GROUNDWATER
ELEVATION
CONTOUR MAP
26 OCTOBER 2006
ANNUAL OPERATIONS
REPORT 2006
DUNN FIELD
GROUNDWATER IRA
YEAR EIGHT
DEFENSE DEPOT
MEMPHIS, TENNESSEE

Projection: NAD 1927 StatePlane Tennessee
Datum: WGS 84
Units: Feet

1:5,000
0 100 200 300 400 500 Feet
0 70 140 210 Meters

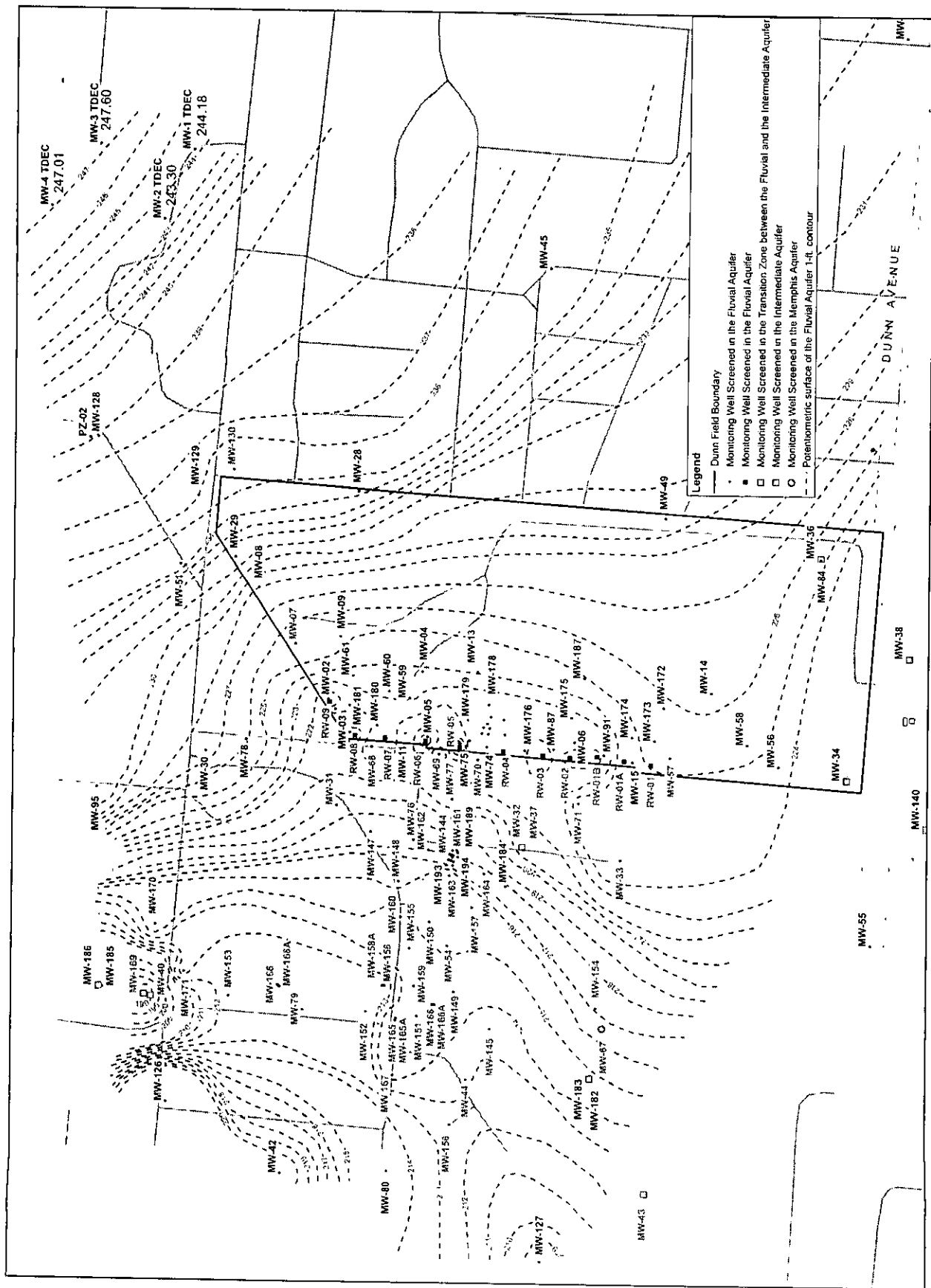
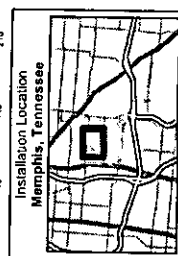




Figure 4-3

TOTAL CVOC CONCENTRATIONS APRIL 2006

ANNUAL OPERATIONS
REPORT 2006

DUNN FIELD
GROUNDWATER IRA
YEAR EIGHT

DEFENSE DEPOT
MEMPHIS, TENNESSEE

NOTES:
FIGURE CREATED FROM MACIEC
FIGURE 5-2 OF THE
SEMI-ANNUAL OPERATION
REPORT - 2006

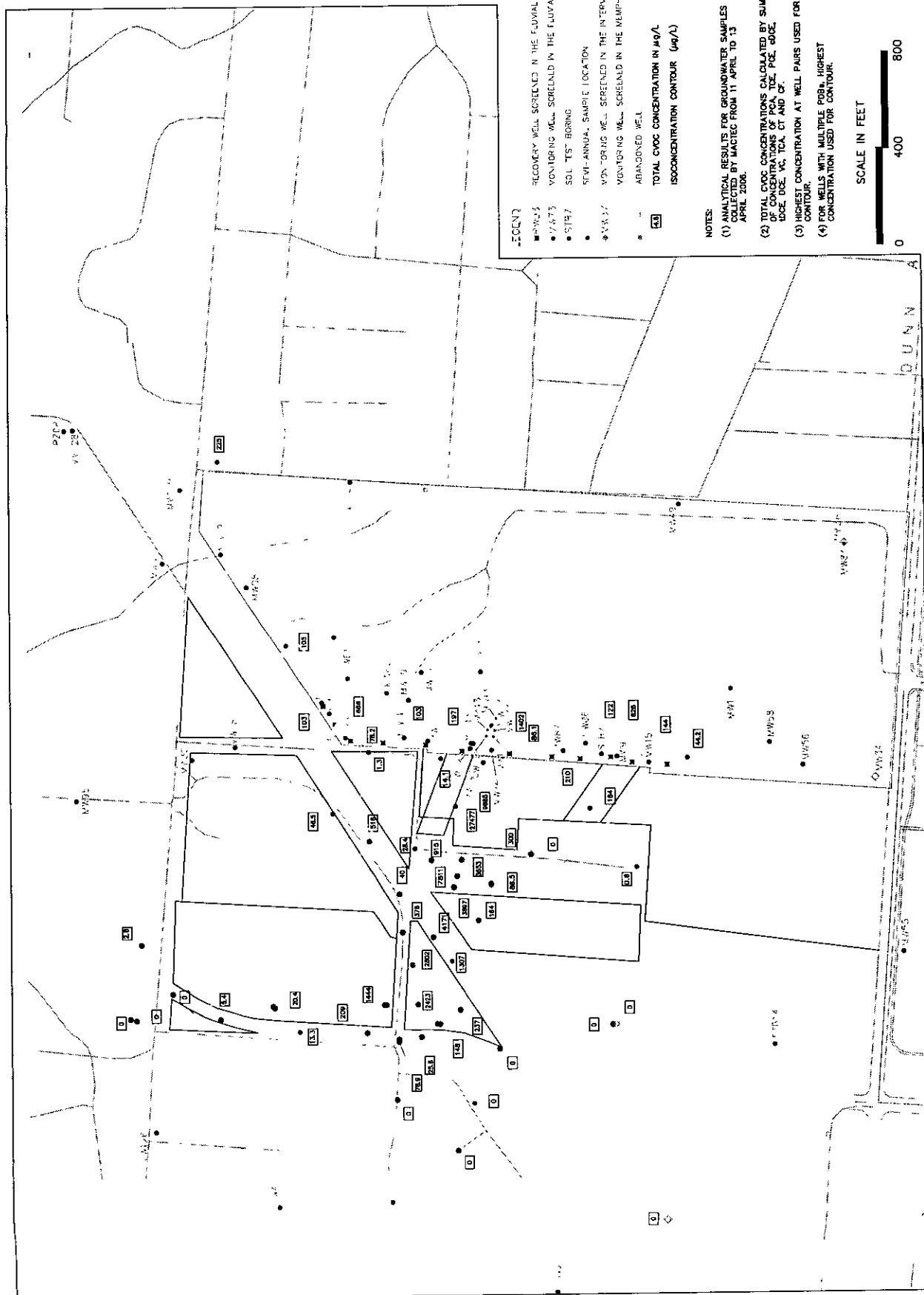
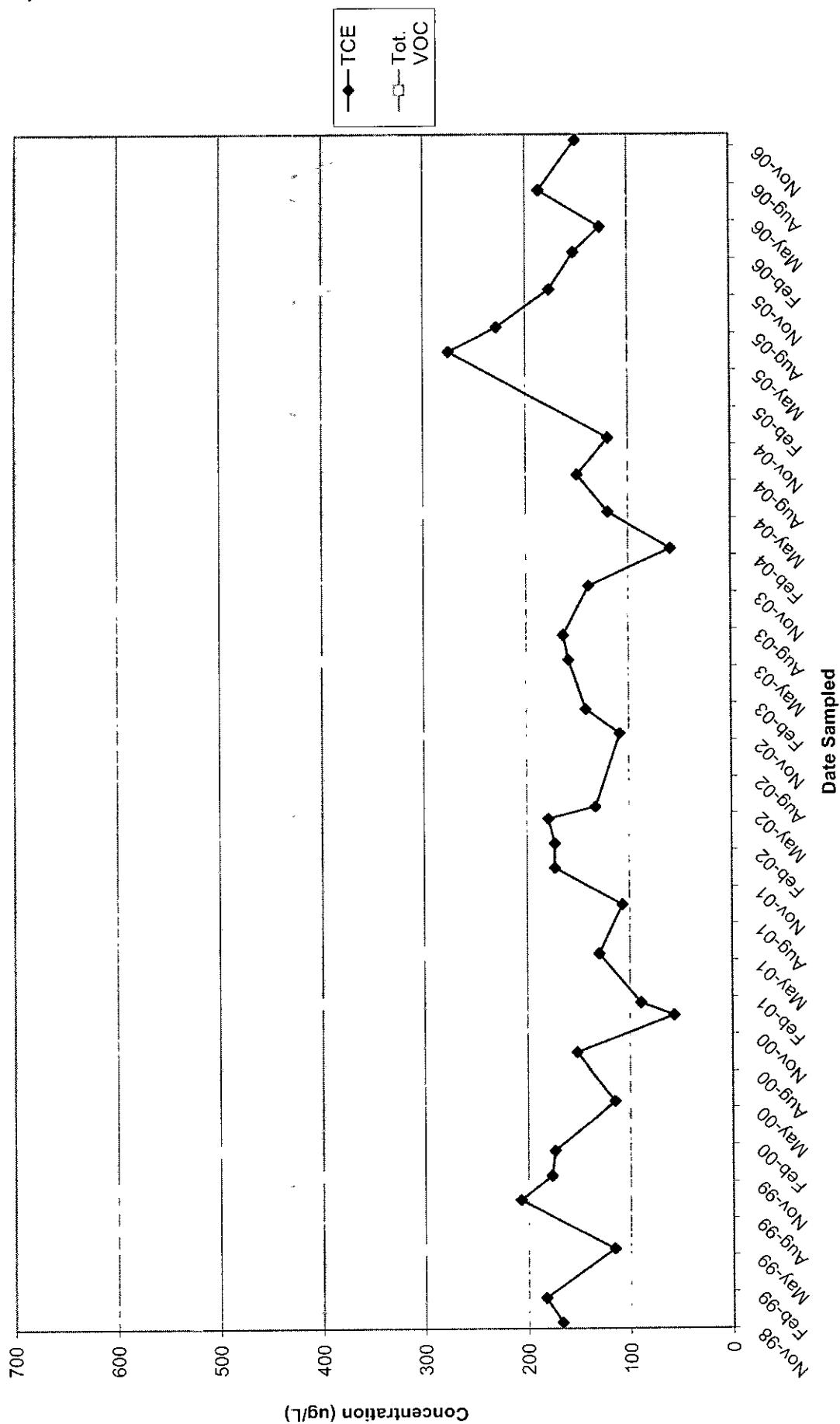


FIGURE 5-1

TCE AND TOTAL VOC CONCENTRATIONS IN EFFLUENT
ANNUAL STATUS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee



APPENDIX A

INDUSTRIAL WASTEWATER DISCHARGE AGREEMENT
PERMIT NUMBER S-NN3.097



DR. WILLIE W. HERENTON - Mayor
KEITH L. McGEE - Chief Administrative Officer
DIVISION OF PUBLIC WORKS
JERRY R. COLLINS JR. - Director
Maynard C. Stiles Wastewater Treatment Plant

Wednesday, July 19, 2006

Mr. Michael A, Dobbs
Chief Environmental, Safety and Occupational Health Office
Defense Logistics Agency
2001 Mission Drive
New Cumberland, Pennsylvania 17070-5000

RE: Revised Industrial Wastewater Discharge Agreement Permit No. S-NN3-097
DES-DDC-EE (Memphis) @ 2163 Airways Blvd., Memphis, Tennessee

Dear Mr. Dobbs:

Please find enclosed copy of the revised sections (Intent & Purpose and A) of DES-DDC-EE (Memphis) 's Industrial Wastewater Discharge Agreement for your record keeping.

If you should have any questions, please feel free to contact me at (901) 576-4337.

Sincerely,

Akil AL-Chokhachi
Environmental Engineer

S-NN3-097

DES-DDC-EE



Division of Public Works

**Industrial Wastewater Discharge
Agreement**

**made by and between the
City of Memphis**

and

D E S - D D C - E E (Memphis)

on

May 01, 2003

Approved by: _____
Jerry Collins, Director
Public Works



City Of Memphis
Industrial Wastewater Discharge
Agreement

ORIGINAL

S-NN3-097

DES-DDC-EE

» » » Intent and Purpose « « «

The City of Memphis in enacting the revised Sewer Use Ordinance deemed it necessary to identify certain significant contributors to the municipal sewer system and regulate the significant contributors on the discharge quantity and characteristics which would be permitted to be discharged into the municipal wastewater system. The basis for the values shown in the following sections are primarily to comply with the State of Tennessee and the Environmental Protection Agency regulations and to preserve the integrity of the publicly owned treatment works.

The agreement serves as a firm understanding between the user and the City for a specified period of time not to exceed five (5) years. The parameters which have been identified in this document reflect the best estimate of the user as to the characteristics of his discharge and will remain in effect until modified by amendments to the discharge agreement. The allowable levels for each parameter are determined by limitations imposed by the Sewer Use Ordinance and for compounds, not specifically limited by the Sewer Use Ordinance or EPA Categorical limitations, the best professional judgement of the City staff engineers and chemists. Primary in the determination is the protection of the integrity of the publicly owned treatment works. Accordingly, tables of guidance for criteria influent levels for specific incompatible wastes have been developed and are part of the Sewer Use Ordinance.

Willful failure of an industrial user to report significant changes in operations which affect wastewater constituents and characteristics can result in the revoking of his discharge agreement. If a public sewer becomes obstructed or damaged because of any substances improperly discharged into it, D E S- D D C- E E (Memphis) if responsible for such discharge shall be billed and shall pay for all the expenses incurred by the City in cleaning out, repairing, or rebuilding the sewer.

According to Section 33-173 of the Sewer Use Ordinance, violations of the Discharge Agreement and the Sewer Use Ordinance requirements may result in civil penalties up to ten thousand dollars (\$10,000) for each day during which the acts or omission continues or occurs.

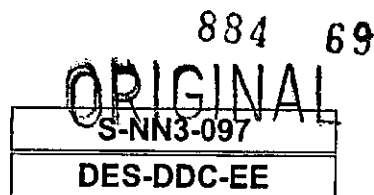
Any person who willfully or negligently violates any section of this Ordinance including, but not limited to the Federal Pretreatment Program Standards, Wastewater Discharge Agreement Permit Conditions may be subject to criminal penalties imposed by the State of Tennessee and/or the United States.

Each industrial user discharging compounds regulated by the pretreatment program or other programs identified by the Environmental Protection Agency (EPA) must also pretreat to the point as required by the EPA. In addition to this, the State of Tennessee has identified certain allowable levels for incompatibles entering a publicly owned treatment works. The pretreatment values set by the City are listed in Table 1 and Table 2, Section 33-104 of the Sewer Use Ordinance.

Wastewater discharge agreements are issued to a specific user for a specific operation. A wastewater discharge agreement shall not be reassigned or transferred or sold to a new owner, new user different premises, or a new or changed operation which will significantly affect wastewater characteristics, Section 33-85 of the Sewer Use Ordinance.



City Of Memphis
Industrial Wastewater Discharge
Agreement



» » » Intent and Purpose « « «

The industrial user shall comply with the record-keeping requirements outlined in the general pretreatment Standards in part 403.12 (o) of the Federal Regulations and Section 33-83(f) of the Sewer Use ordinance.

According to Section 33-110 of the Sewer Use Ordinance, the Industrial User shall notify the Control Authority immediately in the event of spill, bypass, upset and slug or accidental discharges, including any discharges that would violate a prohibition under Section 33-103, with procedures for the follow-up written notification within five days. The Control Authority will evaluate the Industrial User every two years or as needed for slug discharge control plan, if not required then, the Industrial User shall submit a signed statement stating that there is no potential nor any need for developing such a plan. However, if required then the Control Authority will attach a copy of the plan to this Agreement.

Whereas, Chapter 33 of the Code of Ordinances of the City of Memphis requires that "dischargers to the municipal wastewater treatment facilities designated by the approving authority as requiring agreements shall not discharge to the system without said agreement"; and

Whereas, D E S- D D C- E E (Memphis) located at 2163 Airways Blvd, Bldg 144 desires to discharge to the Memphis sewer system; and

Whereas, D E S- D D C- E E (Memphis) agrees to comply with all requirements specified in Chapter 33 of the Code of Ordinances and any revision thereof.

Now therefore, D E S- D D C- E E (Memphis) is granted the right to discharge the wastewater of such characteristics and volume as described in this wastewater discharge permit into the City of Memphis sewer system from May 01, 2003 to April 30, 2008.

Signed by:

Rodney Thomas

City of Memphis

Authorized Industrial User Representative:

[Signature]

D E S- D D C- E E (Memphis)



**City Of Memphis
Industrial Wastewater Discharge
Agreement**

S	N	N	3	-	097
DES-DDC-EE					

Start Date

May 01, 2003

Expiration Date

April 30, 2008

A.1 Corporate Name

DES-DDC-EE (Memphis)

Corporate Address

2163 Airways Blvd, Bldg 144

Memphis

TN

38114

A.2 Company Name

DES-DDC-EE (Memphis)

Mailing Address

2163 Airways Blvd, Bldg 144

Memphis

TN

38114

A.3 Facility Name

DES-DDC-EE (Memphis)

Facility Address

2163 Airways Blvd, Bldg 144

Memphis

TN

38114

A.4 Contact Official

Michael A. Dobbs

Title

Chief E S & O H Office

Phone

(717) 770-6950

A.5 Signing Official

Michael A. Dobbs

Title

Chief E S & O H Office

Signee Address

DDC, Whs 1, Bay 3, 2001 Mission Dr.

New Cumberland

PA

17070-5000

A.6 I certify that the information contained in this industrial wastewater discharge agreement consisting of twenty two pages (and any appendices) is familiar to me and to the best of my knowledge and belief, such information is true, complete and correct.

Michael A. Dobbs 9/6/14, 2006

Authorized Industrial User Representative: Signature/Date

City Of Memphis
Industrial Wastewater Discharge
Agreement

S-NN3-097

DDSP-D MEMPHIS

SECTION B - FACILITY OPERATIONAL CHARACTERISTICS

B.1 Description of manufacturing or service activities

The operation to be permitted is a ground water recovery system located in an open area, Dunn Field, adjacent to the northern perimeter of the DDMT main installation. The DDMT facility is currently being closed with the intent of transferring much of the facility to private ownership. Manufacturing of goods does not occur in the Dunn Field portion of the facility.

*Note: The ground water (GW) recovery and discharge system will operate on a continual basis once the system is completely operational. The federal government will operate and maintain the system.

B.2 Standard Industrial Classification(s)

a. b. c. d. e. f.

B.3 Weekly days of operation are

B.4 The hours of operation and the number of employees per shift.

Shift	Times		Number of Employees		
	Start	Stop	Weekday	Saturday	Sunday
Day	8:00 am	5:00 pm	1		
Evening					
Night					

B.5 Is production operation subject to seasonal variation?

If so, complete the following.

a. Seasonal maximum wastewater discharged into the municipal sewer system is

gallons/day, during the months of

b. Seasonal minimum wastewater discharged into the municipal sewer system is

gallons/day, during the months of

City Of Memphis
Industrial Wastewater Discharge
Agreement

S-NN3-097

DDSP-D MEMPHIS

B.6 Description of other operational schedule characteristics / scheduled shutdown

No operational variations are currently planned. The pumping rate may be altered based on the hydraulic capacity of the city sewer collection system, if required.

This discharge agreement application is for the following groundwater recovery system:

- * One 40 - gpm wells
- * One 50 - gpm wells
- * Five 60 - gpm wells

This seven well groundwater recovery system will result in a total estimated discharge flow of 390 gpm (0.562 mgd) .

Requests for permits for additional wells beyond the seven identified may be submitted in the future, if required. The ground water design currently requires up to seventeen total wells to be installed in up to two phases.

B.7 Description of operational variables and frequency of occurrences which may result in unusual discharges

Fluctuations in the discharge of the system may occur due to changes in ground water conditions. The discharges described in Section B.6 are expected to be maximum discharges.

[illegible]

S-NN3-097

DDSP-D MEMPHIS

DDSP-D MEMPHIS

[illegible]

[illegible]

S-NN3-097
DDSP-D MEMPHIS

B.12 Components of Non-contact Cooling Water

[illegible]

City Of Memphis
Industrial Wastewater Discharge
Agreement

S-NN3-097
DDSP-D MEMPHIS

B.13 The person (or position) on the plant site who shall be contacted for emergency situations during plant operating hours.

Name	John De Back
Title	B R A C Environmental Coordinator
Phone	(901)-544-0622

B.14 The person(s) who shall be contacted at any time during emergency situations.

Name	Phone
John De Back - B R A C Environ. Coordinator	(901)-544-0622

B 15 Description of spill prevention controls and counter measure plans / accidental and slug discharges

A spill of any material or contaminated stormwater run-off as a result of an excavation of hazardous materials or any wastewater other than recovered groundwater shall not be discharged into the sanitary sewer without a written approval from the City of Memphis.

**City Of Memphis
Industrial Wastewater Discharge
Agreement**

S-NN3-097

DDSP-D MEMPHIS

SECTION C - WATER USAGE CHARACTERISTICS

C.1 MLG&W Account number(s)

124708000

C.4 f. & C.5 a. - Recovered ground
water only

C.2 MLG&W Billing address (if different from A.3)

C.3 Annual water usage by source:

From

Million Gallons Per Year

- a. Public water supply
b. Private well
c. Surface stream

C.4 Daily average water consumption:

In

Gallons Per Day

- a. Process (industrial)
b. Non-contact cooling
c. Boiler Feed
d. Product
e. Domestic/Sanitary
f. Other

561,600

C.5 Daily average water discharge:

To

Gallons Per Day

- a. Wastewater sewer
b. Storm drain
c. Waste hauler
d. Evaporative loss
e. Product

561,600

City Of Memphis
Industrial Wastewater Discharge
Agreement

S-NN3-097
DDSP-D MEMPHIS

SECTION D - WASTEWATER CHARACTERISTICS

PAGE 1 OF 2 Ground Water

with a flow of 561,600 gallons / day

D.1 Analysis of wastewater discharged into the municipal sewer system

Parameter	Daily Average (Monthly Average)		Instantaneous (One Day)	
	Maximum Level		Maximum Level	
	mg/l	lbs/day	mg/l	lbs/day
Biochemical Oxygen Demand (BOD ₅)	250.000	1,170.936	400.000	1,873.498
Total Suspended Solids	300.000	1,405.123	500.000	2,341.872
Total Solids				
Oil & Grease (Hydrocarbons)				
Oil & Grease (Total)	10.000	46.837	10.000	46.837
Ammonia Nitrogen (NH ₃ - N)				
Total Kjeldahl Nitrogen (TKN)				

Pounds

Alkalinity (Pounds of 100% sulfuric acid per day. See Attachment)

Acidity (Pounds of 100% sodium hydroxide per day. See Attachment)

Minimum Maximum

Maximum Temperature (Degrees Fahrenheit)

pH Range (Standard Units) (See Attachment)

5.5 10.0

D.2 Description of wastewater sampling location. Method of sample collection see attachment.

Sampling point is at the final discharge prior to the City Sanitary Sewer.
No Priority Pollutants or other substances listed in Appendix A are being discharged into the sanitary sewer.

Note: Blank = parameters not quantified.

**City Of Memphis
Industrial Wastewater Discharge
Agreement**

S-NN3-097
DDSP-D MEMPHIS

D.3 Priority Pollutants and other substances that may be present in the wastewater discharge

(See Appendix A for complete listing)

PAGE 1 OF 2 Ground Water

with a flow of 561,600 gallons / day

Daily Average Instantaneous

(Monthly Average) (One Day)

Maximum Level Maximum Level

Parameter	PPNClass	mg/l	lbs/day	mg/l	lbs/day
1,1,1-trichloroethane	11 Volat	0.010	0.047	0.020	0.094
1,1,2,2-tetrachloroethane	15 Volat	0.500	2.342	1.000	4.684
1,1,2-trichloroethane	14 Volat	0.050	0.234	0.100	0.468
1,1-dichloroethene	Volat	0.050	0.234	0.100	0.468
Aluminum	Metal	1.000	4.684	2.000	9.367
Arsenic	115 Metal	0.040	0.187	0.100	0.468
Bis (2-ethylhexyl) Phthalate	66 Semiv	0.010	0.047	0.020	0.094
Cadmium (total)	118 Metal	0.010	0.047	0.020	0.094
Carbon Tetrachloride (tetrachlor-)	6 Volat	0.020	0.094	0.040	0.187
Chloroform (trichloromethane)	23 Volat	0.100	0.468	0.200	0.937
Chromium (total)	119 Metal	0.200	0.937	0.400	1.873
Cis-1,2-dichloroethene	Volat	0.080	0.375	0.100	0.468
Copper (total)	120 Metal	0.200	0.937	0.400	1.873
Di-n-butyl Phthalate	68 Semiv	0.030	0.141	0.060	0.281
Iron	Metal	10.000	46.837	20.000	93.675
Lead (total)	122 Metal	0.150	0.703	0.300	1.405
Mercury	123 Metal	0.001	0.005	0.002	0.009
Methylene Chloride (dichlorometh-)	44 Volat	0.010	0.047	0.020	0.094
Naphthalene	55 Semiv	0.010	0.047	0.020	0.094
Nickel (total)	124 Metal	0.100	0.468	0.300	1.405
Phenol	65 Semiv	0.010	0.047	0.020	0.094
Tetrachloroethylene (perc- & Tet-)	85 Semiv	0.060	0.281	0.120	0.562
Toluene	86 Volat	0.020	0.094	0.040	0.187
Trans-1,2-dichloroethene	Volat	0.050	0.234	0.100	0.468
Trichloroethylene (trichloroethe-)	87 Volat	0.400	1.873	0.800	3.747

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SECTION D - WASTEWATER CHARACTERISTICS

PAGE 2 OF 2 Ground Water

with a flow of 561,600 gallons / day

D.1 Analysis of wastewater discharged into the municipal sewer system

Parameter	Daily Average		Instantaneous	
	(Monthly Average)		(One Day)	
	Maximum Level		Maximum Level	
	mg/l	lbs/day	mg/l	lbs/day
Biochemical Oxygen Demand (BOD ₅)				
Total Suspended Solids				
Total Solids				
Oil & Grease (Hydrocarbons)				
Oil & Grease (Total)				
Ammonia Nitrogen (NH ₃ - N)				
Total Kjeldahl Nitrogen (TKN)				

Pounds

Alkalinity (Pounds of 100% sulfuric acid per day See Attachment)

Acidity (Pounds of 100% sodium hydroxide per day. See Attachment)

Minimum Maximum

Maximum Temperature (Degrees Fahrenheit)

pH Range (Standard Units) (See Attachment)

D.2 Description of wastewater sampling location. Method of sample collection see attachment

This page is inserted due to additional space required for priority pollutants (Page 13-2).

(See Appendix A for complete listing.)

with a flow of 561,600 gallons / day

Instantaneous

(One Day)

Maximum Level

lbs/day

[illegible]

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D.4 The person or laboratory responsible for wastewater sampling and analysis

The name of the laboratory will be provided once a contract is in place, the groundwater recovery system (described in B . 6) is installed, and sampling begins.

D.5 Type and description of wastewater metering and sampling facilities

A continuous direct reading meter, flow totalizer, and sampling tap will be provided just prior to the discharge pipe leaving DDMT property.

D 6 Any batch wastewater discharges?

No

If yes, describe type, volume, strength and time of discharges

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D.7 Is wastewater treated prior to discharge into the municipal sewer system?

☐ No

If yes, complete the following:

a. Description of unit processes used and wastewater quality before and after treatment

b. Description of production characteristics and any persistent or normal operational problems which may affect treatment system operations

c. Description of quality testing or process control methodology which shall ensure acceptable treatment levels

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SECTION E - SEWER FLOW PLAN, SITE PLAN AND PROCESS SCHEMATICS

E.1 The area of plant site in acres 64.11

E 2 Sewer flow plan or list of outlets, size and flow

PART 1 OF 3

The proposed layout of the groundwater recovery wells and piping system are shown on the figure provided in Attachment 2. Groundwater from the recovery wells will be combined into a common pipeline, conveyed and discharged (i.e., single discharge) into the sewer manhole located at Rozelle Street on the South side of Cane Creek (as shown on the Attachment 2 figure).

Initially, the groundwater discharge rates will be approximately 830 gpm. Each well will be brought on line by discharging flow from an 8-hour period into a holding tank. The groundwater in the holding tank will be analyzed to confirm concentrations are below the proposed discharge limits, prior to discharge to the sewer system.

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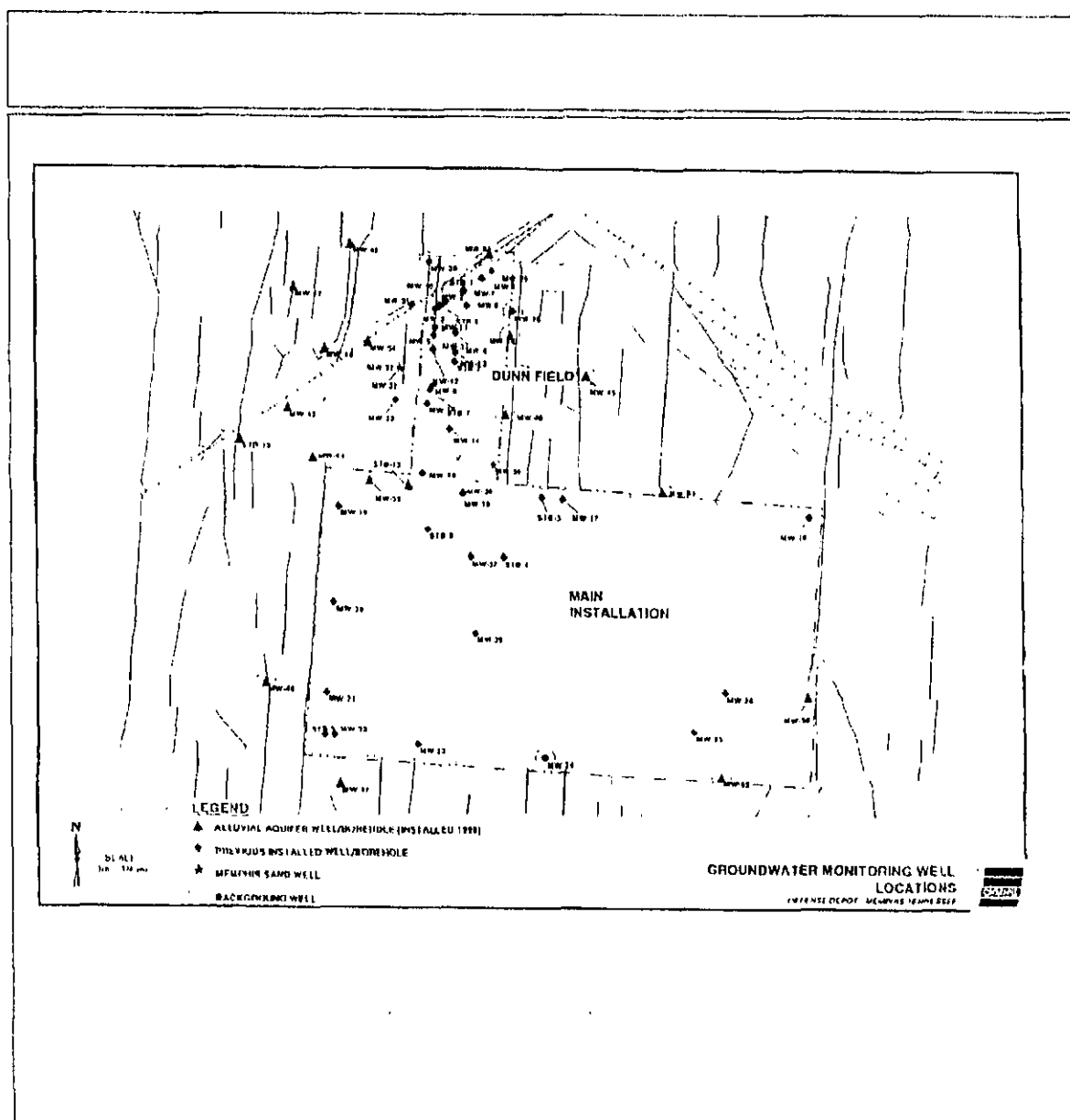
DDSP-D MEMPHIS

SECTION E - SEWER FLOW PLAN, SITE PLAN AND PROCESS SCHEMATICS

E.1 The area of plant site in acres 64.11

E.2 Sewer flow plan or list of outlets, size and flow

PART 2 OF 3



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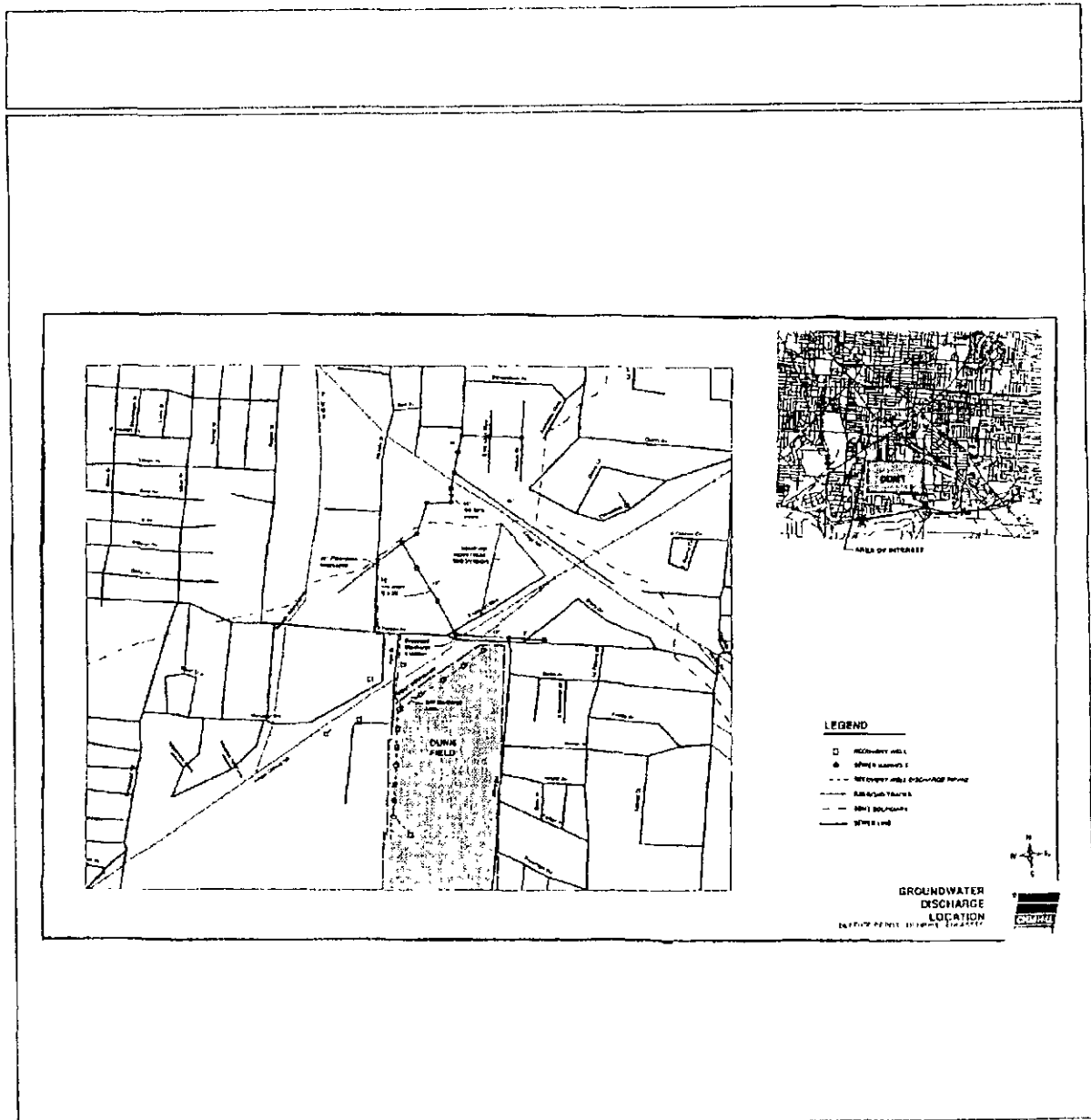
DDSP-D MEMPHIS

SECTION E - SEWER FLOW PLAN, SITE PLAN AND PROCESS SCHEMATICS

E.1 The area of plant site in acres 64.11

E.2 Sewer flow plan or list of outlets, size and flow

PART 3 OF 3



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E.3 Plan indicating major structures and locations of hazardous materials and certain sewer appurtenances

PART 1 OF 1

See attached plan.

884 90

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E.4 Flow diagram of materials or processes

PART 1 OF 1

N/A

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E.5 Diagram and description of areas with quantified acreage where storm waters (run-off) are discharged into the municipal sewer system

Storm water total acreage

PART 1 OF 1

No storm water is being discharged into the sanitary sewer.

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SECTION F - SELF-MONITORING SCHEDULE

PART 1 OF 1

F.1 The self monitoring requirements to be performed and/or reported to the City of Memphis

All monitoring records should be kept on file for a minimum of 3 years.

According to Section 33-83 of the Sewer Use Ordinance, if sampling performed by an Industrial User indicates a violation, the User shall notify the Control Authority within 24 hours of becoming aware of the violation. The User shall repeat the sampling and analysis and submit the results of the repeated analysis to the City within 30 days after becoming aware of the violation or sooner if so directed by the City Authorized representatives.

If any pollutant is monitored more frequently than required, using EPA approved methods, the results of this monitoring shall be included in the report.

A. SELF-MONITORING REQUIREMENT:

- 1) Continuous flow monitoring of the final discharge (Groundwater).
- 2) One (1) grab sample shall be collected semi-annually in May and November with analyses for:
 - pH
 - VOCs (SW846 Method 8240)
 - SVOCs (SW846 Method 8270)
 - TAL Metals (EPA 200 Series)

B. REPORTING REQUIREMENT:

1. Monthly reports include the total volume discharged be sent by the 10th of each month.
2. Semi-annual Reports detailing all analyses of samples collected shall be submitted in June & December.

The above reports shall be submitted to:

Mr. Akil AL-Chokhachi
 City of Memphis
 2303 North Second Street
 Memphis, Tennessee 38127-7500

The Monthly volumes discharged shall be sent to :

Sewer Fee Billing Department
 Room 622, City Hall
 125 Mid-America Mall
 Memphis, TN 38103

A spill of any material or contaminated stormwater run-off as a result of an excavation of hazardous materials or any wastewater other than recovered groundwater shall not be discharged into the sanitary sewer without a written approval from the City of Memphis.

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SECTION G - COMPLIANCE SCHEDULE

PART 1 OF 1

G.1 The compliance schedule as required to meet categorical pretreatment standards and other requirements required by the City of Memphis pretreatment program.

None required

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SECTION H - HAZARDOUS MATERIALS

PART 1 OF 1

H.1 All hazardous, toxic, noxious or malodorous materials used, produced or formed
as by-product or waste

NOT APPLICABLE FOR DDMT INSTALLATION

DUNN FIELD:

Historically, Dunn Field was used as a burial area on DDMT. The individual burial sites within Dunn Field have the following suspected buried contaminants:

- thiodiglycol
- arsenic
- chloroform
- ammonia hydroxide
- acetic acid
- ammonia salts
- metals
- orthotoluidine dihydrochloride
- VOCs
- SVOCs
- methyl bromide
- nitric acid PAHS
- trichloroacetic acid
- sulphuric acid
- hydrochloric acid
- lead
- pesticides

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SECTION I - ATTACHMENTS

PART 1 OF 1

I 1 Summary of Attachments

Appendix A, B, C, & D

Sewer Use Ordinance Table 1 & 2

Sara 312 Tier Two Emergency and Hazardous Chemical Inventory

APPENDIX B

2006 MONTHLY DISCHARGE REPORTS

**January 2006 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
MACTEC Project Number 6301-05-0008**

Groundwater Recovery System Operation - January 2006

Duration of System Operation: 1-Jan-06
31-Jan-06

Site visits During Month:

Site visits were performed on January 9 and on January 17, 2006 to collect flowrates, review system operations, and to perform system maintenance and repair

System Operational Notes:**System Maintenance and Repairs Summary:**

The pump in RW-8 was noted unoperational during January 8 visit and was replaced with new pump on January 17. The old pump was corroded, its interior was completely clogged and encrusted with iron scaling. It is also noted that flowmeters in recovery wells RW-4, RW-7 and RW-9 were not working. The flowmeter in RW-8 works sporadically. Those flowmeters will be evaluated during February visits, and if not repairable, will be replaced in March 2006. The controller in RW-9 is not operational, and its replacement is also planned for March.

Alarm Summary:

No alarms noted.

Upcoming Activities

Two operation and maintenance visits are planned for month of February 2006

Total January 2006 Effluent Discharge Volume: **1,897,056** Gallons January 1, 2006 through January 31, 2006

January 2006 Average Discharge Flow Rate (GPM) 42.2
January 2006 Maximum Discharge Flow Rate (GPM) 47.0
January 2006 Minimum Discharge Flow Rate (GPM) 39.3

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages.

Well I.D.	%Run Time	Average Flow Rate (GPM)	Total Flow (Gallons) - Based on Average Flow Rate During Operational Period
RW-1*	100	0.2	8,928
RW-1A	100	1.9	84,096
RW-1B*	100	2.6	116,064
RW-2*	100	3.0	133,920
RW-3	100	5.6	247,968
RW-4	100	3.8	168,912
RW-5*	100	1.6	71,424
RW-6	100	9.2	411,552
RW-7	100	3.5	155,520
RW-8	74	3.8	125,208
RW-9	100	7.4	329,472

* Pump in noted recovery wells cycled, therefore average flowrates for these wells were calculated from totalized flow readings for the month of January

System Effluent Samples Collected:

The most recent effluent analytical results available for metals and VOCs is from November 2005.

Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup

Contaminant Mass Removal:

January: 2.80 lbs TCE; 6.25 lbs Total VOCs

Cumulative: 288.22 lbs TCE; 727.89 lbs Total VOCs

Total System Effluent through 31 January 2006 **233,486,588** Gallons (includes 56,517 gallons of purge water)

Prepared by CMO 02-03-2006
Checked by MI 02-06-2006

**February 2006 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
MACTEC Project Number 6301-05-0008**

Groundwater Recovery System Operation - February 2006																																																			
Duration of System Operation:		1-Feb-06 28-Feb-06																																																	
Site visits During Month: Site visits were performed on February 7 and on February 27, 2006 to collect flowrates, review system operations, to perform system maintenance and repair and collect effluent sample																																																			
System Operational Notes:																																																			
System Maintenance and Repairs Summary: Flowmeters RW-4, RW-7, RW-8, and RW-9 were noted as inoperable and flow rates for those recovery wells were measured manually on February 7 and February 27. The pump in RW-7 was noted as inoperable. The flowmeters and pump will be repaired or replaced in March. Doors in the recovery wells cabinets for RW-8, RW-7, RW-5, and RW-2 were repaired during the February 27 visit. Desiccant packs were replaced in RW-1, RW-4 and RW-9.																																																			
Alarm Summary: No alarms noted																																																			
Upcoming Activities Two operation and maintenance visits are planned for month of March 2006																																																			
Total February 2006 Effluent Discharge Volume:		2,089,440	Gallons February 1, 2006 through February 28, 2006																																																
February 2006 Average Discharge Flow Rate (GPM)		51.8																																																	
February 2006 Maximum Discharge Flow Rate (GPM)		54.8																																																	
February 2006 Minimum Discharge Flow Rate (GPM)		41.0																																																	
Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Well I.D.</th> <th>%Run Time</th> <th>Average Flow Rate (GPM)</th> <th>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</th> </tr> </thead> <tbody> <tr><td>RW-1*</td><td>100</td><td>0.2</td><td>8,064</td></tr> <tr><td>RW-1A</td><td>100</td><td>1.5</td><td>61,632</td></tr> <tr><td>RW-1B*</td><td>100</td><td>2.5</td><td>100,800</td></tr> <tr><td>RW-2*</td><td>100</td><td>2.4</td><td>96,768</td></tr> <tr><td>RW-3</td><td>100</td><td>5.6</td><td>226,944</td></tr> <tr><td>RW-4</td><td>100</td><td>3.1</td><td>123,840</td></tr> <tr><td>RW-5*</td><td>100</td><td>1.5</td><td>60,480</td></tr> <tr><td>RW-6</td><td>100</td><td>8.3</td><td>335,808</td></tr> <tr><td>RW-7</td><td>93</td><td>1.8</td><td>65,889</td></tr> <tr><td>RW-8</td><td>100</td><td>10.6</td><td>428,256</td></tr> <tr><td>RW-9</td><td>100</td><td>14.3</td><td>576,000</td></tr> </tbody> </table> * Pump in noted recovery wells cycled, therefore average flowrates for these wells were calculated from totalized flow readings for the month of February				Well I.D.	%Run Time	Average Flow Rate (GPM)	Total Flow (Gallons) - Based on Average Flow Rate During Operational Period	RW-1*	100	0.2	8,064	RW-1A	100	1.5	61,632	RW-1B*	100	2.5	100,800	RW-2*	100	2.4	96,768	RW-3	100	5.6	226,944	RW-4	100	3.1	123,840	RW-5*	100	1.5	60,480	RW-6	100	8.3	335,808	RW-7	93	1.8	65,889	RW-8	100	10.6	428,256	RW-9	100	14.3	576,000
Well I.D.	%Run Time	Average Flow Rate (GPM)	Total Flow (Gallons) - Based on Average Flow Rate During Operational Period																																																
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System Effluent Samples Collected:		The most recent effluent analytical results available for metals and VOCs is from November 2005.																																																	
		Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.																																																	
Contaminant Mass Removal:		February: 3.08 lbs TCE; 6.88 lbs Total VOCs Cumulative: 291.3 lbs TCE; 734.77 lbs Total VOCs																																																	
Total System Effluent through 28 February 2006		235,576,028	Gallons (includes 56,517 gallons of purge water)																																																

Prepared by CMO 03-03-2006
Checked by MI 03-06-2006

**March 2006 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
MACTEC Project Number 6301-05-0006**

Groundwater Recovery System Operation - March 2006																																																			
Duration of System Operation:		1-Mar-06 31-Mar-06																																																	
Site visits During Month: Site visits were performed on 17 March and on 28 March 2006 to collect flowrates, review system operations and perform system maintenance and repair																																																			
System Operational Notes:																																																			
System Maintenance and Repairs Summary: The pump in recovery well RW-8 was noted as inoperable during the 17 March 2006 visit. The pump was inspected and switched to the "ON" position and operated throughout the duration of operating period. The pump's electrical components will be repaired during the site repair visit planned for 14-18 April 2006. The pump in RW-7, noted as inoperable during the 27 February 2006 site visit, was replaced on 28 March 2006. However, the pump still did not operate properly due to an electrical system malfunction. The RW-7 pump electrical components will be checked and repaired during the repair visit planned for 14-18 April 2006.																																																			
System Maintenance and Repairs Summary: No alarms noted																																																			
Upcoming Activities Two operation and maintenance visits are planned for month of April 2006. The semi-annual sampling and groundwater level event is planned for 10-14 April 2006. The system review and calibration visit and the system repair visit will take place 14-18 April 2006.																																																			
Total March 2006 Effluent Discharge Volume:		2,400,912	Gallons March 1, 2006 through March 31, 2006																																																
March 2006 Average Discharge Flow Rate (GPM)		53.8																																																	
March 2006 Maximum Discharge Flow Rate (GPM)		54.6																																																	
March 2006 Minimum Discharge Flow Rate (GPM)		49.1																																																	
Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages. <table border="1"> <thead> <tr> <th>Well ID</th> <th>%Run Time</th> <th>Average Flow Rate (GPM)</th> <th>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</th> </tr> </thead> <tbody> <tr> <td>RW-1*</td> <td>100</td> <td>0.2</td> <td>8,928</td> </tr> <tr> <td>RW-1A</td> <td>100</td> <td>1.6</td> <td>70,848</td> </tr> <tr> <td>RW-1B*</td> <td>100</td> <td>2.5</td> <td>111,600</td> </tr> <tr> <td>RW-2*</td> <td>100</td> <td>2.4</td> <td>107,136</td> </tr> <tr> <td>RW-3</td> <td>100</td> <td>5.6</td> <td>248,976</td> </tr> <tr> <td>RW-4</td> <td>100</td> <td>2.5</td> <td>111,600</td> </tr> <tr> <td>RW-5*</td> <td>100</td> <td>1.6</td> <td>71,424</td> </tr> <tr> <td>RW-6</td> <td>100</td> <td>8.4</td> <td>375,840</td> </tr> <tr> <td>RW-7</td> <td>0</td> <td>0.0</td> <td>0</td> </tr> <tr> <td>RW-8</td> <td>100</td> <td>13.5</td> <td>601,920</td> </tr> <tr> <td>RW-9</td> <td>100</td> <td>15.5</td> <td>692,640</td> </tr> </tbody> </table> * Pump in noted recovery wells cycled, therefore average flowrates for these wells were calculated from totalized flow readings for the month of March				Well ID	%Run Time	Average Flow Rate (GPM)	Total Flow (Gallons) - Based on Average Flow Rate During Operational Period	RW-1*	100	0.2	8,928	RW-1A	100	1.6	70,848	RW-1B*	100	2.5	111,600	RW-2*	100	2.4	107,136	RW-3	100	5.6	248,976	RW-4	100	2.5	111,600	RW-5*	100	1.6	71,424	RW-6	100	8.4	375,840	RW-7	0	0.0	0	RW-8	100	13.5	601,920	RW-9	100	15.5	692,640
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System Effluent Samples Collected:		The most recent effluent analytical results available is from February 2006																																																	
		Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup																																																	
Contaminant Mass Removal:		February: 3.06 lbs TCE; 7.49 lbs Total VOCs Cumulative: 294.36 lbs TCE; 742.26 lbs Total VOCs																																																	
Total System Effluent through 31 March 2006		237,976,940	Gallons (includes 56,517 gallons of purge water)																																																

Prepared by CMO 04-04-2006
Checked by MI 04-07-06

884 100

**April 2006 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
MACTEC Project Number 6301-05-0006**

Groundwater Recovery System Operation - April 2006**Duration of System Operation.**

1-Apr-06
30-Apr-06

Site visits During Month:

Site visits were performed on 9 April and on 27 April 2006 to collect flowrates, review system operations and perform system maintenance and repair. Selected monitoring well data loggers were downloaded and semi-annual sampling and quarterly groundwater level and effluent sampling events were performed 10 - 14 April 2006.

System Operational Notes:**System Maintenance and Repairs Summary:**

A system repair visit was performed 14-18 April 2006 and the following items were repaired/replaced. Pump impeller in recovery well RW-7 was reconfigured, cooling sleeve to pump motor was added, and contactor and overlay relay were replaced. Iron incrustation problem was noted in recovery well RW-4, pump wet end was found fouled with iron and the impeller shaft seal worn. The pump was cleaned, and currently operates properly, but may need replacement in the near future. Impeller bearings and other necessary repairs were made to the flowmeters of recovery wells RW-4, RW-7, RW-8 and RW-9. Also, the flowmeter bodies were cleaned. Check valve and level relay were repaired in recovery well RW-2. The wire in 4-20 milliamps loop of recovery well RW-2 was found broken, and a new wire was installed. Strainer in recovery well RW-9 was removed. In addition, all recovery well flowmeters were re-calibrated. On-site and remote level and flowrate readings were compared and are within an acceptable range of accuracy. Per Foxboro (controllers manufacturer) changes were made in the controller's program, and the revised program was then copied into all controllers.

Alarm Summary:

No alarms noted

Upcoming Activities

Two operation and maintenance visits are planned for month of May 2006

Total April 2006 Effluent Discharge Volume.**2,095,488**

Gallons April 1, 2006 through April 30, 2006

April 2006 Average Discharge Flow Rate (GPM)
April 2006 Maximum Discharge Flow Rate (GPM)
April 2006 Minimum Discharge Flow Rate (GPM)

48.5
65.3
37.7

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages:

Well I.D.	%Run Time	Average Flow Rate (GPM)	Total Flow (Gallons) - Based on Average Flow Rate During	
			Operational Period	
RW-1*	100	0.2	8,640	
RW-1A	100	1.5	63,072	
RW-1B*	100	3.0	129,600	
RW-2*	100	2.4	103,680	
RW-3	100	5.2	224,640	
RW-4	100	3.1	135,360	
RW-5*	100	3.1	133,920	
RW-6	100	6.5	279,936	
RW-7	56.6	4.6	117,404	
RW-8	100	10.7	460,800	
RW-9	100	8.2	355,104	

* Pump in noted recovery wells cycled, therefore average flowrates for these wells were calculated from totalized flow readings for the month of April

System Effluent Samples Collected:

The most recent effluent analytical results available is from February 2006

Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.

Contaminant Mass Removal:

April: 2.67 lbs TCE, 6.53 lbs Total VOCs
Cumulative: 297.03 lbs TCE; 748.79 lbs Total VOCs

Total System Effluent through 30 April 2006**240,072,428**

Gallons (includes 56,517 gallons of purge water)

Prepared by: MI 05-02-2006
Checked by: GC 05-04-06

Submitted
5-May-06

**May 2006 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
MACTEC Project Number 6301-05-0006**

<u>Groundwater Recovery System Operation - May 2006</u>		
Duration of System Operation: 1-May-06 31-May-06		
Site visits During Month: Site visits were performed on 16 May and on 31 May 2006 to collect flowrates, review system operations and perform system maintenance and repair		
System Operational Notes:		
System Maintenance and Repairs Summary: During the May 16 visit, minor repair was performed on the flowmeter in RW-3.		
Alarm Summary: No alarms noted		
Upcoming Activities Two operation and maintenance visits are planned for month of June 2006		
Total May 2006 Effluent Discharge Volume: <u>2,609,136</u> Gallons May 1, 2006 through May 31, 2006		
May 2006 Average Discharge Flow Rate (GPM) 58.5 May 2006 Maximum Discharge Flow Rate (GPM) 64.6 May 2006 Minimum Discharge Flow Rate (GPM) 52.4		
Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages		
<u>Well I.D.</u>	<u>%Run Time</u>	<u>Average Flow Rate (GPM)</u>
RW-1*	100	0.2
RW-1A	100	1.2
RW-1B*	100	4.0
RW-2*	100	2.5
RW-3	100	2.0
RW-4	100	7.5
RW-5*	100	1.5
RW-6	100	6.3
RW-7	100	5.0
RW-8	100	7.8
RW-9	100	20.4
		<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>
		8,928
		53,856
		178,560
		111,600
		88,704
		334,512
		66,960
		282,960
		223,200
		347,040
		912,816
* Pump in noted recovery wells cycled, therefore average flowrates for these wells were calculated from totalized flow readings for the month of May		
System Effluent Samples Collected		
The most recent effluent analytical results available is from April 2006		
Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup		
Contaminant Mass Removal:		
May: 2.76 lbs TCE; 6.75 lbs Total VOCs		
Cumulative: 299.79 lbs TCE; 755.57 lbs Total VOCs		
Total System Effluent through 31 May 2006		
242,681,564 Gallons (includes 56,517 gallons of purge water)		

**June 2006 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
MACTEC Project Number 6301-05-0006**

Groundwater Recovery System Operation - June 2006																																																			
Duration of System Operation:		1-Jun-06 30-Jun-06																																																	
Site visits During Month: Site visits were performed on 19-20 June and on 29 June 2006 to collect flowrates, review system operations and perform system maintenance and repair																																																			
System Operational Notes: System Maintenance and Repairs Summary: During the 19-20 June 2006 O&M visit, latches were placed on the recovery well enclosures. In addition, keyed-alike locks were purchased and installed on the latches. Five additional keyed-alike locks were ordered and will be installed during the month of July. During the 19 June 2006 O&M visit, flow meters in recovery wells RW-3, RW-7 and RW-8 were noted as 'inoperational'. The flow-meter manufacturer's literature and resources were consulted/contacted and the flowmeters in RW-3 and RW-8 were repaired during the 29 June 2006 O&M visit. The electrical components of the pump and the flowmeter in RW-7 requires inspection by electrical technician as the pump's measured voltage is out of range. As pre-approved by the City of Memphis on 2 June 2006, seventeen hundred (1,700) gallons of IDW water was pumped from a storage tank at Dunn Field into the City of Memphis sanitary sewer on 08 June 2006.																																																			
Alarm Summary No alarms noted																																																			
Upcoming Activities Two operation and maintenance visits are planned for the month of July 2006 as well as repair of the pump and flowmeter for RW-7																																																			
Total June 2006 Effluent Discharge Volume:		2,247,192	Gallons June 1, 2006 through June 30, 2006																																																
June 2006 Average Discharge Flow Rate (GPM)		52.0																																																	
June 2006 Maximum Discharge Flow Rate (GPM)		55.3																																																	
June 2006 Minimum Discharge Flow Rate (GPM)		50.0																																																	
Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages: <table border="1"> <thead> <tr> <th>Well I.D.</th> <th>% Run Time</th> <th>Average Flow Rate (GPM)</th> <th>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</th> </tr> </thead> <tbody> <tr><td>RW-1*</td><td>100</td><td>0.4</td><td>17,280</td></tr> <tr><td>RW-1A</td><td>100</td><td>1.3</td><td>57,312</td></tr> <tr><td>RW-1B*</td><td>100</td><td>2.1</td><td>90,720</td></tr> <tr><td>RW-2*</td><td>100</td><td>2.5</td><td>108,000</td></tr> <tr><td>RW-3</td><td>100</td><td>2.0</td><td>87,696</td></tr> <tr><td>RW-4</td><td>100</td><td>6.3</td><td>270,000</td></tr> <tr><td>RW-5*</td><td>100</td><td>1.5</td><td>64,800</td></tr> <tr><td>RW-6</td><td>100</td><td>10.7</td><td>461,808</td></tr> <tr><td>RW-7</td><td>100</td><td>2.0</td><td>84,557</td></tr> <tr><td>RW-8</td><td>100</td><td>2.8</td><td>122,155</td></tr> <tr><td>RW-9</td><td>100</td><td>20.4</td><td>882,864</td></tr> </tbody> </table> * Pump in noted recovery wells cycled, therefore average flowrates for these wells were calculated from totalized flow readings for the month of June				Well I.D.	% Run Time	Average Flow Rate (GPM)	Total Flow (Gallons) - Based on Average Flow Rate During Operational Period	RW-1*	100	0.4	17,280	RW-1A	100	1.3	57,312	RW-1B*	100	2.1	90,720	RW-2*	100	2.5	108,000	RW-3	100	2.0	87,696	RW-4	100	6.3	270,000	RW-5*	100	1.5	64,800	RW-6	100	10.7	461,808	RW-7	100	2.0	84,557	RW-8	100	2.8	122,155	RW-9	100	20.4	882,864
Well I.D.	% Run Time	Average Flow Rate (GPM)	Total Flow (Gallons) - Based on Average Flow Rate During Operational Period																																																
RW-1*	100	0.4	17,280																																																
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RW-9	100	20.4	882,864																																																
System Effluent Samples Collected:		The most recent effluent analytical results available is from April 2006																																																	
		Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.																																																	
Contaminant Mass Removal:		May: 2.38 lbs TCE; 5.81 lbs Total VOCs Cumulative: 302.17 lbs TCE, 761.38 lbs Total VOCs																																																	
Total System Effluent through 30 June 2006		244,930,456	Gallons (includes 58,217 gallons of purge water)																																																

Prepared by: CMO 07-10-06
Checked by: MI 07-10-06

**July 2006 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
MACTEC Project Number 6301-05-0006**

Groundwater Recovery System Operation - July 2006			
Duration of System Operation:			
1-Jul-06 31-Jul-06			
Site visits During Month:			
Site visits were performed on 21-25 July and 26-28 July 2006 to collect flowrates, review system operations and perform system maintenance and repair			
System Operational Notes:			
System Maintenance and Repairs Summary:			
A repair visit was performed July 21-25, and the following is the list of performed repairs: RW-8, broken nipple on top of the motor, power cable and level relay were replaced (level relay was replaced by flow relay); RW-5 defective pump, motor-starter, contactor and overload relay were replaced, RW-1B defective pump was replaced, RW-1A, RW-2 RW-3 and RW-5, defective flowmeters were rebuilt; RW-7 electrical components were repaired, and RW-9 the actuator was repaired. New level relay for RW-5 was ordered, and will be calibrated and installed during the August site visit. Additionally, on-site groundwater level and flowmeter readings were compared with the readings obtained remotely, and necessary adjustments and calibrations were performed. A groundwater level and effluent sampling event took place 26 to 28 July. Monitoring wells data loggers were downloaded during that same visit. As pre-approved by the City of Memphis on 11 July 2006, 21,357 gallons of IDW water was pumped from a storage tank at Dunn Field into the City of Memphis sanitary sewer on 13 July 2006.			
Alarm Summary:			
No alarms noted.			
Upcoming Activities			
Two operation and maintenance visits are planned for the month of August 2006			
Total July 2006 Effluent Discharge Volume:			
2,482,416		Gallons July 1, 2006 through July 31, 2006	
July 2006 Average Discharge Flow Rate (GPM)			
55.6			
July 2006 Maximum Discharge Flow Rate (GPM)			
72.1			
July 2006 Minimum Discharge Flow Rate (GPM)			
48.0			
Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages:			
Well I.D.	%Run Time	Average Flow Rate (GPM)	Total Flow (Gallons) - Based on Average Flow Rate During Operational Period
RW-1*	100	0.6	26,784
RW-1A	100	1.3	57,600
RW-1B*	94	0.6	25,177
RW-2*	100	3.1	138,384
RW-3	100	2.8	125,568
RW-4	100	4.9	217,008
RW-5*	94	0.2	8,392
RW-6	100	11.2	498,528
RW-7	100	5.0	221,328
RW-8	100	5.6	248,256
RW-9	100	20.5	913,248
* Pump in noted recovery wells cycled, therefore average flowrates for these wells were calculated from totalized flow readings for the month of July.			
System Effluent Samples Collected:		The most recent effluent analytical results are from April 2006	
		Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.	
Contaminant Mass Removal:		July: 2.63 lbs TCE; 6.42 lbs Total VOCs	
		Cumulative: 304.80 lbs TCE; 767.80 lbs Total VOCs	
Total System Effluent through 31 July 2006		247,434,229	
		Gallons (includes 79,574 gallons of purge water)	

**August 2006 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
MACTEC Project Number 6301-05-0006**

Groundwater Recovery System Operation - August 2006**Duration of System Operation**

1-Aug-06
31-Aug-06

Site visits During Month:

Site visits were performed on 14 August and 21 August 2006 to collect flowrates, review system operations and perform system maintenance and repair

System Operational Notes:**System Maintenance and Repairs Summary:**

It was noted that RW-4 pump was not running on the 14 August site visit. The O&M technician inspected the pump control panel, electrical components, and relay in an attempt to restart the pump, but these efforts were unsuccessful. During the 21 August site visit, the electrical technician diagnosed the pump system and minor repairs of electrical components were performed on RW-4 to get the pump running. In addition, the input components were changed on RW-1 and RW-5.

Alarm Summary:

No alarms noted

Upcoming Activities

Two operation and maintenance visits are planned for the month of September 2006. The second visit in September is planned to be the transition of O&M responsibilities to e2m.

Total August 2006 Effluent Discharge Volume:

3,045,658

Gallons August 1, 2006 through August 31, 2006

August 2006 Average Discharge Flow Rate (GPM)

68.2

August 2006 Maximum Discharge Flow Rate (GPM)

72.3

August 2006 Minimum Discharge Flow Rate (GPM)

61.3

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages:

<u>Well I.D.</u>	<u>%Run Time</u>	<u>Average Flow Rate (GPM)</u>	<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>
RW-1*	100	0.3	13,392
RW-1A	100	1.8	82,224
RW-1B*	100	3.4	151,776
RW-2*	100	3.2	142,848
RW-3	100	1.9	84,730
RW-4	77	4.8	164,435
RW-5*	100	1.3	58,032
RW-6	100	11.1	495,504
RW-7	100	8.4	374,832
RW-8	100	11.7	524,016
RW-9	100	20.3	904,752

* Pump in noted recovery wells cycled, therefore average flowrates for these wells were calculated from totalized flow readings for the month of July

System Effluent Samples Collected:

The most recent effluent analytical results are from July 2006

Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.

Contaminant Mass Removal:

August: 4.66 lbs TCE, 11.56 lbs Total VOCs

Cumulative: 309.46 lbs TCE; 779.36 lbs Total VOCs

Total System Effluent through 31 August 2006

250,479,887

Gallons (includes 79,574 gallons of purge water)

**September 2006 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e2M Project Number 3202-019-01-14**

Groundwater Recovery System (GWRS) Operation - September 2006		
Duration of System Operation: 1-Sep-06 30-Sep-06		
Site visits During Month: Site visits were performed on 11 September and 28 September 2006 to collect flowrates, review system operations and perform system maintenance and repair. The 11 September visit was performed by a MACTEC field technician. The 28 September field visit was performed jointly by MACTEC and e2M in order to familiarize e2M personnel with the system.		
System Operational Notes: All recovery wells (RWs) were continuously online during September 2006 with the exception of minor shutdowns for maintenance issues (noted below). Also, e2M assumed system operations and maintenance and reporting on 01 October 2006.		
System Maintenance and Repairs Summary: Desiccants were replaced in all RW well sensors on 28 September 2006 site visit. Transducer elevations were adjusted in RW-3, RW-4 and RW-8 in an attempt to minimize pump cycling. New transducer elevations are as follows (measured from well top of casing): RW-3 - 79.5 ft; RW-4 - 83.7 ft; RW-8 76.8 ft. The ball valve on RW-3 was found to be jammed during the 11 September site visit, thus limiting flow from the well. The valve was unjammed and put in the 100% open position. Flowrates at RW-3 have increased from 1.9 gpm to 4.6 gpm since the modification.		
Alarm Summary: No alarms noted.		
Upcoming Activities Weekly visits to the groundwater recovery system are scheduled through the month of October 2006. Semiannual groundwater and effluent samples to be collected in October 2006.		
September 2006 GWRS Discharge (gallons):	2,892,960	
Approved One-Time Discharges (gallons)	17,427	
Total September 2006 Effluent Discharge Volume (gallons):	2,910,387	
September 2006 Average Discharge Flow Rate (GPM)	69.2	
September 2006 Maximum Discharge Flow Rate (GPM)	70.4	
September 2006 Minimum Discharge Flow Rate (GPM)	67.7	
Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages:		
Well I.D.	%Run Time	Average Flow Rate (GPM)
RW-1*	100	0.2
RW-1A	100	2.0
RW-1B	100	3.4
RW-2	100	2.8
RW-3	99	3.6
RW-4	99	7.0
RW-5*	100	1.5
RW-6	100	10.8
RW-7	100	5.6
RW-8	99	11.7
RW-9	100	20.5
		Total Flow (Gallons) - Based on Average Flow Rate
		During Operational Period
		8,928
		89,280
		153,115
		126,926
		159,539
		310,239
		66,960
		482,112
		249,984
		518,391
		914,822
* Pump in noted recovery wells cycled, therefore average flowrates for these wells were calculated from totalized flow readings for the month of September 2006.		
System Effluent Samples Collected: The most recent effluent analytical results are from July 2006. Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.		
Contaminant Mass Removal: September 2006: 4.51 lbs TCE; 10.39 lbs Total VOCs Cumulative: 314.06 lbs TCE; 790.78 lbs Total VOCs		
Total System Effluent through 31 September 2006	253,390,905	Gallons

Prepared by SH 10/08/06
Checked by FH 10/09/06

**October 2006 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e2M Project Number 3202-019-01-14**

Groundwater Recovery System (GWRs) Operation - October 2006		
Duration of System Operation: 1-Oct-06 31-Oct-06		
Site visits During Month: Site visits were performed weekly during October 2006 by e2M personnel to collect flowrates, review system operations and perform system maintenance and repair		
System Operational Notes: All recovery wells (RWs) were continuously online during October 2006 with the exception of RW-7 (motor failure)		
System Maintenance and Repairs Summary: The motor at RW-7 failed on about 10/19/06. The pump was pulled, motor replaced, and well restarted on 2 November 2006. Semiannual groundwater samples were also collected in October 2006.		
Alarm Summary: No alarms noted		
Upcoming Activities Weekly visits to the groundwater recovery system are scheduled through the month of November 2006. Effluent system samples are also scheduled to be collected in November 2006.		
October 2006 GWRs Discharge (gallons)	2,867,400	
Approved One-Time Discharges (gallons)	0	
Total October 2006 Effluent Discharge Volume (gallons):	2,867,400	
October 2006 Average Discharge Flow Rate (GPM)	64.2	
October 2006 Maximum Discharge Flow Rate (GPM)	67.1	
October 2006 Minimum Discharge Flow Rate (GPM)	57.4	
Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages:		
Well I.D.	%Run Time	Average Flow Rate (GPM)
RW-1*	100	0.2
RW-1A	100	1.9
RW-1B	100	3.4
RW-2	100	2.8
RW-3	100	4.1
RW-4	100	3.2
RW-5*	100	1.1
RW-6	100	11.1
RW-7	66	5.6
RW-8	100	12.7
RW-9	100	20.4
Total Flow (Gallons) - Based on Average Flow Rate During Operational Period		
		8.928
		84,096
		151,992
		126,288
		182,880
		141,264
		49,104
		494,784
		164,989
		560,261
		908,928
* Pump in noted recovery wells cycled, therefore average flowrates for these wells were calculated from totalized flow readings for the month of October 2006.		
System Effluent Samples Collected: The most recent effluent analytical results are from July 2006.		
Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.		
Contaminant Mass Removal:		
October 2006: 4.47 lbs TCE; 11.09 lbs Total VOCs Cumulative: 318.53 lbs TCE; 801.87 lbs Total VOCs		
Total System Effluent through 31 October 2006	256,258,305	Gallons

**November 2006 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e2M Project Number 3202-019-01-14**

Groundwater Recovery System (GWRs) Operation - November 2006

Duration of System Operation: 1-Nov-06
30-Nov-06

Site visits During Month:

Site visits were performed by e2M on 2 November, 10 November, 17 November, 22 November, and 30 November 2006. Tasks included collection of flowrates, reviewing system operations and performing system maintenance and repair.

System Operational Notes:

All recovery wells (RWs) were continuously online during November 2006 with the exception of those noted below.
All recovery wells and the system discharge were sampled on 8 November 2006.

System Maintenance and Repairs Summary:

As reported in the October 2006 Discharge Report, RW-7 was offline in late October and early November due to a motor failure. After troubleshooting activities, the pump motor at RW-7 was replaced and RW-7 was restarted on 2 November 2006. A small leak at a discharge line joint at RW-7 (within the well housing) was discovered during the 17 November inspection. The joint was replaced and RW-7 restarted. Also, during the 17 November inspection a leak sprung in the discharge line at RW-8 during actuator valve testing. RW-8 was taken offline, the broken line replaced, and the well was restarted. Both RW-7 and RW-8 are functioning normally. RW-1B was offline for unknown reasons beginning 5 November 2006. It was originally thought the well was cycling due to slow recharge. However, after examination of data collected by the datalogger, RW-1B was offline for a 22 day period. RW-1B restarted on its own on 27 November and continues to run without incident. RW-1B will be closely monitored to ensure the well remains operational. The heat trace located at the discharge line was repaired and is currently operational. Also, work has begun on the installation of a new door for the IRA Control Room. Work should be completed in early December 2006.

Alarm Summary:

No alarms noted.

Upcoming Activities:

Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for December 2006.

November 2006 GWRs Discharge (gallons): 2,888,957
Approved One-Time Discharges (gallons): 0

Total November 2006 Effluent Discharge Volume (gallons): 2,888,957

November 2006 Average Discharge Flow Rate (GPM) 68.7
November 2006 Maximum Discharge Flow Rate (GPM) 72.2
November 2006 Minimum Discharge Flow Rate (GPM) 61.0

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages.

Well I.D.	% Run Time	Average Operating Flow Rate (GPM)	Total Flow (Gallons) - Based on Average Flow Rate During Operational Period
RW-1*	100	0.2	8,640
RW-1A	100	2.3	100,800
RW-1B	30	3.4	44,064
RW-2	100	2.7	118,656
RW-3*	100	3.6	154,656
RW-4	100	4.9	209,520
RW-5*	100	1.1	47,520
RW-6	100	10.9	470,160
RW-7	97	8.6	359,816
RW-8	100	13.3	569,100
RW-9	100	20.3	876,816

* Pump cycling (non-continuous flow), therefore average flowrates for these wells were calculated from totalized flow readings for the month of November 2006.

System Effluent Samples Collected:

The most recent effluent analytical results are from November 2006.

Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.

Contaminant Mass Removal:

November 2006: 3.67 lbs TCE; 7.94 lbs Total VOCs
Cumulative: 322.17 lbs TCE; 809.82 lbs Total VOCs

Total System Effluent through 30 November 2006: 259,235,073 Gallons

884 108

**December 2006 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e2M Project Number 3202-019-01-14**

Groundwater Recovery System (GWRs) Operation - December 2006**Duration of System Operation:**

1-Dec-06
31-Dec-06

Site visits During Month:

Site visits were performed by e2M on 8 December, 15 December, 22 December, and 29 December 2006. Tasks included collection of flowrates, reviewing system operations and performing system maintenance and repair.

System Operational Notes:

All recovery wells (RWs) were continuously online during December 2006 with exceptions noted below.

System Maintenance and Repairs Summary:

A brief shutdown of RW-4 occurred on 28 December 2006. The well self started on 29 December 2006. However, the flowrate from RW-4 is approximately 50% less than historic levels. Troubleshooting activities will be completed in January 2007 to increase the flowrate from RW-4. Wells RW-1A and RW-2 shutdown on 27 December 2006 and are currently offline due to unknown reasons. Troubleshooting activities as to the cause are ongoing. Work was completed on the installation of a new door for the IRA Control Room, a drip guard was installed over the door to minimize rusting of the door frame. A fence post was replaced near the north end of Dunn Field (near the IRA System discharge point). Additionally, a tension wire was added to the bottom of the fence to make the fence more secure and improve site security. A couple of holes under the perimeter fence were discovered during weekly inspections. All holes were filled with medium size rock. Inspections of the fence line will continue on a weekly basis.

Alarm Summary:

No alarms noted.

Upcoming Activities

Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for January 2006.

December 2006 GWRs Discharge (gallons)	3,004,157
Approved One-Time Discharges (gallons)	0

Total December 2006 Effluent Discharge Volume (gallons):	<u>3,004,157</u>

December 2006 Average Discharge Flow Rate (GPM)	67.3
December 2006 Maximum Discharge Flow Rate (GPM)	70.7
December 2006 Minimum Discharge Flow Rate (GPM)	58.2

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages.

<u>Well I.D.</u>	<u>%Run Time</u>	<u>Average Operating Flow Rate (GPM)</u>	<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>
RW-1*	100	0.4	17,280
RW-1A	88.3	2.4	92,870
RW-1B	100	3.4	43,537
RW-2	88.7	2.7	101,691
RW-3*	100	2.9	124,416
RW-4	96.3	5.0	208,285
RW-5*	100	1.0	43,200
RW-6	100	9.8	425,311
RW-7	100	6.7	282,109
RW-8	100	13.8	588,819
RW-9	100	20.2	872,640

* Pump cycling (non-continuous flow), therefore average flowrates for these wells were calculated from totalized flow readings for the month of December 2006.

System Effluent Samples Collected:

The most recent effluent analytical results are from November 2006.

Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.

Contaminant Mass Removal:

December 2006: 3.78 lbs TCE; 8.26 lbs Total VOCs

Cumulative: 325.95 lbs TCE; 818.08 lbs Total VOCs

<u>Total System Effluent through 30 December 2006:</u>	262,239,229	Gallons

Prepared by SH 01/08/07
Checked by TH 01/09/07

APPENDIX C
RESULTS OF LABORATORY ANALYSIS
OCTOBER-NOVEMBER 2006

TABLE C-1
MONITORING WELL SAMPLE ANALYTICAL RESULTS, OCTOBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample ID	MW-07	MW-31	MW-31T	MW-32B	MW-33	MW-37	MW-40	MW-43	MW-44
Lab Sample ID	L0610605-03	L0610611-10	L0610611-11	L0610629-03	L0610633-07	L0610629-04	L0610629-05	L0610629-06	L0610629-07
Date	10/18/2006	10/18/2006	10/18/2006	10/19/2006	10/20/2006	10/19/2006	10/19/2006	10/19/2006	10/19/2006
Analyte	units								
Volatile Organic Compounds - SW8260B									
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	0.543 J	0.451 J	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	21.7	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	0.594 J	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	0.862 J	0.644 J	0.233 J	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	18.5	30.6	23.2	<1	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3	<3	<3	<3	<3
Carbon tetrachloride	ug/L	0.273 J	<1	<1	12.3	0.278 J	<1	<1	1.2
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	1.05	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	4.49	<0.3	0.131 J	86	<0.3	<0.3	<0.3	0.467
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	<1	<1	3.53	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
m- p-Xylene	ug/L	<2	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	0.537 J	0.307 J	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	34.5	7.58	0.714 J	1.63	<1	<1	<1	<1
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	<1	<1	0.613 J	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	19.6	12	3.85	38	<1	<1	<1	0.366 J
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes

- Well ID **T is Top interval and **B is Bottom interval
 ug/L micrograms per liter
 J Estimated result based on QC data or reported below RL
 B Estimated result possibly biased high or false positive based on blank data
 R Unusable data

TABLE C-1
MONITORING WELL SAMPLE ANALYTICAL RESULTS, OCTOBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample ID	MW-54	MW-57	MW-67	MW-68B	MW-68T	MW-69B	MW-69T	MW-70B	MW-70T
Lab Sample ID	L0610629-08	L0610633-08	L0610628-07	L0610629-09	L0610629-10	L0610633-09	L0610633-10	L0610633-11	L0610633-12
Date	10/19/2006	10/20/2006	10/19/2006	10/19/2006	10/19/2006	10/20/2006	10/20/2006	10/20/2006	10/20/2006
Analyte	units								
Volatiles Organic Compounds - SW8260B									
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.12	2.4
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	572	<0.5	<0.5J	0.457 J	5.67	<0.5	5850	9200
1,1,2-Trichloroethane	ug/L	2.54	<1	<1J	<1	<1	<1	25.7	10.1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	<1	<1	1.89	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1J	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1J	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.526	0.416 J
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4J	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5J	<0.5	<0.5	<0.5J	<0.5J	<0.5J	<0.5J
Bromotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3	<3	<3	<3	<3
Carbon tetrachloride	ug/L	1.9	31	<1	<1	0.951 J	<1	<1	0.575 J
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1.45	5.67	<0.3	0.165 J	1.57	0.169 J	0.261 J	2.42
Chloromethane	ug/L	<1	<1	<1J	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	19.6	0.294 J	<1	<1	1.06	<1	0.348 J	122
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	2.78	4.02	<1	<1	1.63	0.688 J	2.03	29.5
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	3.88	0.659 J	<1	<1	0.544 J	<1	<1	17.4
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	19.7
Trichloroethene	ug/L	604	28.7	<1	0.485 J	5.76	2.09	9.84	2180
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	3390
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	64.2	<1

Notes:

Well ID **T is Top interval and **B is Bottom interval

ug/L, micrograms per liter

J Estimated result based on QC data or reported below RL

H Estimated result possibly biased high or false positive based on BL

R Unusable data

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DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Analyte	Sample ID	MW-7*	MW-76	MW-77	MW-79	MW-130	MW-144	MW-145B	MW-145T	MW-147
Lab Sample ID	Date	10/20/2006	10/20/2006	10/20/2006	10/18/2006	10/20/2006	10/19/2006	10/19/2006	10/19/2006	10/18/2006
units										
Volatile Organic Compounds - SW8260B										
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	2.99	<0.5	<0.5	<5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	3.64	<10	<1	<1	0.313 J
1,1,2,2-Tetrachloroethane	ug/L	22.9	2.58	14300	<0.5	<0.5	2520	<0.5	<0.5	87.9
1,1,2-Trichloroethane	ug/L	1.16	<1	17.4	<1	<1	60.4	<1	<1	1.39
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	2.9	<10	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	10.6	61.6	<10	<1	<1	0.657 J
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
1,2,4-Tmmethylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<20	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
1,2-Dichloroethane	ug/L	0.628	<0.5	0.511	<0.5	0.736	<5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
1,3,5-Tmmethylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10	<10	88.5 J	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
Bromodichloromethane	ug/L	0.251 J	<0.5	<0.5 J	<0.5	<0.5	<5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3	<3	<30	<3	<3	<3
Carbon tetrachloride	ug/L	37.8	<1	0.922 J	<1	<1	<10	<1	<1	0.364 J
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
Chloroform	ug/L	303	0.208 J	4.77	<0.3	0.256 J	1.45 J	<0.3	<0.3	2.66
Chloromethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	11.7	0.263 J	151	<1	0.766 J	98.2	<1	<1	41.2
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
m-p-Xylene	ug/L	<2	<2	<2	<2	<2	<20	<2	<2	<2
MCK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<100	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<50	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1	3.43 J	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<100	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
Tetrachloroethene	ug/L	7.34	1.84	46.9	0.47 J	112	11.4	<1	<1	3.92
Toluene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	3.07	<1	19.1	<1	<1	19.2	<1	<1	10.3
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
Trichloroethene	ug/L	158 J	4.9	6500	1.63	60.5	1890	<1	<1	81.3
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<10	<1	<1	<1

Notes

- Well ID **T is Top interval and **B is Bottom interval
 ug/L micrograms per liter
 J Estimated result based on QC data or reported below RL
 B Estimated result possibly biased high or false positive based on bl.
 R Unusable data

TABLE C-1
MONITORING WELL SAMPLE ANALYTICAL RESULTS, OCTOBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample ID	MW-148B	MW-148T	MW-149B	MW-149T	MW-150B	MW-150T	MW-151B	MW-151T	MW-152B
Lab Sample ID	L0610605-05	L0610605-06	L0610630-04	L0610630-05	L0610624-02	L0610624-03	L0610605-07	L0610605-08	L0610605-09
Date	10/18/2006	10/18/2006	10/19/2006	10/19/2006	10/19/2006	10/19/2006	10/18/2006	10/18/2006	10/18/2006
Analyte	units								
Volatile Organic Compounds - SW8260B									
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	0.628	<5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	0.789	3.72	23.1	21.3	8480	2040	1.42	<0.5
1,1,2-Trichloroethane	ug/L	<1	0.316 J	0.686 J	0.425 J	14.6	5.31 J	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	0.619 J	<10	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<20	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	0.252 J	<5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
Acetone	ug/L	<10	<10	<10	<10	<10	<100	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3	<3	<30	<3	<3
Carbon tetrachloride	ug/L	<1	0.267 J	12.2	12.9	<1	<10	6.19	0.558 J
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
Chloroform	ug/L	0.146 J	1.74	95.5	81	2.22	<3	16.9	0.287 J
Chloromethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	34.3	7.81	3.15	77.1	38.1	1.45	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
Dibenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2	<20	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	2.78 J	<10	<100	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<50	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<100	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
Tetrachloroethene	ug/L	0.481 J	7.53	1.27	1.44	13	7.13 J	0.621 J	<1
Toluene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	10.7	1.13	0.794 J	13.9	9.79 J	0.282 J	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
Trichloroethene	ug/L	2.28	74.1	45.4	40	2910	1430	10.5	0.502 J
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<10	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<10	<1	<1

Notes:

Well ID **T is Top interval and **B is Bottom interval

ug/L, micrograms per liter

J Estimated result based on QC data or reported below RL

H Estimated result possibly biased high or false positive based on BL

R Unusable data

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TABLE C-1
MONITORING WELL SAMPLE ANALYTICAL RESULTS, OCTOBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date units	MW-152T L0610605-10 10/18/2006	MW-153B L0610611-13 10/18/2006	MW-153T L0610605-11 10/18/2006	MW-154B L0610628-01 10/19/2006	MW-154T L0610628-02 10/19/2006	MW-155B L0610605-12 10/18/2006	MW-155T L0610605-13 10/18/2006	MW-156B L0610628-03 10/19/2006	MW-156T L0610628-04 10/19/2006
Volatile Organic Compounds - SW8260B										
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	1.18	1.04	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	4.87	<0.5	<0.5	<0.5	<0.5	4090	3190	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1	<1	58.5	77.4	<1	<1
1,1-Dichloroethane	ug/L	<1	0.514 J	0.477 J	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	4.87	4.19	<1	<1	0.539 J	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.297 J	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3	<3	<3	<3	<3	<3
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1.2	<0.3	<0.3	<0.3	<0.3	2.1	1.57	<0.3	<0.3
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	10.9	0.368 J	<1	<1	<1	72.2	67	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
m-p-Xylene	ug/L	<2	<2	<2	<2	<2	<2	<2	<2	<2
MCK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1	<1	0.365 J	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	13.4	<1	<1	<1	<1	13.8	10.4	<1	<1
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	5.48	<1	<1	<1	<1	20.4	19.3	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	125	<1	<1	<1	<1	1810	1310	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

- Well ID **T is Top interval and **B is Bottom interval
 ug/L micrograms per liter
 J Estimated result based on QC data or reported below RL
 B Estimated result possibly biased high or false positive based on bl
 R Unusable data

TABLE C-1
MONITORING WELL SAMPLE ANALYTICAL RESULTS, OCTOBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample ID	MW-157	MW-158AB	MW-158AT	MW-158B	MW-158T	MW-159B	MW-159T	MW-160	MW-161
Lab Sample ID	L0610624-04	L0610630-06	L0610630-07	L0610630-08	L0610630-09	L0610611-01	L0610611-02	L0610611-03	L0610624-07
Date	10/19/2006	10/19/2006	10/19/2006	10/19/2006	10/19/2006	10/18/2006	10/18/2006	10/18/2006	10/19/2006
Analyte	units								
Volatiles Organic Compounds - SW8260B									
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
1,1,2,2-Tetrachloroethane	ug/L	2.64	36.2	410	3.73	4.41	357	9.08	1950
1,1,2-Trichloroethane	ug/L	<1	0.618 J	14.9	<1	<1	19.6	10.7	3.55 J
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
1,1-Dichloroethene	ug/L	<1	0.818 J	0.622 J	<1	<1	<1	<1	<10
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<2	<2	<20
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
Acetone	ug/L	<10	<10	<10	<10	<10	<10	<10	<100
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
Bromomethane	ug/L	<3	<3	<3	<3	<3	<3	<3	<30
Carbon tetrachloride	ug/L	9.25	0.754 J	<1	<1	<1	0.493 J	0.252 J	<10
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
Chloroform	ug/L	30.1	3.64	1.22	0.691	0.673	1.02	0.807	<3
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
cis-1,2-Dichloroethene	ug/L	13.3	58.3	60.7	5.96	5.6	55.4	37	38.5
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
Hexachlorobutadiene	ug/L	0.65	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
m,p-Xylene	ug/L	<2	<2	<2	<2	<2	<2	<2	<20
MCK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<10	<10	<100
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5	<5	<50
Methylene chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10	<10	<100
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
Tetrachloroethene	ug/L	2.19	16.1	6.64	8.49	7.22	2.63	0.93 J	19.8
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
trans-1,2-Dichloroethene	ug/L	2.7	22.8	19.1	3.13	2.62	11.2	6.37	17.8
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
Trichloroethene	ug/L	148 J	301	678	77.4	69.3	1480	935	307
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<10
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<10

Notes:

W/L/D **T is Top interval and **B is Bottom interval

ug/L micrograms per liter

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive based on bl.

R Unsatisfactory data

TABLE C-1
MONITORING WELL SAMPLE ANALYTICAL RESULTS, OCTOBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample ID	MW-162	MW-163	MW-164	MW-165AB	MW-165AT	MW-165B	MW-165T	MW-166A	MW-166B
Lab Sample ID	L0610630-10	L0610630-13	L0610624-08	L0610611-04	L0610611-05	L0610611-06	L0610611-07	L0610633-02	L0610633-05
Date	10/19/2006	10/19/2006	10/19/2006	10/18/2006	10/18/2006	10/18/2006	10/18/2006	10/20/2006	10/20/2006
Analyte	units								
Volatile Organic Compounds - SW8260B									
1,1,1,2-Tetrachloroethane	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	162 J	538	3.05	1.65	0.188 J	3.5	2.63	9.59
1,1,2-Trichloroethane	ug/L	0.36 J	17.3	<1	<1	<1	0.655 J	0.343 J	0.385 J
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	2.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	ug/L	<10	18 J	<10	<10	<10	<10	<10	<10
Benzene	ug/L	<0.4	0.843	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3	<3	<3	<3	<3
Carbon tetrachloride	ug/L	<1	<1	16.8	4.91	0.505 J	<1	3.85	7.06
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	0.988	0.446	52.6	7.98	1.95	0.332	7.48	27.7
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	18.3	98.6	8.79	10.3	5.06	14.6	12.9	2.14
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Lithybenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	10.1	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	0.276 J	<1	0.363 B	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	7.81	4.35	2.03	1.35	0.436 J	1.23	1.1	0.792 J
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	5.05	17.2	1.49	2.22	0.89 J	2.67	2.84	0.433 J
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	445	527	92.6	165	86.7	146	187	24.3 J
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	3.63	<1	<1	<1	<1	<1	<1

Notes:

Well ID **T is Top Interval and **B is Bottom Interval

ug/L micrograms per liter

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive based on bli

R Unusable data

TABLE C-1
MONITORING WELL SAMPLE ANALYTICAL RESULTS, OCTOBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample ID	MW-166T	MW-167B	MW-167T	MW168AB	MW168AT	MW-168B	MW-168T	MW-169B	MW-169T
Lab Sample ID	L0610633-06	L0610611-08	L0610611-09	L0610634-002	L0610634-001	L0610624-09	L0610624-10	L0610624-11	L0610624-12
Date	10/20/2006	10/18/2006	10/18/2006	10/20/2006	10/20/2006	10/19/2006	10/19/2006	10/19/2006	10/19/2006
Analyte	units								
Volatile Organic Compounds - SW 8260B									
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	0.471 J	12.5	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	10.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	0.422 J	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	0.396 J	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	1.99	22.1	0.941 J	1.07	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.338 J	0.379 J
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5 J	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoforn	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3	<3	<3	<3	<3
Carbon tetrachloride	ug/L	16.5	<1	<1	<1	0.257 J	<1	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.46	4.44
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	68.5	<0.3	<0.3	<0.3	0.85	<0.3	<0.3	<0.3
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	5.41	<1	<1	<1	<1	<1	0.281 J	0.282 J
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2	<2	<2	<2
MIBK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1.68	<1	<1	<1	0.836 J	<1	<1	<1
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	0.937 J	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	43.7	<1	<1	0.289 J	1.32	0.509 J	0.467 J	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

Well ID **T is Top interval and **B is Bottom interval

ug/L, micrograms per liter

J Estimated result based on QC data or reported below RL

H Estimated result possibly biased high or false positive based on BL

R Unusable data

TABLE C-1
MONITORING WELL SAMPLE ANALYTICAL RESULTS, OCTOBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date units	MW-170B L0610628-05 10/19/2006	MW-170T L0610628-06 10/19/2006	MW-171B L0610624-13 10/19/2006	MW-171T L0610624-14 10/19/2006
Volatile Organic Compounds - SW8260B					
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	1	<1	0.33 J
1,1,2,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	2.15	<1	<1
1,1-Dichloroethene	ug/L	<1	3.52	<1	0.544 J
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropene	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	<1	<1	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	<0.3	<0.3	<0.3	<0.3
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m- p-Xylene	ug/L	<2	<2	<2	<2
MCK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethene	ug/L	<1	<1	<1	<1
Toluene	ug/L	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethene	ug/L	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1

Notes:

Well ID **T is Top interval and **B is Bottom interval

µg/L micrograms per liter

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive based on bl.

R Unusable data

TABLE C-2
RECOVERY WELL SAMPLE ANALYTICAL RESULTS, NOVEMBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample ID	RW-01	RW-01A	RW-01B	RW-02	RW-03	RW-04	RW-05
Lab Sample ID	L0611238-07	L0611238-08	L0611238-13	L0611238-09	L0611238-11	L0611238-10	L0611238-12
Date	11/8/2006	11/8/2006	11/8/2006	11/8/2006	11/8/2006	11/8/2006	11/8/2006
Analytes	units						
Volatiles Organic Compounds - SW8260B							
1,1,1,2-Tetrachloroethane	ug/L	<0.5	0.878	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1.79	202	0.303 J	99.5	26.7	51
1,1,2-Trichloroethane	ug/L	<1	5.55	<1	3.4	1.09	5.91
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	0.626	<0.5	0.268 J	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	0.762	<0.5	<0.5	<0.5	<0.5
Bromoforn	ug/L	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3	<3	<3
Carbon tetrachloride	ug/L	24.5	18.1	15.4	9.05	5.03	1.56
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	120	650	79.1	34	2.22	1.96
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	2.93	8.64	3.86	75.1	19.4	18.9
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2	<2
MFK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	6.35	9.83	3.68	1.82	1.24	7.13
Toluene	ug/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1.67	2.47	0.807 J	3.69	1.73	3.97
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	88	209	53.4	65	62.7	593
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1

Notes:

ug/L, micrograms per liter

J Estimated result based on QC data or reported below RL.

H Estimated result possibly biased high or false positive based on blank data

R Unusable data

Methods:

SW8260B

TABLE C-2
RECOVERY WFL SAMPLE ANALYTICAL RESULTS, NOVEMBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Analytes	Sample ID LabSample ID Date units	RW-06 L0611238-01 11/8/2006	RW-07 L0611238-02 11/8/2006	RW-08 L0611238-05 11/8/2006	RW-09 L0611238-06 11/8/2006
Volatile Organic Compounds - SW8260B					
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	0.658 J
1,1,2,2-Tetrachloroethane	ug/L	0.772	90.3 J	174	3.25
1,1,2-Trichloroethane	ug/L	<1	1.94	3.3	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	0.608 J
1,1-Dichloroethene	ug/L	<1	<1	3.45	18
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	0.351 J	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	<1	0.762 J	1.22	0.846 J
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	1.87	7.16	12.1	5.51
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	18	62.6	162	8.61
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethene	ug/L	20.7	6.06	4.56	20.4
Toluene	ug/L	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	6.58	14.7	43.7	3.54
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethene	ug/L	68.8	153 J	294	40.8
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1

Notes

ug/L micrograms per liter

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive based on blank data

R Unusable data

Method

SW8260B

TABLE C-3
EFFLUENT SAMPLE ANALYTICAL RESULTS
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

	Sample ID Date Units	EFFLUENT-0206 2/27/2006 12 31	EFFLUENT-0406 4/11/2006	EFFLUENT-0706 7/27/2006	EFFLUENT-1106 11/8/2006
pH - E150.0					
pH	SU	6.0	6.5	6.0	NS
Volatile Organic Compounds - SW8260B					
Acetone (2-propanone)	µg/L	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<0.4
Bromobenzene	µg/L				<1
Bromodichloromethane	µg/L	<1	<1	<1	<0.5
Bromotoluene	µg/L	<1	<1	<1	<1
Bromomethane (methyl bromide)	µg/L	<1	<1	<1	<3
Butylbenzene, n-	µg/L				<1
Butylbenzene, sec-	µg/L				<1
Butylbenzene, tert-	µg/L				<1
Carbon disulfide	µg/L	<1	<1	<1	
Carbon tetrachloride	µg/L	3.26	2.24	4.06	1.08
Chlorobenzene	µg/L	<1	<1	<1	<0.5
Chlorobromomethane (bromochloromethane)	µg/L	<1	<1	<1	<1
Chloroethane (ethyl chloride)	µg/L	<1	<1	<1	<1
Chloroform	µg/L	30	21.9	32.2	7.66 J
Chlorohexane, 1-	µg/L				<1
Chloromethane (methyl chloride)	µg/L	<1	<1	<1	<1
Chlorotoluene, o- (2-chlorotoluene)	µg/L				<1
Chlorotoluene, p- (4-chlorotoluene)	µg/L				<1
Cumene (isopropyltoluene)	µg/L				<1
Cymene (isopropyltoluene)	µg/L				<1
Dibromo-3-chloropropane, 1,2-	µg/L	<5	<5	<5	<2
Dibromochloromethane (chlorodibromomethane)	µg/L	<1	<1	<1	<0.5
Dibromofluoromethane	µg/L				93.1
Dichlorobenzene, 1,2-	µg/L	<1	<1	<1	<1
Dichlorobenzene, 1,3-	µg/L	<1	<1	<1	<1
Dichlorobenzene, 1,4-	µg/L	<1	<1	<1	<0.5
Dichlorodifluoromethane	µg/L				<1
Dichloroethane, 1,1-	µg/L	<1	<1	<1	0.245 J
Dichloroethane, 1,2-	µg/L	<1	<1	<1	<0.5
Dichloroethylene, 1,1-	µg/L	10.3	7.51	7.15	6.79
Dichloroethylene, cis-1,2-	µg/L	60.9	50.5	70.6	66.9 J
Dichloroethylene, trans-1,2	µg/L	14.8	11.6	15.5	17.7 J
Dichloropropane, 1,2-	µg/L	<1	<1	<1	<1
Dichloropropane, 1,3-	µg/L				<0.4
Dichloropropane, 2,2-	µg/L				<1
Dichloropropene, 1,1-	µg/L				<1
Dichloropropene, cis-1,3-	µg/L	<1	<1	<1	<0.5
Dichloropropene, trans-1,3-	µg/L	<1	<1	<1	<1
Ethyl benzene	µg/L	<1	<1	<1	<1
Ethylene dibromide (dibromoethane, 1,2-)	µg/L	<1	<1	<1	<1
Hexachlorobutadiene	µg/L				<0.6
Hexanone, 2-	µg/L	<10	<10	<10	
Methyl ethyl ketone (2-butanone)	µg/L	<10	<10	<10	<10
Methyl isobutyl ketone (4-methyl-2-pentanone)	µg/L	<10	<10	<10	<10
Methylene bromide (dibromomethane)	µg/L				<1
Methylene chloride (dichloromethane)	µg/L	<1	<1	1.93 B	<1
MTBE (methyl tert-butyl ether)	µg/L				<5
Naphthalene	µg/L				<1
Propylbenzene, n-	µg/L				<1
Styrene	µg/L	<1	<1	<1	<1
Tetrachloroethane, 1,1,1,2-	µg/L				<0.5
Tetrachloroethane, 1,1,2,2-	µg/L	82.8	74.9	130.1	60.9 J
Tetrachloroethylene (perchloroethylene)	µg/L	17.3	12.6	15.9	15.9
Toluene	µg/L	<1	<1	<1	<1
Trichlorobenzene, 1,2,3-	µg/L				<1
Trichlorobenzene, 1,2,4-	µg/L	<1	<1	<1	<1
Trichloroethane, 1,1,1-	µg/L	<1	<1	<1	0.436 J
Trichloroethane, 1,1,2-	µg/L	1.91	1.83	1.73	1.21
Trichloroethylene	µg/L	153 J	127 J	187	151 J
Trichlorofluoromethane	µg/L				<1
Trichloropropane, 1,2,3-	µg/L				<1
Trimethylbenzene, 1,2,4-	µg/L				<1
Trimethylbenzene, 1,3,5-	µg/L				<1
Vinyl chloride	µg/L	<1	<1	<1	<1
Xylene, o-	µg/L	<1	<1	<1	<1

TABLE C-3
EFFLUENT SAMPLE ANALYTICAL RESULTS
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER 1RA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample ID	EFFLUENT-0206	EFFLUENT-0406	EFFLUENT-0706	EFFLUENT-1106
Date	2/27/2006 12 31	4/11/2006	7/27/2006	11/8/2006
Units				
Semi-volatile Organic Compounds - SW8270B				
Acenaphthene	µg/L	<10		<10.4
Acenaphthylene	µg/L	<10		<10.4
Anthracene	µg/L	<10		<10.4
Benz-a-anthracene	µg/L	<10		<10.4
Benzo-a-pyrene	µg/L	<10		<10.4
Benzo-b-fluoranthene	µg/L	<10		<10.4
Benzo-g,h,i-perylene	µg/L	<10		<10.4
Benzoic acid	µg/L			<104
Benzo-k-fluoranthene	µg/L	<10		<10.4
Benzyl alcohol	µg/L			<20.8
Bis (2-chloroethoxy) methane	µg/L	<10		<10.4
Bis (2-chloroethyl) ether	µg/L	<10		<10.4
Bis (2-chloroisopropyl) ether	µg/L	<10		<10.4
Bis (2-ethyl-hexyl) phthalate	µg/L	<10		<10.4
Bromophenyl phenylether, 4-	µg/L	<10		<10.4
Butyl benzyl phthalate	µg/L	<10		<10.4
Chloro-3-methylphenol, 4-	µg/L	<10		<20.8
Chloroaniline, p-	µg/L	<10		<20.8
Chloronaphthalene, 2- (chloronaphthalene, beta)	µg/L	<10		<10.4
Chlorophenol, 2-	µg/L	<10		<10.4
Chlorophenyl phenylether, 4-	µg/L	<10		<10.4
Chrysene	µg/L	<10		<10.4
Cresol, m- (3-methylphenol)	µg/L	<10		
Cresol, o- (2-methylphenol)	µg/L	<10		<10.4
Cresol, p- (4-methylphenol)	µg/L			<52.1
Dibenz-a,h-anthracene	µg/L	<10		<10.4
Dibenzofuran	µg/L	<10		<10.4
Dichlorobenzene, 1,2-	µg/L			<10.4
Dichlorobenzene, 1,3-	µg/L			<10.4
Dichlorobenzene, 1,4-	µg/L			<10.4
Dichlorobenzidine, 3,3'-	µg/L	<50		<20.8
Dichlorophenol, 2,4-	µg/L	<10		<10.4
Diethyl phthalate	µg/L	<10		<10.4
Dimethyl phenol, 2,4-	µg/L	<10		<10.4
Dimethylphthalate	µg/L	<10		<10.4
Di-n-butyl phthalate	µg/L	<10		<10.4
Dinitro-2-methylphenol, 4,6- (dinitro-o-cresol, 4, 6-)	µg/L	<50		<52.1
Dinitrophenol, 2,4-	µg/L	<50		<52.1
Dinitrotoluene, 2,4-	µg/L	<10		<10.4
Dinitrotoluene, 2,6-	µg/L	<10		<10.4
Di-n-octyl phthalate	µg/L	<10		<10.4
Fluoranthene	µg/L	<10		<10.4
Fluorene	µg/L	<10		<10.4
Hexachlorobenzene	µg/L	<10		<10.4
Hexachlorobutadiene	µg/L	<10		<10.4
Hexachlorocyclopentadiene (HCCPD)	µg/L	<50		
Hexachloroethane	µg/L	<10		<10.4
Indeno-1,2,3-cd-pyrene	µg/L	<10		<10.4
Isophorone	µg/L	<10		<10.4
Methylnaphthalene, 2-	µg/L	<10		<10.4
Naphthalene	µg/L	<10		<10.4
Nitroaniline, 2-	µg/L	<50		<52.1
Nitroaniline, 3-	µg/L	<50		<52.1
Nitroaniline, 4-	µg/L	<50		<52.1
Nitrobenzene	µg/L	<10		<10.4
Nitrophenol, 2-	µg/L	<10		<10.4
Nitrophenol, 4-	µg/L	<50		<52.1
Nitrosodi-n-propylamine, N-	µg/L	<10		<10.4
Nitrosodiphenylamine, N-	µg/L	<10		<10.4
Pentachlorophenol	µg/L	<10		<52.1
Phenanthrene	µg/L	<10		<10.4
Phenol	µg/L	<10		<10.4
Pyrene	µg/L	<10		<10.4
Trichlorobenzene, 1,2,4-	µg/L			<10.4
Trichlorophenol, 2,4,5-	µg/L	<10		<52.1
Trichlorophenol, 2,4,6-	µg/L	<10		<10.4

TABLE C-3
 EFFLUENT SAMPLE ANALYTICAL RESULTS
 ANNUAL OPERATIONS REPORT - 2006
 DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
 Defense Depot Memphis, Tennessee

	Sample ID	EFFLUENT-0206	EFFLUENT-0406	EFFLUENT-0706	EFFLUENT-1106
	Date	2/27/2006 12 31	4/11/2006	7/27/2006	11/8/2006
	Units				
Total Metals - SW6010B					
Aluminum	mg/L		<0.1		<0.1
Antimony	mg/L		<0.01		
Arsenic	mg/L		<0.01		
Barium	mg/L		0.103		0.1
Beryllium	mg/L		<0.001		<0.01
Cadmium	mg/L		<0.002		<0.01
Calcium*	mg/L		24.1		21.6
Cobalt	mg/L		<0.01		<0.02
Copper	mg/L		0.023		<0.02
Iron*	mg/L		0.588 J		0.138 J
Lead (inorganic)	mg/L		0.0064		<0.005
Magnesium*	mg/L		12.3		11.3
Manganese	mg/L		0.0384		0.0066 J
Nickel and compounds	mg/L		0.0085		<0.04
Selenium	mg/L		<0.01		
Silver	mg/L		<0.005		<0.01
Sodium*	mg/L		25.1		22
Vanadium	mg/L		<0.01		<0.01
Zinc	mg/L		0.508 J		0.0447
Mercury	mg/L		<0.2		<0.1

TABLE C-4
QUALITY CONTROL SAMPLE ANALYTICAL RESULTS, OCTOBER-NOVEMBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date	TB-01806 10/13/2006	TB-101906 10/19/2006	TB-102006 10/20/2006	TB-102706 11/8/2006	MW-32B DUP L0610629-01 10/19/2006	MW-54 DUP L0610629-02 10/19/2006	MW-147 DUP L0610605-01 10/18/2006	MW-149T DUP L0610626-004 10/19/2006
units									
Volatile Organic Compounds - SW8260B									
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	0.268 J	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	21.9	576	78.4	21.3
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1	0.649 J	2.64	1.2	0.412 J
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	<1	<1	0.518 J	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3	<3	<3	<3	<3
Carbon tetrachloride	ug/L	<1	<1	<1	<1	12.1	1.83	0.295 J	12.3
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	<0.3	<0.3	<0.3	<0.3	89.1	1.39	2.24	79.6
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	<1	<1	<1	3.65	19.8	35.2	3.2
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2	<2	<2	<2
MLK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<10	<10	2.64 J
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	0.265 J	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	<1	<1	<1	<1	1.67	2.94	3.27	1.43
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	<1	<1	<1	0.641 J	3.94	8.45	0.718 J
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	<1	<1	<1	<1	39.9	560	67.4	39.6
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes

Well ID **T is Top interval and **B is Bottom interval

ug/L micrograms per liter

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive based on blank data

R Unusable data

TABLE C-4
QUALITY CONTROL SAMPLE ANALYTICAL RESULTS, OCTOBER-NOVEMBER 2006
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

Sample ID	MW-150T DUP	MW-160 DUP	MW-163 DUP	MW-164 DUP	MW-168B DUP	RW-07 DUP
Lab Sample ID	1 0610626-003	L0610605-02	L0610630-01	L0610626-002	L0610626-001	L0611238-18
Date	10/19/2006	10/18/2006	10/19/2006	10/19/2006	10/19/2006	11/8/2006
Analyte	units					
Volatile Organic Compounds - SW8260B						
1,1,1,2-Tetrachloroethane	ug/L	<5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<10	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	2060	9.05	584	3.71	<0.5
1,1,2-Trichloroethane	ug/L	4.87 J	<1	16.9	<1	<1
1,1-Dichloroethane	ug/L	<10	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<10	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<10	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<10	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<10	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<10	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<10	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<20	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<10	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<10	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<5	<0.5	2.05	<0.5	0.415 J
1,2-Dichloropropane	ug/L	<10	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<10	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<10	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<10	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<10	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<10	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<10	<1	<1	<1	<1
Acetone	ug/L	<100	<10	20.3 J	<10	<10
Benzene	ug/L	<4	<0.4	0.892	<0.4	<0.4
Bromobenzene	ug/L	<10	<1	<1	<1	<1
Bromochloromethane	ug/L	<10	<1	<1	<1	<1
Bromodichloromethane	ug/L	<5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<10	<1	<1	<1	<1
Bromomethane	ug/L	<10	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<10	0.59 J	<1	13.8	0.775 J
Chlorobenzene	ug/L	<5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<10	<1	<1	<1	<1
Chloroform	ug/L	<3	3.19	0.447	54.5	<0.3
Chloromethane	ug/L	<10	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	40.5	42.7	105	9.18	<1
cis-1,3-Dichloropropene	ug/L	<5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<10	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<10	<1	<1	<1	<1
Ethylbenzene	ug/L	<10	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<10	<1	<1	<1	<1
m,p-Xylene	ug/L	<20	<2	<2	<2	<2
MIBK (2-Butanone)	ug/L	<100	<10	11.5	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<50	<5	<5	<5	<5
Methylene chloride	ug/L	3.61 J	<1	0.422 J	0.317 J	<1
MIBK (methyl isobutyl ketone)	ug/L	<100	<10	<10	<10	<10
Naphthalene	ug/L	<10	<1	<1	<1	<1
n-Butylbenzene	ug/L	<10	<1	<1	<1	<1
n-Propylbenzene	ug/L	<10	<1	<1	<1	<1
o-Xylene	ug/L	<10	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<10	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<10	<1	<1	<1	<1
Styrene	ug/L	<10	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<10	<1	<1	<1	<1
Tetrachloroethene	ug/L	5.55 J	20.8	3.12	1.76	<1
Toluene	ug/L	<10	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	9.08 J	17.9	16.8	1.52	<1
trans-1,3-Dichloropropene	ug/L	<10	<1	<1	<1	<1
Trichloroethene	ug/L	1060	312	501	85.3	0.507 J
Trichlorofluoromethane	ug/L	<10	<1	<1	<1	<1
Vinyl chloride	ug/L	<10	<1	5.6	<1	<1

Notes:

Well ID **T is Top interval and **B is Bottom interval

ug/L, micrograms per liter

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive based on blank

R Unusable data

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Dunn Field Groundwater IRA – Year Eight

February 2007
Revision 0

APPENDIX D

DATA QUALITY EVALUATION

DATA QUALITY EVALUATION

The Dunn Field Interim Remedial Action Operations and Maintenance (O&M) semi-annual groundwater sampling (monitoring wells and recovery wells) at Dunn Field was conducted during April by MACTEC Engineering and Consulting, Inc. (MACTEC) and in October-November 2006 by engineering-environmental Management, Inc. (e²M). Effluent samples from the main discharge at Dunn Field were collected in February, April, and July 2006 by MACTEC and in November 2006 by e²M. The field and laboratory procedures were consistent with the *Remedial Action Sampling and Analysis Plan, Revisions 0 and 1* (RA SAP) (MACTEC, 2005). Samples from monitoring wells were collected in general accordance with the *User's Guide For Polyethylene-Based Passive Diffusion Bag Samplers To Obtain Volatile Organic Compound Concentrations In Wells*, Water Resources Investigation Report 01-4060, U.S. Geological Survey, 2001. Samples collected by MACTEC in February, April, and July were sent to Environmental Testing and Consulting (ETC) in Memphis, Tennessee for analysis. Sample collected by e²M in October and November were sent to Kemron Environmental Services, Inc. (KES) in Marietta, Ohio for analysis. The following sections discuss the field activities, analytical methods, data quality evaluation (DQE) process, and any problems with the quality assurance (QA)/quality control (QC) associated with the laboratory data. The DQE reports for the February, April, and July sampling events were completed and summarized by MACTEC. The DQE reports for the October and November sampling events were completed by an independent data validation contractor, Diane Short and Associates, Inc (DSA) and summarized by e²M.

D.1 FIELD ACTIVITIES and FIELD QUALITY CONTROL

A total of 76 groundwater samples were collected from 50 wells in April and October 2006 using passive diffusion bag samplers (PDB). In addition, 11 samples were collected from 11 recovery wells in April 2006 by MACTEC and in November 2006 by e²M. Further an effluent sample was collected on 27 February 2006, 11 April and 27 July 2006 by MACTEC and again on 8 November 2006 by e²M. The sample locations are presented in the main body of this report.

The field QC program for the collection of samples for the Dunn Field O&M included specific procedures for the collection of groundwater samples as described in the PDB User's Guide and the RA SAP. Sample bottles met USEPA requirements for environmentally clean containers.

Sample labels were pre-printed to facilitate sample tracking from the field through the laboratory to the final report.

Field QC samples were collected to evaluate sampling technique and decontamination procedures. These samples included field duplicates, trip blanks, and field equipment blanks. Documentation of the sampling was performed in the field to ensure that the sample collected, labeling, chain-of-custody, and request for analysis were in agreement. Custody seals were placed on each cooler before pickup by the laboratory.

D.2 ANALYTICAL METHODS

The groundwater samples collected from the monitoring wells and the recovery wells were analyzed for selected VOCs by method 8260B. The effluent samples were analyzed for target compound list (TCL) VOCs by method 8260B, TCL semi-VOCs (SVOCs) by method 8270C, target analyte list (TAL) metals by methods 6010B and 7470A, and pH by method 150.1 in February 2006 and during the semi-annual events (pH not taken in October/November).

D.3 LABORATORY QUALITY CONTROL

The laboratory QC program, including sample handling, laboratory control, and reporting, is documented in the RA SAP. Sample handling includes documentation of sample receipt, placement in storage, lab personnel using the sample, and disposal. The laboratory control consists of instrument calibration and maintenance, laboratory control samples (LCS), method blanks and matrix spikes. Reporting of the laboratory control data was planned prior to the collection of the data, allowing the laboratory to place the appropriate information into the data package so that the DQE could be performed in a timely manner.

D.4 DATA QUALITY EVALUATION

The quality of the laboratory data was evaluated following the DQE standard operating procedures (SOPs) presented in the RA SAP. The objective of the DQE was to provide a review of the chemical data packages submitted by the laboratory and to qualify that data relative to the data quality objectives stated in the RA SAP. The DQE consisted of review of laboratory QC

data and field QC parameters, and flagging of the data as usable, usable with qualification, or unusable.

The data quality relative to laboratory analyses was evaluated using the criteria stated in the RA SAP for each analytical method performed. The following information was reviewed:

- Sample Integrity (Deliverables)
- Sample Completeness
- Sample Holding Times
- Laboratory Methods for Extraction and Analysis (Calibration, Internal Standards)
- Method Accuracy and Precision (Surrogates, Matrix Spike/Matrix Spike Duplicate)
- Laboratory Performance Criteria (Blanks, LCS Recoveries, Instrument Performance Check)

Field QC parameters were evaluated through field duplicates, field blanks, field documentation, and shipping criteria.

The DQE was summarized by use of flags that indicate to the reviewer that the data being considered has been qualified using the established criteria. Sample delivery group (SDG) narratives detailing the evaluation of the laboratory data by MACTEC and DSA are included in this appendix. The SDGs and associated groundwater samples are listed on Table D-1.

The following sections discuss only those deficiencies encountered during the evaluation that resulted in qualified and/or unusable data.

D.4.1 Data Quality Evaluation Summary

DQE was performed on the data reported for the Semi-Annual groundwater sampling events conducted at Dunn Field in April and October 2006. The following sections provide summary discussions of the required data qualifications for each event and analytical method for groundwater samples collected at DDMT. A Level III DQE was performed; the data quality indicators (DQIs) evaluated included sample integrity, holding times, trip blanks, field blanks, method blanks, internal standards, surrogate recoveries, matrix spike/matrix spike duplicate (MS/MSD) recoveries, LCSs, and field duplicate precision. These DQIs are expressed in terms

of precision, accuracy, representativeness, comparability, sensitivity, and completeness. The results of the DQE are summarized below.

Precision

Field duplicates were collected to assess sampling precision. They consisted of replicate grab samples collected concurrently with the associated field samples. Precision is best expressed in terms of relative percent difference (RPD). In general, the precision goals were acceptable with the following exceptions.

Field precision goals exceeded QC limits for various groundwater parameters in the duplicate sample pairs collected during each semi-annual event. Specific samples and the analytes with elevated RPDs are listed below by sampling event. Those analytes requiring qualification include VOCs and metals (effluent samples only). The samples with failing VOCs required dilution and re-analysis to due to high levels of target analytes, which may have been a contributing factor to the RPD failures for VOCs.

Accuracy

Accuracy was measured through the analyses of LCSs and MS/MSDs. Sample specific accuracy is measured through surrogate recovery. Accuracy is expressed as percent recovery (%R).

Recoveries for LCSs in associated groundwater samples were all in control in the April event and no qualifications were required based on LCS recovery. There were five samples for acetone and ten samples for bromodichloromethane in the October/November event that required qualification of estimated "J" due to high LCS recoveries. Project sample surrogate recoveries were elevated for one surrogate in one recovery well sample and one monitoring well sample; however, no qualification to the data was necessary because the samples concentrations reported were similar to historical levels. MS/MSD recoveries resulted in qualification for various VOCs and metals (only iron in the October/November effluent sample) data in project samples as discussed below.

Representativeness

Representativeness refers to the degree sample data accurately and precisely describes the population of samples at a sampling point or under certain environmental conditions. Samples that are not

properly preserved or are analyzed beyond holding times may not be considered representative. Review of sampling procedures, laboratory preparation, analysis holding times, trip blank and field blank analysis help in providing this assessment.

Sampling procedures followed the work plan and were considered representative of the matrices collected. Laboratory preparation and analysis followed method guidelines.

Trip blanks, field blanks, and some method blanks contained VOCs that resulted in the qualification of data as possible false positives or biased high values based on the blank data. This resulted in the “B” qualification of some of the chloroform and methylene chloride results in the water samples. The “B”-qualified data were reported at levels below MCLs and therefore should not adversely impact data quality.

Completeness

Completeness is determined for both field and analytical objectives. Field completeness is calculated from the number of samples proposed verses the actual number of samples collected. Analytical completeness is expressed in terms of usable data. The project completeness goal for DDMT is 90%.

Total analytical completeness for the O&M groundwater 2006 semi-annual sampling events was 100%, which meets the completeness DQO stated in the RA SAP. The groundwater data and effluent data were usable with the qualifications discussed in the sections below and the attached DQE narratives.

Comparability

The selection of standardized methods aids in the comparison of past data to recent studies. Past investigation data are comparable to recent studies. Refer to the historical data presented in Appendix E.

Sensitivity

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. The ultimate expression of analytical

sensitivity is the reporting quantitation limit (RL). The analytical method RLs and MDLs were compared to groundwater protection standards and were determined to meet the overall project objectives within reasonable budget constraints.

Sensitivity was primarily affected with the analysis of VOCs. A number of samples required dilution due to the presence of VOCs in elevated concentrations which resulted in higher RLs. Most of these samples were also analyzed with no dilution to quantitate analytes that were within the normal instrument calibration range.

D.4.1.1 MACTEC Sampling Events – Groundwater and Effluent Sampling

Monitoring Well Samples - During the April 2006 semi-annual sampling event, 76 groundwater samples were collected from 50 monitoring wells. Samples were analyzed for Target Compound List (TCL) VOCs only. The data are usable with qualifications as described below:

- Thirty samples were “B”-qualified for CF based on FB results; and 1 trip blank sample was “B”-qualified for methylene chloride based on method blank results. The “B”-qualified data were reported at levels below MCLs and therefore should not adversely impact data quality.
- Carbon disulfide results in two samples and TCE results in one sample were flagged “J/UJ” and qualified as estimated based on MS/MSD performance.
- /DCE and PCE results for sample MW-144(74.4) were flagged “J” and qualified as estimated because of poor duplicate precision.
- Any result reported below the reporting limit (RL) but above the method detection limit (MDL) was flagged “J” and considered an estimated result (unless overridden by other QC flags).

Recovery Well Samples - Eleven groundwater samples were collected from 11 recovery wells in April 2006. Samples were analyzed for TCL VOCs only. The data are usable with the following qualifications:

- Any result reported below RL but above MDL was flagged “J” and considered an estimated result (unless overridden by other QC flags).

Effluent Samples - Effluent discharge samples were collected in February, April and July 2006. The February and July effluent samples were analyzed for TCL VOCs only. The April sample

and duplicate were analyzed for TCL VOCs, TCL SVOCs Target Analyte List (TAL) Metals and pH. The data are usable with the following qualifications:

- TCE results in sample Effluent-0406 were flagged “J” and qualified as estimated based on MS/MSD performance.
- TCE results for sample Effluent-0206 and iron and zinc results for sample Effluent-0406 were flagged “J” and qualified as estimated because of poor duplicate precision.

D.4.1.2 c²M Sampling Events – Groundwater and Effluent Sampling

Monitoring Well Samples - During the October 2006 semiannual sampling event, 76 groundwater samples were collected from 50 monitoring wells. Samples were analyzed for TCL VOCs only. The October 2006 data are usable with qualifications as described below:

- Two samples were “B”-qualified for methylene chloride based on method blank results. The “B”-qualified data were reported at very low levels and therefore should not adversely impact data quality.
- TCE results in one sample, bromodichloromethane in one sample, and 1,1,2,2-PCA in one sample were qualified as estimated and flagged “J” based on MS/MSD performance.
- Bromodichloromethane detects in ten samples and acetone detects in five samples were qualified as estimated and flagged “J” based on high LCS recovery.
- Any result reported below the reporting limit (RL) but above the method detection limit (MDL) was flagged “J” and considered an estimated result (unless overridden by other QC flags).

Recovery Well Samples - Eleven groundwater samples were collected from 11 recovery wells in November 2006. Samples were analyzed for TCL VOCs only. The November 2006 data are usable with the following qualifications:

- 1,1,2,2-PCA, in one sample (RW-7) was flagged “J” and qualified as estimated based on MS/MSD performance.
- Any result reported below RL but above MDL was flagged “J” and considered an estimated result (unless overridden by other QC flags).

Effluent Sample – An effluent discharge sample was collected in November 2006. This sample and duplicate were analyzed for TCL VOCs, TCL SVOCs and TAL Metals. The effluent discharge data are usable with the following qualifications:

- 1,1,2,2-PCA, chloroform, *c*DCE, and *t*DCE results in the Main Discharge (effluent) sample were flagged “J” and qualified as estimated based on MS/MSD performance.
- The Main Discharge sample was “B”-qualified for antimony based on method blank results. The “B”-qualified data were reported for a non-CVOC and therefore, should not adversely impact data quality.
- The iron result in the Main Discharge sample was flagged “J” and qualified as estimated based on high MS recovery indicating a potential for high bias.
- Any result reported below RL but above MDL was flagged “J” and considered an estimated result (unless overridden by other QC flags).

D.5 SUMMARY

Data obtained in 2006, from the monitoring wells, the recovery wells, and the effluent discharge samples at DDMT Dunn Field were determined to be sufficient and valid for monitoring system effectiveness.

TABLE D-1
SDG SUMMARY TABLE
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

SDG	Groundwater Samples		Quality Control Samples
Effluent Sampling February 2006 Event			
0602910	Effluent-020		TB-022706
			Effluent-Dup-020
April 2006 Semi-Annual Event			
0604359	RW-01	RW-03	RW-08
	RW-01A	RW-04	RW-09
	RW-01B	RW-05	Effluent-DU
	RW-02	RW-06	PDBFB-5-9105010
			PDBFB-6-9106030
			TB-041106
0604364	MW-07 (68.9)	MW-69 (87.4)	MW-148 (85.5)
	MW-31 (71.6)	MW-69 (90.1)	MW-150 (82.2)
	MW-31 (77.1)	MW-70 (82.8)	MW-150 (92.7)
	MW-32 (65.1)	MW-70 (88.8)	MW-154 (57.6)
	MW-33 (57.7)	MW-71 (72.3)	MW-154 (65.5)
	MW-37 (173.2)	MW-76 (88.2)	MW-157 (73.3)
	MW-43 (165.5)	MW-77 (84.9)	MW-160 (80.8)
	MW-57 (66.6)	MW-130 (69.5)	MW-161 (79.9)
	MW-67 (267.5)	MW-144 (74.4)	MW-162 (83.7)
	MW-68 (74.5)	MW-147 (73.7)	MW-164 (72.6)
	MW-68 (80.5)	MW-148 (79.5)	
	MW-40 (90.0)	MW-155 (94.6)	MW-166 (97.8)
	MW-44 (69.0)	MW-156 (57.2)	MW-166A (75.3)
	MW-54 (89.5)	MW-156 (66.8)	MW-167 (72.3)
	MW-79 (92.0)	MW-158 (93.1)	MW-167 (80.7)
0604443	MW-145 (78.6)	MW-158 (104.1)	MW-168 (108.6)
	MW-145 (94.6)	MW-158A (80.8)	MW-168 (119.1)
	MW-149 (83.6)	MW-158A (91.4)	MW-168A (76.4)
	MW-149 (99.6)	MW-159 (81.1)	MW-168A (86.9)
	MW-151 (78.5)	MW-159 (97.1)	MW-169 (77.4)
	MW-151 (94.5)	MW-163 (74.9)	MW-169 (86.2)
	MW-152 (92.9)	MW-165 (89.9)	MW-170 (61.7)
	MW-152 (108.9)	MW-165 (100.4)	MW-170 (77.7)
	MW-153 (79.1)	MW-165A (73.9)	MW-171 (57.2)
	MW-153 (95.1)	MW-165A (84.5)	MW-171 (67.5)
	MW-155 (78.6)	MW-166 (87.3)	RW-07
			TB-041306
			O&MDUP-2
			O&MDUP-6
			O&MDUP-8

TABLE D-1
SDG SUMMARY TABLE
ANNUAL OPERATIONS REPORT - 2006
DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
Defense Depot Memphis, Tennessee

SDG	Groundwater Samples			Quality Control Samples
October/November 2006 Semi-Annual Event				
L0611238	RW-01	RW-03	RW-07	RW-07 DUP
	RW-01A	RW-04	RW-08	RW-07 MS/MSD
	RW-01B	RW-05	RW-09	TB-102706
	RW-02	RW-06	Effluent	Effluent-DU
L0610605				Effluent-MS/MSI
	MW-07 (68.9)	MW-151 (78.5)	MW-153 (79.1)	MW-147 DUP-3
	MW-147 (73.7)	MW-151 (94.5)	MW-155 (78.6)	MW-160T-DUP-4
	MW-148 (79.5)	MW-152 (92.9)	MW-155 (94.6)	
L0610611	MW-148 (85.5)	MW-152 (108.9)		
	MW-31 (71.6)	MW-159 (81.1)	MW-165 (100.4)	
	MW-31 (77.1)	MW-159 (97.1)	MW-167 (72.3)	
	MW-79 (92.0)	MW-165A (73.9)	MW-167 (80.7)	
L0610624	MW-160 (80.8)	MW-165A (84.5)		
	MW-153 (95.1)	MW-165 (89.9)		
	MW-144 (74.4)	MW-161 (79.9)	MW-169 (77.4)	MW-157-MS/MSD
	MW-150 (82.2)	MW-164 (72.6)	MW-169 (86.2)	
L0610626	MW-150 (92.7)	MW-168 (108.6)	MW-171 (57.2)	
	MW-157 (73.3)	MW-168 (119.1)	MW-171 (67.5)	
				MW-149T-DUP-6
				MW-150T-DUP-7
L0610628				MW-164-DUP-8
				MW-168B-DUP-9
	MW-67 (267.5)	MW-156 (57.2)	MW-170 (77.7)	MW-67-MS/MSD
	MW-154 (57.6)	MW-156 (66.8)		TB-101206
L0610629	MW-154 (65.5)	MW-170 (61.7)		
	MW-32 (65.1)	MW-43 (165.5)	MW-68 (74.5)	MW-32B-DUP-1
	MW-37 (173.2)	MW-44 (69.0)	MW-68 (80.5)	MW-54-DUP-2
	MW-40 (90.0)	MW-54 (89.5)		TB-101906
L0610630	MW-145 (78.6)	MW-158A (80.8)	MW-162 (83.7)	MW-163-DUP-5
	MW-145 (94.6)	MW-158A (91.4)	MW-163 (74.9)	MW-162-MS/MSD
	MW-149 (83.6)	MW-158 (93.1)		TB-101906
	MW-149 (99.6)	MW-158 (104.1)		
L0610633	MW-33 (57.7)	MW-70 (88.8)	MW-166A (75.3)	MW-71-MS/MSD
	MW-57 (66.6)	MW-71 (72.3)	MW-166 (87.3)	MW-166A-MS/MSD
	MW-69 (87.4)	MW-76 (88.2)	MW-166 (97.8)	TB-102006
	MW-69 (90.1)	MW-77 (84.9)		
L0610634	MW-70 (82.8)	MW-130 (69.5)		
	MW-168A (76.4)	MW-168A (86.9)		

Data Evaluation Narrative
MACTEC Project: DDMT: Operation and Maintenance
MACTEC Project Number: 6301-05-0008
Matrix: Aqueous

SDG: 0602910

Deliverables

The data packages as submitted to MACTEC Engineering and Consulting, Inc. (MACTEC) are complete as stipulated in the Generic Quality Assurance Project Plan as submitted by CH2M Hill for United States Environmental Protection Agency (USEPA) Methods 8260B and 150.1.

Sample Integrity

Samples within this SDG were submitted to Environmental Testing and Consulting, Inc. (ETC), in Memphis, Tennessee for volatile organic compounds (VOCs) and pH.

Based on the information provided on the cooler receipt forms, the field samples arrived at the laboratory intact and within the temperature guidance criteria. ETC picked up the samples from the DDMT site. Completed chain-of-custody documents and cooler receipt forms are included in the data package.

Sample Identification

This SDG contains the following effluent and quality control (QC) samples:

Effluent-0206	Effluent-DUP-0206	TB	

These samples were collected on February 27, 2006. Sample Effluent-DUP-0206 is a duplicate sample of Effluent-0206.

VOCs (8260B)

All of the samples in this SDG were submitted for VOC analysis. A Level II review was performed on the VOC data and consisted of the review of holding times, method blanks, LCS, surrogate, and MS/MSD recoveries and RPDs, field duplicate precision, and trip and rinsate blanks. Any failures among the method listed are discussed below. Calibration information was not reviewed.

Holding Times

The extraction and analytical logs indicate that applicable holding times were met for the samples submitted for the analysis of VOCs by USEPA Method 8260B.

Reporting Limits

The RLs were met for the sample submitted for the analysis of VOCs by USEPA Method 8260B. Any results reported below the RL but above the MDL were flagged "J" and considered quantitative estimates.

Blank Summary

The analytical results of the laboratory method blanks indicate that VOCs were not present.

Surrogates

The recoveries for the four method-specified surrogates toluene-d₈, 4-bromofluorobenzene, dibromofluoromethane, and 1,2-dichloroethane-d₄ are within QC advisory limits.

Laboratory Control Sample

The laboratory control sample (LCS) spike recoveries were within applicable QC advisory limits.

Matrix Spike/Matrix Spike Duplicate

The matrix spike/matrix spike duplicate (MS/MSD) recoveries and RPDs for spiked sample Effluent-0206 were within the acceptable QC control limits with the exception of low recoveries for trichloroethene (TCE)

Action: The TCE results were flagged "J" and qualified as estimated for sample Effluent-0206 and the Effluent-DUP-0206.

Sampling Accuracy

The analytical results of the field blank and trip blank indicate that VOCs were not present.

Field Duplicate Samples

The field duplicate set Effluent-0206/Effluent-DUP-0206 were reviewed and assessed as good

pH (150.1)

The Effluent-0206 sample in this SDG was submitted for pH analysis. A Level I review was performed on the pH data and consisted of the review of holding times. Any failures among the method listed are discussed below.

Holding Times

The extraction and analytical logs indicate that applicable holding times were met for the sample submitted for the analysis of pH by USEPA Method 150.1.

Overall Site Evaluation and Professional Judgment Flagging Changes

The data within this SDG were compared to site data and edits to the DQE flags were not required based on professional judgment.

Prepared by: JAH 03/29/06
Checked by:

Data Evaluation Narrative**MACTEC Project: DDMT: Operation and Maintenance****MACTEC Project Number: 6301-05-0008****Matrix: Aqueous****SDG: 0604359****Deliverables**

The data packages as submitted to MACTEC Engineering and Consulting, Inc. (MACTEC) are complete as stipulated in the Generic Quality Assurance Project Plan as submitted by CH2M Hill for United States Environmental Protection Agency (USEPA) Methods 8260B, 8270C, 6010B, 7470A, and 150.1.

Sample Integrity

Samples within this SDG were submitted to Environmental Testing and Consulting, Inc. (ETC), in Memphis, Tennessee for volatile organic compounds (VOCs). Samples EFFLUENT and EFFLUENT-DUP were additionally submitted for Target Compound list (TCL) VOCs, TCL semi-volatile organic compounds (SVOCs), Target Analyte List (TAL) metals by inductively coupled plasma (ICP), mercury by cold vapor, and pH.

Based on the information provided on the cooler receipt forms, the field samples arrived at the laboratory intact and within the temperature guidance criteria. ETC picked up the samples from the DDMT site. Completed chain-of-custody documents and cooler receipt forms are included in the data package.

Sample Identification

This SDG contains the following effluent and quality control (QC) samples:

RW-01	RW-03	RW-06	Effluent-DUP
RW-01A	RW-04	RW-08	PDBFB-5-9105010
RW-01B	RW-05	RW-09	PDBFB-6-9106030
RW-02	O&MDUP-9	Effluent	TB-041106

These samples were collected on April 11, 2006. Two field blanks in this SDG (PDBFB-5-9105010 and PDBFB-6-9106030) were analyzed to represent samples collected from the PDB bags. Sample O&MDUP-9 is a duplicate sample of RW-05, and Effluent-DUP is a duplicate of Effluent.

VOCs (8260B)

All of the samples in this SDG were submitted for VOC analysis. Level II review was performed on the VOC data and consisted of the review of holding times, method blanks, LCS, surrogate, and MS/MSD recoveries and RPDs, field duplicate precision, and rinsate blanks. Any failures among the method listed are discussed below. Calibration information was not reviewed.

Holding Times

The extraction and analytical logs indicate that applicable holding times were met for the samples submitted for the analysis of VOCs by USEPA Method 8260B.

Reporting Limits

The RLs were met for the samples submitted for the analysis of VOCs by USEPA Method 8260B with the exception of the following samples which required a dilution in order to place the results within the calibration range:

RW-01A	20x for chloroform
RW-04	20x for 1,1,2,2- trichloroethene (TCA), trichloroethene (TCE)
RW-08	10x for TCE

Results were reported to the RL and evaluated down to the method detection limit (MDL). Flagging of results less than the RL but above the MDL was necessary for the following samples:

RW-01A - bromodichloromethane
 RW-01B - trans-1,2-dichloroethene
 RW-03 - tetrachloroethene, 1,1,2-TCA
 RW-04 - carbon tetrachloride
 RW-08 - carbon tetrachloride

Action: The results reported below the reporting limit, but above the method detection limit were flagged "J" and qualified as estimated unless overridden by other QC exceedances.

Blank Summary

The analytical results of the laboratory method blanks indicate that no analytes were detected.

Surrogates

The recoveries for the four method-specified surrogates toluene-d₈, 4-bromofluorobenzene, dibromofluoromethane, and 1,2-dichloroethane-d₄ are within QC advisory limits with the exception listed below.

<u>Sample</u>	<u>Surrogate</u>	<u>%Recovery</u>	<u>Action</u>
RW-01A	1,2-Dichloroethane-d ₄	138%	None – associated results similar to historical results

Laboratory Control Sample

The laboratory control sample (LCS) spike recoveries were within applicable QC advisory limits or SMF limits.

Matrix Spike/Matrix Spike Duplicate

The matrix spike/matrix spike duplicate (MS/MSD) recoveries for spiked sample RW-01A were outside of SMF limits (low) for chloroform, and the MS/MSD recoveries for spiked sample Effluent were outside of SMF limits (low) for TCE.

Action. The chloroform result in RW-01A was greater than 4x the spike amount; therefore no flagging of the result was necessary. The TCE results in the Effluent and Effluent-DUP samples were qualified as estimated and flagged "J".

Sampling Accuracy

The trip blank sample analyzed with the samples in this SDG did not contain positive results. The analytical results of the field blanks indicate chloroform was detected in field blank sample PDBFB-5-9105010 at 1.82 µg/L.

Action: There were no samples in this SDG associated with this field blank sample

Field Duplicate Samples

Two field duplicate pairs RW-5/O&MDUP-9 and Effluent/Effluent-DUP were reviewed and the difference between the samples and the duplicates were within QC limits.

SVOCs (8270C)

The samples Effluent and Effluent-DUP were submitted for TCL SVOC analysis. Level II review was performed on the SVOC data and consisted of the review of holding times, method blanks, LCS, surrogate, and MS/MSD recoveries and RPDs, field duplicate precision, and rinsate blanks. Any failures among the method listed are discussed below. Calibration information were not reviewed.

Holding Times

The extraction and analytical logs indicate that applicable holding times were met for samples submitted for the analysis of SVOCs by USEPA Method 8270C.

Reporting Limits

The RLs were met for the sample submitted for the analysis of SVOCs by USEPA Method 8270C.

Blank Summary

The analytical results of the laboratory method blanks indicate that no SVOCs were detected.

Surrogates

The recoveries for the six method-specified surrogates 2,4,5-tribromophenol (S1), 2-fluorobiphenyl (S2), 2-fluorophenol (S3), nitrobenzene-d₅ (S4), phenol-d₅ (S5), and terphenyl-d₁₄ (S6) were within the acceptable QC limits and/or SMF criteria.

Laboratory Control Sample

The LCS spike recoveries were within applicable QC advisory limits and/or SMF criteria.

Matrix Spike/Matrix Spike Duplicate

The MS/MSD recoveries and RPDs for spiked sample Effluent were within the acceptable QC control limits or SMF limits.

Field Duplicate Samples

The field duplicate set Effluent-052305/Effluent-DUP-052305 could not be reviewed since all of the results were non-detect.

Metals (6010B/7471A)

The samples Effluent and Effluent-DUP were submitted for TAL metals analysis. Level II review was performed on the metals data and consisted of the review of holding times, method blanks, LCS, and MS/MSD recoveries and RPDs, field duplicate precision, and rinsate blanks. Any failures among the method listed are discussed below. Calibration information was not reviewed.

Holding Times

The extraction and analytical logs indicate that applicable holding times were met for samples submitted for ICP metals and mercury analysis.

Reporting Limits

The RLs were met for samples submitted for metals analysis. Results were reported to the RL and evaluated down to the MDL. Flagging of results less than the RL but above the MDL was necessary for chromium in Effluent.

Action: The associated chromium results were qualified as estimated and flagged "J", unless overridden due to other QC criteria exceedences.

Blank Summary

The analytical results of the method blanks indicate that no metals were detected.

Laboratory Control Sample

The LCS spike recoveries are within the applicable QC advisory limits.

Matrix Spike/Matrix Spike Duplicate

The MS/MSD recoveries and RPDs for spiked sample Effluent were within the acceptable QC control limits, with the exception of low recoveries for sodium.

Action: The sodium result for sample Effluent was greater than 4x the spike amount; therefore no flagging the data was necessary.

Field Duplicate Samples

One field duplicate pair (Effluent/Effluent-DUP) was reviewed and the difference between the sample and the duplicate was outside of QC limits for iron and zinc.

Action: The associated iron and zinc results for samples Effluent and Effluent-DUP were flagged "J" and qualified as estimated due to poor duplicate precision.

Overall Site Evaluation and Professional Judgment Flagging Changes

The data within this SDG were compared to site data and edits to the DQE flags were not required based on professional judgment.

Prepared by: DWK 05/12/06

Checked by: JAH 05/22/06

Data Evaluation Narrative**MACTEC Project: DDMT: Operation and Maintenance****MACTEC Project Number: 6301-05-0008****Matrix: Aqueous****SDG: 0604364****Deliverables**

The data packages as submitted to MACTEC Engineering and Consulting, Inc. (MACTEC) are complete as stipulated in the Generic Quality Assurance Project Plan as submitted by CH2M Hill for United States Environmental Protection Agency (USEPA) Method 8260B.

Sample Integrity

Samples within this SDG were submitted to Environmental Testing and Consulting, Inc. (ETC), in Memphis, Tennessee for volatile organic compounds (VOCs).

Based on the information provided on the cooler receipt forms, the field samples arrived at the laboratory intact and within the temperature guidance criteria. ETC picked up the samples from the DDMT site. Completed chain-of-custody documents and cooler receipt forms are included in the data package.

Sample Identification

This SDG contains the following monitoring well water and quality control (QC) samples:

MW-43 (165.5)	MW-68 (80.5)	MW-70 (88.8)	O&MDUP-4	MW-148 (85.5)
MW-67 (267.5)	O&MDUP-3	MW-69 (87.4)	MW-157 (73.3)	MW-160 (80.8)
MW-154 (57.6)	MW-33 (57.7)	MW-69 (90.1)	O&MDUP-7	MW-150 (82.2)
MW-154 (65.5)	MW-71 (72.3)	MW-77 (84.9)	MW-164 (72.6)	O&MDUP-5
MW-57 (66.6)	MW-37 (173.2)	MW-76 (88.2)	MW-31 (71.6)	MW-150 (92.7)
MW-07 (68.9)	MW-32 (65.1)	MW-162 (83.7)	MW-31 (77.1)	TB-041206
MW-130 (69.5)	O&MDUP-1	MW-161 (79.9)	MW-147 (73.7)	
MW-68 (74.5)	MW-70 (82.8)	MW-144 (74.4)	MW-148 (79.5)	

These samples were collected on April 12, 2005. O&MDUP-1 is a duplicate sample of MW-32 (65.1), O&MDUP-3 is a duplicate of MW-68 (80.5), O&MDUP-4 is a duplicate of MW-144 (74.4), O&MDUP-5 is a duplicate of MW-150 (82.2), and O&MDUP-7 is a duplicate sample of MW-157 (73.3). PDBFB-5-9105010 and PDBFB-6-9106030 (SDG# 0604359) are field blanks which were collected and are associated with the samples within this SDG.

VOCs (8260B)

All of the samples in this SDG were submitted for VOC analysis. Level II review was performed on the VOC data and consisted of the review of holding times, method blanks, LCS, surrogate, and MS/MSD recoveries and RPDs, field duplicate precision, and rinsate blanks. Any failures among the method listed are discussed below. Calibration information were not reviewed.

Holding Times

The extraction and analytical logs indicate that applicable holding times were met for the samples submitted for the analysis of VOCs by USEPA Method 8260B.

Reporting Limits

The RLs were met for the samples submitted for the analysis of VOCs by USEPA Method 8260B with the exception of the following samples which required a dilution in order to place the results within the calibration range:

MW-70 (82.8)	50x for 1,1,2,2-Tetrachloroethene (TCA), Trichloroethene (TCE)
MW-70 (88.8)	50x for 1,1,2,2-TCA, TCE
MW-77 (84.9)	500x for 1,1,2,2-TCA 100x for TCE
MW-162 (83.7)	10x for 1,1,2,2-TCA, TCE
MW-161 (79.9)	50x for 1,1,2,2-TCA, TCE
MW-144 (74.4)	50x for 1,1,2,2-TCA, TCE
O&MDUP-4	200x for 1,1,2,2-TCA, TCE
MW-147 (73.7)	10x for 1,1,2,2-TCA
MW-160 (80.8)	10x for TCE
MW-150 (82.2)	10x for 1,1,2,2-TCA, TCE
O&MDUP-5	10x for 1,1,2,2-TCA, TCE
MW-150 (92.7)	50x for 1,1,2,2-TCA, TCE

Results were reported to the RL and evaluated down to the method detection limit (MDL). Flagging of results less than the RL but above the MDL was necessary for the following samples:

MW-57 (66.6) - trans-1,2-dichloroethene
 MW-07 (69.8) - chloroform, 1,1,1-trichloroethane
 MW-130 (69.5) - 1, 2-dichloroethane
 MW-68 (74.5) - chloroform, tetrachloroethene, trichloroethene
 MW-33 (57.7) - Carbon tetrachloride
 MW-71 (72.3) - trans-1,2-dichloroethene, 1,1,2-trichloroethane
 MW-70 (88.8) - 1,2-dichloroethane
 MW-69 (90.1) - tetrachloroethene
 MW-77 (84.9) - 1,2-dichloroethane
 MW-161 (79.9) - Carbon tetrachloride
 MW-162 (83.7) - 1,1,2-trichloroethane
 MW-164 (72.6) - trans-1,2-dichloroethene, tetrachloroethene
 MW-31 (77.1) - cis-1,2-dichloroethene
 MW-147 (73.7) - Carbon tetrachloride, 1,2-dichloroethane
 MW-148 (79.5) - chloroform
 MW-148 (85.8) - 1,1,2,2-tetrachloroethane, tetrachloroethane
 MW-160 (80.8) - carbon tetrachloride, 1,1-dichloroethene
 MW-150 (82.2) - carbon disulfide, chloroform
 O&MDUP-5 - carbon disulfide, chloroform
 MW-150 (92.7) - carbon tetrachloride

Action: The results reported below the reporting limit, but above the method detection limit were flagged "J" and qualified as estimated unless overridden by other QC exceedances.

Blank Summary

The analytical results of the laboratory method blanks indicate that no VOCs were detected in the method blanks with the exception of 1,1,2,2-TCA in method blank 9748-LB. Any result less than 5x the blank amount was qualified as possibly biased high or false positive and flagged "B".

Action: No qualification was required because associated sample results were greater than 5x the method blank result.

Surrogates

The recoveries for the four method-specified surrogates toluene- d_8 , 4-bromofluorobenzene, dibromofluoromethane, and 1,2-dichloroethane- d_4 are within QC advisory limits.

Laboratory Control Sample

The laboratory control sample (LCS) spike recoveries were within applicable QC advisory limits of SMF limits, therefore no flagging of the data was necessary.

Matrix Spike/Matrix Spike Duplicate

The matrix spike/matrix spike duplicate (MS/MSD) recoveries and RPDs for spiked samples MW-162 (83.7), MW-164 (72.6), MW-148(79.5), and MW-68 (74.5) were outside of the acceptable QC control limits and/or the SMF limits in following instances.

<u>Sample</u>	<u>Analyte</u>	<u>Failing % Rec. or RPD</u>	<u>Flag</u>
MW-162 (83.7)	carbon disulfide	53,55	Positives and ND "J"/"UJ"
	chloroethane	324, 362	Positives "J" - no flag, result ND
MW-164 (72.6)	carbon disulfide	50,53	Positives and ND "J"/"UJ"
	chloroethane	125 %	Positives "J" - no flag; result ND
	TCE	57, 61	Positives and ND "J"/"UJ"
MW-148 (79.5)	chloroethane	369,355	Positives "J" - no flag; result ND
MW-68 (74.5)	chloroethane	350, 301	Positives "J" - no flag; result ND

Sampling Accuracy

The analytical results of the trip blank indicated that no analytes were detected. One of the equipment blank samples (PDBFB-5-9105010) contained chloroform = 1.82 $\mu\text{g/L}$.

Action: Results less than five times the blank value were qualified as estimated with possible equipment blank contamination and flagged "B": MW-57 (66.6), MW-07 (68.9), MW-6 8(74.5), MW-70 (82.8 and 88.8), MW-77(84.9), MW-162 (83.7), MW-162 (83.7), MW-161 (79.9), MW-144 (74.4), O&MDUP-4, MW-147 (73.7), MW-148(79.5), MW-160 (80.8), MW-150 (82.2), O&MDUP-5, MW-150 (92.7).

Field Duplicate Samples

The field duplicate pairs MW-3 2(65.1)/O&MDUP-1, MW-6 8(80.5)/O&MDUP-3, MW-150 (82.2)/O&MDUP-5, MW-157 (73.3)/O&MDUP-7 were reviewed and the RPDs between the samples and duplicates were within QC limits. The RPD between the sample and the duplicate was outside of QC limits for trans-1,2-dichloroethene (30.2%) and tetrachloroethene (32.7) in MW-144 (74.4)/O&MDUP-4.

Action: The associated trans-1,2-dichloroethene and tetrachloroethene results were flagged "J" and qualified as estimated due to poor duplicate precision.

Overall Site Evaluation and Professional Judgment Flagging Changes

The data within this SDG were compared to site data and edits to the DQE flags were not required based on professional judgment.

Prepared by: DWK 05/10/06

Checked by: JAH 05/19/06

Data Evaluation Narrative**MACTEC Project: DDMT: Operation and Maintenance****MACTEC Project Number: 6301-05-0008****Matrix: Aqueous****SDG: 0604443****Deliverables**

The data packages as submitted to MACTEC Engineering and Consulting, Inc. (MACTEC) are complete as stipulated in the Generic Quality Assurance Project Plan as submitted by CH2M Hill for United States Environmental Protection Agency (USEPA) Method 8260B.

Sample Integrity

Samples within this SDG were submitted to Environmental Testing and Consulting, Inc. (ETC), in Memphis, Tennessee for volatile organic compounds (VOCs).

Based on the information provided on the cooler receipt forms, the field samples arrived at the laboratory intact and within the temperature guidance criteria. ETC picked up the samples from the DDMT site. Completed chain-of-custody documents and cooler receipt forms are included in the data package.

Sample Identification

This SDG contains the following monitoring well water and quality control (QC) samples:

MW-170 (61.7)	MW-152 (92.9)	MW-165 (100.4)	MW-151 (78.5)	MW-149 (99.6)
MW-170 (77.7)	MW-152 (108.9)	O&MDUP-8	MW-151 (94.5)	MW-166A (75.3)
MW-40 (90.0)	MW-44 (69.0)	MW-158A (80.8)	MW-145 (78.6)	MW-166 (87.3)
MW-169 (77.4)	MW-156 (57.2)	MW-158A (91.4)	MW-145 (94.6)	MW-166 (97.8)
MW-169 (86.2)	MW-156 (66.8)	MW-158 (93.1)	MW-54 (89.5)	MW-159 (81.1)
MW-171 (57.2)	MW-167 (72.3)	MW-158 (104.1)	O&MDUP-2	MW-159 (97.1)
MW-171 (67.5)	MW-167 (80.7)	MW-168 (108.6)	MW-155 (78.6)	MW-163 (74.9)
MW-153 (79.1)	MW-165A (73.9)	MW-168 (119.1)	O&MDUP-6	RW-07
MW-153 (95.1)	MW-165A (84.5)	MW-168A (76.4)	MW-155 (94.6)	TB-041306
MW-79 (92.0)	MW-165 (89.9)	MW-168A (86.9)	MW-149 (83.6)	

These samples were collected on April 13, 2005. O&MDUP-2 is a duplicate sample of MW-54 (89.5), O&MDUP-6 is a duplicate of MW-155 (78.6), and O&MDUP-8 is a duplicate of MW-165 (100.4). PDBFB-5-9105010 and PDBFB-6-9106030 (SDG# 0604359) are field blanks which were collected and are associated with the samples within this SDG.

VOCs (8260B)

All of the samples in this SDG were submitted for VOC analysis. Level II review was performed on the VOC data and consisted of the review of holding times, method blanks, LCS, surrogate, and MS/MSD recoveries and RPDs, field duplicate precision, and rinsate blanks. Any failures among the method listed are discussed below. Calibration information were not reviewed.

Holding Times

The extraction and analytical logs indicate that applicable holding times were met for the samples submitted for the analysis of VOCs by USEPA Method 8260B.

Reporting Limits

The RLs were met for the samples submitted for the analysis of VOCs by USEPA Method 8260B with the exception of the following samples which required a dilution in order to place the results within the calibration range:

MW-158A (80.8)	50x for 1,1,2,2-TCA, TCE
MW-158A (91.4)	20x for TCE
MW-54 (89.5)	20x for 1,1,2,2-TCA, TCE
O&MDUP-2	20x for 1,1,2,2-TCA, TCE
MW-155 (78.6)	50x for 1,1,2,2-TCA, TCE
O&MDUP-6	50x for 1,1,2,2-TCA, TCE
MW-155 (94.6)	20x for 1,1,2,2-TCA, TCE
MW-159 (81.1)	50x for 1,1,2,2-TCA, TCE
MW-159 (97.1)	20x for 1,1,2,2-TCA, TCE

Results were reported to the RL and evaluated down to the method detection limit (MDL). Flagging of results less than the RL but above the MDL was necessary for the following samples:

MW-54 (89.5) – carbon tetrachloride
 MW-158 (93.1) - chloroform
 MW-165A (73.9) - trans-1,2-dichloroethene
 MW-165A (84.5) – tetrachloroethene
 MW-165 (89.9) - tetrachloroethene
 MW-168 (108.6) – 1,1-dichloroethene
 MW-168 (119.1) – 1,1-dichloroethene
 MW-166 (87.3) – trans-1,2-dichloroethene
 MW-168A (76.4) – chloroform
 O&MDUP-2 – carbon tetrachloride

Action: The results reported below the reporting limit, but above the method detection limit were flagged “J” and qualified as estimated.

Blank Summary

The analytical results of the laboratory method blanks indicate that no methylene chloride was detected in the method blanks.

Action: Only the trip blank sample (TB-041306) had positive results for methylene chloride, and the associated result was qualified as estimated with possible method blank contamination and flagged “B”.

Surrogates

The recoveries for the four method-specified surrogates toluene-d₈, 4-bromofluorobenzene, dibromofluoromethane, and 1,2-dichloroethane-d₄ are within QC advisory limits with the two exceptions described below.

<u>Sample</u>	<u>Surrogate</u>	<u>%Recovery</u>	<u>Action</u>
TB-041306	1,2-Dichloroethane-d ₄	134	None – no associated positive results
MW-158 (104.1)	1,2-Dichloroethane-d ₄	133	None – associated results similar to historical results

Laboratory Control Sample

The laboratory control sample (LCS) spike recoveries were within applicable QC advisory limits of SMF limits, therefore no flagging of the data was necessary.

Matrix Spike/Matrix Spike Duplicate

The matrix spike/matrix spike duplicate (MS/MSD) recoveries and RPDs for spiked samples MW-171 (67.5), MW-170 (61.7), MW-153(79.1), MW-156 (66.8), and MW-166(97.8) were within the acceptable QC control limits and/or the SMF limits.

Sampling Accuracy

The analytical results of the trip blank indicated that no analytes were detected. One of the equipment blank samples (PDBFB-5-9105010) contained chloroform = 1.82 µg/L.

Action: Results less than five times the blank value were qualified as estimated with possible equipment blank contamination and flagged "B": MW-152(92.9), MW-152 (108.9), MW-165A(73.9), MW-165A(84.5), MW-158A(80.8), MW-158A (91.4), MW-158 (93.1), MW-158(104.1), MW-168A (76.4), MW-54(89.5), O&MDUP-2, MW-155(78.6), O&MDUP-6, MW-155(94.6), MW-159(81.1), MW-159 (97.1), and MW-163 (74.9).

Field Duplicate Samples

The field duplicate pairs [MW-54(89.5)/O&MDUP-2, MW-155(78.6)/O&MDUP-6, and MW-165 (100.4)/O&MDUP-8] were reviewed and the RPDs between the samples and duplicates were within QC limits.

Overall Site Evaluation and Professional Judgment Flagging Changes

The data within this SDG were compared to site data and further edits to the DQE flags were not required based on professional judgment.

Prepared by: DWK 05/11/06

Checked by: JA11 05/19/06

ORGANIC DATA QUALITY REVIEW REPORT**VOLATILE ORGANICS SW-846 METHOD 8260B/5030B and Method 8270****8260B/5030B****SDG:** L0610634, L0610630, L0610626, L0610633, L0610629, L0610628, L0610624, L0610605, L0610611, L0611238**PROJECT:** E2m, Memphis Defense Depot Interim Remedial Action IRA-land Recovery Well, Main Discharge**LABORATORY:** Kemron Environmental Services, Marietta, OH**SAMPLE MATRIX:** Water**SAMPLING DATE** (Month/Year): October, November 2006**NO. OF SAMPLES:** 8260B/5030B (Waters) ~ 102 samples (4 Trip blanks); Method 8270: 2 water**ANALYSES REQUESTED:** SW-846 8260B, 8270C**SAMPLE NO.:** See attached result forms and associated edd**DATA REVIEWER:** Sammy Huntington and John Huntington (Gateway Enterprises)**QA REVIEWER:** Diane Short and Associates Inc. INITIALS/DATE: _____Telephone Logs included Yes ___ No X___Contractual Violations Yes ___ No X___

The EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 1999, and the SW-846 Method 8260B has been referenced by the reviewer to perform this data validation review. The EPA qualifiers have been expanded to include a descriptor code and value to define QC violations and their values, per the approval of the Project Manager. Per the Scope of Work, the review of these samples includes Level III validation of all chains of custody, calibrations and QC forms referencing the QC limits in the above documents.

I. DELIVERABLES

A. All deliverables were present as specified in the Statement of Work (SOW), SW-846, or in the project contract.

Yes X___ No ___

This is a Level III Report.

B. Chain of Custody Documentation was complete and accurate.

Yes ___ No X___

The project manager is informed of the following and the chain information is to be updated for the project file.

Many of the SDGs do not have customary chains of custody. Our understanding is that the chain of custody is an electronic sample documentation system.

SDG L0610611: Discrepancy report states that MW-153B-IS-1 10/18@ 14:53 not on chain of custody

C. Samples were received at the required temperature, preservation and intact with no bubbles.

Yes X___ No ___

Cooler temperature was in many cases below 2°C but narratives noted that all samples were received in good condition.

When samples are below the lower EPA limit of 2° C, as long as there is no damage to the samples, no qualifier is required.

Sample Checklist states that all samples are preserved.

II. ANALYTICAL REPORT FORMS

A. The Analytical Report or Data Sheets are present and complete for all requested analyses

Yes ☒ No ☐

B. Holding Times

1. The contract holding times were met for all analyses (Time of sample receipt to time of analysis (VOA) or extraction and from extraction to analysis).

Yes ☒ No ☐

2. The Clean Water Act (40 CFR 136) or method holding times were met for all analyses (14 days from time of sample collection to analysis or extraction).

Yes ☒ No ☐

III. INSTRUMENT CALIBRATION – GC/MS

A. Initial Calibration

1. The Response (RF) and Relative Response Factors (RRF) and average RRF for all compounds for all analyses met the contract criteria of >0.05 .

Yes ☐ No ☒ NA ☐

Percent RSD is out for two SVOA compounds (2,4 dinitrophenol at 41.8%; benzoic acid at 64.1 % RSD; both were quantitated from an acceptable linear curve) but none of the compounds were detected and no qualifiers are required.

2a. The relative standard deviation (RSD) for the five point calibration was within the 30% limit for the CCCs.

Yes ☒ No ☐ NA ☐

This is a method requirement and indicates that the analytical system is in control

2b. The relative standard deviation (RSD) for the five point calibration was within the 30% limit for all other compounds or a linear curve was used.

Yes ☒ No ☐ NA ☐

3. The 12 hour system Performance Check was performed as required in SW-846

Yes ☒ No ☐ NA ☐

B. Continuing Calibrations

1. The midpoint standard was analyzed for each analysis at the required frequency and the QC criteria of > 0.05 were met.

Yes ☐ No ☒ NA ☐

The CCVs were analyzed at the proper frequency.

2. The percent difference (%D) limits of $\pm 25\%$ were met.

Yes ☐ No ☒ NA ☐

See the table below. When there are no detections, unless the %D is biased low and so large as to indicate a significant probability of false negatives, no qualifiers are added for %D outliers when targets are not detected.

SDG	CCV Date	Lab Sample #	Analyte	RRF outliers	%D outliers	Qualifiers Added
L0610624	10/28/06 21:12	2,4	2-butanone	.ok	27.4	None, ND
			4-methyl-2-pentanone	ok	29.7	None, ND
L0610605	10/26/06 6:31	1-7	bromomethane	ok	29.1	None, ND
L0610611	10/28/06 7:14	9-13	bromomethane	.ok	29.1	None, ND
LO611238	11/20	14,15, 16, 19 SVOA	3,3-dichlorobenzidine	ok	30.8	None, ND
			4-chloroaniline	ok	31.4	None, ND

IV. GC/MS INSTRUMENT PERFORMANCE CHECK

The BFB (VOA) or DFTPP (SVOA) performance check was injected once at the beginning of each 12-hour period and relative abundance criteria for the ions were met.

Yes ☒ X No ☐ NA ☐

V. INTERNAL STANDARDS

The Internal Standards met the 100% upper and -50% lower limits criteria and the Retention times were within the required windows.

Yes ☒ X No ☐ NA ☐

VI. SURROGATE

Surrogate spikes were analyzed with every sample.

Yes ☒ X No ☐

And met the recovery limits defined in the current contract, which are the current laboratory limits.

Yes ☒ X No ☐

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Matrix spike (MS) and matrix spike duplicates (MSD) were analyzed for every analysis performed and for every 20 samples or for every matrix whichever is more frequent.

Yes ☒ X No ☐

8260B: There are 7 MS/MSDs which meets the 1:20 ratio.

8270C: There is 1 MS/MSD which meets the 1:20 ratio

A. The MS and MSD percent recoveries were within the limits defined in the contract, which are the current laboratory control chart limits.

Yes ☐ No ☒ X NA ☐

The full target list has been spiked. Most MS/MSD recoveries and RPDs are in control. Instances where spike recoveries are out of limits are shown in the table below. In several instances, the sample amount is 4x the spike level or greater. In such cases, the recovery cannot realistically be calculated, because the anticipated normal analytical variability is on the order of the spike level. Thus no qualifiers are added. Five results are qualified due to an elevated recovery associated with a detection and data could be biased high proportional to the spike recovery. One result is slightly low with a possible slightly low bias. Cis-1,2 DCE is noted with a zero recovery in the Main discharge sample. No chromatograms are available to review, but as several compounds are out of limits, there could be some overall matrix interference. The spike is 20 ug/l and the sample result is 67 ug/l which does not meet the 4x criteria, but there could be other interference issues. There recovery and discharge samples have very high levels of contaminants as evident in the dilutions for several compounds which exceed the linear range.

Method	SDG	Client Sample ID	Lab Sample ID	Analyte	MS/MSD/RP D	Qualifiers
8260B	L0610630	MW-162-IS-1	10	1,1,2,2 tetrachloroethane	34.4/40.8/OK	None, sample > 4x spike
				bromodichloromethane	131/134/OK	None, ND
				bromomethane	OK/145/OK	None, ND
				chloromethane	144/144/OK	None, ND
				trichloroethene	-305/-360/OK	None, sample > 4x spike
				vinyl chloride	137/145/OK	None, ND
	L0610633	MW-166A-IS-1	2	trichloroethene	184/151/OK	JS184
		MW-71-IS-1	13	bromodichloromethane	121/122/OK	JS122
				chloroform	329/-106/OK	None, sample > 4x spike
				trichloroethene	9.86/-41.8/OK	None, sample > 4x spike
	L0610628	MW-67-IS-1	7	1,1,2,2 tetrachloroethane	OK/130/OK	None, ND
				1,1,2 trichloroethane	OK/126/OK	None, ND
				1,2,3 trichloropropane	OK/129/OK	None, ND
				1,2 dibromoethane	OK/123/OK	None, ND
				1,3 dichloropropane	OK/129/OK	None, ND
				bromodichloromethane	129/131/OK	None, ND
				chloromethane	134/134/OK	None, ND
	L0610624	MW-157-IS-1	4	bromodichloromethane	131/130/OK	None, ND
				trichloroethene	31.2/-4.06/OK	None, sample > 4x spike
	L0611238	RW-7	2	1,1,2,2,tetrachloroethane	124/ 136/ OK	JS136
		Main Discharge	14 VOA	1,1,2,2,tetrachloroethane	216/ 204/ ok	JS216
				chloroform	175/168/ ok	JS175
				cis 1,2-dichloroethene	0/0/ ok	JS0
				trichloroethene	194/ 159/ok	None, sample. 4x spike
				trans 1,2 dichloroethene	64/ 59 / ok	JS59
			14 SVOA	1,2 dichlorobenzene	ok/ ok/ 20.5	None, %R ok

A. The MSD relative percent differences (RPD) were within the defined contract limits.

Yes ___ No X NA ___

One RPD was just barely out at 20.5 % limit 20% for the SVOA spike of Main Discharge. The spikes were acceptable (73%/ 59%) and data are not qualified for RPD alone.

A The MS/MSD were client samples.

Yes X No ___ NA ___

VIII. LABORATORY CONTROL SAMPLE

A. Laboratory Control Samples (LCS) was analyzed for every analysis performed and for every 20 samples.
Yes ☒ No ☐

B. The LCS percent recoveries were within the limits defined in the contract (the MS limits are used as a reference or laboratory-specific limits for this matrix are defined).

Yes ☐ No ☒

The full target list has been spiked. There are a number of elevated recoveries observed as shown in the table below. When a high recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the target is detected, the result is qualified as JL#, where # is the elevated recovery. For low recoveries, non-detected results are qualified but no such results are present in this data set.

SDG	Lab Sample #	Batch	Targets Detected	LCS/LCSD/RP D	Qualifiers
L0610630	1,3-5,10	WG226306	bromodichloromethane	133	None, ND
			chloromethane	138	None, ND
	6-9, 13	WG226382	acetone	161	JL161 detects
	6RE, 7RE	WG226410	acetone	148/142/OK	None, ND
L0610626	1-4	WG226283	bromodichloromethane	127	None, ND
	3RE	WG226306	bromodichloromethane	133	None, ND
			chloromethane	138	None, ND
L0610633	5-13, 17	WG226384	bromodichloromethane	123	JL123 detects
	1,2,18	WG226382	acetone	161	None, ND
L0610629	1-4	WG226283	bromodichloromethane	127	None, ND
	5-8, 10,11, 2RE	WG226306	bromodichloromethane	133	None, ND
			chloromethane	138	None, ND
L0610628	5	WG226620	bromodichloromethane	131	None, ND
			vinyl chloride	144	None, ND
	6	WG226306	bromodichloromethane	133	None, ND
			chloromethane	138	None, ND
L0610624	2RE	WG226283	bromodichloromethane	127	None, ND
	3RE	WG226291	acetone	155	None, ND
	2,4	WG226277	bromodichloromethane	128	None, ND
L0611238	None	WG227504	1,2 dibromomethane	123	None, ND

IX. BLANKS

A. Method Blanks were analyzed at the required frequency and for each matrix and analysis.

Yes X No

B. No blank contamination was found in the Method Blank.

Yes No X

Contamination was observed in some method blanks indicated in the table, below the reporting limit. Whenever methylene chloride or acetone is detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UB#, where # is the corrected method blank level. Such results are usable as nondetects. Qualifiers added are summarized in the table below. For other targets, the factor used is 5x.

SDG	Lab Sample #	Batch	Targets Detected	Results	Qualifiers
L0610634	1,2	WG226408	methylene chloride	.332	None, ND
L0610630	2	WG226408	methylene chloride	.332	None, ND
L0610633	5-13, 17	WG226384	methylene chloride	.296	None, ND
	16	WG226408	methylene chloride	.332	UB33.2 detected result
L610629	9	WG226408	methylene chloride	.332	None, ND
L0610611	4	WG226534	methylene chloride	.343	None, ND
	5	WG226408	methylene chloride	.332	UB0.332 detected result
	9-13	WG226258	1,2,3 trichlorobenzene	.162	None, ND

C. If Field Blanks were identified, no blank contamination was found.

Yes No X

There were four (4) trip blanks. No qualifiers are needed as shown in the table below.

SDG	Sample ID	Lab Sample ID	Analyte	Results	Qualifiers
L0610633	TB-102006-LB-1	18	methylene chloride	.265	None, qual from MB
L0610629	TB-101906-LB-1	11	All in control		None
L0610628	TB-101206-LB-1	10	methylene chloride	.525	None, ND
L0611238	TB-102706	17	all in control		None

X. FIELD QC

If Field duplicates were identified, they met guidance RPD of < 35% for water or < 50% for soils. For values reported at < 5 x the reporting limit (RL), a difference of 2 x RL is used as guidance (4 x RL for soils). Data are not qualified for field duplicates as these are evaluated for the total project by the client.

Yes ☒ X ☐ No ☐ NA ☐

There are 11 samples identifiable as field duplicates. All are in control as shown in the table below.

Method	SDG	Client Sample ID	Parent Sample	Observations
8260B	L0610605	IRADUP3-IS-1	MW-147-IS-1	OK
	L0610611, L0610605	IRADUP4-IS-1	MW-160-IS-1	OK
	L0610626, L0610624	IRADUP-7	MW-150T-IS-1	OK
	L0610626, L0610624	IRADUP-8	MW-164-IS-1	OK
	L0610626, L0610624	IRADUP-9	MW-168B-IS-1	OK
	L0610629	IRADUP1-IS-1	MW-32B-IS-1	OK
	L0610629	IRADUP2-IS-1	MW-54-IS-1	OK
	L0610630	IRADUP5-IS-1	MW-163-IS-1	OK
	L0610626, L0610630	IRADUP-6	MW-149T-IS-1	OK
	L0611238	DUP 1	RW-7	ok
		DUP 2	Main Discharge	chloroform 7.66/ 25.5

XI. SYSTEM PERFORMANCE

A. The RICs, chromatograms, tunes and general system performance were acceptable for all instruments and analytical systems.

Yes ☐ No ☐ NA ☒ X ☐

Not part of this review level

B. The suggested EQLs for the sample matrices in this set were met.

Yes ☒ X ☐ No ☐ NA ☐

Dilutions were necessary in some cases to achieve the proper quantification of high-level targets, which raises the EQLs for all other targets in the run. In such cases, the undiluted runs are also reported. Results in those runs which are outside of the calibration range are qualified as JE to indicate that they should be regarded as estimates.

For the Recovery well/ Discharge, only the diluted values are reported.

XII. TCL COMPOUNDS

A. The identification is accurate and all retention times, library spectra and reconstructed ion chromatograms (RIC) were evaluated for all detected compounds.

Yes ☐ No ☐ NA ☒ X

Not part of this review level

B. Quantitation was checked to determine the accuracy of calculations for representative compounds in each internal standards quantitation set.

Yes ☐ No ☐ NA ☒ X

Not part of this review level

XIII. TENTATIVELY IDENTIFIED COMPOUNDS

TICs were properly identified and met the library identification criteria.

Yes ☐ No ☐ NA ☒ X

Not part of this review level

XIV. OVERALL ASSESSMENT OF THE CASE

The laboratory has complied with the requested method. Data are fully usable after consideration of qualifiers.

The following is noted:

Chain of Custody/Deliverables:

The project manager is informed of the following and the chain information is to be updated for the project file.

Many of the SDGs do not have customary chains of custody. Those have a running list of samples with date and time collected with no relinquished and received areas at the bottom of each page. They do not have page numbers. Some of the time there is a typed area of the last page with the samplers name, date and time with a shaded area for the signature. The person receiving the samples has to write in their name and the information as there is no area for that established. Since some of the SDGs do have a proper chain of custody but in some cases where there is a second cooler, it has been received differently with incomplete information.

Our understanding is that the chain of custody is an electronic sample documentation system. We would recommend developing an improved set of chain of custody documents to be generated from this system that provide a more clear hardcopy documentation of the electronic process, particularly once the samples are received at the laboratory. There needs to be signature lines for relinquished and received on all pages of the chain of custody and the pages need to be numbered and uniquely identified.

SDG L0610611: Discrepancy report states that MW-153B-IS-1 10/18@ 14:53 not on chain of custody

Sample Condition

Cooler temperature was in many cases below 2°C but narratives noted that all samples were received in good condition. When samples are below the lower EPA limit of 2° C, as long as there is no damage to the samples, no qualifier is required.

Sample Checklist states that all samples are preserved.

Initial Calibrations:

There were no qualifications based on IC.

Continuing Calibrations:

The CCVs were analyzed at the proper frequency. Two samples were qualified R due to %D outliers. See the table in the report for details.

Matrix Spikes:

The full target list has been spiked. Most MS/MSD recoveries and RPDs are in control. Instances where spike recoveries are out of limits are shown in the table below. In several instances, the sample amount is 4x the spike level or greater. In such cases, the recovery cannot realistically be calculated, because the anticipated normal analytical variability is on the order of the spike level. Thus no qualifiers are added. Five results are qualified due to an elevated recovery associated with a detection and data could be biased high proportional to the spike recovery. One result is slightly low with a possible slightly low bias. Cis-1,2 DCE is noted with a zero recovery in the Main discharge sample. No chromatograms are available to review, but as several compounds are out of limits, there could be some overall matrix interference. The spike is 20 ug/l and the sample result is 67 ug/l which does not meet the 4x criteria, but there could be other interference issues. There recovery and discharge samples have very high levels of contaminants as evident in the dilutions for several compounds which exceed the linear range.

One RPD was just barely out at 20.5 % limit 20% for the SVOA spike of Main Discharge. The spikes were acceptable (73%/ 59%) and data are not qualified for RPD alone.

Method Blanks:

Contamination was observed in some method blanks, below the reporting limit. Whenever methylene chloride or acetone is detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UB#, where # is the corrected method blank level. Such results are usable as nondetects. Qualifiers added are summarized in the table within the report. For other targets, the factor used is 5x.

Field Blanks:

There were four (4) trip blanks. No qualifiers are needed as shown in the table within the report.

LCS Recoveries:

The full target list has been spiked. There are a number of elevated recoveries observed as shown in the table in the report. When a high recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the target is detected, the result is qualified as JL#, where # is the elevated recovery. For low recoveries, non-detected results are qualified but no such results are present in this data set.

EQLs:

Dilutions were necessary in some cases to achieve the proper quantification of high-level targets, which raises the EQLs for all other targets in the run. In such cases, the undiluted runs are also reported. Results in those runs which are outside of the calibration range are qualified as JE to indicate that they should be regarded as estimates.

For the Recovery well/ Discharge, only the diluted values are reported.

Field QC:

Eleven (11) field duplicates are present, all in control with the one exception note. See the table in the report for details.

INORGANIC DATA QUALITY REVIEW REPORT**METALS BY ICP SW-846 METHOD 6010B and Mercury**SDG: L0611238PROJECT: Memphis Site, Recovery Well and Discharge; for e2mLABORATORY: Kemron Laboratories, Marietta, OHSAMPLE MATRIX: Water SAMPLING DATE (Month/Year): 11/06ANALYSES REQUESTED: SW-846 Method 6010 (ICP), 6020 (ICPMS) and MercuryNO. OF SAMPLES: 2 Total WaterSAMPLE NO: Main Discharge, DUP 2DATA REVIEWER: Diane ShortQA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE:Telephone Logs included Yes___ No XContractual Violations Yes___ No X

The EPA Contract Laboratory Program National Functional Guidelines for Inorganic Review, 2002 and the SW-846 Methods have been referenced by the reviewer to perform this data validation review. The EPA qualifiers have been expanded to include a descriptor code and value to define QC violations and their values, per the approval of the Project Manager. Per the Scope of Work, the review includes validation of all calibrations, chains of custody (for sample holding time and preservation only), and QC forms referencing the above documents.

I. DELIVERABLES

All deliverables were present as specified in the Statement of Work or project contract.

Yes X No___

The following is noted for clarification:

The packages contained 2 total waters samples analyzed for ICP and ICP/MS metals. Per the contract, all packages were reviewed for holding time, summary QC and calibration (Level III). No raw data were required for review, nor were raw data required for submission.

II. CALIBRATIONS

A. All initial instrument calibrations were performed as defined in the contract or Statement of Work (SOW). All correlation coefficients of the 3 point curve were > 0.995.

Yes X No___ NA___

Linear coefficients were reported and were within limits.

B. The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were analyzed at the required frequency.

Yes X No___

Sequencing was not required, but sufficient calibrations were present to verify that the frequencies were met for client samples for ICP and ICP/MS and all calibrations bracketing the client samples were reviewed.

C. And the ICV and CCV standard percent recovery results were within the required control limits of 90 – 110% (Mercury 80 – 120%).

Yes ☒ No ☐

III. CRDL STANDARDS

The 2 x CRDL standards were analyzed as required in the SOW.

Yes ☒ No ☐ NA ☐

A CRI was reported and was acceptable.

IV. BLANKS

Note: the highest blank associated with any particular analyte is used for the qualification process and is the value entered after the "B" blank descriptor.

A. The initial calibration blanks (ICB) and continuing calibration blanks (CCB) were analyzed at the required frequency.

Yes ☒ No ☐ NA ☐

Sequencing was not required, but sufficient calibration blanks were present to verify that the frequencies were met for client samples and blanks bracketing the client samples were reviewed.

B. And the ICB and CCB results were within the required control limits.

Yes ☐ No ☒ NA ☐

Per the review of the ICP data, there were as some blank analyte detects reported in the calibration blanks, but all client data were either non-detect or much greater than the contamination, with the exception of the ICB and CCB bracketing client samples for antimony. Data for both samples are qualified UB.00011 to indicate the level of blank contamination. Data are fully usable as undetected values. Note blanks are reported in ug/l and sample results are in mg/l. Units have been corrected for qualifying.

C. And all analytes in the Leach Blank were less than the CRDL, or less than 2x the instrument detection limit (IDL), whichever is lower.

Yes ☐ No ☐ NA ☒

No TCLP analysis was performed.

V. PREPARATION BLANKS

A. Preparation blanks were prepared and analyzed at the required frequency.

Yes ☒ No ☐

B. And all analytes in the preparation blank were less than the CRDL, or less than the instrument detection limit (IDL), whichever is lower.

Yes ☒ No ☐

The preparation blanks are only reported to the RL. All are undetected.

C. Field, trip, decon rinse or other field blanks are contained and identified in the package.

Yes ☐ No ☒ NA ☐

D. And the reported results are less than the CRDL or less than the IDL, whichever is lower.

Yes ☐ No ☐ NA ☐

VIA. ICP INTERFERENCE CHECK SAMPLE

A. The Interference Check Sample (ICS) was analyzed as required in the SOW or contract.

Yes ☒ No ☐ NA ☐

B. And the ICS percent recovery results were reported for all required ICS analytes and were within required control limits of 80% to 120%.

Yes ☒ No ☐ NA ☐

C. ICP analysis results for analytes not required to be present in a given ICS standard were within acceptable limits.

Yes ☐ No ☐ NA ☒

Not requested by client and data not provided by laboratory.

VIB. INTERELEMENT CORRECTION FACTORS

The Interelement Correction Factors are included and complete for all possible interferent analytes.

Yes ☐ No ☐ NA ☒

Review of possible other contaminants was not requested by the client.

VII. SPIKE SAMPLE RECOVERY

A. A matrix (pre-digestion) spike sample was analyzed for each digestion group and/or matrix or as required in the SOW.

Yes ☒ No ☐

The MS is Main Discharge.

B. And the Matrix spike percent recoveries were within the required control limits of 75 – 125%.

Yes ☐ No ☒ NA ☐

Iron was slightly high at 126/ 135%. The samples were qualified JS135, where the # is the percent recovery of iron. Data could be biased slightly high proportional to the spike.

B. A Post-digest spike was analyzed if required.

Yes ☒ No ☐ NA ☐

C. The MS/MSD samples included client samples

Yes ☒ No ☐ NA ☐

VIII. DUPLICATES

A. Matrix (pre-digestion) duplicate samples were analyzed at the required frequency

Yes ☒ No ☐

The laboratory ran MS/MSD samples.

B. And the Matrix duplicate relative percent differences (RPD) were within the required control limits (Water 20%, Soil 35%) or the RL limits were met if the duplicate values are $< 5 \times \text{RL}$. If the either one of the duplicate results are $< 5 \times \text{RL}$, the RPD is not used. The QC limit used is the difference between the original and the duplicate results ($\pm$ the RL) for water and ($\pm 2X$ the RL) for soils.

Yes ☒ No ☐ NA ☐

IX. LABORATORY CONTROL SAMPLE

A. Laboratory control samples (LCS) were analyzed at the required frequency.

Yes ☒ No ☐

B. And LCS recoveries were within the required control limits of 80 to 120%.

Yes ☒ No ☐

X. MSA RESULTS AND GRAPHITE FURNACE ANALYSIS (GFAA)

Duplicate injections were performed for all analyses and the RSDs were less than 20% for all reported results (Method of Standard Additions (MSA) requires only a single injection).

Yes ☐ No ☐ NA ☒

Graphite furnace was not done

XI. ICP SERIAL DILUTION

A. ICP Serial Dilutions have been analyzed at the required frequency if the analyte concentrations are greater than 50 x IDL.

Yes ☒ No ☐ NA ☐

The DUP 2 was used for the serial dilution.

B. And the percent difference criteria of $\pm 10\%$ have been met when results are greater than 50 x IDL (100 x IDL for ICP/MS).

Yes ☒ No ☐ NA ☐

No values were $> 50 \times \text{IDL}$.

C. The serial dilution analyses were on client samples

Yes ☒ No ☐

XII. INSTRUMENT DETECTION LIMITS

A. The Instrument Detection Limits have met the Quarterly reporting requirements.

Yes ☒ No ☐ NA ☐

This was determined to be acceptable during the contractual process.

B. And all sample results have met the required detection limits (CRDL).

Yes ☒ No ☐ NA ☐

XIII. PREPARATION AND ANALYSIS LOGS

A. All samples were prepared or analyzed within the required holding times referencing the SOW (time of sample receipt to preparation/distillation).

Yes ☒ No ☐

B. All samples were analyzed within the 40 CFR 136 (Clean Water Act) or method recommended holding times (time of sample collection to date of analysis)

Yes ☒ No ☐

C. Chains of Custody (COC)

1. Chains of Custody (COC) were reviewed and all fields were complete, signatures were present and cross outs were clean and initialed.

Yes ☒ No ☐

2. Samples were received at the required temperature and preservation.

Yes ☒ No ☐

Preservation is not noted on the chain of custody. The preservation is verified per the laboratory log in sheets.

XIV. FIELD QC

A. Field QC samples (duplicates, SRMs) were identified.

Yes ☒ No ☐

The field duplicates are identified as: Main Discharge and DUP2

B. Field duplicates were within a guidance limit of $< 35\%$ RPD limit for water or $< 50\%$ RPD limit for soil. If values are $< 5 \times \text{RL}$, the water limit is $\pm 2 \times \text{RL}$ and the soil limit is $\pm 4 \times \text{RL}$. Final determination will be made by the project manager.

Yes ☒ No ☐ NA ☐

Per the field manager, the duplicates are within project criteria. The reviewer has checked the data and concurs.

XV. GENERAL COMMENTS

The laboratory has complied with the requested methods and the quality of the data is acceptable and usable with consideration of the following qualifications. Note that the following qualifiers are used:

UCB#, where # is the value of the calibration blank contamination. Data are usable as undetected values.
JS# is for matrix spike/matrix spike duplicate recoveries, where # is the analyte recovery. The bias to the data is considered to be high or low proportional to the analyte recovery. (JS125 would indicate the value could be 125% of the true value)

Summary:

*Very low level detections of antimony could be false detections due to laboratory calibration blank contamination, not the presence of the analytes in the sample. (UCB#)

*Iron could be biased slightly high proportional to the matrix spike/matrix spike duplicate analyte recoveries (JS#).

Qualification or Comments in Detail**Calibration Blank**

Per the review of the ICP data, there were as some blank analyte detects reported in the calibration blanks, but all client data were either non-detect or much greater than the contamination, with the exception of the ICB and CCB bracketing client samples for antimony. Data for both samples are qualified UB.00011 to indicate the level of blank contamination. Data are fully usable as undetected values. Note blanks are reported in ug/l and sample results are in mg/l. Units have been adjusted for the qualification

Matrix Spike

Iron was slightly high at 126/ 135%. The samples were qualified JS135, where the # is the percent recovery of iron. Data could be biased slightly high proportional to the spike.

APPENDIX E

HISTORICAL DATA TABLES

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-07

Analyte	Sample Name	MW072	MW073	MW074	MW075	MW-7-2	MW-7-1	MW-07-2	MW-07-1	MW07 (70.5-72.5)
	Sample Date	6/21/1997	9/27/1997	4/2/1998	10/14/1998	7/28/2003	7/28/2003	10/28/2003	10/28/2003	4/28/2004
UN11										
1,1,1-Trichloroethane	µg/L	<10	2J	2J	<10	0.96J	<1	1.69	<1	1.5
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1.2
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1.2
1,1-Dichloroethane	µg/L	26	50	47	25	23.9	4.06	40.9	18.7	32
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	2.99	<1	1.23	<1.2
Chloroform	µg/L	8J	9J	2J	7J	<1	911	<1	139	<1.2
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	2.98	<1	<1	<1.2
Tetrachloroethene	µg/L	32	82	78	47	32.3	2.26	42.6	15	50
Total 1,2-Dichloroethene	µg/L	<10	<10	<10	<10	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	0.8J	<1	<1	<1.2J
Trichloroethene	µg/L	16	32	31	21	19.9	46.3	27.6	21.2	32
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1.2

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV1990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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MW-07

Analyte	Sample Name	MW07 (66.9-68.9)	MW07 69.56-71.56	MW-07(68.9)	MW-07 (68.9)1105	MW-07 (68.9)0406	MW-07 -IS-1
	Sample Date	4/28/2004	10/20/2004	6/14/2005	11/18/2005	4/12/2006	10/18/2006
	UNIT						
1,1,1-Trichloroethane		0.94J	0.72J	<1	<1	0.868J	0.543J
1,1,2,2-Tetrachloroethane		<1	<1.4	<1	<1	<1	<0.5
1,1,2-Trichloroethane		<1	<1.4	<1	<1	<1	<1
1,1-Dichloroethane		22	17	15.3	18.1	27.4	18.5
Carbon tetrachloride		0.29J	<1.4	<1	<1	<1	0.273J
Chloroform		8	0.44J	<1	1.07B	0.501B	4.49
cis-1,2-Dichloroethene		<1	<1.4	<1	<1	<1	<1
Tetrachloroethene		28	18	20.6	26.3	50.7	34.5
Total 1,2-Dichloroethene		--	--	--	--	--	--
trans-1,2-Dichloroethene		<1	<1.4	<1	<1	<1	<1
Trichloroethene		18	14	14.9	15.4	26.5	19.6
Vinyl chloride		<1	<1.4	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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MW-31

Analyte	Sample Name	MW312	MW313ADD	MW314	MW315	MW-31-Y1Q1	MW-31-Y1Q2	MW-31-Y1Q3	MW-31-Y1Q4	MW-31-Y2Q1	MW31NA
	Sample Date	6/20/1997	9/24/1997	3/24/1998	10/15/1998	2/3/1999	5/25/1999	8/27/1999	11/3/1999	2/15/2000	3/23/2000
	UNIT										
1,1,1-Trichloroethane	µg/L	2J	2J	<25	<25	1.26	<1	<1	<1	<1	0.2J
1,1,2,2-Tetrachloroethane	µg/L	<10	10J	97	33	3.22	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<20	4J	<25	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	29	47	26	14J	7.86	33.3	7.9	5.98	9.89	8
Carbon tetrachloride	µg/L	1J	8J	3J	<25	1.51	<1	0.59J	<1	<1	<1
Chloroform	µg/L	10	49	21J	16J	7.22	<1	1.66	0.92J	1.19	0.5J
cis-1,2-Dichloroethene	µg/L	--	--	--	--	58.9	4.78	4.34	5.09	6.89	0.6J
Tetrachloroethene	µg/L	67	110	66	42	4.25	7.55	1.31	0.9J	0.64J	1J
Total 1,2-Dichloroethene	µg/L	38	140	280	280	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	22.2	2.14	4.66	2.52	3.37	0.3J
Trichloroethene	µg/L	78	220	400	380	140	23.9	33.7	18	25.6	4
Vinyl chloride	µg/L	<10	<20	<25	<25	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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MW-31

Analyte	Sample Name	MW-31	MW-31-Y2Q3	MW-31-Y2Q4	MW-31_010214	MW-31-Y3S2-A	MW-31-Y3S2-B	MW-31-1_020410	MW-31-1_020410
	Sample Date	5/17/2000	8/23/2000	11/7/2000	2/14/2001	10/3/2001	10/3/2001	4/10/2002	4/10/2002
	UNIT								
1,1,1-Trichloroethane	µg/L	<1	0.42J	<1	<1	<1	0.7J	0.5J	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	14.8	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	1.2	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	22.3	<1	31.5	7.98	20.6	31.2	39.5	20.6
Carbon tetrachloride	µg/L	<1	0.4J	<1	2.76	1.25	<1	<1	<1
Chloroform	µg/L	1.29	<1	<1	25.1	1.61	<1	<1	<1
cis-1,2-Dichloroethane	µg/L	15.5	12.3	4.24	148	44.2	5.53	2.66	6.78
Tetrachloroethene	µg/L	1.16	2.08	0.92J	5.02	2.1	4.19	1.24	1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	7.78	<1	4.53	49.3	34.4	4.83	2.51	5.34
Trichloroethene	µg/L	49.5	68.1	18.5	241	227	38.1	21.5	33.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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MW-31

Analyte	Sample Name	MW-31-1_021002	MW-31-2_021002	MW-31-1	MW-31-2	MW-31-2_031028	MW-31-1_031028	MW-31.77	5-4/29/2004
	Sample Date	10/2/2002	10/2/2002	4/8/2003	4/8/2003	10/28/2003	10/28/2003	4/29/2004	
	UNIT								
1,1,1-Trichloroethane	µg/L	0.62J	0.63J	<1	<1	<1	<1	0.54J	
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethene	µg/L	39.3	55.4	13.7	5.37	7.61	8.38	33	
Carbon tetrachloride	µg/L	0.88J	<1	<1	<1	<1	<1	0.18J	
Chloroform	µg/L	1.08	<1	<1	<1	<1	<1	0.32J	
cis-1,2-Dichloroethene	µg/L	17	1.24	2.06	<1	<1	<1	0.56J	
tetrachloroethene	µg/L	1.32	1.1	0.92	0.83	<1	<1	0.85J	
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	
trans-1,2-Dichloroethene	µg/L	11.3	0.73J	1.53	<1	<1	<1	0.47J	
Trichloroethene	µg/L	87.5	15.8	13.5	1.24	2.32	1.46	12	
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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MW-31

Analyte	Sample Name	MW-31 72.2-4/29/2004	MW-31 8/12/2004	MW-31 77.5-10/20/2004	MW-31 72.5-10/20/2004	MW-31 (77.1) 6/17/2005
	Sample Date	4/29/2004	8/12/2004	10/20/2004	10/20/2004	6/17/2005
	UNIT					
1,1,1-Trichloroethane	µg/L	0.74J	0.36J	<1J	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<17	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<17	<1	<1	<1
1,1-Dichloroethane	µg/L	40	26B	17	12	<1
Carbon tetrachloride	µg/L	0.24J	<17	<1J	<1	<1
Chloroform	µg/L	0.32J	<17	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.46J	<17	0.58J	0.35J	<1
Tetrachloroethene	µg/L	2.2	0.59J	0.42J	0.31J	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.42J	<17	0.31J	<1	<1
Trichloroethene	µg/L	16	5.5	4.7	2.7	<1
Vinyl chloride	µg/L	<1	<17J	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-31

Analyte	Sample Name	MW-31(71.3)	MW-31(77.1)	MW-31(71.3)	MW-31(71.3)	MW-31(71.6)	MW-31(77.1)	MW-31(77.1)	MW-31B - IS-I
	Sample Date	6/17/2005	11/18/2005	11/18/2005	4/12/2006	4/12/2006	4/12/2006	10/18/2006	10/18/2006
UNIT									
1,1,1-Trichloroethane	µg/L	0.505J	<1	<1	<1	<1	<1	<1	0.451J
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	24.9	12.4	27.8	29.6	23	23.2	30.6	30.6
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	0.131J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.814J	<1	<1	1.56	0.34J	<1	<1	<1
Tetrachloroethene	µg/L	0.547J	<1	0.755J	1.22	1.35	0.714J	7.58	7.58
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.595J	<1	<1	1.4	<1	<1	<1	<1
Trichloroethene	µg/L	8.48	1.83	8.86	14.7	4.99	3.85	12	12
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
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MW-32

Analyte	Sample Name	MW322	MW323	MW324	MW-32-Y1Q1	MW-32-Y1Q2	MW-32-Y1Q3	MW-32-Y1Q4	MW-32-Y2Q1	MW-32
	Sample Date	6/21/1997	9/29/1997	3/27/1998	2/3/1999	5/25/1999	8/26/1999	11/3/1999	2/15/2000	5/16/2000
	UNIT									
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	91	110	140	5.67	4.42	0.92J	<1	<1	<1
1,1,2-Trichloroethane	µg/L	5J	5J	6J	1.54	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	25	16	20	25.2	14.2	17.3	25.2	25.5	37
Chloroform	µg/L	8J	6J	7J	7.89	32.2	76.9	73	77.2	117
cis-1,2-Dichloroethene	µg/L	--	--	--	30.5	16.7	4.64	4.59	5.07	6.61
Tetrachloroethene	µg/L	2J	1J	1J	1.16	1.28	2.22	2.63	2.34	3.94
Total 1,2-Dichloroethene	µg/L	120	88	140	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	3.82	1.76	0.99J	1.01	1.12	2
Trichloroethene	µg/L	93	76	100	31.9	28.1	34.6	36.8	41.8	58.2
Vinyl chloride	µg/L	<10	<10	<10	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-32

Analyte	Sample Name	Sample Date	UNIT	MW-32-Y2Q3	MW-32-Y2Q4	MW-32_010220	MW-32-Y3S2	MW-32-1_020410	MW-32-1_021001	MW-32-1
				8/24/2000	11/9/2000	2/20/2001	10/3/2001	4/10/2002	10/1/2002	4/8/2003
1,1,1-Trichloroethane			µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane			µg/L	2.12	21.5	68.2	216	24	14	11
1,1,2-Trichloroethane			µg/L	<1	0.61J	<1	<1	0.59J	<1	0.52
1,1-Dichloroethene			µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride			µg/L	47.2	61.3	19.7	42.7	12.1	12.3	1.18
Chloroform			µg/L	171	372J	434	828	102	91.5	50.2
cis-1,2-Dichloroethene			µg/L	5.66	8.55	9.44	12.6J	4.21	3.49	9.16
Tetrachloroethene			µg/L	5.9	6.39J	3.74	<1	0.82J	1.41	<1
Total 1,2-Dichloroethene			µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene			µg/L	2.68	4.53	2.42	5.82J	1.26	0.72J	<1
Trichloroethene			µg/L	89.2	94.8	71.9	238	37.9	34.8	13.5
Vinyl chloride			µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

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Historical Analytical Results
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MW-32

Analyte	Sample Name	MW-32-1_031028	MW-32.64.5-4/29/2004	MW-32	MW-32.65.9-10/20/2004	MW32RD66	MW-32(65.1)
	Sample Date	10/28/2003	4/29/2004	8/13/2004	10/20/2004	10/28/2004	6/14/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<2.5	<1J	<0.25	<1
1,1,2,2-Tetrachloroethane	µg/L	7.82	8.1	21	3.6	17.10J	3.72
1,1,2-Trichloroethane	µg/L	<1	<1	<2.5	<1	0.37J	<1
1,1-Dichloroethane	µg/L	<1	<1	<2.5	<1	<0.5	<1
Carbon tetrachloride	µg/L	<1	8.2	7.6	2.3J	9.56J	2.83
Chloroform	µg/L	50.9	37	68	17	64.69J	11.5
cis-1,2-Dichloroethene	µg/L	7.97	2	2.8	1.7	3.29J	1.65
Tetrachloroethene	µg/L	<1	0.37J	0.97J	<1	0.93J	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	0.36J	<2.5	0.23J	0.49J	<1
Trichloroethene	µg/L	13.4	14	24	7.3	22J	4.1
Vinyl chloride	µg/L	<1	<1	<2.5	<1	<0.25	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-32

Analyte	Sample Name	MW-32 (65.1) 1105	MW-32 (65.1) 0406	MW-32 IS-1
	Sample Date	11/16/2005	4/12/2006	10/19/2006
	UNIT			
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	32.7	46	21.7
1,1,2-Trichloroethane	µg/L	1.06	1.28	0.594J
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	12.3	17.4	12.3
Chloroform	µg/L	131	154	86
cis-1,2-Dichloroethene	µg/L	4.99	7.62	3.53
Tetrachloroethene	µg/L	1.55	2.58	1.63
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	1.25	0.613J
Trichloroethene	µg/L	55	70	38
Vinyl chloride	µg/L	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-33

Analyte	Sample Name	MW332	MW333	MW334	MW335	MW-33-Y1Q1	MW-33-Y1Q2	MW-33-Y1Q3	MW-33-Y1Q4	MW-33-Y2Q1	MW-33-Y2Q3	
	Sample Date	6/18/1997	9/25/1997	3/25/1998	10/16/1998	2/2/1999	5/25/1999	8/26/1999	11/2/1999	2/15/2000	5/16/2000	8/22/2000
UNIT												
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	<10	<10	<10	<10	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8040/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-33

Analyte	Sample Name	Sample Date	11/8/2000	10/3/2001	4/10/2002	10/2/2002	4/8/2003	10/28/2003	4/29/2004
		UNIT							
1,1,1-Trichloroethane	MW-33-Y2Q4 MW-33-Y3S2 MW-33-1_020410 MW-33-1_021002 MW-33-1_031028 MW-33-56-4/29/2004	µg/L	<I	<I	<I	<I	<I	<I	<I
1,1,2,2-tetrachloroethane		µg/L	<I	<I	<I	<I	<I	<I	<I
1,1,2-Trichloroethane		µg/L	<I	<I	<I	<I	<I	<I	<I
1,1-Dichloroethene		µg/L	<I	<I	<I	<I	<I	<I	<I
Carbon tetrachloride		µg/L	<I	<I	<I	<I	<I	<I	<I
Chloroform		µg/L	<I	<I	<I	<I	<I	<I	<I
cis-1,2-Dichloroethene		µg/L	<I	<I	<I	<I	<I	<I	<I
1-tetrachloroethene		µg/L	<I	<I	<I	<I	<I	<I	<I
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<I	<I	<I	<I	<I	<I	<I
Trichloroethene		µg/L	<I	<I	<I	<I	<I	<I	<I
Vinyl chloride		µg/L	<I	<I	<I	<I	<I	<I	<I

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

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Historical Analytical Results
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-33

Analyte	Sample Name	4/29/2004	10/20/2004	6/14/2005	11/16/2005	4/12/2006	10/20/2006
	MW-33.59.5-4/29/2004 MW33.59 3-10/20/2004 MW-33(57.7) MW-33 (57.7) 1105 MW-33 (57.7) 406 MW-33 - IS-1						
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1J	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1J	<1	<1	0.562J	0.278J
Chloroform	µg/L	<1	<1	<1	<1	<1	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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R Unusable

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

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MW-37

Analyte	Sample Name										Sample Date			
	MW373	MW372	MW374	MW-37	MW-37- 3_020410	MW-37- 2_020410	MW-37- 1_020410	MW-37- 1_021001	MW-37- 2_021001	MW-37- 3_021001	9/29/1996	6/18/1997	3/27/1998	2/20/2001
	UNIT										4/10/2002	4/10/2002	4/10/2002	4/10/2002
1,1,1-Trichloroethane	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	--	--	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	<10	<10	<10	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	--	--	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.83
Vinyl chloride	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-37

Analyte	Sample Name	4/8/2003	4/8/2003	10/28/2003	10/28/2003	2_031028	MW-37- 3_031028	MW-37- 170.5-	MW37,175.5-	MW37,180-	MW37,180.5-
	Sample Date	4/8/2003	4/8/2003	10/28/2003	10/28/2003	2_031028	MW-37- 3_031028	MW37,170.5-	MW37,175.5-	MW37,180-	MW37,180.5-
	UNIT										
1,1,1-Trichloroethane	µg/L	<I	<I	<I	<I	<I	<I	<I	<I	<I	<I
1,1,2,2-Tetrachloroethane	µg/L	<I	<I	<I	<I	<I	<I	<I	<I	<I	<I
1,1,2-Trichloroethane	µg/L	<I	<I	<I	<I	<I	<I	<I	<I	<I	<I
1,1-Dichloroethene	µg/L	<I	<I	<I	<I	<I	<I	<I	<I	<I	<I
Carbon tetrachloride	µg/L	<I	<I	<I	<I	<I	<I	<I	<I	<I	<I
Chloroform	µg/L	<I	<I	<I	<I	<I	<I	<I	<I	<I	<I
cis-1,2-Dichloroethene	µg/L	<I	<I	<I	<I	<I	<I	<I	<I	<I	<I
Tetrachloroethene	µg/L	<I	<I	<I	<I	<I	<I	<I	<I	<I	<I
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<I	<I	<I	<I	<I	<I	<I	<I	<I	<I
Trichloroethene	µg/L	<I	<I	<I	<I	<I	<I	<I	<I	<I	<I
Vinyl chloride	µg/L	<I	<I	<I	<I	<I	<I	<I	<I	<I	<I

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-37

Analyte	Sample Name	Sample Date	MW37.175.5- 10/21/2004	MW37.170.5- 10/21/2004	MW-37(173.2) 6/14/2005	MW-37(173.2) 11/16/2005	MW-37 (173.2)0406 4/12/2006	MW-37 - IS-1 10/19/2006
	UNIT							
1,1,1-Trichloroethane	µg/L	<1J	<1J	<1J	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1J	<1J	<1J	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
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Historical Analytical Results
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MW-40

Analyte	Sample Name	MW402	MW403	MW404	MW405	MW-40-Y1Q1	MW-40-Y1Q2	MW-40-Y1Q3	MW-40-Y1Q4	MW-40-Y2Q1
Sample Date	6/19/1997	9/26/1997	3/28/1998	10/19/1998	2/2/1999	5/24/1999	8/26/1999	11/2/1999	2/15/2000	
	UNIT									
1,1,1-Trichloroethane	<10	<10	<10	1J	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<10	<10	2J	<10	1.35	1.07	<1	<1	<1	<1
Carbon tetrachloride	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1
Chloroform	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	--	--	--	--	<1	<1	<1	<1	<1	<1
Tetrachloroethene	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	<10	<10	<10	<10	--	--	--	--	--	--
trans-1,2-Dichloroethene	--	--	--	--	<1	<1	<1	<1	<1	<1
Trichloroethene	<10	<10	<10	<10	1.55	<1	<1	<1	<1	<1
Vinyl chloride	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-40

Analyte	Sample Name	MW-40NA	MW-40	MW-40-Y2Q3	MW-40-Y2Q4	MW-40_010214	MW-40-Y3S2	MW-40-1_020410	MW-40-1_021001
	Sample Date	3/22/2000	5/16/2000	8/23/2000	11/8/2000	2/14/2001	10/3/2001	4/10/2002	10/1/2002
	UNIT								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.2J	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

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MW-40

Analyte	Sample Date	4/8/2003	10/28/2003	4/29/2004	4/29/2004	10/21/2004
	Sample Name	MW-40-1	MW-40-1_031028	MW40.87.9-4/29/2004	MW40.91.9-4/29/2004	MW40.91.9-10/21/2004
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1J
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1J
Chloroform	µg/L	<1	<1	0.38J	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1J	<1J	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

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MW-40

Analyte	Sample Name	Sample Date	10/21/2004	6/15/2005	11/18/2005	4/13/2006	MW-40 (90-0)0406	MW-40 - IS-1
		UNIT						
1,1,1-Trichloroethane		µg/L	<1J	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	<1	<1	<1	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1J	<1	<1	<1	<1	<1
Chloroform		µg/L	<1	<1	<1	<1	<1	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
1-tetrachloroethene		µg/L	<1	<1J	<1	<1	<1	<1
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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MW-43

Analyte	Sample Name	MW431_45	MW435	MW435B	MW435U	MW-43	MW-43-Y3S2-B	MW-43-Y3S2-A	MW-43-2	020410
	Sample Date	10/21/1998	10/23/1998	10/24/1998	11/8/1998	2/19/2001	10/3/2001	10/3/2001	4/10/2002	
	UNIT									
1,1,1-Trichloroethane	µg/L	<10	1J	14	2J	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	9.59	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Chloroform	µg/L	2J	<10	<10	<10	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	<10	<10	<10	<10	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<10	<10	<10	<10	1.02	<1	<1	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

E FLAGS:

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Historical Analytical Results
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MW-43

Analyte	Sample Name MW-43-1_020410 MW-43-2_021001 MW-43-1_021001 MW-43-1 MW-43-2 MW-43-1_031028 MW-43-2_031028							
	Sample Date	4/10/2002	10/1/2002	10/1/2002	4/8/2003	4/8/2003	10/28/2003	10/28/2003
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

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Historical Analytical Results
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-43

Sample Name MW43,163-4/29/2004 MW43,168-4/29/2004 MW43,168-10/21/2004 MW43,165-10/21/2004 MW-43(166 5)					
Analyte	Sample Date	4/29/2004	4/29/2004	10/21/2004	10/21/2004 6/17/2005
UNIT					
1,1,1-Trichloroethane	µg/L	<I	<I	<I	<I
1,1,2,2-Tetrachloroethane	µg/L	<I	<I	<I	<I
1,1,2-Trichloroethane	µg/L	<I	<I	<I	<I
1,1-Dichloroethene	µg/L	<I	<I	<I	<I
Carbon tetrachloride	µg/L	<I	<I	<I	<I
Chloroform	µg/L	<I	<I	<I	<I
cis-1,2-Dichloroethene	µg/L	<I	<I	<I	<I
Tetrachloroethene	µg/L	<I	<I	<I	<I
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<I	<I	<I	<I
Trichloroethene	µg/L	<I	<I	<I	<I
Vinyl chloride	µg/L	<I	<I	<I	<I

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E. FLAGS:

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- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-43

Analyte	Sample Date	11/17/2005	4/12/2006	10/19/2006
Sample Name MW-43 (166 5)1105 MW-43 (165 5)0406 MW-43 - IS-1				
	UNIT			
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<1	<1	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
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Historical Analytical Results
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MW-44

Analyte	Sample Name	MW442	MW443	MW444	MW445	MW-44-Y1Q1	MW-44-Y1Q2	MW-44-Y1Q3	MW-44-Y1Q4	MW-44-Y2Q1
Sample Date	6/20/1997	9/25/1997	3/27/1998	10/17/1998	2/2/1999	5/25/1999	8/26/1999	11/2/1999	2/15/2000	
	UNIT									
1,1,1-Trichloroethane	<10	<10	<10	<10	<1	<1	<10	<1	<1	<1
1,1,2,2-Tetrachloroethane	<10	<10	<10	<10	<1	<1	<10	<1	<1	<1
1,1,2-Trichloroethane	<10	<10	<10	<10	<1	<1	<10	<1	<1	<1
1,1-Dichloroethene	<10	<10	<10	<10	<1	<1	<10	<1	<1	<1
Carbon tetrachloride	6J	6J	4J	<10	<1	<1	<10	<1	<1	<1
Chloroform	6J	<10	4J	<10	<1	<1	<10	<1	<1	<1
cis-1,2-Dichloroethene	--	--	--	--	<1	<1	<10	<1	<1	<1
Tetrachloroethene	<10	<10	<10	<10	<1	<1	<10	<1	<1	<1
Total 1,2-Dichloroethene	2J	2J	1J	<10	--	--	--	--	--	--
trans-1,2-Dichloroethene	--	--	--	--	<1	<1	<10	<1	<1	<1
Trichloroethene	4J	5J	3J	<10	<1	<1	<10	<1	<1	<1
Vinyl chloride	<10	<10	<10	<10	<1	<1	<10	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-44

Analyte	Sample Name	MW-44	MW-44-Y2Q3	MW-44-Y2Q4	MW-44-Y3S2-C	MW-44-Y3S2-B	MW-44-Y3S2-A	MW-44-2_020410
	Sample Date	5/16/2000	8/24/2000	11/8/2000	10/3/2001	10/3/2001	10/3/2001	4/10/2002
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	1.29	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	2.3	5.3	2.1	2.84	6.47	<1	4.36
Chloroform	µg/L	1.88	3.62	1.23	2.78	5.04	2.05	2.81
cis-1,2-Dichloroethene	µg/L	0.65J	1.35	0.622J	<1	<1	<1	1.1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.36	4.92	0.79J	1.26	2.77	<1	2.05
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-44

Sample Name		MW-44-1_020410	MW-44-3_020410	MW-44-2_021001	MW-44-3_021001	MW-44-1_021001	MW-44-1
Analyte	Sample Date	4/10/2002	4/10/2002	10/11/2002	10/11/2002	10/11/2002	4/8/2003
UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	2.1	4.39	<1	<1	3.65
Chloroform	µg/L	<1	1.29	2.8	1.03	<1	2.19
cis-1,2-Dichloroethene	µg/L	<1	<1	1.01	<1	<1	0.84
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	0.85J	1.67	<1	<1	1.64
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-44

Analyte	Sample Name	Sample Date	10/28/2003	4/29/2004	4/29/2004	MW44,64-4/29/2004	MW-44	8/14/2004	10/21/2004	10/21/2004
			UNIT							
1,1,1-Trichloroethane			<1	<1	<1	<1	<1	<1J	<1J	<1J
1,1,2,2-Tetrachloroethane			<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane			<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene			<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride			1.96	0.85J	1.3	0.8J	0.8J	0.54J	0.71J	0.71J
Chloroform			1.15	0.42J	0.91J	0.4J	0.4J	0.42J	0.64J	0.64J
cis-1,2-Dichloroethene			<1	<1	0.35J	<1	<1	<1	<1	0.27J
Tetrachloroethene			<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene			--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene			<1	<1	<1J	<1	<1	<1	<1	<1
Trichloroethene			0.82J	0.35J	0.75J	0.28J	0.28J	0.41J	0.55J	0.55J
Vinyl chloride			<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

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- R Unusable
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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-44

Analyte	Sample Name	Sample Date	6/16/2005	11/17/2005	MW-44 (69 0)1105	MW-44 (69 0)0406	MW-44 - IS-1
							10/19/2006
		UNIT					
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	<1	<1	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	1.01	<1	<1	1.2
Chloroform		µg/L	<1	<1	<1	<1	0.467
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	<1	<1	<1	0.366J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-54

Analyte	Sample Name	MW542	MW543	MW544	MW545	MW-54-Y1Q1	MW-54-Y1Q2	MW-54-Y1Q3	MW-54-Y1Q4	MW-54-Y2Q1
	Sample Date	6/20/1997	9/25/1997	3/28/1998	10/16/1998	2/3/1999	5/25/1999	8/26/1999	11/3/1999	2/15/2000
	UNIT									
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<10	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1	<10	40.1	23.6
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<10	1.15	0.9J
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<10	<1	<1
Carbon tetrachloride	µg/L	<10	1J	2J	<10	<1	3.53	12.8	5.02	14.7
Chloroform	µg/L	<10	<10	1J	<10	<1	<1	5.04	2.54	12.4
cis-1,2-Dichloroethene	µg/L	--	--	--	--	3.6	3.9	10.3	24.1	22.5
Tetrachloroethene	µg/L	<10	2J	2J	<10	<1	<1	<10	0.68J	0.94J
Total 1,2-Dichloroethene	µg/L	4J	10	12	4J	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<10	1.4	2.01
Trichloroethene	µg/L	58	150	180	79	60.6	61	50	30.6	43.3
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<10	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

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- R Unusable
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MW-54

NOTES:

SW8260B, or CV3990

 $\mu\text{g/L}$ micrograms per liter

-- Not Analyzed

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

884 196

MW-54

Analyte	Sample Date	10/3/2001	4/10/2002	4/10/2002	4/10/2002	10/1/2002	10/1/2002	10/1/2002
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<10	<10	<10
1,1,2,2-Tetrachloroethane	µg/L	8.67	18.1	9.06	17.5	50.7	60.1	60.1
1,1,2-Trichloroethane	µg/L	<1	1.19	<1	1.1	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<10	<10	<10
Carbon tetrachloride	µg/L	7.7	14.2	2.96	14.4	14	14.4	14.4
Chloroform	µg/L	11.9	8.84	5.54	8.15	10.9	11.6	11.6
cis-1,2-Dichloroethene	µg/L	27.6	43.7	24.2	41.7	80.2	85.9	85.9
Tetrachloroethene	µg/L	<1	1.62	<1	2.06	<10	<10	<10
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.15	9.95	5.11	9.17	16.2	15.2	15.2
Trichloroethene	µg/L	105	618	127	723	920	632	632
Vinyl chloride	µg/L	<1	<1	<1	<1	<10	<10	<10

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-54

Analyte	Sample Name	MW-54-1_021001	MW-54-1	MW-54-2	MW-54-3	MW-54-3_031118	MW-54-1_031118	MW-54-2_031118
Sample Date	10/1/2002	4/8/2003	4/8/2003	4/8/2003	4/8/2003	11/18/2003	11/18/2003	11/18/2003
	UNIT							
1,1,1-Trichloroethane	µg/L	<10	<1	<10	<10	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	40	10.3	40.6	44.1	1760	301	1680
1,1,2-Trichloroethane	µg/L	<10	<1	<10	<10	10.4	2.05	7.86
1,1-Dichloroethene	µg/L	<10	<1	<10	<10	<1	<1	<1
Carbon tetrachloride	µg/L	5.58J	0.68	7.32	7.48	2.58	<1	3.35
Chloroform	µg/L	11.5	1.82	<10	<10	3.68	<1	3.18
cis-1,2-Dichloroethene	µg/L	66	10.7	44.1	44.3	85.3	26.3	75.5
Tetrachloroethene	µg/L	<10	<1	3.43	4.02	10.1	<1	7.37
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	12.1	1.51	8.76	7.71	16	4.16	15.3
Trichloroethene	µg/L	333	72.4	632	629	1900	216	1530
Vinyl chloride	µg/L	<10	<1	<10	<10	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-54

Analyte	Sample Date	2/4/2004	2/4/2004	4/7/2004	4/29/2004	4/29/2004
	Sample Name	MW54-020404-90.5-92.5	MW54-020404-85-87.5	MW54-040704	MW54.85.6-4/29/2004	MW54.90.6-4/29/2004
	UNIT					
1,1,1-Trichloroethane	µg/L	<0.25	<0.25	<0.25	<50	<67
1,1,2,2-Tetrachloroethane	µg/L	2150	2180	1350	1300	2000
1,1,2-Trichloroethane	µg/L	9.85	9.74	6.63	<50	<67
1,1-Dichloroethene	µg/L	<0.5	<0.5	<0.5	<50	<67
Carbon tetrachloride	µg/L	5	5.79	3.94	<50	<67
Chloroform	µg/L	5.27	5.4	3.93	<50	<67
cis-1,2-Dichloroethene	µg/L	83.2	83.4	61.2	49J	64J
Tetrachloroethene	µg/L	12.8	14.2	8.36	<50	<67
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	20.3	20.4	13	38J	54J
Trichloroethene	µg/L	2110	2230	1530J	1400	2000
Vinyl chloride	µg/L	0.441J	0.301J	<0.25	<50	<67

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-54

Analyte	Sample Date	8/14/2004	10/21/2004	10/21/2004	10/21/2004	10/21/2004	1/27/2005	3/23/2005	6/17/2005
		UNIT							
1,1,1-Trichloroethane		<100	<140	<140	<140	<10	<8.3	<1	<1
1,1,2,2-Tetrachloroethane		2300	4700	4300	3000	3000	2100	1220	1220
1,1,2-Trichloroethane		<100	<140	<140	6J	6J	6.1J	3.68	3.68
1,1-Dichloroethene		<100	<140	<140	<10	<10	<8.3	<1	<1
Carbon tetrachloride		<100	<140	<140	<10	<10	<8.3	0.902J	0.902J
Chloroform		<100	<140	<140	<10	<10	3J	1.52B	1.52B
cis-1,2-Dichloroethene		65J	61J	70J	23	23	41	35.8	35.8
Tetrachloroethene		<100	<140	<140	<10	<10	5.8J	2.77	2.77
Total 1,2-Dichloroethene		--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene		<100	<140	<140	2.9J	2.9J	6.5J	5.94	5.94
Trichloroethene		2200	2700	2500	300	300	1300	729	729
Vinyl chloride		<100	<140	<140	<10	<10	<8.3	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-54

Analyte	Sample Name	Sample Date	11/18/2005	MW-54 (89.5)1105	MW-54 (89.5)0406	MW-54 - IS-1
			4/13/2006			10/19/2006
		UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	853	605	572	572	572
1,1,2-Trichloroethane	µg/L	3.44	3.91	2.54	2.54	2.54
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	1.3	0.944J	1.9	1.9	1.9
Chloroform	µg/L	1.46B	1.14B	1.45	1.45	1.45
cis-1,2-Dichloroethene	µg/L	25.4	19.1	19.6	19.6	19.6
Tetrachloroethene	µg/L	4.42	2.98	2.78	2.78	2.78
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.18	4.38	3.88	3.88	3.88
Trichloroethene	µg/L	478J	671	604	604	604
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-57

Analyte	Sample Name	DIA224	MW-57-Y2Q1	MW-57	MW-57-Y2Q3	MW-57-Y2Q4	MW-57-Y3S2-B	MW-57-Y3S2-A	MW-57-2_020410
	Sample Date	3/15/1999	2/16/2000	5/17/2000	8/22/2000	11/7/2000	10/3/2001	10/3/2001	4/10/2002
	UNIT								
1,1,1-Trichloroethane	µg/L	<10	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<10	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	14	39.9	50.6	45.7	48.3	37.5	37.1	42.8
Chloroform	µg/L	6J	13.2	10.3	11.3	8.93	28	25.9	15.1
cis-1,2-Dichloroethene	µg/L	--	<1	<1	0.53J	0.411J	0.97J	0.86J	0.55J
Tetrachloroethene	µg/L	2J	5.38	5.1	5.86	5.07	4.58	5.24	5.02
Total 1,2-Dichloroethene	µg/L	<10	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	1.55	1.51	1.83	1.5	1.68	1.73	1.88
Trichloroethene	µg/L	22	50.8	46.5	49.2	30.9	77.4	73.4	66.4
Vinyl chloride	µg/L	<10	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-57

Sample Name	MW-57-1_020410	MW-57-2_021001	MW-57-1_021001	MW-57-1	MW-57-2	MW-57-1_031028	MW-57-2_031028
Sample Date	4/10/2002	10/1/2002	10/1/2002	4/8/2003	4/8/2003	10/28/2003	10/28/2003
Analyte	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	38.5	43	41.5	42.4	24.3	33.3
Chloroform	µg/L	13.4	29.7	11.8	15.6	12.2	18.2
cis-1,2-Dichloroethene	µg/L	0.51J	1.13	0.53	0.68	<1	<1
Tetrachloroethene	µg/L	6.08	8.14	6.43	7.86	5.32	5.28
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.63	2.27	0.99	1.37	0.97J	1.45
Trichloroethene	µg/L	58.8	111	60.9	73.3	57.3	71.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-57

Analyte	Sample Name	MW57.67-4/29/2004	MW57.64.5-4/29/2004	MW57.66.8-10/21/2004	MW57RD67	MW-57(66.6)	MW-57 (66.6)1105
	Sample Date	4/29/2004	4/29/2004	10/21/2004	10/28/2004	6/14/2005	11/18/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<1.7	<3.3	<1	<0.25	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1.7	<3.3	<1	<0.125	<1	<1
1,1,2-Trichloroethane	µg/L	<1.7	<3.3	<1	<0.25	<1	<1
1,1-Dichloroethane	µg/L	<1.7	<3.3	<1	<0.5	<1	<1
Carbon tetrachloride	µg/L	25	33	19	23.7	20.6	17.1
Chloroform	µg/L	5.7	11	6.1	9.29	4.94B	4.75B
cis-1,2-Dichloroethene	µg/L	<1.7	<3.3	0.27J	0.34J	<1	<1
Tetrachloroethene	µg/L	3.5	5	2.7	2.96	2.6	2.3
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.46J	<3.3	0.58J	0.79J	<1	<1
Trichloroethene	µg/L	31	48	29	35.9	19	17.6
Vinyl chloride	µg/L	<1.7	<3.3	<1	<0.25	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-57

Analyte	Sample Name	Sample Date	UNIT
	MW-57 (66 6)0406	4/12/2006	
	MW-57 - IS-1	10/20/2006	
1,1,1-Trichloroethane		<1	<1
1,1,2,2-Tetrachloroethane		<1	<0.5
1,1,2-Trichloroethane		<1	<1
1,1-Dichloroethene		<1	<1
Carbon tetrachloride		23	31
Chloroform		3.25B	5.67
cis-1,2-Dichloroethene		<1	0.294J
Tetrachloroethene		2.81	4.02
Total 1,2-Dichloroethene		--	--
trans-1,2-Dichloroethene		0.419J	0.659J
Trichloroethene		18	28.7
Vinyl chloride		<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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NOTES:
VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

J	Estimated results based on QC data or reported below RL
B	Estimated results possibly biased high or false positive based on blank data
<	Not detected at sample reporting limit
R	Unusable
UJ	Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-67

Analyte	Sample Date	MW-67-										UNIT										
		3_021001		MW-67-2		MW-67-1		MW-67-3		MW-67-3_031028			MW-67-2_031028		MW-67-1_031028		MW67,271-		MW67,261-		MW67,266-	
1,1,1-Trichloroethane				<1		<1		<1		<1		<1		<1		<1		<1		<1		<1
1,1,2,2-Tetrachloroethane				<1		<1		<1		<1		<1		<1		<1		<1		<1		<1
1,1,2-Trichloroethane				<1		<1		<1		<1		<1		<1		<1		<1		<1		<1
1,1-Dichloroethene				<1		<1		<1		<1		<1		<1		<1		<1		<1		<1
Carbon tetrachloride				<1		<1		<1		<1		<1		<1		<1		<1		<1		<1
Chloroform				<1		<1		<1		<1		<1		<1		<1		<1		<1		<1
cis-1,2-Dichloroethene				<1		<1		<1		<1		<1		<1		<1		<1		<1		<1
Tetrachloroethene				<1		<1		<1		<1		<1		<1		<1		<1		<1		<1
Total 1,2-Dichloroethene				--		--		--		--		--		--		--		--		--		--
trans-1,2-Dichloroethene				<1		<1		<1		<1		<1		<1		<1		<1		<1		<1
Trichloroethene				<1		<1		<1		<1		<1		<1		<1		<1		<1		<1
Vinyl chloride				<1		<1		<1		<1		<1		<1		<1		<1		<1		<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-67

Analyte	MW-67									
	Sample Name	10/21/2004	10/21/2004	10/21/2004	10/21/2004	6/17/2005	12/8/2005	MW-67(267.5)-1205	MW-67(267.5)0406	MW-67 - IS-1
	Sample Date	10/21/2004	10/21/2004	10/21/2004	10/21/2004	6/17/2005	12/8/2005	12/8/2005	4/12/2006	10/19/2006
	UNIT									
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<0.5J
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1J
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

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MW-68

Analyte	Sample Name	5/18/2000	8/23/2000	11/8/2000	2/14/2001	10/3/2001	10/3/2001	10/3/2001
		MW-68_000518	MW-68-Y2Q3	MW-68-Y2Q4	MW-68_010214	MW-68-Y4S2-A	MW-68-Y3S2-A	MW-68-Y3S2-B
	Sample Date	5/18/2000	8/23/2000	11/8/2000	2/14/2001	10/3/2001	10/3/2001	10/3/2001
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	6.55	<1	<1	<1	<1	4.15
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	9.01	<1	<1
Carbon tetrachloride	µg/L	0.89J	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	6.44	<1	<1	<1	1.43	<1	3.5
cis-1,2-Dichloroethene	µg/L	13.7	31	1.9	4.38	<1	<1	3.12
Tetrachloroethene	µg/L	2.07	8.35	0.4J	0.92J	4.3	<1	1.6
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	13.1	9.36	1.4	4.14	<1	<1	0.78J
Trichloroethene	µg/L	44.5	48.9	3.21	9.67	3.85	0.5J	6.56
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-68

Analyte	Sample Date	4/10/2002	4/10/2002	10/10/2002	10/10/2002	10/1/2002	10/1/2002	4/8/2003	4/8/2003	10/28/2003
		UNIT								
1,1,1-Trichloroethane		<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		1.01	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane		<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		<1	<1	<1	9.01	<1	<1	<1	<1	<1
Carbon tetrachloride		<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform		<1	<1	<1	1.43	<1	7.88	<1	<1	<1
cis-1,2-Dichloroethene		<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		<1	<1	<1	4.3	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene		--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene		<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		<1	<1	<1	3.85	0.94J	<1	<1	<1	<1
Vinyl chloride		<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL
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positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-68

Analyte	Sample Name	Sample Date	10/28/2003	4/29/2004	4/29/2004	4/29/2004	10/21/2004
			UNIT				
1,1,1-Trichloroethane	MW-68-1_031028		<1	<2.5	<1	<1	<1J
1,1,1,2,2-Tetrachloroethane	MW68,69-4/29/2004		<1	0.85J	<1	<1	<1
1,1,2-Trichloroethane	MW68,73-4/29/2004		<1	<2.5	<1	<1	<1
1,1-Dichloroethene	MW68,78-4/29/2004		<1	<2.5	<1	1.5	<1
Carbon tetrachloride	MW68,78-4/29/2004		<1	<2.5	0.21J	<1	<1J
Chloroform	MW68,78-4/29/2004		<1	0.78J	0.59J	<1	<1
cis-1,2-Dichloroethene	MW68,78-4/29/2004		<1	<2.5	<1	<1	<1
Tetrachloroethene	MW68,78-4/29/2004		<1	<2.5	0.32J	2.1	<1
Total 1,2-Dichloroethene	MW68,78-4/29/2004		--	--	--	--	--
trans-1,2-Dichloroethene	MW68,78-4/29/2004		<1	<2.5	<1	<1	<1
Trichloroethene	MW68,78-4/29/2004		<1	1J	<1	1.4	<1
Vinyl chloride	MW68,78-4/29/2004		<1	<2.5	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-68

Sample Name		MW68.74.6-10/21/2004	MW68.70.6-10/21/2004	MW-68(80.5)	MW-68(74.5)	MW-68 (80.5)1105	MW-68 (74.5)1105
Analyte	Sample Date	10/21/2004	10/21/2004	6/15/2005	6/15/2005	11/17/2005	11/17/2005
UNIT							
1,1,1-Trichloroethane	µg/L	<1	<33J	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	81	<1	1.52B	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<33	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<33	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<33J	<1	<1	<1	<1
Chloroform	µg/L	<1	<33	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<33	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<33	<1J	<1J	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<33	<1	<1	<1	<1
Trichloroethene	µg/L	<1	20J	<1	0.512J	<1	<1
Vinyl chloride	µg/L	<1	<33	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
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- < Not detected at sample reporting limit
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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-68

Analyte	Sample Name	Sample Date	MW-68 (74.5)0406	MW-68T - IS-1	MW-68B - IS-1
			4/12/2006	10/19/2006	10/19/2006
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	5.67	0.457J
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	0.951J	<1
Chloroform	µg/L	0.564B	<1	1.57	0.165J
cis-1,2-Dichloroethene	µg/L	<1	<1	1.06	<1
Tetrachloroethene	µg/L	0.696J	<1	1.63	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	0.544J	<1
Trichloroethene	µg/L	0.608J	<1	5.76	0.485J
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-69

Analyte	Sample Name	MW-69-Y2Q1	MW-69	MW-69-Y2Q3	MW-69-Y2Q4	MW-69-94.2FT	MW-69-88.2FT	MW-69-Y3S2-A	MW-69-Y3S2-B	MW-69-2_020410
	Sample Date	2/16/2000	5/18/2000	8/24/2000	11/9/2000	1/8/2001	1/8/2001	10/3/2001	10/3/2001	4/10/2002
	UNIT									
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	4.36	<1	<1	0.6J	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	0.73J	<1	<1	<1	0.3J	<1	<1	<1
Chloroform	µg/L	<1	3.56	<1	2.12	0.1J	1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	4.11	31.2	2.26	23.1	<1	11	<1	<1	<1
Tetrachloroethene	µg/L	1.76	4.87	0.68J	6.39J	<1	4	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.26	19.1	0.86J	12.3	<1	5	<1	<1	<1
Trichloroethene	µg/L	99.2	642	50.4	464	<1	350	1.01	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-69

Analyte	Sample Date	4/10/2002	10/2/2002	10/2/2002	4/8/2003	4/8/2003	10/28/2003	10/28/2003	10/28/2003	4/29/2004
		UNIT								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	1.52	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	7.92	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.84	0.98J	<1	1.94	<1	<1	<1	<1	0.55J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.14	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	128	8.12	<1	2.18	<1	<1	<1	<1	0.47J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW/8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-69

Analyte	Sample Name	4/29/2004	10/21/2004	10/21/2004	6/15/2005
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1J	<1J	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1J	<1J	<1
Chloroform	µg/L	<1	0.17J	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	1.5	<1	0.951J
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1R	<1
Trichloroethene	µg/L	<1	3.7	<1	2.47
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-69

Sample Name	MW-69(90 I)	MW-69 (90 I)	11/16/2005	11/16/2005	4/12/2006	MW-69 (87 4)0406	MW-69 (90.1)0406	MW-69T - IS-1	MW-69B - IS-1
Sample Date	6/15/2005	11/16/2005	11/16/2005	11/16/2005	4/12/2006	4/12/2006	4/12/2006	10/20/2006	10/20/2006
UNIT									
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	5.51	1.15	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1	<1	<1	0.2611	0.1691	0.1691
cis-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	0.348J	<1	<1
Tetrachloroethene	<1	<1	<1	<1	4.72	0.341J	2.03	0.688J	0.688J
Total 1,2-Dichloroethene	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	0.334J	<1	<1	<1	3.85	<1	9.84	2.09	2.09
Vinyl chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
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Historical Analytical Results
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-70

Analyte	Sample Name	MW-70-Y2Q1	MW70NA	MW-70 Bottom	MW-70-Top	MW-70-Y2Q3	MW-70-Y2Q4	MW70-93FT	MW70-89.5FT
	Sample Date	2/15/2000	3/24/2000	5/18/2000	5/18/2000	8/24/2000	11/10/2000	1/8/2001	1/8/2001
	UNIT								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	4830	310	342	284	930	3370	14	130J
1,1,2-Trichloroethane	µg/L	39.4	4	3.93	2.64	15.2	16	0.6J	1
1,1-Dichloroethene	µg/L	0.61J	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	3.48	0.4J	0.64J	<1	2.46	1.81	<1	0.3J
Chloroform	µg/L	18.2	2	5.18	4.36	8.46	9.37	0.1J	0.5J
cis-1,2-Dichloroethene	µg/L	522	46	54.8	38.8	211	292	12	9
Tetrachloroethene	µg/L	89.7	13	5.35	2.92	35.8	32.5J	<1	0.8J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	149	14	12	10.1	50.4	57.3	0.6J	2
Trichloroethene	µg/L	11700	1100	720	538	4240	4040	18	140J
Vinyl chloride	µg/L	1.88	0.2J	<1	<1	0.62J	1.69	8	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
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MW-70

Analyte	Sample Name	Sample Date	1/8/2001	10/3/2001	10/3/2001	10/3/2001	4/10/2002	4/10/2002	10/2/2002
			MW70-86.3FT	MW-70-Y3S2-A	MW-70-Y3S2-B	MW-70-1_020410	MW-70-2_020410	MW-70-2_021002	
		UNIT							
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<50
1,1,2,2-Tetrachloroethane		µg/L	390	1320	766	2540	1580	7980	
1,1,2-Trichloroethane		µg/L	2	<1	<1	735	52	<50	
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	0.98J	<50	
Carbon tetrachloride		µg/L	0.4J	<1	<1	<1	<1	<50	
Chloroform		µg/L	1J	<1	<1	3.99	2.65	<50	
cis-1,2-Dichloroethene		µg/L	21	92.8J	55.9J	114	69.2	42.5J	
Tetrachloroethene		µg/L	2	<1	<1	13.5	3.27	<50	
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--	
trans-1,2-Dichloroethene		µg/L	5	<1	<1	27.3	10.8	<50	
Trichloroethene		µg/L	590	2340	1170	2940	1490	1340	
Vinyl chloride		µg/L	<1	<1	<1	<1	17	<50	

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IIR - Year Eight
Defense Depot Memphis, Tennessee

MW-70

Analyte	Sample Name	MW-70-1_021002	MW-70-1	MW-70-2	MW-70-2_031028	MW-70-1_031028	MW70.85.8-4/29/2004
	Sample Date	10/2/2002	4/8/2003	4/8/2003	10/28/2003	10/28/2003	4/29/2004
	UNIT						
1,1,1-Trichloroethane	µg/L	<50	<200	<50	<1	<1	<250
1,1,2,2-Tetrachloroethane	µg/L	12400	3060	2120	4170	8270	8500
1,1,2-Trichloroethane	µg/L	<50	<200	<50	4.39	6.92	<250
1,1-Dichloroethene	µg/L	<50	<200	<50	<1	<1	<250
Carbon tetrachloride	µg/L	<50	<200	<50	<1	0.64J	<250
Chloroform	µg/L	<50	<200	<50	<1	2.5	<250
cis-1,2-Dichloroethene	µg/L	72.4	<200	31.6	50	112	120J
Tetrachloroethene	µg/L	<50	<200	<50	3.85	17.3	<250
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<50	<200	<50	3.91	18.8	<250
Trichloroethene	µg/L	1980	1220	824	1410	2530	3700
Vinyl chloride	µg/L	<50	<200	<50	10.3	<1	<250

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-70

Analyte	Sample Name	4/29/2004	8/14/2004	10/21/2004	10/22/2004	6/14/2005	6/14/2005
		UNIT					
1,1,1-Trichloroethane	MW70,90 8-4/29/2004	<200	<120	<170J	<140	<10	<5
1,1,2,2-Tetrachloroethane	MW-70,8-10/21/2004	6900	3500	4200	5800	6410	1890
1,1,2-Trichloroethane	MW70,85 8-10/22/2004	<200	<120	<170	<140	13.2	8.88
1,1-Dichloroethene	MW70,90,8-10/21/2004	<200	<120	<170	<140	<10	<5
Carbon tetrachloride	MW70,85 8-10/22/2004	<200	<120	<170J	<140	<10	<5
Chloroform	MW70,90 8-4/29/2004	<200	<120	<170	<140	<10	<5
cis-1,2-Dichloroethene	MW-70,8-10/21/2004	110J	<120	<170	41J	67.8	37.2
Tetrachloroethene	MW70,85 8-10/22/2004	<200	<120	<170	<140	6.3J	<5
Total 1,2-Dichloroethene	MW70,90 8-4/29/2004	--	--	--	--	--	--
trans-1,2-Dichloroethene	MW-70,8-10/21/2004	<200	<120	<170	<140	13.9	6.3J
Trichloroethene	MW70,90 8-4/29/2004	2200	970	1100	2100	1940	361
Vinyl chloride	MW70,90 8-4/29/2004	<200	<120	<170	<140	<10	18.1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-70

Analyte	Sample Name	MW-70 (88.8)1105	MW-70 (82.8)1105	MW-70 (82.8)0406	MW-70 (88.8)0406	MW-70B - IS-1	MW-70T - IS-1
	Sample Date	11/19/2005	11/19/2005	4/12/2006	4/12/2006	10/20/2006	10/20/2006
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<10	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	2200	2990	7670	6750	5850	9200
1,1,2-Trichloroethane	µg/L	13.1	6.65J	6.15	29	25.7	10.1
1,1-Dichloroethene	µg/L	1.07	<10	<1	3.36	1.89	<1
Carbon tetrachloride	µg/L	<1	<10	<1	<1	<1	0.575J
Chloroform	µg/L	2.12B	11.6	1.52B	1.37B	2.42	3.79
cis-1,2-Dichloroethene	µg/L	70.5	63.4	48.1	111	122	101
Tetrachloroethene	µg/L	4.84	16.9	16.5	11.4	12.7	29.5
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	13.8	15.8	12	16.6	17.4	19.7
Trichloroethene	µg/L	1620	2420	2130	1980	2180	3390
Vinyl chloride	µg/L	29.5	<10	1.82	94.2	64.2	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-71

Analyte	Sample Name	MW-71-Y2Q1	MW71NA	MW-71	MW-71-Y2Q3	MW-71-Y2Q4	MW-71B-Y2Q4	MW-71-Y3S2-B
	Sample Date	2/15/2000	3/24/2000	5/18/2000	8/23/2000	11/9/2000	11/9/2000	10/3/2001
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<10	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	97.7	180	181	168	106	78.4	262
1,1,2-Trichloroethane	µg/L	3.21	5J	4.54	4.04	2.99	2.03	<1
1,1-Dichloroethene	µg/L	<1	<10	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	53.9	47	34	32.9	26.5	19.7	22.6
Chloroform	µg/L	996	1600	1080	989	605J	554	857
cis-1,2-Dichloroethene	µg/L	11.5	14	9.98	8.94	6.49	4.71	9.09J
Tetrachloroethene	µg/L	10	15	7.35	7.02	4.09J	3.15J	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.7	5J	3.72	2.94	2.29	1.58	<1
Trichloroethene	µg/L	330	390	239	247	95.6	75.3	186
Vinyl chloride	µg/L	<1	<10	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-71

Analyte	Sample Name	Sample Date	MW-71-Y3S2-A	MW-71-2_020410	MW-71-1_020410	MW-71-2_021002	MW-71-1_021002	MW-71-2_021002	MW-71-1_021002	MW-71-2_021002	MW-71-1_021002	MW-71-2_021002
			10/3/2001	4/10/2002	4/10/2002	10/2/2002	10/2/2002	10/2/2002	4/8/2003	4/8/2003	4/8/2003	4/8/2003
		UNIT										
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	268	68.1	332	26.7	9.49	7.62	30.8	7.62	30.8	30.8
1,1,2-Trichloroethane		µg/L	5.17J	1.36	6	<1	<1	<1	<1	<1	0.66	0.66
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	21.8	17	20.3	11.2	<1	15.3	17.6	15.3	17.6	17.6
Chloroform		µg/L	839	234	828	73.1	8.89	35.4	117	35.4	117	117
cis-1,2-Dichloroethene		µg/L	7.94J	3.3	9.64	1.12	<1	0.54	1.59	0.54	1.59	1.59
Tetrachloroethene		µg/L	<1	1.32	1.96	<1	<1	<1	1.31	<1	1.31	1.31
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	2.91J	1.76	3.36	<1	<1	<1	0.52	<1	0.52	0.52
Trichloroethene		µg/L	159	70.9	184	27	1.6	16.8	44.5	16.8	44.5	44.5
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-71

Analyte	Sample Name	Sample Date	10/28/2003	10/28/2003	10/28/2003	MW71,74 4-4/29/2004	MW71,71-4/29/2004	MW71,73 8-10/21/2004
		UNIT						
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<2	<1J
1,1,2,2-Tetrachloroethane		µg/L	<1	27	3.8	16	6	6
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<2	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<2	<1	<1
Carbon tetrachloride		µg/L	15.3	6.87	8.2	7.8	5.6J	5.6J
Chloroform		µg/L	31.1	88.8	17	56	28	28
cis-1,2-Dichloroethene		µg/L	<1	1.59	0.48J	0.98J	0.7J	0.7J
Tetrachloroethene		µg/L	<1	<1	0.31J	0.54J	0.4J	0.4J
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<2	<1	<1
Trichloroethene		µg/L	10.4	17.4	6.9	15	12	12
Vinyl chloride		µg/L	<1	<1	<1	<2	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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MW-71

NOTES:

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R	Unusable
UU	Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater (RA - Year Eight
Defense Depot Memphis, Tennessee

884 226

MW-76

Analyte	Sample Name	MW76-88 7FT	MW76-91 7FT	MW-76	MW-76-Y3S2-B	MW-76-Y3S2-A	MW-76-2_020410	MW-76-1_020410
Sample Date	1/8/2001	1/8/2001	2/14/2001	10/3/2001	10/3/2001	10/3/2001	4/10/2002	4/10/2002
	UNIT							
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	2000	2300	694	332	106	15.5	117	117
1,1,2-Trichloroethane	2	2	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	0.9J	1	<1	<1	<1	1.22	<1	<1
cis-1,2-Dichloroethene	34	58	17.8	19.6	4.67J	13.5	10.6	10.6
Tetrachloroethene	5	1	3.98	<1	<1	1.81	<1	<1
Total 1,2-Dichloroethene	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	11	19	6.84	7.57J	1.91J	7.71	5.29	5.29
Trichloroethene	840	690	276	117	72.2	142	90.7	90.7
Vinyl chloride	<1	0.3J	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-76

Analyte	Sample Name	MW-76-1_021001	MW-76-2_021001	MW-76-1_031028	MW-76-2_031028
	Sample Date	10/1/2002	10/1/2002	4/8/2003	10/28/2003
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	54.7	14	11.6	6.76
1,1,2-Trichloroethane	µg/L	<1	<1	<1	8.08
1,1-Dichloroethane	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	2.94	1.9	10.3	5.98
Tetrachloroethene	µg/L	<1	1.8	7.43	1.74
Total 1,2-Dichloroethene	µg/L	--	--	--	2.29
trans-1,2-Dichloroethene	µg/L	1.17	<1	4.74	0.83
Trichloroethene	µg/L	37.2	20.3	78.9	17.6
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-76

Analyte	Sample Name	Sample Date	MW76.86-4/29/2004	MW76.91-4/29/2004	MW-76	MW76.91.3-10/21/2004	MW76.86.3-10/21/2004
	UNIT						
1,1,1-Trichloroethane	µg/L		<1	<1	<2	<1J	<1J
1,1,2,2-Tetrachloroethane	µg/L		3.6	10	2.9	12	4.3
1,1,2-Trichloroethane	µg/L		<1	<1	<2	<1	<1
1,1-Dichloroethene	µg/L		<1	<1	<2	<1	<1
Carbon tetrachloride	µg/L		<1	<1	<2	<1J	<1J
Chloroform	µg/L		0.21J	0.23J	0.47J	0.18J	0.16J
cis-1,2-Dichloroethene	µg/L		<1	0.95J	6.9	0.69J	0.24J
Tetrachloroethene	µg/L		1.4	0.86J	1.8J	<1	0.27J
Total 1,2-Dichloroethene	µg/L		--	--	--	--	--
trans-1,2-Dichloroethene	µg/L		<1	0.44J	3.5	0.24J	<1
Trichloroethene	µg/L		4	10	34	8.9	3.9
Vinyl chloride	µg/L		<1	<1	<2	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-76

Analyte	Sample Name	MW-76(88.2)0605	MW-76 (88.2)1105	MW-76 (88.2)0406	MW-76 - IS-1
	Sample Date	6/15/2005	11/17/2005	4/12/2006	10/20/2006
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,1,2,2-Tetrachloroethane	µg/L	4.98B	<1	18.3	2.58
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	0.208J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	0.263J
Tetrachloroethene	µg/L	0.854J	1.14	2.36	1.84
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	3.88	5.16B	7.71	4.9
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-77

Analyte	Sample Name	Sample Date	UNIT	1/8/2001	1/8/2001	10/3/2001	4/10/2002	10/1/2002	4/8/2003	11/18/2003
1,1,1-Trichloroethane	MW77-85FT	1/8/2001	µg/L	<10	<1	<1	<1	<50	<50	<1
1,1,2,2-Tetrachloroethane	MW77-87.5FT	1/8/2001	µg/L	2400	2900	1820	4330	18200	30000	12800
1,1,2-Trichloroethane	MW77-85FT	1/8/2001	µg/L	71	8	<1	9.46	<50	<50	8.53
1,1-Dichloroethene	MW77-87.5FT	1/8/2001	µg/L	<10	<1	<1	<1	<50	<50	<1
Carbon tetrachloride	MW77-85FT	1/8/2001	µg/L	<10	0.61	<1	<1	<50	<50	0.86J
Chloroform	MW77-87.5FT	1/8/2001	µg/L	41	4	<1	5.39	<50	<50	4.96
cis-1,2-Dichloroethene	MW77-85FT	1/8/2001	µg/L	130	130	76.4J	176	237	230	189
Tetrachloroethene	MW77-87.5FT	1/8/2001	µg/L	11	6	<1	7.18	<50	<50	14.8
Total 1,2-Dichloroethene	MW77-85FT	1/8/2001	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	MW77-87.5FT	1/8/2001	µg/L	33	30	20.1J	42.2	42.9J	42.2	37.8
Trichloroethene	MW77-85FT	1/8/2001	µg/L	2400	2500	1620	3170	5040	5320	4550
Vinyl chloride	MW77-87.5FT	1/8/2001	µg/L	<10	0.41	<1	<1	<50	<50	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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R Unusable

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-77

Analyte	Sample Name	4/29/2004	4/29/2004	8/15/2004	10/21/2004	6/15/2005
	UNJT					
1,1,1-Trichloroethane	µg/L	<500	<620	<330	<250J	<20
1,1,2,2-Tetrachloroethane	µg/L	15000	15000	11000	4700	2290J
1,1,2-Trichloroethane	µg/L	<500	<620	<330	<250	<20
1,1-Dichloroethene	µg/L	<500	<620	<330	<250	<20
Carbon tetrachloride	µg/L	<500	<620	<330	<250J	<20
Chloroform	µg/L	<500	<620	<330	<250	<20
cis-1,2-Dichloroethene	µg/L	160J	170J	94J	64J	100
Tetrachloroethene	µg/L	<500	<620	<330	<250	16.8J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<500J	<620	<330	<250	24.1
Trichloroethene	µg/L	5000	5400	3200	1700	2100
Vinyl chloride	µg/L	<500	<620	<330	<250	<20

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-77

Analyte	Sample Name	MW-77 (84.9) 1105	MW-77 (84.9)0406	MW-77 - IS-1
	Sample Date	11/16/2005	4/12/2006	10/20/2006
	UNIT			
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	14000	21700	14300
1,1,2-Trichloroethane	µg/L	18.7	15.7	17.4
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	0.961J	1.12	0.922J
Chloroform	µg/L	2.58B	4.32B	4.77
cis-1,2-Dichloroethene	µg/L	107	154	151
Tetrachloroethene	µg/L	21.1	48	46.9
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	15.5	38.5	19.1
Trichloroethene	µg/L	5300	5520	6500
Vinyl chloride	µg/L	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-79

Analyte	Sample Name	MW79-96FEET	MW79-100.5FT	MW79-91.3FT	MW79-86.1FT	MW-79	MW-79-Y3S2-D	MW-79-Y3S2-A
	Sample Date	2/15/2001	2/15/2001	2/15/2001	2/15/2001	2/19/2001	10/3/2001	10/3/2001
UNIT								
1,1,1-Trichloroethane	µg/L	1.2	<1	1.2	0.8J	<1	0.6J	0.35J
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<3.8	3.34	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	48	46	48	22	30.1	37.6	21
Carbon tetrachloride	µg/L	<1	0.099J	0.1J	<1	<1	<1	<1
Chloroform	µg/L	0.76J	0.8J	0.76J	1.7	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.53J	0.89J	0.51J	6.1	2.52	<1	0.62J
Tetrachloroethene	µg/L	33	34	31	3.2	14	16.6	6.28
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.5J	0.55J	0.49J	2.2	<1	<1	0.75J
Trichloroethene	µg/L	20	26	20	18	9.6	11.9	8.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-79

Analyte	Sample Name	Sample Date	MW-79-Y3S2-B	MW-79-Y3S2-C	MW-79-3_020410	MW-79-2_020410	MW-79-1_020410	MW-79-4_020410
			10/3/2001	10/3/2001	4/10/2002	4/10/2002	4/10/2002	4/10/2002
	UNIT							
1,1,1-Trichloroethane	µg/L	0.39J	0.35J	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	22.8	21.4	18.8	16.4	17.4	18.5	18.5
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.88J	0.57J	<1	<1	0.68J	<1	<1
Tetrachloroethene	µg/L	6.85	6.53	6.96	3.56	3.39	6.64	6.64
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.96J	0.59J	<1	<1	1.09	<1	<1
Trichloroethene	µg/L	10.8	8.27	6.87	6.05	9	5.79	5.79
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-79

Analyte	Sample Name	MW-79-1_021001	MW-79-2_021001	MW-79-3_021001	MW-79-4_021001	MW-79-1	MW-79-2	MW-79-1_031028
	Sample Date	10/1/2002	10/1/2002	10/1/2002	10/1/2002	4/8/2003	4/8/2003	10/28/2003
	UNIT							
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<1	0.44	<1
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1
1,1-Dichloroethene	µg/L	19.8	22.6	23.5	23.8	29.3	35.8	21.6
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	5.34J	8.67J	8.07J	7.02J	0.86	0.48	1.41
Tetrachloroethene	µg/L	<10	2.89J	3.26J	3.18J	1.83	5.64	2.1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	6.82J	11.2	10.7	9	1.31	0.73	1.34
Trichloroethene	µg/L	37.8	67.6	68.4	56.6	15.2	12.3	11.2
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-79

Analyte	Sample Name	Sample Date	10/28/2003	4/29/2004	MW79,94-4/29/2004	MW79,84-4/29/2004	MW79,99-4/29/2004	8/13/2004
		UNIT						
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	0.27J
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	23.9	8.9	10	9.4	12	7.6B
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	0.77J
Chloroform		µg/L	<1	<1	0.21J	<1	<1	<1
cis-1,2-Dichloroethene		µg/L	2.07	1.6	1	1.7	0.56J	1.9
Tetrachloroethene		µg/L	1.95	1.5	1.8	1.7	2.1	1.7
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	1.61	1.8J	0.91J	2J	0.51J	1.6
Trichloroethene		µg/L	12.4	11	8.3	12	5.8	14
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-79

Analyte	Sample Name	MW79.99-10/22/2004	10/22/2004	MW79.94-10/22/2004	10/22/2004	MW79.89-10/22/2004	10/22/2004	MW79.84-10/22/2004	10/22/2004	MW-79	1/26/2005	MW-79	3/22/2005
	UNIT												
1,1,1-Trichloroethane	µg/L	<1		0.28J		0.48J		0.41J		<1		0.35J	
1,1,2,2-Tetrachloroethane	µg/L	<1		<1		<1		<1		<1		<1	
1,1,2-Trichloroethane	µg/L	<1		<1		<1		<1		<1		<1	
1,1-Dichloroethene	µg/L	7.8		6.8		6.3		6.3		9.1		10	
Carbon tetrachloride	µg/L	0.2J		0.29J		0.42J		0.37J		0.22J		0.3J	
Chloroform	µg/L	<1		<1		0.29J		0.26J		<1		0.28B	
cis-1,2-Dichloroethene	µg/L	0.92J		1.7		3		2.6		1		2.4	
Tetrachloroethene	µg/L	1.8		1.5		1.2		1.4		1.2		1.2	
Total 1,2-Dichloroethene	µg/L	--		--		--		--		--		--	
trans-1,2-Dichloroethene	µg/L	1.4		1.9		3		2.8		1.1		2.3	
Trichloroethene	µg/L	9.5		14		21		19		7.5		16	
Vinyl chloride	µg/L	<1		<1		<1		<1		<1		<1	

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-79

Analyte	Sample Name	MW-79(92.0)	MW-79 (92.0)1105	MW-79 (92.0)0406	MW-79 - IS-1
	Sample Date	6/16/2005	11/18/2005	4/13/2006	10/18/2006
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	13.1	16.6	11.4	10.6
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<0.3
cis-1,2-Dichloroethene	µg/L	1.59	<1	<1	<1
Tetrachloroethene	µg/L	1.17	1.01	<1	0.471
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.28	<1	<1	<1
Trichloroethene	µg/L	9.99	3.69	1.94	1.63
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-130

Analyte	Sample Name	MW-130-4_030728	MW-130-3_030728	MW-130-2_030728	MW-130-1_030728	MW-130-2_031028	MW-130-2_031028
Sample Date	Sample Date	7/28/2003	7/28/2003	7/28/2003	7/28/2003	10/28/2003	10/28/2003
	UNIT						
1,1,1-Trichloroethane	µg/L	4.29	3.68	4.03	3.55	4.62	4.81
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	41.1	38.9	40.7	36.5	42.2	40.5
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.54J	0.5J	0.49J	0.46J	0.59J	0.67J
Tetrachloroethene	µg/L	71.6	63.8	69.7	62.9	74.3	79.8
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	54	48.1	51.2	48.5	61.1	64
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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- R Unusable
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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-130

Analyte	Sample Name	Sample Date	UNIT	10/22/2004	10/22/2004
1,1,1-Trichloroethane	MW130.60 5-4/29/2004	4/29/2004	µg/L	3.5	4
1,1,2,2-Tetrachloroethane	MW130.70 5-10/22/2004	10/22/2004	µg/L	<3.3	<2.5
1,1,2-Trichloroethane	MW130.60 5-10/22/2004	10/22/2004	µg/L	<3.3	<2.5
1,1-Dichloroethene	MW130.60 5-10/22/2004	10/22/2004	µg/L	41	33
Carbon tetrachloride	MW130.60 5-10/22/2004	10/22/2004	µg/L	<3.3	<2.5
Chloroform	MW130.60 5-10/22/2004	10/22/2004	µg/L	<3.3	<2.5
cis-1,2-Dichloroethene	MW130.60 5-10/22/2004	10/22/2004	µg/L	<3.3	<2.5
Tetrachloroethene	MW130.60 5-10/22/2004	10/22/2004	µg/L	88	62
Total 1,2-Dichloroethene	MW130.60 5-10/22/2004	10/22/2004	µg/L	--	--
trans-1,2-Dichloroethene	MW130.60 5-10/22/2004	10/22/2004	µg/L	<3.3	<2.5
Trichloroethene	MW130.60 5-10/22/2004	10/22/2004	µg/L	58	48
Vinyl chloride	MW130.60 5-10/22/2004	10/22/2004	µg/L	<3.3	<2.5

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

884 241

Historical Analytical Results
Annual Operations Report - 2006
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MW-130

Analyte	Sample Name	Sample Date	10/22/2004	10/22/2004	6/15/2005	11/17/2005	4/12/2006	MW-130 (69.5)105	MW-130 (69.5)0406	MW-130 - IS-1
										10/20/2006
		UNIT								
1,1,1-Trichloroethane	µg/L	3.9	4.1	4.08	3.76	3.78	3.64			
1,1,2,2-Tetrachloroethane	µg/L	<3.3	<2	<1	<1	<1	<0.5			
1,1,2-Trichloroethane	µg/L	<3.3	<2	<1	<1	<1	<1			
1,1-Dichloroethene	µg/L	31	35	22.6	28.3	52.8	61.6			
Carbon tetrachloride	µg/L	<3.3	<2	<1	<1	<1	<1			
Chloroform	µg/L	<3.3	<2	<1	<1	<1	0.256J			
cis-1,2-Dichloroethene	µg/L	<3.3	0.63J	<1	<1	<1	0.766J			
Tetrachloroethene	µg/L	59	63	48.8	57.4	114	112			
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--			
trans-1,2-Dichloroethene	µg/L	<3.3	<2	<1	<1	<1	<1			
Trichloroethene	µg/L	46	50	37.9	43.5	57.7	60.5			
Vinyl chloride	µg/L	<3.3	<2	<1	<1	<1	<1			

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-144

Analyte	Sample Name	MW-144-8/12/2004	MW144RD75	MW-144-1/27/2005	MW-144-3/23/2005	MW-144(74 4)	MW-144(74 4)1105
	Sample Date	8/12/2004	10/27/2004	1/27/2005	3/23/2005	6/15/2005	11/14/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<250	<0.25	<12	<25	<10	<20
1,1,2,2-Tetrachloroethane	µg/L	7700	6230J	4600	7700	5810J	4970
1,1,1,2-Trichloroethane	µg/L	<250	7.05J	10J	14J	9.64J	14.1J
1,1-Dichloroethene	µg/L	<250	<0.5	<12	<25	<10	<20
Carbon tetrachloride	µg/L	<250	1.47J	<12	<25	<10	<20
Chloroform	µg/L	<250	2.75J	3.2J	4.3J	<10	<20
cis-1,2-Dichloroethene	µg/L	68J	74.09J	69	72	70.2	54.3
Tetrachloroethene	µg/L	<250	7.69J	10J	13J	8.78J	10.2
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<250	17.5J	15	14J	14.1	<20
Trichloroethene	µg/L	2800	2060	2100	4500	2610	2280
Vinyl chloride	µg/L	<250J	<0.25	<12	<25	<10	<20

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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- UJ Undetected, reporting limit is inaccurate or imprecise

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Historical Analytical Results
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MW-144

Analyte	Sample Name	Sample Date	UNIT	MW-144 (74.4)0406	MW-144 - IS-1
		4/12/2006			10/19/2006
1,1,1-Trichloroethane	µg/L	<1			<10
1,1,2,2-Tetrachloroethane	µg/L	5040			2520
1,1,2-Trichloroethane	µg/L	9.04			60.4
1,1-Dichloroethene	µg/L	<1			<10
Carbon tetrachloride	µg/L	1.03			<10
Chloroform	µg/L	2.72B			1.45J
cis-1,2-Dichloroethene	µg/L	83.9			98.2
Tetrachloroethene	µg/L	19.9J			11.4
Total 1,2-Dichloroethene	µg/L	--			--
trans-1,2-Dichloroethene	µg/L	7.28J			19.2
Trichloroethene	µg/L	2650			1890
Vinyl chloride	µg/L	<1			<10

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-145

Analyte	Sample Name	8/16/2004	1/27/2005	3/23/2005	6/17/2005	6/17/2005	11/17/2005
		UNIT					
1,1,1-Trichloroethane	MW-145-8/16/2004	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	MW-145-1/27/2005	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	MW-145-3/23/2005	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	MW-145(94.6)	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	MW-145(78.6)	<1	<1	<1	<1	<1	<1
Chloroform	MW-145(94.6)	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	MW-145(94.6)	<1	<1	<1	<1	<1	<1
Tetrachloroethene	MW-145(94.6)	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	MW-145(94.6)	--	--	--	--	--	--
trans-1,2-Dichloroethene	MW-145(94.6)	<1	<1	<1	<1	<1	<1
Trichloroethene	MW-145(94.6)	<1	<1	<1	<1	<1	<1
Vinyl chloride	MW-145(94.6)	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-145

Analyte	Sample Name	MW-145 (78.6)1105	MW-145 (94.6)0406	MW-145 (78.6)0406	MW-145T - IS-1	MW-145B - IS-1
	Sample Date	11/17/2005	4/13/2006	4/13/2006	10/19/2006	10/19/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-147

Analyte	Sample Name	8/17/2004	10/26/2004	1/27/2005	3/22/2005	6/17/2005	11/18/2005
		UNIT					
1,1,1-Trichloroethane		<5.6	<0.25	0.66J	1.9	1.69	1.92
1,1,2,2-Tetrachloroethane		56	61.79J	140	180	251J	185
1,1,2-Trichloroethane		<5.6	0.74J	1.8	2.2	2.62	3.9
1,1-Dichloroethene		2.2B	1.23	1.2	2.7	2.07	3.32
Carbon tetrachloride		4.3J	1.50	0.36J	0.45J	0.729J	1.27
Chloroform		12	13.40	3.4	3	5.94B	5.1b
cis-1,2-Dichloroethene		57	60.60	48	39	65.1	95
Tetrachloroethene		5.3J	5.94	3.4	3.4	4.44	4.83
Total 1,2-Dichloroethene		--	--	--	--	--	--
trans-1,2-Dichloroethene		20	23.29	12	15	15.9	20.5
Trichloroethene		120	130	77	73	124	121
Vinyl chloride		<5.6	<0.25	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-147

Analyte	Sample Name	MW-147(73 7)0406	MW-147 - IS-1
	Sample Date	4/12/2006	10/18/2006
	UNIT		
1,1,1-Trichloroethane	µg/L	1.32	0.313J
1,1,2,2-Tetrachloroethane	µg/L	3.11	87.9
1,1,2-Trichloroethane	µg/L	4.36	1.39
1,1-Dichloroethene	µg/L	1.76	0.657J
Carbon tetrachloride	µg/L	0.565J	0.364J
Chloroform	µg/L	5.53B	2.66
cis-1,2-Dichloroethene	µg/L	74.8	41.2
Tetrachloroethene	µg/L	3.61	3.92
Total 1,2-Dichloroethene	µg/L	--	--
trans-1,2-Dichloroethene	µg/L	14.4	10.3
Trichloroethene	µg/L	106	81.3
Vinyl chloride	µg/L	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-148

Analyte	Sample Name	8/17/2004	10/26/2004	1/27/2005	3/22/2005	6/17/2005	6/17/2005
		UNIT					
1,1,1-Trichloroethane	MW-148-S/17/2004	<1	<0.25	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	MW148RD82	0.72J	5.55	0.63J	0.37J	0.997J	15.4
1,1,2-Trichloroethane	MW-148-3/22/2005	<1	0.42J	<1	<1	<1	1.03
1,1-Dichloroethene	MW-148(85.8)	<1	<0.5	<1	<1	<1	0.426J
Carbon tetrachloride	MW-148(85.8)	0.73J	0.577J	0.19J	<1	<1	0.583J
Chloroform	MW-148(85.8)	0.6J	2.25	0.88J	0.58B	<1	3.07B
cis-1,2-Dichloroethene	MW-148(85.8)	13	52.29	12	4.8	<1	95.2
Tetrachloroethene	MW-148(85.8)	3.7	7.82	4.5	3.3	<1	6.44
Total 1,2-Dichloroethene	MW-148(85.8)	--	--	--	--	--	--
trans-1,2-Dichloroethene	MW-148(85.8)	4.9	21.29	3.8	1.9	<1	26.8
Trichloroethene	MW-148(85.8)	31	136	27	13	1.17B	160
Vinyl chloride	MW-148(85.8)	<1	<0.25	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
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884 250

884 250

884 250

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990
 -- Not Analyzed
 µg/L micrograms per liter

J Estimated results based on QC data or reported

B	Estimated results possibly biased high or false positive based on blank data
<	Not detected at sample reporting limit
R	Unusable
UJ	Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-149

Analyte	Sample Name	8/18/2004	1/27/2005	4/12/2005	6/17/2005	6/17/2005	11/19/2005
		UNIT					
1,1,1-Trichloroethane		<5	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		27J	37	27	50.4	18.1	38.3
1,1,2-Trichloroethane		<5	0.87J	0.64J	1.66	0.454J	1.62
1,1-Dichloroethene		<5	<1	<1	<1	<1	<1
Carbon tetrachloride		12	14	16	15.7	10.7	22
Chloroform		110	140	79	167	64	159
cis-1,2-Dichloroethene		3.8J	4	3.1	20.4	2.57	16.6
Tetrachloroethene		1.6J	1.8	1.6	0.881J	1.01	2.13
Total 1,2-Dichloroethene		--	--	--	--	--	--
trans-1,2-Dichloroethene		<5	0.81J	0.63J	2.37	0.513J	2.21
Trichloroethene		38	45	35	68.1	23.1	75.4
Vinyl chloride		<5	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

884 251

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-149

Analyte	Sample Name	MW-149 (83.6)1105	MW-149 (99.6)0406	MW-149 (83.6)0406	MW-149T - 10/19/2006	MW-149B - IS-1
	Sample Date	11/19/2005	4/13/2006	4/13/2006	10/19/2006	10/19/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	29.2	30.3	11.4	21.3	23.1
1,1,2-Trichloroethane	µg/L	0.83J	1.23	<1	0.425J	0.686J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	15.1	12.6	10.3	12.9	12.2
Chloroform	µg/L	102	122	50	81	95.5
cis-1,2-Dichloroethene	µg/L	4.36	11.3	3.42	3.15	7.81
Tetrachloroethene	µg/L	1.84	1.02	1.3	1.44	1.27
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.894J	1.48	<1	0.794J	1.13
Trichloroethene	µg/L	44.5	57.1	32.1	40	45.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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- < Not detected at sample reporting limit
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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-150

Analyte	Sample Name	MW-150-8/18/2004	MW150RD86	MW-150-1/27/2005	MW-150-3/23/2005	MW-150(92.7)	MW-150(82.2)
	Sample Date	8/18/2004	10/25/2004	1/27/2005	3/23/2005	6/17/2005	6/17/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<250	<0.25	<20	<20	<10	<10
1,1,1,2-Tetrachloroethane	µg/L	8000J	10900J	6700	6600	4790	3050
1,1,2-Trichloroethane	µg/L	<250	5.73J	6.9J	5.1J	7.44J	9.2J
1,1-Dichloroethene	µg/L	<250	<0.5	<20	<20	<10	<10
Carbon tetrachloride	µg/L	<250	1.53J	<20	<20	<10	<10
Chloroform	µg/L	<250	3.34J	<20	3.3J	<10	<10
cis-1,2-Dichloroethene	µg/L	74J	81.90J	84	48	57	44.7
Tetrachloroethene	µg/L	<250	13.60J	<20	6.4J	6.77J	<10
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<250	21.10J	22	9.1J	13.8	8.83J
Trichloroethene	µg/L	3000	2330J	690	2000	2060	983
Vinyl chloride	µg/L	<250	<0.25	<20	<20	<10	<10

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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884 254

884 254

884 254

Well	Sample	Concentration	Color	OD	Notes
1	SW8260A	100 µg/L	Yellow	0.15	
2	SW8260B	100 µg/L	Yellow	0.15	
3	SW8260C	100 µg/L	Yellow	0.15	
4	SW8260D	100 µg/L	Yellow	0.15	
5	SW8260E	100 µg/L	Yellow	0.15	
6	SW8260F	100 µg/L	Yellow	0.15	
7	SW8260G	100 µg/L	Yellow	0.15	
8	SW8260H	100 µg/L	Yellow	0.15	
9	SW8260I	100 µg/L	Yellow	0.15	
10	SW8260J	100 µg/L	Yellow	0.15	
11	SW8260K	100 µg/L	Yellow	0.15	
12	SW8260L	100 µg/L	Yellow	0.15	
13	SW8260M	100 µg/L	Yellow	0.15	
14	SW8260N	100 µg/L	Yellow	0.15	
15	SW8260O	100 µg/L	Yellow	0.15	
16	SW8260P	100 µg/L	Yellow	0.15	
17	SW8260Q	100 µg/L	Yellow	0.15	
18	SW8260R	100 µg/L	Yellow	0.15	
19	SW8260S	100 µg/L	Yellow	0.15	
20	SW8260T	100 µg/L	Yellow	0.15	
21	SW8260U	100 µg/L	Yellow	0.15	
22	SW8260V	100 µg/L	Yellow	0.15	
23	SW8260W	100 µg/L	Yellow	0.15	
24	SW8260X	100 µg/L	Yellow	0.15	
25	SW8260Y	100 µg/L	Yellow	0.15	
26	SW8260Z	100 µg/L	Yellow	0.15	
27	SW8260AA	100 µg/L	Yellow	0.15	
28	SW8260AB	100 µg/L	Yellow	0.15	
29	SW8260AC	100 µg/L	Yellow	0.15	
30	SW8260AD	100 µg/L	Yellow	0.15	
31	SW8260AE	100 µg/L	Yellow	0.15	
32	SW8260AF	100 µg/L	Yellow	0.15	
33	SW8260AG	100 µg/L	Yellow	0.15	
34	SW8260AH	100 µg/L	Yellow	0.15	
35	SW8260AI	100 µg/L	Yellow	0.15	
36	SW8260AJ	100 µg/L	Yellow	0.15	
37	SW8260AK	100 µg/L	Yellow	0.15	
38	SW8260AL	100 µg/L	Yellow	0.15	
39	SW8260AM	100 µg/L	Yellow	0.15	
40	SW8260AN	100 µg/L	Yellow	0.15	
41	SW8260AO	100 µg/L	Yellow	0.15	
42	SW8260AP	100 µg/L	Yellow	0.15	
43	SW8260AQ	100 µg/L	Yellow	0.15	
44	SW8260AR	100 µg/L	Yellow	0.15	
45	SW8260AS	100 µg/L	Yellow	0.15	
46	SW8260AT	100 µg/L	Yellow	0.15	
47	SW8260AU	100 µg/L	Yellow	0.15	
48	SW8260AV	100 µg/L	Yellow	0.15	
49	SW8260AW	100 µg/L	Yellow	0.15	
50	SW8260AX	100 µg/L	Yellow	0.15	
51	SW8260AY	100 µg/L	Yellow	0.15	
52	SW8260AZ	100 µg/L	Yellow	0.15	
53	SW8260BA	100 µg/L	Yellow	0.15	
54	SW8260BB	100 µg/L	Yellow	0.15	
55	SW8260BC	100 µg/L	Yellow	0.15	
56	SW8260BD	100 µg/L	Yellow	0.15	
57	SW8260BE	100 µg/L	Yellow	0.15	
58	SW8260BF	100 µg/L	Yellow	0.15	
59	SW8260BG	100 µg/L	Yellow	0.15	
60	SW8260BH	100 µg/L	Yellow	0.15	
61	SW8260BI	100 µg/L	Yellow	0.15	
62	SW8260BJ	100 µg/L	Yellow	0.15	
63	SW8260BK	100 µg/L	Yellow	0.15	
64	SW8260BL	100 µg/L	Yellow	0.15	
65	SW8260BM	100 µg/L	Yellow	0.15	
66	SW8260BN	100 µg/L	Yellow	0.15	
67					

J	Estimated results based on QC data or reported below RL
B	Estimated results possibly biased high or false positive based on blank data
<	Not detected at sample reporting limit
R	Unusable
UJ	Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-151

Analyte	Sample Name	MW-151-8/16/2004	MW151RD87	MW-151-1/25/2005	MW-151-3/22/2005	MW-151(94.5)	MW-151(78.5)
	Sample Date	8/16/2004	10/26/2004	1/25/2005	3/22/2005	6/17/2005	6/17/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<0.25	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.125	0.23J	0.28J	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<0.25	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<0.5	<1	<1	<1	<1
Carbon tetrachloride	µg/L	2.7	3.44	4.7	5.3	0.939J	<1
Chloroform	µg/L	3.3	6.71	10	11	2.69B	<1
cis-1,2-Dichloroethene	µg/L	0.22J	0.44J	0.92J	0.96J	<1	<1
Tetrachloroethene	µg/L	<1	<0.25	0.4J	0.48J	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<0.25	<1	0.25J	<1	<1
Trichloroethene	µg/L	2.2	3.67	6.3	7.2	1.3J	<1
Vinyl chloride	µg/L	<1	<0.25	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-151

Analyte	Sample Name	MW-151 (94 5)1105	MW-151 (78 5)1105	MW-151 (94 5)0406	MW-151 (78 5)0406	MW-151T - IS-1	MW-151B - IS-1
	Sample Date	11/19/2005	11/19/2005	4/13/2006	4/13/2006	10/18/2006	10/18/2006
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<0.5	1.42
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	4.78	<1	4.47	<1	0.558J	6.19
Chloroform	µg/L	8.04	<1	11.4	<1	0.287J	16.9
cis-1,2-Dichloroethene	µg/L	1	<1	1.22	<1	<1	1.45
Tetrachloroethene	µg/L	0.415J	<1	<1	<1	<1	0.621J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	0.282J
Trichloroethene	µg/L	4.67B	<1	8.75	<1	0.502J	10.5
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-152

Analyte	Sample Name	Sample Date	8/15/2004	10/10/2004	10/11/2004	10/13/2004	10/14/2004
		UNIT					
1,1,1-Trichloroethane		µg/L	<3.3	<5	<5	<100	<5
1,1,2,2-Tetrachloroethane		µg/L	11	<5	15	1500	12
1,1,2-Trichloroethane		µg/L	<3.3	<5	<5	<100	<5
1,1-Dichloroethene		µg/L	<3.3	<5	<5	<100	<5
Carbon tetrachloride		µg/L	2.1J	<5	<5	<100	<5
Chloroform		µg/L	0.97J	<5	<5	<100	<5
cis-1,2-Dichloroethene		µg/L	9.2	6.9	7.7	35J	9
Tetrachloroethene		µg/L	5.4	4J	3.1J	<100	5.9
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	4.1	3.4J	4.6J	<100	4.1J
Trichloroethene		µg/L	76	70	78	950	92
Vinyl chloride		µg/L	<3.3	<5	<5	<100	<5

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-152

Analyte	Sample Name	1/26/2005	3/22/2005	6/16/2005	6/16/2005	11/18/2005	11/18/2005
		MW-152-1/26/2005 MW-152-3/22/2005 MW-152(92.9) MW-152(108.9) MW-152 (92.9)1105 MW-152 (108.9)1105					
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	9.3J	6.5	5.32	3.4	12	4.95
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.39J	0.24J	<1	<1	1	<1
Chloroform	µg/L	1.5	0.98B	<1	<1	2.19B	1.08B
cis-1,2-Dichloroethene	µg/L	14	10	2.97	4.22	29	12.2
Tetrachloroethene	µg/L	7.8	5.8	1.06	1.74	11.7	5.27
total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	6.6	5.1	1.12	1.87	13.5	4.43
Trichloroethene	µg/L	110	59	17.6	19.3	159	71
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-152

Analyte	Sample Name	MW-152 (92.9)0406	MW-152 (108.9)0406	MW-152T - IS-1	MW-152B - IS-1
	Sample Date	4/13/2006	4/13/2006	10/18/2006	10/18/2006
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	12.4	8.16	4.87	3.86
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	1.36B	1.76B	1.2	1.14
cis-1,2-Dichloroethene	µg/L	15.6	18.7	10.9	12.7
Tetrachloroethene	µg/L	10.4	11.3	13.4	10.8
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	7.1	9.62	5.48	5.96
Trichloroethene	µg/L	147	161	125	116
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-153

Analyte	Sample Name	Sample Date	8/19/2004	6/16/2005	6/16/2005	11/18/2005	11/18/2005	11/18/2005	4/13/2006
		UNIT							
1,1,1-Trichloroethane		µg/L	4	1.46	1.15	1.31	1.04	1.27	
1,1,2,2-Tetrachloroethane		µg/L	<1J	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethene		µg/L	9.1	3.73	3.07	4.56	3.48	4.13	
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1	
Chloroform		µg/L	<1	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	
Tetrachloroethene		µg/L	0.24J	<1	<1	<1	<1	<1	
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--	
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	
Trichloroethene		µg/L	<1	<1	<1	<1	<1	<1	
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-153

Analyte	Sample Name	MW-153 (79.1)0406	MW-153T - IS-1	MW-153B - IS-1
	Sample Date	4/13/2006	10/18/2006	10/18/2006
	UNIT			
1,1,1-Trichloroethane	µg/L	1.71	1.04	1.18
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	5.4	4.19	4.87
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	0.368J
Tetrachloroethene	µg/L	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-154

Analyte	Sample Name	Sample Date	8/14/2004	8/17/2004	6/17/2005	6/17/2005	11/17/2005	11/17/2005
			MW-154, 598/14/2004	IW-154-8/17/2004	MW-154(65 5)	MW-154(57.6)	MW-154 (65 5)1105	MW-154 (57.6)1105
		UNIT						
1,1,1-Trichloroethane		µg/L	<0U	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<0U	<1	<1	<1	<1	<1
1,1,2-Trichloroethane		µg/L	<0U	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<0U	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<0U	<1	<1	<1	<1	<1
Chloroform		µg/L	<0U	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene		µg/L	<0U	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<0U	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<0U	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<0U	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<0U	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
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- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-154

Analyte	Sample Name	MW-154(65.5)04061W-154(57.6)040	MW-154T-IS-1	MW-154B-IS-1
	Sample Date	4/12/2006	10/19/2006	10/19/2006
	UNIT			
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-155

Analyte	Sample Name	Sample Date	UNIT	MW-155-8/16/2004	MW-155-10/13/2004	MW-155-11/8/2004Int3	MW-155-11/8/2004Int2	MW-155-11/8/2004Int4
1,1,1-Trichloroethane		8/16/2004	µg/L	<77	<100	<25	<50	<25
1,1,2,2-Tetrachloroethane		8/16/2004	µg/L	2100	2000	700	1300	800
1,1,2-Trichloroethane		8/16/2004	µg/L	<77	<100	<25	<50	<25
1,1-Dichloroethene		8/16/2004	µg/L	<77	<100	<25	<50	<25
Carbon tetrachloride		8/16/2004	µg/L	<77	<100	<25	<50	<25
Chloroform		8/16/2004	µg/L	<77	<100	<25	<50	<25
cis-1,2-Dichloroethene		8/16/2004	µg/L	48J	55J	24J	46J	23J
Tetrachloroethene		8/16/2004	µg/L	<77	<100	7.4J	10J	5.9J
Total 1,2-Dichloroethene		8/16/2004	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene		8/16/2004	µg/L	<77	<100	6.4J	<50	<25
Trichloroethene		8/16/2004	µg/L	1000	1000	570	1000J	620
Vinyl chloride		8/16/2004	µg/L	<77	<100	<25	<50	<25

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-155

Analyte	Sample Name	MW-155-11/8/2004Int1	MW-155-1/26/2005	MW-155-3/23/2005	MW-155(78.6)	MW-155(94.6)	MW-155 (94.6)1105
	Sample Date	11/8/2004	1/26/2005	3/23/2005	6/17/2005	6/17/2005	11/19/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<42	<1	<2.2	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	1100	470J	660	2220	1650	1680
1,1,2-Trichloroethane	µg/L	<42	0.59J	1.7J	4.54	3.24	7.91
1,1-Dichloroethane	µg/L	<42	<1	<2.2	<1	<1	<1
Carbon tetrachloride	µg/L	<42	<1	<2.2	<1	<1	<1
Chloroform	µg/L	<42	<1	0.68B	1.5B	1.08B	1.64B
cis-1,2-Dichloroethene	µg/L	38J	1.8	27	67.5	50.5	38.5
Tetrachloroethene	µg/L	<42	<1	0.6J	3.04	1.01	8.11
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	10J	0.29J	4.5	15.1	10.9	9.91
Trichloroethene	µg/L	820	32	530	1750	1410	1130
Vinyl chloride	µg/L	<42	<1	<2.2	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-155

Analyte	Sample Name	MW-155 (78.6)1105	MW-155 (78.6)0406	MW-155 (94.6)0406	MW-155T - IS-1	MW-155B - IS-1
	Sample Date	11/19/2005	4/13/2006	4/13/2006	10/18/2006	10/18/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<10	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	3530	1880	581	3190	4090
1,1,2-Trichloroethane	µg/L	9.95J	7.5	7.1	77.4	58.5
1,1-Dichloroethene	µg/L	<10	<1	<1	<1	0.559J
Carbon tetrachloride	µg/L	<10	<1	<1	<1	<1
Chloroform	µg/L	<10	1.51B	1.21B	1.57	2.1
cis-1,2-Dichloroethene	µg/L	53.9	35.1	29	67	72.2
Tetrachloroethene	µg/L	11.2	5.93	5.06	10.4	13.8
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	14.5	8.66	7.06	19.3	20.4
Trichloroethene	µg/L	1560	865	572	1310	1810
Vinyl chloride	µg/L	<10	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-156

Analyte	Sample Name	MW-156-156.55/8/17/2004	MW-156-8/20/2004	MW-156(66.8)6/16/2005	MW-156(57.2)6/16/2005	MW-156 (66.8)110511/17/2005	MW-156 (57.2)110511/17/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<0U	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0U	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<0U	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<0U	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<0U	<1	<1	<1	<1	<1
Chloroform	µg/L	<0U	0.42J	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<0U	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<0U	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<0U	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<0U	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<0J	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

- J Estimated results based on QC data or reported below RL
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- R Unusable
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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-156

Analyte	Sample Name	Sample Date	MW-156 (66 8)0406	MW-156 (57 2)0406	MW-156T-IS-1 10/19/2006	MW-156B-IS-1 10/19/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

F FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-157

Analyte	Sample Name	MW-157-8/18/2004	MW157RD73	MW-157-1/27/2005	MW-157-3/23/2005	MW-157(73 3)
	Sample Date	8/18/2004	10/27/2004	1/27/2005	3/23/2005	6/15/2005
	UNIT					
1,1,1-Trichloroethane	µg/L	<6.7	<0.25	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	5.7J	6.73J	3.8	3.6	3.18B
1,1,2-Trichloroethane	µg/L	<6.7	0.35J	0.33J	0.26J	<1
1,1-Dichloroethene	µg/L	<6.7	<0.5	<1	<1	<1
Carbon tetrachloride	µg/L	9.4	10.5J	9.9	5.2	4.75
Chloroform	µg/L	14	14J	12	7.5	10.2
cis-1,2-Dichloroethene	µg/L	11	13.19J	13	11	10.9
Tetrachloroethene	µg/L	1.9J	1.50J	2	1.6	1.32
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.9J	2.70J	2.4	1.9	2.58
Trichloroethene	µg/L	120	143J	160	200	157
Vinyl chloride	µg/L	<6.7	<0.25	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-157

Analyte	Sample Name	Sample Date	MW-157 (73.3)1105	MW-157(73.3)0406	MW-157 - IS-1
			11/17/2005	4/12/2006	10/19/2006
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	2.22	2.28	2.64	2.64
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	4.56	5.61	9.25	9.25
Chloroform	µg/L	8.18	10.8	30.1	30.1
cis-1,2-Dichloroethene	µg/L	9.35	9.75	13.3	13.3
Tetrachloroethene	µg/L	1.49	1.59	2.19	2.19
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.3	2.2	2.7	2.7
Trichloroethene	µg/L	1.17	1.32	148J	148J
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-158

Analyte	Sample Name	Sample Date	10/9/2004	10/13/2004	11/8/2004	11/8/2004	11/8/2004	11/8/2004
			UNIT					
1,1,1-Trichloroethane			<1	<1	<1	<1	<1	<1.4
1,1,2,2-Tetrachloroethane			15	21	13	16	25	25
1,1,2-Trichloroethane			<1	<1	<1	<1	<1.4	<1.4
1,1-Dichloroethene			<1	<1	<1	<1	<1.4	<1.4
Carbon tetrachloride			<1	<1	<1	<1	<1.4	<1.4
Chloroform			0.47B	0.29J	0.45J	0.3J	0.47J	0.47J
cis-1,2-Dichloroethene			2.2	3	4.5	2.1	6.1	6.1
Tetrachloroethene			1.2	1.8	2.9	1.7	3.5	3.5
Total 1,2-Dichloroethene			--	--	--	--	--	--
trans-1,2-Dichloroethene			1.1	1.3	1.8	0.86J	2.5	2.5
Trichloroethene			20	30	32	24	46	46
Vinyl chloride			<1	<1	<1	<1	<1.4	<1.4

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-158

Analyte	Sample Name	Sample Date	11/8/2004	1/25/2005	3/21/2005	6/16/2005	6/16/2005
			MW-158-11/8/2004Int4	MW-158-1/25/2005	MW-158-3/21/2005	MW-158(93.1)	MW-158(104.1)
		UNIT					
1,1,1-Trichloroethane	µg/L	<2.5	<1.4	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	53	24	11	4.39	3.74	3.74
1,1,2-Trichloroethane	µg/L	<2.5	<1.4	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<2.5	<1.4	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<2.5	<1.4	<1	<1	<1	<1
Chloroform	µg/l	0.63J	0.38J	0.41B	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	7.2	3.1	3.3	5.13	5.16	5.16
Tetrachloroethene	µg/L	3.1	2.3	3.3	3.67	1.93	1.93
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	3	1.3J	1.6	2.32	2.52	2.52
Trichloroethene	µg/L	74	33	30	30.7	32	32
Vinyl chloride	µg/L	<2.5	<1.4	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-158

Analyte	Sample Name	Sample Date	11/18/2005	11/18/2005	4/13/2006	MW-158 (93.1)0406	MW-158 (104.1)0406	MW-158T - IS-1	MW-158B - IS-1
		UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	5.44	5.54	3.78	6.36	4.41	3.73		
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	1.07B	1B	0.738B	0.673	0.691		
cis-1,2-Dichloroethene	µg/L	7.17	9.31	7.74	4.87	5.6	5.96		
Tetrachloroethene	µg/L	5.05	6.05	9.28	7.19	7.22	8.49		
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.99	3.38	3.62	2.4	2.62	3.13		
Trichloroethene	µg/L	74.6	77.8	76.3	52.6	69.3	77.4		
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-158A

Analyte	Sample Name	MW-158A-10/10/2004	MW-158A-RA-10/12/04	MW-158A-11/8/04Int2	MW-158A-11/8/04Int1
	Sample Date	10/10/2004	10/12/2004	11/8/2004	11/8/2004
	UNIT				
1,1,1-Trichloroethane	µg/L	<20	<15	<7.7	<22
1,1,2,2-Tetrachloroethane	µg/L	560	270	170	560
1,1,2-Trichloroethane	µg/L	<20	<15	<7.7	<22
1,1-Dichloroethene	µg/L	<20	<15	<7.7	<22
Carbon tetrachloride	µg/L	<20	<15	<7.7	<22
Chloroform	µg/L	<20	<15	<7.7	<22
cis-1,2-Dichloroethene	µg/L	27	43	18	32
Tetrachloroethene	µg/L	<20	5.7J	6.5J	11J
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	9J	17	7.1J	11J
Trichloroethene	µg/L	340	360	210	530
Vinyl chloride	µg/L	<20	<15	<7.7	<22

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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- < Not detected at sample reporting limit
- R Unusable
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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-158A

Analyte	Sample Name	MW-158A-11/8/04m3	MW-158A-11/8/04Im4	MW-158A-1/24/2005	MW-158A-3/21/2005	MW-158A(91.4)
	Sample Date	11/8/2004	11/8/2004	1/24/2005	3/21/2005	6/16/2005
	UNIT					
1,1,1-Trichloroethane	µg/L	<7.1	<7.1	<2	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	25	83	77	96	193
1,1,2-Trichloroethane	µg/L	<7.1	<7.1	<2	0.24J	0.983J
1,1-Dichloroethene	µg/L	<7.1	<7.1	<2	<1	<1
Carbon tetrachloride	µg/L	<7.1	<7.1	<2	0.55J	<1
Chloroform	µg/L	2.1J	1.9J	0.88J	2.4	1.28B
cis-1,2-Dichloroethene	µg/L	40	31	11	33	28
Tetrachloroethene	µg/L	8	8.1	3.2	12	5.63
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	17	13	4.3	15	7.26
Trichloroethene	µg/L	180	190	58	200	185
Vinyl chloride	µg/L	<7.1	<7.1	<2	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

884 275

Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-158A

Analyte	Sample Name	Sample Date	MW-158A(80 8)	MW-158A (80.8) 1105	MW-158A (91 4) 1105	MW-158A (80 8) 0406	MW-158A (91 4) 0406
			6/16/2005	11/18/2005	11/18/2005	4/13/2006	4/13/2006
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<10	<10	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	736	844	64 4	681	43.1	43.1
1,1,2-Trichloroethane	µg/L	2.5	4 5J	<10	6.08	<1	<1
1,1-Dichloroethene	µg/L	0 392J	<10	<10	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<10	<10	<1	<1	<1
Chloroform	µg/L	1.12B	<10	3 47B	1 47B	2 62B	2 62B
cis-1,2-Dichloroethene	µg/L	37 1	38	45 5	49.7	32.6	32.6
Tetrachloroethene	µg/L	2.32	<10	17 8	4 69	15	15
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	9 54	<10	13 6	14	13 8	13 8
Trichloroethene	µg/L	470	492	374	689	273	273
Vinyl chloride	µg/L	<1	<10	<10	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

884 276

Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-158A

Analyte	Sample Name	MW-158AT - IS-1	MW-158AB - IS-1
	Sample Date	10/19/2006	10/19/2006
	UNIT		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	410	36.2
1,1,2-Trichloroethane	µg/L	14.9	0.618J
1,1-Dichloroethene	µg/L	0.622J	0.818J
Carbon tetrachloride	µg/L	<1	0.754J
Chloroform	µg/L	1.22	3.64
cis-1,2-Dichloroethene	µg/L	60.7	58.3
Tetrachloroethene	µg/L	6.64	16.1
Total 1,2-Dichloroethene	µg/L	--	--
trans-1,2-Dichloroethene	µg/L	19.1	22.8
Trichloroethene	µg/L	678	301
Vinyl chloride	µg/L	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
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- < Not detected at sample reporting limit
- R Unusable
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884 277

Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

MW-159

Analyte	Sample Name	MW-159-10/11/2004	MW-159-11/8/04Int4	MW-159-11/8/04Int3	MW-159-11/8/04Int2	MW-159-11/8/04Int1
	Sample Date	10/11/2004	11/8/2004	11/8/2004	11/8/2004	11/8/2004
	UNIT					
1,1,1-Trichloroethane	µg/L	<150	<10	<20	<33	<29
1,1,2,2-Tetrachloroethane	µg/L	3500	210	300	510	580
1,1,2-Trichloroethane	µg/L	<150	<10	<20	<33	<29
1,1-Dichloroethene	µg/L	<150	<10	<20	<33	<29
Carbon tetrachloride	µg/L	<150	<10	<20	<33	<29
Chloroform	µg/L	<150	<10	<20	<33	<29
cis-1,2-Dichloroethene	µg/L	100J	98	200	390	350
Tetrachloroethene	µg/L	<150	<10	<20	<33	<29
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<150	28	58	100	100
Trichloroethene	µg/L	1700	290	440	790	660
Vinyl chloride	µg/L	<150	<10	<20	<33	<29

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-159

Analyte	Sample Name	MW-159-1/26/2005	MW-159-3/24/2005	MW-159(97.1)	MW-159(81.1)	MW-159(81.1)1105	MW-159(97.1)-1205
	Sample Date	1/26/2005	3/24/2005	6/17/2005	6/17/2005	11/19/2005	12/8/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<6.2	<7.1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	2000J	2200	659	1830	421	125
1,1,2-Trichloroethane	µg/L	6.3	7.8	1.76	3.27	2.25	<1
1,1-Dichloroethene	µg/L	<6.2	<7.1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<6.2	<7.1	0.961J	0.567J	0.927J	4.13
Chloroform	µg/L	2.9J	4.2J	1.27B	1.04B	1.6B	12.1
cis-1,2-Dichloroethene	µg/L	62	80	26.7	39.4	46.7	10.5
Tetrachloroethene	µg/L	4J	7.1	1.56	1.82	2.33	0.935J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	12	15	6.57	9.78	5.76	1.73
Trichloroethene	µg/L	830	1700	531	691	552	120
Vinyl chloride	µg/L	<6.2	<7.1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

884 279

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-159

Analyte	Sample Name	MW-159 (971)0406	MW-159 (811)0406	MW-159T - IS-1	MW-159B - IS-1
	Sample Date	4/13/2006	4/13/2006	10/18/2006	10/18/2006
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	549	847	276	357
1,1,2-Trichloroethane	µg/L	2.5	10.4	10.7	19.6
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	0.252J	0.493J
Chloroform	µg/L	1.14B	1.22B	0.807	1.02
cis-1,2-Dichloroethene	µg/L	20.4	36.4	37	55.4
Tetrachloroethene	µg/L	1.33	1.71	0.93J	2.63
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.14	7.64	6.37	11.2
Trichloroethene	µg/L	594	1520	935	1400
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

884 230

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-160

Analyte	Sample Name	10/13/2004	1/28/2005	3/22/2005	6/17/2005	11/18/2005
	UNIT					
1,1,1-Trichloroethane	µg/L	<10	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	30	53	29	35.4	13.4
1,1,2-Trichloroethane	µg/L	<10	0.23J	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<10	0.79J	0.48J	0.581J	1.01
Chloroform	µg/L	<10	2.7	1.7	2.33B	2.26B
cis-1,2-Dichloroethene	µg/L	31	38	21	35.7	30.8
Tetrachloroethene	µg/L	12	21	15	14.7	14.7
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	17	18	10	16.3	12.2
Trichloroethene	µg/L	240	290	190	448	161
Vinyl chloride	µg/L	<10	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

884 281

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-160

Analyte	Sample Name	Sample Date	UNIT	MW-160(80 8)0406	MW-160 - IS-1
		4/12/2006			10/18/2006
1,1,1-Trichloroethane			µg/L	<1	<1
1,1,2,2-Tetrachloroethane			µg/L	23.1	9.08
1,1,2-Trichloroethane			µg/L	<1	<1
1,1-Dichloroethene			µg/L	0.538J	<1
Carbon tetrachloride			µg/L	0.729J	0.575J
Chloroform			µg/L	3.29B	3.35
cis-1,2-Dichloroethene			µg/L	45	42.5
Tetrachloroethene			µg/L	13	19.8
Total 1,2-Dichloroethene			µg/L	--	--
trans-1,2-Dichloroethene			µg/L	18.1	17.8
Trichloroethene			µg/L	278	307
Vinyl chloride			µg/L	<1	<1

NOTES:

VOC samples analyzed using methods SW
801.0/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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- < Not detected at sample reporting limit
- R Unusable
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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-161

Analyte	Sample Name	Sample Date	MW-161-10/12/2004	MW-161(79.9)	MW-161(79.9)1105	MW-161(79.9)0406	MW-161 - IS-1
			10/12/2004	6/15/2005	11/14/2005	4/12/2006	10/19/2006
		UNIT					
1,1,1-Trichloroethane		µg/L	<50	<10	<20	<1	<10
1,1,2,2-Tetrachloroethane		µg/L	3100J	4560	2680	2120	1950
1,1,2-Trichloroethane		µg/L	<50	9.26J	7.58J	5.71	3.55J
1,1-Dichloroethene		µg/L	<50	<10	<20	<1	<10
Carbon tetrachloride		µg/L	<50	<10	<20	0.339J	<10
Chloroform		µg/L	<50	<10	<20	1.12B	<3
cis-1,2-Dichloroethene		µg/L	31J	48.5	43	38.4	38.5
Tetrachloroethene		µg/L	<50	7.22J	7.68	13	10.1
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<50	9.52J	<20	5.12	<10
Trichloroethene		µg/L	1400J	2170	1590	1470	1640
Vinyl chloride		µg/L	<50	<10	<20	<1	<10

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
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- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

884 283

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-162

Analyte	Sample Name	MW-162-10/12/2004	MW-162(83 7)	MW-162(83 7) 1105	MW-162(83 7)0406	MW-162 - IS-1
	Sample Date	10/12/2004	6/15/2005	11/14/2005	4/12/2006	10/19/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<100	<5	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	1700	123	10.2	522	162J
1,1,2-Trichloroethane	µg/L	<100	<5	<1	0.99J	0.36J
1,1-Dichloroethene	µg/L	<100	<5	<1	<1	<1
Carbon tetrachloride	µg/L	<100	<5	<1	<1	<1
Chloroform	µg/L	<100	<5	0.463B	1.49B	0.988
cis-1,2-Dichloroethene	µg/L	62J	26.1	2.91	31.2	18.3
Tetrachloroethene	µg/L	<100	16.2J	3.43	10.5	7.81
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<100	7.46	<1	8.25	5.05
Trichloroethene	µg/L	1400	641	72.9	342	445
Vinyl chloride	µg/L	<100	<5	<1	<1	<1J

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-163

Analyte	Sample Name	MW-163-10/14/2004	MW-163(74 9)	MW-163 (74.9)1105	MW-163 (74.9)0406	MW-163 - IS-1
	Sample Date	10/14/2004	6/15/2005	11/17/2005	4/13/2006	10/19/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	--	<10	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	4800	3420J	2080	1980	538
1,1,2-Trichloroethane	µg/L	<100	7.43J	4.95	4.77	17.3
1,1-Dichloroethene	µg/L	<100	<10	<1	<1	<1
Carbon tetrachloride	µg/L	<100	<10	0.882J	<1	<1
Chloroform	µg/L	<100	<10	0.88B	1.28B	0.446
cis-1,2-Dichloroethene	µg/L	41J	39.6	24	39.7	98.6
Tetrachloroethene	µg/L	<100	5.09J	4.3	8.68	4.35
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<100	9.22J	2.68	3.55	17.2
Trichloroethene	µg/L	1700	1740	1300	1860	527
Vinyl chloride	µg/L	<100	<10	<1	<1	3.63

NOTES:

VOC samples analyzed using methods SW/8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

884 285

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-164

Analyte	Sample Name	MW-164-10/15/2004	MW-164(72.6)	MW-164(72.6)1105	MW-164(72.6)0406	MW-164 - IS-1
	Sample Date	10/15/2004	6/15/2005	11/14/2005	4/12/2006	10/19/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<2.5	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<2.5	4.65B	2.14	2.6	3.05
1,1,2-Trichloroethane	µg/L	<2.5	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<2.5	<1	<1	<1	<1
Carbon tetrachloride	µg/L	4	3.66	5.44	2.99	16.8
Chloroform	µg/L	9.1	8.82	8.44B	9.56	52.6
cis-1,2-Dichloroethene	µg/L	6.3	7.86	8.05	6.87	8.79
Tetrachloroethene	µg/L	<2.5	<1	0.576	0.637J	2.03
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.97J	1.22	0.599J	0.974J	1.49
Trichloroethene	µg/L	60	53.3	75.5	62.9J	92.6
Vinyl chloride	µg/L	<2.5	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-165

Analyte	Sample Name	MW-165-11/21/2004	MW-165-1/25/2005	MW-165-3/21/2005	MW-165(89.9)	MW-165(100.4)	MW-165 (89.9)	11/18/2005
	Sample Date	11/21/2004	1/25/2005	3/21/2005	6/16/2005	6/16/2005	6/16/2005	11/18/2005
	UNIT							
1,1,1-Trichloroethane	µg/L	<9.1	<2	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	24	8.9	12	21.8	12.3	21.8	21.8
1,1,2-Trichloroethane	µg/L	<9.1	0.74J	0.55J	1.16	0.54J	1.48	1.48
1,1-Dichloroethene	µg/L	<9.1	<2	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	11	8	7.8	1.67	<1	2.68	2.68
Chloroform	µg/L	140	64	58	77	26.5	65.4	65.4
cis-1,2-Dichloroethene	µg/L	7.1J	10	11	6.22	7.64	8.06	8.06
Tetrachloroethene	µg/L	2.3J	1.8J	2.1	<1	<1	0.916J	0.916J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<9.1	1.3J	2.2	1.13	2.49	0.991J	0.991J
Trichloroethene	µg/L	64	48	53	37.2	28.1	46.5	46.5
Vinyl chloride	µg/L	<9.1	<2	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

884 287

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-165

Analyte	Sample Name	Sample Date	MW-165 (100 4)1105	MW-165 (89.9)0406	MW-165 (100 4)0406	MW-165T - IS-1	MW-165B - IS-1
			11/18/2005	4/13/2006	4/13/2006	10/18/2006	10/18/2006
		UNIT					
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	21.2	5.81	8	2.63	3.5
1,1,2-Trichloroethane		µg/L	1.58	1.51	1.24	0.343J	0.655J
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	<1	<1	3.85	<1
Chloroform		µg/L	1.01B	<1	<1	7.48	0.332
cis-1,2-Dichloroethene		µg/L	7.75	8.65	10.9	12.9	14.6
Tetrachloroethene		µg/L	1.04	0.892J	1.27	1.1	1.23
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	1.64J	1.64	2.07	2.84	2.67
Trichloroethene		µg/L	42.3	60.4	54.2	187	146
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

884 288

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-165A

Analyte	Sample Name	MW-165A-11/18/2004	MW-165A-1/24/2005	MW-165A-3/21/2005	MW-165A(84.5)	MW-165A(73.9)
	Sample Date	11/18/2004	1/24/2005	3/21/2005	6/16/2005	6/16/2005
	UNIT					
1,1,1-Trichloroethane	µg/L	<2	<2	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	7.8	5.4	5.5	12	0.77J
1,1,2-Trichloroethane	µg/L	<2	<2	0.37J	<1	<1
1,1-Dichloroethene	µg/L	<2	<2	<1	<1	<1
Carbon tetrachloride	µg/L	6.4	6.9	9.8	4.63	0.933J
Chloroform	µg/L	24	15	24	48.5	3.7B
cis-1,2-Dichloroethene	µg/L	13	9.3	10	6.05	1.83
Tetrachloroethene	µg/L	1.3J	1.1J	1.4	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.7J	1.3J	1.8	0.986J	<1
Trichloroethene	µg/L	69	53	64	46.7	17.9
Vinyl chloride	µg/L	<2	<2	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

884 289

884 230

884 230

NOTES:
VOC samples analyzed using methods SW
801/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3940
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:
J) Estimated results based on QC data or reported
below RL
B) Estimated results possibly biased high or false
positive based on blank data
C) Not detected at sample reporting limit
R) Unusable
U) Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-166

Analyte	Sample Name	MW-166-11/19/2004	11/19/2004	1/27/2005	3/23/2005	6/17/2005	6/17/2005	11/19/2005
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	4.2	3.7	3.7	3.5	1.2	<1	0.822J
1,1,2-Trichloroethane	µg/L	0.32J	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.83J	2.9	2.9	1.9	<1	1.68	<1
Chloroform	µg/L	30	24	24	11	1.03B	9.01	5.27
cis-1,2-Dichloroethene	µg/L	4.3	3.4	3.4	2.6	1.51	1.27	2.49
Tetrachloroethene	µg/L	0.79J	0.68J	0.68J	0.87J	<1	<1	0.561J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.49J	0.41J	0.41J	0.63J	<1	<1	0.438J
Trichloroethene	µg/L	12	10	10	11	5.78	6.27	6.92
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

884 291

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-166

Analyte	Sample Name	MW-166 (87 3)1105	MW-166 (97 8)0406	MW-166 (87 3)0406	MW-166T - IS-1	MW-166B - IS-1
	Sample Date	11/19/2005	4/13/2006	4/13/2006	10/20/2006	10/20/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	1.48	12.5	13.4	10.2	9.59
1,1,2-Trichloroethane	µg/L	<1	<1	<1	0.422J	0.385J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	1.17	8.54	10.6	16.5	14
Chloroform	µg/L	7.54	65.8	79.3	68.5	56.9
cis-1,2-Dichloroethene	µg/L	3.43	5.21	4.41	5.41	4.44
Tetrachloroethene	µg/L	0.498J	<1	1.24	1.68	1.44
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	1.17	0.826J	0.937J	0.935J
Trichloroethene	µg/L	6.67	35.8	38	43.7	35.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW/8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-166A

Analyte	Sample Name	Sample Date	11/19/2004	1/27/2005	3/23/2005	6/17/2005	11/19/2005
		UNIT					
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	1.4	3.9	3.9	3.08	1.89
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	6.1	8.3	6.91	3.5
Chloroform		µg/L	13B	37	38	31.3	17.2
cis-1,2-Dichloroethene		µg/L	0.77J	2.6	2.8	3.08	1.89
Tetrachloroethene		µg/L	0.24J	0.8J	0.9J	0.732J	0.516J
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<1	0.52J	0.65J	0.69J	0.482J
Trichloroethene		µg/L	5.2	19	24	19.8	17.6
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-166A

Analyte	Sample Name	MW-166A (75.3)0406	MW-166A - IS-1
	Sample Date	4/13/2006	10/20/2006
	UNIT		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	13.6	5.15
1,1,2-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	9.75	7.06
Chloroform	µg/L	57	27.7
cis-1,2-Dichloroethene	µg/L	2.33	2.14
Tetrachloroethene	µg/L	1.06	0.792J
Total 1,2-Dichloroethene	µg/L	--	--
trans-1,2-Dichloroethene	µg/L	<1	0.433J
Trichloroethene	µg/L	25.8	24.3J
Vinyl chloride	µg/L	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-167

Analyte	Sample Name	Sample Date	11/21/2004	1/25/2005	3/22/2005	6/16/2005	6/16/2005	11/18/2005
		UNIT						
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	2.1B	0.47J	0.82B	<1	<1	<1
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-167

Analyte	Sample Name	MW-167 (72.3)1105	MW-167 (80.7)0406	MW-167 (72.3)0406	MW-1671 - IS-1	MW-167B - IS-1
	Sample Date	11/18/2005	4/13/2006	4/13/2006	10/18/2006	10/18/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	2.67	<1	<1	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.961J	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-168

Analyte	Sample Name	Sample Date	11/19/2004	1/26/2005	3/21/2005	6/16/2005	11/18/2005
			UNIT				
1,1,1-Trichloroethane			<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane			<1	<1	<1	<1	<1
1,1,2-Trichloroethane			<1	<1	<1	<1	<1
1,1-Dichloroethane			1.9	1.7	1.6	<1	0.889J
Carbon tetrachloride			<1	<1	<1	<1	<1
Chloroform			<1	<1	<1	<1	<1
cis-1,2-Dichloroethene			<1	<1	<1	<1	<1
Tetrachloroethene			<1	<1	<1	<1	<1
Total 1,2-Dichloroethene			--	--	--	--	--
trans-1,2-Dichloroethene			<1	<1	<1	<1	<1
Trichloroethene			0.71J	0.53J	0.5J	<1	<1
Vinyl chloride			<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-168

Analyte	Sample Name	Sample Date	MW-168 (108.6)1105	MW-168 (119.1)0406	MW-168 (108.6)0406	MW-168T - IS-1	MW-168B - IS-1
			11/18/2005	4/13/2006	4/13/2006	10/19/2006	10/19/2006
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	0.858J	0.842J	0.905J	1.07	0.941J	0.941J
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	0.467J	0.509J	0.509J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-168A

Analyte	Sample Name	Sample Date	11/17/2004	1/25/2005	3/21/2005	6/16/2005	6/16/2005
		UNIT					
1,1,1-Trichloroethane	MW-168A-11/17/2004	µg/L	6.7	7.3	7.2	3.88	21.2
1,1,2,2-Tetrachloroethane	MW-168A-1/25/2005	µg/L	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	MW-168A-3/21/2005	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	MW-168A-6/16/2005	µg/L	11	10	11	6.12	19.3
Carbon tetrachloride	MW-168A-6/16/2005	µg/L	<1	<1	<1	<1	<1
Chloroform	MW-168A-6/16/2005	µg/L	0.6B	0.52J	0.55B	<1	0.571B
cis-1,2-Dichloroethene	MW-168A-6/16/2005	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	MW-168A-6/16/2005	µg/L	1.1	0.8J	0.98J	0.817J	0.508J
Total 1,2-Dichloroethene	MW-168A-6/16/2005	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	MW-168A-6/16/2005	µg/L	<1	<1	<1	<1	<1
Trichloroethene	MW-168A-6/16/2005	µg/L	0.36J	0.49J	0.52J	0.383J	<1
Vinyl chloride	MW-168A-6/16/2005	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8360A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-168A

Analyte	Sample Name	11/18/2005	11/18/2005	4/13/2006	4/13/2006	MW168AT - IS-1	MW168AB - IS-1
Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date
	UNIT						
1,1,1-Trichloroethane	µg/L	3.18	23.1	1.66	13.8	12.5	0.471J
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	7.56	27.6	3.72	19.4	22.1	1.99
Carbon tetrachloride	µg/L	<1	0.825J	<1	<1	0.257J	<1
Chloroform	µg/L	<1	0.883B	<1	0.957B	0.85	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	0.888J	<1	<1	0.836J	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	1	1.32	0.289J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-169

Analyte	Sample Name	MW-169-12/12/2004	MW-169(86.2)	MW-169(77.4)	MW-169 (86.2)1105	MW-169 (77.4)1105	MW-169 (86.2)0406
	Sample Date	12/12/2004	6/15/2005	6/15/2005	11/18/2005	11/18/2005	4/13/2006
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.8B	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.26J	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1J	<1J	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1J	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-169

Analyte	Sample Name	MW-169 (77.4)0406	MW-169T -IS-1	MW-169B -IS-1
	Sample Date	4/13/2006	10/19/2006	10/19/2006
	UNIT			
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	0.282J	0.281J
Tetrachloroethene	µg/L	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

884 303

Analyte	Sample Date	MW-170-12/12/2004	MW-170(77.7)	MW-170(61.7)	MW-170(77.7)1105	MW-170(61.7)1105	MW-170(77.7)0406
	Sample Date	12/12/2004	6/16/2005	6/16/2005	11/18/2005	11/18/2005	4/13/2006
	UNIT						
1,1,1-Trichloroethane	µg/L	0.54J	<1	2.01	<1	1.46	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	1.3	<1	4.06	<1	4.37	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.42B	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1J	<1	<1J	<1	<1	<1

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

μg/L micrograms per liter

Not Analyzed

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-170

Analyte	Sample Name	Sample Date	MW-170 (61 7)0406	MW-170T-IS-1	MW-170B-IS-1
			4/13/2006	10/19/2006	10/19/2006
	UNIT				
1,1,1-Trichloroethane	µg/L		<1	1	<1
1,1,2,2-Tetrachloroethane	µg/L		<1	<0.5	<0.5
1,1,2-Trichloroethane	µg/L		<1	<1	<1
1,1-Dichloroethene	µg/L		2.84	3.52	<1
Carbon tetrachloride	µg/L		<1	<1	<1
Chloroform	µg/L		<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L		<1	<1	<1
Tetrachloroethene	µg/L		<1	<1	<1
Total 1,2-Dichloroethene	µg/L		--	--	--
trans-1,2-Dichloroethene	µg/L		<1	<1	<1
Trichloroethene	µg/L		<1	<1	<1
Vinyl chloride	µg/L		<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A.

SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-171

Analyte	Sample Name	MW-171-12/13/2004	MW-171(67.5)	MW-171(57.2)	MW-171 (67.5)105	MW-171 (57.2)105	MW-171 (67.5)0406
	Sample Date	12/13/2004	6/16/2005	6/16/2005	11/18/2005	11/18/2005	4/13/2006
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1J	<1J	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported

below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

884 305

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

MW-171

Analyte	Sample Name	MW171 (572)0406	MW-171T - IS-1	MW-171B - IS-1
	Sample Date	4/13/2006	10/19/2006	10/19/2006
	UNIT			
1,1,1-Trichloroethane	µg/L	<1	0.33J	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	0.544J	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L, micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unstable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-01

Analyte	Sample Name	2/16/2000	5/17/2000	8/23/2000	11/9/2000	4/10/2002	10/29/2003	RW-1-5/4/2004	RW-1-10/22/2004	RW-01
	Sample Date							5/4/2004	10/22/2004	6/13/2005
		UNIT								
1,1,1-Trichloroethane		0.95J	<1	<1	<1	<1	<1	<3.3	<8J	<1
1,1,2,2-Tetrachloroethane		<1	<1	<1	<1	<1	<1	<3.3	<8	14J
1,1,2-Trichloroethane		<1	<1	<1	<1	<1	<1	<3.3	<8	0.404J
1,1-Dichloroethane		<1	<1	<1	<1	<1	<1	<3.3	<8	<1
Carbon tetrachloride		42.4	45.4	41.5	46.1J	24.1	49.1	15	29J	29.4
Chloroform		15.7	22.8	15.5	13.1J	68.2	286	45	170	123
cis-1,2-Dichloroethene		<1	<1	<1	<1	1.16	4.3	<3.3	3.9J	2.75
Tetrachloroethene		4.66	4.28	3.99	3.77J	4.36	9.36	7.3	8.6	5.32
Total 1,2-Dichloroethene		--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene		0.93J	1.18	0.8J	1.18J	1.55	2.86	2.9J	2.1J	1.53
Trichloroethene		35.2	45.5	40.2	28J	58.2	154	87	130	81.4
Vinyl chloride		<1	<1	<1	<1	<1	<1	<3.3	<8	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

884 307

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-01

Analyte	Sample Name	RW-01-1105	RW-01-0406	RW-01 - IS-1
	Sample Date	11/14/2005	4/11/2006	11/8/2006
	UNIT			
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	8.89	1.78	1.79
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	28.4	14.3	24.5
Chloroform	µg/L	185	69.3	120
cis-1,2-Dichloroethene	µg/L	5	1.88	2.93
Tetrachloroethene	µg/L	5.57	3.26	6.35
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	2.32	1.01	1.67
Trichloroethene	µg/L	109	52.8	88
Vinyl chloride	µg/L	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

884 309

146 of 165

NOTES:

μg/L micrograms per liter

Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-01A

Analyte	Sample Name	RW-1A	RW-1A-5/4/2004	RW1A-10/22/2004	RW-01A	RW-01A-12/05	RW-01A-0406	RW-01A-IS-I
	Sample Date	10/29/2003	5/4/2004	10/22/2004	6/13/2005	12/8/2005	4/11/2006	11/8/2006
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<25	<33J	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	169	110	160	253J	146	131	202
1,1,2-Trichloroethane	µg/L	4.22	<25	<33	5.51	5.15	3.68	5.55
1,1-Dichloroethene	µg/L	<1	<25	<33	<1	<1	<1	<1
Carbon tetrachloride	µg/L	33.6	24J	18J	46.8	20	16.4	18.1
Chloroform	µg/L	776	580J	680	1330	643	512	650
cis-1,2-Dichloroethene	µg/L	11.1	9J	9.8J	19.6	10.3	5.38	8.64
Tetrachloroethene	µg/L	11.3	10J	11J	17.2	8.05	6.06	9.83
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	3.64	18J	<33	5.67	2.1	1.82	2.47
Trichloroethene	µg/L	285	230	230	424	175J	152	209
Vinyl chloride	µg/L	<1	<25	<33	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-01B

Analyte	Sample Name	2/16/2000	5/17/2000	8/23/2000	11/9/2000	4/10/2002	10/1/2002	4/17/2003	10/29/2003	RW-1B-5/4/2004
	UNIT									
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1.7
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	1.43	<1	3.75	<1	1.4J
1,1,2-Trichloroethane	µg/L	<1	<1	0.32J	<1	<1	0.66J	<1	<1	<1.7
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1.7
Carbon tetrachloride	µg/L	20.6	12.3	26.1	20.1	22.5	27.9	30.9	19.5	15
Chloroform	µg/L	20.7	15.3	49.4	37	26.4	20.8	34.1	40.8	25
cis-1,2-Dichloroethene	µg/L	3.32	2.18	5.57	3.66	10.7	12.5	8.28	14.5	11
Tetrachloroethene	µg/L	2.37	1.08	2.84	1.93J	2.99	2.05	4.6	2.93	2.8
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.23	0.8J	1.7	1.22	2.48	2.45	1.54	1.69	2j
Trichloroethene	µg/L	21.9	13.6	35.7	21.1	34.8	24.1	46.4	42.4	36
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1.7

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

RW-01B

Analyte	Sample Name	Sample Date	10/22/2004	6/13/2005	11/14/2005	4/11/2006	RW-01B - IS-1
	UNIT						
1,1,1-Trichloroethane	µg/L	<2J	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	1.7J	7.53J	<1	<1	<1	0.303J
1,1,2-Trichloroethane	µg/L	<2	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<2	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	14J	33.5	11.6	21.4	15.4	15.4
Chloroform	µg/L	36	85.4	35.6	47.5	79.1	79.1
cis-1,2-Dichloroethene	µg/L	12	9.04	5.41	3.62	3.86	3.86
Tetrachloroethene	µg/L	3.2	4.9	1.73	3.6	3.68	3.68
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.2J	1.63	0.908J	0.875J	0.807J	0.807J
Trichloroethene	µg/L	43	74	29.4	46.1	53.4	53.4
Vinyl chloride	µg/L	<2	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

884 312

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-02

Analyte	Sample Name	2/16/2000	5/17/2000	8/23/2000	11/10/2000	4/10/2002	10/1/2002	4/17/2003	10/29/2003	RW-2	RW-2	RW-2-5/4/2004
		UNIT										
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2.9
1,1,2,2-Tetrachloroethane		µg/L	4.04	<1	<1	2.18	77.1	94.7	80.6	95.9	67	67
1,1,2-Trichloroethane		µg/L	0.61J	<1	0.51J	<1	2.74	3.34	2.91	3.02	1.9J	1.9J
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<2.9	<2.9
Carbon tetrachloride		µg/L	15.7	16.4	16.8	23.8	13	21.6	15.5	14	6.5	6.5
Chloroform		µg/L	14.2	11.5	15.4	20.2	34.4	23.1	12.4	11.4	13	13
cis-1,2-Dichloroethene		µg/L	17.4	10.7	13.6	12.1	65.9	88.1	68.7	78.6	55	55
Tetrachloroethene		µg/L	1.25	1.06	1.29	1.36J	1.48	1.48	1.88	1.56	1.2J	1.2J
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	1.69	1.3	1.77	1.93	5.22	6.49	3.89	4.57	4.4J	4.4J
Trichloroethene		µg/L	21.4	16.9	20.6	17.2	63.9	64.6	73.4	83.4	57	57
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2.9

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported

below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

884 313

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-02

Analyte	Sample Name	Sample Date	RW2-10/22/2004	RW-02	RW-02-1105	RW-02-0406	RW-02 - IS-1
			10/22/2004	6/13/2005	11/19/2005	4/11/2006	11/8/2006
		UNIT					
1,1,1-Trichloroethane	µg/L	<4J	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	83	88.7	18.6	64.7	99.5	99.5
1,1,2-Trichloroethane	µg/L	2.8J	2.39	0.882J	2.72	3.4	3.4
1,1-Dichloroethene	µg/L	<4	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	7.2J	13.5	21.1	7.62	9.05	9.05
Chloroform	µg/L	9.4	15.9	99.9	25.9	34	34
cis-1,2-Dichloroethene	µg/L	72	89.9	12.3	56.5	75.1	75.1
Tetrachloroethene	µg/L	1.6J	1.74	3.57	1.4	1.82	1.82
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	3.7J	4.52	1.75	3.1	3.69	3.69
Trichloroethene	µg/L	65	58.8	69.2	47.9	65	65
Vinyl chloride	µg/L	<4	0.654J	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

884 314

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-03

Analyte	Sample Name	5/24/1999	8/27/1999	11/1/1999	2/14/2000	5/18/2000	8/24/2000	11/20/2000	4/10/2002	10/1/2002	4/17/2003
	UNIT										
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	42.5	40.8	42.3	61.9	85.5	59.6	97.5	4.35	3.61	31.7
1,1,2-Trichloroethane	µg/L	2.73	1.98	1.85	2.8	3.23	2.39	<1	<1	<1	1.31
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	13.3	10.5	13.2	10.9	16.3	13.8	16	9.75	15.2	19.1
Chloroform	µg/L	1.36	5.66	5.24	4.57	5.51	4.77	5.36	2.43	3.97	17.5
cis-1,2-Dichloroethene	µg/L	56	47	44	101	138	70.8	160	15.4	16.9	36
Tetrachloroethene	µg/L	<1	0.73J	1.01	0.65J	0.73J	0.84J	<1	1.3	0.92J	2.81
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	3.94	2.97	3.31	4.52	7.42	4.78	7.53	2.47	2.56	2.78
Trichloroethene	µg/L	54.3	42.1	55	57.8	78.8	57.4	62.1	87.2	70.4	65.7
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

884 315

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-03

Analyte	Sample Name	Sample Date	RW-3 4/17/2003	RW-3 10/29/2003	RW-3 5/4/2004	RW-3 10/22/2004	RW-3 6/13/2005	RW-3 11/14/2005	RW-3 4/11/2006	RW-3-IS-1 11/8/2006
	UNIT									
1,1,1-Trichloroethane	µg/L	--	<1	<2.9	<2J	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	37.7	<1	<2.9	<2	27.6J	27.6	16	26.7	26.7
1,1,2-Trichloroethane	µg/L	1.46	<1	<2.9	<2	1.03	1.46	0.775J	1.09	1.09
1,1-Dichloroethene	µg/L	--	<1	<2.9	<2	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	22.5	10.9	4.3	5.2J	5.88	6.51	3.6	5.03	5.03
Chloroform	µg/L	20.7	2.08	1.2J	1.8J	2.26	2.98	1.68	2.22	2.22
cis-1,2-Dichloroethene	µg/L	38.6	9.04	6.9	8.9	24.8	27.5	13.7	19.4	19.4
Tetrachloroethene	µg/L	2.82	1.1	1.1J	1.2J	1.08	1.13	0.928J	1.24	1.24
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.83	1.73	2.9J	1.2J	2.14	1.44	1.22	1.73	1.73
Trichloroethene	µg/L	70.4	66.4	68	54	56.6	59.7	49.9	62.7	62.7
Vinyl chloride	µg/L	--	<1	<2.9	<2	0.512J	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-04

Analyte	Sample Name	5/24/1999	8/27/1999	11/1/1999	2/14/2000	5/15/2000	8/24/2000	11/20/2000	4/10/2002	10/1/2002	4/17/2003
	UNIT										
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	21.9	19.2	<1	12.3	12.9	20.2	14.9	37.5	669	55.4
1,1,2-Trichloroethane	µg/L	1.5	1.4	<1	0.76J	0.7J	1.4J	<1	3.33	5.25	2.87
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	3.5J	3.23	<1	6.97	4.26	5.83	<1	1.7	1.77	1.6J
Chloroform	µg/L	<1	2.3	<1	2.8	2.27	2.82	<1	2.23	3.33	2.4J
cis-1,2-Dichloroethene	µg/L	15.4	17.6	26.6J	15	16	29.6	17.8	26.8	38.8	22.8
Tetrachloroethene	µg/L	2.4	2.92	<1	2.03	1.97	5.14	<1	6.2J	5.73	5.97
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.74	3.03	<1	2.15	2.65	4.72	3.08	7.0J	8.1J	4.24
Trichloroethene	µg/L	2.94	3.68	6.49	252	316	438	204J	665	1050	562
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-04

Analyte	Sample Name	Sample Date	RW-4-5/4/2004	RW4-10/22/2004	RW-04	RW-04-11/05	RW-04-0406	RW-04-IS-1
			5/4/2004	10/22/2004	6/13/2005	11/14/2005	4/11/2006	11/8/2006
	UNIT							
1,1,1-Trichloroethane	µg/L	<25	<42J	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	250	840	1170J	799	264	230	230
1,1,2-Trichloroethane	µg/L	<25	<42	20.4	11.3	11.8	5.91	5.91
1,1-Dichloroethene	µg/L	<25	<42	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<25	<42J	1.84	1.37	0.698J	1.56	1.56
Chloroform	µg/L	<25	<42	4.35	2.88	2.75	1.96	1.96
cis-1,2-Dichloroethene	µg/L	26	25J	60.7	33.1	30	18.9	18.9
Tetrachloroethene	µg/L	7.3J	<42	16	7.05	8.25	7.13	7.13
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	19J	<42	11.4	6.18	5.65	3.97	3.97
Trichloroethene	µg/L	820	860	1620	1490	1080	593	593
Vinyl chloride	µg/L	<25	<42	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-05

Analyte	Sample Name	Sample Date	RW-5 2/1/1999	RW-5 5/24/1999	RW-5 8/27/1999	RW-5 11/1/1999	RW-5 2/14/2000	RW-5 8/24/2000	RW-5 11/20/2000	RW-5 4/10/2002	RW-5 10/1/2002	RW-5 4/17/2003
		UNIT										
	1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1,2,2-Tetrachloroethane	µg/L	3.13	582	1380	2260	3120	167	<1	196	47.8	5.6
	1,1,2-Trichloroethane	µg/L	<1	<1	1.15	<1	1.93	0.61	<1	<1	<1	<1
	1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	2.65	<1	<1	<1	<1
	Chloroform	µg/L	<1	<1	1.62	<1	1.36	1.29	<1	1.24	<1	1.04
	cis-1,2-Dichloroethene	µg/L	7.34	50.1	49.6	48.41	50.2	17.9	<1	15.8	12.8	3.95
	Tetrachloroethene	µg/L	2.16	12.9	12.2	45.11	10.8	1.45	<1	5.89	4.36	10.2
	Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--
	trans-1,2-Dichloroethene	µg/L	2.4	15.7	14.3	<1	12.3	2.28	<1	5.08	2.3	1.05
	Trichloroethene	µg/L	171	1180	1270	1290	1170	132	1.89	400	142	95
	Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

RW-05

Analyte	Sample Name	RW-5	RW-5-5/4/2004	RW-5-10/22/2004	RW-05	RW-05-11/05	RW-05-04/06	RW-05 - IS-1
	Sample Date	10/29/2003	5/4/2004	10/22/2004	6/13/2005	11/14/2005	4/11/2006	11/8/2006
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<8	<1J	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	14.9	14	<1	38J	13	17.2	51
1,1,2-Trichloroethane	µg/L	<1	<8	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<8	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<8	1.5J	<1	<1	<1	1.14
Chloroform	µg/L	1.04	<8	1.8	<1	<1	<1	1.8
cis-1,2-Dichloroethene	µg/L	7.08	6.6J	0.38J	10.6	5.95	5.69	8.12
Tetrachloroethene	µg/L	7.47	6.4J	2.1	7.76	5.08	5.91	6.68
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.23	6.3J	0.23J	2.9	2.03J	1.94	2.66
Trichloroethene	µg/L	193	200	22	272	185J	166	290
Vinyl chloride	µg/L	<1	<8	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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NOTES:

ug/L micrograms per liter

-- Not Analyzed

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UU Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-06

Analyte	Sample Name	RW-6	RW-6-5/4/2004	RW-6-10/22/2004	RW-06	RW-06-11/05	RW-06-04/06	RW-06 - IS-1
	Sample Date	10/29/2003	5/4/2004	10/22/2004	6/13/2005	11/14/2005	4/11/2006	11/8/2006
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1.2	<1.7J	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1.2	<1.7	2.34J	<1	<1	0.772
1,1,2-Trichloroethane	µg/L	<1	<1.2	<1.7	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1.2	<1.7	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1.2	<1.7J	<1	<1	<1	<1
Chloroform	µg/L	2.15	1.8	1.8	2.14	2.2	2.06	1.87
cis-1,2-Dichloroethene	µg/L	11.2	11	11	22.3	18.6	16.1	18
Tetrachloroethene	µg/L	37.1	20	24	27.9	18.8	19.7	20.7
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.01	3.8J	3.5	8	6.68	5.89	6.58
Trichloroethene	µg/L	40.7	39	35	68.2	63.8	59.3	68.8
Vinyl chloride	µg/L	<1	<1.2	<1.7	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

RW-07

Analyte	Sample Name	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7
	Sample Date	2/4/1999	5/24/1999	8/27/1999	11/1/1999	2/14/2000	5/15/2000	8/24/2000	11/20/2000	4/10/2002	10/1/2002	4/17/2003					
	UNIT																
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	14	28.8	43.2	60.7	49.9	52.2	65.8	49.8	115	156	144					
1,1,2-Trichloroethane	µg/L	<1	<1	0.85J	1.08	1.03	0.95J	1.44	1.88	1.87	1.43	2.2					
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	0.54J	<1	<1	<1	<1	0.43J	<1	0.98J	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	1.79	<1	3.39	2.28	1.84	1.27	1.59	3.08	2.64	6.66	3.48					
cis-1,2-Dichloroethene	µg/L	35	54.6	59.1	74.7	70.3	59.6	70.6	86.6	51.2	50.4	63.8					
Tetrachloroethene	µg/L	8.84	7.94	9.81	12.2	9.33	7.76	10.7	9.3J	4.96	4.22	5.94					
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	--					
trans-1,2-Dichloroethene	µg/L	11.8	17.1	17.3	23.6	19.2	17.4	19.7	22.9	12.7	10.8	13.7					
Trichloroethene	µg/L	64.2	89.5	94	145	102	97.2	98.9	101	74.1	55.3	108					
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

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Historical Analytical Results
Annual Operations Report - 2006
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RW-07

Analyte	Sample Name	RW-7	RW-7-5/4/2004	RW7-10/22/2004	RW-07	RW-07-1105	RW-07-0406	RW-07 - IS-1
	Sample Date	10/29/2003	5/4/2004	10/22/2004	6/13/2005	11/14/2005	4/14/2006	11/8/2006
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<5	<4J	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	214	160	100	155J	56.5	9.28	90.3J
1,1,2-Trichloroethane	µg/L	2.21	<5	1.6J	1.89	1.28	<1	1.94
1,1-Dichloroethene	µg/L	<1	<5	<4	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<5	<4J	<1	<1	<1	0.762J
Chloroform	µg/L	3.87	3J	3.2J	4.86	3.43	5.02	7.16
cis-1,2-Dichloroethene	µg/L	56.8	42	51	61.6	60.4	15.5	62.6
Tetrachloroethene	µg/L	5.35	3.3J	4.4	7.04	3.98	3.33	6.06
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	12	12J	9.2	13.1	17	4.4	14.7
Trichloroethene	µg/L	102	79	95	109	117	40.7	153J
Vinyl chloride	µg/L	<1	<5	<4	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

884 324

Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-08

Analyte	Sample Name	2/4/1999	5/24/1999	8/27/1999	11/1/1999	2/14/2000	5/15/2000	8/24/2000	11/20/2000	4/10/2002	10/1/2002	RW-8	RW-8	RW-8
	UNIT													
	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.6J	<1	<1
1,1,1-Trichloroethane														
1,1,2,2-Tetrachloroethane		11.4	74.8	108	119	121	121	109	<1	171	312	350		
1,1,2-Trichloroethane		<1	1.66	1.32	1.28	1.58	1.74	1.97	<1	2.98	3.9	4.85		
1,1-Dichloroethene		8.54	12.2	9.79	<1	6.82	4.98	5.1	<1	14.2	21.8	14.1		
Carbon tetrachloride		<1	1.38	1.3	1.11	1.03	0.89J	0.94J	<1	1.49	2.76	1.96		
Chloroform		2.49	10.3	14.1	10.3	10.5	8.41	8.72	6.53	15.3	36.2	20		
cis-1,2-Dichloroethene		11.9	104	93	89.1	115	120	128	40.1	130	166	168		
Tetrachloroethene		3.5	5.96	5.5	6.14	6.67	5.19	5.66	2.02J	10.4	8.35	14.3		
Total 1,2-Dichloroethene		--	--	--	--	--	--	--	--	--	--	--		
trans-1,2-Dichloroethene		2.96	35.4	27	<1	30.8	37.6	39.7	11.9	38	38.6	36.3		
Trichloroethene		26.4	273	173	261	190	268	190	56.9	288	189	413		
Vinyl chloride		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

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positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

884 325

Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

RW-08

Analyte	Sample Name	RW-8	RW-8-10/22/2004	RW-08	RW-08-11/05	RW-08-0406	RW-08 - IS-1
	Sample Date	10/29/2003	10/22/2004	6/13/2005	11/14/2005	4/11/2006	11/8/2006
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<11J	<1	<10	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	223	270	588J	353	195	174
1,1,2-Trichloroethane	µg/L	3.12	4J	6.69	<10	4.47	3.3
1,1-Dichloroethene	µg/L	14.2	12	8.67	11.2	2.12	3.45
Carbon tetrachloride	µg/L	1.79	<11J	1.3	<10	0.755J	1.22
Chloroform	µg/L	18.7	16	15.3	27.1	10.6	12.1
cis-1,2-Dichloroethene	µg/L	116	130	229	236	151	162
Tetrachloroethene	µg/L	11	8.8J	7.36	<10	3.74	4.56
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	26.1	28	52.3	44.1	32.6	43.7
Trichloroethene	µg/L	232	240	386	361	266	294
Vinyl chloride	µg/L	<1	<11	0.677J	<10	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A.

SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee

RW-09

Analyte	Sample Name	Sample Date	RW-9 5/24/1999	RW-9 8/27/1999	RW-9 11/1/1999	RW-9 2/14/2000	RW-9 5/15/2000	RW-9 8/24/2000	RW-9 11/20/2000	RW-9 4/10/2002	RW-9 10/1/2002	RW-9 4/17/2003
UNIT												
1,1,1-Trichloroethane	µg/L		2.01	1.67	1.73	1.56	1.4	1.25	1.92	1.28	1.49	1.23
1,1,2,2-Tetrachloroethane	µg/L		1.21	1.52	<1	2.98	<1	2.55	<1	5.07	10.2	5.35
1,1,2-Trichloroethane	µg/L		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L		49.2	45.1	44.4	52.9	35.9	45.4	52.5	32.4	42	33.2
Carbon tetrachloride	µg/L		1.43	1.21	1.12	0.79J	0.9J	1.17	<1	1.23	1.28	1.5
Chloroform	µg/L		10.2	15.4	11.8	12.5	10.8	12.5	13.3	12.1	23.4	16.5
cis-1,2-Dichloroethene	µg/L		8.47	5.65	4.95	5.45	6.03	7.68	2.02	7.23	7.55	9.11
Tetrachloroethene	µg/L		41.5	37.7	38.8	61.2	32.1	32.9	54.3J	42.9	30.4	64.6
Total 1,2-Dichloroethene	µg/L		--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L		3.18	1.94	1.86	2.23	2.24	2.53	<1	2.41	2.03	2.71
Trichloroethene	µg/L		52	41.1	43.3	51.4	37.7	35.5	36.3	42.2	35	61.3
Vinyl chloride	µg/L		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

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Historical Analytical Results
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee

RW-09

Analyte	Sample Name	RW-9	RW-9-5/4/2004	RW9-10/22/2004	RW-09	RW-09-11/05	RW-09-0406	RW-09 -IS-1
	Sample Date	10/29/2003	5/4/2004	10/22/2004	6/13/2005	11/14/2005	4/11/2006	11/8/2006
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	0.85J	0.61J	<1	<10	<1	0.658J
1,1,2,2-Tetrachloroethane	µg/L	90.3	6.2	6.3	11.2J	11.5	4.42	3.25
1,1,2-Trichloroethane	µg/L	1.7	<2	<2	<1	<10	<1	<1
1,1-Dichloroethene	µg/L	7.46	31	24	28	44.4	19.5	18
Carbon tetrachloride	µg/L	6.55	0.8J	0.43J	<1	<10	<1	0.846J
Chloroform	µg/L	69.7	10	12	12.3	16.5	5.82	5.51
cis-1,2-Dichloroethene	µg/L	47	9	5.4	11.4	18.1	8.95	8.61
Tetrachloroethene	µg/L	26.5	35	32	33.7	39.2	20.1	20.4
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	9.51	4.1J	1.6J	4.68	<10	3.6	3.54
Trichloroethene	µg/L	120	49	40	56.9	88.2	40.4	40.8
Vinyl chloride	µg/L	<1	<2	<2	<1	<10	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

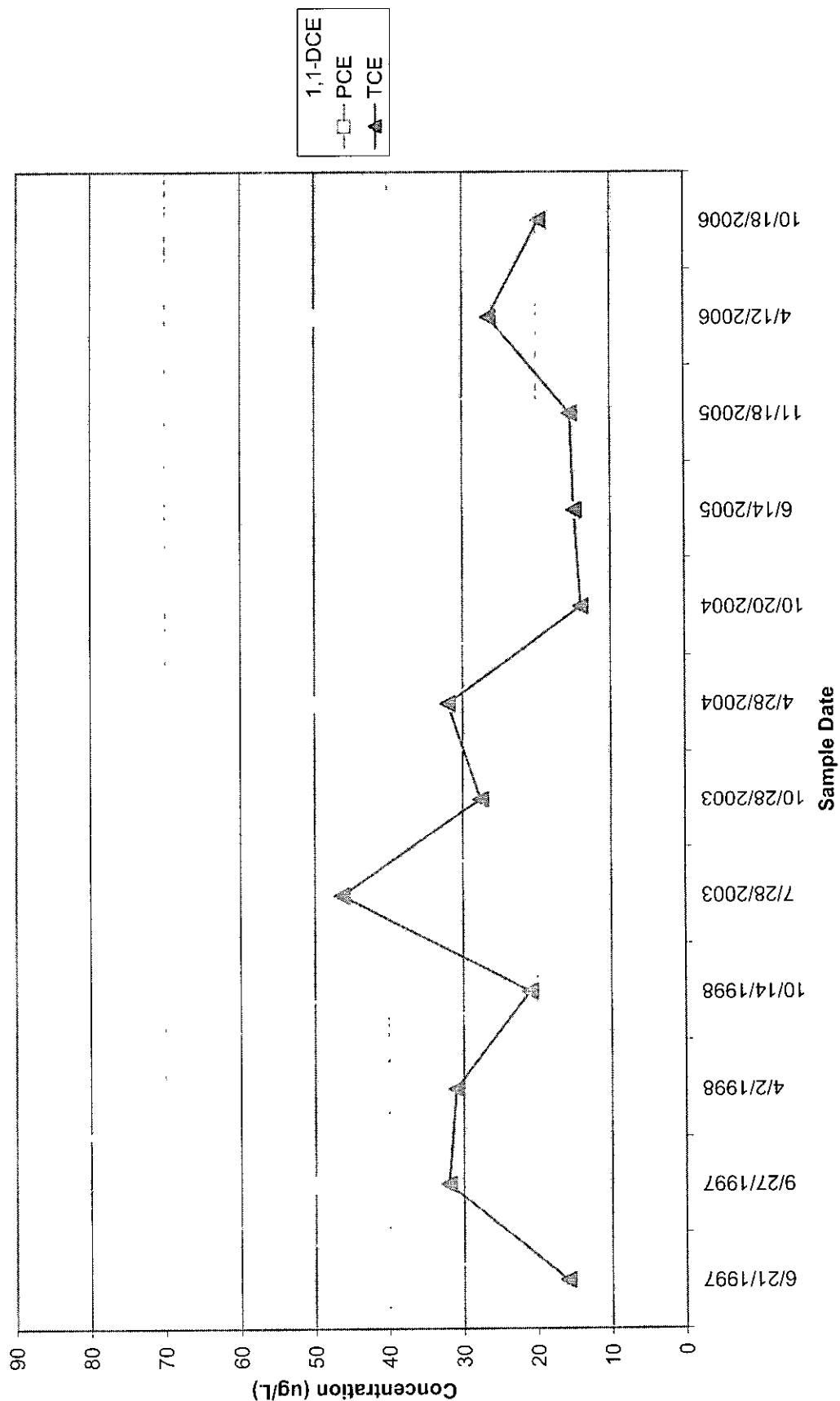
< Not detected at sample reporting limit

R Unusable

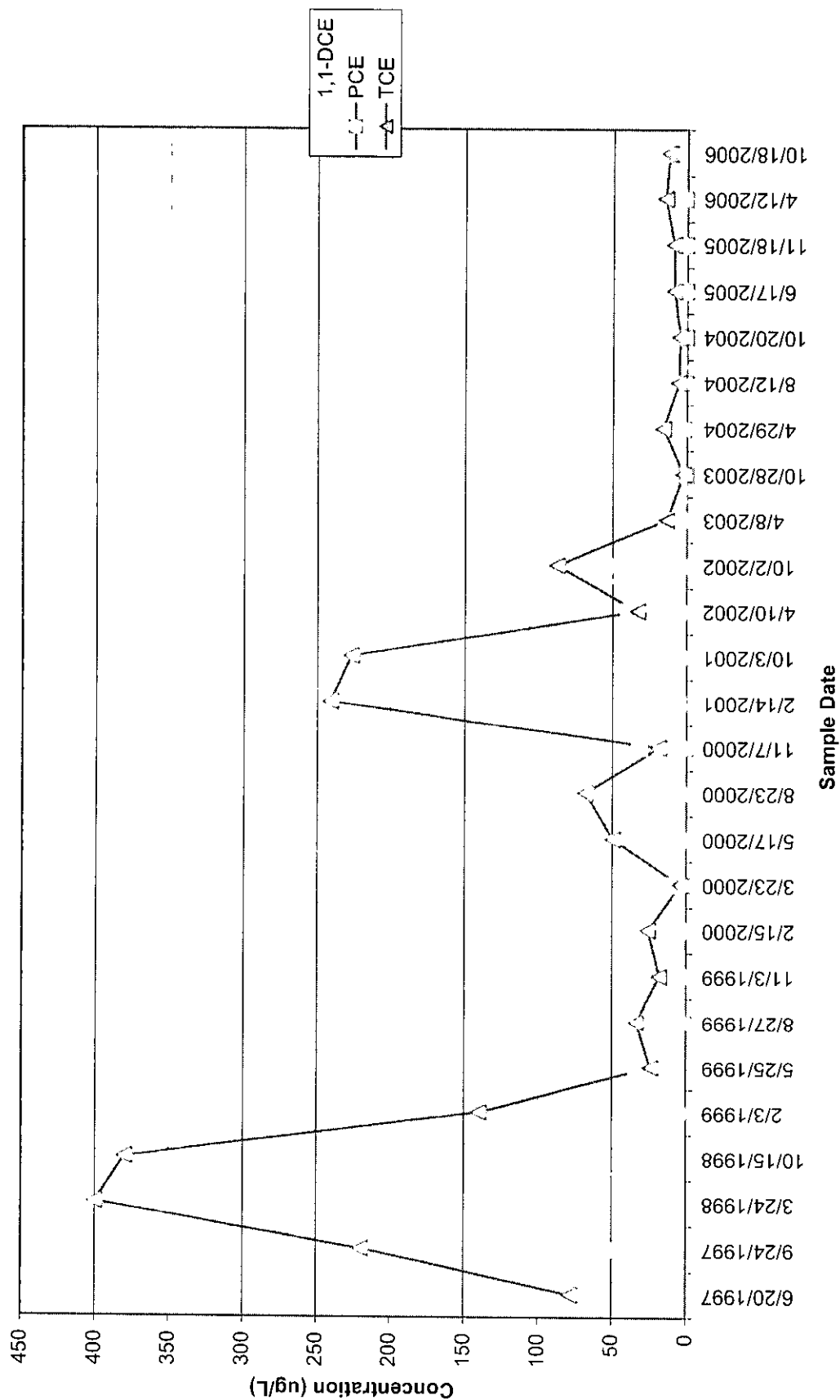
UJ Undetected, reporting limit is inaccurate or imprecise

APPENDIX F
TIME TREND PLOTS

Time Trend Plots
 Annual Operations Report - 2006
 Dunn Field Groundwater IRA - Year Eight
 Defense Depot Memphis, Tennessee
MW-07

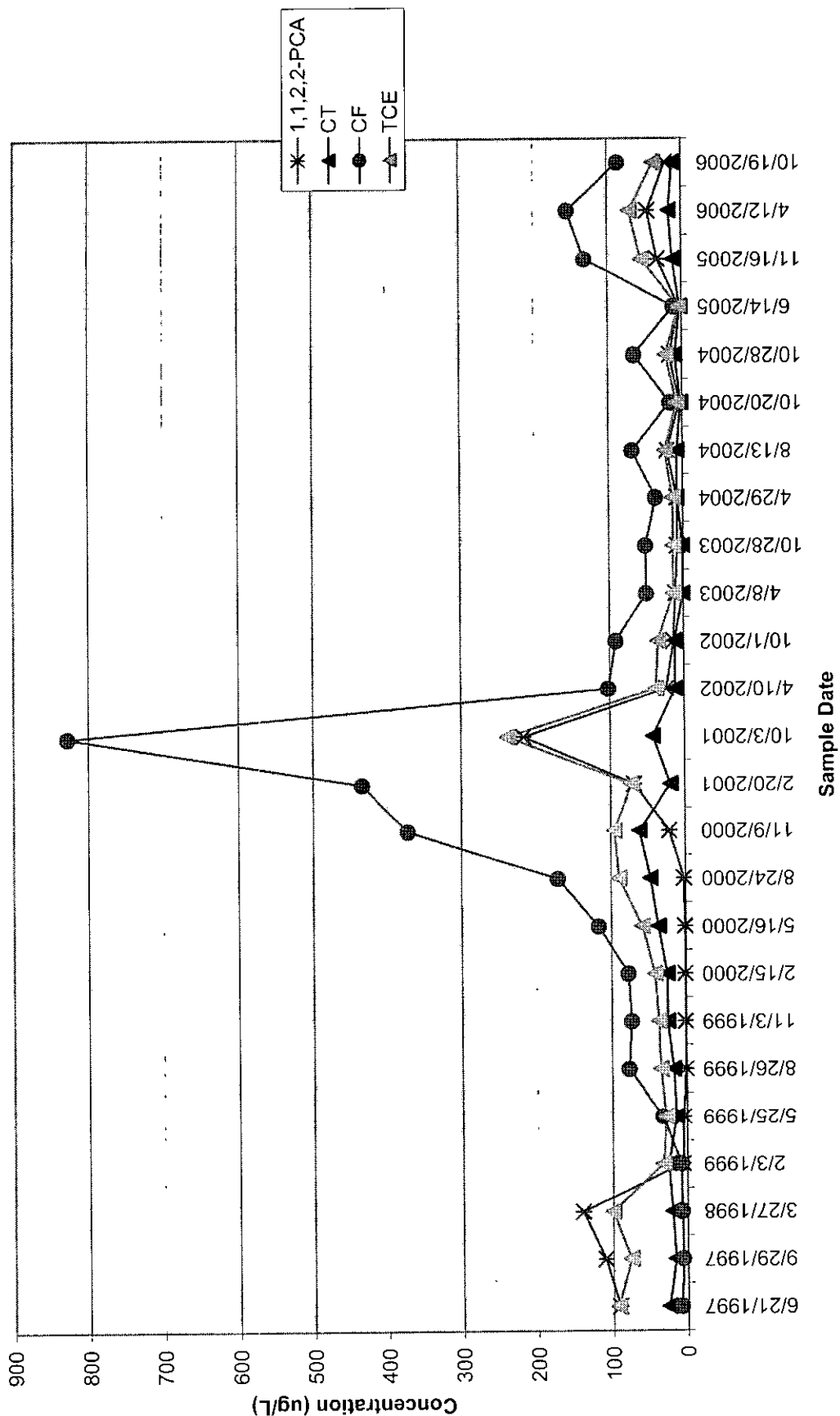


Time Trend Plots
 Annual Operations Report - 2006
 Dunn Field Groundwater IRA - Year Eight
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MW-31

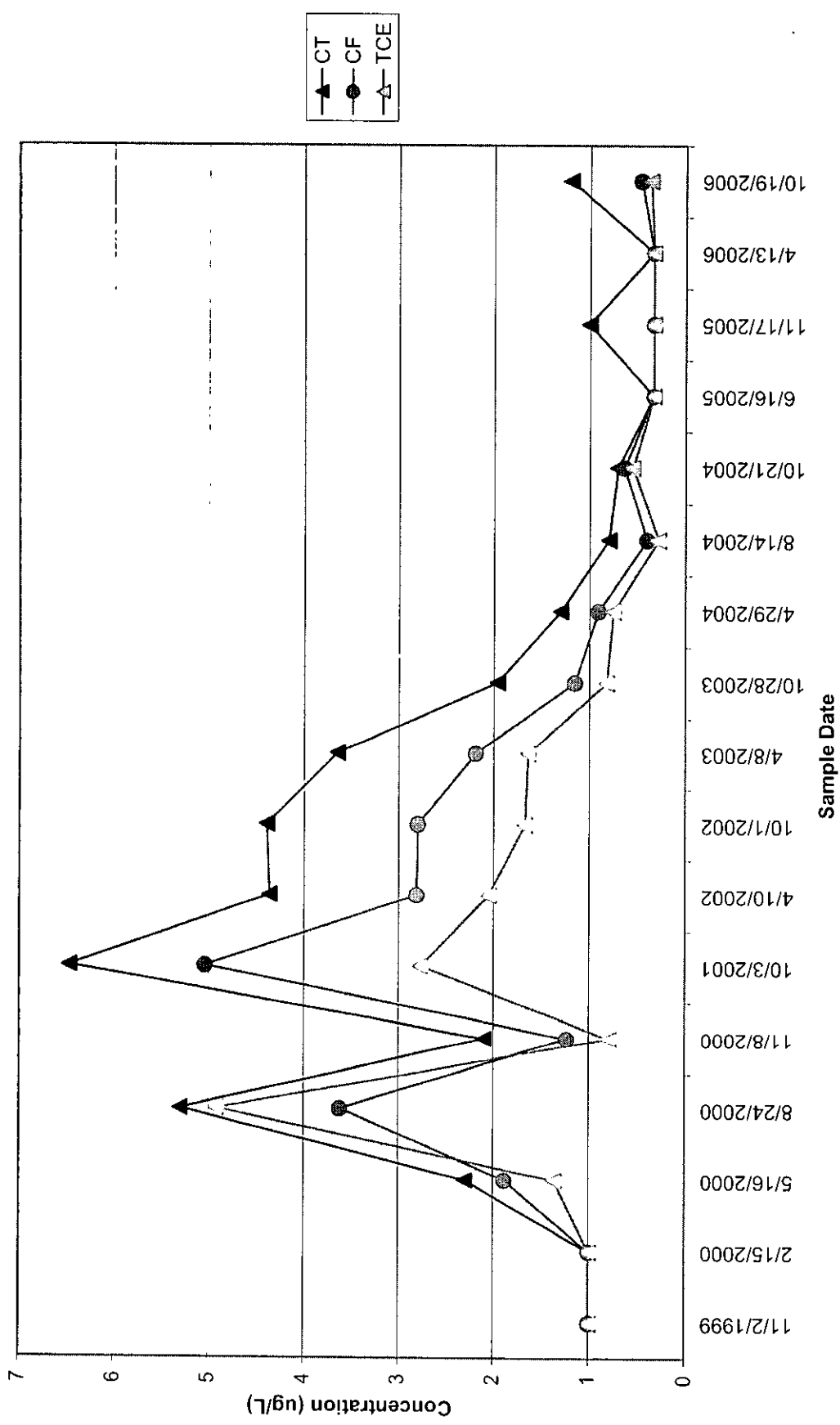


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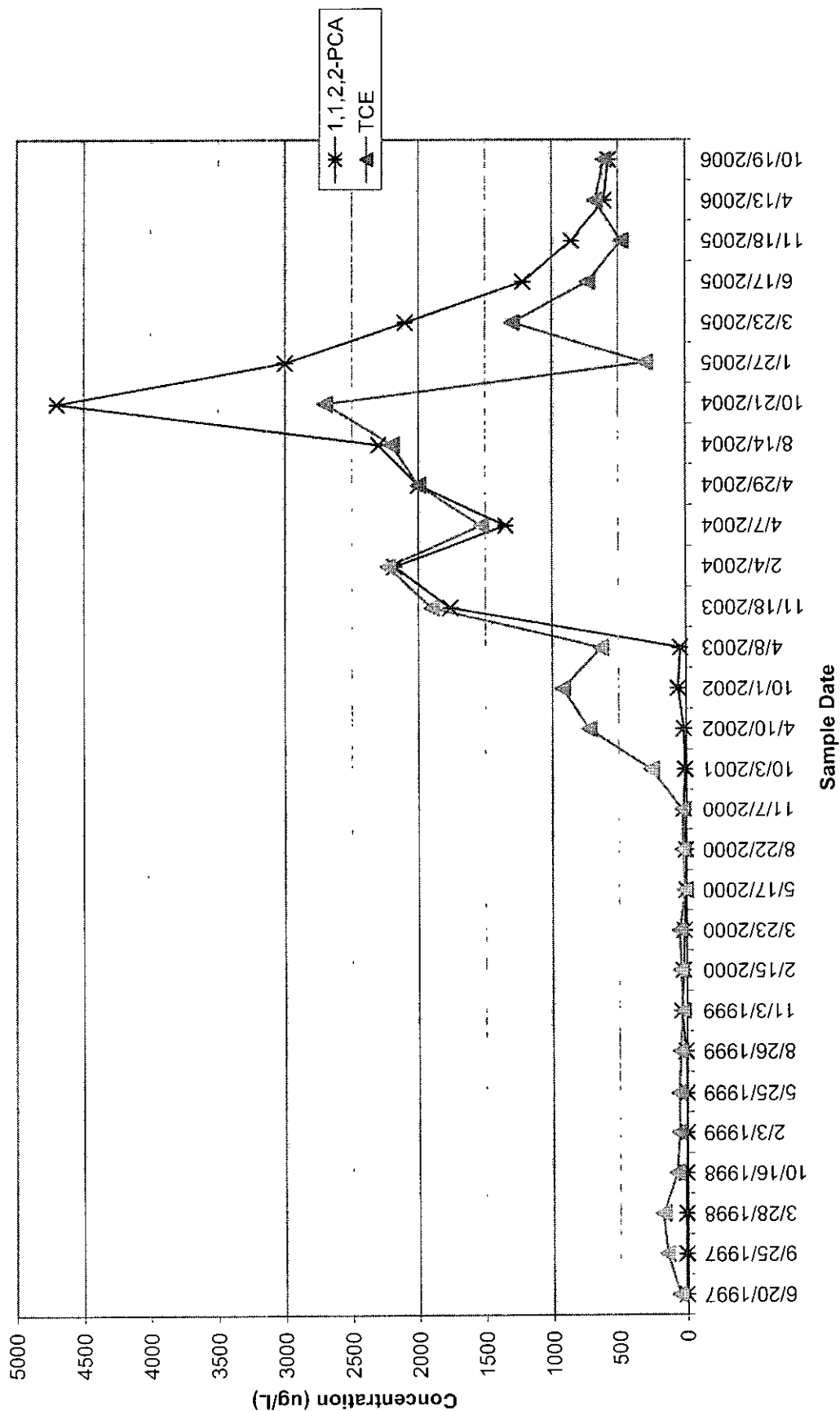
Time Trend Plots
Annual Operations Report - 2006
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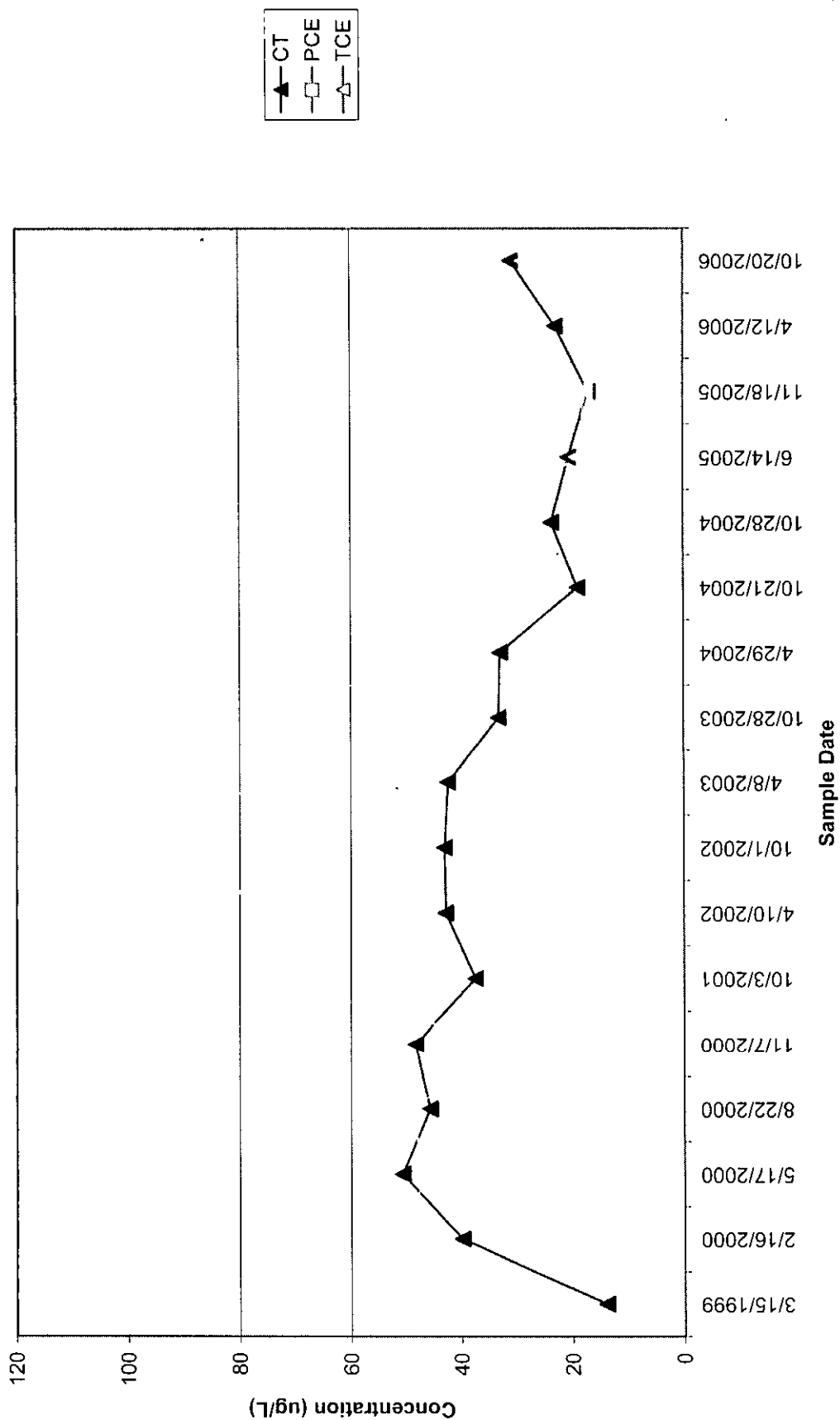


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 Dunn Field Groundwater IRA - Year Eight
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MW-54

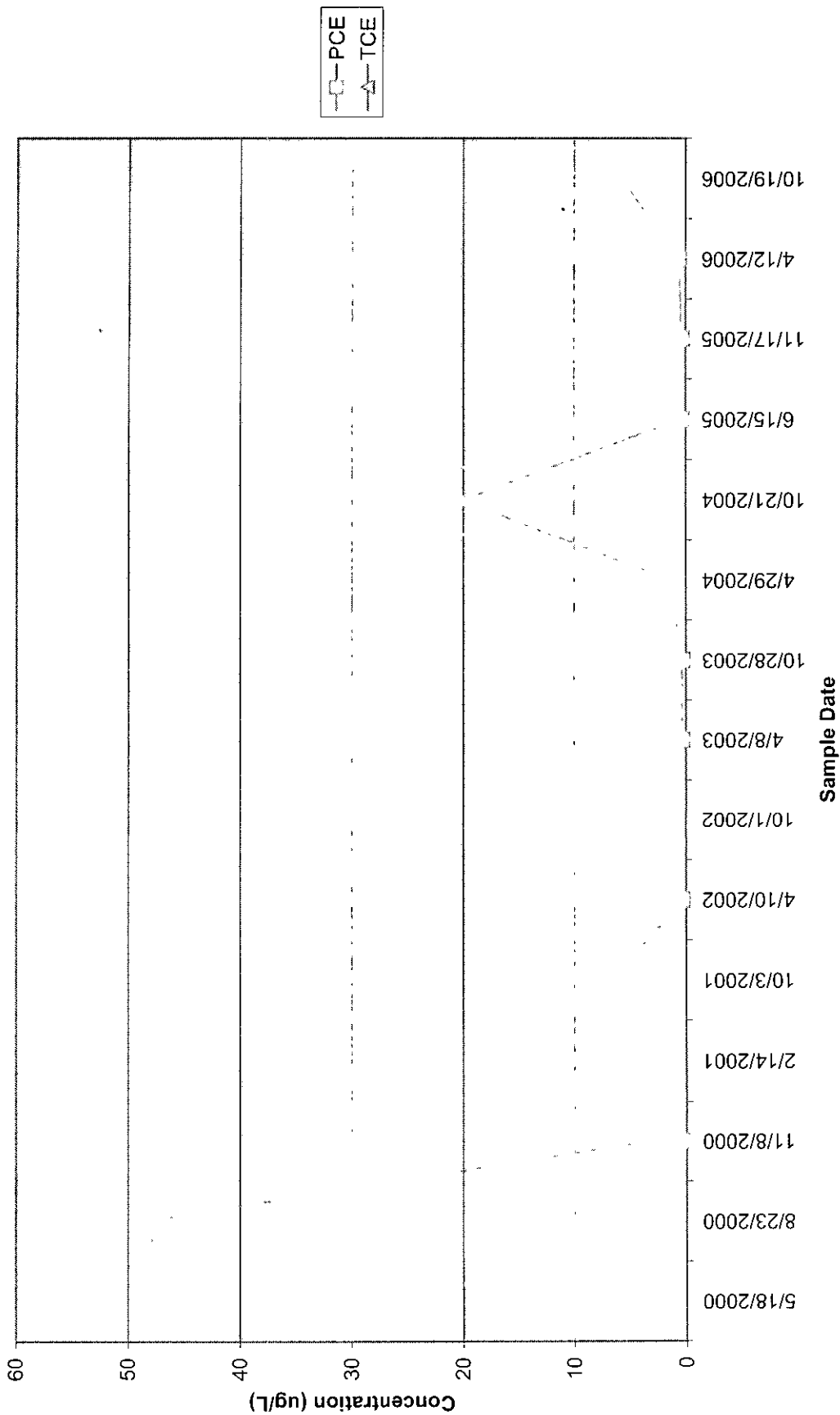


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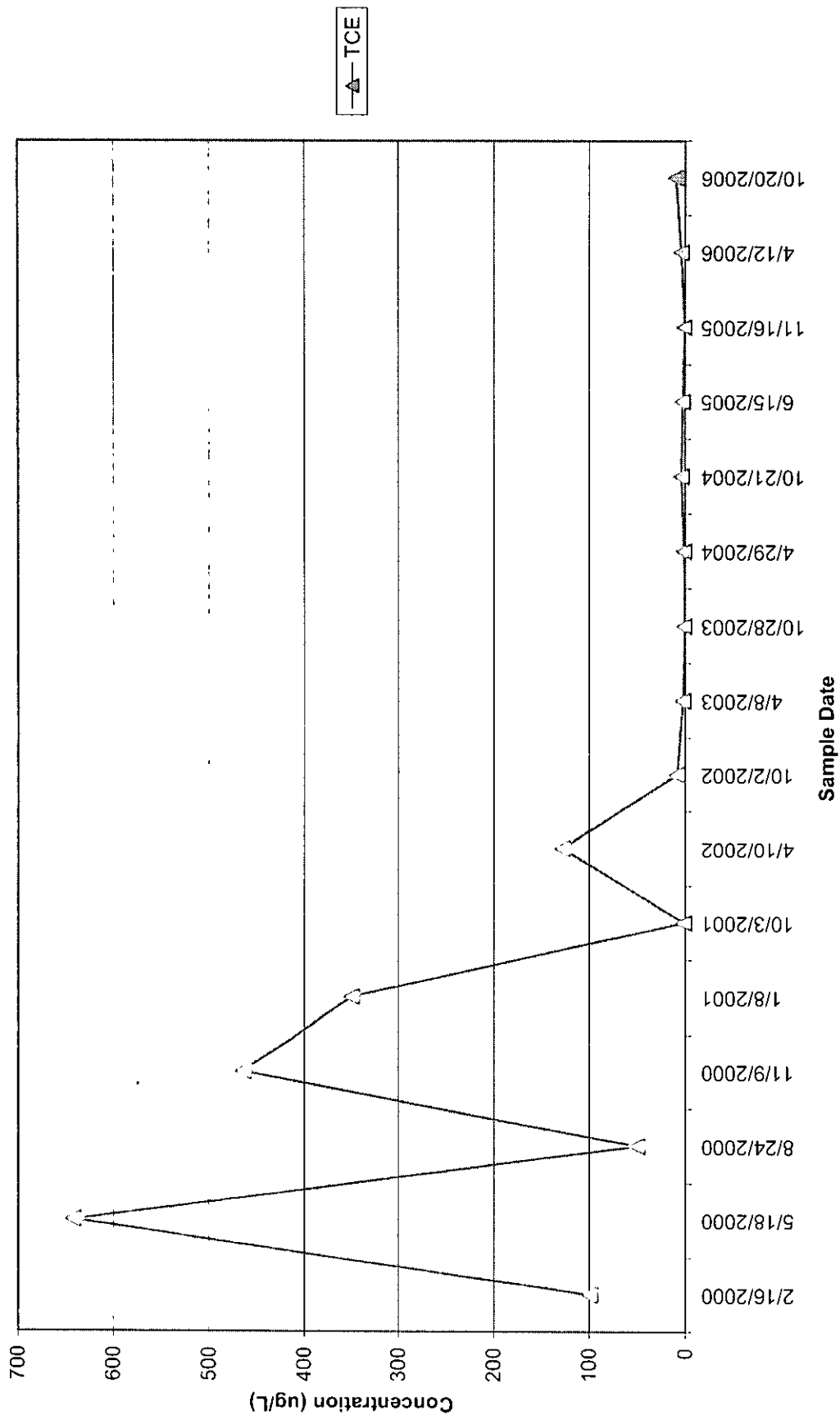
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MW-57



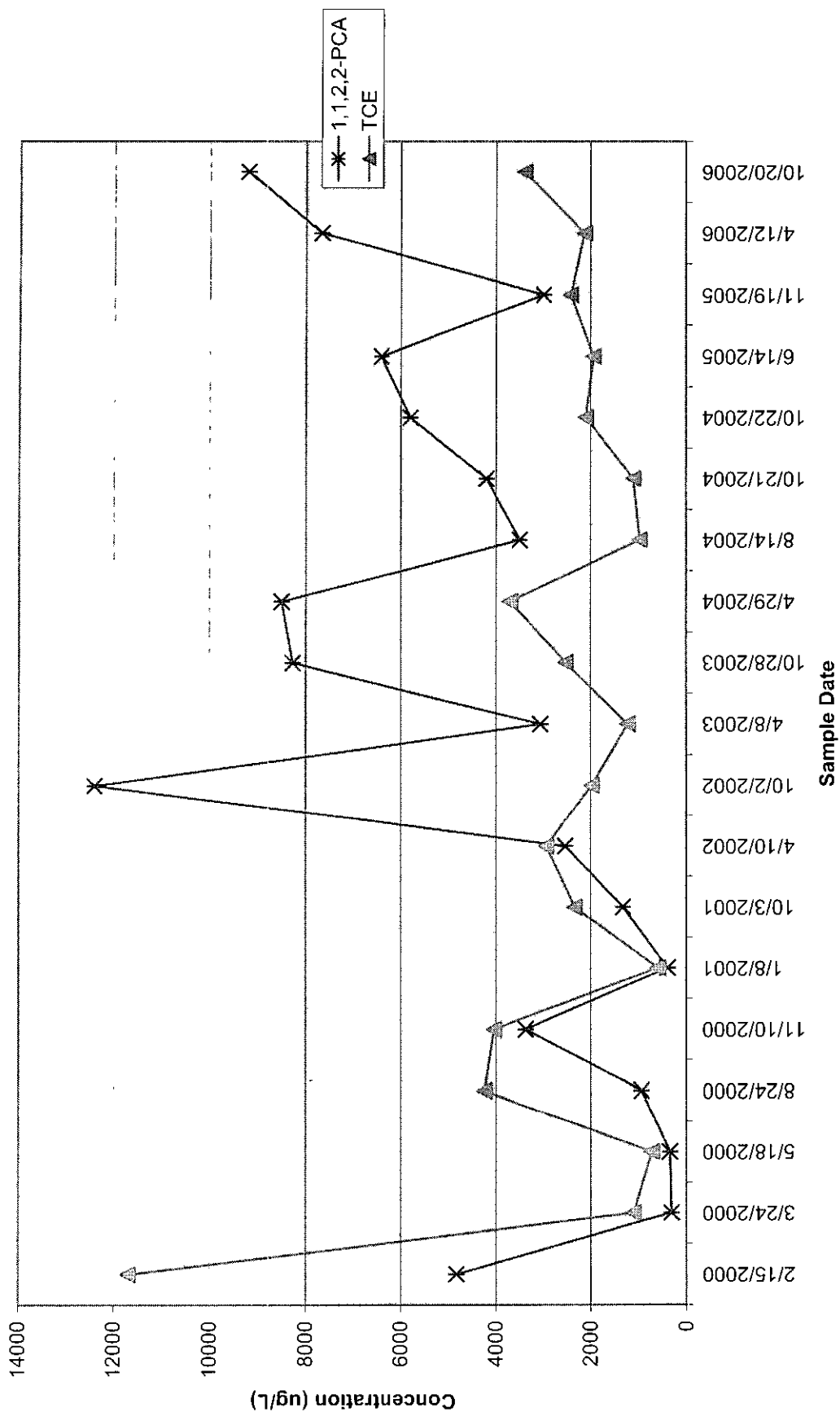
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 Dunn Field Groundwater IRA - Year Eight
 Defense Depot Memphis, Tennessee
MW-68



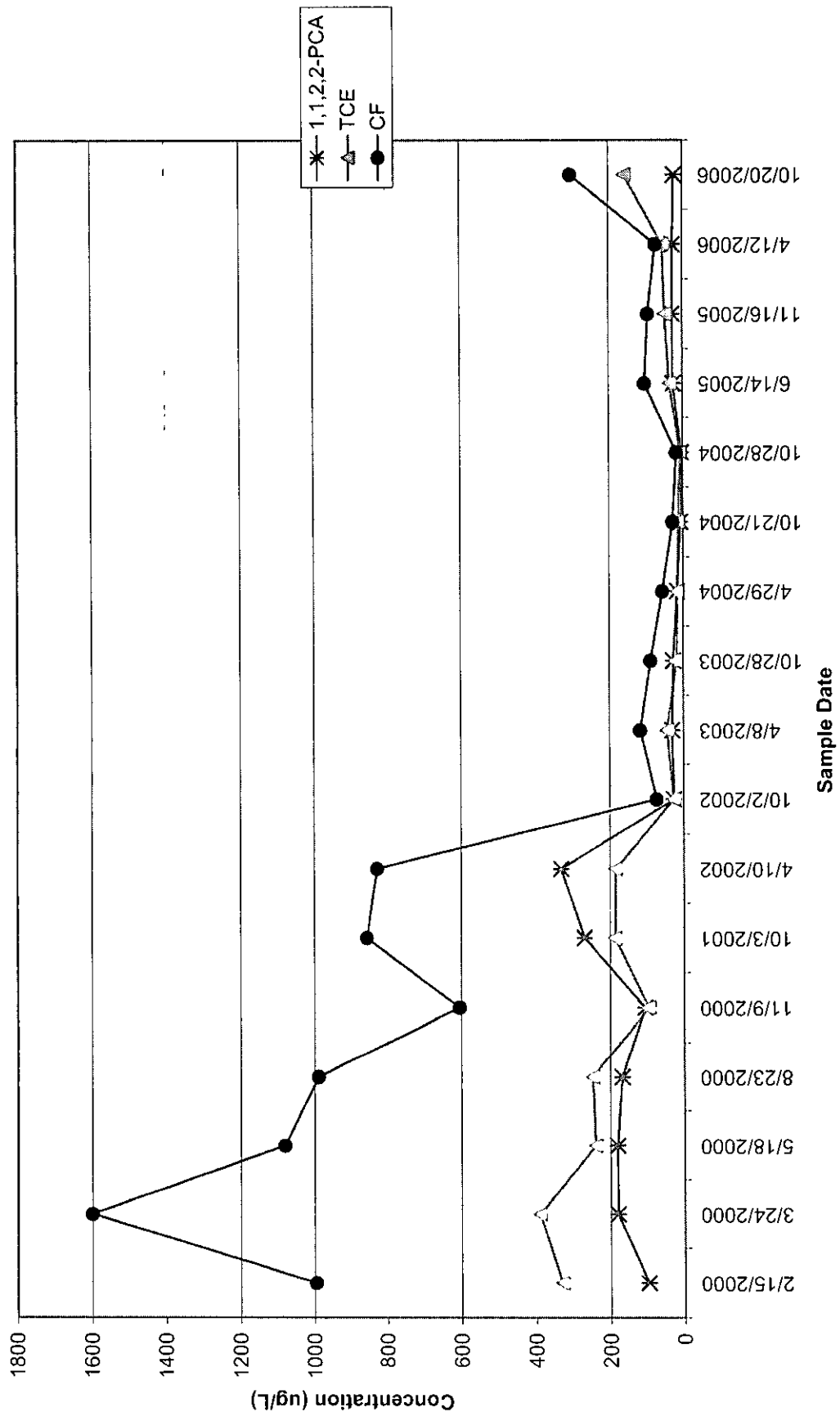
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee
MW-69



Time Trend Plots
Annual Operations Report - 2006
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MW-70

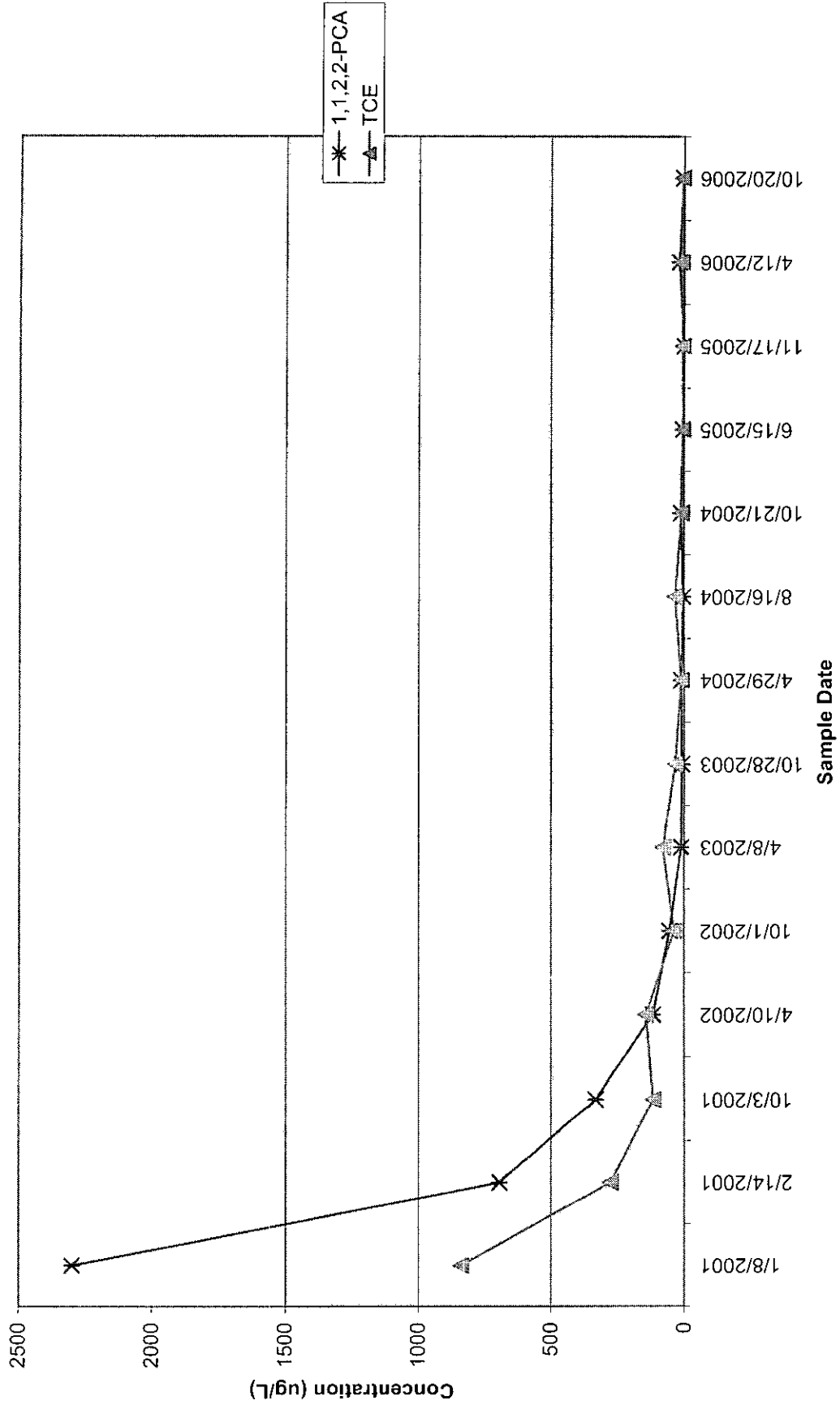


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MW-71



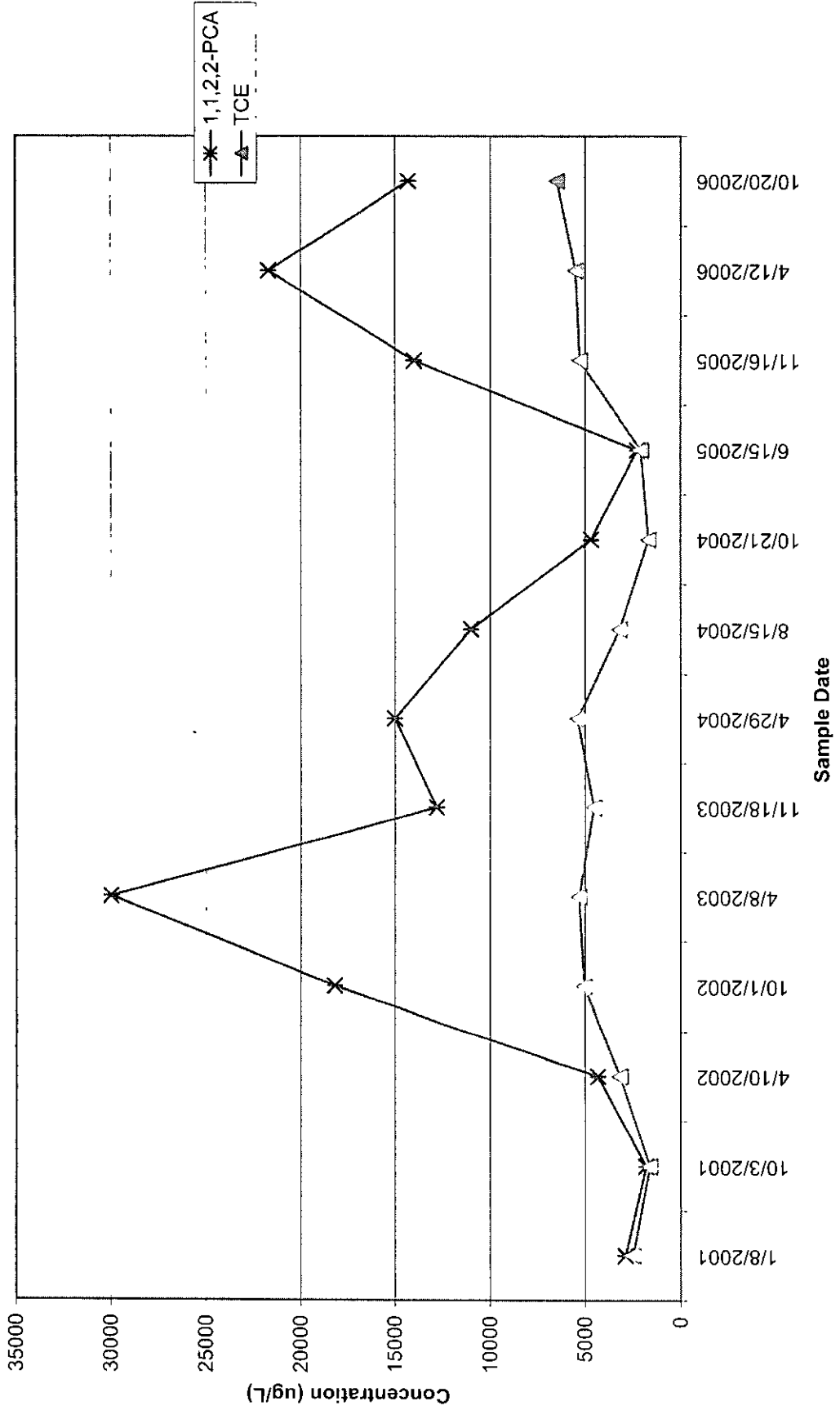
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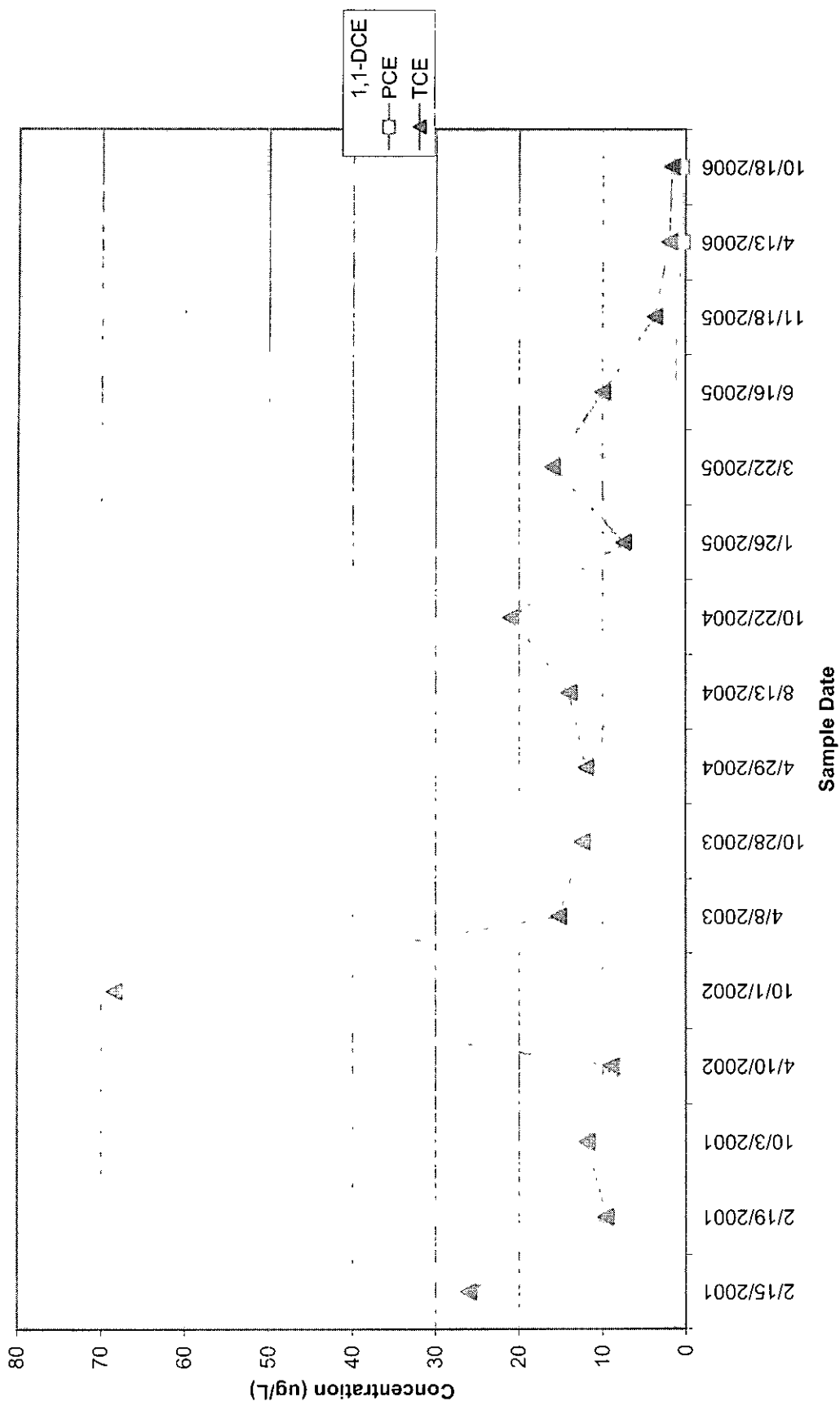


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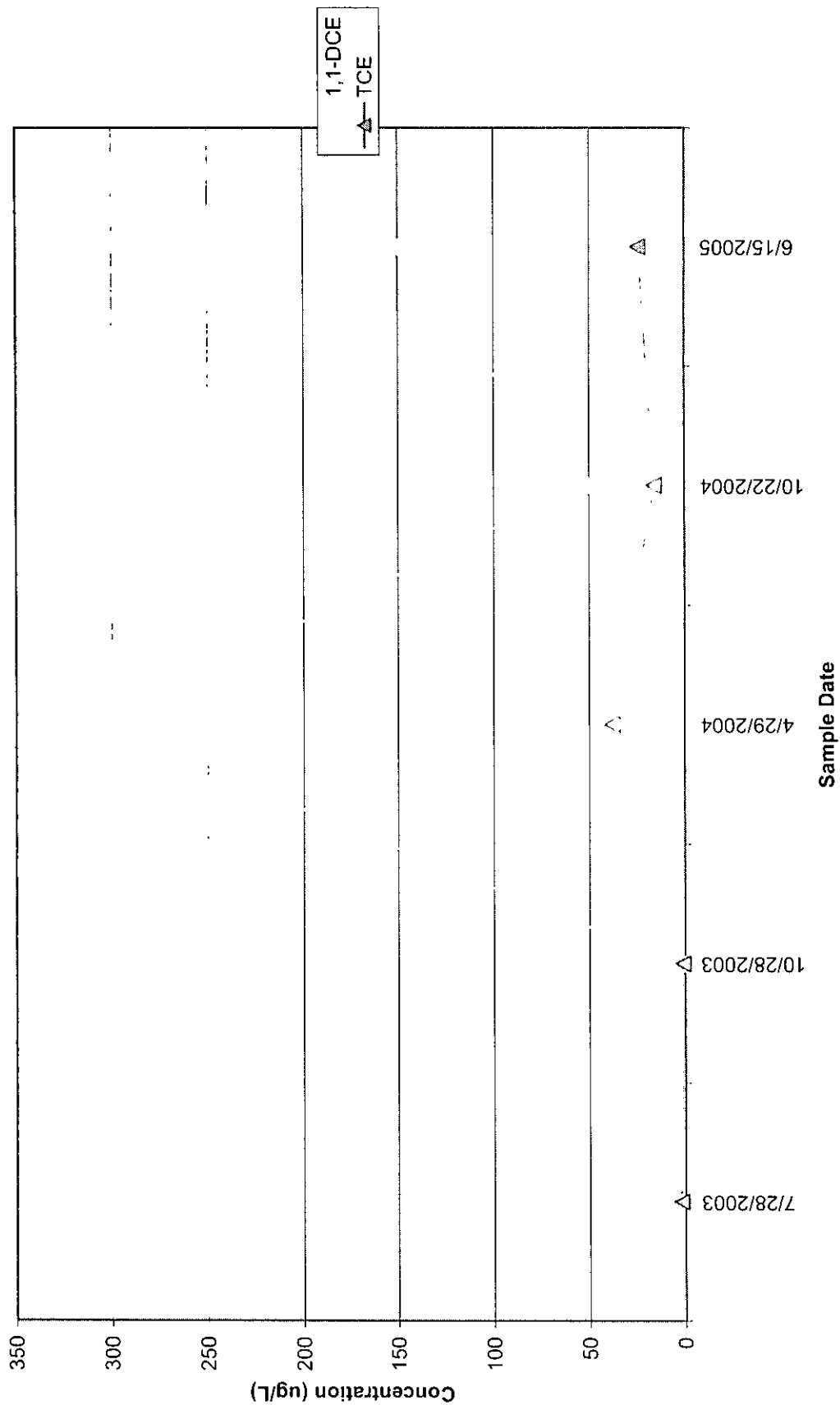
Time Trend Plots
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Dunn Field Groundwater IRA - Year Eight
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MW-77



Time Trend Plots
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Dunn Field Groundwater IRA - Year Eight
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MW-79

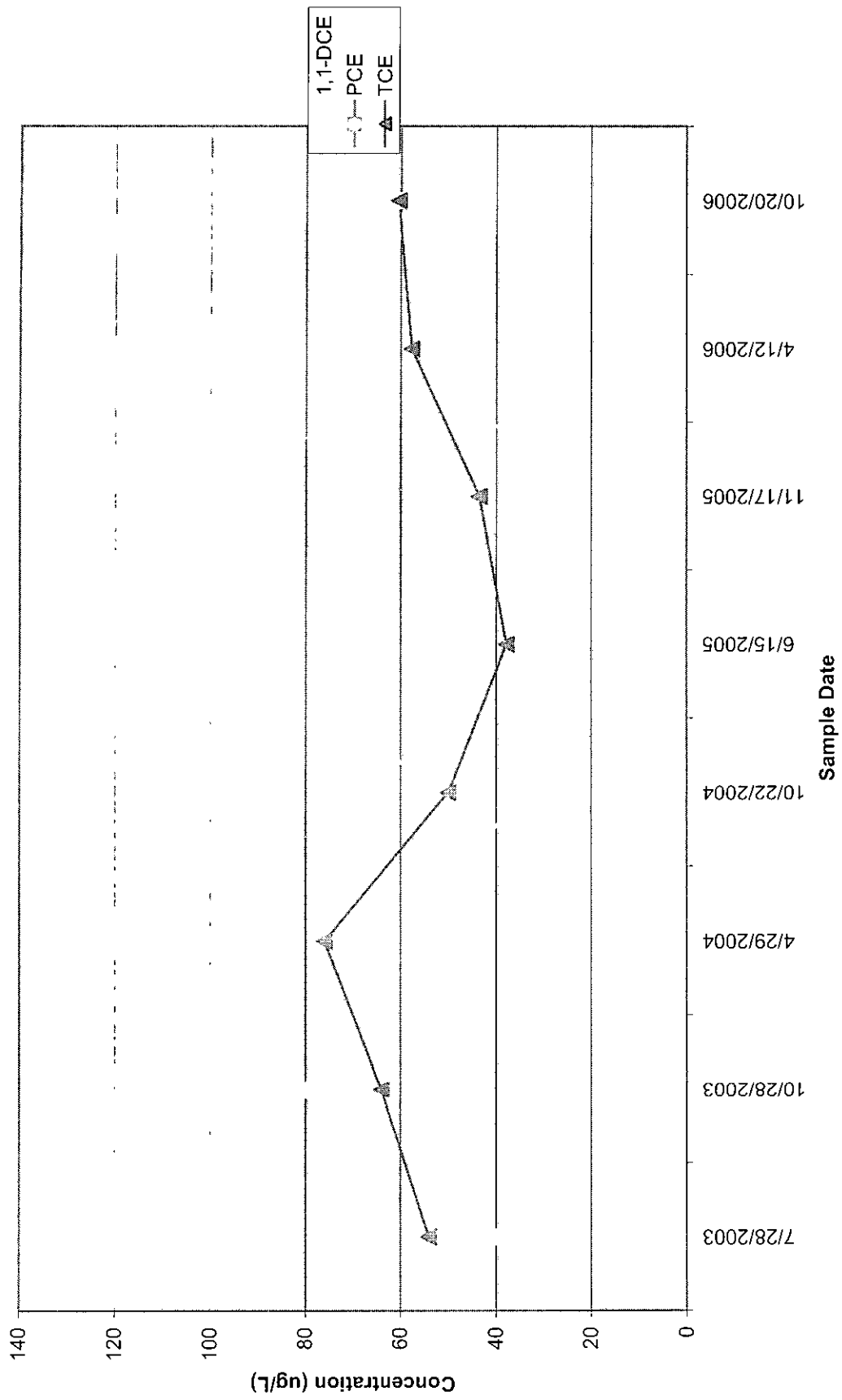


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 Dunn Field Groundwater IRA - Year Eight
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MW-128

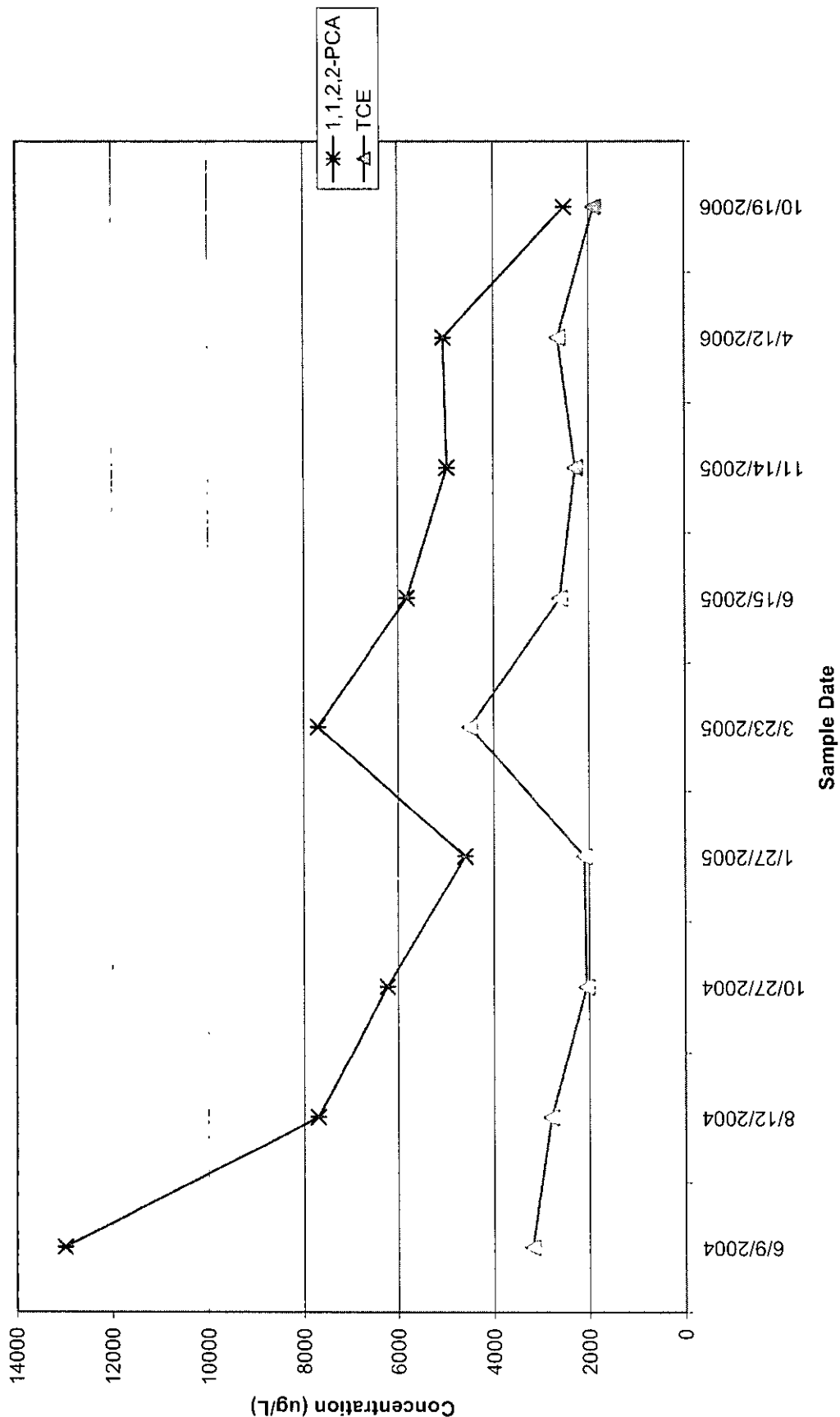


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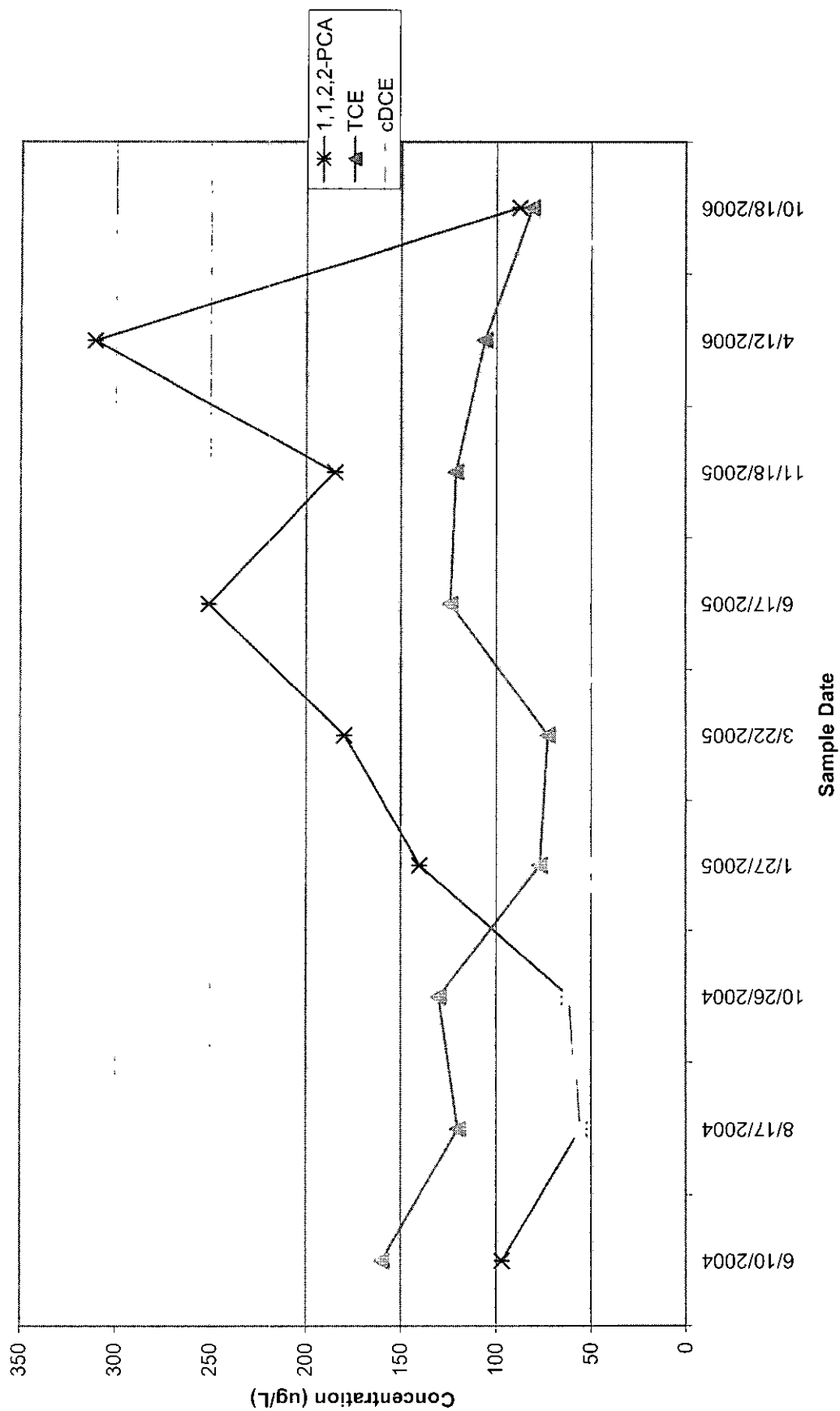
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Defense Depot Memphis, Tennessee
MW-130



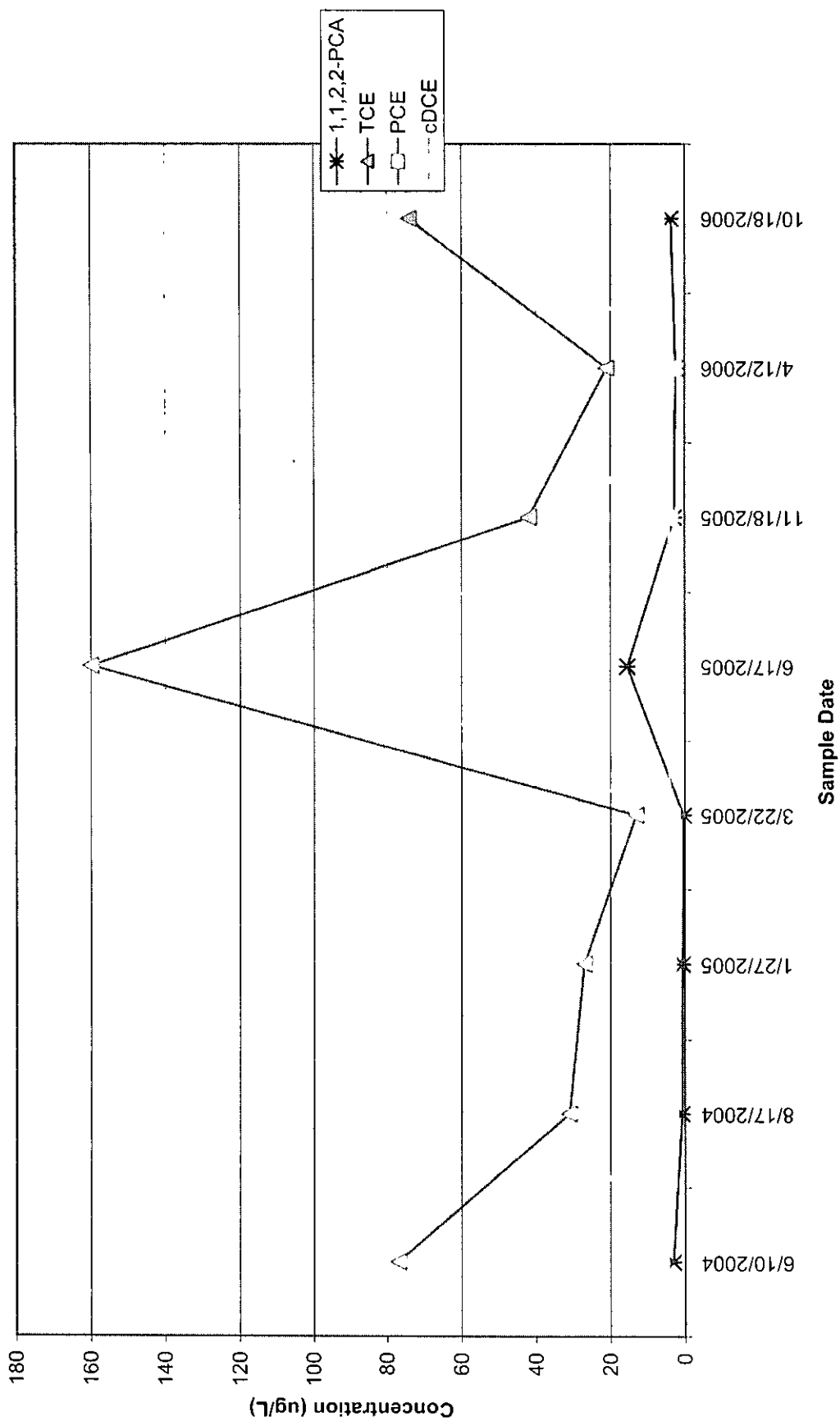
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Defense Depot Memphis, Tennessee
MW-144



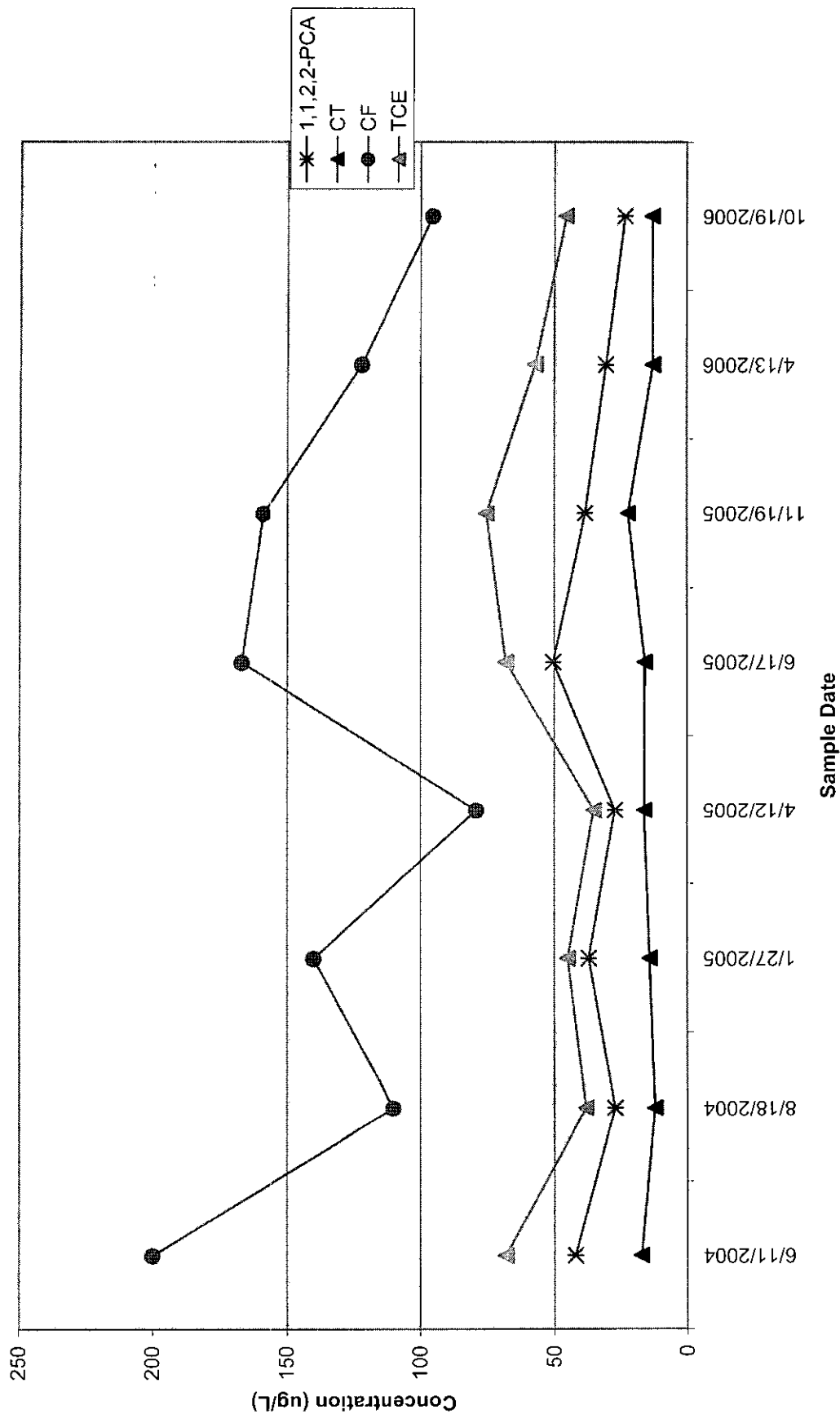
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MW-147



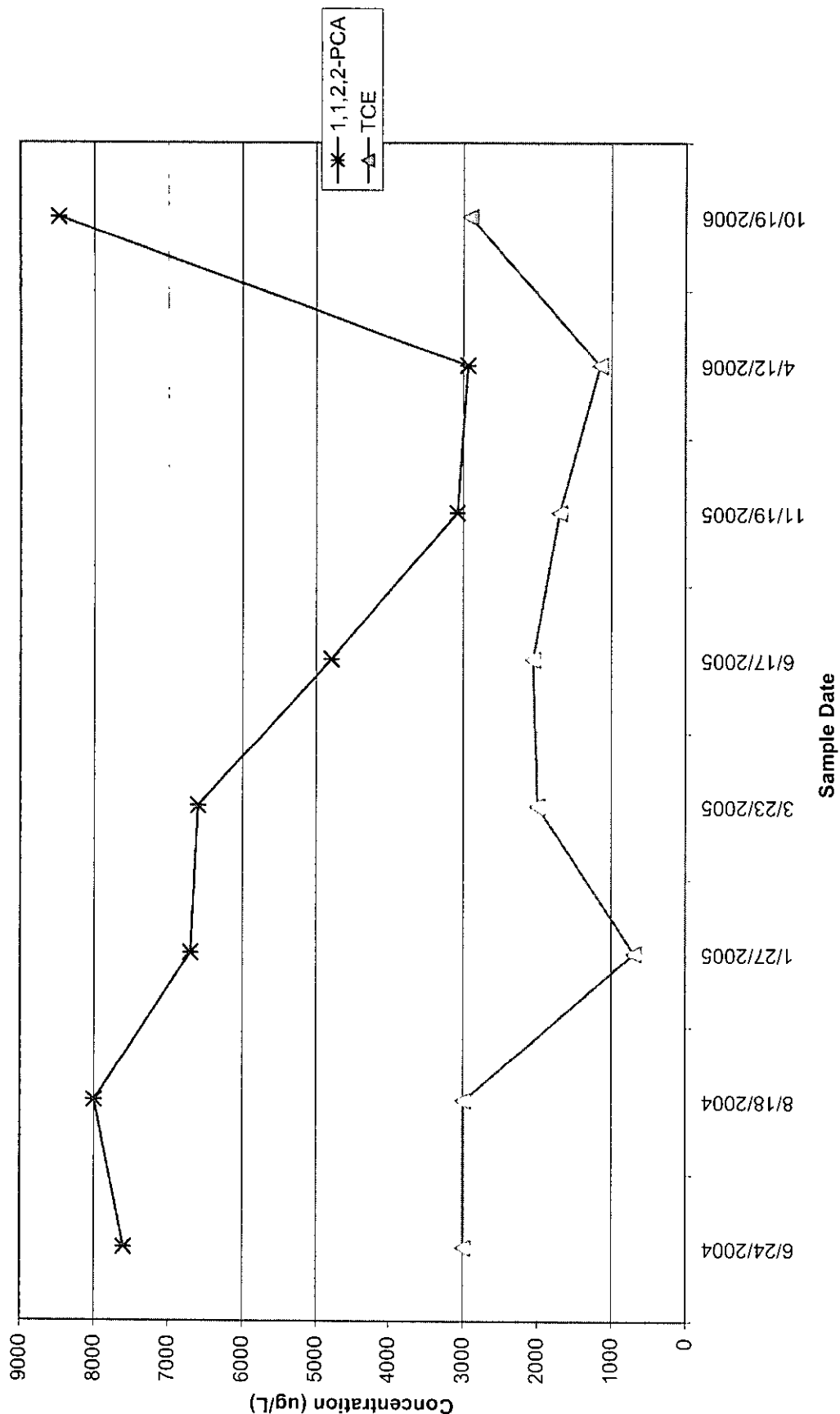
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MW-148



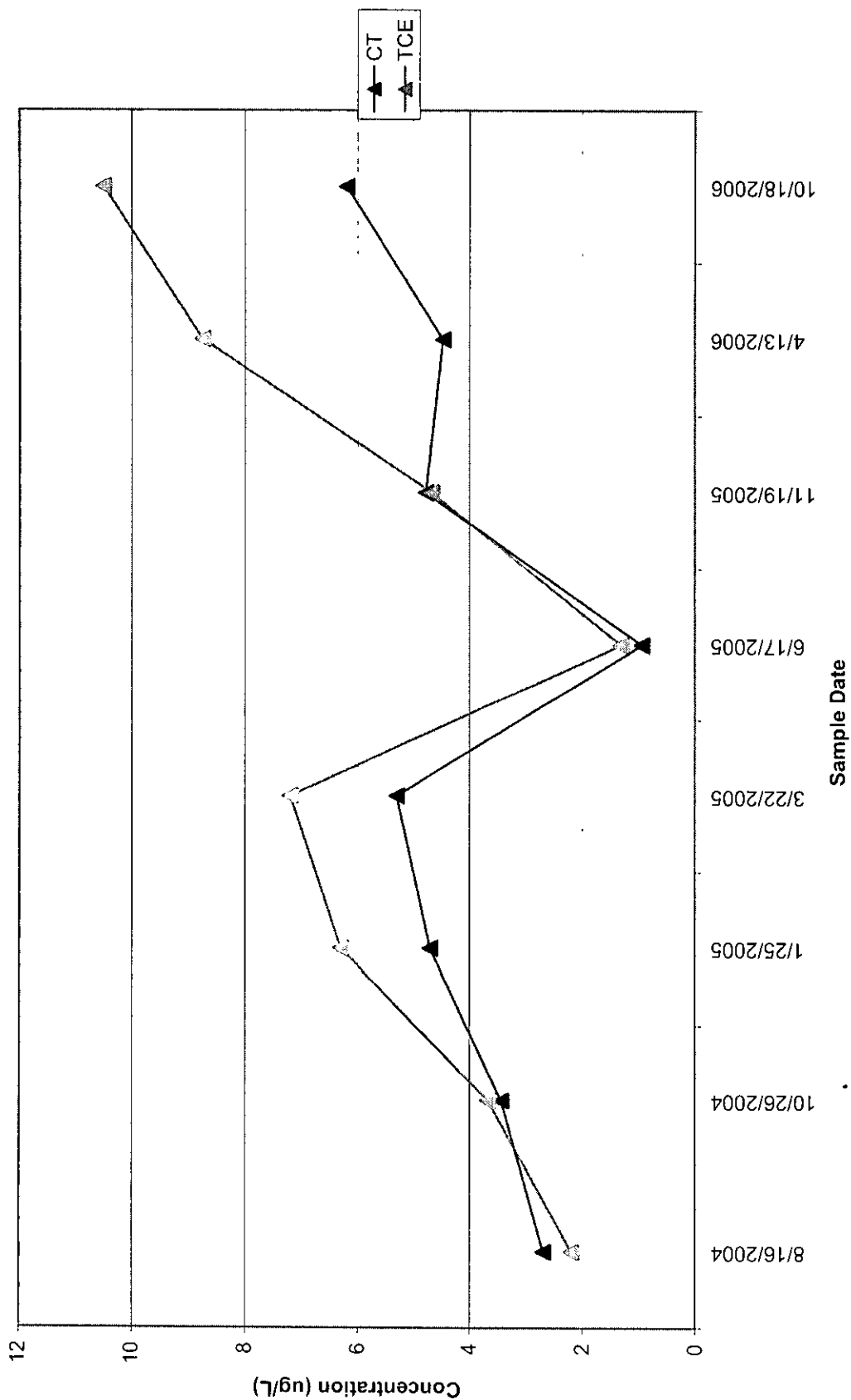
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Dunn Field Groundwater IRA - Year Eight
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MW-149



Time Trend Plots
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Defense Depot Memphis, Tennessee
MW-150

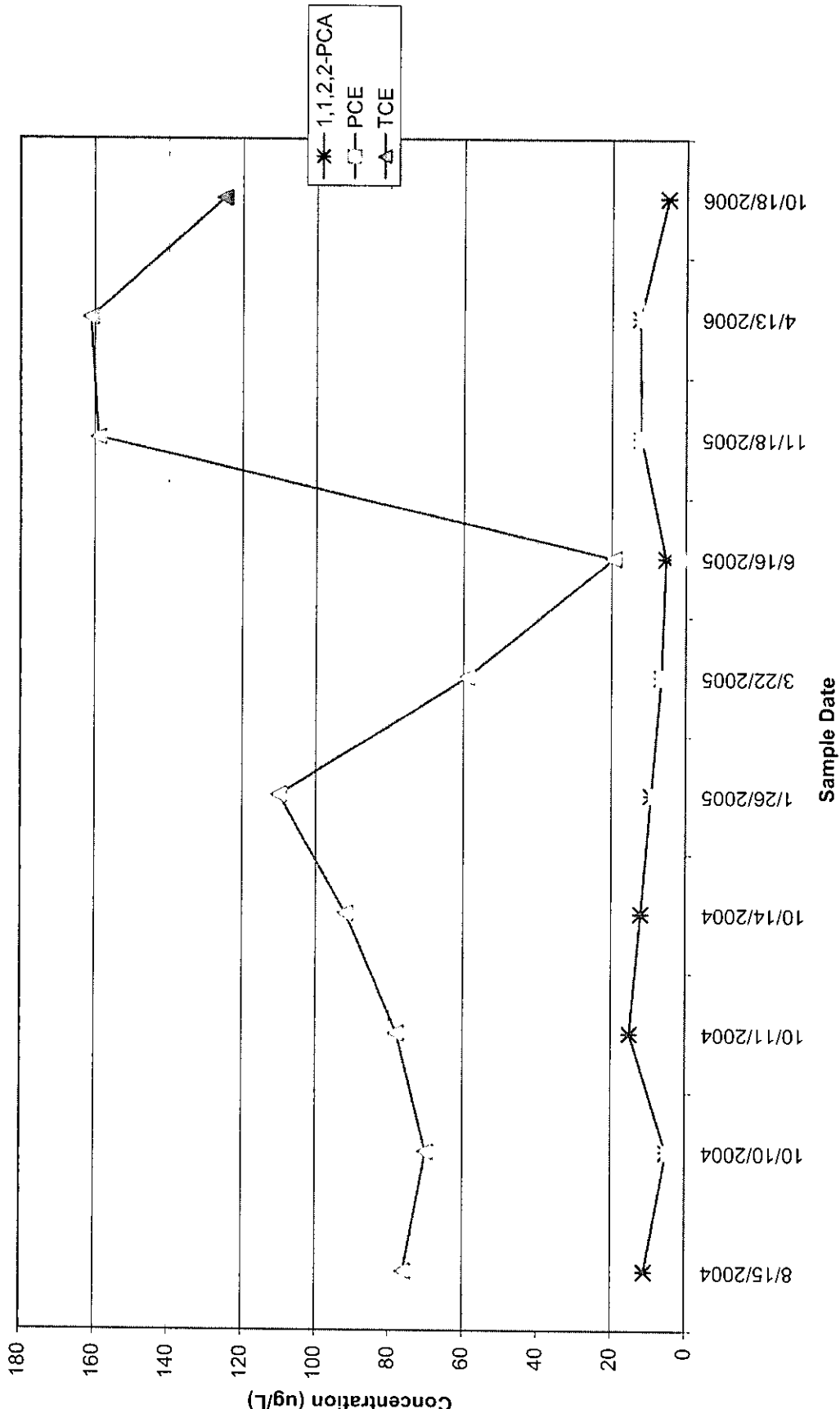


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Defense Depot Memphis, Tennessee
MW-151

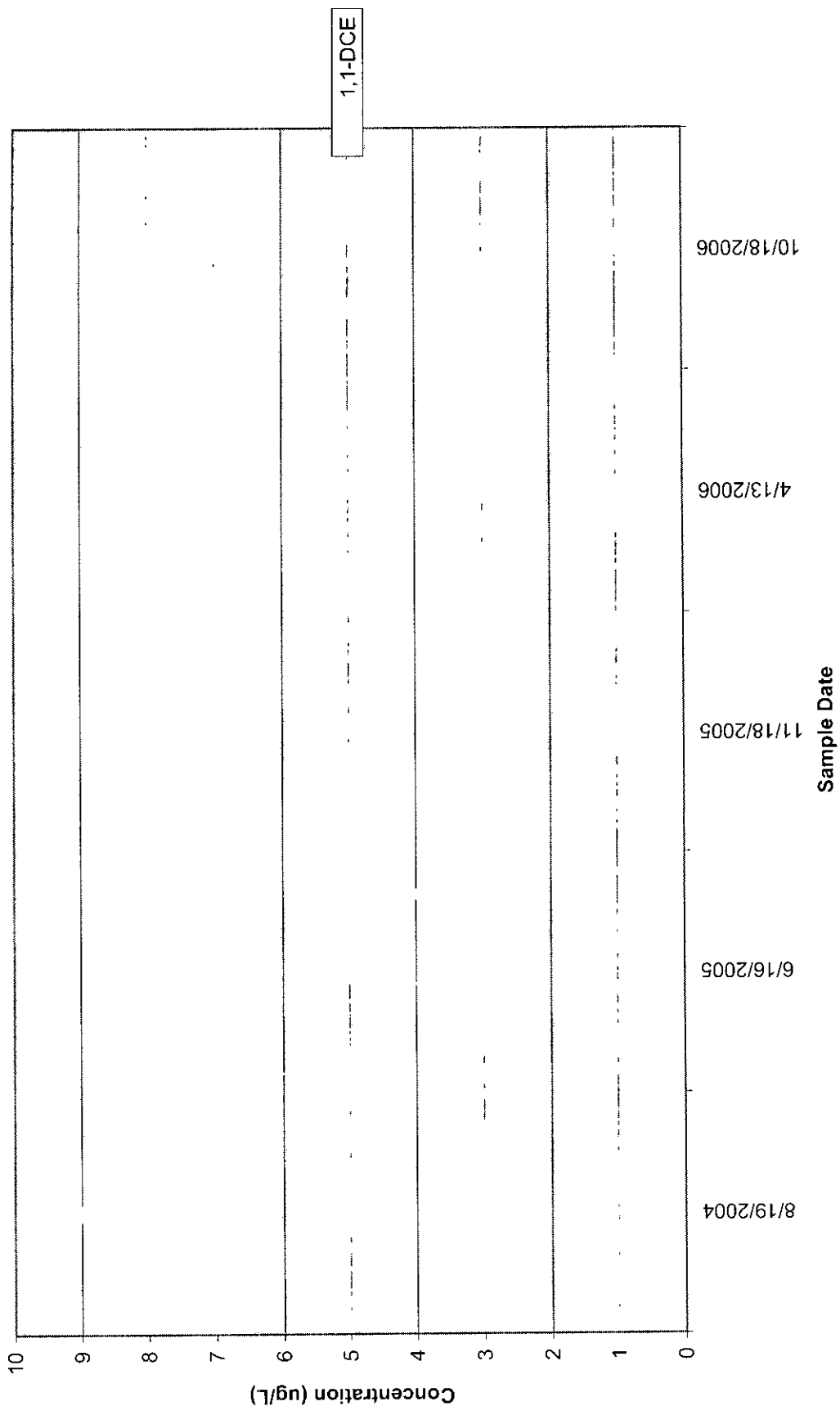


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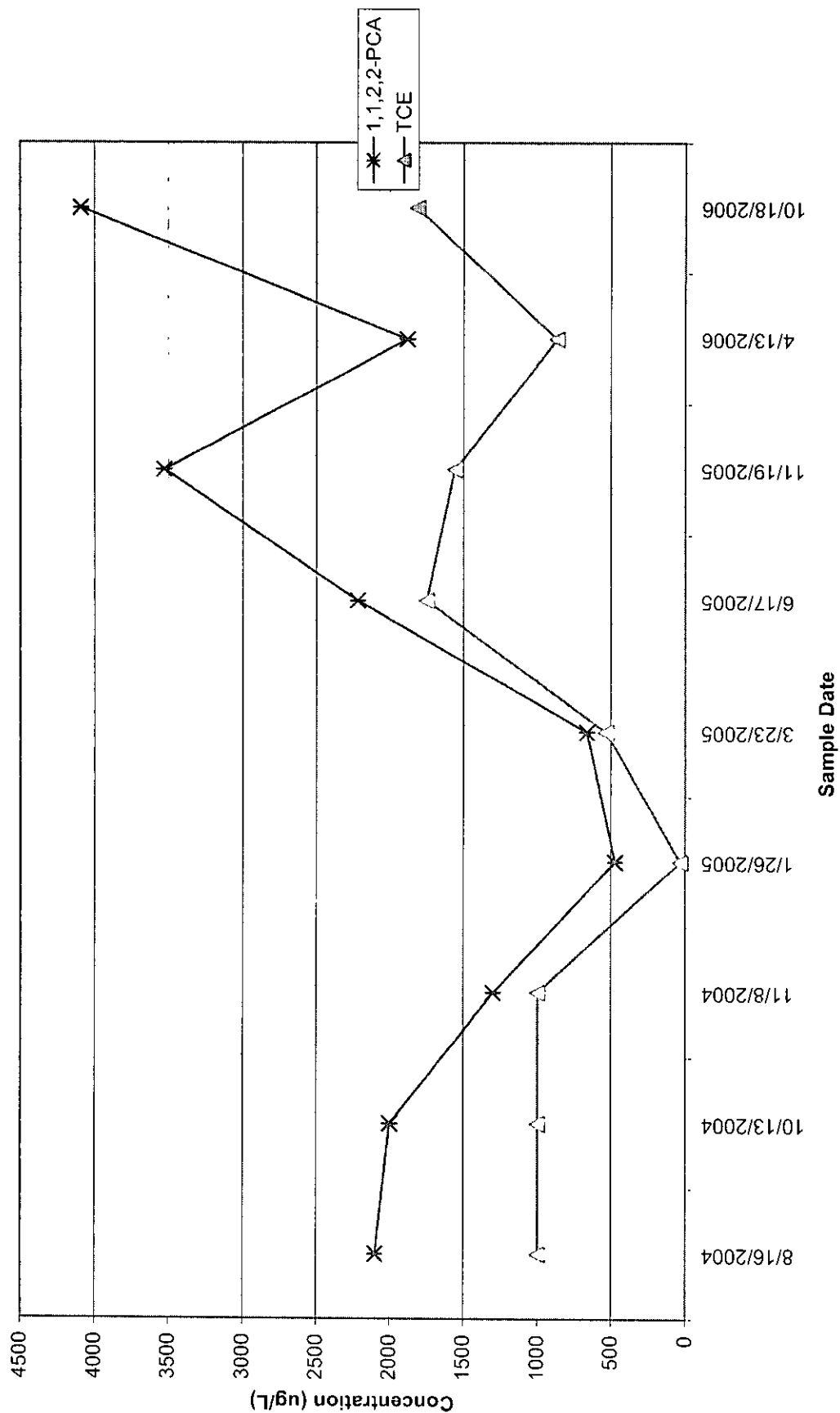
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Defense Depot Memphis, Tennessee
MW-152



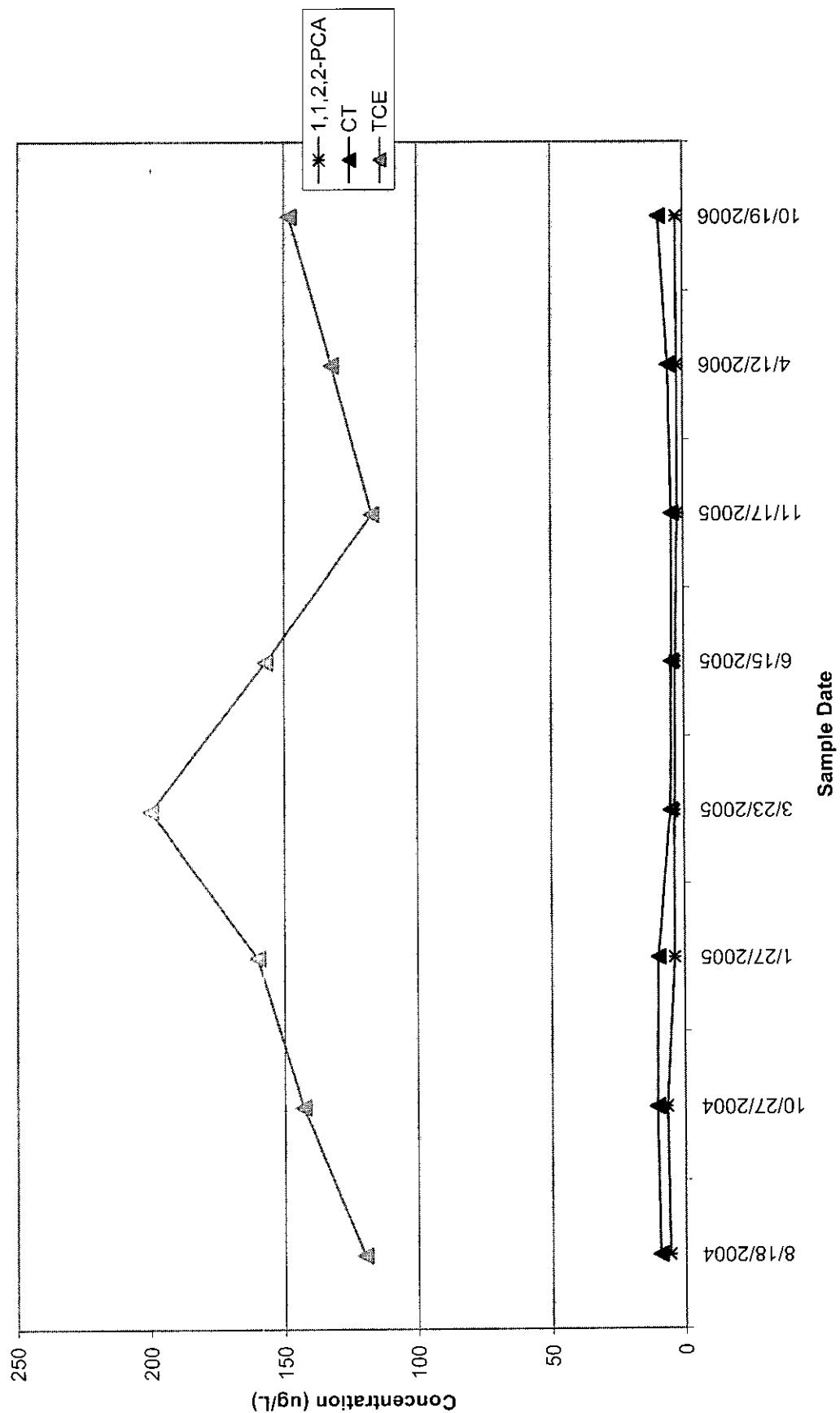
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 Defense Depot Memphis, Tennessee
MW-153



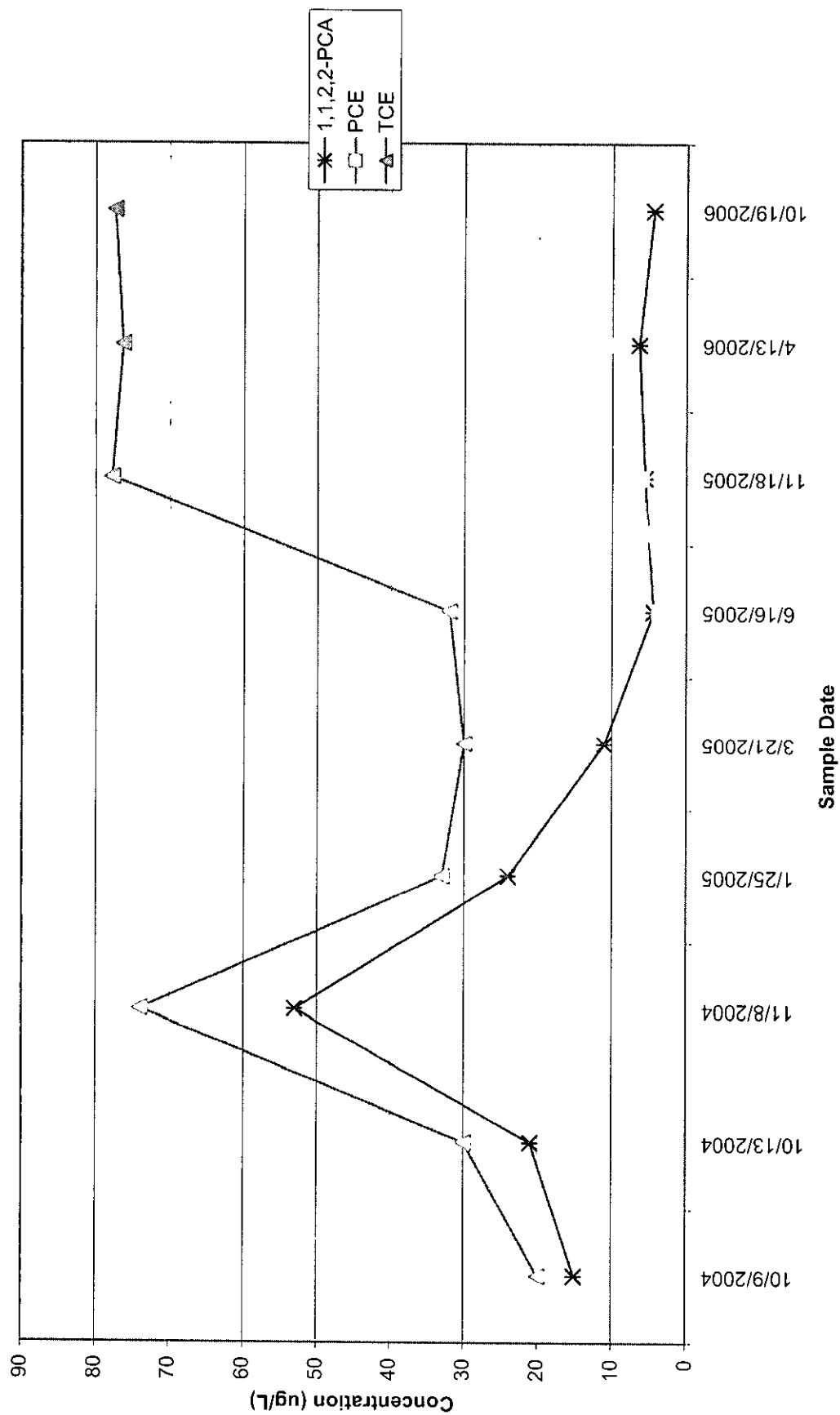
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Defense Depot Memphis, Tennessee
MW-155



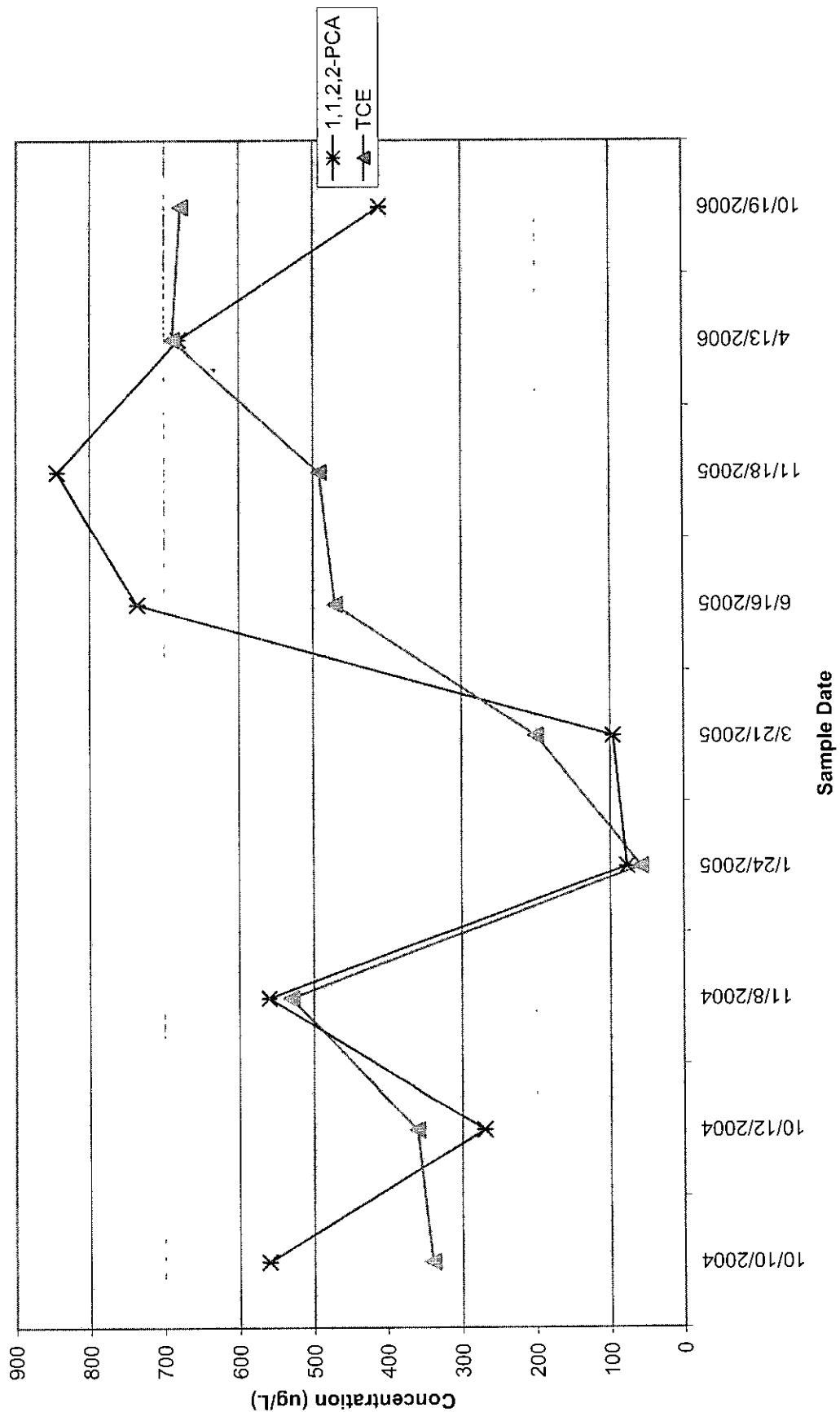
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Defense Depot Memphis, Tennessee
MW-157



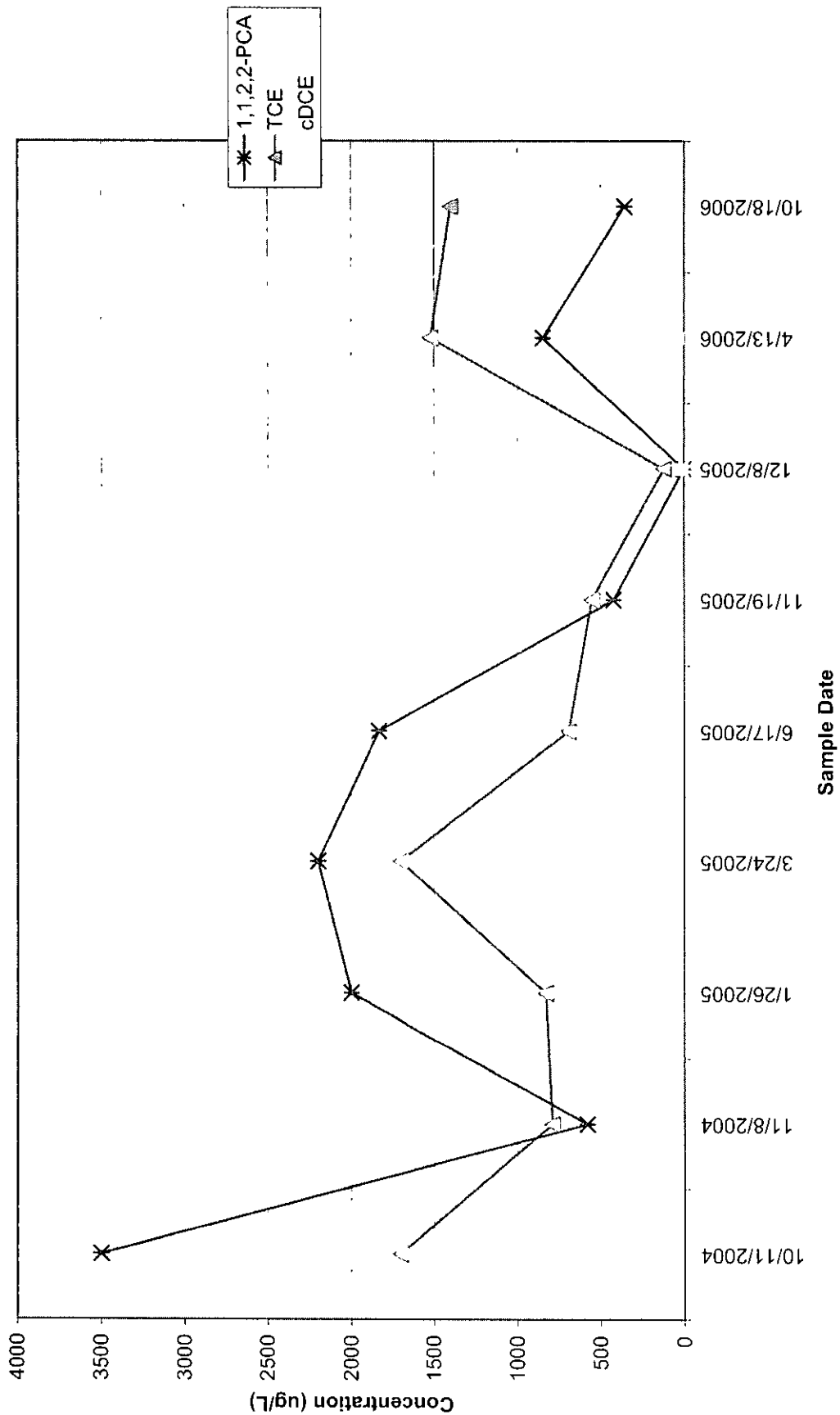
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Defense Depot Memphis, Tennessee
MW-158



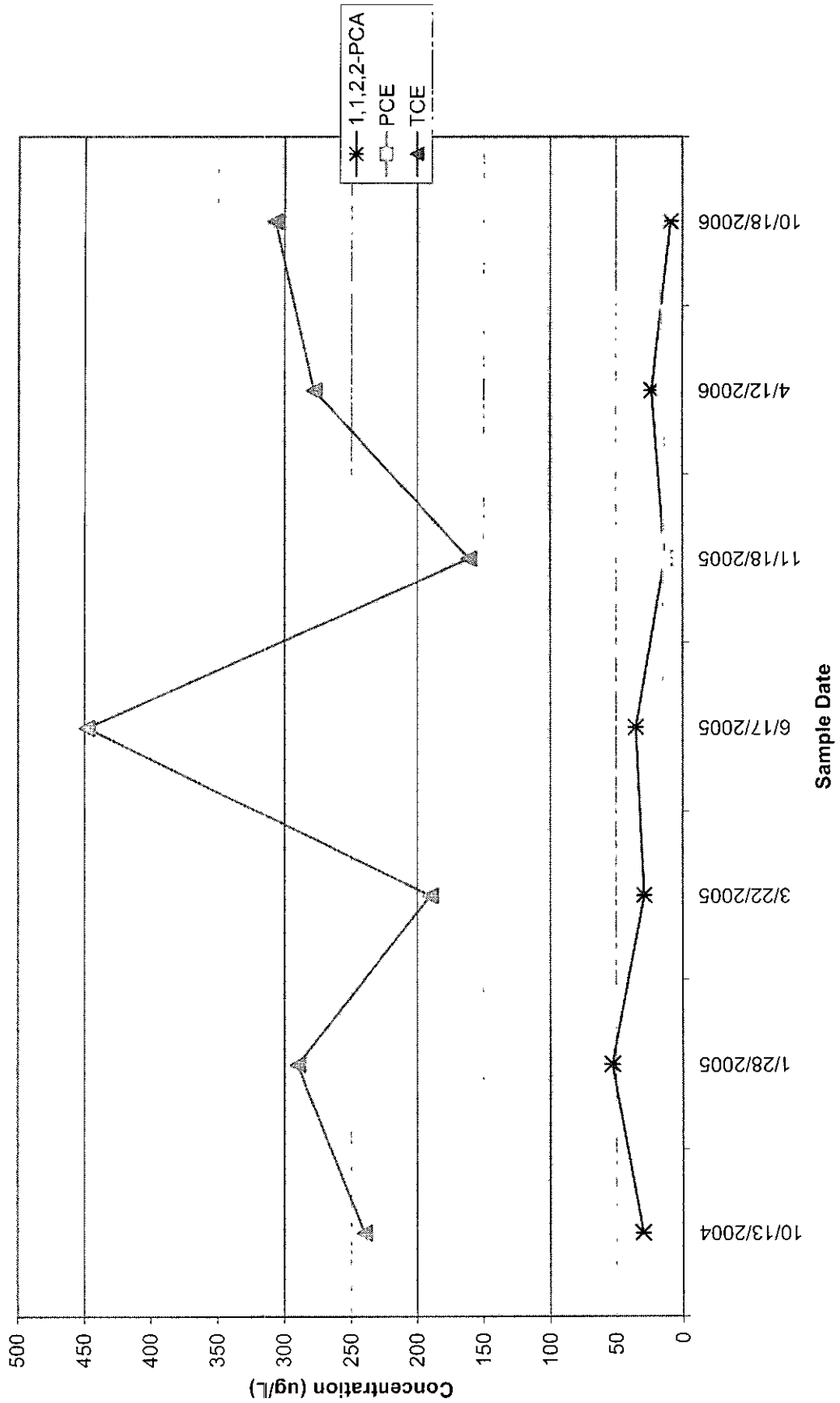
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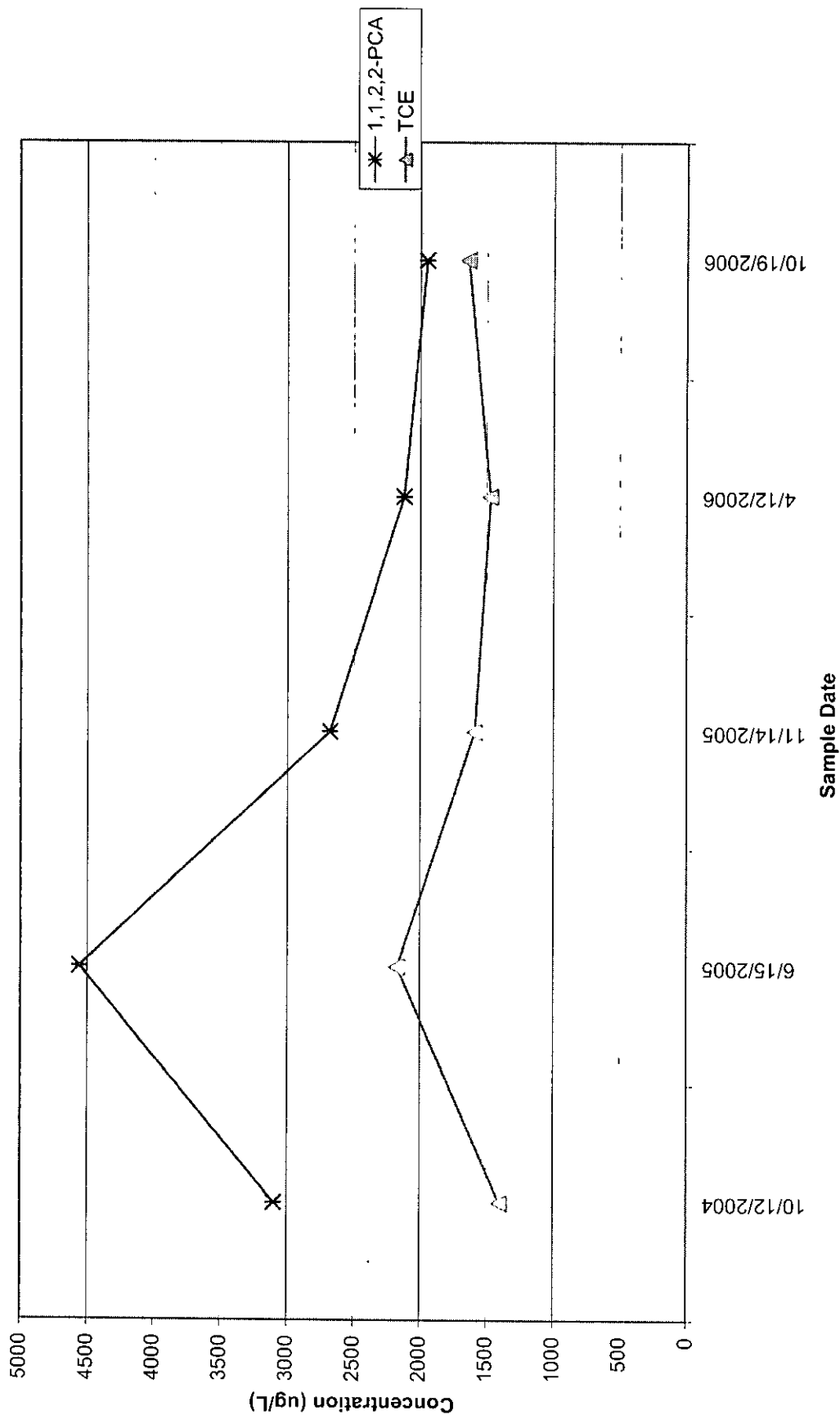
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 Defense Depot Memphis, Tennessee
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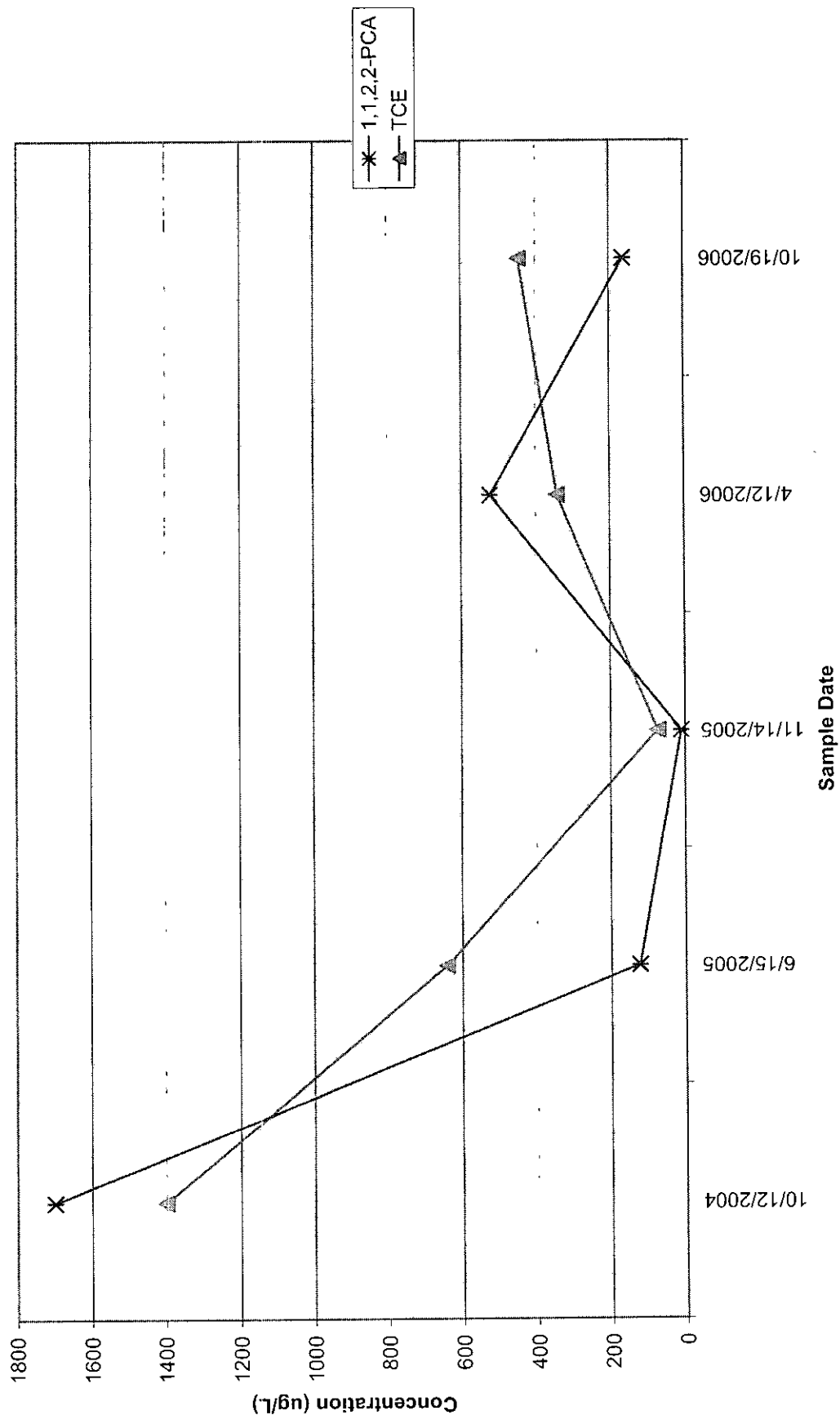
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 Defense Depot Memphis, Tennessee
MW-160



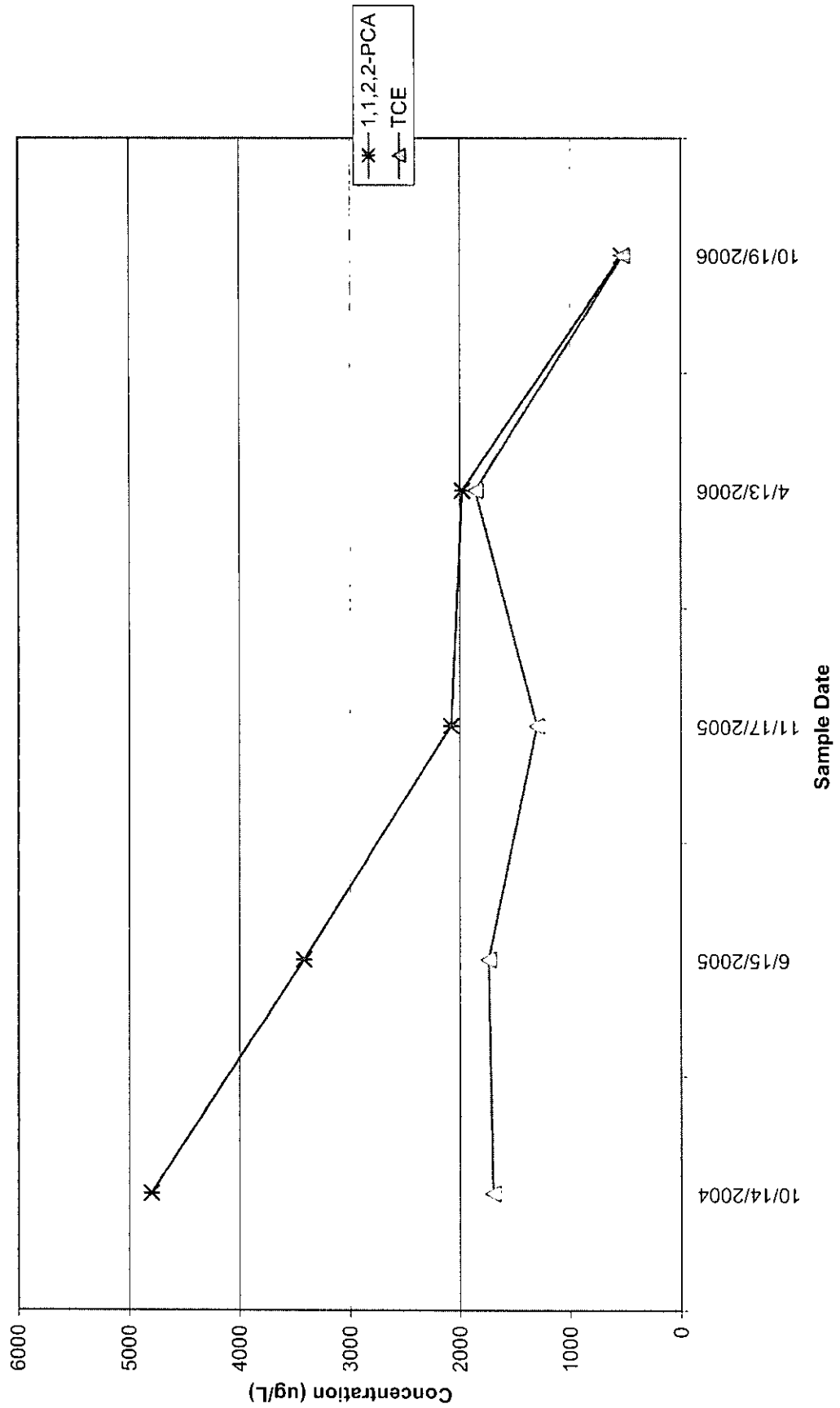
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee
MW-161



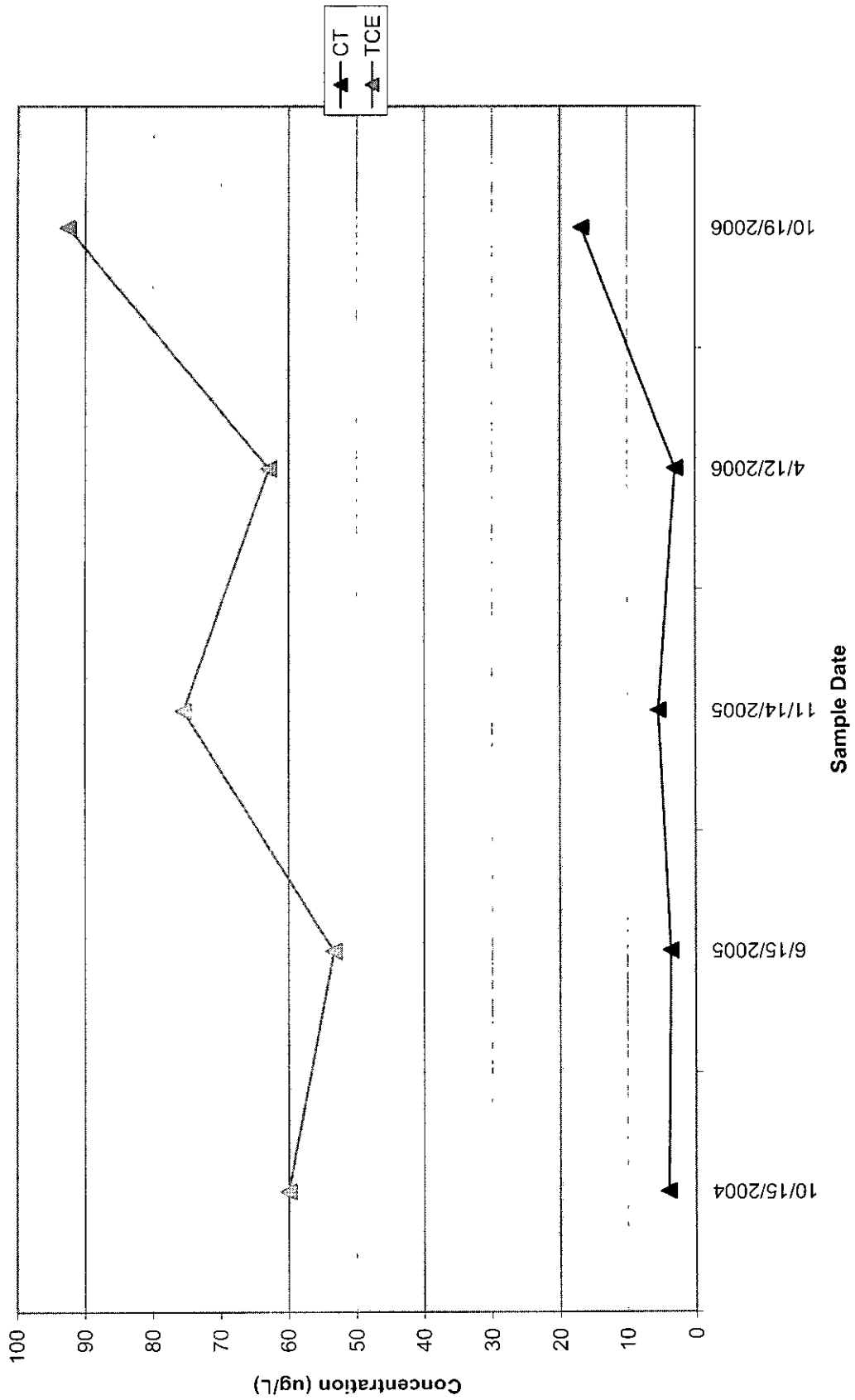
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Defense Depot Memphis, Tennessee
MW-162



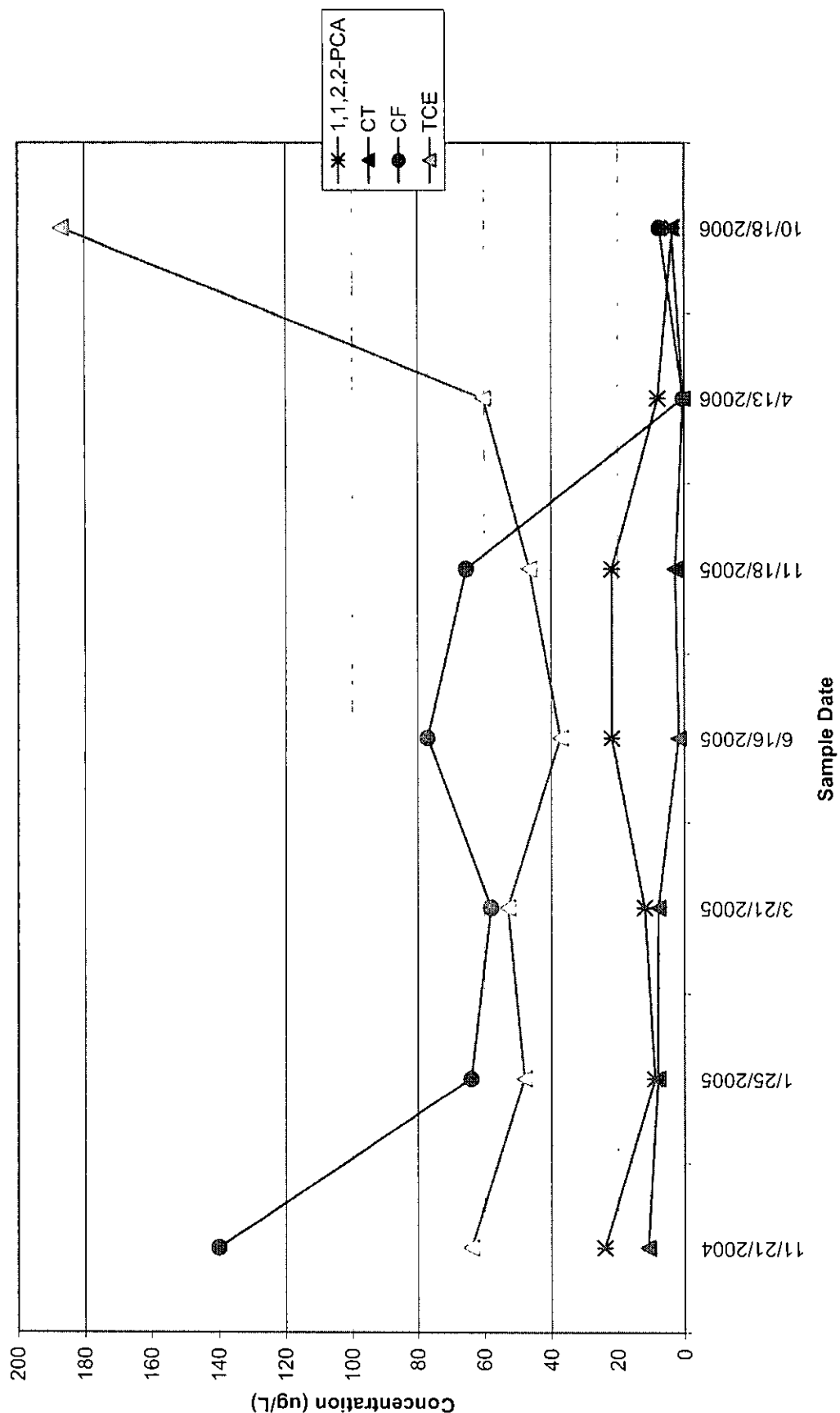
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MW-163



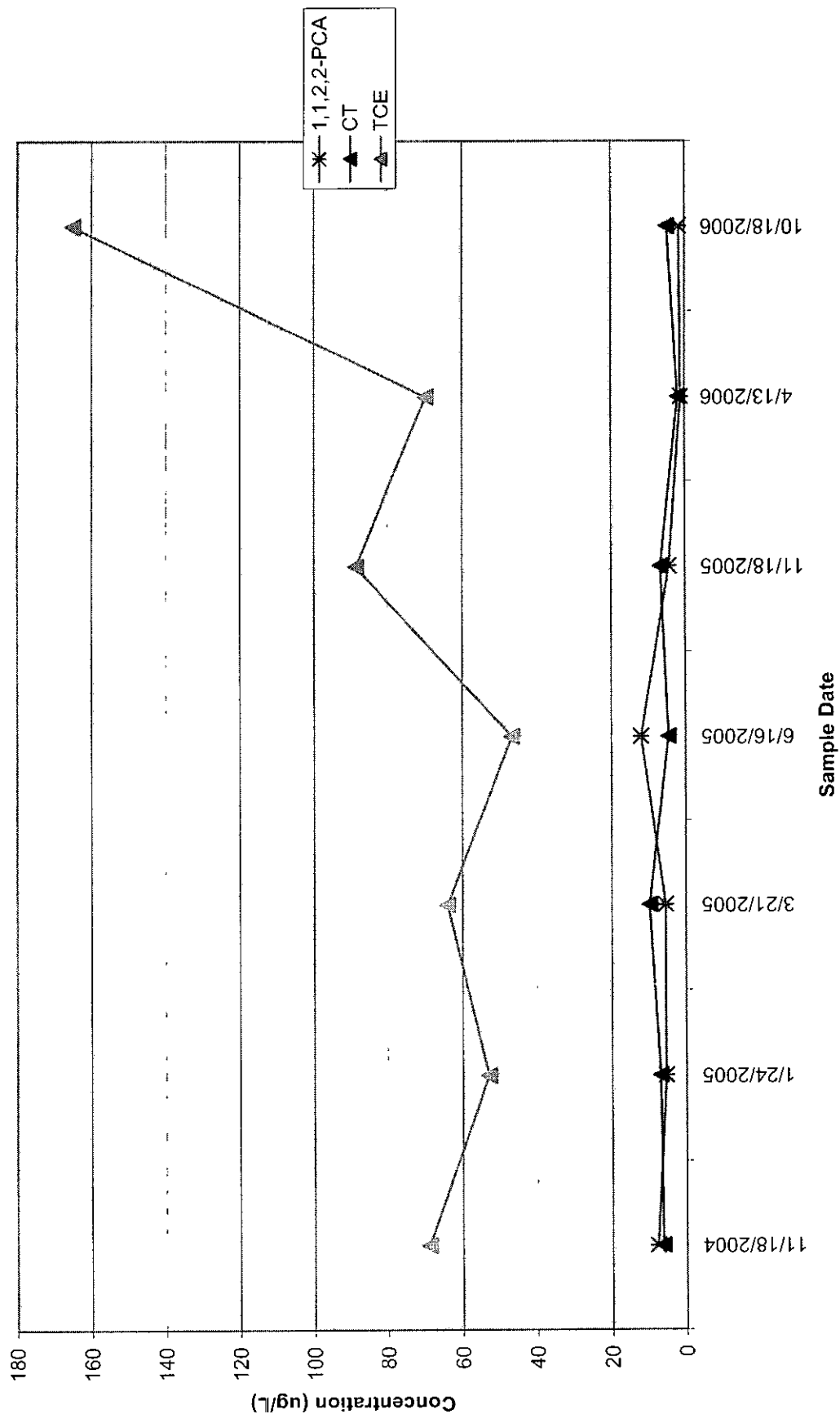
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Defense Depot Memphis, Tennessee
MW-164



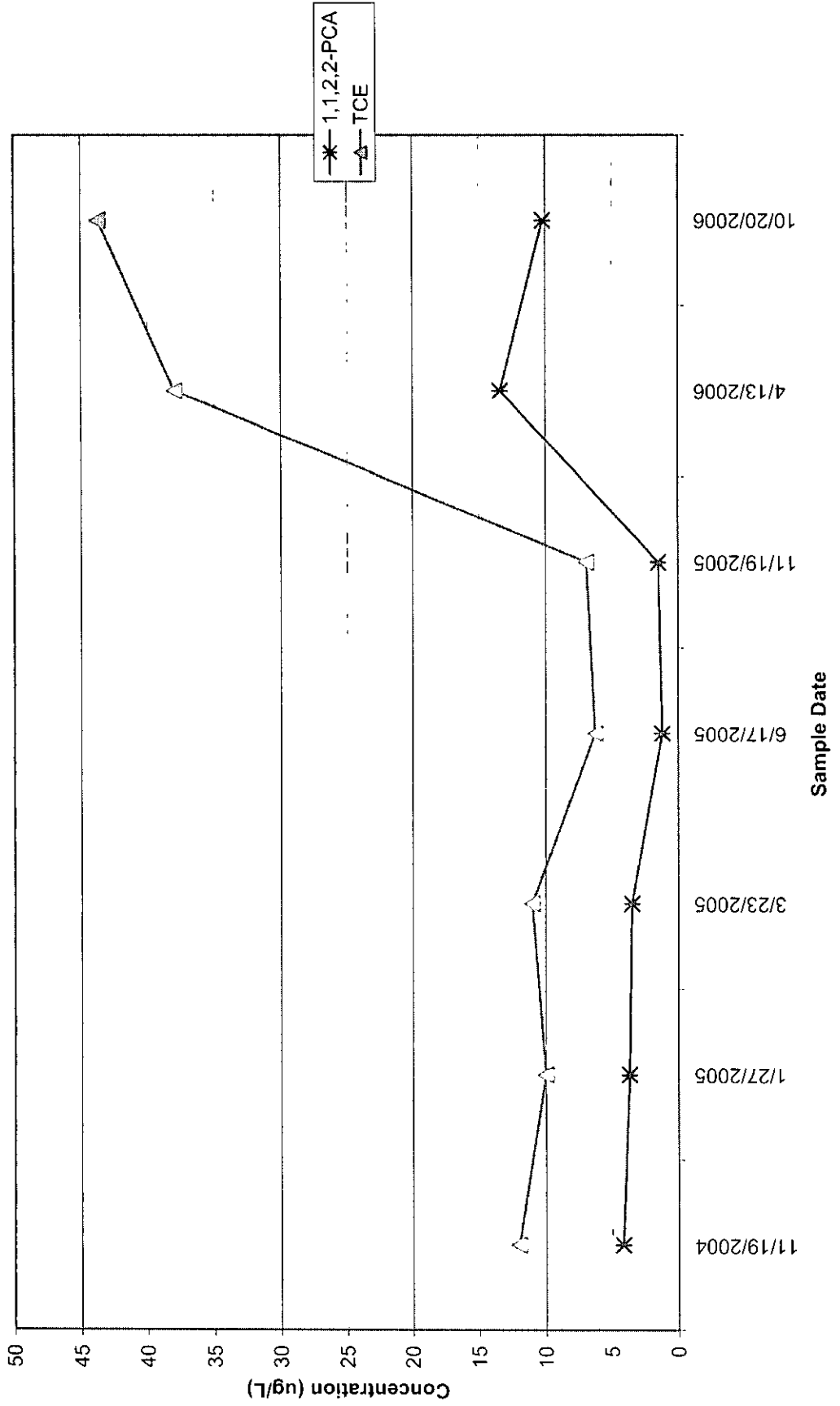
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Defense Depot Memphis, Tennessee
MW-165



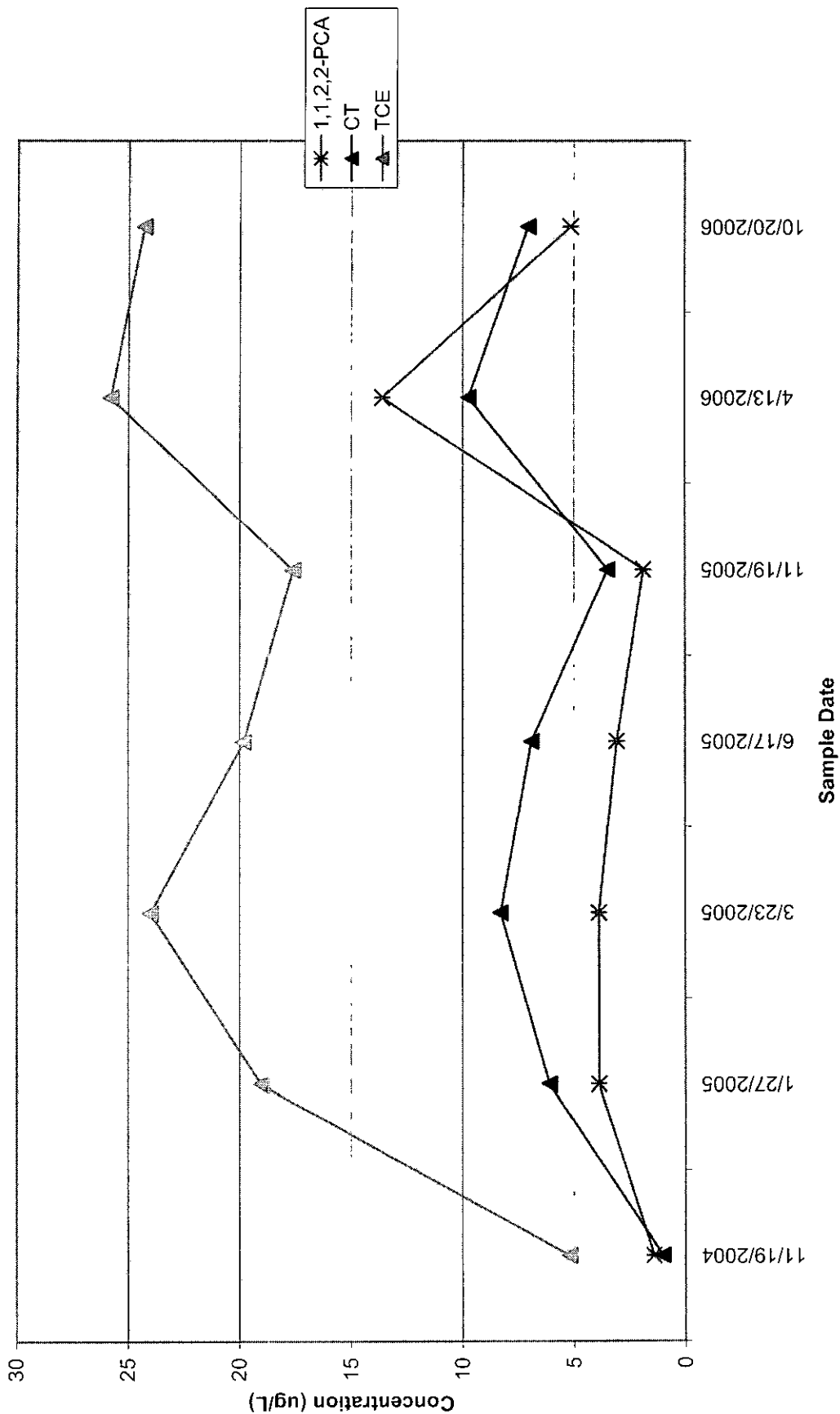
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 Defense Depot Memphis, Tennessee
MW-165A



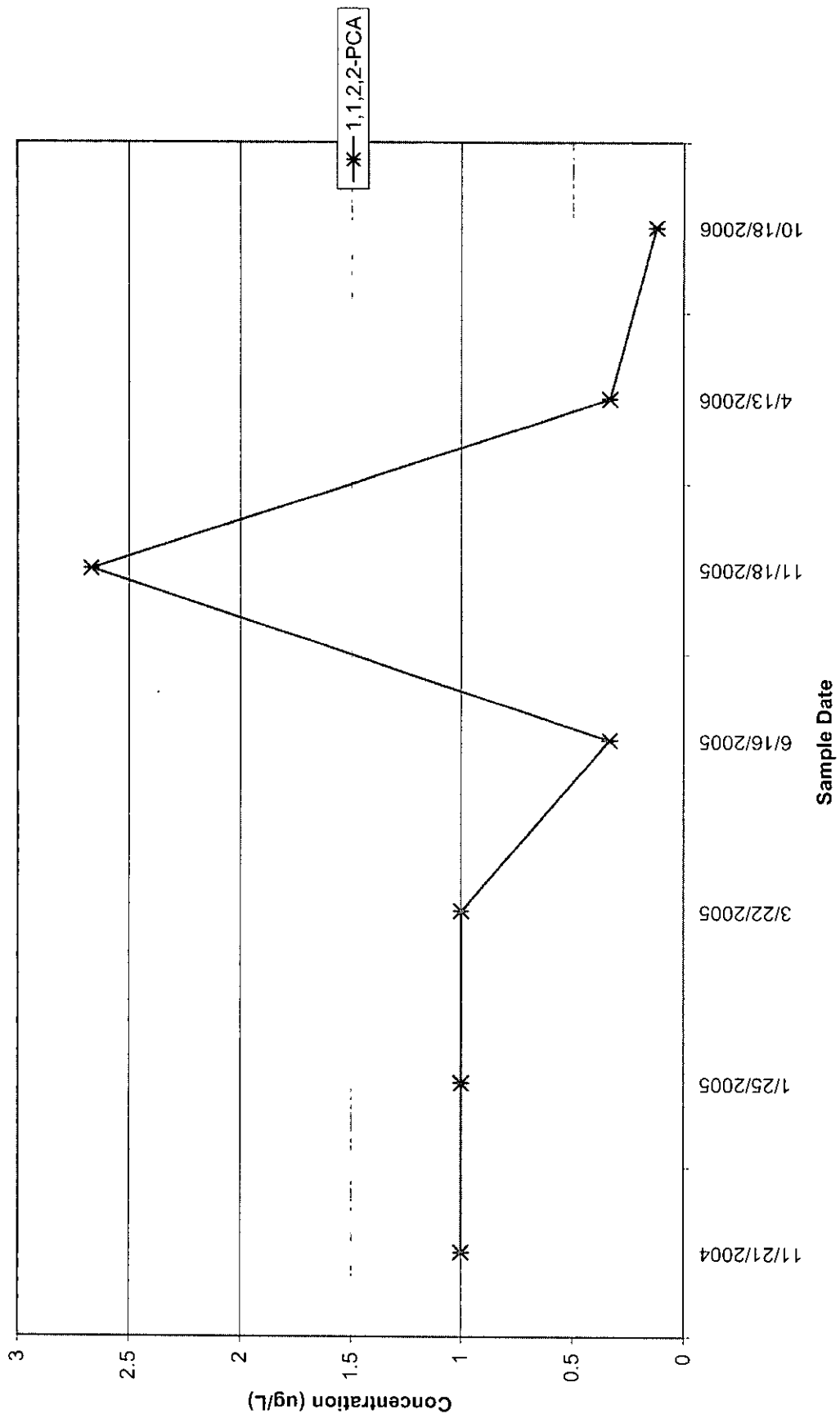
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Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee
MW-166



Time Trend Plots
Annual Operations Report - 2006
Dunn Field Groundwater IRA - Year Eight
Defense Depot Memphis, Tennessee
MW-166A

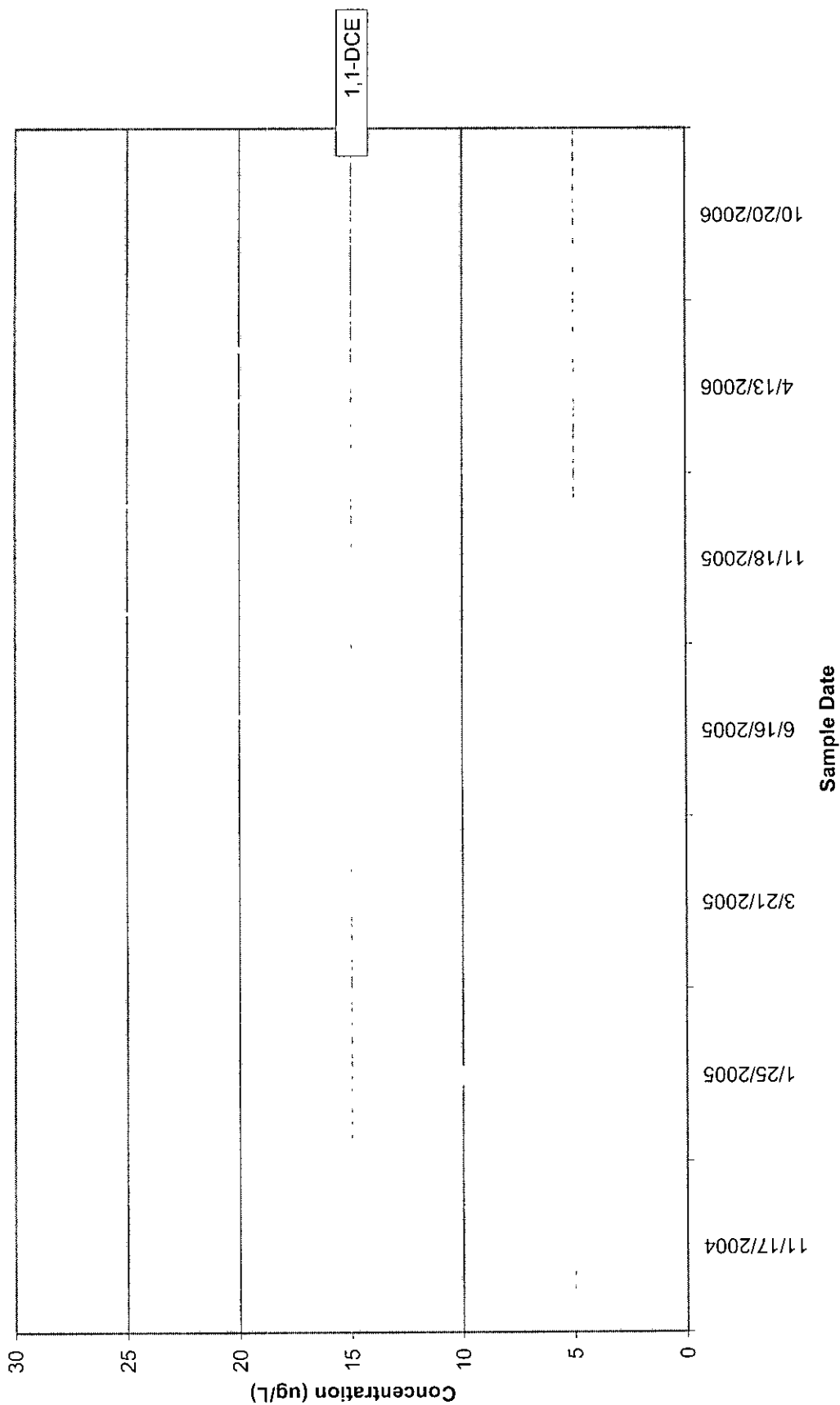


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 Defense Depot Memphis, Tennessee
MW-167

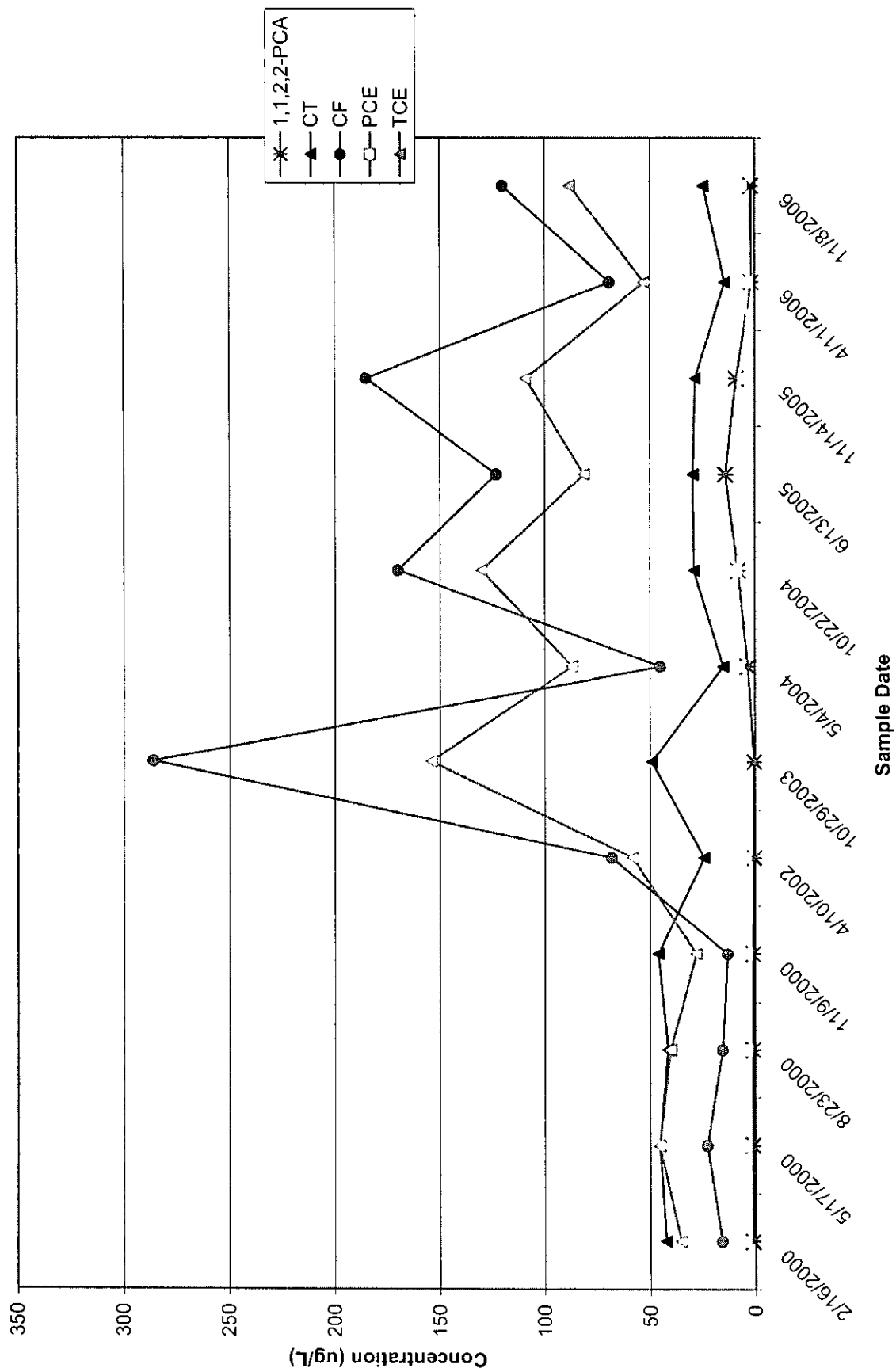


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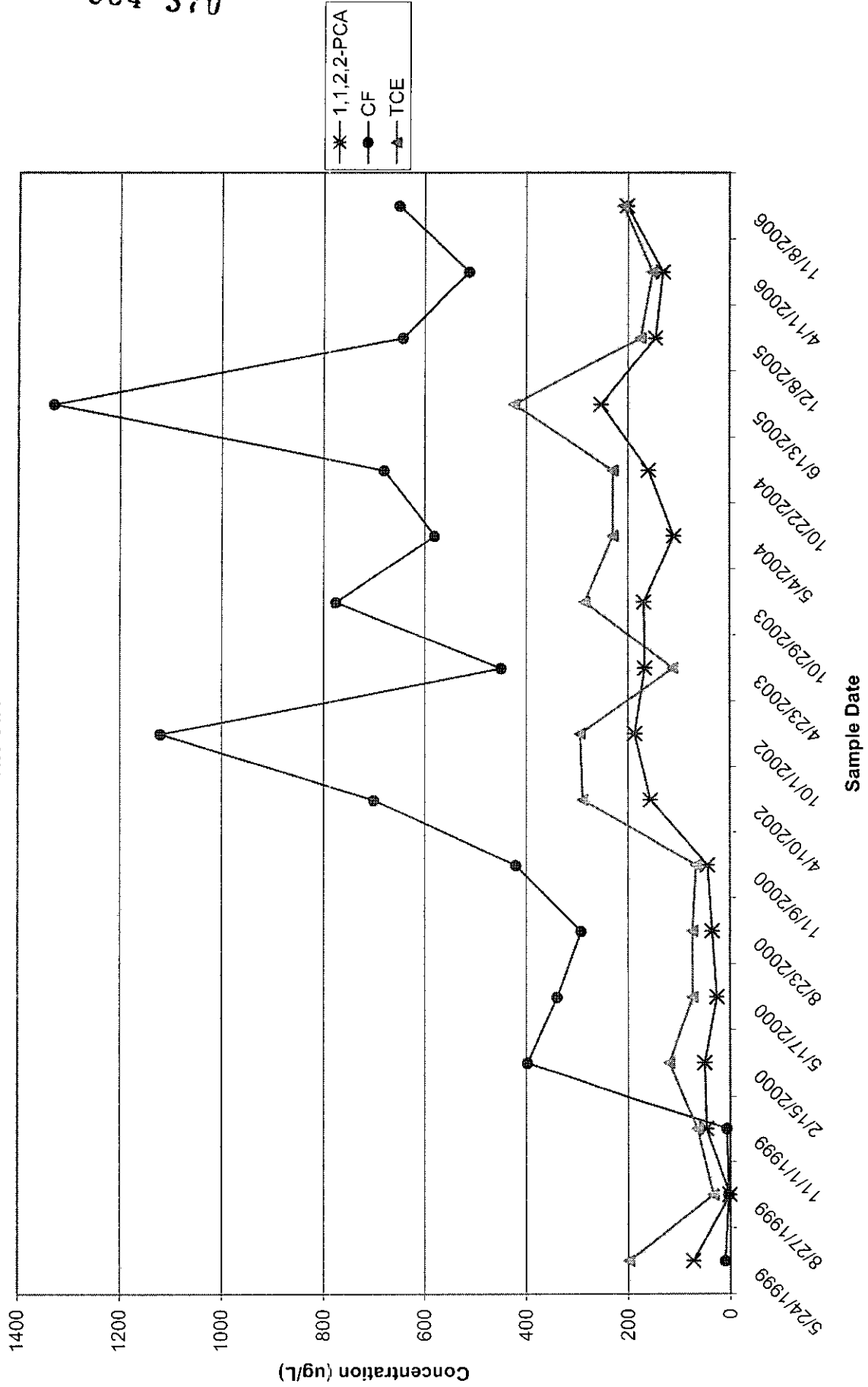
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Defense Depot Memphis, Tennessee
MW-168A



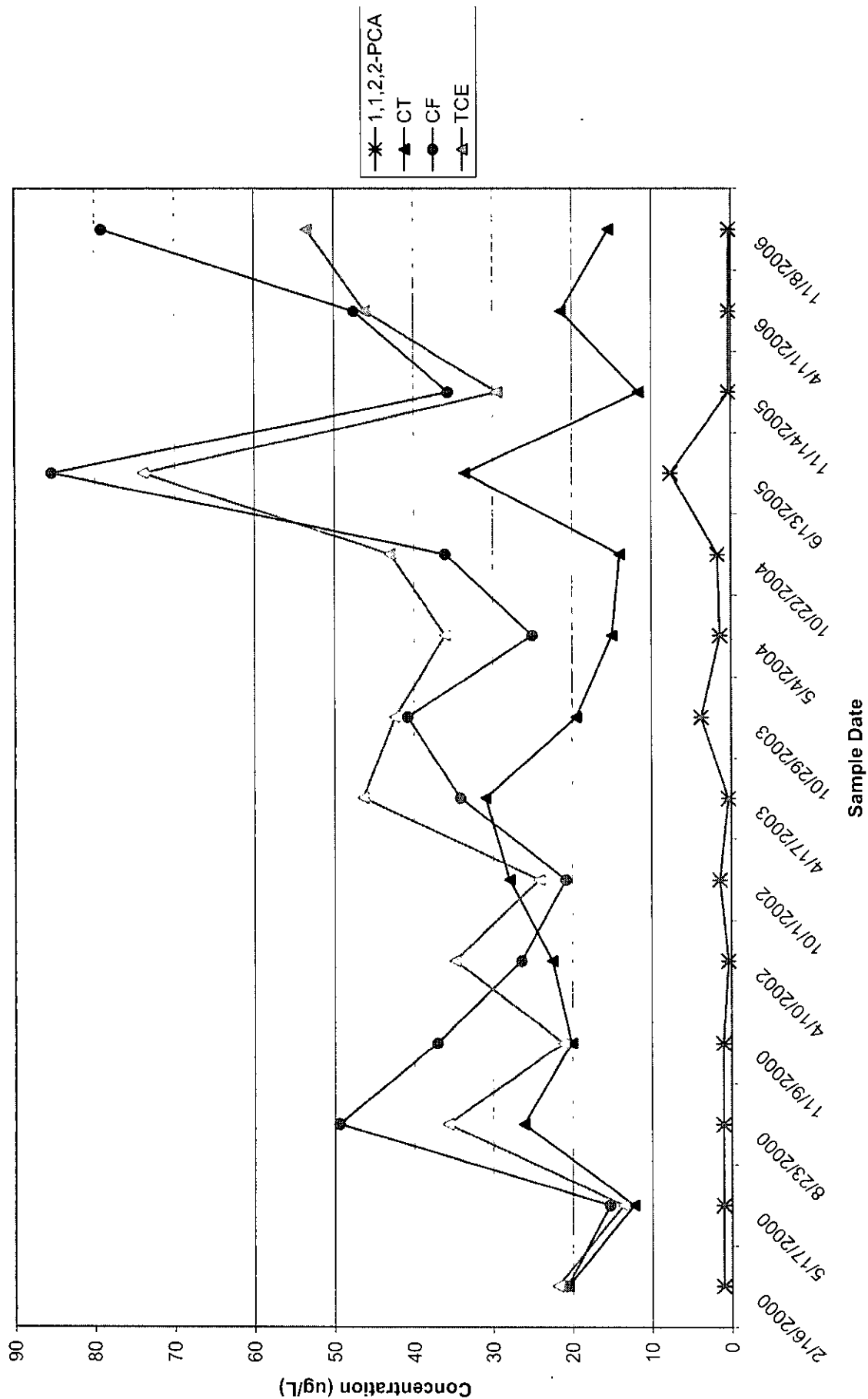
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Defense Depot Memphis, Tennessee
RW-01



Time Trend Plots
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RW-01A

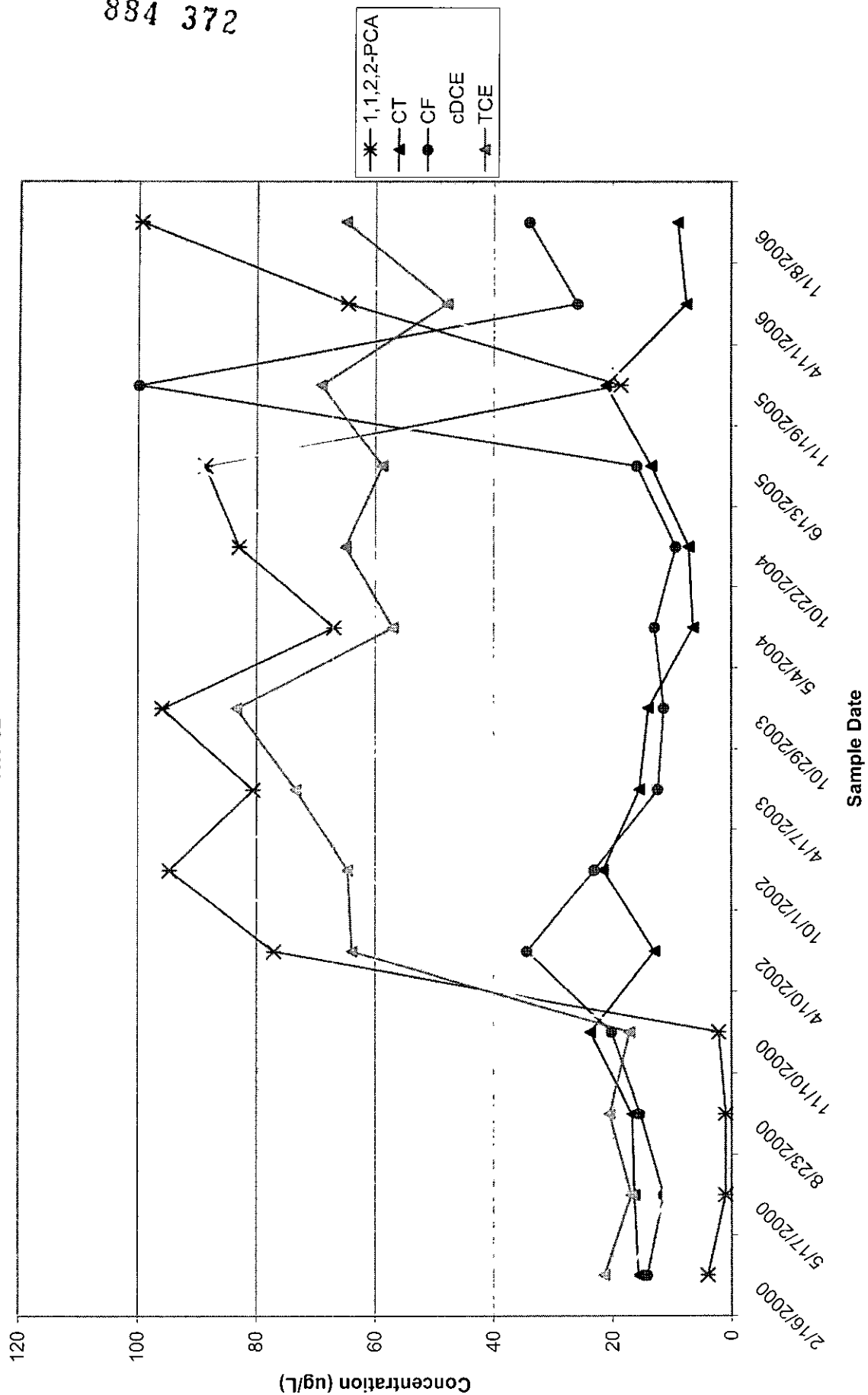


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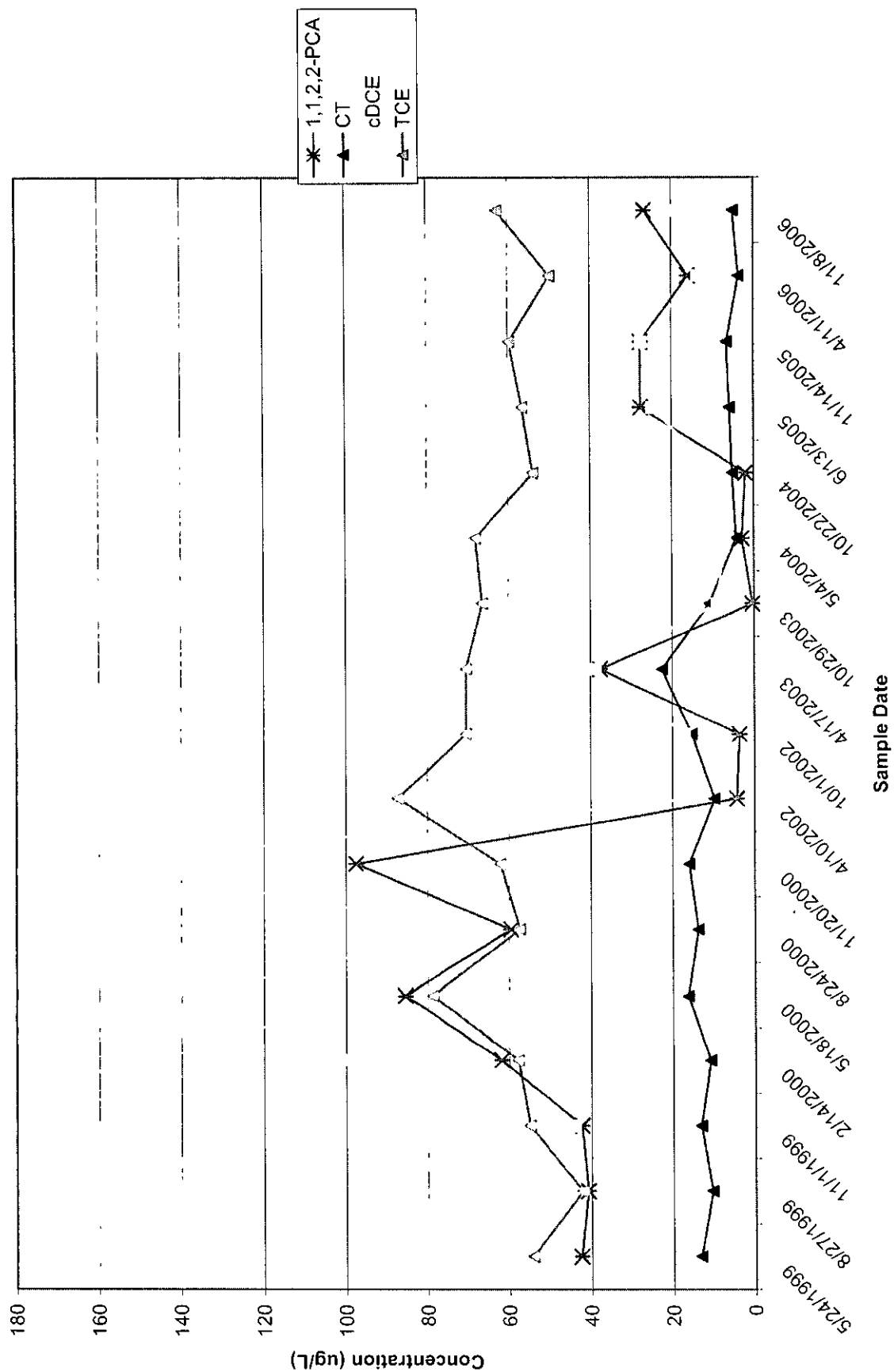


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Time Trend Plots
Annual Operations Report - 2006
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Defense Depot Memphis, Tennessee
RW-02

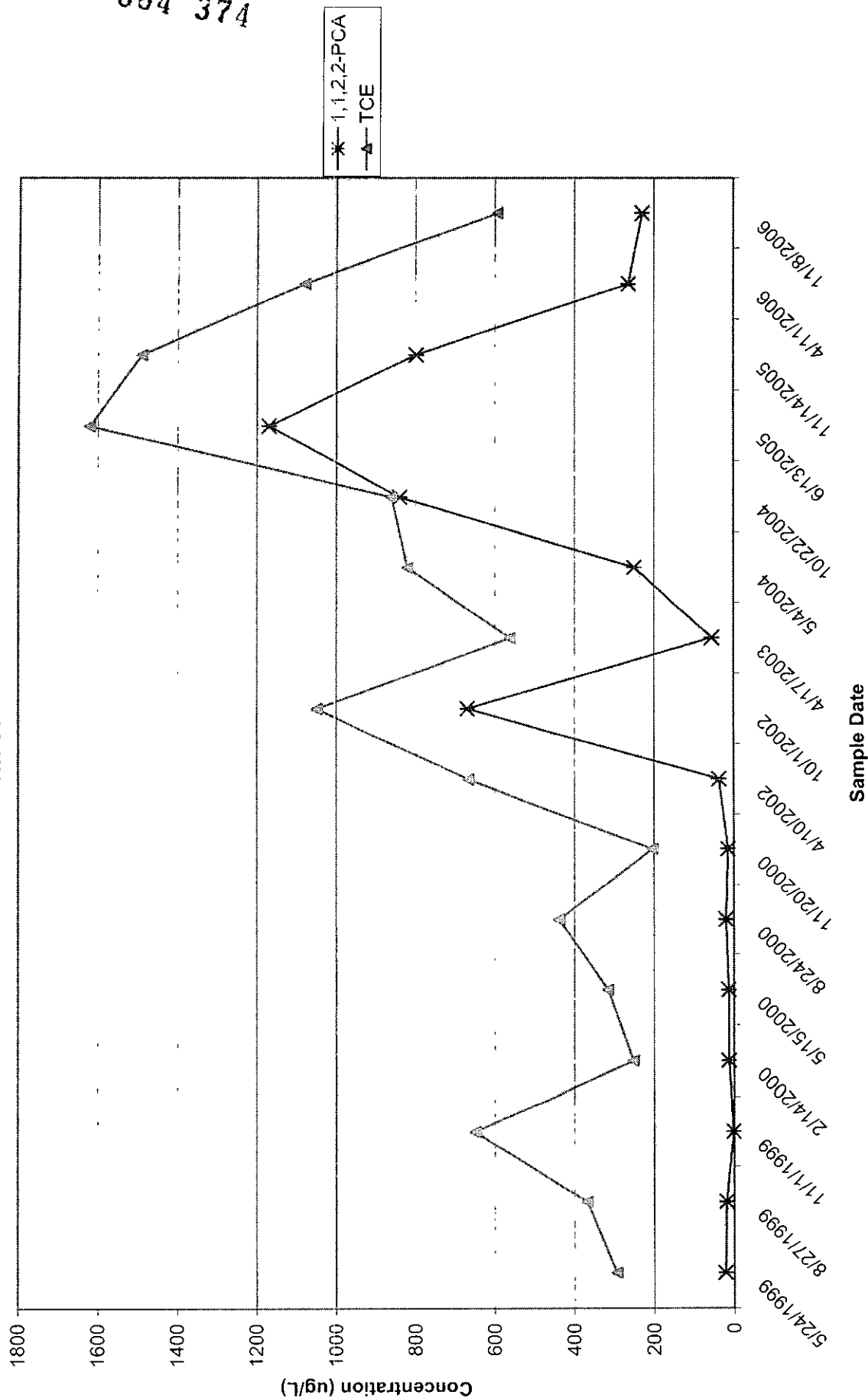


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Defense Depot Memphis, Tennessee
RW-03

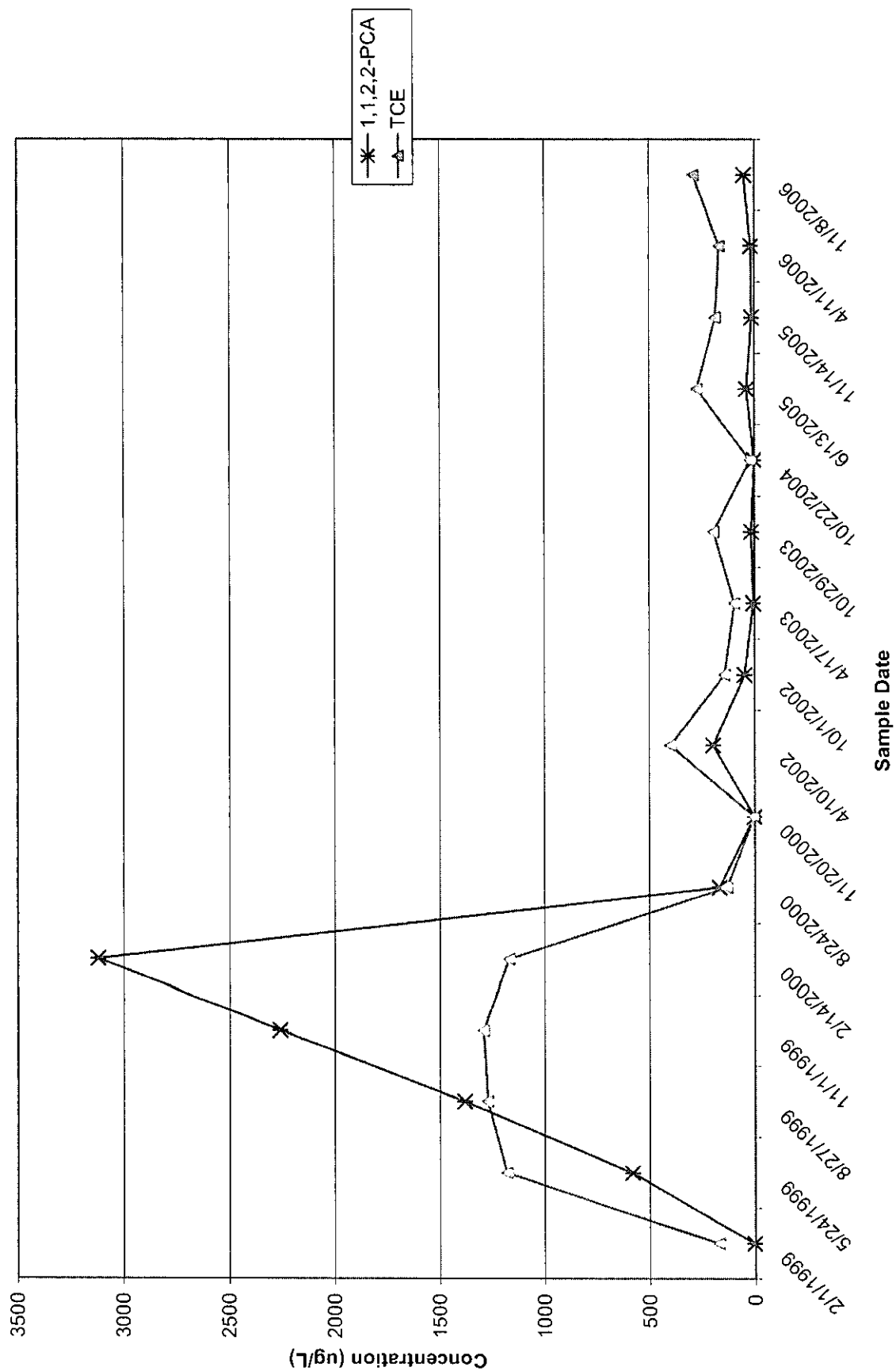


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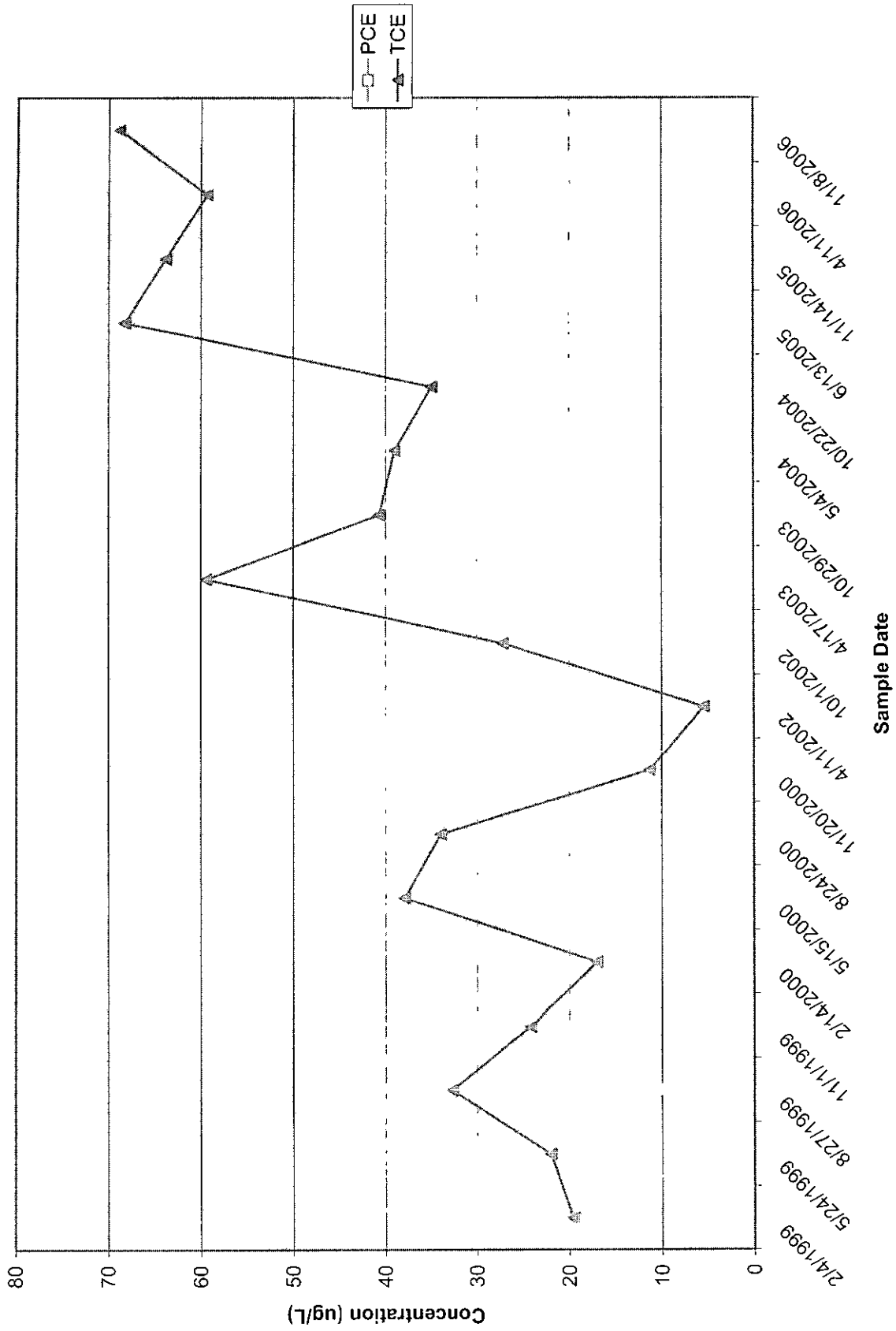
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RW-04



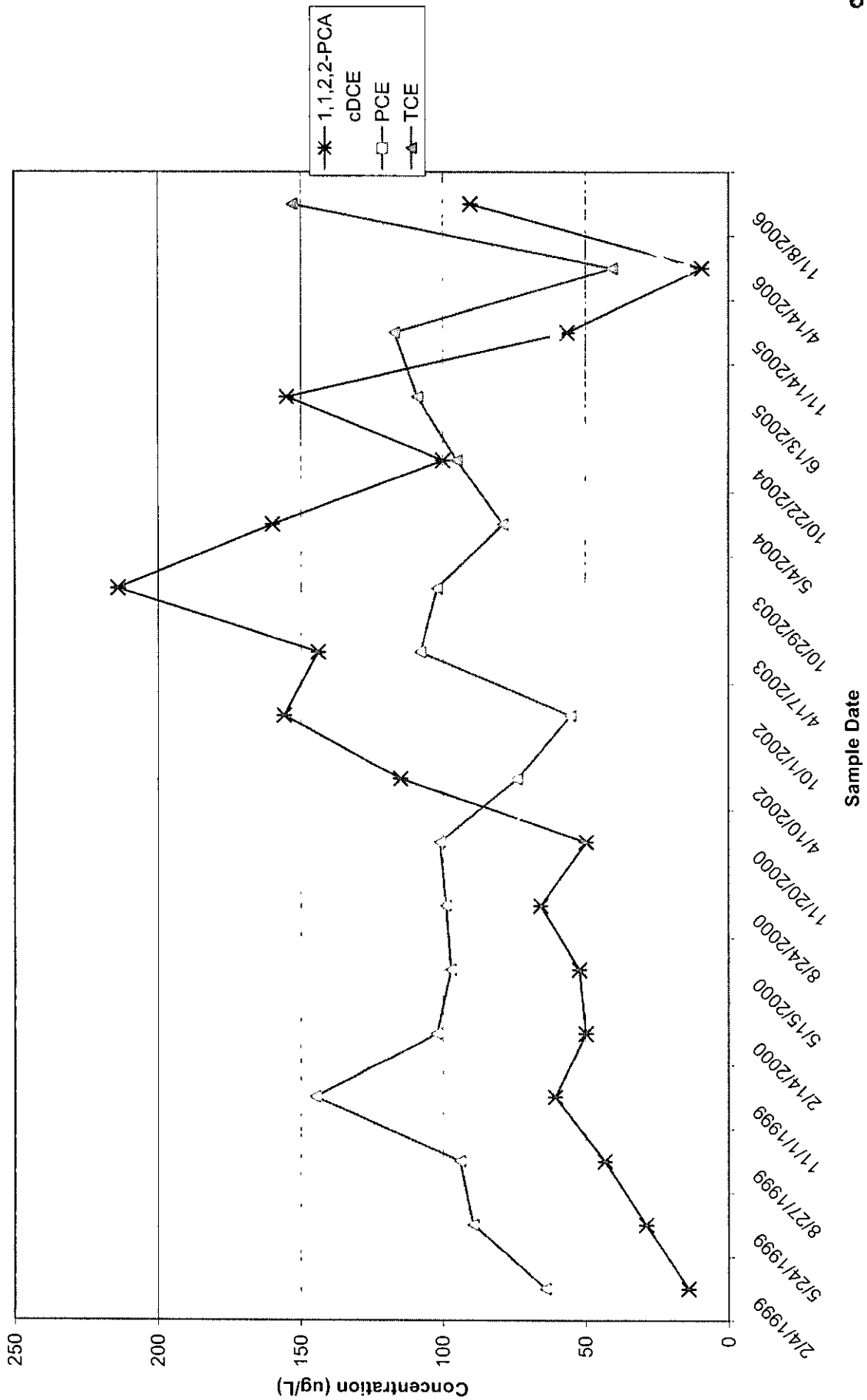
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RW-05



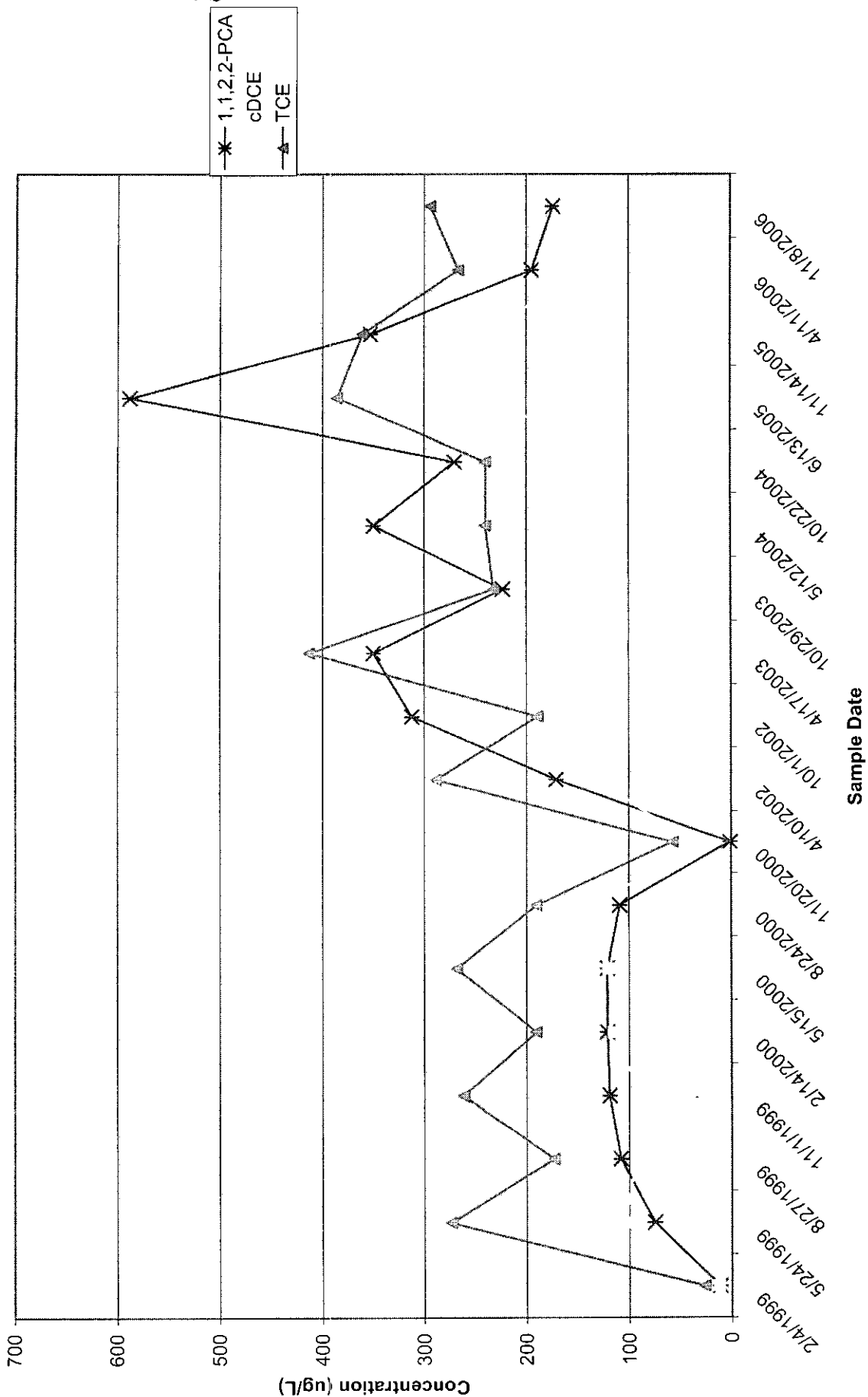
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RW-06



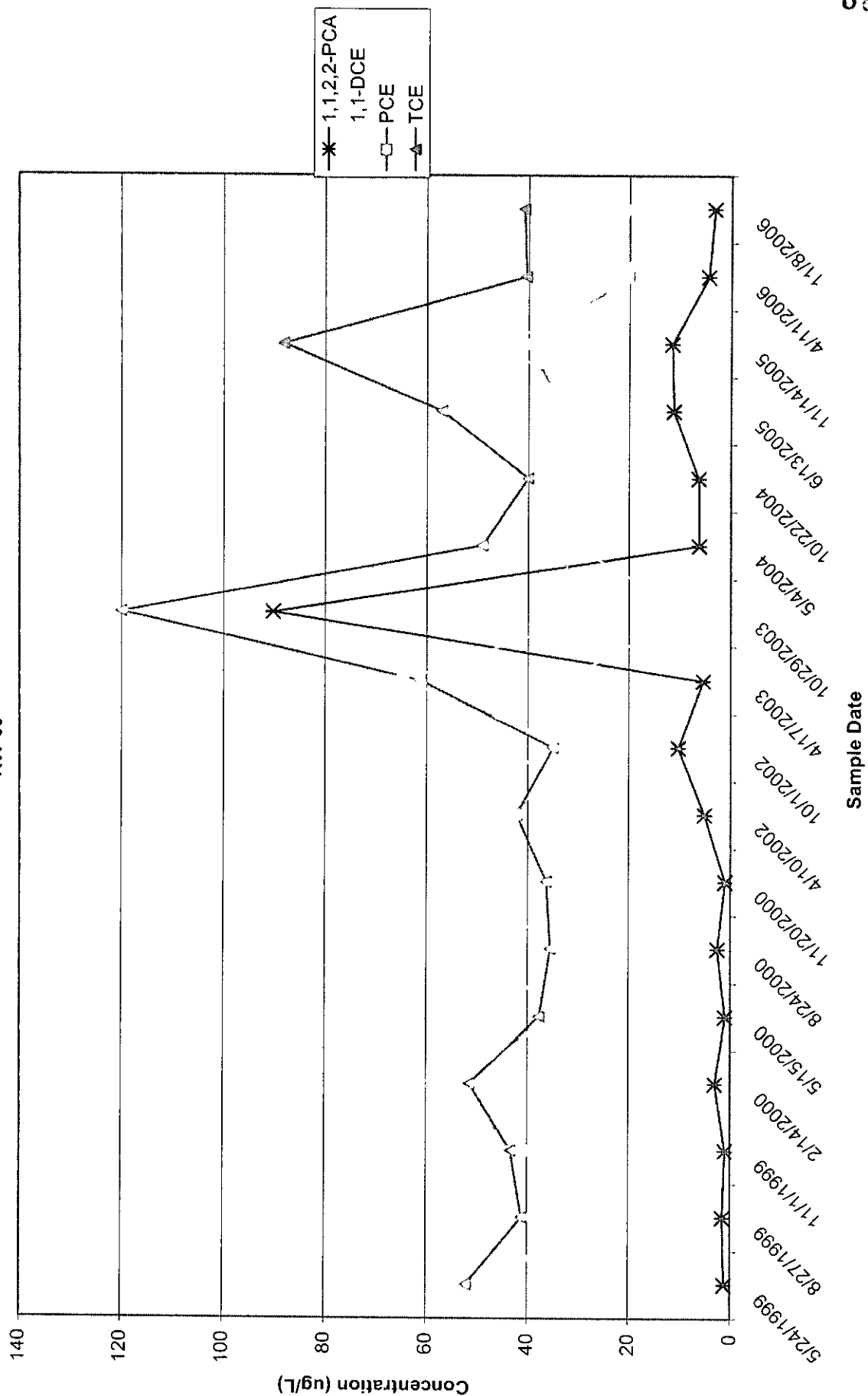
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Dunn Field Groundwater IRA - Year Eight
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RW-07



Time Trend Plots
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Dunn Field Groundwater IRA - Year Eight
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RW-08



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RW-09



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