ANNUAL LONG-TERM MONITORING REPORT – 2010
MAIN INSTALLATION

Defense Depot Memphis, Tennessee

Department of the Army

Air Force Center for Engineering and the Environment
Contract No. FA8903-08-D-8771
Task Order No. 0069

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Prepared for:

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LIST OF ACRONYMS AND ABBREVIATIONS

AFCEE	Air Force Center for Engineering and the Environment
bgs	Below Ground Surface
btoc	below top of casing
cDCE	cis-1,2-Dichloroethene
CF	chloroform or confidence factor
COV	coefficient of variation
CT	carbon tetrachloride
CVOC	Chlorinated Volatile Organic Compound
DDMT	Defense Depot Memphis, Tennessee
DQE	Data Quality Evaluation
DQO	Data Quality Objective
EBT	Enhanced Bioremediation Treatment
FSVE	Fluvial Soil Vapor Extraction
IAQ	Intermediate Aquifer
ID	Inside Diameter
IDW	Investigation-derived Waste
IRACR	Interim Remedial Action Completion Report
LCS	Laboratory Calibration Standard
LTM	Long-term Monitoring
LTOA	Long-Term Operational Area
LUC	Land Use Control
MACTEC	MACTEC Engineering and Consulting, Inc.
MAQ	Memphis Aquifer
MAROS	Monitoring and Remediation Optimization System
MCL	Maximum Contaminant Level
µg/L	Micrograms per Liter
MI	Main Installation
msl	Mean Sea Level
MW	Monitoring Well
NTU	Nephelometric Turbidity Units
PCE	Tetrachloroethene
PMW	Performance Monitoring Well

LIST OF ACRONYMS AND ABBREVIATIONS
(Continued)

PVC	polyvinyl chloride
PZ	Piezometer
RA	Remedial Action
RAO	Remedial Action Objective
RA SAP	Remedial Action Sampling and Analysis Plan
RD	Remedial Design or Reductive Dechlorination
RI	Remedial Investigation
ROD	Record of Decision
RL	Reporting Limit
SVOC	Semi-Volatile Organic Compound
TCA	1,1,1-Trichloroethane
TCE	Trichloroethene
TDEC	Tennessee Department of Environment and Conservation
TTA	Target Treatment Area
USEPA	U.S. Environmental Protection Agency
VC	Vinyl Chloride
VOC	Volatile Organic Compound

1.0 INTRODUCTION

HDR has prepared this 2010 Annual Long-term Monitoring (LTM) Report for the Main Installation (MI) at Defense Depot Memphis, Tennessee (DDMT) under Contract FA8903-08-D-8771, Task Order 0069 to the Air Force Center for Engineering and the Environment (AFCEE). MI LTM is performed to document changes in plume concentrations and to detect potential plume migration to off-site areas or into deeper aquifers. This report documents the groundwater monitoring activities on the MI during 2010. The MI LTM was performed in accordance with the LTM Plan in Appendix B of the *Main Installation Final Remedial Design, Rev.1* (RD) (CH2M HILL, 2004).

1.1 SITE LOCATION AND DESCRIPTION

DDMT is located in southeastern Memphis, Shelby County, Tennessee approximately 5 miles east of the Mississippi River and just northeast of Interstate 240 (Figure 1). DDMT originated as a military facility in the early 1940s; it 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 facilities to be closed under Base Realignment and Closure. Storage and distribution of material continued until the facility closed in September 1997.

The property consists of approximately 642 acres and includes the MI and Dunn Field. The MI contains approximately 578 acres with open storage areas, warehouses, former military family housing, and outdoor recreational areas. Dunn Field, which is located across Dunn Avenue from the north-northwest portion of the MI, contains approximately 64 acres and includes former mineral storage and waste disposal areas.

In 1992, DDMT was added to the National Priorities List (57 Federal Register 47180 No. 199). Responsibility for environmental restoration activities at DDMT transferred from the Defense Logistics Agency to the Department of the Army in December 2010. The regulatory oversight agencies are U.S. Environmental Protection Agency (USEPA) Region 4 and the Tennessee Department of Environment and Conservation (TDEC). 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 loess consists of wind-blown and deposited brown to reddish-brown, low-plasticity clayey silt to silty clay. The loess deposits are about 20 to 30 feet thick and are continuous throughout the DDMT area.

The fluvial (terrace) deposits consist of two general layers. The upper layer is a silty, sandy clay that transitions to a clayey sand and ranges from about 10 to 40 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 uppermost aquifer is the unconfined fluvial aquifer, which consists of saturated sands and gravelly sands in the lower portion of the fluvial deposits. Recharge to this unit is mainly from rainfall infiltration; discharge is to underlying units or laterally into adjacent stream channels. The saturated thickness ranges from 0 feet (dry) to approximately 60 feet, and is controlled by the uppermost clay configuration in the Jackson formation/Upper Claiborne group. Groundwater flow in the fluvial aquifer is toward the gap in the uppermost clay in the northwest area of the MI. The flow is toward the low point on the gap's southeast side, and the fluvial aquifer is dewatered (or "pinches out") elsewhere on the gap's perimeter. Water level elevations in the fluvial aquifer at the MI range from a high of approximately 240 feet mean sea level (msl) in the northeast to a low of approximately 195 feet msl in the central area.

The intermediate aquifer (IAQ) is locally developed in Jackson formation/Upper Claiborne group deposits, which contain laterally extensive, thick clay deposits. The uppermost clay unit appears to be continuous, except for a large gap in the MI's northwestern area and Dunn Field's southwestern area. There are other possible gaps in the clay off-site, west and northwest of Dunn Field. Where present, these gaps create connections to the underlying IAQ from the fluvial deposits. Water level elevations in the IAQ, away from areas of recharge from the fluvial aquifer, are approximately 160 feet msl with a general westward flow.

The Memphis Sand primarily consists of thick-bedded, white to brown or gray, very fine-grained to gravelly, partly argillaceous and micaceous sand. The Memphis Sand ranges from 500 to 890 feet in thickness and begins at a depth below ground surface (bgs) of approximately 120 to 300 feet. The top of the Memphis Sand was identified at 255 feet bgs (elevation of 21 feet above msl) in monitoring well (MW)-67, the first monitoring well completed in the Memphis Sand at DDMT. The Memphis aquifer (MAQ) is confined by overlying clays and silts in the Cook Mountain formation (part of the

Jackson/Upper Claiborne group) and 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, which is operated by Memphis Light, Gas and Water, is located approximately 2 miles west of DDMT. The top of the MAQ potentiometric surface at MW-67 is approximately 160 feet msl.

1.3 REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) for the MI were established in the *Main Installation Record of Decision* (ROD) (CH2MHILL, 2001). The groundwater RAOs are:

- to prevent human ingestion of water contaminated with volatile organic compounds (VOCs) in excess of maximum contaminant levels (MCLs) from potential future onsite wells;
- to restore groundwater to concentrations at or less than MCLs; and
- to prevent migration horizontally and vertically offsite of groundwater contaminants in excess of MCLs.

The groundwater remedy selected in the ROD was enhanced bioremediation treatment (EBT) with LTM and land use controls (LUCs). EBT was conducted from September 2006 to February 2009 in the most contaminated part of the plume within the MI and untreated parts of the plume were allowed to degrade under natural attenuation processes. LUCs were implemented through deed and lease restrictions, zoning and a recorded Notice of Land Use Restrictions.

1.4 PREVIOUS GROUNDWATER MONITORING

Historical groundwater monitoring results described in the MI RD were mainly associated with focused investigations; monitoring wells had not been sampled consistently over extended periods. The LTM Plan summarized results for three groundwater sampling programs: Remedial Investigation (RI) sampling events conducted from January 1996 to November 1998, the long-term operational area (LTOA) investigation from September through December 2001, and a baseline sampling event conducted in March 2002. The RI identified six VOCs as commonly detected at the MI: tetrachloroethene (PCE); trichloroethene (TCE); total 1,2-dichloroethene; carbon tetrachloride (CT); chloroform (CF) and 1,1,1-trichloroethane (TCA). PCE and TCE were the most frequently detected VOCs during the RI and at that time had maximum concentrations of 120 and 58 micrograms per liter (µg/L), respectively. The LTOA and baseline sampling events were considered contemporaneous for the purpose of reviewing the analytical results. The review confirmed the presence of the VOCs identified in the RI, except TCA.

The LTM Plan presented a decision tree for determining well sampling frequency based on the *Final Long-term Monitoring Optimization Guide, Version 1.1* (AFCEE, 1997). LTM wells were classified in four categories:

- Background – wells screened in the fluvial aquifer located along or outside the MI boundary; wells upgradient of or at a distance from groundwater plumes on the MI and Dunn Field; and wells with no, or low, previous detections of site constituents.
- Boundary – wells screened in the fluvial aquifer located along or outside the MI boundary to monitor constituent migration from off-site sources.
- Sentinel – wells screened within either the fluvial or IAQ adjacent to or within the window to the IAQ.
- Performance – wells screened in the fluvial aquifer and within the limits of known groundwater plumes.

The LTM plan also established an initial sampling frequency (biennial, annual, semiannual, or quarterly) for the 47 existing wells and piezometers (PZs).

The LTM program was initiated by MACTEC Engineering and Consulting, Inc. (MACTEC) in 2004 to provide updated baseline groundwater data at the MI. Water level measurements and groundwater samples were collected over four sampling events: March–June 2004, November 2004, February 2005, and May 2005. The monitoring results for these sample events were summarized in *Annual Long-Term Monitoring Report, Main Installation Rev.1* (MACTEC, 2006).

During the initial year of LTM, MCLs for PCE and TCE were exceeded in samples collected at wells located throughout the MI. The wells exceeding MCLs were grouped into six plumes in the fluvial aquifer. Sentinel wells in the IAQ and the transition zone between the fluvial aquifer and the IAQ are listed separately.

Plume	Primary CVOCs
TTA-1 North	PCE
TTA-1 South	PCE, TCE
TTA-2	PCE, CT, CF
West Central	PCE
Building 835	TCE
North Central	TCE
Sentinel	PCE

The initial annual LTM report (MACTEC, 2006) included recommendations for additional monitoring wells at six locations to further delineate plumes outside the EBT treatment areas and to provide suitable compliance well networks. The report also recommended changes in the monitoring frequency at specific wells and, based on the consistency of the field measurements and laboratory analyses for indicators of anaerobic degradation, recommended that laboratory analysis of LTM samples be limited to VOCs.

Further MI LTM was postponed until the MI Remedial Action (RA) was initiated by HDR in August 2006. LTM activities in 2006 and 2007 consisted of phased installation and development of 36 new monitoring wells, abandonment of 24 monitoring wells and quarterly monitoring of designated LTM wells during five sampling events in October 2006, January 2007, April 2007, July 2007, and October 2007. The LTM activities and findings were documented in *Annual Long-Term Monitoring Report - 2007, Main Installation Rev.1* (HDR|e²M, 2009a). The monitoring wells installed in 2006 and 2007 provided additional information on the top of clay and groundwater flow directions on the MI and the groundwater samples improved the delineation of the groundwater plumes.

LTM activities in 2008 consisted of water level measurements and groundwater sampling of designated LTM wells during three events in January, April and October 2008. The LTM activities and findings were documented in *Annual Long-Term Monitoring Report - 2008, Main Installation Rev.1* (HDR|e²M, 2009b). No changes were recommended for the 2009 LTM events.

LTM activities in 2009 consisted of water level measurements and groundwater sampling of designated LTM wells in April and October 2009. The LTM activities and findings were documented in *Annual Long-Term Monitoring Report - 2009, Main Installation Rev.0* (HDR|e²M, 2010). Installation of monitoring wells in the MAQ was planned in late 2009 to support source investigation and modeling results which indicated further active groundwater treatment was not necessary to meet the MI RAOs. Well installation was delayed following a request from USEPA and TDEC for additional wells in the IAQ to determine the extent of chlorinated volatile organic compounds (CVOCs) downgradient of MW-90; the request was based on review of the *Main Installation Interim Remedial Action Completion Report* (MI IRACR) (HDR|e²M, 2009c). Proposed well locations were included in the 2009 LTM report. In addition, the report recommended changes to LTM wells to improve distribution of sample locations and changes to sample frequency per guidelines in the LTM plan. The recommendations were approved by USEPA and TDEC and were implemented in 2010.

2.0 LTM ACTIVITIES

LTM activities during 2010 consisted of installation, development and initial sampling of three monitoring wells in the IAQ and two wells in the MAQ, abandonment of six monitoring wells and monitoring of designated LTM wells during three sampling events in April, October and December 2010. Field activities and laboratory analyses were performed in accordance with the *Remedial Action Sampling and Analysis Plan* (RA SAP) (MACTEC, 2005).

Changes to the 2010 LTM wells were made in the former EBT areas (target treatment area [TTA]-1 and TTA-2) to monitor wells with high concentrations and potential for rebound of parent CVOC concentrations:

- In TTA-1N, IW-6, MW-115 and MW-125 were abandoned, and performance monitoring well (PMW)21-03 and PMW21-05 were added to LTM.
- In TTA-1S, PMW101-04A/B were added to LTM.
- In TTA-2, IW-01 and MW-86 were abandoned, and PMW92-03 and PMW92-06 were added to LTM.
- PZ-07 was abandoned because it was blocked by an obstruction and was not usable.

In addition, changes to sample frequency were made as described below:

- Three background and boundary wells (MW-93, MW-99 and MW-102B) were changed to biennial samples because sufficient sample results are now available and analytes have been below MCLs.
- 16 performance wells (DR1-1A, DR1-4, MW-25A, MW-52, MW-96, MW-104, MW-198, MW-214A/B, MW-215A/B, MW-216, MW-202A, MW-209A, MW-211 and MW-229) were changed to annual samples because of consistent results below or slightly above MCLs.

Additional sentinel wells were installed as recommended in the MI IRACR. Two IAQ wells, MW-252 and MW-253, were installed at the proposed locations in June 2010. Based on the results from these wells, a third IAQ well, MW-256, and two MAQ wells, MW-254 and MW-255, were installed in July 2010.

The LTM wells are classified as boundary, background, performance or sentinel wells and assigned semiannual, annual or biennial sampling frequencies. Including the new sentinel wells, there are 110 wells used for MI LTM: 7 background wells, 7 boundary wells, 72 performance wells and 24 sentinel wells. The new wells will be sampled for four quarters before the sample frequency is selected in accordance with the LTM plan. The remaining wells have the following sample frequency: biennial (13 wells), annual (33 wells) and semiannual (59 wells). The LTM wells are listed on Table 1 and the locations are shown on Figure 2. The current well classification, sample frequency, and 2010 sampling events are shown on Table 2.

2.1 WELL INSTALLATION

Five sentinel wells were installed in June and July 2010 to support groundwater modeling results, which indicated the identified groundwater plumes in the Fluvial aquifer on the MI would not significantly impact groundwater quality in the deeper MAQ. The wells also delineated the extent of CVOCs in the IAQ and improved the LTM network's effectiveness in monitoring CVOC migration from the fluvial aquifer. The new well locations are highlighted on Figure 2. Well installation data are provided on Table 3.

2.1.1 Intermediate Aquifer Wells

Three IAQ sentinel wells were installed to determine the extent of CVOCs in the IAQ and to monitor CVOC migration from the fluvial aquifer. The wells were installed with well screens in the first significant, saturated sand layer beneath the upper clay in the Jackson Formation/Upper Claiborne Group in order to monitor the upper portion of the IAQ, which has the highest CVOC concentration in the IAQ sentinel well pairs, MW-89/MW-90 and MW-202A/B. Two wells, MW-252 and MW-253, were installed in June at the locations proposed in the 2009 LTM report; a third well, MW-255, was installed in July based on results from the first two wells.

2.1.1.1 Wells MW-252 and MW-253

The well locations for MW-252 and MW-253 were marked by Allen and Hoshall of Memphis, Tennessee, a Tennessee Registered Land Surveyor, on 20 May and the locations were cleared for utilities by ALS, a private utility locating service, on 27 May. The wells were installed by Boart Longyear from 2 to 9 June 2010. HDR field geologists were present during drilling to record field observations, log the soil core and supervise well installation.

Borings were advanced 10 feet into the uppermost clay of the Jackson Formation/Upper Claiborne Group using rotasonic drilling methods with a 6-inch outer core barrel and a 4-inch inner core barrel. A 10-inch borehole was then advanced and a 6-inch diameter Schedule 80 polyvinyl chloride (PVC) surface casing was installed with the bottom section containing a seal and check valve. The driller pumped grout through an injection pipe connected to the check valve until it returned to the ground surface. Following grouting, potable water was pumped into the inner annulus of the casing. After the grout was allowed to cure for over 24 hours, the water in the inner annulus of the casing was pumped to a holding tank and the borehole was advanced using a 5-inch outer core barrel and a 3-inch inner core barrel.

Continuous soil cores were collected from ground surface to the termination depth of each boring. Soil core from the screened interval was placed in labeled core boxes and stored at the HDR field office. Soil boring logs are provided in Appendix A.

At MW-252, the upper clay extended from 87.5 feet to 116.5 feet bgs and the underlying fine sand extended to boring termination at 151 feet bgs. At MW-253, the upper clay extended from 107 feet to 125 feet bgs; sand with clay was observed from 125 feet to 137 feet bgs followed by grey clay to boring termination at 157 feet bgs. Although the sand layer in MW-253 was not as extensive as at MW-252, it was near the target depth for the IAQ wells and the next sand layer was at least 20 feet deeper. A temporary well was installed to confirm sufficient groundwater for sampling; the borehole was backfilled with sand to the bottom of the intermediate sand (with clay) layer and a well screen and filter pack were installed. Approximately 75 gallons of water was extracted using a Waterra pump and a bailer, and well installation was completed.

Well casings were new, unused, decontaminated, 2-inch inside diameter (ID) schedule 80 PVC pipe with internal threaded flush joints. The well screens were 20 feet of schedule 80 PVC, 0.010 inch continuous slotted screen with a PVC cap at the bottom. Centralizers were used every 30 feet along the riser in MW-252, except in the well screen or bentonite seal section. Centralizers were not used in MW-253

The filter pack consists of 8-16 grade filter pack of inert, hard, well rounded sand (less than 2 percent flat particles) installed from the bottom of the boring to 5 feet above the top of the well screen. A 5-foot-thick bentonite seal was placed above the filter pack. The bentonite seal was allowed to hydrate for a minimum of 1 hour prior to installation of the grout seal. The annular space was filled with a cement-bentonite grout mixture to approximately 6 inches below the ground surface. All wells had flush-mount completions with a 12-inch ID manhole set within a 3-foot by 3-foot by 0.5-foot thick concrete pad. Steel bollards filled with concrete were placed around the wells for additional protection. Well installation diagrams are provided in Appendix B and a summary is provided on Table 3.

The wells were developed at least 24 hours after installation. The wells were initially developed using Typhoon and Grundfos submersible pumps; however, the Typhoon did not have sufficient power and the

Grundfos motor burned out. Well development was completed with a Waterra inertial pump. The wells were surged with the pump during development. Water quality measurements were made to evaluate well development in accordance with the RA SAP criteria: stabilized turbidity less than 10 nephelometric turbidity units (NTUs), pH within 0.1 standard units, and temperature and specific conductance within 10 percent for three consecutive readings. A well development summary, including volume purged and final stabilization parameters, is shown on Table 4. MW-252 met the development criteria. MW-253 was developed for 12 hours but did not meet the development criteria for turbidity.

The completed wells were surveyed for location and elevation (ground surface and top of casing) by Allen and Hoshall on 17 June 2010. Horizontal and vertical coordinates are based on the North American Datum, 1927 used for all survey data at DDMT. Horizontal coordinates were provided in the Tennessee State Plane coordinate system.

2.1.1.2 Well MW-256

Based on water level measurements at the two new wells and existing IAQ wells on the MI, it was determined that neither of the new wells was directly downgradient of the targeted IAQ wells, MW-202B and MW-90. A third IAQ well location was approved to the north of MW-252.

The location for MW-256 was cleared for utilities by ALS, a private utility locating service, on 7 July. The well was installed by Boart Longyear from 13 to 16 July 2010. An HDR field geologist was present during drilling to record field observations, log the soil core and supervise well installation.

The boring was advanced to a depth of 79 feet, 10 feet into the uppermost clay of the Jackson Formation/Upper Claiborne Group, using rotasonic drilling methods with a 6-inch outer core barrel and a 4-inch inner core barrel. A 10-inch borehole was then advanced and a 6.25-inch diameter welded steel surface casing was installed in the same manner as the two previous wells. After the grout was allowed to cure for 24 hours, the borehole was advanced to the target depth.

Continuous soil cores were collected from ground surface to boring termination at 145 feet bgs. Soil core from the screened interval was placed in labeled core boxes and stored at the HDR field office. The soil boring log is provided in Appendix A.

The well was constructed with new, unused, decontaminated, 2-inch ID schedule 80 PVC (polyvinyl chloride) well casing with internal threaded flush joints and 20 feet of schedule 80 PVC, 0.010 inch continuous slotted screen with a PVC cap at the bottom. Centralizers were used every 50 feet along the riser. The filter pack consists of 8-16 grade filter pack of inert, hard, well rounded sand (less than 2 percent flat particles) installed from the bottom of the boring to 5 feet above the top of the well screen. A 5-foot-thick bentonite seal was placed above the filter pack. The bentonite seal was allowed to hydrate for a minimum of 1 hour prior to installation of the grout seal. The annular space was filled with a cement-bentonite grout mixture to approximately 6 inches below the ground surface. The well was completed with a flush-mount 12-inch ID manhole set within a 3-foot by 3-foot by 0.5-foot thick concrete pad. The well installation diagram is provided in Appendix B and an installation summary is provided on Table 3.

The well was developed on 17-18 July, more than 24 hours after installation, using a Mega Monsoon pump; the well was surged with the pump during development. Water quality measurements were made to evaluate well development in accordance with the RA SAP criteria. In addition, MW-253 was redeveloped on 15 July due to high turbidity in the initial development. Both wells met the development criteria. A well development summary, including volume purged and final stabilization parameters, is shown on Table 4.

The completed well was surveyed by Allen and Hoshall on 21 July 2010.

2.1.2 Memphis Aquifer Wells

Two MAQ sentinel wells were installed in July 2010 to support groundwater modeling results indicating limited impact to the MAQ from CVOC plumes in the Fluvial aquifer. Wells MW-254 and MW-255 were installed with well screens in the upper portion of the Memphis Sand. The new well locations are highlighted on Figure 2.

The locations were cleared for utilities by ALS, a private utility locating service, on 7 July. The wells were installed by WDC from 22 July to 1 August 2010. An HDR field geologist was present during drilling to record field observations, log the soil core and supervise well installation.

At each location, borings were advanced 10 feet into the uppermost clay of the Jackson Formation/Upper Claiborne Group using rotasonic drilling methods with a 6-inch outer core barrel and a 4-inch inner core barrel. A 10-inch borehole was then advanced and a 6-inch diameter welded steel surface casing was installed. After the grout was allowed to cure for over 24 hours, the borehole was advanced using a 6-inch outer core barrel and a 4-inch inner core barrel.

MW-255 was begun on 22 July 2010. The fluvial aquifer was drilled and logged, and the underlying gray clay of the Cook Mountain formation was encountered at 72 feet bgs. The borehole was then enlarged to

10 inches using a larger diameter bit and 6-inch welded steel surface casing was installed to 82 feet bgs. The surface casing was grouted into place and the rig was moved off MW-255. MW-254 was begun on 24 July 2010. The fluvial aquifer was drilled and logged, and the gray clay was encountered at 75 feet bgs. The borehole was enlarged to 10 inches and welded steel surface casing was installed to 85 feet bgs. Drilling resumed at MW-255 on 26 July. On 27 July the casing broke at approximately 70 feet bgs and drilling could not resume until the casing was retrieved and repaired early on 28 July. The MW-255 boring was terminated in the Memphis Sand at 305 feet bgs; the well was installed on 29 July and grouting completed on 30 July. Drilling resumed at MW-254 on 30 July and the boring was terminated in the Memphis Sand at 305 feet bgs the morning of 1 August; the well was installed the same day. Potable water was used during drilling to advance the large diameter boring through the gravelly sands and into the grey clay. After the casing break in MW-255, approximately150 gallons of drilling mud was used to advance the borings to termination depth; the drilling mud consisted of 100% sodium bentonite powder mixed 25 pounds of powder to 50 gallons of potable water. Water was obtained from a fire hydrant. A water sample was collected from the water tank used during drilling and analyzed for VOCs; the sample contained low concentrations (1 to 4 µg/L) of trihalomethanes but no primary CVOCs, other than CF.

Continuous soil cores were collected from ground surface to the termination depth of each boring. Soil core from the screened interval was placed in labeled core boxes and stored at the HDR field office. Soil boring logs are provided in Appendix A.

The Memphis Sand was encountered at 283 feet bgs in MW-254 and 275 feet in MW-255; both borings were terminated at 305 feet bgs. Dr. Daniel Larsen of the Groundwater Institute at the University of Memphis was on-site 26 to 28 July and assisted in the identification of the Memphis Sand aquifer at MW-255. The Memphis Sand is distinguished by its light color, medium-sized sand grains, and lack of silts and clays. The depth to the Memphis sand and the screen location were stated by Dr. Larsen to be comparable to the top of the well screens at the Allen well field.

The wells were constructed with new, unused, decontaminated, 2-inch ID schedule 80 PVC well casing with internal threaded flush joints and 20 feet of schedule 80 PVC, 0.010 inch continuous slotted screen with a PVC cap at the bottom. Centralizers were used every 50 feet along the riser in each well. The filter pack consists of 10-20 grade filter pack of inert, hard, well rounded sand (less than 2 percent flat particles) installed from the bottom of the boring to 5 feet above the top of the well screen. A 5-foot-thick bentonite seal was placed above the filter pack. The bentonite seal was allowed to hydrate for a minimum of 1 hour prior to installation of the grout seal. The annular space was filled with a cement-bentonite grout mixture to approximately 6 inches below the ground surface. All wells had flush-mount completions with a 12-inch ID manhole set within a 3-foot by 3-foot by 0.5-foot thick concrete pad. Well installation diagrams are provided in Appendix B and a summary is provided on Table 3.

The wells were developed at least 24 hours after installation. MW-255 was developed using a 36-inch pneumatic auto-reclaimer pump on 2-3 August. While trying to install the auto-reclaimer pump in MW-254, an obstruction was found in the well at approximately 145 feet below top of casing (btoc). Through use of a down-hole camera, an O-ring was found extruding into the well at a joint in the PVC; the obstruction was cleared using a surge block. While attempting to run the pump back down the well, a slight bend in the casing was found at the same depth (145 feet btoc) which would not allow the 36-inch pump to pass. A 10-inch Grundfos pump could pass the bend and was used to develop MW-254 on 11-12 August. Water quality measurements were made to evaluate well development in accordance with the RA SAP criteria. MW-254 met the development criteria but was still pumped for 12 hours in order to remove water used during drilling. MW-255 was developed for 12 hours but turbidity at 111 NTUs still exceeded the development criteria. A well development summary, including volume purged and final stabilization parameters, is shown on Table 4.

The completed wells were surveyed for location and elevation (ground surface and top of casing) by Allen and Hoshall on 5 August 2010.

2.2 WELL ABANDONMENT

Five monitoring wells and one piezometer were abandoned 6-8 June 2010 based on recommendations in the 2009 LTM report. Well abandonment permits were not obtained from Memphis Shelby County Health Department since the wells were located on the MI. Total well depth, location, and date of abandonment are listed on Table 5. The abandoned well locations are highlighted on Figure 2.

Well abandonment was performed by Boart Longyear and observed by an HDR field geologist. Each well was checked to confirm that obstructions did not interfere with placement of the tremie pipe and grout. Sample tubing lodged in PZ-07 could not be removed due to the piezometer’s small diameter. One half gallon of chlorine bleach was poured into each well. Bentonite was added to each well to absorb water in the screened interval and to fully seal the screen. The wells were then grouted with Portland type II cement with 5 percent bentonite. The grout was placed from the bottom to the top of the well casing using a tremie pipe. The grout was allowed to settle for 48 hours, and the well bore was capped with concrete. The tubing in PZ-07 and its small diameter prevented use of bentonite to seal the screen or use of a tremie pipe; a thinner grout mixture was slowly poured in the well during abandonment. Since all the wells were located in gravel or asphalt parking lots, the surface completions were left in place; the manhole covers were removed and the manholes were filled with concrete.

2.3 GROUNDWATER MONITORING

Groundwater levels were measured in all LTM wells prior to sampling during the two semiannual sample events. During the initial and quarterly sample events for the new sentinel wells, water levels were measured in wells near and within the gap in the uppermost clay in the northwest area of the MI. Measurements were made using Solinist Model 101 water level meters with electronic sensors and tapes graduated in 0.01-foot increments. The water level measurements are listed on Table 6.

Groundwater samples were collected from most monitoring wells using low-flow purging methods. Dedicated PVC and stainless steel bladder pumps were installed in most LTM wells to facilitate sampling. Other wells were sampled with portable stainless steel bladder pumps. Teflon® bladders and Teflon®-lined polyethylene tubing were used for each well. The pumping rate at each well was monitored in order that the water levels would not decline more than 1.2 inches (0.1 foot). Following sampling, the bladders and tubing for each well without a dedicated pump were placed in separate, sealed plastic bags and stored for future sampling events. Piezometers and certain monitoring wells were sampled with bailers due to the small diameter casing in the piezometers and the slow recharge and thin saturated layer in the wells.

Water quality parameters were measured at approximately 5 to 10 minute intervals during purging using a flow-through cell with an YSI 6550 and a LaMotte 2020e turbidity meter. The units were calibrated each morning prior to sampling, and if abnormal readings were observed during the day, the instruments were recalibrated in the field. All measurements were recorded on the field sampling forms.

Purging continued at each well for up to two hours in order to meet the stabilization criteria: three successive readings within 0.1 for pH, 10 milliVolts for oxygen reduction potential, 3 percent for specific conductance, 10 percent for dissolved oxygen and <20 NTU for turbidity. Temperature was also measured and recorded but was not used as a stabilization parameter. Samples were collected when stabilization criteria were met or the field team leader approved the variance from the criteria. The final stabilization measurements for each event are shown on Tables 7 to 10.

Samples were sent to Microbac Laboratories in Marietta, Ohio, for laboratory analysis of VOCs by method 8260B. The activities during each sampling event are summarized in the following sections.

2.3.1 April 2010

Semiannual groundwater sampling was conducted with samples collected from 58 of 59 designated wells on 29 March to 7 April 2010. One well (MW-213) was dry, as it has been since installation. There were 59 groundwater samples collected; samples were collected from the top and bottom screened intervals at MW-101.

Water levels were measured in LTM wells on 23 March 2010. Water levels were not collected at two wells; MW-213 was dry and DR1-3 was not accessible.

Groundwater samples were collected from 56 wells using low-flow purging methods. Two wells, MW-62 and MW-212, were sampled with a Teflon® bailer due to thin saturated layer and slow recharge. The final stabilization measurements are shown on Table 7. The samples were collected according to the procedures described above with the following exceptions:

- Samples were collected by bailer from MW-62 and MW-212 with turbidity of 164 and 385 NTUs. Three well volumes were purged from each and samples were then collected.

2.3.2 June-August 2010

Following well development, groundwater samples were collected from the five new sentinel wells using low-flow purging methods. The samples were collected from the first two IAQ wells (MW-252 and MW-253) on 18 June 2010, from the third IAQ well (MW-256) on 9 August 2010 and from the two MAQ wells on 9 August (MW-255) and 16 August (MW-254). Water levels were measured in IAQ and MAQ wells at the MI on 13 August 2010.

The final stabilization measurements are shown on Table 8. The samples were collected according to the procedures described above with the following exceptions:

- Samples were collected from MW-253 after purging for 1.7 hours with turbidity at 1428 NTU, due to thunderstorms in the area and an increase in turbidity during purging.

2.3.3 October 2010

Biennial groundwater sampling was conducted with samples collected from 109 of the 110 designated wells on 4 to 15 October 2010. One well (MW-213) was dry, and a sample could not be collected. There were 111 groundwater samples collected; samples were collected from two screened intervals at MW-101 and MW-107. Water levels were measured in LTM wells on 4 October 2010.

Groundwater samples were collected from 105 wells using low-flow purging methods. Two wells (MW-62 and MW-212) and two piezometers (PZ-03 and PZ-06) were sampled with a Teflon® bailer due to the slow recharge, small diameter of casing and/or thin saturated layer. The final stabilization measurements are shown on Table 9. The samples were collected according to the procedures described above with the following exceptions:

- Samples were collected from MW-62 and MW-212 with turbidity values of 170 and 196 NTUs, respectively. Both wells were purged and sampled with bailers after three well volumes had been drawn from the well.
- Samples were collected from PZ-03 and PZ-06 with turbidity values of 1436 and 5603 NTUs, respectively. Both piezometers were bailed dry and sampled with bailers later in the day after water levels had recovered.
- Samples were collected from MW-19, MW-99, MW-103, and MW-255 with turbidity ranging from 22.0 to 45.1 NTUs. The wells were sampled after 2 hrs of purging.
- Well DR2-2 was purged dry and sampled the next day. The turbidity prior to sampling was 32.2 NTUs.

2.3.4 December 2010

Quarterly groundwater sampling was conducted at the five new sentinel wells from 8 to 9 December 2010. Water levels were measured in IAQ and MAQ wells at the MI on 7 December 2010. Groundwater samples were collected using low-flow purging methods. Samples were collected according to the procedures described above when stabilization criteria were met. The final stabilization measurements are shown on Table 10.

2.4 WASTE DISPOSAL

The waste generated during MI LTM activities in 2010 was classified as either non-investigative waste or investigation-derived waste (IDW). Non-investigative waste, such as packaging materials, personal protective equipment, disposable sampling supplies, and other inert refuse, was collected, containerized, and transported to a designated collection bin for disposal at a municipal landfill. The IDW consisted of soil cuttings from the monitoring well borings, waste water from equipment decontamination, and groundwater from well development and purging prior to sampling.

The purge water collected during sampling in April 2010 was placed in the storage tank used for collection of condensate from the fluvial soil vapor extraction (FSVE) system. A wastewater grab sample was collected on 1 June 2010 when the tank neared capacity and was analyzed for VOCs, semi-volatile organic compounds (SVOCs) and metals in accordance with the permit. The analytical results were compared to the permit limits and a request for one-time discharge was submitted. The discharge was approved on 22 June 2010 and approximately 17,000 gallons was pumped from the tank to the sanitary sewer on 23 and 24 June 2010.

The soil cuttings from the new well borings were spread on Dunn Field as the borings were completed. Wastewater generated from decontamination of the drill rig and downhole equipment prior to drilling and of well construction materials prior to well installation was collected and transferred to a 20,000-gallon storage tank separate from the tank used for FSVE condensate. Groundwater collected during well development and sampling of the new wells was also transported to the storage tank. Based on the low CVOC concentrations reported in the samples from the new sentinel wells, the wastewater from drilling, well installation and development was transferred to the FSVE condensate storage tank. The tank was cleaned out and the sediment was spread on Dunn Field; the storage tank was removed on 22 September 2010.

The purge water collected during sampling in October and December 2010 was placed in the FSVE condensate storage tank use. A wastewater grab sample was collected on 20 January 2011 for analysis of VOCs, SVOCs and metals in accordance with the permit. The analytical results will be compared to the permit limits and a request for one-time discharge submitted to the City of Memphis.

3.0 SUMMARY OF MONITORING RESULTS

3.1 HYDROGEOLOGY

Water level measurements for the 2010 LTM events are shown on Table 6. Groundwater elevations for all LTM wells, with contours for the fluvial aquifer and the IAQ within the window, are shown on Figures 3 and 4 for the semiannual LTM events. The groundwater elevation contour maps are similar. Groundwater flow near TTA-1 is to the northeast with an approximate gradient of 0.003 in April and October (DR1-5A to MW-197B). The groundwater flow near TTA-2 is to the west-southwest with an approximate gradient of 0.02 in April and October (DR2-1 to MW-26). The gradient in the 'window' is to the northwest with an approximate gradient of 0.23 in April and 0.029 in October (MW-90 to MW-140).

The soil borings for the new sentinel wells were drilled through the upper clay in the Jackson Formation/Upper Claiborne Group that forms the base of the fluvial aquifer and into the underlying fine sands. An updated top of clay contour map is shown on Figure 5 and a cross-section through the area is shown on Figure 6. The cross-section indicates a connection from the fluvial aquifer to the Memphis Sand through the window in the upper clay and the underlying sands in the IAQ. The deepest wells on the MI (MW-140, MW-254 and MW-255) show varying amounts of fine-grained soils (sandy clay to clayey sand) in the IAQ but there appear to be sufficient sand zones to allow vertical migration. The water levels on the cross-section show the gradient in the upper portion of the IAQ from MW-90 to MW-252 flattens from MW-252 to MW-256. The three deepest wells have similar water levels which are slightly below the shallower IAQ wells indicating a downward gradient.

Groundwater contour maps for the water level measurements in the IAQ and MAQ wells during the October and December LTM events are contoured on Figures 7 and 8. The water levels for the IAQ indicate flow is generally to the northwest. The water levels in the three deepest wells indicate the gradient is to the west, from MW-140 to MW-254.

3.2 DATA QUALITY EVALUATION

Data collected during the 2010 LTM sampling events were reviewed based on guidelines in the RA SAP. Data review was performed by an independent data validation contractor, Diane Short and Associates, Inc. Based on the review and the project data quality objectives (DQOs), the data are acceptable and usable, with the exception of 13 non-detect results for bromomethane and two non-detect results for chloromethane. The bromomethane and chloromethane results were rejected due to low continuing calibration response. The complete analytical results with data quality evaluation (DQE) flags are presented for each sample event in Appendix C.

- Method blank, trip blank, and rinsate blank contamination resulted in several U qualifications for analytes that were not contaminants of concern, and B qualifiers indicating a possible high bias in the reported value for TCE, a contaminant of concern. Most of the detections in associated samples were less than 5x the method blank (or 10x the method blank for common laboratory contaminants), therefore the results are qualified as U and are usable as non-detects.
- Several samples had elevated laboratory calibration standard (LCS) recoveries observed, and other samples had low LCS recoveries. When a high recovery is associated with a non-detect, no qualifier is added since the indicated bias is high. When a low recovery is associated with a non-detect, the result is qualified as estimated J. When the target is detected with either a high or low LCS recovery, the result is qualified as estimated J.
- Carbon tetrachloride in one sample (MW85-LS-11) in April and TCE in one sample (PMW92-06-LB-12) in October were qualified as estimated J based on matrix spike/matrix spike duplicate recovery. The results could be biased low approximately proportional to the recovery.
- Two samples had detected results (carbon tetrachloride and chloroform in MW214A-LB-12 and TCE and PCE in PMW101-04A-LB-12) in October qualified as estimated due to high recoveries of a surrogate.
- Thirteen non-detect bromomethane results and two non-detect chloromethane results in October were qualified as rejected (R) due to low responses in the continuing calibrations.
- Any result reported below the reporting limit (RL) but above the method detection limit was flagged "J" and considered an estimated result (unless overridden by other QC flags).

Overall, the VOC data from the LTM events met project DQOs and were determined to be sufficient to support the evaluation of remedial action. The complete DQE for 2010 LTM is provided in Appendix D.

3.3 ANALYTICAL RESULTS

The results for each sampling event are discussed in the following sections based on concentrations detected above the RL for the primary CVOCs: PCE, TCE, cis-1,2-Dichloroethene (cDCE), CT, CF and vinyl chloride (VC). The analytical results were compared to the MCLs: 5µg/L for PCE, TCE, and CT; 70µg/L for cDCE, and 2µg/L for VC. The MCL for total trihalomethanes, which includes CF, is 80µg/L.

3.3.1 April 2010

Groundwater samples were collected from 58 LTM wells for the semiannual event in April 2010. A total of 59 groundwater samples were collected; samples were collected from two screened intervals in MW-101. Table 11 lists the analytical results for the primary CVOCs and for other VOCs detected above the RL in one or more samples. A summary of analytical results for the primary CVOCs is provided on Table 12. Twelve VOCs were detected above RLs. The analytical results for the primary CVOCs are summarized below:

- PCE was reported in 53 samples with a maximum concentration of 225 µg/L in DR1-6. The MCL (5 µg/L) was exceeded in 51 samples.
- TCE was reported in 54 samples with a maximum concentration of 178 µg/L in MW-62. The MCL (5 µg/L) was exceeded in 37 samples.
- cDCE was reported in 36 samples with a maximum concentration of 123 µg/L in MW-92. The MCL (70 µg/L) was exceeded in four samples.
- CT was reported in 13 samples with a maximum concentration of 217 µg/L in DR2-5. The MCL (5 µg/L) was exceeded in 12 samples.
- CF was reported in 19 samples with a maximum concentration of 69.3 µg/L in DR2-5. The MCL (80 µg/L for total trihalomethanes) was not exceeded.
- VC was reported in four samples with a maximum concentration of 131 µg/L in MW100B. The MCL (2 µg/L) was exceeded in four samples.

3.3.2 June-August 2010

Groundwater samples were collected from the 5 new sentinel wells following well development; the samples were collected from 18 June to 16 August 2010. Table 13 lists the analytical results for the primary CVOCs and for other VOCs detected above the RL in one or more samples. Three VOCs were detected above RLs. The analytical results for the primary CVOCs are summarized below:

- PCE was reported in MW-256 at 8.71 µg/L. The MCL (5 µg/L) was exceeded in that sample.
- TCE was reported in 2 samples with a maximum concentration of 2.43 µg/L in MW-256. The MCL (5 µg/L) was not exceeded.
- CF was reported in MW-256 at 1.74 µg/L. The MCL (80 µg/L for total trihalomethanes) was not exceeded.

3.3.3 October 2010

Groundwater samples were collected from 109 LTM wells for the biennial event in October 2010. A total of 111 groundwater samples were collected; samples were collected from two of three screened intervals in MW-101 and from both screened intervals in MW-107. Table 14 lists the analytical results for the primary CVOCs and for other VOCs detected above the RL in one or more samples. A summary of analytical results for the primary CVOCs is provided on Table 15. Fifteen VOCs were detected above RLs. The analytical results for the primary CVOCs are summarized below:

- PCE was reported in 75 samples with a maximum concentration of 239 µg/L in DR1-6. The MCL (5 µg/L) was exceeded in 60 samples.
- TCE was reported in 75 samples with a maximum concentration of 149 µg/L in DR1-6A. The MCL (5 µg/L) was exceeded in 45 samples.
- cDCE was reported in 35 samples with a maximum concentration of 119 µg/L in MW-92. The MCL (70 µg/L) was exceeded in three samples.
- CT was reported in 20 samples with a maximum concentration of 121 µg/L in MW-85. The MCL (5 µg/L) was exceeded in 11 samples.
- CF was reported in 35 samples with a maximum concentration of 41.1 µg/L in PMW-92-06. The MCL (80 µg/L for total trihalomethanes) was not exceeded.
- VC was reported in 5 samples with a maximum concentration of 132 µg/L in MW100B. The MCL (2 µg/L) was exceeded in 4 samples.

3.3.4 December 2010

Groundwater samples were collected from the 5 new sentinel wells in December 2010. A total of 5 groundwater samples were collected. Table 16 lists the analytical results for the primary CVOCs and for other VOCs detected above the RL in one or more samples. Five VOCs were detected above RLs. The analytical results for the primary CVOCs are summarized below:

- PCE was reported in 2 samples with a maximum concentration of 8.64 µg/L in MW-256. The MCL (5 µg/L) was exceeded in 1 sample.
- TCE was reported in 4 samples with a maximum concentration of 4.87 µg/L in MW-253. The MCL (5 µg/L) was not exceeded.
- CT was reported in MW-254 at 1.18 µg/L. The MCL (5 µg/L) was not exceeded.
- CF was reported in 2 samples with a maximum concentration of 1.95 µg/L in MW-256. The MCL (80 µg/L for total trihalomethanes) was not exceeded.

3.4 PLUME MAPS AND CROSS-SECTIONS

PCE and TCE isoconcentration maps are shown on Figures 9 and 10 for the April 2010 LTM semiannual samples, and on Figures 11 and 12 for the October 2010 LTM annual samples. The isopleths, indicating plume extent, were based on PCE or TCE concentrations in adjacent wells with limited consideration of groundwater gradient. Concentrations in adjacent wells were generally assumed to have the same source even with distances of a few hundred feet between the wells. In particular, the PCE and TCE isopleths for TTA-2 in the southeast MI indicate the plume has migrated west-northwest when the groundwater gradient is west-southwest. This interpretation is considered reasonable based on the reported concentrations and the limited groundwater elevation measurements in the eastern half of the MI, except in the immediate area of TTA-2. Additional wells to improve groundwater gradient data are not warranted based on the low concentrations and the trend in concentrations.

The isopleths are generally similar to those from previous LTM sampling events. Wells in the west-central plume and sentinel wells, outside the EBT areas, continue to have reduced PCE concentrations. In April 2009, the highest PCE concentration in the west-central plume was 163 µg/L in MW-208A; the 2010 PCE concentrations in MW-208A were 24.4 µg/L in April and 38 µg/L. in October. cDCE concentrations increased in MW-208A from 3.61 µg/L in April 2009 to 25.7 µg/L in October 2010. The highest PCE concentration in the sentinel wells in April 2009 was 80.8 µg/L in MW-90; the 2010 PCE concentrations in MW-90 were 58.3 µg/L in April and 47.9 µg/L in October. The PCE concentration in MW-207B at the eastern end of the west-central plume increased in 2010 from 15.3 µg/L in April to 113 µg/L in October; PCE concentrations in MW-207B have varied significantly in 2009 and 2010.

The October analytical results for PCE and TCE in IAQ and MAQ wells are shown on the cross-section in Figure 13. PCE concentrations are higher in the wells screened in the upper portion of the IAQ and decrease downgradient from MW-90.

3.5 WELL CLASSIFICATION REVIEW

Currently, 110 wells are included in MI LTM. The current well classifications are shown on Table 2: 7 background wells, 7 boundary wells, 72 performance wells and 24 sentinel wells. For the 105 LTM wells excluding the new sentinel wells, 59 wells are sampled semiannually, 33 wells are sampled annually and 13 wells are sampled biennially.

Analytical results for the individual well classifications in the 2010 LTM events are summarized in the following sections. Historical analytical results for the primary CVOCs in all LTM wells are provided in Appendix E.

3.5.1 Background Wells

There are seven LTM background wells screened in the fluvial aquifer located along or outside the MI boundary; wells upgradient of or at a distance from groundwater plumes on the MI and Dunn Field; and wells with no, or low, previous detections of site constituents. The background wells are MW-16, MW-19, MW-53, MW-55, MW-66A, MW-99, and MW-143. All background wells were sampled in October 2010.

Primary CVOCs were not detected above RLs in four wells. Three wells each had one CVOC detected above RLs; PCE was detected in MW-53 at 1.39 µg/L and in MW-66A at 3.31 µg/L and TCE was detected in MW-143 at 8.83 µg/L. The PCE concentrations in MW-53 and MW-66A are similar to past results. TCE has not been detected above 2 µg/L in MW-143 previously.

3.5.2 Boundary Wells

There are seven LTM boundary wells screened in the fluvial aquifer located along or outside the MI boundary to monitor constituent migration from off-site sources. The boundary wells are MW-22, MW-23, MW-24, MW-50, MW-93, MW-102B, and MW-219. MW-219 was sampled in April, and all boundary wells were sampled in October 2010.

Primary CVOCs were not detected above RLs in five wells. Two wells each had one CVOC detected above RLs; TCE was detected in MW-50 at 1.24 µg/L and PCE was detected in MW-219 at 5.57 µg/L. The TCE concentration in MW-50 is similar to past results. Well MW-219 was installed in April 2007 on the western MI boundary and immediately upgradient of TTA-1 North; PCE concentrations in MW-219 have generally decreased since a high of 48 µg/L in January 2008. The results at MW-219 indicate potential plume migration on to the MI.

3.5.3 Sentinel Wells

With the addition of 5 sentinel wells in June and July 2010, there are now 24 LTM sentinel wells screened within either the fluvial, intermediate or Memphis aquifers adjacent to or within the window. The sentinel wells are MW-34, MW-38, MW-63A/B, MW-89, MW-90, MW-107, MW-108, MW-140, MW-141, MW-199A, MW202A/B, MW-207A/B, MW-209A, MW-210A, MW-211, MW-229 and MW-252 to

MW-256. Seven sentinel wells were sampled in April and all sentinel wells were sampled in October. The new wells, MW-252 to MW-256, were also sampled in June to August after installation and in December 2010.

Primary CVOCs were not detected above RLs in five sentinel wells (MW-38, MW-199A, MW-209A, MW-229 and MW-255). The remaining sentinel wells had CVOCs detected above the RLs and nine wells (MW-63B, MW-90, MW-108, MW-141, MW-202B, MW-207A/B, MW-210A and MW-256) had PCE and/or TCE at concentrations above the MCL.

3.5.4 Performance Wells

There are 72 LTM performance wells, including two piezometers, screened in the fluvial aquifer and within the limits of designated groundwater plumes: TTA-1 North (MW-21 Area), TTA-1 South (MW-101 Area), TTA-2, West Central, Building 835 and North Central. The designated plumes, primary CVOCs and associated LTM wells are listed below.

Plume	CVOC	LTM Wells
TTA-1 North	PCE	DR1-2, DR1-7, DR1-8, MW-21, MW-100B, PMW21-03 and PMW21-05
TTA-1 South	PCE, TCE	DR1-1, DR1-1A, DR1-3, DR1-4, DR1-5, DR1-5A, DR1-6, DR1-6A, MW-101, PMW101-04A/B
TTA-2	PCE, CT, CF	DR2-1, DR2-2, DR2-3, DR2-4, DR2-5, DR2-6, MW-26, MW-64, MW-85, MW-88, MW-92, MW-96, MW-113, MW-217, MW-218, PMW92-03 and PMW92-06
West-Central	PCE	MW-39/39A, MW-94A, MW-98, MW-197A/B, MW-200, MW-203A/B, MW-204A/B, MW-205A/B, MW-206A/B, MW-208A/B, MW-210B, MW-214A/B, MW-215A/B, PZ-03
Bldg 835	TCE	MW-62, MW-142, MW-198, MW199B, MW-209B, MW-212, MW-213 (dry)
North-Central	TCE	MW-103, MW-104, PZ-06

There are four isolated LTM performance wells outside the designated plumes (MW-25A, MW-52, MW-97 and MW-216). MW-97 was sampled in April, and all four wells were sampled in October 2010. MW-216, in the southwestern MI, did not have any primary CVOCs above the RL. The three other wells had CVOC concentrations above MCLs in 2010; the highest concentration was TCE at 49.8 µg/L in MW-97. TCE concentrations in MW-97 have increased steadily since 2004; MW-216 is located 150 feet upgradient of MW-97. CVOC concentrations in MW-25A and MW-52 have remained relatively stable.

3.5.4.1 TTA-1 North

The TTA-1 North plume is located near the central section of Building 1089 and north of former Buildings 1084 and 1085. The depth of water is approximately 90 feet bgs and the average saturated thickness is 26 feet.

Seven LTM performance wells are associated with the TTA-1 North plume. Four wells were sampled in April, and all seven wells were sampled in October 2010. The maximum PCE concentration in the October 2010 LTM event was 83.5 µg/L (MW-21).

3.5.4.2 TTA-1 South

The TTA-1 South plume is located a few hundred feet southeast of TTA-1 North, on the west side of Building 1088 and the southern section of Building 972. Based on the distribution of PCE and TCE in the plume, there appear to be two source areas. Wells in the southern area have high TCE concentrations and moderate PCE concentrations while those in the northern area have high PCE concentrations and low TCE concentrations. The depth of water is approximately 90 feet bgs and the average saturated thickness is 36 feet.

Eleven LTM performance wells are associated with the TTA-1 South plume. Eight wells were sampled in April, and all eleven wells were sampled in October 2010. The maximum concentrations of PCE and TCE in the October 2010 LTM event were 239 µg/L (DR1-6) and 149 µg/L (DR1-6A), respectively.

3.5.4.3 TTA-2

The TTA-2 plume is an irregularly shaped area with elevated concentrations of PCE, TCE, CT and CF. The distribution of PCE and CT in TTA-2 suggest two or more source areas. While PCE concentrations are elevated throughout most of the plume area, CT concentrations are primarily in the northwestern plume area (near Buildings 260, 261 and 263). The depth of water is approximately 93 feet bgs and the average saturated thickness is 9 feet.

Seventeen LTM performance wells are associated with the TTA-2 plume. Fifteen wells were sampled in April, and all seventeen wells were sampled in October 2010. The maximum PCE, CT and CF concentrations in the October 2010 LTM event were 149 µg/L (MW-113), 121 µg/L (MW-85) and 41.1 µg/L (PMW-92-06), respectively.

3.5.4.4 West Central

The West-Central plume is a broad area of elevated PCE concentrations in groundwater approximately 1500 feet northeast of TTA-1. The eastern end of the plume is at the former location of Buildings 873 and 875 and the central area is near Building 770. The depth of water is approximately 100 feet bgs and the saturated thickness ranges from 7 to 94 feet with an average of 48 feet.

Twenty-three LTM performance wells are associated with the West Central plume. Eighteen wells were sampled in April, and all twenty-three wells were sampled in October 2010. The maximum PCE concentration in the October 2010 LTM event was 143 µg/L in MW-203A.

3.5.4.5 Building 835

The Building 835 plume located in the western portion of the MI contains elevated concentrations of TCE. The plume is orientated along the southern edge of the elevated clay plateau that is present in the northwest corner of the MI. The depth of water is approximately 94 feet bgs and the average saturated thickness is 6 feet.

Seven LTM performance wells are associated with the Building 835 plume. Four wells were sampled in April, and six wells were sampled in October 2010; MW-213 was dry during both sample events. The maximum TCE concentration in the October 2010 LTM event was 119 µg/L in MW-62.

3.5.4.6 North Central

The North-central plume is located in the northeastern portion of the MI contains and contains slightly elevated concentrations of TCE. Additional plume delineation is not considered necessary because of the low concentrations. The depth of water is approximately 66 feet bgs and the average saturated thickness is 23 feet.

Three LTM performance wells are associated with the North Central plume. All three wells were sampled in October 2010. The maximum TCE concentration in the October 2010 LTM event was 14.4 µg/L in MW-104.

3.6 TREND ANALYSIS

Historical analytical results for the primary CVOCs in all LTM wells are provided in Appendix E. Time trend plots for primary CVOCs where one or more were detected above MCLs in LTM wells are provided by area in Appendix F.

3.6.1 Mann-Kendall Analysis

Concentration trends were assessed for the available groundwater analytical results for the LTM wells from January 2004 through October 2010 using the Mann-Kendall test. The Mann-Kendall test does not require any assumptions as to the statistical distribution of the data and can be used with data sets which include irregular sampling intervals and missing data. The analysis was performed using the Mann-Kendall module within the Monitoring and Remediation Optimization System (MAROS) software version 2.2 developed by AFCEE. The Mann-Kendall trend evaluation using MAROS relies on three statistical metrics: the Mann-Kendall statistic (S), the coefficient of variation (COV) and the confidence factor (CF).

The Mann-Kendall statistic (S) measures the trend in the data. Positive values indicate an increase in constituent concentrations over time, whereas negative values indicate a decrease in constituent concentrations over time. The strength of the trend is proportional to the magnitude of the Mann-Kendall Statistic (i.e., large magnitudes indicate a strong trend). Typically, the Mann-Kendall test results in No Trend, Increasing or Decreasing designations for the dataset. MAROS uses the CF to provide a finer resolution of outcomes.

The COV is a statistical measure of how the individual data points vary about the mean value; it is defined as the standard deviation divided by the average. Values less than or near 1.00 indicate that the data form a relatively close group about the mean value. Values larger than 1.00 indicate that the data show a greater degree of scatter about the mean. The Confidence in Trend is the statistical probability that the constituent concentration is increasing (S>0) or decreasing (S<0).

The Concentration Trend for each well is determined according to the following rules:

Mann-Kendall Statistic	Confidence in Trend	Concentration Trend
S > 0	> 95%	Increasing
S > 0	90 - 95%	Probably Increasing
S > 0	< 90%	No Trend
S ≤ 0	< 90% and COV ≥ 1	No Trend
S ≤ 0	< 90% and COV < 1	Stable
S < 0	90 - 95%	Probably Decreasing
S < 0	95%	Decreasing

The Mann-Kendall analysis was run for PCE, TCE and cDCE on analytical results for 111 LTM sample locations, including both screened intervals in MW101 and MW-107. MW-213 (dry) was excluded. In addition, Mann-Kendall analysis was run for CT and CF on analytical results for 17 LTM wells in TTA-2. The analysis was limited to samples collected since January 2004 to provide a more consistent comparison between wells; many of the LTM performance wells were installed from 2004 to 2007 and regular groundwater monitoring was not performed before 2004.

The results of the Mann-Kendall analysis are shown on Tables 17 through 21. The tables present the statistical metrics for each well, the concentration trend, the number of sample rounds and the number of samples with detects. In addition, the maximum and minimum analytical results for the review period are shown.

Most of the boundary (7) and background (7) wells had non-detects or very low concentrations of CVOCs and the majority of those wells had insufficient data or no trend. One boundary well, MW-219 located upgradient of TTA-1 North had PCE concentrations up to 48 μg/L and may represent a groundwater plume migrating on to the MI.

The results for sentinel (25) and performance (72) sample locations are summarized below.

	Total Locations	**Insufficient Data**	**Increasing/ Probably Increasing**	**Stable/ No Trend**	**Decreasing/ Probably Decreasing**
PCE	97	13	19	36	29
TCE	97	7	29	40	21
cDCE	97	26	28	32	11

The analysis indicates that many locations show no clear trend or are stable for these CVOCs. More of the remaining locations have decreasing trends for PCE, with increasing trends for TCE and cDCE.

The results for TCE and cDCE show a greater proportion of decreasing trends if the sample locations are limited to those with a maximum concentration above the MCL (since January 2004) as shown below.

	Total Locations	**Insufficient Data**	**Increasing/ Probably Increasing**	**Stable/ No Trend**	**Decreasing/ Probably Decreasing**
PCE	69	1	16	26	26
TCE	52	0	15	22	15
cDCE	9	0	2	4	3

Trends for the parent/primary CVOCs in each plume are summarized below.

Plume	**Analyte**	**Total Locations**	**Insufficient Data**	**Increasing/ Probably Increasing**	**Stable/ No Trend**	**Decreasing/ Probably Decreasing**
TTA-1 North	PCE	7	1	1	2	3
TTA-1 South	PCE	12	0	4	3	5
TTA-1 South	TCE	12	0	3	7	2
TTA-2	PCE	17	0	4	6	7
TTA-2	CT	17	0	2	9	6
TTA-2	CF	17	0	1	9	7
West-Central	PCE	23	0	4	6	13
Bldg 835	TCE	6	0	2	1	3
North-Central	TCE	3	1	0	2	0
Sentinel	PCE	25	6	11	7	1

The wells in plumes within the fluvial aquifer generally have stable-decreasing trends for the parent compounds; this is especially pronounced in the west-central plume with 13 locations with decreasing trends as compared with 4 locations with increasing trends. However, the sentinel wells generally have increasing trends (11 locations) versus decreasing trends (1 location). This may be due to the time required for migration of groundwater with reduced CVOC concentrations resulting from EBT treatment.

3.6.2 Rebound in EBT Areas

There are nine LTM performance wells located in the central or downgradient portions of the EBT areas: MW-100B and PMW21-03 in TTA-1N; MW-101, PMW101-04A and B in TTA-1S; and DR2-5, MW-113, PMW92-03 and PMW92-06 in TTA-2. Analytical results for PCE, TCE and cDCE in these wells are shown below for March 2009, after EBT injections ended in February 2009, and for April and October 2010. The time trend plots for these wells are also included in Appendix F.

	PCE (µg/L)			TCE (µg/L)			cDCE (µg/L)		
Well	Mar 09	Apr 10	Oct 10	Mar 09	Apr 10	Oct 10	Mar 09	Apr 10	Oct 10
MW-100B	<1	<1	<1	<1	<1	<1	22.3	8.8	11
PMW21-03	18.7	59.7	45.9	8.01	16.2	11.4	57.4	1.11	0.687
MW-101-T	46.9	82.9	75.6	2.16	0.307	<1	35.2	0.5	<1
PMW101-04A	22.6	33	44.6	6.83	6.93	7.89	47	29	13.5
PMW101-04B	22.4	35.7	28.7	2.39	3.87	3.09	37.2	0.708	<1
DR2-5	114	98.7	21.1	35	33.2	12.1	62	71.7	105
MW-113	192	191	149	29.5	23.2	19.9	57.1	37.1	29.7
PMW92-03	15.6	66.6	104	5.99	18.2	19	139	112	83
PMW92-06	3.88	148	141	2.98	33.5	33	200	85.4	68.5

All except MW-100B and MW-113 were included in EBT performance monitoring and classified for indicators of reductive dechlorination (RD) in the MI IRACR. Well DR2-5 was classified as negative for RD, MW-101 was classified as positive for RD and the remaining five wells were classified as showing the best indication of RD. Since EBT injections ended, most of these wells have shown some rebound, with increases in PCE and TCE concentrations and decreases in cDCE concentrations. However, PCE and TCE concentrations in DR2-5 have decreased while cDCE increased, indicating RD is occurring. Also, PCE and TCE were not detected in MW-100B while VC concentrations have increased.

3.6.3 Reductive Dechlorination

VC, the final CVOC in the reductive dechlorination sequence for PCE and TCE, was detected slightly above the RL in in only a few EBT samples or LTM samples prior to 2009. In 2009, VC was detected at concentrations up to 94.6 µg/L in LTM samples from six wells: MW-86, MW-92, MW-100B, MW-197B, MW-203B and MW-205B.

In April 2010, VC was detected above the RL in four LTM wells: MW-100B at 131 µg/L, MW-197B at 7.24 µg/L, MW-203B at 5.51 µg/L and MW-205B at 5.05 µg/L. In October 2010, VC was detected above the RL in five LTM wells: MW-100B at 132 µg/L, MW-197B at 3.99 µg/L, MW-203B at 5.11 µg/L, MW-205A at 1.2 µg/L and MW-205B at 4.59 µg/L.

Well MW-100B is near TTA-1N and the results demonstrate continuing RD at the end of EBT. The other wells, MW-203B, MW-197B and MW-205A/B are located in the West-central plume approximately 900 feet, 1250 feet and 1500 feet respectively downgradient of MW-100B. Except for MW-100B, the concentrations are near the MCL; VC concentrations are expected to decrease over time and to not have a long-term impact on groundwater quality.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Some rebound in concentrations of parent compounds in TTA-1 and TTA-2 were observed in 2010 LTM samples. In eight LTM wells within the former EBT areas, PCE concentrations are at 20% to 40% of the baseline concentrations (August 2006) in four wells, near or above baseline concentrations at two locations (MW-113 and PMW92-06 in TTA-2), and not detected (MW-100B) or still declining (DR2-5) at two locations.

The effect of EBT in TTA-1 was observed in the West-central plume in 2009 LTM sample results. PCE concentrations in the West-central plume and sentinel well MW-90 decreased significantly in 2009 and concentrations have remained at reduced concentrations at most locations in 2010.

The boring logs and cross-section developed from the new sentinel wells support the conceptual model of a connection between the fluvial and deeper aquifers. The data also indicate the two MAQ wells and the third IAQ well, MW-256, are appropriately located to serve as sentinel wells for vertical migration of contaminants. The analytical results are consistent with the groundwater modeling described in the IRACR, which indicated the potential for low CVOC concentrations in the Intermediate and Memphis aquifers at the MI. The results do not indicate significant impact to the MAQ.

One change is recommended to the LTM wells; well PZ-06 is redundant and should be abandoned. The well is a 1-inch diameter piezometer installed in 1998. There have been no primary CVOCs detected in the eight samples collected at the piezometer, including five annual samples collected since October 2004. Well MW-53, a background well is located nearby and can provide similar information for the low-level North Central plume.

One change to sample frequency is recommended. Due to detection of TCE above the MCL in background well MW-143, the sample frequency should be changed from biennial to semi-annual. If the TCE concentration is confirmed, the well will be re-classified as a performance well. Background well MW-19 is located upgradient to MW-143.

The new sentinel well will have the final quarterly sample collected in April 2011. They will be re-sampled in October 2011 and the sample frequency will be re-evaluated in the 2011 annual LTM report.

5.0 REFERENCES

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TABLES

TABLE 1
LTM WELLS
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well	Aquifer	Well Classification	Sample Frequency	Northing (ft)	Easting (ft)	Ground Elevation (ft, msl)	Stick Up (ft)	Riser Length (ft)	Screen Length (ft)	Total Well Depth (ft, btoc)
MW-16	Fluvial	Background	Biennial	278837.83	807099.66	300.19	-0.3	57.6	15	72.6
MW-19	Fluvial	Background	Biennial	278945.87	800782.26	290.86	-0.3	83.1	10	93.1
MW-21	Fluvial	Performance	Semiannual	276473.39	800602.39	295.21	-0.2	92.1	15	107.1
MW-22	Fluvial	Boundary	Biennial	275912.38	800702.16	298.49	-0.5	95.4	10	105.4
MW-23	Fluvial	Boundary	Biennial	275791.02	801817.13	299.24	-0.3	101.2	10	111.2
MW-24	Fluvial	Boundary	Biennial	275616.05	803538.81	299.81	-0.3	97.3	15	112.3
MW-25A	Fluvial	Performance	Annual	275975.11	805521.27	270.13	-0.3	73.0	10	83.0
MW-26	Fluvial	Performance	Semiannual	276508.16	805962.09	303.89	-0.2	97.6	10	107.6
MW-34	Intermediate	Sentinel	Annual	279411.21	801917.96	300.80	-0.8	136.6	20	156.6
MW-38	Intermediate	Sentinel	Annual	279141.38	802450.43	308.45	-1.0	139.9	15	154.9
MW-39	Fluvial	Performance	Semiannual	277280.67	802598.11	296.58	-0.3	95.5	20	115.5
MW-39A	Fluvial	Performance	Semiannual	277278.20	802607.72	298.49	0.0	147.9	20	167.9
MW-50	Fluvial	Boundary	Biennial	276455.81	807065.28	299.32	-0.5	115.0	10	125.0
MW-52	Fluvial	Performance	Annual	275371.97	805897.36	279.71	-0.5	94.0	10	104.0
MW-53	Fluvial	Background	Biennial	279176.66	805136.05	305.58	0.8	72.5	10	82.5
MW-55	Fluvial	Background	Biennial	279301.05	801204.62	292.48	-0.4	64.0	10	74.0
MW-62	Fluvial	Performance	Semiannual	278289.89	801858.16	294.10	-0.5	86.0	10	96.0
MW-63A	Fluvial/Intermediate	Sentinel	Annual	278200.31	803572.83	306.33	-0.4	140.0	10	150.0
MW-63B	Fluvial/Intermediate	Sentinel	Annual	278201.32	803557.77	306.22	-0.4	115.0	10	125.0
MW-64	Fluvial	Performance	Semiannual	276951.52	805005.97	304.46	-0.2	102.0	10	112.0
MW-66A	Fluvial	Background	Biennial	276626.02	799792.63	284.34	-0.1	74.6	20	94.6
MW-85	Fluvial	Performance	Semiannual	276704.14	806064.51	304.50	-0.4	95.9	15	110.9
MW-88	Fluvial	Performance	Semiannual	276879.05	806512.88	305.47	-0.3	82.0	15	97.0
MW-89	Intermediate	Sentinel	Annual	278286.97	802555.25	304.38	-0.4	147.0	30	177.0
MW-90	Intermediate	Sentinel	Semiannual	278283.60	802539.51	304.64	-0.5	115.0	30	145.0
MW-92	Fluvial	Performance	Semiannual	276614.20	806489.66	304.78	-0.4	93.0	15	108.0
MW-93	Fluvial	Boundary	Biennial	275542.22	804440.10	294.31	-0.2	92.0	15	107.0
MW-94A	Fluvial	Performance	Semiannual	276805.80	803085.80	303.23	-0.2	109.6	10	119.6
MW-96	Fluvial	Performance	Annual	276310.14	806320.24	289.67	-0.7	75.5	20	95.5
MW-97	Fluvial	Performance	Semiannual	276074.23	802139.23	297.70	-0.3	97.5	20	117.5
MW-98	Fluvial	Performance	Semiannual	276891.37	802572.77	294.93	-0.5	137.0	10	147.0
MW-99	Fluvial	Background	Biennial	277443.37	801114.53	285.69	-0.4	91.5	20	111.5
MW-100B	Fluvial	Performance	Semiannual	276600.65	800854.43	291.60	-0.5	107.5	20	127.5
MW-101	Fluvial	Performance	Semiannual	276204.27	801110.38	291.99	-0.3	89.0	15	104.0
MW-102B	Fluvial	Boundary	Biennial	275760.59	800707.72	312.07	-0.7	120.5	20	140.5
MW-103	Fluvial	Performance	Annual	278690.88	805159.83	301.89	-0.5	70.0	20	90.0
MW-104	Fluvial	Performance	Annual	278676.47	805417.03	292.18	-0.2	70.5	20	90.5
MW-107	Fluvial/Intermediate	Sentinel	Annual	278419.07	803009.93	305.18	-0.3	128.0	15	143.0
MW-108	Fluvial/Intermediate	Sentinel	Semiannual	277658.02	802985.53	303.25	-0.2	160.0	10	170.0

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MW-113	Fluvial	Performance	Semiannual	276685.34	806279.10	304.92	-0.1	96.0	10	106.0
MW-140	Intermediate	Sentinel	Annual	279061.29	801715.68	298.16	0.0	224.6	20	244.6
MW-141	Intermediate	Sentinel	Semiannual	278019.19	802571.25	303.70	0.0	148.7	20	168.7
MW-142	Fluvial	Performance	Annual	278056.03	801629.12	291.49	-0.3	85.0	20	105.0
MW-143	Fluvial	Background	Biennial	278301.27	801201.33	290.74	-0.2	78.5	20	98.5
MW-197A	Fluvial	Performance	Semiannual	276975.42	802042.30	291.54	-0.3	162.0	15	177.0
MW-197B	Fluvial	Performance	Semiannual	276973.14	802036.92	291.43	-0.4	94.2	15	109.2
MW-198	Fluvial	Performance	Annual	277775.67	802141.93	291.80	-0.3	90.0	15	105.0
MW-199A	Intermediate	Sentinel	Annual	277756.40	802573.52	301.84	-0.3	146.1	15	161.1
MW-199B	Fluvial	Performance	Semiannual	277751.74	802575.66	302.07	-0.3	104.6	15	119.6
MW-200	Fluvial	Performance	Semiannual	277006.10	802859.39	300.51	-0.3	102.9	15	117.9
MW-202A	Intermediate	Sentinel	Annual	278685.74	802111.27	299.69	-0.5	176.2	15	191.2
MW-202B	Intermediate	Sentinel	Semiannual	278692.79	802112.04	299.74	-0.2	118.8	15	133.8
MW-203A	Fluvial	Performance	Semiannual	276841.61	801740.37	290.78	-0.2	142.9	15	158.0
MW-203B	Fluvial	Performance	Semiannual	276821.58	801741.76	290.75	-0.2	92.8	15	107.8
MW-204A	Fluvial	Performance	Semiannual	276724.66	802168.25	292.49	-0.3	133.3	15	148.3
MW-204B	Fluvial	Performance	Semiannual	276707.82	802167.00	292.67	-0.4	94.5	15	109.5
MW-205A	Fluvial	Performance	Semiannual	277157.28	802277.37	292.32	-0.4	141.0	15	156.0
MW-205B	Fluvial	Performance	Semiannual	277173.13	802277.76	292.04	-0.2	97.0	15	112.0
MW-206A	Fluvial	Performance	Semiannual	277219.28	802792.28	300.35	-0.4	127.3	15	142.4
MW-206B	Fluvial	Performance	Semiannual	277200.85	802794.78	300.12	-0.2	96.7	15	111.7
MW-207A	Fluvial	Sentinel	Semiannual	277652.65	803191.86	303.99	-0.2	149.7	15	164.7
MW-207B	Fluvial	Sentinel	Semiannual	277665.39	803193.06	304.03	-0.2	108.3	15	123.3
MW-208A	Fluvial	Performance	Semiannual	277382.04	802799.25	301.91	-0.4	183.4	15	198.5
MW-208B	Fluvial	Performance	Semiannual	277396.90	802814.96	302.08	-0.3	106.7	15	121.7
MW-209A	Intermediate	Sentinel	Annual	277574.28	802507.10	298.36	-0.3	189.0	15	204.0
MW-209B	Fluvial	Performance	Semiannual	277581.50	802520.13	298.72	-0.2	102.3	15	117.3
MW-210A	Intermediate	Sentinel	Semiannual	277238.49	801958.05	289.78	-0.1	177.1	15	192.0
MW-210B	Fluvial	Performance	Semiannual	277228.18	801951.94	289.53	-0.2	97.0	15	112.0
MW-211	Intermediate	Sentinel	Annual	278000.59	802973.69	304.09	-0.4	166.3	15	181.3
MW-212	Fluvial	Performance	Semiannual	278028.36	802225.44	295.68	-0.3	85.7	15	100.7
MW-213	Fluvial	Performance	Semiannual	278426.83	801668.99	294.12	-0.3	76.9	15	91.9
MW-214A	Fluvial	Performance	Annual	277877.62	803906.94	303.96	-0.4	119.1	15	134.1
MW-214B	Fluvial	Performance	Annual	277875.84	803922.20	303.96	-0.3	101.6	15	116.6
MW-215A	Fluvial	Performance	Annual	277298.37	804164.31	304.86	-0.4	128.8	15	143.8
MW-215B	Fluvial	Performance	Annual	277298.27	804177.33	304.98	-0.4	105.4	15	120.4
MW-216	Fluvial	Performance	Annual	276024.68	801995.93	297.63	-0.3	99.9	15	115.0
MW-217	Fluvial	Performance	Semiannual	276670.60	805213.69	304.51	-0.3	101.8	15	116.8
MW-218	Fluvial	Performance	Semiannual	276936.70	805628.44	306.00	-0.4	98.9	15	114.0

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MW-219	Fluvial	Boundary	Semiannual	276429.60	800460.96	295.07	-0.2	97.7	15	112.8
MW-229	Intermediate	Sentinel	Annual	279293.98	802836.28	311.99	-0.2	188.4	20	208.4
MW-252	Intermediate	Sentinel	Quarterly	278789.21	801364.70	294.40	-0.2	126.1	20	146.1
MW-253	Intermediate	Sentinel	Quarterly	278287.43	801191.42	290.80	-0.3	118.3	20	138.3
MW-254	Memphis	Sentinel	Quarterly	279334.36	800857.53	293.28	-0.4	285.8	20	305.8
MW-255	Memphis	Sentinel	Quarterly	279304.76	801226.84	292.38	-0.5	284.7	20	304.7
MW-256	Intermediate	Sentinel	Quarterly	279301.82	801243.80	293.40	-0.7	127.1	20	147.1
PMW21-03	Fluvial	Performance	Semiannual	276573.43	800742.52	292.72	-0.6	90.3	20	110.3
PMW21-05	Fluvial	Performance	Semiannual	276628.32	801129.72	288.92	-0.4	94.3	20	114.3
PMW92-03	Fluvial	Performance	Semiannual	276678.91	806438.66	304.17	-0.3	92.5	10	102.5
PMW92-06	Fluvial	Performance	Semiannual	276766.94	806270.66	304.97	-0.3	91.6	10	101.6
PMW101-04A	Fluvial	Performance	Semiannual	276299.41	801182.12	291.43	-0.4	117.9	20	137.9
PMW101-04B	Fluvial	Performance	Semiannual	276296.40	801186.86	291.75	-0.3	98.6	20	118.6
PZ-03	Fluvial	Performance	Annual	276379.33	802941.05	298.98	-0.5	108.9	10	118.9
PZ-06	Fluvial	Performance	Annual	278855.84	805099.54	304.56	-0.2	89.4	10	99.4
DR1-1	Fluvial	Performance	Annual	276300.45	800855.38	293.26	-0.2	121.7	20	141.7
DR1-1A	Fluvial	Performance	Annual	276307.37	800863.15	293.29	-0.2	89.3	20	109.3
DR1-2	Fluvial	Performance	Annual	276536.56	801152.64	290.28	-0.2	97.8	20	117.8
DR1-3	Fluvial	Performance	Semiannual	276527.27	801415.91	291.11	-0.2	109.7	20	129.7
DR1-4	Fluvial	Performance	Annual	276231.20	801399.53	293.00	-0.2	106.3	20	126.3
DR1-5	Fluvial	Performance	Semiannual	276079.76	800828.18	294.88	-0.4	125.2	20	145.2
DR1-5A	Fluvial	Performance	Semiannual	276086.88	800835.32	294.88	-0.3	89.7	20	109.7
DR1-6	Fluvial	Performance	Semiannual	276044.05	801103.49	293.44	-0.5	115.8	20	135.8
DR1-6A	Fluvial	Performance	Semiannual	276035.13	801103.29	293.52	-0.4	90.8	20	110.8
DR1-7	Fluvial	Performance	Annual	276791.26	801441.36	289.46	-0.3	108.3	20	128.3
DR1-8	Fluvial	Performance	Annual	276752.46	800875.44	290.37	-0.4	92.7	20	112.7
DR2-1	Fluvial	Performance	Semiannual	276772.10	806497.62	305.08	-0.2	73.9	20	93.9
DR2-2	Fluvial	Performance	Semiannual	276771.06	806658.74	304.49	-0.1	79.0	20	99.0
DR2-3	Fluvial	Performance	Semiannual	276539.12	806203.16	303.66	-0.2	93.0	20	113.0
DR2-4	Fluvial	Performance	Annual	276455.68	806632.64	303.80	-0.3	88.0	20	108.0
DR2-5	Fluvial	Performance	Semiannual	276830.90	806180.36	305.55	-0.1	85.0	20	105.0
DR2-6	Fluvial	Performance	Semiannual	276643.99	805860.91	304.92	-0.2	94.6	20	114.6

Notes:
ft: feet
ft, btoc: feet below top of casing
ft, msl: feet mean seal level

TABLE 2
LTM SAMPLE SCHEDULE
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well ID	Well Type	Current Sample Frequency	Semiannual Apr-2010	Quarterly Jun to Aug-2010	Biennial Oct-2010	Quarterly Dec-10
MW-16	Background	Biennial	-	-	X	-
MW-19	Background	Biennial	-	-	X	-
MW-21	Performance	Semiannual	X	-	X	-
MW-22	Boundary	Biennial	-	-	X	-
MW-23	Boundary	Biennial	-	-	X	-
MW-24	Boundary	Biennial	-	-	X	-
MW-25A	Performance	Annual	-	-	X	-
MW-26	Performance	Semiannual	X	-	X	-
MW-34	Sentinel	Annual	-	-	X	-
MW-38	Sentinel	Annual	-	-	X	-
MW-39	Performance	Semiannual	X	-	X	-
MW-39A	Performance	Semiannual	X	-	X	-
MW-50	Boundary	Biennial	-	-	X	-
MW-52	Performance	Annual	-	-	X	-
MW-53	Background	Biennial	-	-	X	-
MW-55	Background	Biennial	-	-	X	-
MW-62	Performance	Semiannual	X	-	X	-
MW-63A	Sentinel	Annual	-	-	X	-
MW-63B	Sentinel	Annual	-	-	X	-
MW-64	Performance	Semiannual	X	-	X	-
MW-66A	Background	Biennial	-	-	X	-
MW-85	Performance	Semiannual	X	-	X	-
MW-88	Performance	Semiannual	X	-	X	-
MW-89	Sentinel	Annual	-	-	X	-
MW-90	Sentinel	Semiannual	X	-	X	-
MW-92	Performance	Semiannual	X	-	X	-
MW-93	Boundary	Biennial	-	-	X	-
MW-94A	Performance	Semiannual	X	-	X	-
MW-96	Performance	Annual	-	-	X	-
MW-97	Performance	Semiannual	X	-	X	-
MW-98	Performance	Semiannual	X	-	X	-
MW-99	Background	Biennial	-	-	X	-
MW-100B	Performance	Semiannual	X	-	X	-
MW-101[1]	Performance	Semiannual	X	-	X	-
MW-102B	Boundary	Biennial	-	-	X	-
MW-103	Performance	Annual	-	-	X	-
MW-104	Performance	Annual	-	-	X	-
MW-107[1]	Sentinel	Annual	-	-	X	-
MW-108	Sentinel	Semiannual	X	-	X	-
MW-113	Performance	Semiannual	X	-	X	-
MW-140	Sentinel	Annual	-	-	X	-
MW-141	Sentinel	Semiannual	X	-	X	-
MW-142	Performance	Annual	-	-	X	-
MW-143	Background	Biennial	-	-	X	-
MW-197A	Performance	Semiannual	X	-	X	-
MW-197B	Performance	Semiannual	X	-	X	-
MW-198	Performance	Annual	-	-	X	-
MW-199A	Sentinel	Annual	-	-	X	-
MW-199B	Performance	Semiannual	X	-	X	-

TABLE 2
LTM SAMPLE SCHEDULE
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well ID	Well Type	Current Sample Frequency	Semiannual Apr-2010	Quarterly Jun to Aug-2010	Biennial Oct-2010	Quarterly Dec-10
MW-200	Performance	Semiannual	X	-	X	-
MW-202A	Sentinel	Annual	-	-	X	-
MW-202B	Sentinel	Semiannual	X	-	X	-
MW-203A	Performance	Semiannual	X	-	X	-
MW-203B	Performance	Semiannual	X	-	X	-
MW-204A	Performance	Semiannual	X	-	X	-
MW-204B	Performance	Semiannual	X	-	X	-
MW-205A	Performance	Semiannual	X	-	X	-
MW-205B	Performance	Semiannual	X	-	X	-
MW-206A	Performance	Semiannual	X	-	X	-
MW-206B	Performance	Semiannual	X	-	X	-
MW-207A	Sentinel	Semiannual	X	-	X	-
MW-207B	Sentinel	Semiannual	X	-	X	-
MW-208A	Performance	Semiannual	X	-	X	-
MW-208B	Performance	Semiannual	X	-	X	-
MW-209A	Sentinel	Annual	-	-	X	-
MW-209B	Performance	Semiannual	X	-	X	-
MW-210A	Sentinel	Semiannual	X	-	X	-
MW-210B	Performance	Semiannual	X	-	X	-
MW-211	Sentinel	Annual	-	-	X	-
MW-212	Performance	Semiannual	X	-	X	-
MW-213	Performance	Semiannual	NS	-	NS	-
MW-214A	Performance	Annual	-	-	X	-
MW-214B	Performance	Annual	-	-	X	-
MW-215A	Performance	Annual	-	-	X	-
MW-215B	Performance	Annual	-	-	X	-
MW-216	Performance	Annual	-	-	X	-
MW-217	Performance	Semiannual	X	-	X	-
MW-218	Performance	Semiannual	X	-	X	-
MW-219	Boundary	Semiannual	X	-	X	-
MW-229	Sentinel	Annual	-	-	X	-
MW-252	Sentinel	Quarterly	-	X	X	X
MW-253	Sentinel	Quarterly	-	X	X	X
MW-254	Sentinel	Quarterly	-	X	X	X
MW-255	Sentinel	Quarterly	-	X	X	X
MW-256	Sentinel	Quarterly	-	X	X	X
PMW21-03	Performance	Semiannual	X	-	X	-
PMW21-05	Performance	Semiannual	X	-	X	-
PMW92-03	Performance	Semiannual	X	-	X	-
PMW92-06	Performance	Semiannual	X	-	X	-
PMW101-04A	Performance	Semiannual	X	-	X	-
PMW101-04B	Performance	Semiannual	X	-	X	-
PZ-03	Performance	Annual	-	-	X	-
PZ-06	Performance	Annual	-	-	X	-
DR1-1	Performance	Annual	-	-	X	-
DR1-1A	Performance	Annual	-	-	X	-
DR1-2	Performance	Annual	-	-	X	-
DR1-3	Performance	Semiannual	X	-	X	-
DR1-4	Performance	Annual	-	-	X	-

TABLE 2
LTM SAMPLE SCHEDULE
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well ID	Well Type	Current Sample Frequency	Semiannual Apr-2010	Quarterly Jun to Aug-2010	Biennial Oct-2010	Quarterly Dec-10
DR1-5	Performance	Semiannual	X	-	X	-
DR1-5A	Performance	Semiannual	X	-	X	-
DR1-6	Performance	Semiannual	X	-	X	-
DR1-6A	Performance	Semiannual	X	-	X	-
DR1-7	Performance	Annual	-	-	X	-
DR1-8	Performance	Annual	-	-	X	-
DR2-1	Performance	Semiannual	X	-	X	-
DR2-2	Performance	Semiannual	X	-	X	-
DR2-3	Performance	Semiannual	X	-	X	-
DR2-4	Performance	Annual	-	-	X	-
DR2-5	Performance	Semiannual	X	-	X	-
DR2-6	Performance	Semiannual	X	-	X	-

Notes:

1) Samples collected from two screened intervals in MW-101 and MW-108

X Sample Collected

NS Sample planned but not collected

\- Sample not planned or collected

TABLE 3
WELL INSTALLATION SUMMARY
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well	Date Completed	Northing	Easting	Location	Aquifer Screened	Top of Casing Elevation (ft, msl)	Ground Elevation (ft, msl)	Top of Clay Depth (ft, bgs)	Surface Casing Depth (ft, bgs)	Total Boring Depth (ft, bgs)	Groundwater Elevation (ft, msl)	Fluvial Aquifer Thickness (ft)	Screen Length (ft)	Total Well depth (ft, btoc)
MW-252	6/7/2010	278789.21	801364.70	MI	Intermediate	294.16	294.40	87.0	97.0	151.0	131.12	NM	20	146.1
MW-253	6/9/2010	278287.43	801191.42	MI	Intermediate	290.47	290.80	107.0	117.0	157.0	117.87	NM	20	138.3
MW-254	8/1/2010	279334.36	800857.53	MI	Memphis	292.84	293.28	75.0	85.0	305.0	135.25	NM	20	305.8(1)
MW-255	7/30/2010	279304.76	801226.84	MI	Memphis	291.84	292.38	72.0	82.0	305.0	135.17	NM	20	304.7
MW-256	7/16/2010	279301.82	801243.80	MI	Intermediate	292.68	293.40	69.0	79.0	145.0	129.79	NM	20	147.1(1)

Notes:
ft: feet
ft, bgs: feet below ground surface
ft, msl: feet mean sea level
MI: Main Installation
NM: Not measured
(1): Casing was washed out out prior to setting well making the well set deeper than the hole was drilled.

TABLE 4
WELL DEVELOPMENT SUMMARY
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

			Final Stabilization Parameters			
Well ID	Date Developed	Volume Purged (gallons)	pH	Specific Conductivity (mS/cm)	Turbidity (NTU)	Temperature (˚C)
MW-252	6/15/2010	500.0	6.2	0.240	10.0	20.9
MW-253	6/17/2010	355.0	6.1	0.265	447.0	20.4
MW-253	7/15/2010	38.0	6.1	0.265	9.7	23.5
MW-254	8/12/2010	1892.5	6.1	0.232	5.1	21.5
MW-255	8/3/2010	103.0	6.2	0.291	111.0	28.1
MW-256	7/18/2010	240.0	5.8	0.395	6.4	24.2

Notes:
˚C : degrees Celsius
mS/cm: milliSiemens per centimeter
NTU: nephelometric turbidity units
(1): MW-253 was redeveloped due to elevated turbidity during the first development.

TABLE 5
WELL ABANDONMENT SUMMARY
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well	Date Abandoned	Northing	Easting	Ground Elevation (ft, msl)	Well Depth (ft, btoc)
MW-86	6/6/2010	276696.65	806301.24	304.89	117.5
MW-115	6/8/2010	276588.14	800805.19	291.92	99.5
MW-125	6/8/2010	276594.62	800818.74	291.47	109.0
IW-1	6/6/2010	276705.58	806329.97	304.29	99.0
IW-6	6/8/2010	276580.44	800795.75	292.27	109.0
PZ-07	6/6/2010	277053.25	806006.75	305.22	100.0

Notes:
ft, btoc: feet below top of casing
ft, msl: feet mean sea level

TABLE 6
WATER LEVEL MEASUREMENTS
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

		Top of Casing Elevation	Top of Screen Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation
				23-Mar-10		13-Aug-10		4-Oct-10		7-Dec-10	
Well ID	Aquifer	(ft, msl)	(ft, msl)	(ft, btoc)	(ft, msl)	(ft, btoc)	(ft, msl)	(ft, btoc)	(ft, msl)	(ft, btoc)	(ft, msl)
MW-16	Fluvial	299.86	242.26	56.21	243.65	-	-	56.18	243.68	-	-
MW-19	Fluvial	290.57	207.47	85.80	204.77	-	-	84.51	206.06	-	-
MW-21	Fluvial	295.00	202.90	91.38	203.62	-	-	90.36	204.64	-	-
MW-22	Fluvial	298.04	202.64	94.16	203.88	-	-	93.14	204.90	-	-
MW-23	Fluvial	298.99	197.79	96.56	202.43	-	-	95.45	203.54	-	-
MW-24	Fluvial	299.51	202.21	102.65	196.86	-	-	101.77	197.74	-	-
MW-25A	Fluvial	269.88	196.88	69.69	200.19	-	-	68.75	201.13	-	-
MW-26	Fluvial	303.69	206.09	98.18	205.51	-	-	97.05	206.64	-	-
MW-34	Intermediate	299.97	163.37	130.32	169.65	132.36	167.61	134.12	165.85	131.34	168.63
MW-38	Intermediate	307.45	167.55	126.73	180.72	126.62	180.83	127.69	179.76	126.48	180.97
MW-39	Fluvial	296.28	200.78	100.75	195.53	-	-	99.91	196.37	-	-
MW-39A	Fluvial	298.45	150.53	101.06	197.39	-	-	100.27	198.18	-	-
MW-50	Fluvial	298.82	183.82	84.45	214.37	-	-	83.63	215.19	-	-
MW-52	Fluvial	279.26	185.26	77.50	201.76	-	-	76.57	202.69	-	-
MW-53	Fluvial	306.38	233.88	72.34	234.04	-	-	72.37	234.01	-	-
MW-55	Fluvial	292.08	228.08	69.50	222.58	-	-	70.29	221.79	-	-
MW-62	Fluvial	293.65	207.65	93.56	200.09	-	-	92.50	201.15	-	-
MW-63A	Fluvial/Intermediate	305.96	165.96	102.23	203.73	100.22	205.74	100.49	205.47	100.32	205.64
MW-63B	Fluvial/Intermediate	305.78	190.78	102.08	203.70	-	-	100.26	205.52	-	-
MW-64	Fluvial	304.21	202.21	105.43	198.78	-	-	104.66	199.55	-	-
MW-66A	Fluvial	284.22	209.60	77.55	206.67	-	-	76.30	207.92	-	-
MW-85	Fluvial	304.13	208.23	97.42	206.71	-	-	96.40	207.73	-	-
MW-88	Fluvial	305.15	223.15	78.72	226.43	-	-	77.88	227.27	-	-
MW-89	Intermediate	303.98	156.98	112.25	191.73	-	-	112.05	191.93	-	-
MW-90	Intermediate	304.19	189.19	112.76	191.43	111.89	192.30	112.51	191.68	111.54	192.65
MW-92	Fluvial	304.41	211.41	94.14	210.27	-	-	93.51	210.90	-	-
MW-93	Fluvial	294.08	202.08	98.08	196.00	-	-	79.30	214.78	-	-
MW-94A	Fluvial	303.00	193.38	106.00	197.00	-	-	105.31	197.69	-	-
MW-96	Fluvial	289.02	213.52	80.71	208.31	-	-	79.86	209.16	-	-
MW-97	Fluvial	297.44	199.94	96.70	200.74	-	-	95.65	201.79	-	-

TABLE 6
WATER LEVEL MEASUREMENTS
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well ID	Aquifer	Top of Casing Elevation (ft, msl)	Top of Screen Elevation (ft, msl)	23-Mar-10 Depth to Water (ft, btoc)	23-Mar-10 Groundwater Elevation (ft, msl)	13-Aug-10 Depth to Water (ft, btoc)	13-Aug-10 Groundwater Elevation (ft, msl)	4-Oct-10 Depth to Water (ft, btoc)	4-Oct-10 Groundwater Elevation (ft, msl)	7-Dec-10 Depth to Water (ft, btoc)	7-Dec-10 Groundwater Elevation (ft, msl)
MW-98	Fluvial	294.43	157.43	96.54	197.89	-	-	95.79	198.64	-	-
MW-99	Fluvial	285.33	193.83	85.25	200.08	-	-	84.41	200.92	-	-
MW-100B	Fluvial	291.06	183.56	88.55	202.51	-	-	87.75	203.31	-	-
MW-101T	Fluvial	291.70	202.70	89.27	202.43	-	-	88.16	203.54	-	-
MW-102B	Fluvial	311.40	190.90	106.86	204.54	-	-	105.82	205.58	-	-
MW-103	Fluvial	301.35	231.35	68.51	232.84	-	-	68.35	233.00	-	-
MW-104	Fluvial	295.76	225.26	58.24	237.52	-	-	58.07	237.69	-	-
MW-107	Fluvial/Intermediate	304.92	176.92	107.50	197.42	104.64	200.28	105.16	199.76	104.60	200.32
MW-108	Fluvial/Intermediate	303.07	143.07	106.37	196.70	105.15	197.92	105.61	197.46	104.91	198.16
MW-113	Fluvial	304.81	208.81	95.88	208.93	-	-	94.77	210.04	-	-
MW-140	Intermediate	298.12	73.52	132.94	165.18	140.62	157.50	139.75	158.37	135.57	162.55
MW-141	Intermediate	303.71	155.01	110.39	193.32	109.48	194.23	109.94	193.77	109.09	194.62
MW-142	Fluvial	291.18	206.18	91.81	199.37	-	-	90.76	200.42	-	-
MW-143	Fluvial	290.56	212.06	89.02	201.54	-	-	88.92	201.64	-	-
MW-197A	Fluvial	291.26	129.30	92.97	198.29	91.82	199.44	92.16	199.10	91.53	199.73
MW-197B	Fluvial	291.03	196.88	92.89	198.14	-	-	92.10	198.93	-	-
MW-198	Fluvial	291.50	201.47	93.70	197.80	-	-	92.76	198.74	-	-
MW-199A	Intermediate	301.53	155.45	107.36	194.17	106.37	195.16	106.79	194.74	106.01	195.52
MW-199B	Fluvial	301.73	197.12	104.46	197.27	-	-	103.59	198.14	-	-
MW-200	Fluvial	300.18	196.98	103.17	197.01	-	-	102.46	197.72	-	-
MW-202A	Intermediate	299.23	122.73	119.34	179.89	120.83	178.40	121.37	177.86	119.45	179.78
MW-202B	Intermediate	299.51	180.42	119.59	179.92	120.04	179.47	120.41	179.10	-	-
MW-203A	Fluvial	290.59	147.65	91.59	199.00	-	-	90.66	199.93	-	-
MW-203B	Fluvial	290.51	197.68	91.48	199.03	-	-	90.57	199.94	-	-
MW-204A	Fluvial	292.21	158.95	94.03	198.18	-	-	93.25	198.96	-	-
MW-204B	Fluvial	292.32	197.83	94.09	198.23	-	-	93.26	199.06	-	-
MW-205A	Fluvial	291.93	150.96	94.32	197.61	93.21	198.72	93.61	198.32	92.95	198.98
MW-205B	Fluvial	291.82	194.82	94.12	197.70	-	-	93.37	198.45	-	-
MW-206A	Fluvial	299.92	172.58	103.01	196.91	101.91	198.01	102.30	197.62	101.65	198.27
MW-206B	Fluvial	299.90	203.18	102.97	196.93	-	-	102.25	197.65	-	-

TABLE 6
WATER LEVEL MEASUREMENTS
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well ID	Aquifer	Top of Casing Elevation	Top of Screen Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation
				23-Mar-10		13-Aug-10		4-Oct-10		7-Dec-10	
		(ft, msl)	(ft, msl)	(ft, btoc)	(ft, msl)	(ft, btoc)	(ft, msl)	(ft, btoc)	(ft, msl)	(ft, btoc)	(ft, msl)
MW-207A	Fluvial	303.78	154.13	107.08	196.70	105.84	197.94	106.29	197.49	105.63	198.15
MW-207B	Fluvial	303.83	195.58	106.97	196.86	-	-	106.16	197.67	-	-
MW-208A	Fluvial	301.50	118.05	104.65	196.85	103.84	197.66	104.21	197.29	104.49	197.01
MW-208B	Fluvial	301.79	195.13	104.93	196.86	-	-	104.22	197.57	-	-
MW-209A	Fluvial	298.05	109.07	102.81	195.24	102.48	195.57	102.60	195.45	101.72	196.33
MW-209B	Fluvial	298.49	196.17	101.22	197.27	-	-	100.38	198.11	-	-
MW-210A	Intermediate	289.66	112.60	97.31	192.35	97.83	191.83	97.88	191.78	96.70	192.96
MW-210B	Fluvial	289.29	192.33	91.32	197.97	-	-	90.43	198.86	-	-
MW-211	Intermediate	303.74	137.48	107.76	195.98	106.41	197.33	106.92	196.82	106.20	197.54
MW-212	Fluvial	295.34	209.69	97.38	197.96	-	-	96.41	198.93	-	-
MW-213	Fluvial	293.83	216.92	Dry	-	-	-	Dry	-	-	-
MW-214A	Fluvial	303.61	184.53	101.67	201.94	-	-	100.47	203.14	-	-
MW-214B	Fluvial	303.70	202.13	101.26	202.44	-	-	100.01	203.69	-	-
MW-215A	Fluvial	304.50	175.75	107.46	197.04	-	-	106.70	197.80	-	-
MW-215B	Fluvial	304.56	199.15	107.55	197.01	-	-	106.81	197.75	-	-
MW-216	Fluvial	297.34	197.41	96.40	200.94	-	-	95.39	201.95	-	-
MW-217	Fluvial	304.18	202.39	105.60	198.58	-	-	104.78	199.40	-	-
MW-218	Fluvial	305.60	206.69	102.19	203.41	-	-	101.08	204.52	-	-
MW-219	Fluvial	294.90	197.16	91.03	203.87	-	-	89.75	205.15	-	-
MW-229	Intermediate	311.77	123.34	144.73	167.04	153.58	158.19	152.65	159.12	148.36	163.41
MW-252	Intermediate	294.16	168.36	-	-	133.94	160.22	134.28	159.88	130.46	163.70
MW-253	Intermediate	290.47	172.47	-	-	110.24	180.23	109.21	181.26	106.94	183.53
MW-254	Memphis	292.84	7.24	-	-	137.17	155.67	136.01	156.83	131.70	161.14
MW-255	Memphis	291.84	7.34	-	-	135.41	156.43	134.42	157.42	130.12	161.72
MW-256	Intermediate	292.68	166.68	-	-	131.49	161.19	133.29	159.39	129.95	162.73
PMW21-03	Fluvial	292.11	201.80	89.93	202.18	-	-	88.51	203.60	-	-
PMW21-05	Fluvial	288.53	194.28	87.64	200.89	-	-	86.61	201.92	-	-
PMW92-03	Fluvial	303.91	211.42	92.57	211.34	-	-	92.21	211.70	-	-
PMW92-06	Fluvial	304.65	213.02	94.00	210.65	-	-	93.22	211.43	-	-
PMW101-04A	Fluvial	291.07	173.13	89.32	201.75	-	-	88.25	202.82	-	-

TABLE 6
WATER LEVEL MEASUREMENTS
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well ID	Aquifer	Top of Casing Elevation (ft, msl)	Top of Screen Elevation (ft, msl)	Depth to Water 23-Mar-10 (ft, btoc)	Groundwater Elevation 23-Mar-10 (ft, msl)	Depth to Water 13-Aug-10 (ft, btoc)	Groundwater Elevation 13-Aug-10 (ft, msl)	Depth to Water 4-Oct-10 (ft, btoc)	Groundwater Elevation 4-Oct-10 (ft, msl)	Depth to Water 7-Dec-10 (ft, btoc)	Groundwater Elevation 7-Dec-10 (ft, msl)
PMW101-04B	Fluvial	291.75	192.91	89.89	201.86	-	-	88.80	202.95	-	-
PZ-03	Fluvial	298.51	189.61	101.24	197.27	-	-	100.46	198.05	-	-
PZ-06	Fluvial	302.74	213.34	74.97	227.77	-	-	74.01	228.73	-	-
DR1-1	Fluvial	293.09	171.42	90.36	202.73	-	-	89.57	203.52	-	-
DR1-1A	Fluvial	293.13	203.79	90.42	202.71	-	-	89.48	203.65	-	-
DR1-2	Fluvial	290.08	192.28	88.72	201.36	-	-	87.69	202.39	-	-
DR1-3	Fluvial	290.93	181.26	NM	-	-	-	89.58	201.35	-	-
DR1-4	Fluvial	292.78	186.50	90.84	201.94	-	-	89.74	203.04	-	-
DR1-5	Fluvial	294.50	169.28	91.80	202.70	-	-	90.71	203.79	-	-
DR1-5A	Fluvial	294.61	204.88	91.86	202.75	-	-	90.79	203.82	-	-
DR1-6	Fluvial	292.98	177.14	90.49	202.49	-	-	89.41	203.57	-	-
DR1-6A	Fluvial	293.14	202.32	90.60	202.54	-	-	89.49	203.65	-	-
DR1-7	Fluvial	289.15	180.86	89.06	200.09	-	-	88.12	201.03	-	-
DR1-8	Fluvial	290.02	197.37	87.81	202.21	-	-	86.91	203.11	-	-
DR2-1	Fluvial	304.90	231.00	86.75	218.15	-	-	86.26	218.64	-	-
DR2-2	Fluvial	304.37	225.37	80.44	223.93	-	-	80.65	223.72	-	-
DR2-3	Fluvial	303.44	210.44	96.06	207.38	-	-	95.07	208.37	-	-
DR2-4	Fluvial	303.47	215.47	93.32	210.15	-	-	92.41	211.06	-	-
DR2-5	Fluvial	305.44	220.44	94.82	210.62	-	-	94.10	211.34	-	-
DR2-6	Fluvial	304.70	210.10	100.01	204.69	-	-	98.85	205.85	-	-

Notes:
ft, msl: feet above mean sea level
ft, btoc: feet below top of casing
-: Not measured

TABLE 7
FINAL WELL STABILIZATION MEASUREMENTS, APRIL 2010
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Well ID	Sample Date	Method	Time Sampled	Sample Pump Depth (ft, btoc)	Water Depth (ft, btoc)	Purge Rate (mL/min)	Volume Purged (L)	(pH)	Temp (˚C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTUs)
MW-21	3/30/2010	low flow	10:07	92.2	9.44	400	15.8	5.8	17.5	0.318	8.0	123.3	0.0
MW-26	3/31/2010	low flow	10:35	104.1	98.07	110	3.0	5.6	20.4	0.347	8.3	122.1	0.0
MW-39	3/31/2010	low flow	15:56	110.1	100.58	45	3.0	5.8	22.3	0.422	4.7	66.2	0.0
MW-39A	4/2/2010	low flow	13:31	161.6	100.87	390	7.6	5.7	19.0	0.429	6.2	149.3	0.0
MW-62	4/7/2010	bailer	8:30	na	93.45	na	5.7	5.9	18.1	0.205	7.1	116.7	164.0
MW-64	3/29/2010	low flow	4:00	110.4	105.32	180	4.0	5.6	19.5	0.365	7.7	74.6	5.0
MW-85	3/30/2010	low flow	15:04	105.1	97.75	100	3.7	5.6	22.5	0.300	7.1	113.4	4.4
MW-88	3/30/2010	low flow	13;43	87.0	78.63	100	1.6	5.6	22.1	0.362	8.2	126.4	1.7
MW-90	4/2/2010	low flow	15:18	130.6	112.43	390	5.1	5.5	19.2	0.710	6.0	131.3	0.0
MW-92	4/7/2010	low flow	9:50	102.1	93.70	160	6.0	6.7	21.0	1.013	1.6	-90.0	5.2
MW-94A	3/29/2010	low flow	14:50	117.5	105.89	200	6.1	5.8	19.2	0.437	5.4	94.9	7.2
MW-97	3/31/2010	low flow	14:10	109.2	96.52	280	11.4	5.5	19.5	0.222	7.8	85.2	2.7
MW-98	4/5/2010	low flow	17:10	142.6	96.44	225	13.6	5.7	19.2	0.373	6.3	117.1	20.0
MW-100B	3/30/2010	low flow	9:00	118.5	88.78	200	10.1	6.5	18.5	1.897	3.4	-85.0	0.7
MW101T	4/5/2010	low flow	11:23	98.5	89.20	60	3.9	6.0	23.0	0.458	6.6	108.5	19.0
MW101B	4/5/2010	low flow	10:19	127.6	89.20	360	37.8	6.0	19.5	0.462	6.5	71.4	1.9
MW-108	4/1/2010	low flow	14:45	167.9	106.15	320	13.2	5.3	18.8	0.619	6.5	37.3	6.7
MW-113	3/30/2010	low flow	15:58	103.2	95.72	140	4.8	5.2	21.7	0.264	4.8	120.8	0.0
MW-141	4/2/2010	low flow	14:40	161.0	110.15	300	7.7	5.3	19.0	0.624	4.2	143.4	0.0
MW-197A	4/2/2010	low flow	8:37	170.4	92.73	300	7.6	5.9	17.7	0.426	5.8	87.1	3.3
MW-197B	4/2/2010	low flow	8:06	102.6	92.62	220	6.7	6.0	17.4	0.553	4.3	70.8	0.0
MW-199B	4/2/2010	low flow	14:06	113.3	104.20	350	5.9	5.4	19.2	0.230	7.9	140.6	0.0
MW-200	3/29/2010	low flow	15:25	112.0	103.07	210	6.0	5.8	18.1	0.444	3.7	82.9	3.7
MW-202B	4/6/2010	low flow	15:08	129.9	119.44	360	22.5	5.7	20.0	0.682	6.7	142.0	14.5
MW-203A	4/2/2010	low flow	9:04	150.5	91.37	320	6.2	5.8	17.8	0.413	5.5	108.5	0.0
MW-203B	4/2/2010	low flow	10:00	100.3	91.36	200	6.0	6.1	18.1	0.520	3.9	52.2	0.0
MW-204A	4/6/2010	low flow	10:25	139.0	93.73	420	9.2	5.9	18.8	0.520	4.1	130.7	0.0
MW-204B	4/6/2010	low flow	9:53	100.5	93.74	275	8.4	6.0	19.2	0.492	6.0	124.7	0.5
MW-205A	4/6/2010	low flow	11:37	147.0	94.00	360	19.8	5.9	19.2	0.443	4.6	30.8	0.3
MW-205B	4/6/2010	low flow	12:48	103.1	93.75	320	7.1	5.9	19.6	0.545	4.6	108.7	0.0
MW-206A	4/6/2010	low flow	8:58	134.8	102.68	200	10.0	5.9	18.7	0.406	4.2	112.0	0.4
MW-206B	4/6/2010	low flow	8:22	107.9	102.65	350	9.5	5.8	18.5	0.352	7.3	100.1	0.0
MW-207A	4/1/2010	low flow	16:35	157.2	106.76	250	12.0	5.4	20.8	0.616	7.3	100.1	20.0
MW-207B	4/2/2010	low flow	12:50	115.6	106.75	140	3.1	5.5	20.8	0.278	8.1	143.4	1.7
MW-208A	4/5/2010	low flow	16:14	191.0	104.65	275	17.4	6.0	20.3	0.346	3.9	71.2	7.7
MW-208B	4/5/2010	low flow	14:38	114.2	104.80	180	8.6	5.8	20.2	0.286	7.2	114.8	17.3

TABLE 7
FINAL WELL STABILIZATION MEASUREMENTS, APRIL 2010
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Well ID	Sample Date	Method	Time Sampled	Sample Pump Depth (ft, btoc)	Water Depth (ft, btoc)	Purge Rate (mL/min)	Volume Purged (L)	(pH)	Temp (˚C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTUs)
MW-209B	4/6/2010	low flow	13:36	108.3	100.81	360	6.4	5.6	20.4	0.200	8.7	129.5	6.9
MW-210A	4/2/2010	low flow	14:53	184.5	97.23	210	7.3	5.9	18.2	0.385	7.3	111.2	0.0
MW-210B	4/2/2010	low flow	11:20	104.5	91.21	160	3.1	5.8	18.6	0.339	7.3	126.1	2.0
MW-212	4/7/2010	bailer	7:59	na	97.12	na	7.5	5.6	18.6	0.218	7.7	109.6	385.0
MW-213	4/7/2010	na	--	Dry	--	--	--	--	--	--	--	--	--
MW-217	3/31/2010	low flow	8:42	111.0	105.50	110	3.5	5.6	17.9	0.265	7.4	122.2	3.1
MW-218	3/31/2010	low flow	13:07	108.2	102.03	100	4.6	5.9	22.9	0.322	9.3	107.8	20.0
MW-219	4/1/2010	low flow	8:02	105.2	90.96	400	7.5	5.8	17.7	0.374	8.0	80.3	0.4
PMW21-03	3/30/2010	low flow	8:02	101.2	89.55	315	7.5	5.8	17.3	0.333	3.7	57.2	0.0
PMW101-04A	4/1/2010	low flow	11:32	128.8	89.20	300	13.5	6.4	19.7	0.662	6.5	-76.4	16.7
PMW101-04B	4/1/2010	low flow	10:07	109.5	89.74	350	9.3	5.7	18.7	0.407	5.7	11.6	0.2
PMW21-05	4/1/2010	low flow	12:21	105.1	87.75	340	10.0	5.4	19.5	0.339	8.8	89.6	5.3
PMW92-06	4/7/2010	low flow	11:29	98.9	93.81	140	6.1	5.5	21.2	0.251	1.4	120.3	1.9
PMW92-03	4/7/2010	low flow	10:32	98.6	92.46	270	5.2	6.4	21.1	0.743	1.6	-33.7	2.8
DR1-3	4/5/2010	low flow	13:16	121.6	90.44	310	13.2	5.9	19.1	0.455	4.9	-60.9	0.0
DR1-5	3/30/2010	low flow	10:50	136.3	91.70	160	4.8	5.7	19.4	0.373	8.5	137.5	0.0
DR1-5A	3/30/2010	low flow	11:50	102.3	91.82	400	16.3	5.7	19.1	0.220	10.8	59.8	0.1
DR1-6	4/1/2010	low flow	9:21	126.6	90.37	260	7.7	5.7	19.5	0.477	10.3	129.6	0.0
DR2-1	3/30/2010	low flow	12:59	92.3	86.70	50	1.1	6.0	22.7	0.329	10.5	107.1	1.9
DR2-2	4/7/2010	low flow	14:12	88.6	80.67	180	4.0	5.5	20.2	0.301	5.9	175.2	9.5
DR2-3	4/7/2010	low flow	13:38	102.6	95.84	180	3.7	5.5	20.7	0.437	5.3	154.4	5.7
DR2-5	4/7/2010	low flow	12:52	98.6	94.71	120	9.7	5.8	21.5	0.329	1.6	33.5	2.7
DR2-6	3/31/2010	low flow	9:38	109.2	99.89	110	3.8	6.3	18.6	0.291	4.5	138.5	4.9

Notes:

˚C : degrees Celsius
DO: Dissolved Oxygen
ft, btoc: feet below top of casing
L: liters
mg/L: milligrams per liter
mL/min: milliliters per minute
mS/cm: milliSiemens per centimeter
mV: millivolts
NA: not available
NTUs: nephelometric turbidity units
ORP: Oxidation Reduction Potential

TABLE 8
FINAL WELL STABILIZATION MEASUREMENTS, JUNE-AUGUST 2010
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Main Installation - Defense Depot Memphis, Tennessee

Well ID	Sample Date	Method	Time Sampled	Sample Depth(1) (ft, btoc)	Water Depth (ft, btoc)	Purge Rate (mL/min)	Volume Purged (L)	pH	Temp (˚C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
MW-252	6/18/2010	low flow	9:00	138.2	130.00	380	9.3	6.0	21.1	0.209	0.0	117.1	7.7
MW-253	6/18/2010	low flow	16:50	124.2	117.89	330	33.5	5.9	21.1	0.252	1.6	128.0	1428.0
MW-254	8/16/2010	low flow	13:15	295.8	136.36	400	14.0	5.8	20.8	0.224	6.2	105.5	10.5
MW-255	8/9/2010	low flow	14:35	294.7	134.47	300	29.5	6.0	21.5	0.265	2.6	38.9	38.6
MW-256	8/9/2010	low flow	18:00	137.1	131.59	250	14.0	5.6	20.7	0.422	2.1	120.0	17.5

Notes:
˚C : degrees Celsius
DO : Dissolved Oxygen
ft, btoc: feet below top of casing
L : liters
mg/L : milligrams per liter
mL/min: milliliters per minute
mS/cm : milliSiemens per centimeter
mV :millivolts
NTU: nephelometric turbidity unit
ORP : Oxidation Reduction Potential

(1) - MW-252, MW-253, and MW-256 sample depths are the location of the pump intakes. For MW-254 and MW-255 the sample depth is the location of the sample inlet on a drop tube, the pumps are located at 160 ft bgs.

TABLE 9
FINAL WELL STABILIZATION MEASUREMENTS, OCTOBER 2010
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well ID	Sample Date	Method	Time Sampled	Sample Pump Depth (ft, btoc)	Water Depth (ft, btoc)	Purge Rate (mL/min)	Volume Purged (L)	pH	Temp (˚C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTUs)
MW-16	10/13/2010	low flow	14:15	65.1	55.36	150	3.3	6.1	22.1	0.294	6.89	-22.5	5.5
MW-19	10/11/2010	low flow	12:55	88.1	84.00	80	10.8	7.0	22.7	0.246	9.20	-108.1	33.7
MW-21	10/6/2010	low flow	10:25	92.2	90.04	100	3.1	6.0	19.2	0.274	6.09	192.3	1.8
MW-22	10/12/2010	low flow	9:40	100.4	92.85	80	7.5	6.3	19.5	0.498	3.89	8.7	14.4
MW-23	10/12/2010	low flow	12:16	106.2	95.14	80	3.4	6.4	22.4	0.512	2.08	-2.3	14.0
MW-24	10/14/2010	low flow	9:39	102.3	101.85	350	11.8	5.9	19.0	0.284	8.40	206.2	18.0
MW-25A	10/7/2010	low flow	10:27	79.0	68.74	310	6.0	5.9	18.0	0.386	6.09	228.3	1.3
MW-26	10/7/2010	low flow	9:27	104.1	96.97	300	5.3	5.9	20.0	0.297	6.94	213.6	3.3
MW-34	10/6/2010	low flow	13:49	148.9	134	140	4.0	5.4	20.5	0.242	3.96	-109.9	3.4
MW-38	10/9/2010	low flow	13:22	147.0	127.27	160	6.3	6.0	22.0	0.314	1.20	-242.3	1.6
MW-39	10/9/2010	low flow	9:45	110.1	99.61	190	5.9	6.0	20.4	0.416	0.94	-253.4	9.5
MW-39A	10/9/2010	low flow	10:32	161.6	99.94	350	12.7	6.0	19.6	0.414	1.40	-232.6	5.3
MW-50	10/13/2010	low flow	12:26	120.0	83.69	300	7.8	5.9	20.4	0.655	6.59	184.9	14.9
MW-52	10/7/2010	low flow	11:07	97.4	76.55	300	5.0	5.9	19.2	1.022	4.78	214.0	4.9
MW-53	10/13/2010	low flow	10:37	77.5	72.32	290	12.9	6.0	20.4	0.424	4.36	196.2	4.4
MW-55	10/11/2010	low flow	10:20	69.0	69.87	200	8.4	5.9	21.0	0.202	8.90	4.5	16.6
MW-62	10/15/2010	bailed	10:34	na	92.53	na	7.6	6.2	18.3	0.114	9.71	147.1	170.0
MW-63A	10/7/2010	low flow	13:15	136.1	100.2	100	4.0	5.8	22.9	0.537	3.11	-187.5	0.7
MW-63B	10/7/2010	low flow	13:57	120.8	99.95	170	4.0	5.6	21.7	0.799	3.34	-181.6	1.2
MW-64	10/7/2010	low flow	8:37	110.4	104.45	350	6.9	6.0	19.9	0.302	5.92	212.6	2.9
MW-66A	10/12/2010	low flow	12:45	84.5	76.34	100	3.5	6.0	22.8	0.340	1.34	30.1	18.0
MW-85	10/14/2010	low flow	12:51	105.1	96.41	60	3.3	5.6	22.4	0.260	5.28	122.2	5.3
MW-88	8/4/2010	low flow	15:57	87.0	77.75	80	3.3	5.9	22.4	0.340	6.91	-16.2	1.7
MW-89	10/8/2010	low flow	14:51	164.3	111.56	320	7.5	5.7	20.1	0.287	5.21	-175.8	9.7
MW-90	10/8/2010	low flow	14:19	130.6	112	340	6.8	5.8	20.2	0.705	4.18	181.0	5.6
MW-92	10/9/2010	low flow	15:44	102.1	93.41	68	3.2	6.4	25.8	0.521	0.67	-131.4	3.0
MW-93	10/14/2010	low flow	8:35	103.0	97.37	80	3.4	5.7	16.3	0.277	8.20	97.9	17.2
MW-94A	10/11/2010	low flow	8:14	117.5	104.67	180	6.0	5.8	20.3	0.418	1.40	-20.1	7.6
MW-96	10/7/2010	low flow	12:04	89.2	79.72	270	9.2	6.0	20.0	0.297	6.71	189.1	1.8
MW-97	10/9/2010	low flow	15:35	109.2	95.2	200	5.2	5.7	21.3	0.140	9.10	219.5	18.7
MW-98	10/9/2010	low flow	11:36	142.6	95.51	330	17.0	5.9	20.6	0.357	4.05	-142.3	19.4
MW-99	10/12/2010	low flow	16:27	102.0	83.78	50	5.6	6.1	21.7	0.322	1.10	8.5	45.1
MW-100B	10/6/2010	low flow	8:15	118.5	87.43	100	3.2	6.7	19.8	1.020	1.20	-137.0	5.5
MW-101T	10/13/2010	low flow	10:55	98.5	87.99	50	3.5	5.9	21.3	0.453	10.47	48.0	3.3
MW-101B	10/13/2010	low flow	9:45	127.6	87.99	40	3.0	5.9	22.1	0.460	8.50	42.4	2.8
MW-102B	10/11/2010	low flow	15:30	131.0	109.38	100	5.2	6.2	25.5	0.532	5.99	-115.8	19.9
MW-103	10/7/2010	low flow	11:10	80.0	67.99	120	5.2	5.7	22.9	0.964	1.42	-203.1	28.5
MW-104	10/7/2010	low flow	12:15	77.2	57.68	90	3.4	5.7	21.2	0.812	1.32	-222.3	7.5
MW-107T	10/13/2010	low flow	8:30	136.0	104.85	280	8.0	5.9	18.3	0.233	6.82	197.8	1.8
MW-107B	10/13/2010	low flow	9:07	153.0	104.91	350	10.7	5.9	18.6	0.232	6.89	211.7	16.6
MW-108	10/12/2010	low flow	12:20	167.9	105.12	350	7.4	5.7	19.1	0.567	3.60	192.8	14.1

TABLE 9
FINAL WELL STABILIZATION MEASUREMENTS, OCTOBER 2010
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well ID	Sample Date	Method	Time Sampled	Sample Pump Depth (ft, btoc)	Water Depth (ft, btoc)	Purge Rate (mL/min)	Volume Purged (L)	pH	Temp (˚C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTUs)
MW-113	10/14/2010	low flow	12:34	103.2	94.98	175	4.7	5.7	23.1	0.184	1.61	202.7	1.5
MW-140	10/13/2010	low flow	13:53	238.5	139.05	200	8.3	5.8	20.2	0.235	6.50	163.4	0.7
MW-141	10/8/2010	low flow	13:45	161.0	109.58	330	7.3	5.8	20.3	0.619	1.66	-217.0	3.3
MW-142	10/9/2010	low flow	11:09	96.9	90.3	100	3.1	5.9	21.5	0.241	10.43	224.9	1.0
MW-143	10/12/2010	low flow	11:00	86.0	87.53	100	4.6	6.0	20.6	0.258	3.20	29.7	10.3
MW-197A	10/11/2010	low flow	8:47	170.4	91.65	340	6.2	6.1	18.4	0.357	4.57	196.5	12.1
MW-197B	10/11/2010	low flow	9:42	102.6	91.55	210	10.2	6.3	19.3	0.437	2.21	132.8	0.9
MW-198	10/8/2010	low flow	11:57	100.5	92.34	90	3.0	5.9	24.7	0.162	8.77	177.5	3.1
MW-199A	10/7/2010	low flow	15:25	154.6	106.34	80	3.2	5.8	22.8	0.266	5.24	-165.8	13.2
MW-199B	10/8/2010	low flow	13:11	113.3	103.22	250	5.6	5.8	21.3	0.203	7.71	-169.8	7.0
MW-200	10/11/2010	low flow	9:00	112.0	101.89	200	6.6	6.0	19.1	0.420	0.98	-32.3	2.4
MW-202A	10/9/2010	low flow	13:56	185.0	120.95	330	6.5	5.5	20.5	0.312	4.69	-138.6	3.6
MW-202B	10/9/2010	low flow	14:43	129.9	120.61	265	10.7	5.8	21.3	0.627	3.97	-134.1	12.2
MW-203A	10/9/2010	low flow	13:02	150.5	92.28	80	3.2	6.0	22.5	0.343	3.29	211.0	2.0
MW-203B	10/11/2010	low flow	13:02	100.3	90.13	150	3.7	6.3	21.6	0.427	2.57	84.7	5.9
MW-204A	10/8/2010	low flow	14:00	139.0	92.76	100	3.2	6.2	22.3	0.460	2.73	176.5	2.0
MW-204B	10/11/2010	low flow	13:57	100.5	92.72	200	4.5	6.1	22.1	0.378	7.47	181.0	3.9
MW-205A	10/8/2010	low flow	15:40	147.0	93	90	3.5	6.1	23.4	0.371	2.81	117.0	1.1
MW-205B	10/11/2010	low flow	14:46	103.1	92.77	140	3.4	6.3	23.0	0.454	2.54	137.7	8.1
MW-206A	10/8/2010	low flow	9:10	134.8	101.78	60	3.0	6.2	20.0	0.333	2.55	165.9	6.2
MW-206B	10/8/2010	low flow	11:18	107.9	101.87	210	10.6	6.0	20.8	0.345	2.25	-206.6	5.5
MW-207A	10/14/2010	low flow	8:32	157.2	106.16	390	7.9	5.7	19.1	0.576	3.52	206.2	15.6
MW-207B	10/12/2010	low flow	11:01	115.6	105.7	150	3.7	5.8	22.4	0.373	6.67	188.6	9.9
MW-208A	10/8/2010	low flow	10:50	191.0	103.69	100	3.5	6.1	21.0	0.342	2.63	68.4	10.8
MW-208B	10/8/2010	low flow	9:45	114.2	103.77	170	4.8	5.7	20.5	0.244	6.39	-173.7	7.6
MW-209A	10/9/2010	low flow	8:35	195.3	102.28	210	5.2	5.6	20.0	0.286	8.36	-60.7	5.4
MW-209B	10/8/2010	low flow	12:31	108.3	100	140	3.0	5.6	23.3	0.156	7.18	-160.0	13.8
MW-210A	10/11/2010	low flow	10:29	184.5	97.48	180	3.9	6.2	19.9	0.315	6.96	187.2	6.9
MW-210B	10/11/2010	low flow	11:02	104.5	90.1	190	3.8	6.0	20.3	0.249	9.44	203.4	4.8
MW-211	10/13/2010	low flow	15:10	174.0	106.58	380	9.7	5.9	19.8	0.415	3.89	178.3	8.0
MW-212	10/15/2010	bailed	11:05	na	96.24	na	9.2	5.9	18.2	0.131	10.11	110.4	196.0
MW-213	10/15/2010	--	--	Dry	Dry	--	--	--	--	--	--	--	--
MW-214A	10/7/2010	low flow	8:45	126.6	100.01	125	3.0	5.7	21.8	0.363	4.78	-130.6	16.6
MW-214B	10/12/2010	low flow	9:58	109.6	99.65	190	3.5	5.9	21.8	0.314	4.63	188.0	1.1
MW-215A	10/6/2010	low flow	15:32	136.3	106.29	80	3.0	5.9	24.6	0.337	5.90	191.5	2.6
MW-215B	10/12/2010	low flow	9:19	114.4	106.41	230	4.5	5.9	21.4	0.323	6.43	209.3	15.2
MW-216	10/9/2010	low flow	14:50	107.4	90.05	100	5.1	6.2	24.3	0.555	8.91	200.4	18.7
MW-217	10/7/2010	low flow	14:40	111.0	104.68	125	3.0	5.8	23.5	0.208	5.93	189.5	8.4
MW-218	10/14/2010	low flow	10:28	108.2	101.05	280	5.5	6.0	20.8	0.249	10.57	198.8	9.5
MW-219	10/6/2010	low flow	10:37	105.2	89.8	360	6.5	5.8	18.5	0.338	6.01	-35.7	3.7
MW-229	10/6/2010	low flow	12:08	200.0	152.68	200	10.0	6.3	19.8	0.287	0.82	-193.2	2.8

TABLE 9
FINAL WELL STABILIZATION MEASUREMENTS, OCTOBER 2010
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well ID	Sample Date	Method	Time Sampled	Sample Pump Depth (ft, btoc)	Water Depth (ft, btoc)	Purge Rate (mL/min)	Volume Purged (L)	pH	Temp (˚C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTUs)
MW-252	10/6/2010	low flow	9:15	138.2	134.11	370	14.0	5.9	19.4	0.257	5.50	-43.5	1.7
MW-253	10/6/2010	low flow	9:57	124.2	108.91	300	7.6	5.7	19.4	0.294	6.22	-33.4	14.5
MW-254	10/5/2010	low flow	12:59	295.6	136.14	380	27.9	5.7	19.7	0.261	3.22	44.7	19.7
MW-255	10/5/2010	low flow	11:11	294.5	134.52	350	36.0	5.8	19.6	0.291	2.59	6.5	22.0
MW-256	10/5/2010	low flow	8:52	136.3	133.34	340	22.0	5.5	19.1	0.478	5.66	-101.0	9.0
PMW21-03	10/5/2010	low flow	8:50	101.2	88.4	100	3.8	6.1	17.8	0.263	2.68	145.6	0.6
PMW21-05	10/6/2010	low flow	13:50	105.1	86.28	150	3.4	6.0	21.8	0.264	1.23	119.2	2.8
PMW92-03	10/4/2010	low flow	15:26	98.6	92.19	100	3.1	6.7	23.0	0.631	2.50	-56.9	4.8
PMW92-06	10/4/2010	low flow	16:33	98.9	93.2	150	4.7	5.8	23.1	0.172	2.27	179.2	0.5
PMW101-04A	10/14/2010	low flow	10:20	128.8	88.19	140	5.9	6.5	19.6	0.599	1.90	-63.8	17.8
PMW101-04B	10/5/2010	low flow	12:00	109.5	88.71	120	3.4	6.1	20.0	0.288	1.48	24.1	17.2
PZ-03	10/15/2010	bailed	15:05	na	100.19	na	8.5	6.8	19.9	0.339	10.37	155.0	1436.0
PZ-06	10/15/2010	bailed	11:30	na	74.33	na	8.5	6.5	18.6	0.252	6.96	101.3	5603.0
DR1-1	10/9/2010	low flow	10:15	133.8	89.19	100	3.1	6.1	23.0	0.366	7.00	210.3	2.8
DR1-1A	10/9/2010	low flow	8:54	101.3	89.11	100	3.1	6.2	21.6	0.343	8.78	204.3	1.8
DR1-2	10/5/2010	low flow	9:55	109.1	87.59	100	3.4	6.2	20.9	0.360	6.34	176.8	0.5
DR1-3	10/6/2010	low flow	12:00	121.6	89.31	100	3.2	6.3	20.6	0.375	1.77	-26.9	0.6
DR1-4	10/6/2010	low flow	12:50	117.6	89.47	120	3.5	6.3	20.5	0.447	1.90	37.5	2.2
DR1-5	10/5/2010	low flow	16:40	136.3	90.45	60	3.0	5.9	22.3	0.314	6.01	212.3	0.6
DR1-5A	10/5/2010	low flow	15:20	102.3	90.52	100	3.4	5.9	21.9	0.149	9.36	210.3	3.0
DR1-6	10/5/2010	low flow	14:29	126.6	89.2	100	3.2	6.1	22.2	0.405	6.19	190.9	1.2
DR1-6A	10/5/2010	low flow	13:30	102.8	89.34	150	3.6	5.9	21.1	0.154	7.58	194.0	1.8
DR1-7	10/5/2010	low flow	11:00	120.3	88.01	80	3.1	6.2	19.4	0.337	5.69	187.2	12.8
DR1-8	10/6/2010	low flow	9:10	103.5	86.68	100	3.3	6.1	20.8	0.307	7.62	164.3	1.7
DR2-1	10/14/2010	low flow	14:00	92.3	86.28	80	4.2	6.2	23.2	0.295	8.89	92.1	5.7
DR2-2	10/12/2010	low flow	8:31	88.6	80.65	150	16.0	5.9	25.4	0.263	7.55	212.3	32.2
DR2-3	10/6/2010	low flow	13:49	102.6	94.95	300	5.4	5.4	21.4	0.395	5.94	-123.3	2.0
DR2-4	10/13/2010	low flow	13:00	102.0	92.35	120	3.5	5.5	21.9	0.376	6.45	126.6	4.6
DR2-5	10/13/2010	low flow	12:05	98.6	94.12	100	3.3	6.0	23.7	0.368	0.89	-63.4	2.4
DR2-6	10/7/2010	low flow	13:47	109.2	98.7	80	3.3	5.9	24.6	0.223	2.01	166.1	1.6

Notes:

˚C : degrees Celsius
DO: Dissolved Oxygen
ft, btoc: feet below top of casing
L: liters
mg/L: milligrams per liter
mS/cm: milliSiemens per centimeter
mV: millivolts
NA: not available
NTU: nephelometric turbidity unit
ORP: Oxidation Reduction Potential

TABLE 10
FINAL WELL STABILIZATION MEASUREMENTS, DECEMBER 2010
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well ID	Sample Date	Method	Time Sampled	Sample Depth (ft, btoc)	Water Depth (ft, btoc)	Purge Rate (mL/min)	Volume Purged (L)	pH	Temp (˚C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
MW-252	12/9/2010	low flow	9:55	138.2	130.65	430	8.6	6.0	18.1	0.230	5.3	100.6	2.0
MW-253	12/9/2010	low flow	9:15	124.2	109.10	320	8.0	6.1	17.6	0.262	8.7	12.8	3.0
MW-254	12/8/2010	low flow	10:40	295.8	130.27	410	13.6	6.3	17.9	0.324	11.0	93.7	7.8
MW-255	12/8/2010	low flow	11:15	294.7	131.86	400	8.0	6.0	17.8	0.228	10.8	123.9	13.3
MW-256	12/9/2010	low flow	10:50	137.1	129.92	240	9.6	5.8	17.9	0.418	8.9	173.3	10.4

Notes:
˚C : degrees Celsius
DO: Dissolved Oxygen
ft, btoc: feet below top of casing
L: liters
mg/L: milligrams per liter
mL/min: milliliters per minute
mS/cm: milliSiemens per centimeter
mV: millivolts
NA: not available
NTU: nephelometric turbidity unit
ORP: Oxidation Reduction Potential

TABLE 11
ANALYTICAL RESULTS SUMMARY, APRIL 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	DR1-3 L10040161-16 4/5/2010	DR1-5 L10030780-17 3/30/2010	DR1-5A L10030780-18 3/30/2010	DR1-6 L10040095-14 4/1/2010	DR1-6A L10040095-15 4/1/2010	DR2-1 L10030780-19 3/30/2010	DR2-2 L10040167-04 4/7/2010	DR2-3 L10040167-05 4/7/2010
Carbon tetrachloride	µg/L	5	<1	<1	<1	<1	<1	**10.1**	**7.46**	**5.88**
Chloroform	µg/L	80	<0.3	<0.3	0.205 J	<0.3	0.193 J	**5.25**	**1.44**	**0.925**
cis-1,2-Dichloroethene	µg/L	70	0.29 J	<1	**3.58**	**1.37**	**4.05**	**9.88**	**3.3**	0.888 J
Tetrachloroethene	µg/L	5	**13.9**	**22.2**	**59.4**	**225**	**43.5**	**98.5**	**69.2**	**34.2**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**2.47**	<1	**96.6**	**1.56**	**122**	**4.21**	**3.63**	**2.03**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1
Additional VOCs										
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	<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
Carbon disulfide	µg/L	-	<1	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Methyl t-butyl ether (MTBE)	µg/L	-	<5	2.33 J	**7.3**	<5	<5	<5	<5	<5

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 sampled at two intervals

DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE 11
ANALYTICAL RESULTS SUMMARY, APRIL 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	DR2-5 L10040167-06 4/7/2010	DR2-6 L10040095-06 3/31/2010	MW-21 L10030780-10 3/30/2010	MW-26 L10040095-01 3/31/2010	MW-39 L10040095-02 3/31/2010	MW-39A L10040095-21 4/2/2010	MW-62 L10040167-01 4/7/2010	MW-64 L10030780-07 3/29/2010
Carbon tetrachloride	µg/L	5	**217**	**8.59**	<1	**7.09**	<1	<1	0.485 J	**3.56**
Chloroform	µg/L	80	**69.3**	**3.31**	<0.3	**1.14**	<0.3	<0.3	0.296 J	**1.34**
cis-1,2-Dichloroethene	µg/L	70	**71.7**	**24.9**	**2.27**	0.466 J	**17.7**	**35.4**	<1	0.482 J
Tetrachloroethene	µg/L	5	**98.7**	**20.9**	**146**	**38.9**	**37.4**	**43.8**	0.474 J	**23**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**33.2**	**3.81**	**8.59**	**1.63**	**12.3**	**11.4**	**178**	**38.8**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1
Additional VOCs										
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.03**
1,2,3-Trichloropropane	µg/L	-	**27.5**	**6.89**	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	0.465 J	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.264 J
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	µg/L	-	**1.86**	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	2.12 J	<5	<5	<5	<5	<5

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 sampled at two intervals

DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE 11
ANALYTICAL RESULTS SUMMARY, APRIL 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	MW-85 L10030780-11 3/30/2010	MW-88 L10030780-14 3/30/2010	MW-90 L10040095-22 4/2/2010	MW-92 L10040167-02 4/7/2010	MW-94A L10030780-08 3/29/2010	MW-97 L10040095-03 3/31/2010	MW-98 L10040161-11 4/5/2010	MW-100B L10030780-15 3/30/2010
Carbon tetrachloride	µg/L	5	**116 J**	**10.4**	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	**14.9**	**1.74**	**3.94**	<0.3	<0.3	0.249 J	0.128 J	<0.3
cis-1,2-Dichloroethene	µg/L	70	**1.69**	**2.15**	0.424 J	**123**	**3.15**	<1	0.367 J	**8.8**
Tetrachloroethene	µg/L	5	**38.1**	**46.2**	**58.3**	**4.76**	**27.7**	<1	**40.1**	<1
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**12.1**	**3.83**	**8.55**	**1.99**	**7.83**	**36.8**	**2.99**	<1
Vinyl chloride	µg/L	2	<1	<1	<1	0.791 J	<1	<1	<1	**131 J**
Additional VOCs										
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	0.364 J	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	**1.78**	<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	-	**12.5 J**	<10	<10	**13.9**	<10	<10	<10	<10
Carbon disulfide	µg/L	-	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1	<1 UJ
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	<5	<5	<5	**41**

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 sampled at two intervals

DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE 11
ANALYTICAL RESULTS SUMMARY, APRIL 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	MW-101T L10040161-12 4/5/2010	MW-101B L10040161-13 4/5/2010	MW-108 L10040095-11 4/1/2010	MW-113 L10030780-16 3/30/2010	MW-141 L10040095-23 4/2/2010	MW-197A L10040095-26 4/2/2010	MW-197B L10040095-27 4/2/2010	MW-199B L10040095-28 4/2/2010
Carbon tetrachloride	µg/L	5	<1	<1	<1	**72.2**	<1	<1	<1	0.378 J
Chloroform	µg/L	80	<0.3	<0.3	**9.62**	**26.5**	**1.54**	<0.3	<0.3	0.154 J
cis-1,2-Dichloroethene	µg/L	70	0.512 J	0.498 J	0.627 J	**37.1**	<1	**2.22**	**16.6**	<1
Tetrachloroethene	µg/L	5	**82.9**	**99.6**	**4.29**	**191**	**16.6**	**34**	**26.8**	0.511 J
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	0.307 J	0.325 J	**34.7**	**23.2**	**2.58**	**1.81**	**10.9**	**87.5**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	**7.24**	<1
Additional VOCs										
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	**7.86**	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	0.366 J	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	<10	<10	<10	<10	<10 UJ	<10	<10	<10
Carbon disulfide	µg/L	-	<1	<1	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1
Methyl t-butyl ether (MTBE)	µg/L	-	1.97 J	1.94 J	<5	<5	<5	<5	<5	<5

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 sampled at two intervals

DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE 11
ANALYTICAL RESULTS SUMMARY, APRIL 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	MW-200 L10030780-09 3/29/2010	MW-202B L10040161-01 4/6/2010	MW-203A L10040095-29 4/2/2010	MW-203B L10040095-30 4/2/2010	MW-204A L10040161-02 4/6/2010	MW-204B L10040161-03 4/6/2010	MW-205A L10040161-04 4/6/2010	MW-205B L10040161-05 4/6/2010
Carbon tetrachloride	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	0.157 J	**1.81**	0.185 J	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	**8.57**	<1	**4.11**	**9.53**	**6.88**	**2.33**	**31.8**	**19.8**
Tetrachloroethene	µg/L	5	**23.8**	**21.4**	**162**	**31.8**	**37.3**	**23.5**	**32.3**	**24**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**7.99**	**3.78**	**2.43**	**6.74**	**1.79**	**3.71**	**7.77**	**10.9**
Vinyl chloride	µg/L	2	<1	<1	<1	**5.51**	<1	<1	<1	**5.05**
Additional VOCs										
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	**0.613**	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	<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
Carbon disulfide	µg/L	-	<1 UJ	<1 UJ	<1	<1	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	0.612 J	<5	<5	<5	<5

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 sampled at two intervals

DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE 11
ANALYTICAL RESULTS SUMMARY, APRIL 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / **Units**	Maximum Contaminant Level	MW-206A L10040161-06 4/6/2010	MW-206B L10040161-07 4/6/2010	MW-207A L10040095-12 4/1/2010	MW-207B L10040095-31 4/2/2010	MW-208A L10040161-14 4/5/2010	MW-208B L10040161-15 4/5/2010	MW-209B L10040161-08 4/6/2010	MW-210A L10040095-32 4/2/2010
Carbon tetrachloride	µg/L	5	<1	<1	<1	0.752 J	<1	<1	0.658 J	<1
Chloroform	µg/L	80	<0.3	<0.3	**9.02**	**1.35**	<0.3	0.184 J	0.243 J	0.156 J
cis-1,2-Dichloroethene	µg/L	70	**14.8**	**6.56**	0.893 J	<1	**20.9**	**1.81**	<1	**2.18**
Tetrachloroethene	µg/L	5	**22.3**	**12.3**	**10.7**	**15.3**	**24.4**	**9.29**	<1	**14.7**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**11.5**	**7.5**	**46.4**	**92.1**	**6.48**	**45.1**	**21.2**	**6.37**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1
Additional VOCs										
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	**0.555**	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	<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	3.94 J	<10	<10 UJ	<10
Carbon disulfide	µg/L	-	<1 UJ	<1 UJ	<1 UJ	<1	<1	<1	<1 UJ	<1
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	0.531 J	<5	<5	<5	<5	0.873 J

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 sampled at two intervals

DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE 11
ANALYTICAL RESULTS SUMMARY, APRIL 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / **Units**	Maximum Contaminant Level	MW-210B L10040095-33 4/2/2010	MW-212 L10040167-03 4/7/2010	MW-217 L10040095-04 3/31/2010	MW-218 L10040095-05 3/31/2010	MW-219 L10040095-13 4/1/2010	PMW21-03 L10030780-20 3/30/2010	PMW21-05 L10040095-16 4/1/2010	PMW92-03 L10040167-07 4/7/2010
Carbon tetrachloride	µg/L	5	<1	0.277 J	**65.6**	**7.56**	<1	<1	<1	<1
Chloroform	µg/L	80	<0.3	<0.3	**4.4**	**2.42**	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	**1.3**	<1	**1.33**	0.303 J	0.393 J	**1.11**	0.851 J	**112**
Tetrachloroethene	µg/L	5	**10.3**	<1	**29.7**	**11.2**	**10.6**	**59.7**	**57.7**	**66.6**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**7.06**	**31.5**	**34.6**	**32.8**	0.868 J	**16.2**	**5.71**	**18.2**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1
Additional VOCs										
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	0.353 J	**0.767**	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	0.384 J	**0.657**	<0.5	<0.5	<0.5
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	µg/L	-	<1	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	<5	**21.2**	<5	<5

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 sampled at two intervals

DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE 11
ANALYTICAL RESULTS SUMMARY, APRIL 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	PMW92-06 L10040167-08 4/7/2010	PMW101-04A L10040095-17 4/1/2010	PMW101-04B L10040095-18 4/1/2010
Carbon tetrachloride	µg/L	5	**98.3**	<1	<1
Chloroform	µg/L	80	**48**	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	**85.4**	**29**	0.708 J
Tetrachloroethene	µg/L	5	**148**	**33**	**35.7**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1
Trichloroethene	µg/L	5	**33.5**	**6.93**	**3.87**
Vinyl chloride	µg/L	2	<1	<1	<1
Additional VOCs					
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	**92.7**	<1	<1
1,2-Dichloroethane	µg/L	5	**1.11**	<0.5	<0.5
Acetone	µg/L	-	<10	<10	<10
Carbon disulfide	µg/L	-	<1 UJ	<1 UJ	<1 UJ
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	0.805 J

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 sampled at two intervals

DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE 12
PRIMARY CVOC RESULTS, APRIL 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

VOC Analyte	MCL (µg/L)	Number of Locations with Analyte Above RL	Maximum Concentration (µg/L)	Location of Maximum Concentration	Number of Locations with Analyte Above MCL
Carbon tetrachloride	5	13	217	DR2-5	12
Chloroform	80	19	69.3	DR2-5	0
cis-1,2-Dichloroethene	70	36	123	MW-92	4
Tetrachloroethene	5	53	225	DR1-6	51
trans-1,2-Dichloroethene	100	0	ND	NA	NA
Trichloroethene	5	54	178	MW-62	37
Vinyl chloride	2	4	131	MW-100B	4

Notes:
µg/L: micrograms per liter
--: not listed
MCL: Maximum Contaminant Level
RL: Reporting Limit

TABLE 13
ANALYTICAL RESULTS SUMMARY, JUNE-AUGUST 2010
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Primary VOCs	Well Lab ID Date **units**	Maximum Contaminant Level	MW-252 L10060573-01 6/18/2010	MW-253 L10060573-02 6/18/2010	MW-254 L10080386-01 8/16/2010	MW-255 L10080210-01 8/9/2010	MW-256 L10080210-02 8/9/2010
Carbon tetrachloride	µg/L	5	<1	<1	0.695 J	<1	0.302 J
Chloroform	µg/L	80	<0.3	0.156 J	0.241 J	<0.3	**1.74**
cis-1,2-Dichloroethene	µg/L	70	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5	<1	<1	0.814 J	<1	**8.71**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	<1	0.344 J	**2.28**	<1	**2.43**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
RL: reporting limit
<: Not detected above RL
Results detected at or above RL shown in bold

DQE FLAGS:
J: Concentration estimated

TABLE 14
ANALYTICAL RESULTS SUMMARY, OCTOBER 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	Maximum Contaminant Level	DR1-1 L10100302-01 10/9/2010	DR1-1A L10100302-17 10/9/2010	DR1-2 L10100199-11 10/5/2010	DR1-3 L10100199-33 10/6/2010	DR1-4 L10100199-34 10/6/2010	DR1-5 L10100199-14 10/5/2010	DR1-5A L10100199-15 10/5/2010	DR1-6 L10100199-16 10/5/2010	DR1-6A L10100199-17 10/5/2010
Carbon tetrachloride	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	<0.3	**0.348**	0.179 J	<0.3	<0.3	<0.3	0.197 J	<0.3	0.271 J
cis-1,2-Dichloroethene	µg/L	70	**1.26**	0.42 J	0.805 J	<1	<1	<1	**3.88**	**1.69**	**5.08**
Tetrachloroethene	µg/L	5	**2.56**	**1.33**	**2.1**	**9.13**	0.435 J	**18.3**	**70.4**	**239**	**60.1**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	0.304 J	**3.6**	<1	**1.75**	0.543 J	<1	**110**	**1.89**	**149**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Additional VOCs											
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	0.176 J	<1	0.207 J
1,1-Dichloroethene	µg/L	7	<1	<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	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	0.532 J	0.617 J	<1	0.759 J	<1	<1	<1	<1	<1
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	<5	4.06 J	**5.64**	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 and MW-107 sampled at two intervals.

DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on blank data
R : Rejected

TABLE 14
ANALYTICAL RESULTS SUMMARY, OCTOBER 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	DR1-7 L10100199-18 10/5/2010	DR1-8 L10100199-35 10/6/2010	DR2-1 L10100482-03 10/14/2010	DR2-2 L10100407-19 10/12/2010	DR2-3 L10100199-29 10/6/2010	DR2-4 L10100407-27 10/13/2010	DR2-5 L10100407-28 10/13/2010	DR2-6 L10100252-14 10/7/2010	MW-16 L10100407-22 10/13/2010
Carbon tetrachloride	µg/L	5	<1	<1	**13.2**	**4.87**	**5.81**	**4.56**	**25**	**74.4**	<1
Chloroform	µg/L	80	0.169 J	<0.3	**6.9**	**0.63**	**0.828**	**0.716**	**21.5**	**16.1**	<0.3
cis-1,2-Dichloroethene	µg/L	70	0.525 J	<1	**14.3**	**1.06**	0.674 J	0.373 J	**105**	**18.5**	<1
Tetrachloroethene	µg/L	5	**3.81**	<1	**106**	**25.6**	**31.6**	**19.8**	**21.1**	**52.9**	<1
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	0.549 J	<1	**5.23**	**2.45 B**	**2.07**	**1.7**	**12.1**	**10.1**	<1
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Additional VOCs											
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	0.416 J	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	**19.7**	**9.15**	<1
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10	6.7 J	<10	3.13 J
Carbon disulfide	µg/L	-	<1	<1	<1 J	<1	<1	<1	0.689 J	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1 R	<1	<1	<1	<1	<1
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 and MW-107 sampled at two intervals.

DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on blank da
R : Rejected

TABLE 14
ANALYTICAL RESULTS SUMMARY, OCTOBER 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	Maximum Contaminant Level	MW-19 L10100302-18 10/11/2010	MW-21 L10100199-30 10/6/2010	MW-22 L10100407-01 10/12/2010	MW-23 L10100407-02 10/12/2010	MW24 L10100482-05 10/14/2010	MW-25A L10100252-01 10/7/2010	MW-26 L10100252-02 10/7/2010	MW-34 L10100199-26 10/6/2010	MW-38 L10100302-02 10/9/2010
Carbon tetrachloride	µg/L	5	<1	<1	<1	<1	<1	**2.74**	**9.18**	**0.572**	<1
Chloroform	µg/L	80	<0.3	<0.3	<0.3	<0.3	<0.3	**0.411**	**1.79**	**0.325**	0.141 J
cis-1,2-Dichloroethene	µg/L	70	<1	**2.39**	<1	<1	<1	<1	0.606 J	<1	<1
Tetrachloroethene	µg/L	5	<1	**83.5**	<1	<1	<1	**13.6**	**46.4**	0.269 J	<1
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	<1	**5.67**	<1	<1	<1	0.386 J	**1.98**	0.756 J	0.717 J
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Additional VOCs											
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	**0.671**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1 J	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	<5	0.506 J	<5	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 and MW-107 sampled at two intervals.

DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on blank da
R : Rejected

TABLE 14
ANALYTICAL RESULTS SUMMARY, OCTOBER 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

	Well ID	Maximum	MW-39	MW-39A	MW-50	MW-52	MW-53	MW-55	MW-62	MW-63A	MW-63B
	Lab ID	Contaminant	L10100302-03	L10100302-04	L10100407-07	L10100252-03	L10100407-08	L10100302-19	L10100482-06	L10100252-18	L10100252-19
	Date	Level	10/9/2010	10/9/2010	10/13/2010	10/7/2010	10/13/2010	10/11/2010	10/14/2010	10/7/2010	10/7/2010
Analyte	**Units**										
Carbon tetrachloride	µg/L	5	<1	<1	<1	<1	<1	<1	0.577 J	<1	<1
Chloroform	µg/L	80	<0.3	<0.3	0.281 J	**0.893**	<0.3	<0.3	0.291 J	<0.3	**1.71**
cis-1,2-Dichloroethene	µg/L	70	**18.3**	**36**	0.297 J	0.608 J	<1	<1	<1	<1	0.372 J
Tetrachloroethene	µg/L	5	**29.1**	**25.6**	0.46 J	**5.25**	**1.39**	<1	0.447 J	**1.69**	**7.47**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**13.6**	**10.9**	**1.24 B**	0.838 J	<1	<1	**119**	**1.37**	**3.55**
Vinyl chloride	µg/L	2	0.414 J	<1	<1	<1	<1	<1	<1	<1	<1
Additional VOCs											
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	0.992 J
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	0.557 J	<1	0.628 J
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1 J	<1	<1
Chloromethane	µg/L	-	<1	<1	<1 R	<1	<1	<1	<1	0.641 J	<1
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	1.88 J	<5	0.533 J	<5	<5	0.794 J	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
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Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	MW-64 L10100252-04 10/7/2010	MW-66A L10100407-03 10/12/2010	MW-85 L10100482-01 10/14/2010	MW-88 L10100199-05 10/4/2010	MW-89 L10100252-05 10/8/2010	MW-90 L10100252-06 10/8/2010	MW-92 L10100302-05 10/9/2010	MW-93 L10100482-02 10/14/2010	MW-94A L10100302-20 10/11/2010
Carbon tetrachloride	µg/L	5	**3.08**	<1	**121**	**10.5**	0.261 J	<1	<1	<1	<1
Chloroform	µg/L	80	**1.17**	<0.3	**27.1**	**1.85**	0.212 J	**4.07**	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	0.423 J	<1	**9.47**	**2.54**	<1	0.483 J	**119**	<1	**3.17**
Tetrachloroethene	µg/L	5	**20.8**	**3.31**	**39.2**	**56.1**	**1.43**	**47.9**	**20.7**	<1	**30**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**34.1**	<1	**12.3**	**4.11**	**1.63**	**8.17**	**8.64**	<1	**6.89**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	0.314 J	<1	<1
Additional VOCs											
1,1,2,2-Tetrachloroethane	µg/L	-	**1.11**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.365 J
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	**1.03**	<1	<1	<1
1,1-Dichloroethene	µg/L	7	0.682 J	<1	<1	<1	<1	0.834 J	<1	<1	<1
1,2-Dichloroethane	µg/L	5	**0.529**	**0.574**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	**7.28**	<1	<1	<1	<1	<1	<1
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10	5.46 J	<10	<10
Carbon disulfide	µg/L	-	<1	<1	<1 J	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using method 8260B
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Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	MW-96 L10100252-07 10/7/2010	MW-97 L10100302-13 10/9/2010	MW-98 L10100302-06 10/9/2010	MW-99 L10100407-04 10/12/2010	MW-100B L10100199-31 10/6/2010	MW-101T L10100407-23 10/13/2010	MW-101B L10100407-26 10/13/2010	MW-102B L10100302-21 10/11/2010	MW-103 L10100252-20 10/7/2010
Carbon tetrachloride	µg/L	5	**2.45**	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	**0.557**	**0.368**	0.127 J	0.252 J	<0.3	<0.3	<0.3	<0.3	**7.78**
cis-1,2-Dichloroethene	µg/L	70	0.34 J	<1	0.502 J	<1	**11**	<1	0.264 J	<1	0.386 J
Tetrachloroethene	µg/L	5	**3.99**	<1	**35.4**	<1	<1	**75.6**	**66.4**	<1	<1
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	<1	**49.8**	**2.85**	<1	<1	<1	<1	<1	**3.98**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	**132**	<1	<1	<1	<1
Additional VOCs											
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	**2.68**
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	<1	<1	**1.98**
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10	2.66 J	<10	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1 J		<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	**1.04**	<1	<1	<1	<1
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	**60.1**	2.76 J	2.41 J	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
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Analyte	Well ID / Lab ID / Date / Units	Maximum Contaminant Level	MW-104 L10100252-21 10/7/2010	MW-107T L10100407-11 10/13/2010	MW-107B L10100407-12 10/13/2010	MW-108 L10100407-13 10/12/2010	MW-113 L10100482-07 10/14/2010	MW-140 L10100407-14 10/13/2010	MW-141 L10100252-08 10/8/2010	MW-142 L10100302-14 10/9/2010	MW-143 L10100407-05 10/12/2010
Carbon tetrachloride	µg/L	5	<1	**0.6**	**0.629**	<1	**77.3**	<1	<1	<1	<1
Chloroform	µg/L	80	**10.2**	**0.357**	**0.375**	**11.9**	**24.3**	0.242 J	**2.06**	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	0.477 J	<1	0.252 J	0.744 J	**29.7**	<1	<1	<1	<1
Tetrachloroethene	µg/L	5	<1	**4.26**	**4.22**	**5.23**	**149**	**1.18**	**19.6**	<1	<1
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	0.358 J	<1	<1	<1	<1
Trichloroethene	µg/L	5	**14.4**	**2.17 B**	**2.2**	**37.7**	**19.9**	0.971 J	**3.18**	**6.71**	**8.83**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Additional VOCs											
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	**1.15**	<1	<1	0.55 J	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	**1.96**	<1	<1	0.779 J	<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	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	**7.27**	<1	<1	<1	<1
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1 J	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	**0.718 J**	0.743 J	<1 R	<1	<1	<1	<1	<1
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	<5	0.532 J	<5	**6.93**	**6.4**
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1

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	Well ID	Maximum	MW-197A	MW-197B	MW-198	MW-199A	MW-199B	MW-200	MW-202A	MW-202B	MW-203A
	Lab ID	Contaminant	L10100302-24	L10100302-25	L10100252-27	L10100252-22	L10100252-09	L10100302-22	L10100302-07	L10100302-08	L10100302-15
	Date	Level	10/11/2010	10/11/2010	10/8/2010	10/7/2010	10/8/2010	10/11/2010	10/9/2010	10/9/2010	10/9/2010
Analyte	**Units**										
Carbon tetrachloride	µg/L	5	<1	<1	<1	<1	0.287 J	<1	<1	<1	<1
Chloroform	µg/L	80	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.21 J	**1.46**	<0.3
cis-1,2-Dichloroethene	µg/L	70	**1.84**	**9.66**	<1	<1	<1	**16.7**	<1	0.299 J	**5.32**
Tetrachloroethene	µg/L	5	**35**	**34.1**	<1	<1	0.707 J	**31.5**	**1**	**23.1**	**143**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**1.72**	**10.2**	**3.14**	0.968 J	**53.8**	**7.24**	**1.43**	**3.43**	**2.55**
Vinyl chloride	µg/L	2	<1	**3.99 J**	<1	<1	<1	<1 J	<1	<1	<1
Additional VOCs											
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	0.589 J	<1
1,1-Dichloroethene	µg/L	7	<1	<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	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10 J	<10	<10	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	2.82 J	<5	<5	<5	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using method 8260B
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Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	MW-203B L10100302-26 10/11/2010	MW-204A L10100252-28 10/8/2010	MW-204B L10100302-27 10/11/2010	MW-205A L10100252-29 10/8/2010	MW-205B L10100302-28 10/11/2010	MW-206A L10100252-30 10/8/2010	MW-206B L10100252-10 10/8/2010	MW-207A L10100482-08 10/14/2010	MW-207B L10100407-15 10/12/2010
Carbon tetrachloride	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	**1.85 J**
Chloroform	µg/L	80	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	**12.1**	**6.99**
cis-1,2-Dichloroethene	µg/L	70	**6.65**	**4.36**	**1.11**	**25.2**	**13.5**	**13.5**	**6.68**	0.768 J	0.9 J
Tetrachloroethene	µg/L	5	**31.9**	**47.2**	**15.7**	**39.1**	**30.8**	**15.6**	**12.3**	**18.1**	**113**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**6.76**	**1.83**	**5.35**	**9.03**	**10.7**	**12.2**	**8.81**	**36.2**	**53.6**
Vinyl chloride	µg/L	2	**5.11 J**	<1	<1	**1.2**	**4.59 J**	<1	<1	<1	<1
Additional VOCs											
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	**1.52**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	0.68 J	0.205 J
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	<1	0.849 J	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.462 J
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1 J	<1
Chloromethane	µg/L	-	<1	<1	<1	0.516 U	<1	<1	<1	<1	<1
Methyl t-butyl ether (MTBE)	µg/L	-	0.789 J	<5	<5	<5	<5	<5	<5	<5	0.772 J
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1

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Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	MW-208A L10100252-31 10/8/2010	MW-208B L10100252-11 10/8/2010	MW-209A L10100302-09 10/9/2010	MW-209B L10100252-12 10/8/2010	MW-210A L10100302-29 10/11/2010	MW-210B L10100302-30 10/11/2010	MW-211 L10100407-16 10/13/2010	MW-212 L10100482-09 10/15/2010	MW-214A L10100252-25 10/7/2010
Carbon tetrachloride	µg/L	5	<1	<1	<1	0.659 J	<1	<1	**0.344**	0.323 J	**1.12 J**
Chloroform	µg/L	80	<0.3	0.262 J	0.134 J	0.217 J	0.13 J	<0.3	0.218 J	<0.3	**5.01 J**
cis-1,2-Dichloroethene	µg/L	70	**25.7**	**1.45**	<1	<1	**2.25**	**1.1**	<1	<1	<1
Tetrachloroethene	µg/L	5	**38**	**16.5**	<1	0.479 J	**13.6**	**9.27**	0.745 J	0.407 J	**10.5 J**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**12.2**	**42.9**	0.659 J	**31.8**	**6.16**	**7.77**	**1.3**	**23.8**	**7.88 J**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Additional VOCs											
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<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	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	2.7 J	<5	0.681 J	<5	<5	<5	3.87 J
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1

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R : Rejected

TABLE 14
ANALYTICAL RESULTS SUMMARY, OCTOBER 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	MW-214B L10100407-17 10/12/2010	MW-215A L10100199-32 10/6/2010	MW-215B L10100407-18 10/12/2010	MW-216 L10100302-16 10/9/2010	MW-217 L10100252-13 10/7/2010	MW-218 L10100482-10 10/14/2010	MW-219 L10100199-27 10/6/2010	MW-229 L10100199-28 10/6/2010	MW-252 L10100199-03 10/6/2010
Carbon tetrachloride	µg/L	5	**1.08**	0.747 J	**1.23 J**	<1	**48.8**	**8.81**	<1	<1	<1
Chloroform	µg/L	80	**3.79**	**1.03**	**0.63**	<0.3	**3.73**	**2.98**	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	<1	<1	<1	<1	0.819 J	0.373 J	<1	<1	<1
Tetrachloroethene	µg/L	5	**10**	**4.19**	**5.81**	0.285 J	**27.4**	**13.7**	**5.57**	<1	<1
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**5.65 B**	**2.72**	**1.5**	<1	**37.9**	**37.6**	0.575 J	<1	<1
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Additional VOCs											
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	0.403 J	**1.18**	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	0.316 J	**0.536**	**0.645**	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1 J	<1	**1.09 U**	<1
Chloromethane	µg/L	-	<1 R	<1	<1	<1	<1	<1	<1	<1	<1
Methyl t-butyl ether (MTBE)	µg/L	-	2.36 J	0.971 J	1.27 J	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	0.585 J	**0.786**	<1	<1	<1

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 and MW-107 sampled at two intervals.

DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on blank da
R : Rejected

TABLE 14
ANALYTICAL RESULTS SUMMARY, OCTOBER 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date **Units**	Maximum Contaminant Level	MW-253 L10100199-04 10/6/2010	MW-254 L10100199-23 10/5/2010	MW-255 L10100199-24 10/5/2010	MW-256 L10100199-01 10/5/2010	PMW21-03 L10100199-19 10/5/2010	PMW21-05 L10100199-36 10/6/2010	PMW92-03 L10100199-06 10/4/2010	PMW92-06 L10100199-07 10/4/2010	PMW101-04A L10100482-04 10/14/2010
Carbon tetrachloride	µg/L	5	<1	0.872 J	<1	**0.32**	<1	<1	<1	**110**	<1
Chloroform	µg/L	80	<0.3	0.223 J	<0.3	**2.01**	<0.3	<0.3	0.26 J	**41.1**	<0.3
cis-1,2-Dichloroethene	µg/L	70	<1	<1	<1	<1	0.687 J	0.798 J	**83**	**68.5 J**	**13.5 J**
Tetrachloroethene	µg/L	5	<1	0.623 J	<1	**9.44**	**45.9**	**43.1**	**104**	**141**	**44.6 J**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**2.99**	**2.07**	0.297 J	**2.77**	**11.4**	**4.24**	**19**	**33 J**	**7.89 J**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	0.528 J	0.379 J	<1
Additional VOCs											
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	0.138 J	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<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	**0.577**	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	**105**	<1
Acetone	µg/L	-	<10	<10	<10	<10	3.89 J	<10	7.14 J	<10	3.44 J
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	0.612 J
Methyl t-butyl ether (MTBE)	µg/L	-	**6.79**	<5	<5	<5	**15.1**	<5	<5	<5	1.07 J
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 and MW-107 sampled at two intervals.

DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on blank da
R : Rejected

TABLE 14
ANALYTICAL RESULTS SUMMARY, OCTOBER 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

	Well ID	Maximum	PMW101-04B	PZ-03	PZ-06
	Lab ID	Contaminant	L10100199-20	L10100482-11	L10100482-12
	Date	Level	10/5/2010	10/15/2010	10/15/2010
Analyte	**Units**				
Carbon tetrachloride	µg/L	5	<1	<1	<1
Chloroform	µg/L	80	<0.3	0.203 J	<0.3
cis-1,2-Dichloroethene	µg/L	70	<1	0.287 J	<1
Tetrachloroethene	µg/L	5	**28.7**	**2.04**	<1
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1
Trichloroethene	µg/L	5	**3.09**	**1.23**	<1
Vinyl chloride	µg/L	2	<1	<1	<1
Additional VOCs					
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1
Acetone	µg/L	-	<10	**10.6**	7.13 J
Carbon disulfide	µg/L	-	<1	<1 J	<1 J
Chloromethane	µg/L	-	<1	0.604 J	<1
Methyl t-butyl ether (MTBE)	µg/L	-	1.12 J	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected above RL
RL: reporting limit
Results detected at or above RL shown in bold
MW-101 and MW-107 sampled at two intervals.

DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on blank da
R : Rejected

TABLE 15
PRIMARY CVOC RESULTS, OCTOBER 2010
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

VOC Analyte	MCL (µg/L)	Number of Locations with Analyte Above RL	Maximum Concentration (µg/L)	Location of Maximum Concentration	Number of Locations with Analyte Above MCL
Carbon tetrachloride	5	20	121	MW-85	11
Chloroform	80	35	41.1	PMW92-06	0
cis-1,2-Dichloroethene	70	35	119	MW-92	3
Tetrachloroethene	5	75	239	DR1-6	60
trans-1,2-Dichloroethene	100	0	0.358	MW-113	0
Trichloroethene	5	75	149	DR1-6A	45
Vinyl chloride	2	5	132	MW-100B	4

Notes:
µg/L: micrograms per liter
--: not listed
RL: Reporting Limit
MCL: Maximum Contaminant Level

TABLE 16
ANALYTICAL RESULTS SUMMARY, DECEMBER 2010
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Primary VOCs	Well ID LabID Date **Units**	Maximum Contaminant Level	MW-252 L10120348-01 12/9/2010	MW-253 L10120348-02 12/9/2010	MW-254 L10120289-01 12/8/2010	MW-255 L10120289-02 12/8/2010	MW-256 L10120348-03 12/9/2010
Carbon tetrachloride	µg/L	5	<1	<1	**1.18**	<1	0.613 J
Chloroform	µg/L	80	**0.332**	<0.3	0.29 J	<0.3	**1.95**
cis-1,2-Dichloroethene	µg/L	70	<1	<1	0.299 J	<1	<1
Tetrachloroethene	µg/L	5	**2.75**	<1	0.854 J	<1	**8.64**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**1.62**	**4.87 J**	**2.58**	0.269 J	**2.9 J**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1
Additional VOCs							
Methyl t-butyl ether (MTBE)	µg/L		<5	**6.29**	<5	<5	<5

Notes:
VOC samples analyzed using method 8260B
µg/L : micrograms per liter
RL: reporting limit
<: Not detected above RL
Results detected at or above RL shown in bold

DQE FLAGS:
J: Concentration estimated

TABLE 17
MANN-KENDALL TREND ANALYSIS - PCE
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well	Plume	COC	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Number of Sample Rounds	Detects	Max	Min
MW-16	Background	PCE	0.00	0	37.50%	ND	4	0		
MW-19	Background	PCE	0.00	0	37.50%	ND	4	0		
MW-53	Background	PCE	0.49	0	37.50%	S	4	4	2.26	0.59
MW-55	Background	PCE	0.00	0	37.50%	ND	4	0		
MW-66A	Background	PCE	0.27	3	61.40%	NT	7	7	3.31	1.7
MW-99	Background	PCE	0.00	0	42.27%	ND	6	0		
MW-143	Background	PCE	0.00	0	43.73%	ND	9	0		
MW-22	Boundary	PCE	1.14	-1	50.00%	NT	4	1	0.79	0.79
MW-23	Boundary	PCE	0.00	0	37.50%	ND	4	0		
MW-24	Boundary	PCE	0.00	0	0.00%	N/A	3	0		
MW-50	Boundary	PCE	0.47	6	95.80%	I	4	3	0.46	0.263
MW-93	Boundary	PCE	0.11	-5	76.50%	S	6	1	0.16	0.16
MW-102B	Boundary	PCE	0.48	-1	50.00%	S	6	1	0.308	0.308
MW-219	Boundary	PCE	0.51	-11	81.00%	S	11	11	48	5.57
MW-34	Sentinel	PCE	0.46	-3	55.35%	S	17	10	0.753	0.269
MW-38	Sentinel	PCE	0.73	-1	50.00%	S	6	1	0.446	0.446
MW-63A	Sentinel	PCE	0.66	7	80.90%	NT	7	6	1.69	0.32
MW-63B	Sentinel	PCE	0.54	9	88.10%	NT	7	7	7.47	1.58
MW-89	Sentinel	PCE	0.92	3	61.40%	NT	7	6	1.43	0.251
MW-90	Sentinel	PCE	0.51	29	98.70%	I	12	12	80.8	19
MW-107B	Sentinel	PCE	1.07	11	97.20%	I	6	6	4.22	0.291
MW-107T	Sentinel	PCE	0.87	6	88.30%	NT	5	5	5.05	0.411
MW-108	Sentinel	PCE	0.20	8	70.25%	NT	11	11	6.03	3.3
MW-140	Sentinel	PCE	0.56	33	100.00%	I	11	9	1.18	0.38
MW-141	Sentinel	PCE	0.32	-18	84.70%	S	14	13	31	5.9
MW-199A	Sentinel	PCE	0.54	-1	50.00%	S	8	1	0.361	0.361
MW-202A	Sentinel	PCE	0.54	15	89.20%	NT	10	10	1	0.257
MW-202B	Sentinel	PCE	0.51	37	99.80%	I	11	11	23.1	3.82
MW-207A	Sentinel	PCE	0.26	27	99.20%	I	11	11	18.1	7.92
MW-207B	Sentinel	PCE	0.88	5	63.60%	NT	10	10	113	13
MW-209A	Sentinel	PCE	0.52	-5	65.65%	S	9	2	0.326	0.323
MW-210A	Sentinel	PCE	0.43	-39	100.00%	D	11	11	38.2	8.48
MW-211	Sentinel	PCE	0.66	19	98.85%	I	8	5	0.811	0.431
MW-229	Sentinel	PCE	0.00	0	42.27%	ND	7	0		
MW-252	Sentinel	PCE	0.00	0	0.00%	N/A	2	0		
MW-253	Sentinel	PCE	0.00	0	0.00%	N/A	2	0		
MW-254	Sentinel	PCE	0.00	0	0.00%	N/A	2	2	0.814	0.623
MW-255	Sentinel	PCE	0.00	0	0.00%	N/A	2	0		
MW-256	Sentinel	PCE	0.00	0	0.00%	N/A	2	2	9.44	8.71
MW-25A	-	PCE	0.28	-2	54.00%	S	9	9	13.6	4.91
MW-52	-	PCE	0.30	-13	85.40%	S	10	10	10.8	4.7
MW-97	-	PCE	0.00	0	46.87%	ND	11	0		
MW-216	-	PCE	2.73	7	76.35%	NT	8	2	34.2	0.285
DR1-2	TTA-1 North	PCE	0.20	-17	95.10%	D	9	9	2.5	1.47
DR1-7	TTA-1 North	PCE	0.81	-29	99.95%	D	9	9	30	3.81
DR1-8	TTA-1 North	PCE	0.00	0	46.00%	ND	9	0		
MW-21	TTA-1 North	PCE	0.36	76	99.90%	I	18	18	192	53
MW-100B	TTA-1 North	PCE	1.64	-15	79.90%	NT	15	8	101	0.706
PMW101-04A	TTA-1 North	PCE	1.13	-20	90.20%	PD	12	12	199	4.64
PMW101-04B	TTA-1 North	PCE	0.87	-16	84.50%	S	12	12	109	5.33
DR1-1	TTA-1 South	PCE	0.14	-17	95.10%	D	9	9	3.3	2.12
DR1-1A	TTA-1 South	PCE	0.35	-37	99.45%	D	12	12	1.8	0.747
DR1-3	TTA-1 South	PCE	1.07	-30	88.20%	NT	17	17	54.7	0.45
DR1-4	TTA-1 South	PCE	1.05	-27	96.30%	D	12	10	12.4	0.435
DR1-5	TTA-1 South	PCE	0.70	19	86.05%	NT	13	13	95.8	4.3
DR1-5A	TTA-1 South	PCE	0.23	37	98.70%	I	13	13	70.4	24
DR1-6	TTA-1 South	PCE	0.62	58	100.00%	I	13	13	239	13
DR1-6A	TTA-1 South	PCE	0.36	67	100.00%	I	14	14	60.1	1.1
MW-101B	TTA-1 South	PCE	0.50	-50	99.90%	D	13	13	239	47
MW-101T	TTA-1 South	PCE	0.55	-58	100.00%	D	13	13	251	16.5
PMW21-03	TTA-1 South	PCE	0.92	-16	84.50%	S	12	12	185	18.7

TABLE 17
MANN-KENDALL TREND ANALYSIS - PCE
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well	Plume	COC	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Number of Sample Rounds	Detects	Max	Min
PMW21-05	TTA-1 South	PCE	0.49	46	100.00%	I	12	12	61.2	6.37
DR2-1	TTA-2	PCE	0.44	-70	99.80%	D	18	18	280	33.7
DR2-2	TTA-2	PCE	0.73	36	98.50%	I	13	13	159	10
DR2-3	TTA-2	PCE	0.26	-13	76.35%	S	13	13	47	20.6
DR2-4	TTA-2	PCE	0.32	11	84.55%	NT	9	9	19.8	7.15
DR2-5	TTA-2	PCE	0.40	-31	89.00%	S	17	17	114	21.1
DR2-6	TTA-2	PCE	0.46	-14	78.20%	S	13	13	115	20.9
MW-26	TTA-2	PCE	0.32	3	54.75%	NT	13	13	46.4	13.7
MW-64	TTA-2	PCE	0.14	32	99.35%	I	11	11	23.8	16
MW-85	TTA-2	PCE	0.39	-42	95.40%	D	17	17	74.8	14.4
MW-88	TTA-2	PCE	0.43	41	99.40%	I	14	14	56.1	14
MW-92	TTA-2	PCE	0.89	-44	99.70%	D	13	12	193	0.499
MW-96	TTA-2	PCE	1.83	-20	90.20%	PD	13	13	63	1.46
MW-113	TTA-2	PCE	0.26	43	99.60%	I	13	13	200	64
MW-217	TTA-2	PCE	0.16	3	56.90%	NT	10	10	34.7	18.4
MW-218	TTA-2	PCE	0.16	-25	98.60%	D	10	10	18.5	11.2
PMW92-03	TTA-2	PCE	0.98	-27	96.30%	D	12	12	252	15.6
PMW92-06	TTA-2	PCE	0.91	-36	99.30%	D	12	12	179	0.67
MW-39	West Central	PCE	0.41	-39	98.20%	D	14	14	158	29.1
MW-39A	West Central	PCE	0.44	-27	94.30%	PD	13	13	234	25.6
MW-94A	West Central	PCE	0.24	-33	97.50%	D	13	13	52.2	27.3
MW-98	West Central	PCE	0.19	38	98.90%	I	13	13	40.1	17
MW-197A	West Central	PCE	0.50	-49	100.00%	D	12	12	130	33.8
MW-197B	West Central	PCE	0.80	-35	99.70%	D	11	11	179	16.7
MW-200	West Central	PCE	0.51	-15	85.90%	S	12	12	132	23.8
MW-203A	West Central	PCE	0.32	30	99.65%	I	10	10	170	62.6
MW-203B	West Central	PCE	0.43	14	87.30%	NT	11	11	38.4	9.39
MW-204A	West Central	PCE	0.10	15	89.20%	NT	10	10	47.4	36.2
MW-204B	West Central	PCE	0.24	-13	85.40%	S	10	10	29.4	14.9
MW-205A	West Central	PCE	0.49	-31	99.80%	D	11	11	180	32.3
MW-205B	West Central	PCE	0.80	-31	99.80%	D	10	10	149	19.7
MW-206A	West Central	PCE	0.54	-29	99.50%	D	10	10	114	15.6
MW-206B	West Central	PCE	0.60	-32	99.85%	D	10	10	77.5	12.3
MW-208A	West Central	PCE	0.46	-26	98.90%	D	10	10	198	24.4
MW-208B	West Central	PCE	0.89	25	98.60%	I	10	10	16.5	1.68
MW-210B	West Central	PCE	0.45	-41	100.00%	D	10	10	32.4	9.27
MW-214A	West Central	PCE	0.30	-12	87.00%	S	9	9	10.5	4.51
MW-214B	West Central	PCE	0.34	-16	94.00%	PD	9	9	10	4
MW-215A	West Central	PCE	0.17	-17	95.10%	D	9	9	7.01	4.19
MW-215B	West Central	PCE	0.23	24	99.40%	I	9	9	5.81	2.1
PZ-03	West Central	PCE	0.46	-9	88.10%	S	7	7	5	0.523
MW-62	Building 835	PCE	0.65	4	56.40%	NT	14	11	1.1	0.318
MW-142	Building 835	PCE	0.00	0	46.00%	ND	11	1	0	0
MW-198	Building 835	PCE	0.00	0	46.43%	ND	10	0		
MW-199B	Building 835	PCE	2.60	3	56.00%	NT	11	11	23.4	0.393
MW-209B	Building 835	PCE	0.55	14	87.30%	NT	10	5	0.479	0.278
MW-212	Building 835	PCE	0.73	0	46.43%	S	11	3	0.516	0.407
MW-103	North Central	PCE	0.00	0	43.73%	ND	7	0		
MW-104	North Central	PCE	0.00	0	46.00%	ND	9	0		
PZ-06	North Central	PCE	0.00	0	43.73%	ND	7	0		

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 18
MANN-KENDALL TREND ANALYSIS - TCE
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well	Plume	COC	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Number of Sample Rounds	Detects	Max	Min
MW-16	Background	TCE	0.00	0	37.50%	ND	4	0		
MW-19	Background	TCE	0.00	0	37.50%	ND	4	0		
MW-53	Background	TCE	0.00	0	37.50%	ND	4	0		
MW-55	Background	TCE	0.00	0	37.50%	ND	4	0		
MW-66A	Background	TCE	0.00	0	43.73%	ND	7	0		
MW-99	Background	TCE	0.42	-5	76.50%	S	6	1	0.28	0.28
MW-143	Background	TCE	1.96	18	99.70%	I	9	4	8.83	0.31
MW-22	Boundary	TCE	0.70	-1	50.00%	S	4	2	0.531	0.329
MW-23	Boundary	TCE	0.00	0	37.50%	ND	4	0		
MW-24	Boundary	TCE	0.00	0	0.00%	N/A	3	0		
MW-50	Boundary	TCE	0.15	2	62.50%	NT	4	4	1.5	1.1
MW-93	Boundary	TCE	0.00	0	42.27%	ND	6	0		
MW-102B	Boundary	TCE	0.00	0	42.27%	ND	6	0		
MW-219	Boundary	TCE	0.45	-15	89.20%	S	11	11	3.74	0.575
MW-34	Sentinel	TCE	0.43	30	97.80%	I	17	15	1.39	0.29
MW-38	Sentinel	TCE	1.31	-2	57.00%	NT	6	3	4.63	0.717
MW-63A	Sentinel	TCE	0.42	15	98.50%	I	7	7	1.81	0.63
MW-63B	Sentinel	TCE	0.60	17	99.50%	I	7	7	4.56	0.92
MW-89	Sentinel	TCE	0.24	-7	80.90%	S	7	7	2.13	1.1
MW-90	Sentinel	TCE	0.46	17	89.10%	NT	12	12	8.55	2.28
MW-107B	Sentinel	TCE	0.42	15	99.90%	I	6	6	2.2	0.585
MW-107T	Sentinel	TCE	0.31	8	95.80%	I	5	5	2.51	0.999
MW-108	Sentinel	TCE	0.21	21	94.00%	PI	11	11	38.4	15
MW-140	Sentinel	TCE	0.24	-1	50.00%	S	11	10	1.49	0.54
MW-141	Sentinel	TCE	0.23	31	96.65%	I	14	13	3.56	1.2
MW-199A	Sentinel	TCE	1.13	13	92.85%	PI	8	2	0.968	0.419
MW-202A	Sentinel	TCE	0.18	-19	94.60%	PD	10	10	2.22	1.21
MW-202B	Sentinel	TCE	0.45	45	100.00%	I	11	11	3.79	0.811
MW-207A	Sentinel	TCE	0.40	31	99.80%	I	11	11	52.7	18.6
MW-207B	Sentinel	TCE	0.49	9	75.80%	NT	10	10	109	12.1
MW-209A	Sentinel	TCE	0.15	14	91.00%	PI	9	9	0.659	0.404
MW-210A	Sentinel	TCE	0.07	13	85.40%	NT	11	11	6.37	4.92
MW-211	Sentinel	TCE	0.44	20	99.30%	I	8	8	1.38	0.436
MW-229	Sentinel	TCE	0.00	0	42.27%	ND	7	0		
MW-252	Sentinel	TCE	0.00	0	0.00%	N/A	2	0		
MW-253	Sentinel	TCE	0.00	0	0.00%	N/A	2	2	2.99	0.344
MW-254	Sentinel	TCE	0.00	0	0.00%	N/A	2	2	2.28	2.07
MW-255	Sentinel	TCE	0.00	0	0.00%	N/A	2	1	0.297	0.297
MW-256	Sentinel	TCE	0.00	0	0.00%	N/A	2	2	2.77	2.43
MW-25A	-	TCE	0.23	-7	72.80%	S	9	9	0.644	0.352
MW-52	-	TCE	0.31	4	60.25%	NT	10	10	1.4	0.34
MW-97	-	TCE	0.57	51	100.00%	I	11	11	49.8	2.2
MW-216	-	TCE	1.64	1	50.00%	NT	8	1	1.5	1.5
DR1-2	TTA-1 North	TCE	1.81	4	61.90%	NT	9	1	1.83	1.83
DR1-7	TTA-1 North	TCE	0.48	-19	97.00%	D	9	9	2.2	0.549
DR1-8	TTA-1 North	TCE	1.21	7	72.80%	NT	9	2	1.03	0.341
MW-21	TTA-1 North	TCE	0.39	-16	72.90%	S	18	18	32.5	5.67
MW-100B	TTA-1 North	TCE	1.54	-15	79.90%	NT	15	8	43.1	0.309
PMW21-03	TTA-1 North	TCE	0.93	-8	68.10%	S	12	12	58	6.73
PMW21-05	TTA-1 North	TCE	0.59	-36	99.30%	D	12	12	34.6	4.24
DR1-1	TTA-1 South	TCE	0.34	12	87.00%	NT	9	7	0.399	0.255
DR1-1A	TTA-1 South	TCE	0.32	-28	96.90%	D	12	12	6.9	2.33
DR1-3	TTA-1 South	TCE	0.63	-32	89.80%	S	17	16	5.13	0.303
DR1-4	TTA-1 South	TCE	0.61	-12	77.00%	S	12	10	1.69	0.393
DR1-5	TTA-1 South	TCE	2.59	4	57.10%	NT	13	1	4.28	4.28
DR1-5A	TTA-1 South	TCE	0.22	1	50.00%	NT	13	13	114	47
DR1-6	TTA-1 South	TCE	0.43	-24	91.80%	PD	13	13	4.61	1.27
DR1-6A	TTA-1 South	TCE	0.20	42	99.50%	I	14	14	163	9.1
MW-101B	TTA-1 South	TCE	1.18	19	86.05%	NT	13	11	4.15	0.293
MW-101T	TTA-1 South	TCE	0.94	23	90.80%	PI	13	10	2.16	0.298
PMW101-04A	TTA-1 South	TCE	1.19	53	100.00%	I	12	10	7.89	0.26

TABLE 18
MANN-KENDALL TREND ANALYSIS - TCE
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well	Plume	COC	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Number of Sample Rounds	Detects	Max	Min
PMW101-04B	TTA-1 South	TCE	1.17	-6	63.10%	NT	12	12	23.2	1.24
DR2-1	TTA-2	TCE	0.36	-76	99.90%	D	18	18	12.7	2.61
DR2-2	TTA-2	TCE	0.17	6	61.70%	NT	13	13	4.25	2.45
DR2-3	TTA-2	TCE	0.12	-36	98.50%	D	13	13	2.7	2
DR2-4	TTA-2	TCE	0.11	-16	94.00%	PD	9	9	2.2	1.54
DR2-5	TTA-2	TCE	0.34	-28	86.50%	S	17	17	35	12.1
DR2-6	TTA-2	TCE	0.48	-14	78.20%	S	13	13	19.7	2.2
MW-26	TTA-2	TCE	0.21	-28	95.00%	D	13	13	2.5	1.3
MW-64	TTA-2	TCE	0.12	17	89.10%	NT	11	11	41.5	28.9
MW-85	TTA-2	TCE	0.35	-59	99.20%	D	17	17	25.1	7
MW-88	TTA-2	TCE	0.15	11	72.50%	NT	14	14	4.8	2.7
MW-92	TTA-2	TCE	0.62	-25	92.70%	PD	13	11	8.64	1.72
MW-96	TTA-2	TCE	0.55	-11	74.85%	S	12	2	0.419	0.22
MW-113	TTA-2	TCE	0.26	30	96.20%	I	13	13	29.5	8.8
MW-217	TTA-2	TCE	0.14	-5	63.60%	S	10	10	40.6	25.6
MW-218	TTA-2	TCE	0.11	-28	99.35%	D	10	10	47.6	32.8
PMW92-03	TTA-2	TCE	0.47	8	68.10%	NT	12	12	19	4.66
PMW92-06	TTA-3	TCE	0.86	-31	98.10%	D	12	10	39.7	0.747
MW-39	West Central	TCE	0.24	34	96.45%	I	14	14	13.9	6.15
MW-39A	West Central	TCE	0.36	20	87.40%	NT	13	13	11.8	4.04
MW-94A	West Central	TCE	0.19	43	99.60%	I	13	13	9.49	4.2
MW-98	West Central	TCE	0.21	42	99.50%	I	13	13	2.99	1.2
MW-197A	West Central	TCE	0.12	-12	79.90%	S	12	12	2.47	1.72
MW-197B	West Central	TCE	0.13	30	98.95%	I	11	11	12.6	8.51
MW-200	West Central	TCE	0.26	8	70.25%	NT	12	12	8.04	3.42
MW-203A	West Central	TCE	0.21	45	100.00%	I	10	10	2.55	1.27
MW-203B	West Central	TCE	0.20	-1	50.00%	S	11	11	11.3	6.18
MW-204A	West Central	TCE	0.27	7	70.00%	NT	10	10	1.83	0.852
MW-204B	West Central	TCE	0.26	15	89.20%	NT	10	10	5.35	2.37
MW-205A	West Central	TCE	0.21	35	100.00%	I	11	11	9.03	3.69
MW-205B	West Central	TCE	0.21	21	96.40%	I	10	10	11.8	5.15
MW-206A	West Central	TCE	0.11	7	70.00%	NT	10	10	13.9	9.81
MW-206B	West Central	TCE	0.14	-18	93.40%	PD	10	10	11.7	7.5
MW-208A	West Central	TCE	0.19	20	95.50%	I	10	10	12.2	6.48
MW-208B	West Central	TCE	0.48	29	99.50%	I	10	10	45.1	13.2
MW-210B	West Central	TCE	0.13	-17	92.20%	PD	10	10	10.7	7.06
MW-214A	West Central	TCE	0.47	-14	91.00%	PD	9	9	7.88	1.95
MW-214B	West Central	TCE	0.38	-18	96.20%	D	9	9	5.65	1.93
MW-215A	West Central	TCE	0.31	-18	96.20%	D	9	9	10.2	2.72
MW-215B	West Central	TCE	0.10	2	54.00%	NT	9	9	1.76	1.25
PZ-03	West Central	TCE	0.38	14	97.50%	I	7	7	1.23	0.321
MW-62	Building 835	TCE	0.31	7	62.60%	NT	14	14	184	59.2
MW-142	Building 835	TCE	1.24	22	98.80%	I	11	9	6.71	0.3
MW-198	Building 835	TCE	0.73	-17	92.20%	PD	10	10	25.8	3.14
MW-199B	Building 835	TCE	0.27	-18	90.45%	PD	11	11	136	53.8
MW-209B	Building 835	TCE	0.50	37	100.00%	I	10	10	31.8	6.4
MW-212	Building 835	TCE	0.19	-19	94.60%	PD	11	11	47.9	23.8
MW-103	North Central	TCE	0.19	5	71.90%	NT	7	7	6.63	3.98
MW-104	North Central	TCE	0.17	8	76.20%	NT	9	9	18.2	11
PZ-06	North Central	TCE	0.00	0	43.73%	ND	7	0		

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 19
MANN-KENDALL TREND ANALYSIS - cDCE
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well	Plume	COC	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Number of Sample Rounds	Detects	Max	Min
MW-16	Background	cDCE	0.00	0	37.50%	ND	4	0		
MW-19	Background	cDCE	0.00	0	37.50%	ND	4	0		
MW-53	Background	cDCE	0.00	0	37.50%	ND	4	0		
MW-55	Background	cDCE	0.00	0	37.50%	ND	4	0		
MW-66A	Background	cDCE	0.00	0	43.73%	ND	7	0		
MW-99	Background	cDCE	0.00	0	42.27%	ND	6	0		
MW-143	Background	cDCE	0.00	0	43.73%	ND	9	0		
MW-22	Boundary	cDCE	0.89	-1	50.00%	S	4	1	0.527	0.527
MW-23	Boundary	cDCE	0.00	0	37.50%	ND	4	0		
MW-24	Boundary	cDCE	0.00	0	0.00%	N/A	3	0		
MW-50	Boundary	cDCE	0.28	-6	95.80%	D	4	4	0.52	0.297
MW-93	Boundary	cDCE	0.00	0	42.27%	ND	6	0		
MW-102B	Boundary	cDCE	0.00	0	42.27%	ND	6	0		
MW-219	Boundary	cDCE	0.41	-7	70.00%	S	11	10	1.15	0.393
MW-34	Sentinel	cDCE	0.00	0	47.30%	ND	17	0		
MW-38	Sentinel	cDCE	0.00	0	42.27%	ND	6	0		
MW-63A	Sentinel	cDCE	0.00	0	43.73%	ND	7	0		
MW-63B	Sentinel	cDCE	0.57	11	93.20%	PI	7	3	0.401	0.253
MW-89	Sentinel	cDCE	0.49	-10	90.65%	PD	7	4	0.404	0.27
MW-90	Sentinel	cDCE	0.31	26	97.50%	I	12	10	0.484	0.29
MW-107B	Sentinel	cDCE	0.57	4	70.25%	NT	6	3	0.449	0.252
MW-107T	Sentinel	cDCE	0.47	-1	50.00%	S	5	3	0.385	0.257
MW-108	Sentinel	cDCE	0.20	9	72.90%	NT	11	11	0.75	0.33
MW-140	Sentinel	cDCE	0.37	-14	91.00%	PD	11	3	0.28	0.22
MW-141	Sentinel	cDCE	0.00	0	47.60%	ND	14	0		
MW-199A	Sentinel	cDCE	0.00	0	45.20%	ND	8	0		
MW-202A	Sentinel	cDCE	0.29	-3	56.90%	S	10	1	0.251	0.251
MW-202B	Sentinel	cDCE	0.37	10	75.30%	NT	11	1	0.299	0.299
MW-207A	Sentinel	cDCE	0.36	27	99.20%	I	11	11	0.974	0.382
MW-207B	Sentinel	cDCE	1.09	15	89.20%	NT	10	2	0.9	0.558
MW-209A	Sentinel	cDCE	0.00	0	46.00%	ND	9	0		
MW-210A	Sentinel	cDCE	0.47	35	100.00%	I	11	11	2.25	0.727
MW-211	Sentinel	cDCE	0.00	0	45.20%	ND	8	0		
MW-229	Sentinel	cDCE	0.00	0	42.27%	ND	7	0		
MW-252	Sentinel	cDCE	0.00	0	0.00%	N/A	2	0		
MW-253	Sentinel	cDCE	0.00	0	0.00%	N/A	2	0		
MW-254	Sentinel	cDCE	0.00	0	0.00%	N/A	2	0		
MW-255	Sentinel	cDCE	0.00	0	0.00%	N/A	2	0		
MW-256	Sentinel	cDCE	0.00	0	0.00%	N/A	2	0		
MW-25A	-	cDCE	0.00	0	46.00%	ND	9	0		
MW-52	-	cDCE	0.20	11	81.00%	NT	10	10	0.993	0.58
MW-97	-	cDCE	0.00	0	46.87%	ND	11	0		
MW-216	-	cDCE	0.40	1	50.00%	NT	8	1	0.288	0.288
DR1-2	TTA-1 North	cDCE	0.16	-6	69.40%	S	9	9	0.805	0.48
DR1-7	TTA-1 North	cDCE	0.26	-2	54.00%	S	9	9	0.787	0.344
DR1-8	TTA-1 North	cDCE	0.00	0	46.00%	ND	9	0		
MW-21	TTA-1 North	cDCE	0.27	96	100.00%	I	18	18	2.47	0.99
MW-100B	TTA-1 North	cDCE	0.62	-44	99.70%	D	15	15	160	8.8
PMW101-04A	TTA-1 North	cDCE	0.85	11	74.85%	NT	12	9	86.9	13.5
PMW101-04B	TTA-1 North	cDCE	0.91	-12	77.00%	S	12	11	86.3	0.394
DR1-1	TTA-1 South	cDCE	0.35	4	61.90%	NT	9	8	1.26	0.8
DR1-1A	TTA-1 South	cDCE	0.55	-42	99.80%	D	12	11	1	0.262
DR1-3	TTA-1 South	cDCE	1.15	11	65.70%	NT	17	11	32.9	0.22
DR1-4	TTA-1 South	cDCE	1.86	9	70.40%	NT	12	5	8.09	0.582
DR1-5	TTA-1 South	cDCE	0.34	4	57.10%	NT	13	1	0.295	0.295
DR1-5A	TTA-1 South	cDCE	0.29	-3	54.75%	S	13	13	5.2	1.7
DR1-6	TTA-1 South	cDCE	0.65	-40	99.30%	D	13	13	6.2	1.09
DR1-6A	TTA-1 South	cDCE	0.23	32	97.10%	I	14	14	5.98	0.95
MW-101B	TTA-1 South	cDCE	1.20	8	66.20%	NT	13	12	35.6	0.264
MW-101T	TTA-1 South	cDCE	2.00	17	83.15%	NT	13	11	51.2	0.266
PMW21-03	TTA-1 South	cDCE	2.38	16	84.50%	NT	12	12	57.4	0.355

TABLE 19
MANN-KENDALL TREND ANALYSIS - cDCE
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well	Plume	COC	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Number of Sample Rounds	Detects	Max	Min
PMW21-05	TTA-1 South	cDCE	0.62	24	94.20%	PI	12	11	1.47	0.278
DR2-1	TTA-2	cDCE	0.86	-38	93.60%	PD	18	18	86.4	4.69
DR2-2	TTA-2	cDCE	0.62	22	89.80%	NT	13	12	7.39	1.06
DR2-3	TTA-2	cDCE	0.46	-19	86.05%	S	13	13	1.8	0.549
DR2-4	TTA-2	cDCE	0.45	14	91.00%	PI	9	6	0.414	0.22
DR2-5	TTA-2	cDCE	0.48	26	84.60%	NT	17	17	105	25.9
DR2-6	TTA-2	cDCE	0.55	32	97.10%	I	13	13	36	0.69
MW-26	TTA-2	cDCE	0.39	-24	91.80%	PD	13	12	0.76	0.295
MW-64	TTA-2	cDCE	0.15	31	99.20%	I	11	11	0.519	0.31
MW-85	TTA-2	cDCE	0.70	-17	74.20%	S	17	17	59.2	1.3
MW-88	TTA-2	cDCE	0.49	8	66.20%	NT	14	14	2.54	0.325
MW-92	TTA-2	cDCE	0.85	41	99.40%	I	13	13	123	7.32
MW-96	TTA-2	cDCE	2.69	-25	94.95%	PD	13	9	19	0.34
MW-113	TTA-2	cDCE	0.41	-54	100.00%	D	13	13	110	29.7
MW-217	TTA-2	cDCE	0.55	-1	50.00%	S	10	10	4.8	0.819
MW-218	TTA-2	cDCE	0.15	-18	93.40%	PD	10	10	0.508	0.303
PMW92-03	TTA-2	cDCE	0.48	1	50.00%	NT	12	12	182	19.9
PMW92-06	TTA-2	cDCE	0.40	20	90.20%	PI	12	12	200	68.5
MW-39	West Central	cDCE	1.51	64	100.00%	I	14	11	21.3	0.435
MW-39A	West Central	cDCE	1.51	51	99.95%	I	13	11	36	0.362
MW-94A	West Central	cDCE	0.79	36	98.50%	I	13	13	3.17	0.42
MW-98	West Central	cDCE	2.67	37	98.70%	I	13	7	8.6	0.22
MW-197A	West Central	cDCE	0.79	27	98.00%	I	12	12	3.69	0.345
MW-197B	West Central	cDCE	1.00	23	95.70%	I	11	11	48.7	0.484
MW-200	West Central	cDCE	1.38	33	99.50%	I	12	12	16.7	0.303
MW-203A	West Central	cDCE	0.99	44	100.00%	I	10	8	5.32	0.294
MW-203B	West Central	cDCE	0.58	-31	99.80%	D	11	11	63.5	6.65
MW-204A	West Central	cDCE	1.04	33	99.90%	I	10	10	6.88	0.763
MW-204B	West Central	cDCE	0.85	21	96.40%	I	10	10	6.13	0.906
MW-205A	West Central	cDCE	1.08	41	100.00%	I	11	11	31.8	0.337
MW-205B	West Central	cDCE	0.76	15	89.20%	NT	10	10	43	0.546
MW-206A	West Central	cDCE	1.05	31	99.80%	I	10	10	18.6	0.607
MW-206B	West Central	cDCE	0.87	27	99.20%	I	10	10	11	0.582
MW-208A	West Central	cDCE	1.42	23	97.70%	I	10	10	25.7	0.517
MW-208B	West Central	cDCE	0.28	19	94.60%	PI	10	10	2.14	0.932
MW-210B	West Central	cDCE	0.40	23	97.70%	I	10	10	1.3	0.433
MW-214A	West Central	cDCE	0.00	0	46.00%	ND	9	0		
MW-214B	West Central	cDCE	0.00	0	46.00%	ND	9	0		
MW-215A	West Central	cDCE	0.00	0	46.00%	ND	9	0		
MW-215B	West Central	cDCE	0.00	0	46.00%	ND	9	0		
PZ-03	West Central	cDCE	0.44	3	61.40%	NT	7	2	0.287	0.26
MW-62	Building 835	cDCE	1.06	-10	68.55%	NT	14	7	1.3	0.26
MW-142	Building 835	cDCE	0.00	0	46.00%	ND	11	0		
MW-198	Building 835	cDCE	0.00	0	46.43%	ND	10	0		
MW-199B	Building 835	cDCE	0.00	0	46.87%	ND	11	0		
MW-209B	Building 835	cDCE	0.00	0	46.43%	ND	10	0		
MW-212	Building 835	cDCE	0.00	0	46.43%	ND	11	0		
MW-103	North Central	cDCE	0.31	-9	88.10%	S	7	6	0.44	0.314
MW-104	North Central	cDCE	0.23	10	82.10%	NT	9	9	0.63	0.305
PZ-06	North Central	cDCE	0.00	0	43.73%	ND	7	0		

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 20
MANN-KENDALL TREND ANALYSIS - CT
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well	Plume	COC	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Number of Sample Rounds	Detects	Max	Min
DR2-1	TTA-2	CT	0.52	-72	99.90%	D	18	18	35	1.26
DR2-2	TTA-2	CT	0.57	34	97.90%	I	13	13	16.2	1.8
DR2-3	TTA-2	CT	0.17	22	89.80%	NT	13	13	6.66	4.1
DR2-4	TTA-2	CT	0.18	6	69.40%	NT	9	9	4.56	2.2
DR2-5	TTA-2	CT	0.41	-57	99.00%	D	17	17	260	25
DR2-6	TTA-2	CT	0.64	-8	66.20%	S	13	13	92	7.2
MW-26	TTA-2	CT	0.22	-3	54.75%	S	13	13	9.18	4.38
MW-64	TTA-2	CT	0.09	4	58.95%	NT	11	11	3.68	2.78
MW-85	TTA-2	CT	0.44	-27	85.55%	S	17	17	188	22.5
MW-88	TTA-2	CT	0.42	14	78.20%	NT	14	14	10.5	2.66
MW-92	TTA-2	CT	1.03	-56	100.00%	D	13	8	27.2	6.3
MW-96	TTA-2	CT	2.90	-26	95.70%	D	13	13	150	0.69
MW-113	TTA-2	CT	0.36	36	98.50%	I	13	13	110	20
MW-217	TTA-2	CT	0.33	15	89.20%	NT	10	10	96.3	34.8
MW-218	TTA-2	CT	0.26	-15	89.20%	S	10	10	17.7	7.56
PMW92-03	TTA-2	CT	1.77	-56	100.00%	D	12	7	58.1	0.586
PMW92-06	TTA-2	CT	0.97	-32	98.40%	D	12	8	182	1.53

Notes:
- I: Increasing
- S: Stable
- D: Decreasing
- N/A: Insufficent Data
- PI: Probably Increasing
- NT: No Trend
- PD: Probably Decreasing
- ND: Not Detected

TABLE 21
MANN-KENDALL TREND ANALYSIS - CF
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

Well	Plume	COC	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Number of Sample Rounds	Detects	Max	Min
DR2-1	TTA-2	CF	0.39	-91	100.00%	D	18	18	16	3.76
DR2-2	TTA-2	CF	0.61	19	86.05%	NT	13	13	4.23	0.63
DR2-3	TTA-2	CF	0.35	-43	99.60%	D	13	13	1.9	0.76
DR2-4	TTA-2	CF	0.19	-18	96.20%	D	9	9	1.06	0.575
DR2-5	TTA-2	CF	0.34	-38	93.60%	PD	17	17	82	21.5
DR2-6	TTA-2	CF	0.64	-14	78.20%	S	13	13	43.1	1.5
MW-26	TTA-2	CF	0.25	-13	76.35%	S	13	13	1.8	0.871
MW-64	TTA-2	CF	0.16	29	98.70%	I	11	11	1.34	0.818
MW-85	TTA-2	CF	0.48	-28	86.50%	S	17	17	51.5	8.03
MW-88	TTA-2	CF	0.46	-12	74.50%	S	14	14	2.5	0.404
MW-92	TTA-2	CF	0.85	-38	98.90%	D	13	8	13.2	7.6
MW-96	TTA-2	CF	2.78	-18	87.50%	NT	13	13	33	0.337
MW-113	TTA-2	CF	0.18	-15	79.90%	S	13	13	45.3	24.3
MW-217	TTA-2	CF	0.44	-3	56.90%	S	10	10	13.4	3.73
MW-218	TTA-2	CF	0.09	-9	75.80%	S	10	10	3.15	2.42
PMW92-03	TTA-2	CF	1.19	-45	99.95%	D	12	10	31	0.151
PMW92-06	TTA-2	CF	0.75	-31	98.10%	D	12	10	114	1.11

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

FIGURES

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Figure 1

SITE LOCATION MAP

ANNUAL LONG-TERM MONITORING REPORT – 2010

MAIN INSTALLATION
DEFENSE DEPOT
MEMPHIS, TENNESSEE

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 0.6 1.2 1.8 2.4 3 Miles

Installation Location
Memphis, Tennessee

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Date: January 2011
Edition: Rev 0

HDR

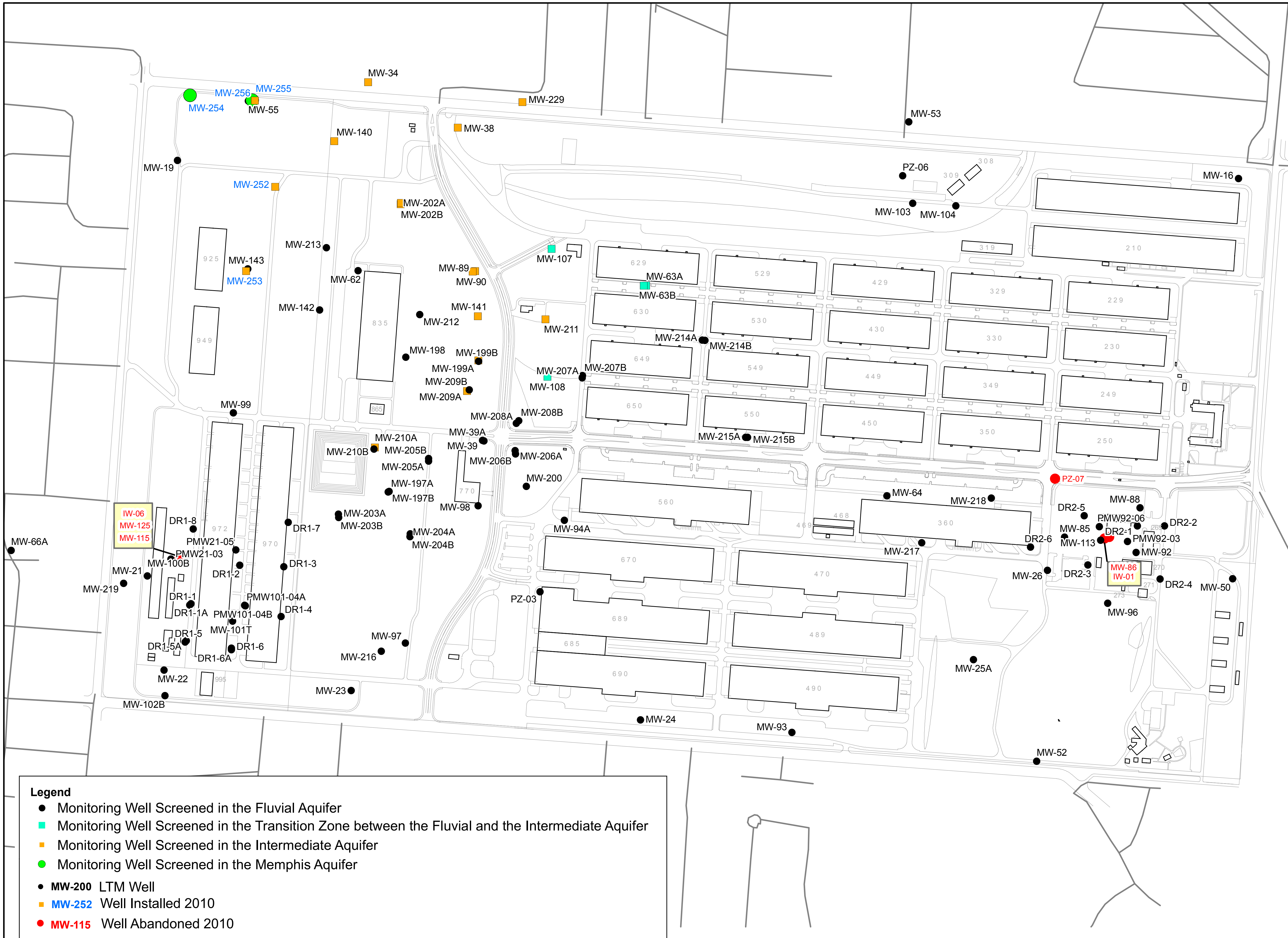

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Figure 2

WELL LOCATION MAP

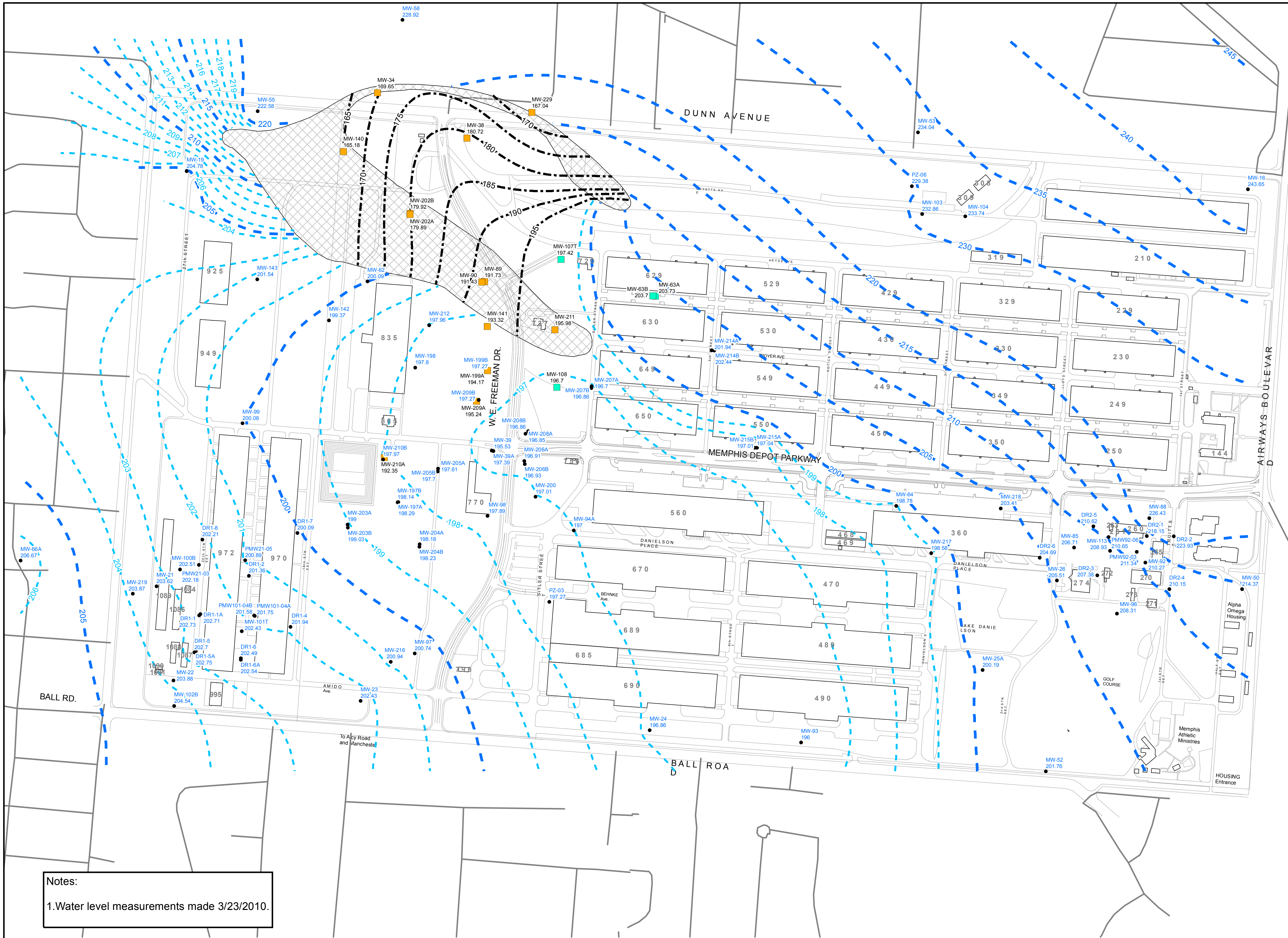
ANNUAL LONG-TERM MONITORING REPORT – 2010

MAIN INSTALLATION DEFENSE DEPOT MEMPHIS, TENNESSEE

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 250 500 1,000
Feet

Date: January 2011
Edition: Rev 0



Notes:

1.Water level measurements made 3/23/2010.

Figure 3

GROUNDWATER ELEVATIONS, MARCH 2010

ANNUAL LONG-TERM MONITORING REPORT – 2010

MAIN INSTALLATION DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

- Monitoring Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Intermediate Aquifer
- Monitoring Well Screened in the Transition Zone
- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface of the Intermediate Aquifer 5-ft. contour
- Clay Elevation Exceeds Groundwater Elevation

MW-03 100.12 Blue: value used for Fluvial Aquifer groundwater contours

MW-237 100.15 Black: value used for Intermediate Aquifer groundwater contours

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 250 500 1,000

Feet

Installation Location
Memphis, Tennessee

HDR

Date: January 2011
Edition: Rev 0

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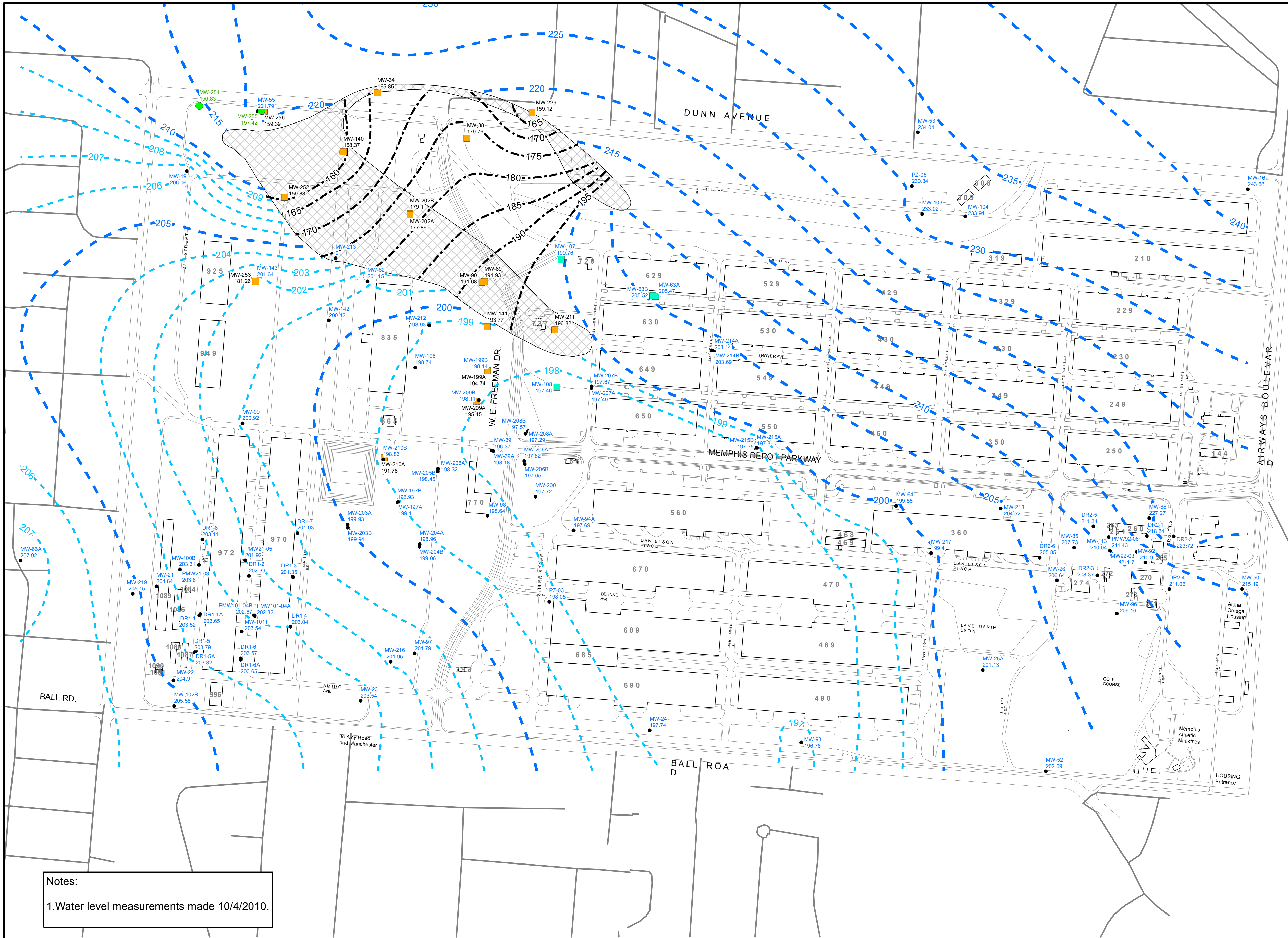

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Figure 4

GROUNDWATER ELEVATIONS, OCTOBER 2010

ANNUAL LONG-TERM MONITORING REPORT – 2010

MAIN INSTALLATION DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

- Monitoring Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Intermediate Aquifer
- Monitoring Well Screened in the Transition Zone
- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface of the Intermediate Aquifer 5-ft. contour
- Clay Elevation Exceeds Groundwater Elevation

MW-03 100.12 — Blue: value used for Fluvial Aquifer groundwater contours

MW-237 100.15 — Black: value used for Intermediate Aquifer groundwater contours

MW-254 156.83 — Green: Memphis Aquifer, not contoured

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 250 500 1,000
Feet

Installation Location
Memphis, Tennessee

Date: January 2011
Edition: Rev 0

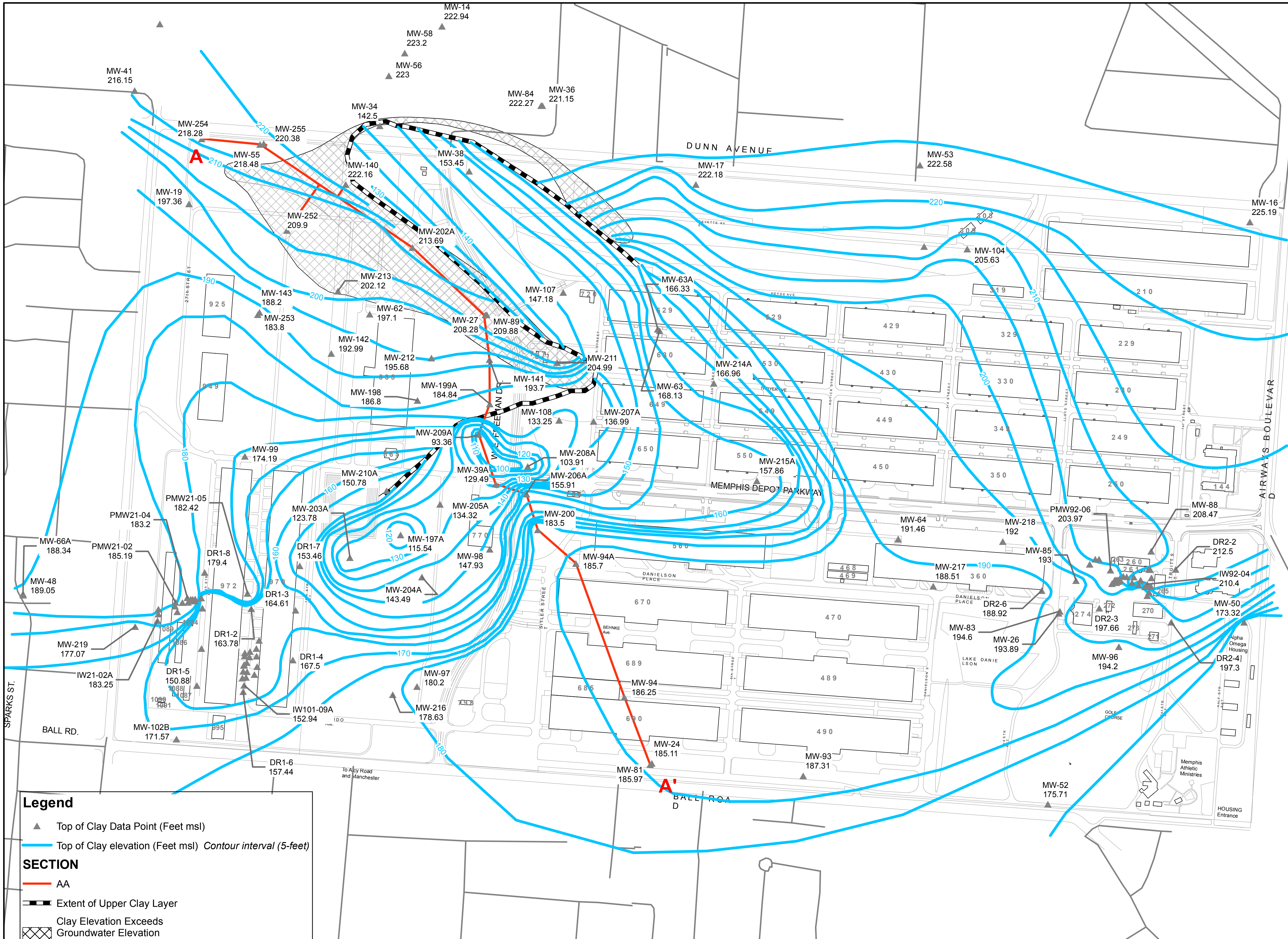

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Figure 5

TOP OF CLAY ELEVATIONS

ANNUAL LONG-TERM MONITORING REPORT – 2010

MAIN INSTALLATION DEFENSE DEPOT MEMPHIS, TENNESSEE

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 200 400 800
Feet

Installation Location
Memphis, Tennessee

HDR

Date: January 2011
Edition: Rev 0

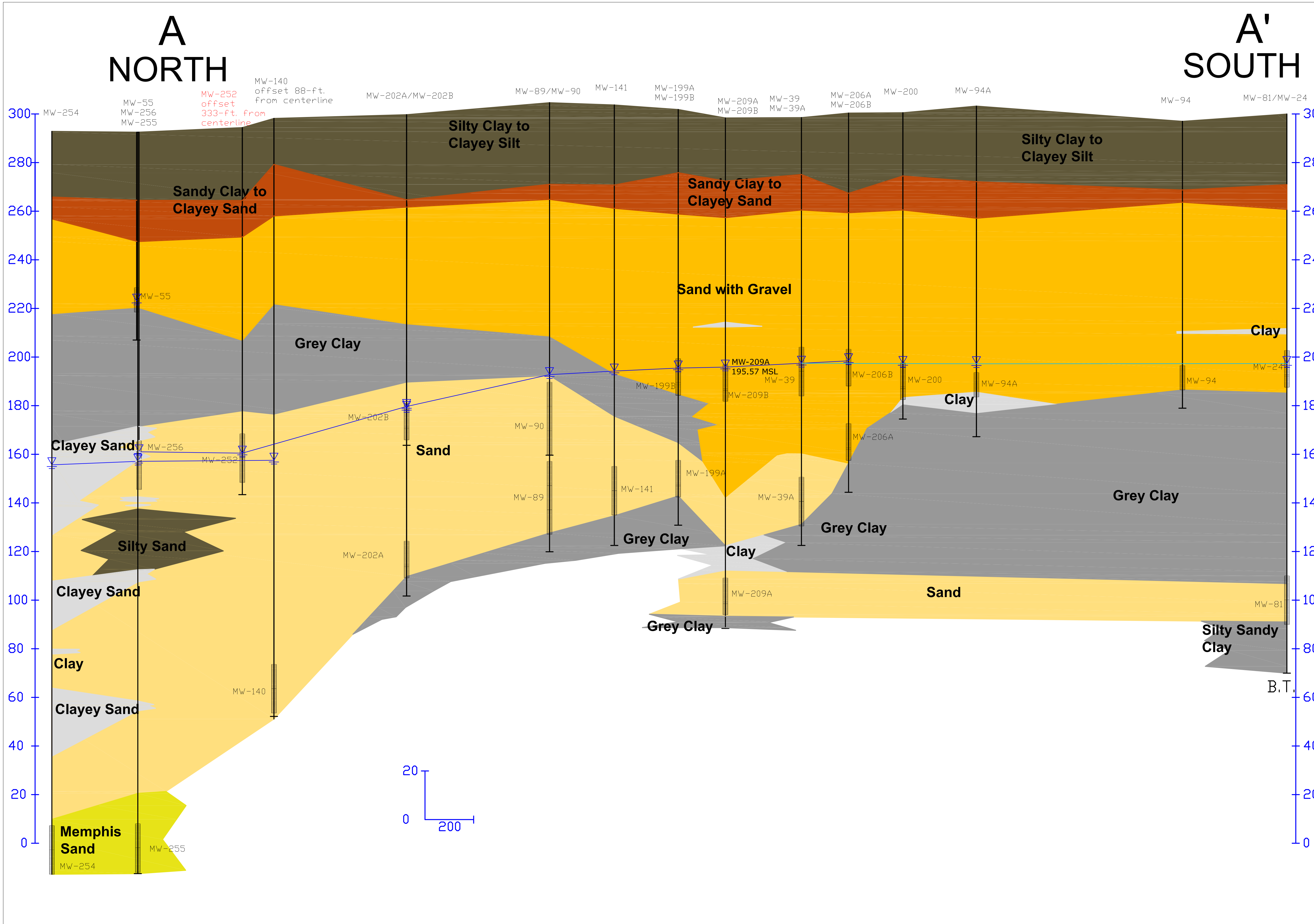

Figure 6

LITHOLOGIC CROSS-SECTION

ANNUAL LONG-TERM MONITORING REPORT - 2010

MAIN INSTALLATION DEFENSE DEPOT MEMPHIS, TENNESSEE

- Silty Clay to Clayey Silt
- Sandy Clay to Clayey Sand
- Fluvial Sand or Sand with Gravel
- Clayey Sand to Silty Clay
- Intermediate Sand
- Clay
- Memphis Sand
- Groundwater Elevation
- Groundwater Elevation 3/23/2010
- Groundwater Elevation 8/13/2010
- Well Screen Interval

Installation Location
Memphis, Tennessee

HDR

Date: January 2011
Edition: Rev 0

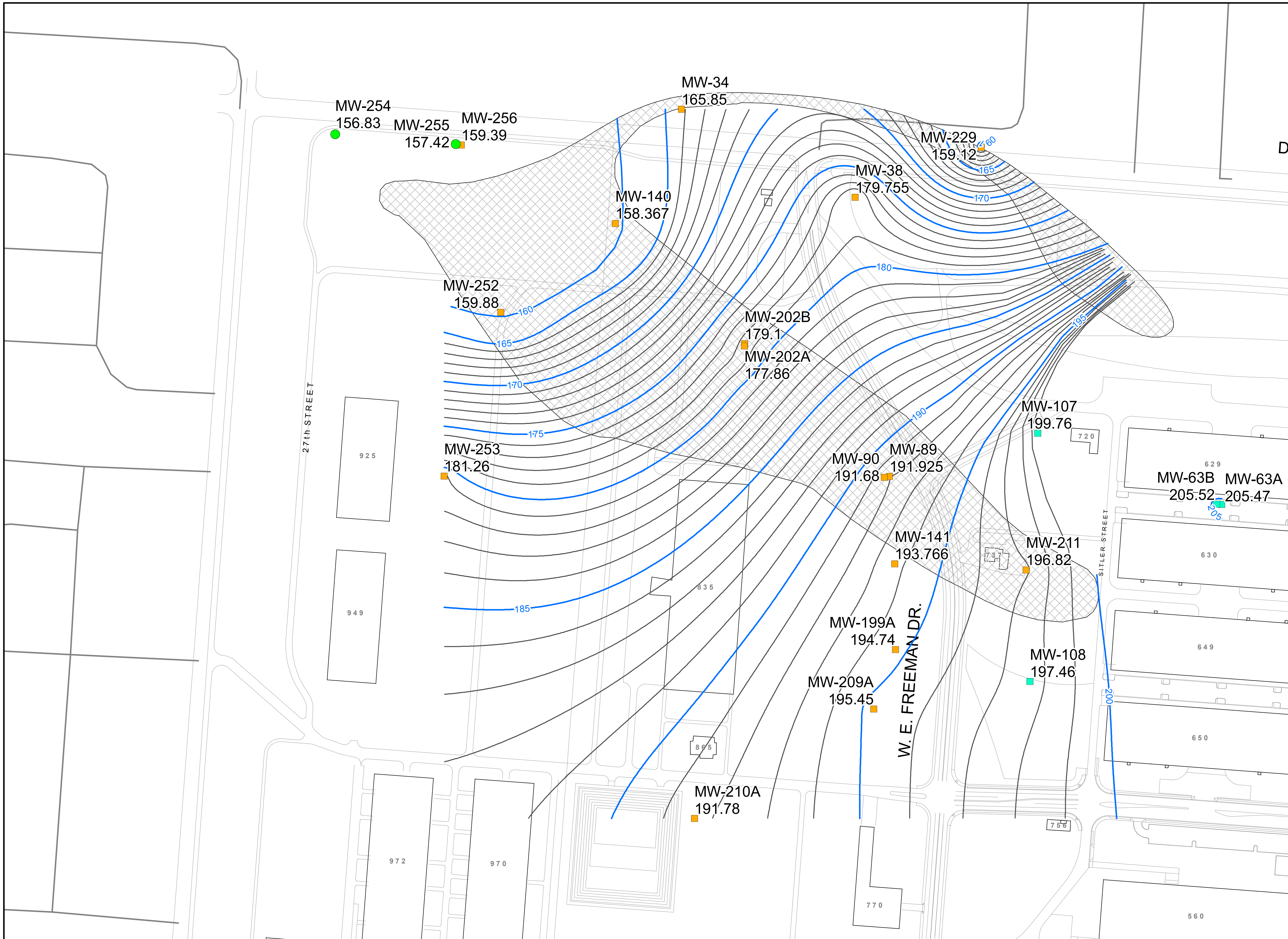

Figure 7

INTERMEDIATE AND MEMPHIS AQUIFER GROUNDWATER ELEVATIONS, OCTOBER 2010

ANNUAL LONG-TERM MONITORING REPORT – 2010

MAIN INSTALLATION DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

- Monitoring Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Transition Zone
- Monitoring Well Screened in the Intermediate Aquifer
- Monitoring Well Screened in the Memphis Aquifer
- Potentiometric surface 1 - Ft. Contour
- Potentiometric surface 5 - Ft. Contour
- Clay Elevation Exceeds Fluvial Aquifer Groundwater Elevation
- MW-63 205.52 Groundwater Elevation (msl)

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 100 200 400
Feet

Installation Location
Memphis, Tennessee

Date: January 2011
Edition: Rev 0

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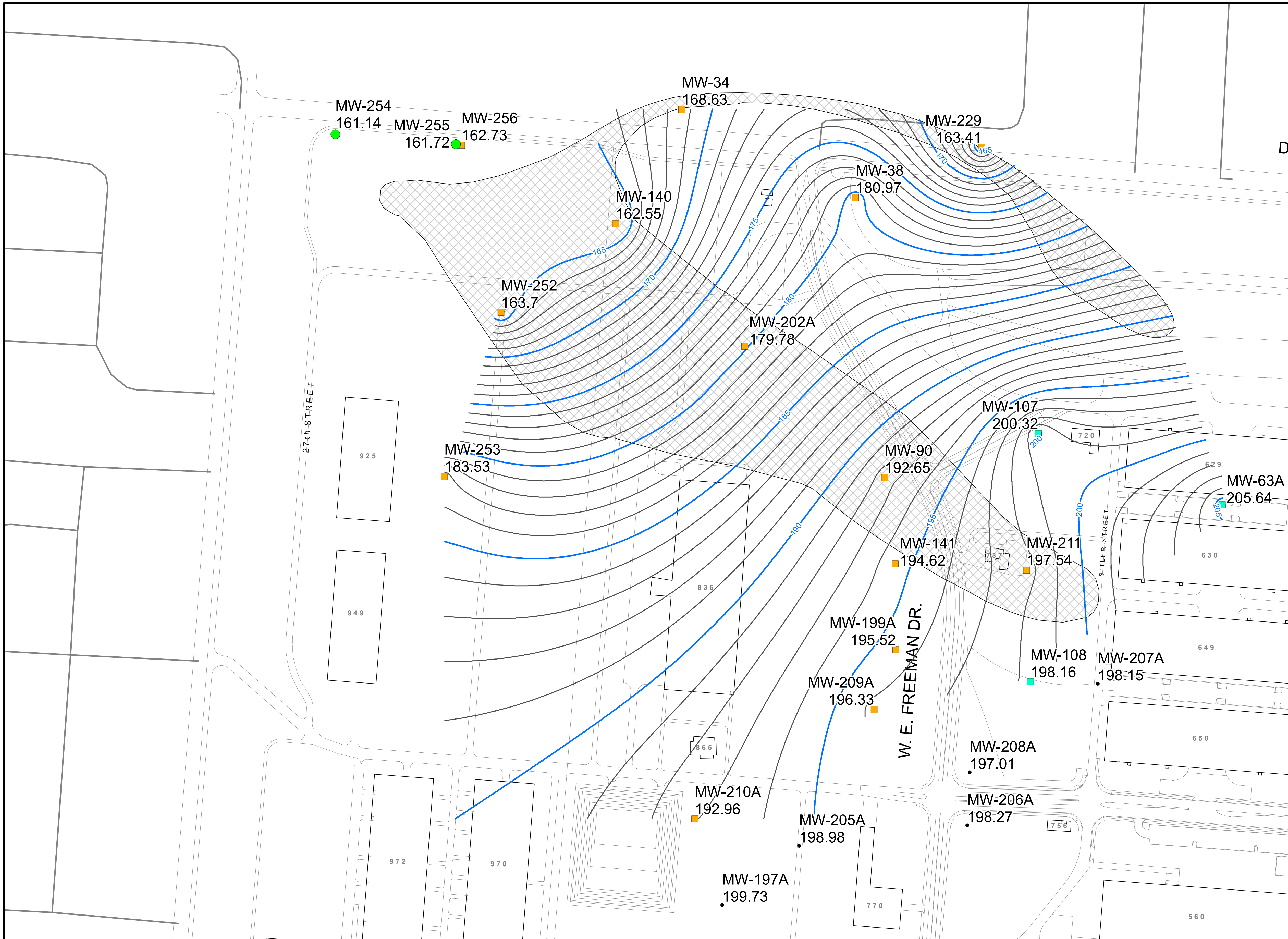


Figure 8

INTERMEDIATE AND MEMPHIS AQUIFER GROUNDWATER ELEVATIONS, DECEMBER 2010

ANNUAL LONG-TERM MONITORING REPORT – 2010

MAIN INSTALLATION DEFENSE DEPOT MEMPHIS, TENNESSEE

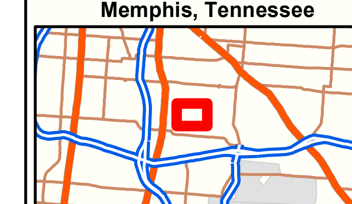
Legend

- Monitoring Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Transition Zone
- Monitoring Well Screened in the Intermediate Aquifer
- Monitoring Well Screened in the Memphis Aquifer
- Potentiometric surface 1 - Ft. Contour
- Potentiometric surface 5 - Ft. Contour
- Clay Elevation Exceeds Fluvial Aquifer Groundwater Elevation
- MW-63 205.52 Groundwater Elevation (msl)

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 100 200 400
Feet

Installation Location
Memphis, Tennessee



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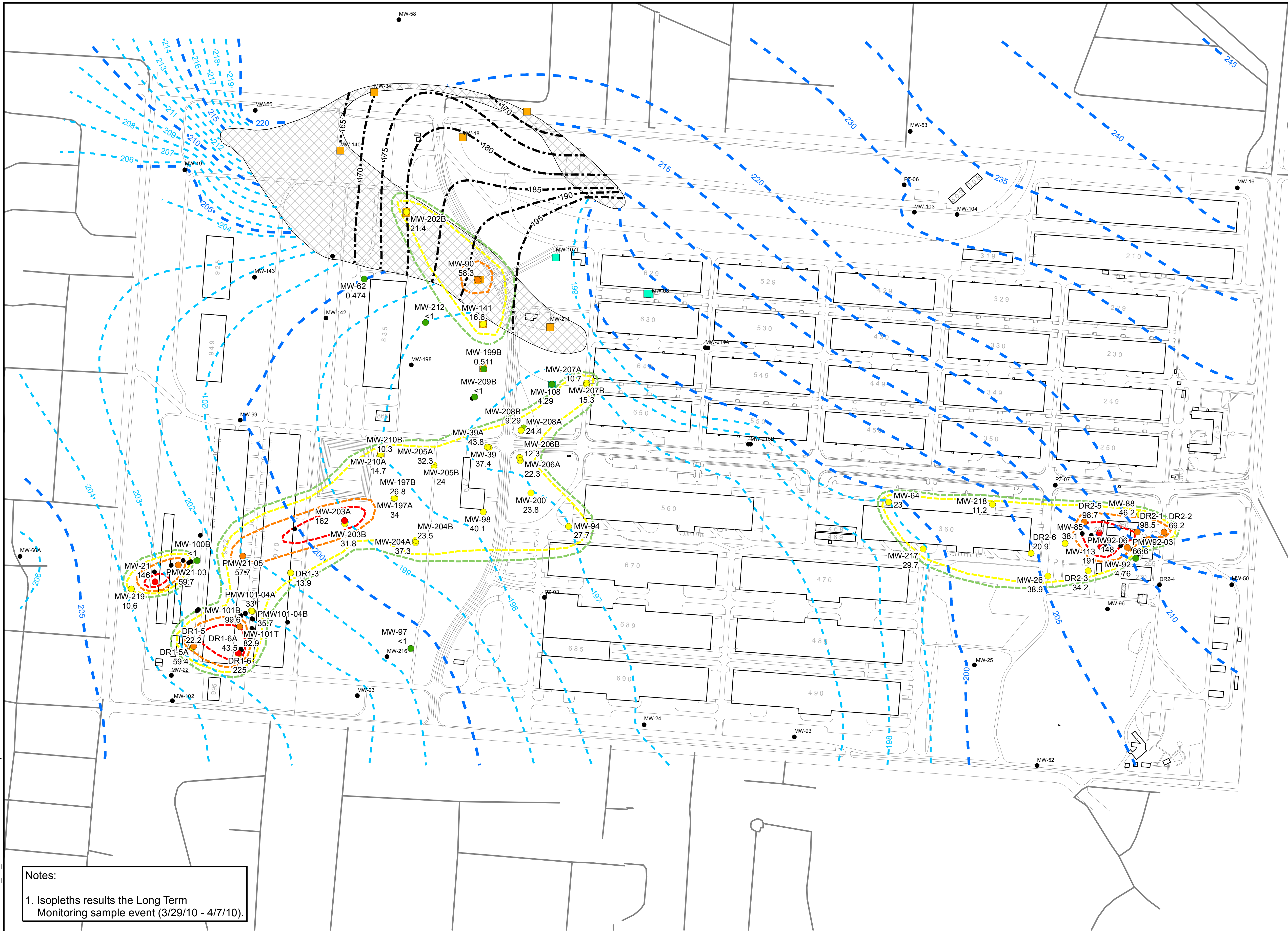

Figure 9

PCE ISOPLETH MAP, APRIL 2010

ANNUAL LONG-TERM MONITORING REPORT – 2010

MAIN INSTALLATION
DEFENSE DEPOT
MEMPHIS, TENNESSEE

Legend

PCE Ranges
ug/L
- 0 - 5
- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 300

PCE Isopleth
ug/L
- 5
- 10
- 50
- 100

Clay Elevation Exceeds Groundwater Elevation

Potentiometric surface of the Fluvial Aquifer 1-ft. contour
Potentiometric surface of the Fluvial Aquifer 5-ft. contour
Potentiometric surface of the Intermediate Aquifer 5-ft. contour

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 200 400 800
Feet

Installation Location
Memphis, Tennessee

HDR

Date: January 2011
Edition: Rev 0

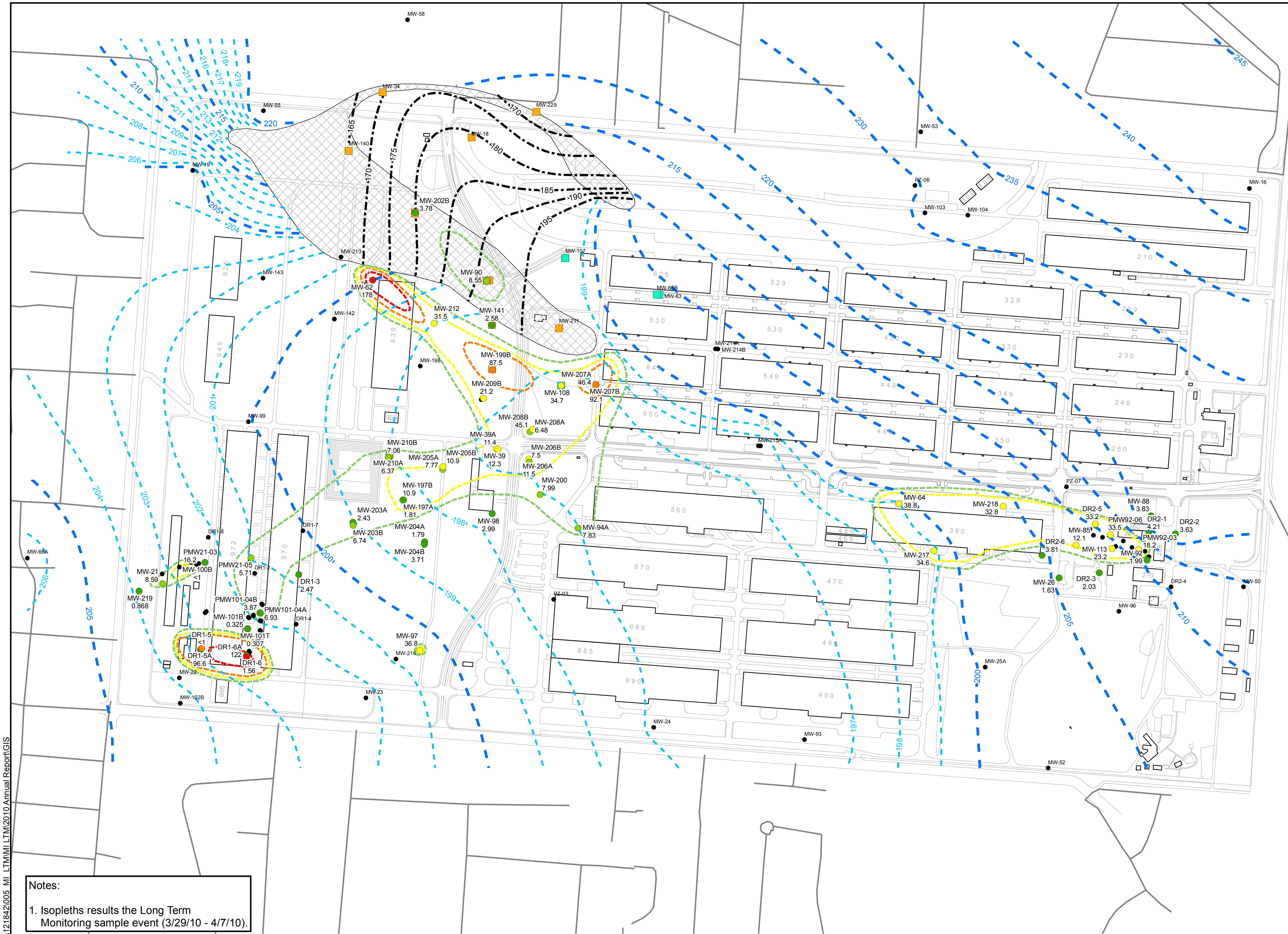

Figure 10

TCE ISOPLETH MAP, APRIL 2010

ANNUAL LONG-TERM
MONITORING REPORT – 2010

MAIN INSTALLATION
DEFENSE DEPOT
MEMPHIS, TENNESSEE

Legend

TCE Ranges

ug/L

- 0 - 5
- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 300

TCE Isopleth

ug/L

- 5
- 10
- 50
- 100
- Clay Elevation Exceeds Groundwater Elevation
- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface of the Intermediate Aquifer 5-ft. contour

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 200 400 800

Feet

Installation Location
Memphis, Tennessee

Notes:

1. Isopleths results the Long Term Monitoring sample event (3/29/10 - 4/7/10).

Date: January 2011
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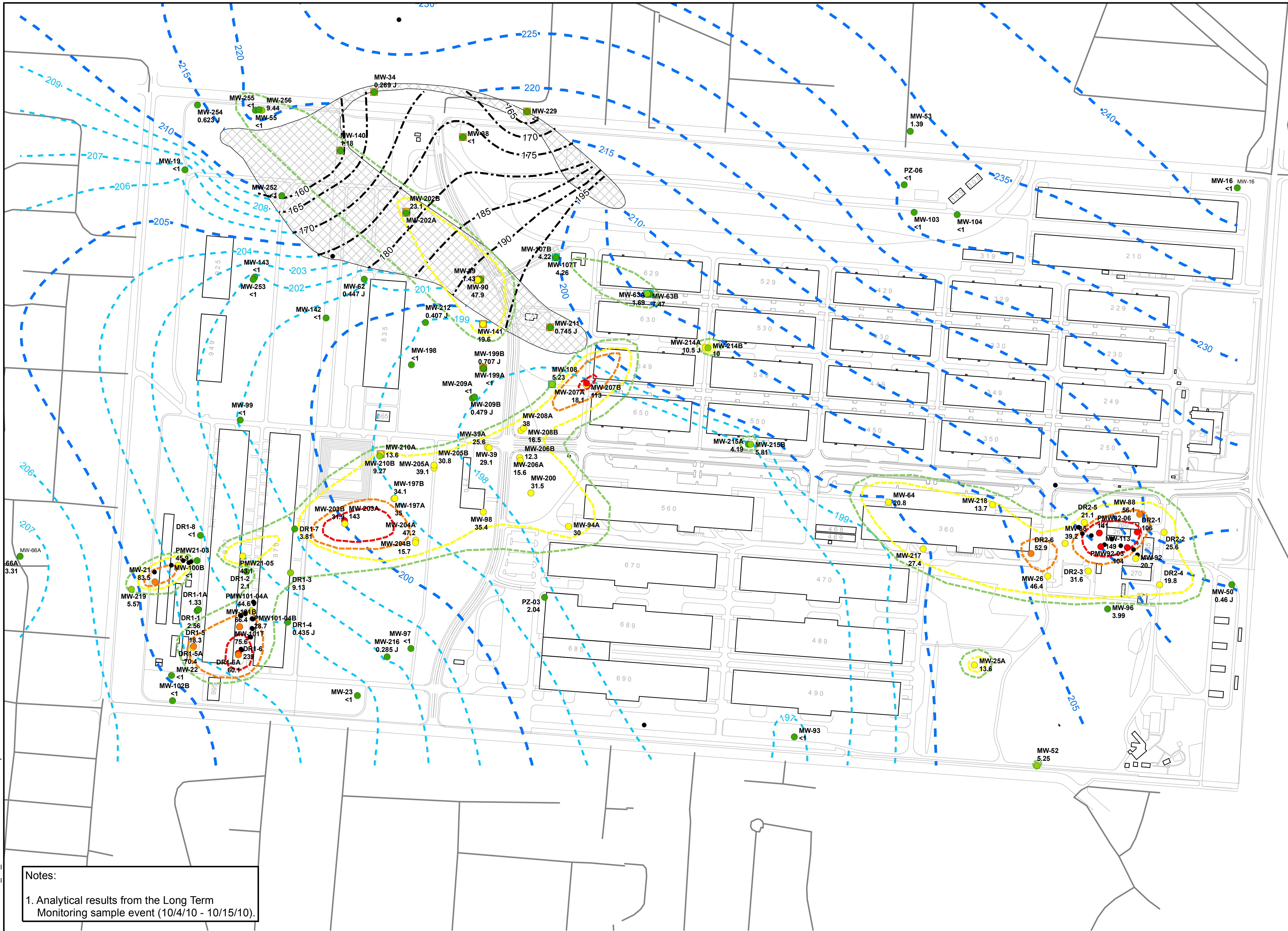

Figure 11

PCE ISOPLETH MAP, OCTOBER 2010

ANNUAL LONG-TERM MONITORING REPORT – 2010

MAIN INSTALLATION
DEFENSE DEPOT
MEMPHIS, TENNESSEE

Legend

PCE Ranges
ug/L
- 0 - 5
- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 300

PCE Isopleth
ug/L
- 5
- 10
- 50
- 100

Clay Elevation Exceeds Groundwater Elevation

Potentiometric surface of the Fluvial Aquifer 1-ft. contour
Potentiometric surface of the Fluvial Aquifer 5-ft. contour
Potentiometric surface of the Intermediate Aquifer 5-ft. contour

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 200 400 800
Feet

Installation Location
Memphis, Tennessee

Date: January 2011
Edition: Rev 0

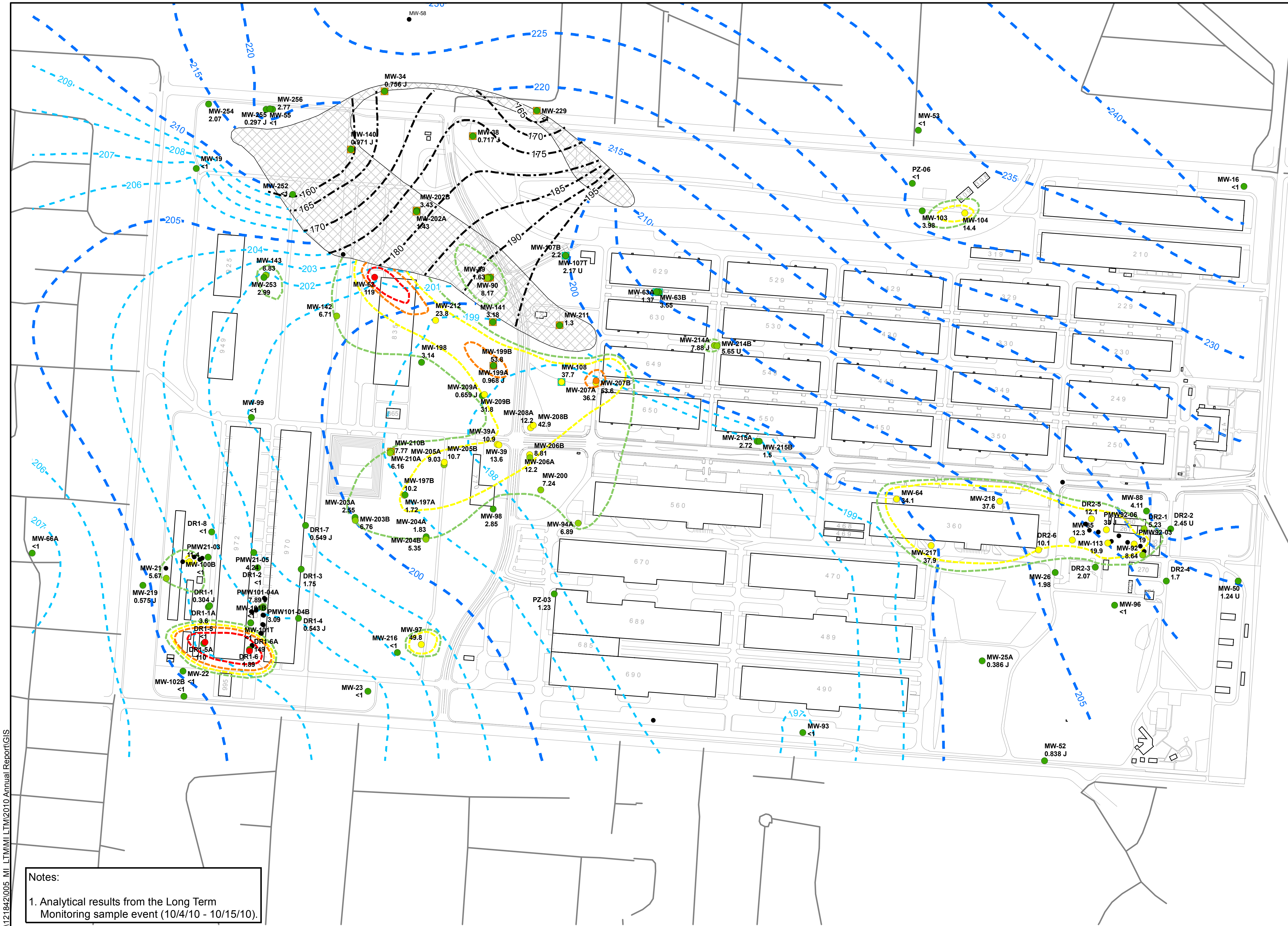

Figure 12

TCE ISOPLETH MAP, OCTOBER 2010

ANNUAL LONG-TERM MONITORING REPORT – 2010

MAIN INSTALLATION DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

TCE Ranges ug/L
- 0 - 5
- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 300

TCE Isopleth ug/L
- 5
- 10
- 50
- 100

Clay Elevation Exceeds Groundwater Elevation

Potentiometric surface of the Fluvial Aquifer 1-ft. contour

Potentiometric surface of the Fluvial Aquifer 5-ft. contour

Potentiometric surface of the Intermediate Aquifer 5-ft. contour

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 200 400 800 Feet

Installation Location
Memphis, Tennessee

Date: January 2011
Edition: Rev 0

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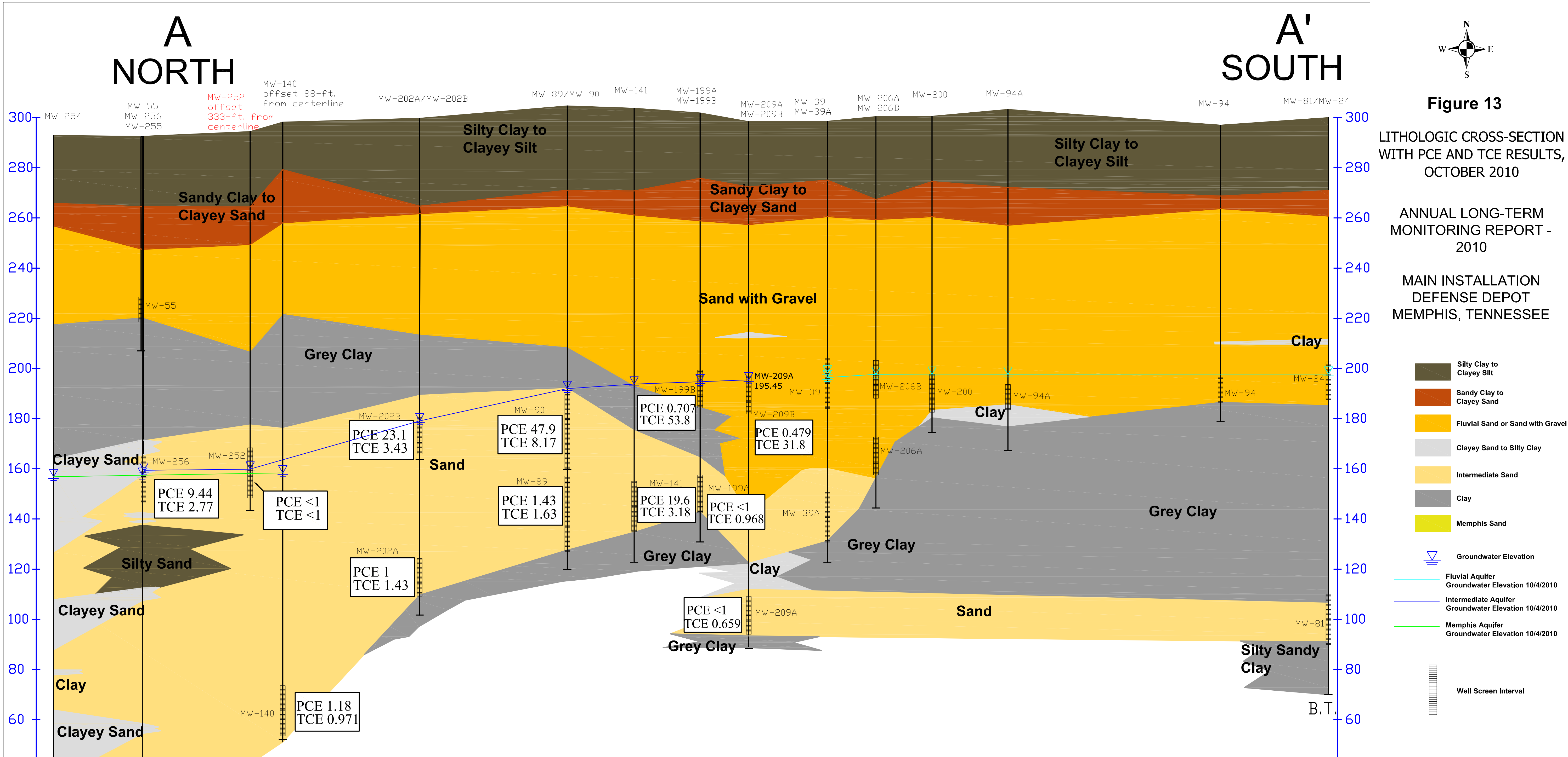


Figure 13

LITHOLOGIC CROSS-SECTION WITH PCE AND TCE RESULTS, OCTOBER 2010

ANNUAL LONG-TERM MONITORING REPORT - 2010

MAIN INSTALLATION DEFENSE DEPOT MEMPHIS, TENNESSEE

APPENDIX A

SOIL BORING LOGS

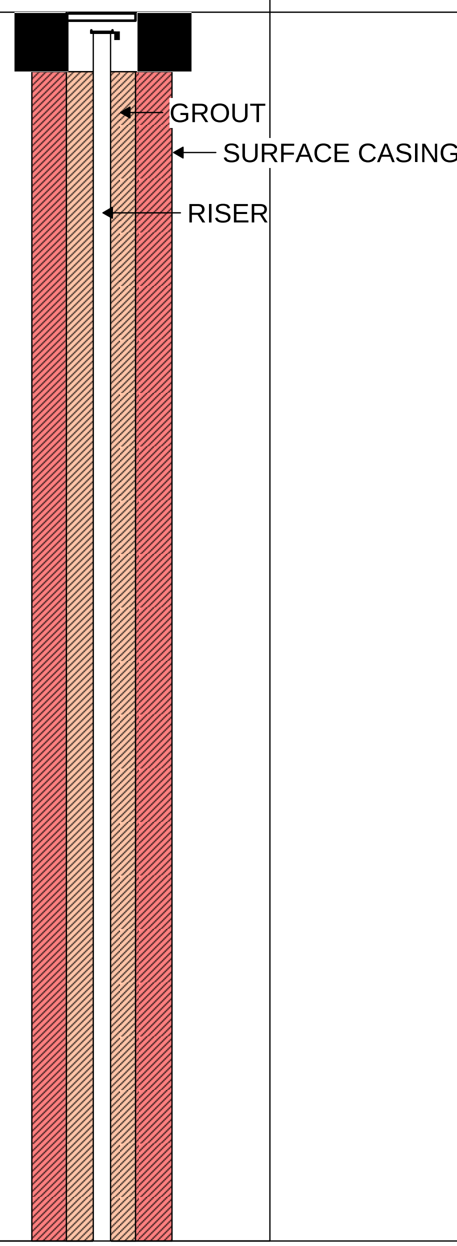
FIELD BOREHOLE LOG

BOREHOLE NO.: MW-252
TOTAL DEPTH: 151

PROJECT INFORMATION	DRILLING INFORMATION
PROJECT: IAQ Drilling	**DRILLING CO.: Boart Longyear**
PROJECT NO.: 121803-008	**DRILLER: Thomas Ardito**
SITE LOCATION: DDMT-MI	**DRILLING METHOD/RIG: Sonic**
PROJECT MANAGER: T. Holmes	**BOREHOLE DIAMETER: 6x10 and 3x5**
FIELD STAFF: J. Sperry	**GROUND SURFACE ELEVATION: 294.4**
BOREHOLE STARTED: 6/2/2010	**WATER DEPTH/ DATE: 131.12 / 6/21/2010**
BOREHOLE FINISHED: 6/7/2010	**BOREHOLE USE: Monitoring Well**

NOTES:

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		GW Fill gravel. 10YR 7/1 Light Gray. Compacted.		
		CL Silty Clay. 10YR 5/3 Brown. Medium plasticity. Dry		
10		**CL** Clay. 2.5YR 5/1 Gray. Medium Plasticity.		
		CL Silty Clay with mottling. 7.5YR 4/6 Strong brown. Low plasticity. Dry.		
20		**CL** Silty clay. 7.5YR 5/6 Strong brown. Medium plasticity. Moist.		
30		**CL** same as above		
		SC Clayey sand with some subangular gravel. 5YR 5/8 Yellowish red. Low plasticity. Moist.		
40		**CL** Sandy Clay with some fine gravel. 10YR 4/3 Brown. Very plastic. Moist.		
		SC Clayey sand with some fine gravel. 2.5YR 5/6 Red. Dry.		
50		**SP** Fine sand. 10YR 8/6 Yellow. Loose. Dry.		
		SP Fine sand with a trace of clay. 2.5YR 5/5 Red. Dry.		
60		**SP** Fine sand with a trace of clay. 2.5YR 5/8 Red. Loose. Moist.		



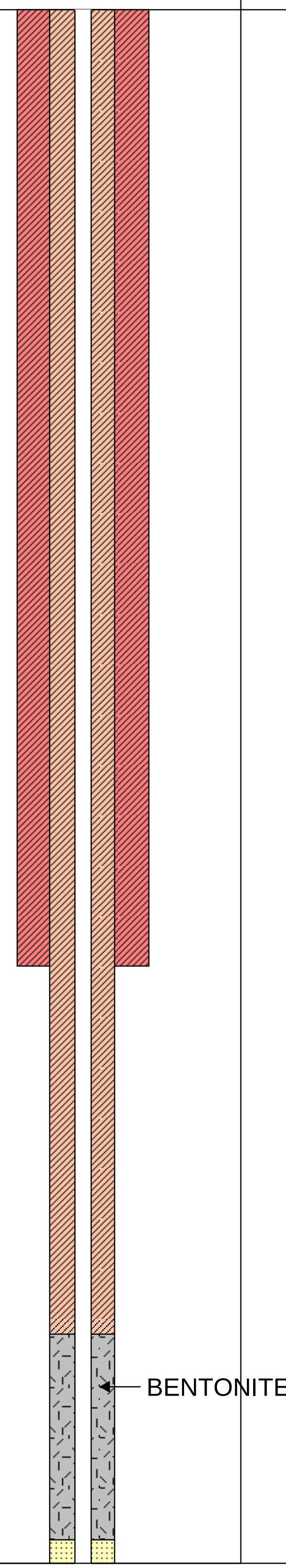
Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-252

TOTAL DEPTH: 151

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SP Medium sand with a trace of gravel. 7.5YR 6/6 Reddish yellow. Loose. Dry.		
		SP Clean fine sand with trace of fine gravel. 5YR 5/8 Yellowish Red. Loose. Moist.		
70		**SP** same as above		
		SP Fine sand. 10YR 8/6 Yellow. Loose. Moist.		
80		**SP** Fine sand. 5YR 5/8 Yellowish Red. Loose. Moist.		
		SW Sandy Gravel. 10YR 5/8 Yellowish brown. Wet.		
90		**CH** Clay. 10YR 4/1 Dark Gley. High Plasticity. Moist.		
100		**CH** same as above		
110		**CH** same as above		
120		**SP** Fine sand. 10YR 6/1 gray. Loose. Dry.		

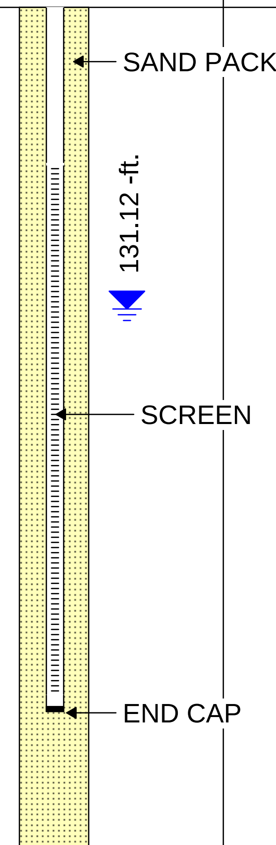


FIELD BOREHOLE LOG

BOREHOLE NO.: MW-252

TOTAL DEPTH: 151

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SP Fine sand. 10YR 6/1 gray. Moist.		
130		**SP** Fine sand with some silt. 10YR 5/1 Gray. Wet.		
140		**SP** same as above		
		SP Fine sand. 10YR 7/6 Yellow. Wet.		
150		**SP** Fine sand with clay lenses. 10YR 6/2 light brownish gray. Loose. Wet.		
		End of Log		
160				
170				
180				



Created By: WTR

Checked By: JBS

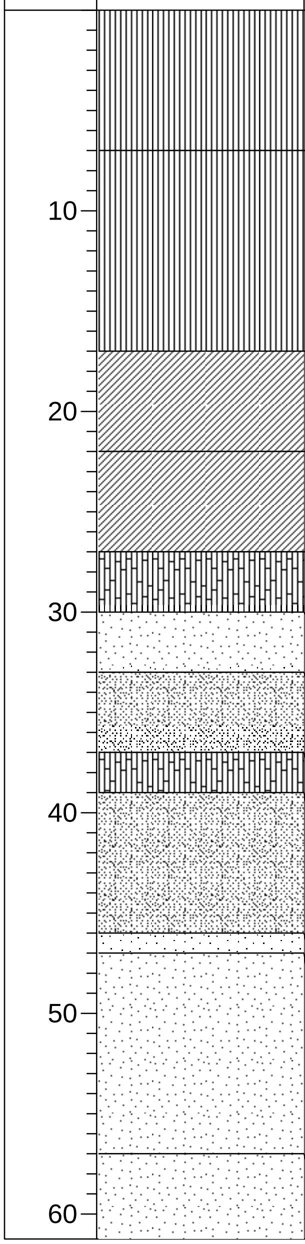
FIELD BOREHOLE LOG

BOREHOLE NO.: MW-253
TOTAL DEPTH: 157

PROJECT INFORMATION	DRILLING INFORMATION
PROJECT: IAQ Drilling	DRILLING CO.: Boart Longyear
PROJECT NO.: 121803-008	DRILLER: Thomas Ardito
SITE LOCATION: DDMT-MI	DRILLING METHOD/RIG: Sonic
PROJECT MANAGER: T. Holmes	BOREHOLE DIAMETER: 6x10 and 3x5
FIELD STAFF: J. Sperry	GROUND SURFACE ELEVATION: 290.8
BOREHOLE STARTED: 6/4/2010	WATER DEPTH/ DATE: 117.87 6/21/2010
BOREHOLE FINISHED: 6/9/2010	BOREHOLE USE: Monitoring Well

NOTES:

Depth	Soil Symbol	Soil Description	Well Completion	Well Description



ML
Clayey Silt.10YR 4/4 Dark Yellowish Brown. Low Plasticity. Dry

ML
same as above.

CL
Silty Clay. 10YR 4/4 Dark Yellowish Brown. Low Plasticity. Dry

CL
Silty Clay. 10YR 4/4 Dark Yellowish Brown with Orange Mottles . Low Plasticity. Dry

SM
Silty Sand. 10YR 5/2 Grayish Brown. Loose. Moist

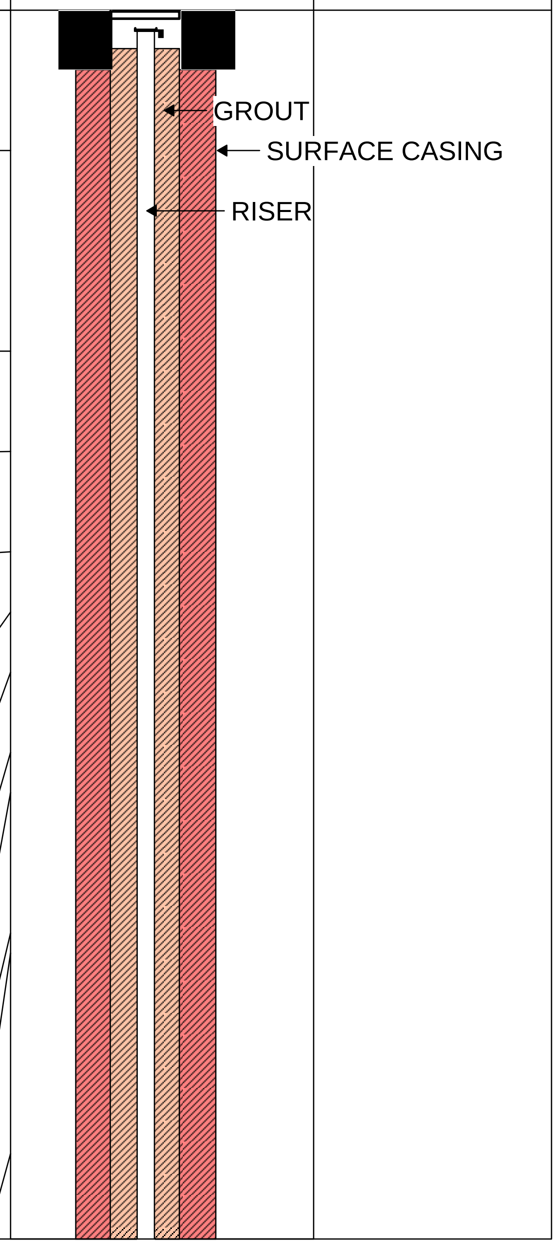
SW
Silty Sand. 10YR 5/6 Yellowish Brown. Trace Gravel. Moderately Consolidated. Moist

SP
Fine Sand. 5YR 5/8 Yellowish Red. Loose. Moist

SM
Silty Sand. 10YR 5/8 Yellowish Brown. Trace Gravel. Loose. Moist

SP
Fine Sand. 10YR 5/6 Yellowish Red. Loose. Moist

SW
Medium Sand. 10YR 6/6 Brownish Yellow. Loose. Moist

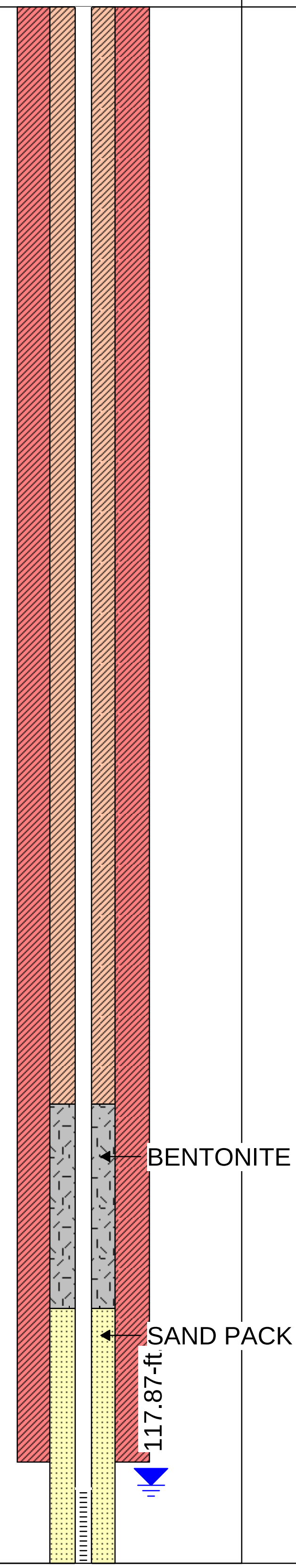


Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-253

TOTAL DEPTH: 157

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SW Fine to Medium Sand. 7.5YR 6/8 Medium Yellow. Loose. Moist		
		SW Fine to Coarse Sand. 10YR 5/8 Yellowish Brown. Some Gravel. Loose. Moist		
70		**SP** Fine Sand. 10YR 8/4 Very Pale Brown. Loose. Dry.		
		SW Fine to Coarse Sand. 10YR 5/8 Yellowish Brown. Some Gravel. Loose. Moist		
80		**SW** Fine to Coarse Sand. 10YR 5/6 Yellowish Brown. Trace Gravel. Loose. Moist		
90		**SW** same as above.		
		SW Fine Sand. 10YR 8/4 Very Pale Brown. Stiff. Wet.		
100		**SM** Silty Sand. 10YR 4/4 Dark Yellowish Brown. Trace Gravel. Loose. Moist		
		SP Medium to Fine Sand. 10YR 8/3 Very Pale Brown. Loose. Wet		
110		**CH** Clay. 10YR 5/1 Grey. Stiff. Moist		
		CH same as above.		
120		**CH** Clay. 10YR 5/1 Grey. Highly Plastic. Moist		

Created By: WTR

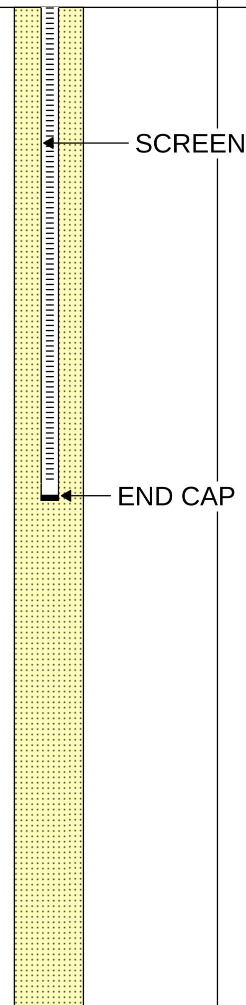
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-253

TOTAL DEPTH: 157

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SP Sand with some Clay. 10YR 6/3 Pale Brown. Moist. Loose		
130		**SP** Sand with some Clay. 10YR 6/3 Pale Brown. Moist. Loose		
		SP Sand with some Clay. 10YR 6/3 Pale Brown. Wet. Loose		
140		**CH** Clay. 10YR 5/1 Grey. Highly Plastic. Moist		
150		**CH** same as above.		
		End of Log		
160				
170				
180				



Created By: WTR

Checked By: JBS

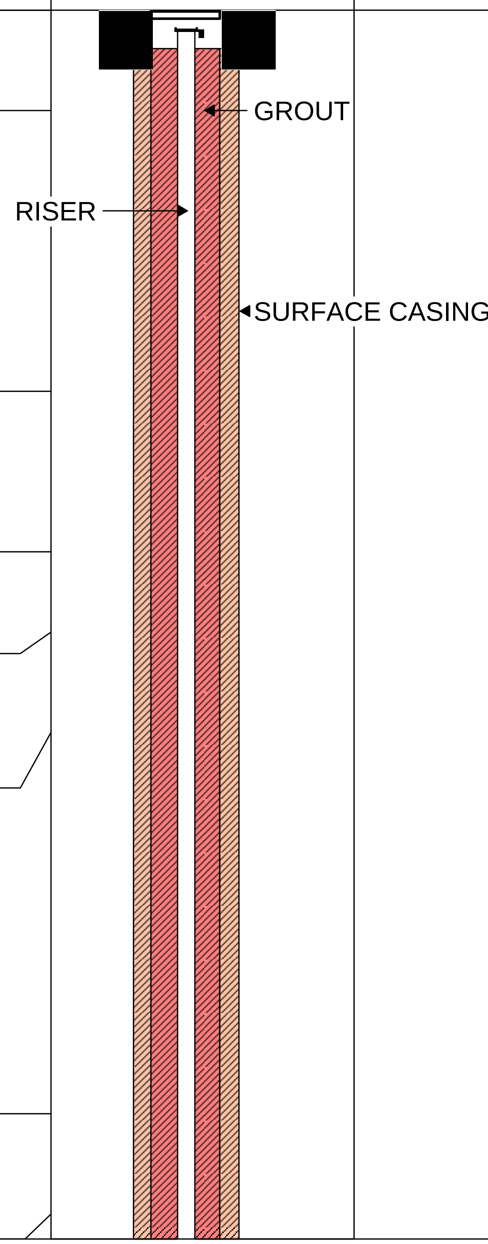
FIELD BOREHOLE LOG

BOREHOLE NO.: MW-254
TOTAL DEPTH: 305

PROJECT INFORMATION	DRILLING INFORMATION
PROJECT: Memphis Aquifer Drilling	DRILLING CO.: WDC
PROJECT NO.: 121842-005	DRILLER: T. Minor
SITE LOCATION: Main Installation	DRILLING METHOD/RIG: Sonic
PROJECT MANAGER: T. Holmes	BOREHOLE DIAMETER: 6x10 and 4x6
FIELD STAFF: J. Sperry	GROUND SURFACE ELEVATION: 293.28
BOREHOLE STARTED: 7/24/2010	WATER DEPTH/ DATE: 135.25 on 8/10/2010
BOREHOLE FINISHED: 8/1/2010	BOREHOLE USE: Monitoring Well

NOTES: Surface casing installed to 85 feet bgs, approximately 10 feet into upper clay. Boring drilled to 305 feet; borehole washed to 306 feet bgs during well installation.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
		No Recovery Hand augured for utility clearance		
10		**ML** Silt. 7.5YR 4/4 Brown. Low Plasticity. Moist		
20		**ML** Clayey Silt. 10YR 6/6 Brownish Yellow. Low to Medium Plasticity. Moist.		
30		**CL** Silty Clay. 5YR 6/8 Yellowish Red. Low Plasticity. Trace Sand. Moist.		
		SC Sand. 5YR 6/8 Reddish Yellow. Poorly Sorted. Trace Clay and Gravel. Subangular gravel. Moist.		
40		**SP** Gravelly Sand. 7.5YR 7/6 Reddish Yellow. Sand is Medium to Fine Grained. Poorly Sorted. Subangular Gravel. Dry.		
50				
60				



Created By: WTR

Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-254

TOTAL DEPTH: 305

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SP Sand. 7.5YR 4/6 Strong Brown. Medium to Coarse Grained. Poorly Sorted. Trace Gravel. Moist.		
70		**SP** Sand. 7.5YR 6/6 Reddish Yellow. Medium to Fine Grained. Poorly Sorted. Trace Gravel. Moist		
		SP Sand. 5YR 5/8 Yellowish Red. Medium to Fine Grained. Trace Gravel. Poorly Sorted. Moist.		
		CH Clay. 10YR 6/8 Brownish Yellow. High Plasticity. Stiff. Moist.		
80		**CH** Clay. 10YR 5/1 Gray. High Plasticity. Stiff. Trace Fine Sand. Moist.		
90		**CH** Clay. 10YR 5/1 Gray. High Plasticity. Trace Lignite and Fine Sand. Moist		
100				
110				
120				

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-254
TOTAL DEPTH: 305

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
130		**SC** Clayey Sand. 10YR 6/1 Gray. Fine Grained. Well Sorted. Moist.	135.25-ft	
140				
150		**CH** Sandy Clay. 10YR 5/1 Gray. Moderately Plastic. Fine Grained. Stiff. Moist.		
160		**SC** Clayey Sand. 10YR 6/1 Gray. Very Fine Grained Sand. Moist.		
		CH Sandy Clay. 10YR 5/1 Gray. Moderately Plastic. Fine Grained. Moist.		
		ML Clayey Silt. 10YR 7/1 Light Gray. Possible Silt Stone. Rock Flour.		
170		**SP** Sand. 10YR 4/1 Dark Gray. Medium to Fine Grained. Poorly Sorted. Moist.		
180		**SP** Sand. 10YR 7/2 Light Gray. Medium to Fine Grained. Poorly Sorted. Trace Lignite. Moist.		

Created By: WTR

Checked By: JBS

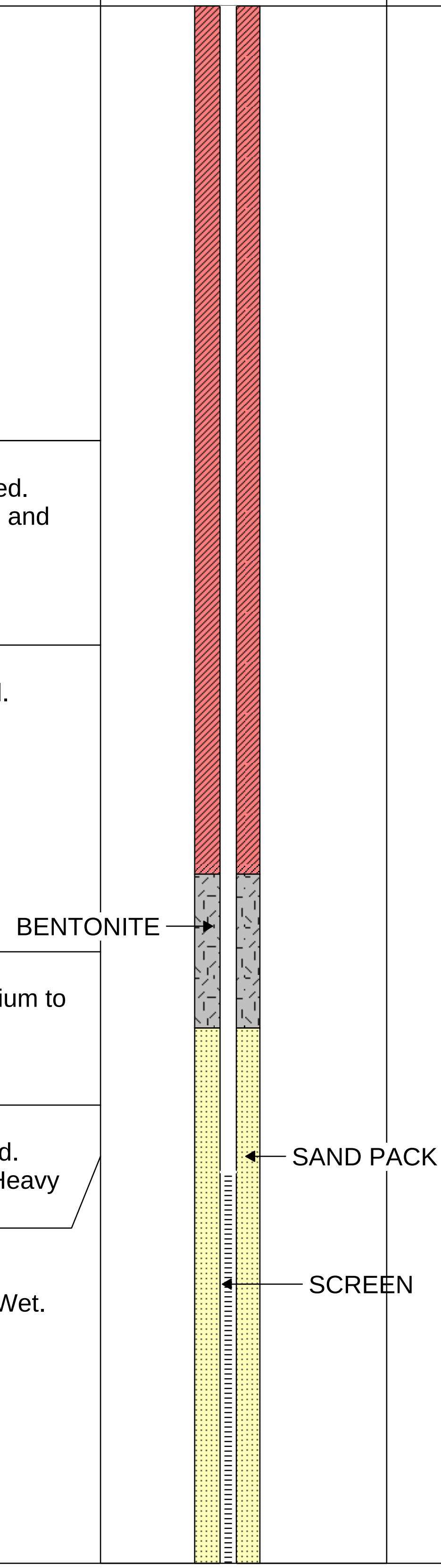
Depth	Soil Symbol	Soil Description	Well Completion	Well Description
190		**SW** Sand. 10YR 6/1 Gray. Medium to Coarse Grained Sand. Well Sorted. Trace Lignite. Moist.		
		SP Clayey Sand. 10YR 5/1 Gray. Fine Grained. Moist		
200				
		SP Sand. 10YR 7/3 Very Pale Brown. Medium Grained. Well Sorted. Trace Fines and Lignite. Moist.		
210				
		CH Clay.10YR 4/1 Dark Gray. High Plasticity. Stiff. Moist.		
		SW Clayey Sand. 10YR 6/1 Gray. Well Sorted. Fine Grained. Moist.		
220				
230		**SC** Clayey Sand. 10YR 6/3 Pale Brown. Fine Grained. Well Sorted. Lignite Grains.Moist.		
		SC Clayey Sand. 7.5YR 5/1 Gray. Fine Grained. Well Sorted. Moist.		
240				

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-254

TOTAL DEPTH: 305

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
250				
260		**SW** Sand. 10YR 7/6 Yellow. Medium Grained. Some Fines. Well Sorted. Trace Lignite and Heavy Minerals. Moist.		
270		**SW** Sand. 10YR 5/1 Gray. Medium Grained. Trace Clay. Trace Lignite and Heavy Minerals. Well Sorted. Wet.		
280		**SW** Sand. 10YR 7/3 Very Pale Brown. Medium to fine Grained. Trace Lignite and Heavy Minerals. Trace Fines. Wet.		
		SW Sand. 10YR 8/1 White. Medium Grained. Well Sorted. Clean. Trace Lignite and Heavy Minerals. Wet.		
290		**SW** Sand. 10YR 7/2 Light Gray. Medium to Coarse Grained. Clean. Trace Lignite. Wet.		
300				



FIELD BOREHOLE LOG

BOREHOLE NO.: MW-254

TOTAL DEPTH: 305

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		End of Log	END CAP	
310				
320				
330				
340				
350				
360				

Created By: WTR

Checked By: JBS

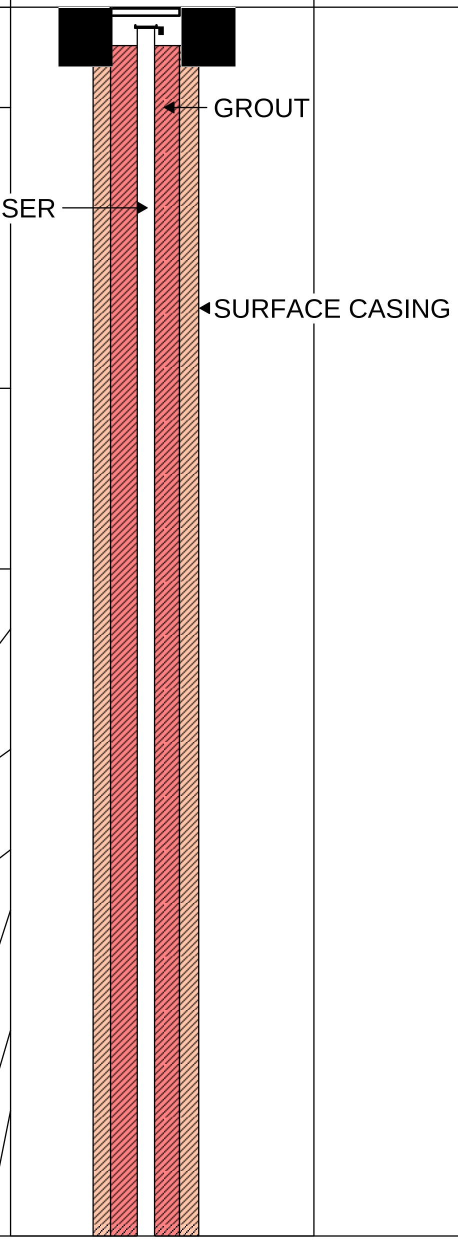
FIELD BOREHOLE LOG

BOREHOLE NO.: MW-255
TOTAL DEPTH: 305

PROJECT INFORMATION	**DRILLING INFORMATION**
PROJECT: Memphis Aquifer Drilling	**DRILLING CO.: WDC**
PROJECT NO.: 121842-005	**DRILLER: T. Minor**
SITE LOCATION: Main Installation	**DRILLING METHOD/RIG: Sonic**
PROJECT MANAGER: T. Holmes	**BOREHOLE DIAMETER: 6x10 and 4x6**
FIELD STAFF: J. Sperry	**GROUND SURFACE ELEVATION: 292.38**
BOREHOLE STARTED: 7/22/2010	**WATER DEPTH/ DATE: 135.17 on 8/2/10**
BOREHOLE FINISHED: 7/28/2010	**BOREHOLE USE: Monitoring Well**

NOTES: Surface casing installed to 82 feet bgs, approximately 10 feet into upper clay. Boring drilled to 305 feet bgs.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
		No Recovery Hand augured for utility clearance		
10		**ML** Clayey silt. 10YR 4/4 Dark Yellowish Brown. Low to Med Plasticity. Moist.		
20		**ML** Clayey Silt. 7.5YR 4/4 Brown. Low Plasiticity. Some Fine Sand. Moist.		
30		**SM** Silty Sand. 10YR 4/6 Dark Yellowish Brown. Fine grained Sand. Moist.		
		SM Silty Sand. 10YR 4/6 Dark Yellowish Brown. Trace Gravel, Subangular. Moist.		
40		**SC** Clayey Sand. 5YR 5/8 Yellowish Red. Fine Grained Sand. Trace gravel. Moist.		
		SC Clayey Sand. 7.5YR 7/8 Reddish Yellow. Medium Grained Sand. Poorly Sorted.Trace Gravel. Moist.		
50		**SW** Gravelly Sand. 10YR 5/6 Yellowish Brown. Medium to Coarse Grained. Poorly graded. Moist.		
60				



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Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-255

TOTAL DEPTH: 305

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SW Gravelly Sand. 10YR 5/8 Yellowish Brown. Medium to Fine Grained. Poorly graded. Moist.		
70		**SW** Gravelly Sand. 7.5YR 6/8 Reddish yellow. Medium to Coarse Grained. Poorly Graded. Moist.		
80		**CH** Clay 10YR 5/1 Gray. High Plasticity. Stiff. Moist.		
90, 100		**CH** Clay. 10YR 4/1 Dark gray. Very Plastic. Stiff. Trace Fine Sand. Moist		
		CH Clay. 10YR 4/1 Dark Gray. Very Plastic. Stiff. Moist.		
110, 120		**CH** Clay 10YR 4/1 Dark Gray. Very Plastic. Stiff. Moist.		

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FIELD BOREHOLE LOG

BOREHOLE NO.: MW-255

TOTAL DEPTH: 305

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		CL Sandy Clay. 10YR 5/1 Gray. Soft. Very Fine. Very Low Plasticity. Moist.		
130		**SW** Sand. 10YR 6/4 Light Yellowish Brown. Trace of Clay. Fine to Medium Grained. Moist.	135.17-ft	
		CL Clay 10YR 7/1 Light Gray. Stiff. Inorganic. Highly Plastic. Moist.		
140		**SW** Sand. 10YR 7/3 Very Pale Brown. Fine to Medium Grained. Some Oxidized Zones. Wet.		
150		**CL** Clay. 10 YR 7/1 Light Gray. Stiff. Inorganic. Highly plastic. Moist		
		SW Sand. 10YR 7/3 Very Pale Brown. Fine to Medium Grained. Some Oxidized Zones. Wet.		
160		**CL** Clay. 10 YR 7/1 Light Gray. Stiff. Inorganic. Highly plastic. Moist		
		SW Sand. 10YR 7/3 Very Pale Brown. Fine to Medium Grained. Some Oxidized Zones. Wet.		
170		**SM** Silty Sand. 10YR 7/2 Light Gray. Fine Grained. Well Sorted. Some Oxidized Zones (10YR 7/6 Yellow). Wet.		
180		**SM** Silty Sand 10YR 7/2 Light Gray. Fine grained. Small Deposits of Lignite Staining (10YR 3/2 Very Dark Grayish Brown). Wet.		

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FIELD BOREHOLE LOG

BOREHOLE NO.: MW-255

TOTAL DEPTH: 305

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		CL Clay. 10YR 7/1 Light Gray. Inorganic. Stiff. Very Plastic. Moist.		
190		**SW** Sand. 10YR 6/8 Brownish Yellow. Medium Grained. Well Sorted. Oxidized. Moist.		
200		**SC** Sand. 10YR 6/8 Borwnish Yellow. Coarse Grained. Clay in Small Laminations throughout core. Wet.		
		SC Sand. 7.5YR 7/8 Reddish Yellow. Medium Grained. Well Sorted. Oxidation bands. Wet.		
210		**SC** Sand 7.5YR 7/2 Pinkish Gray. Medium to Fine Grained. Trace Silt. Oxidation bands. Wet.		
220		**SC** Sand. 10YR 7/2 Light Gray. Medium to Coarse Grained. Well Sorted. Wet.		
230		**SM** Sand. 10YR 6/2 Light Brownish Gray. Fine to Medium Grained. Trace Silt and Clay. Wet.		
		CL Sandy Clay. 10YR 8/2 Very Pale Brown. Fine Grained. Soft. Oxidized Laminations in Clay. Moist.		
240				

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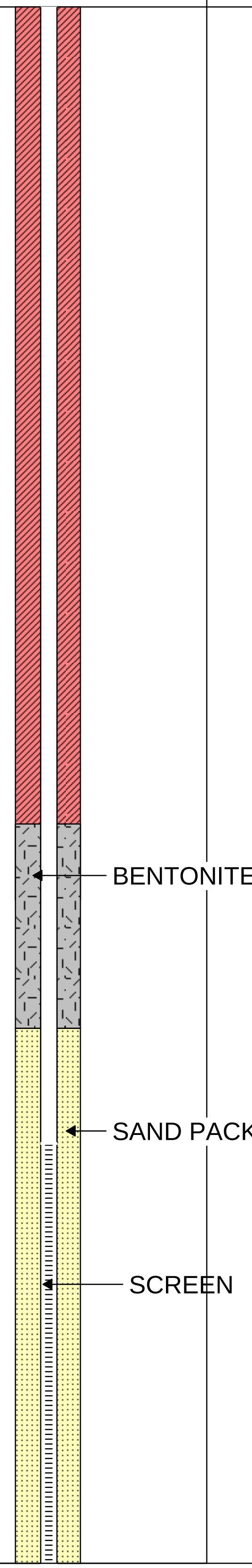
Depth	Soil Symbol	Soil Description	Well Completion	Well Description
250, 260, 270		**SW** Sand. 10YR 7/4 Very Pale Brown. Medium to Fine Grained. Trace Silt and Clay. Well Sorted. Wet.		
		SW Sand. 10YR 6/8 Brownish Yellow. Medium Grained. Trace Fines. Well sorted. Oxidized. Wet.		
280, 290, 300		**SW** Sand. 10YR 7/4 Very Pale Brown. Medium Grained. Few Fines. Well Sorted. Wet.		



Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SW Sand. 10YR 7/4 Very Pale Brown. Coarse Grained. Few Fines. Trace Lignite Chunks. Well Sorted. Wet.	END CAP	
		End of Log		
310				
320				
330				
340				
350				
360				

Created By: WTR

Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-256
TOTAL DEPTH: 145

PROJECT INFORMATION

PROJECT: IAQ Drilling
PROJECT NO.: 121803-008
SITE LOCATION: Main Installation
PROJECT MANAGER: T. Holmes
FIELD STAFF: K. Sedlak
BOREHOLE STARTED: 7/13/2010
BOREHOLE FINISHED: 7/16/2010

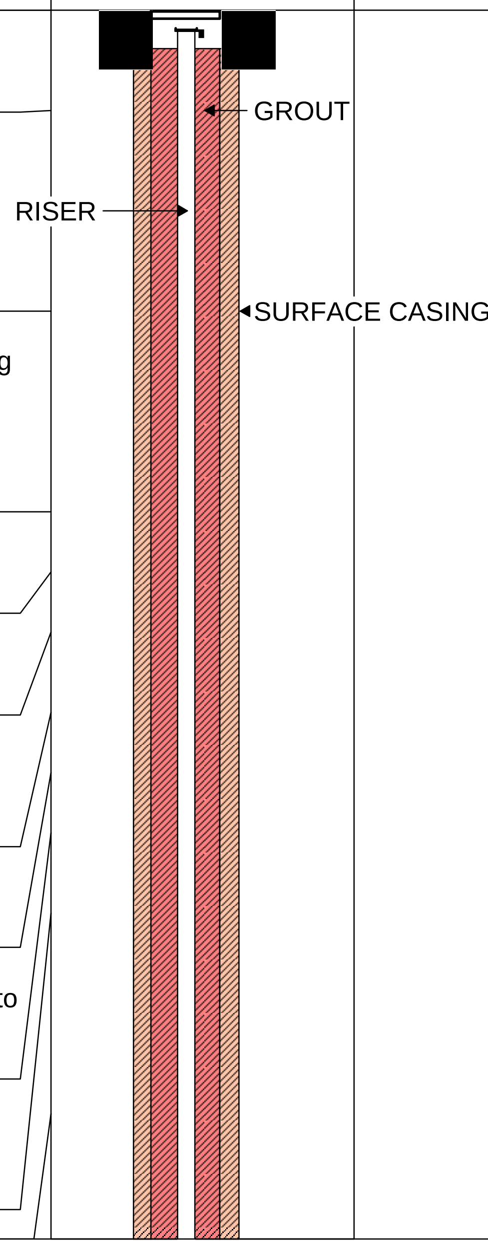
DRILLING INFORMATION

DRILLING CO.: Boart Longyear
DRILLER: S. Gautney
DRILLING METHOD/RIG: Sonic
BOREHOLE DIAMETER: 6x10 and 4x6
GROUND SURFACE ELEVATION: 293.40
WATER DEPTH/ DATE: 130.75 on 7/21/2010
BOREHOLE USE: Monitoring Well

NOTES: Surface casing installed to 79 feet bgs, approximately 10 feet into upper clay. Boring drilled to 145 feet; borehole washed to 147 feet bgs during well installation.

Depth (ft, bgs)	Soil Symbol	Soil Description
		CL Silty Clay. 10YR 4/6 Dark Yellowish Brown. Low Plasticity. Moist.
10		**CH** Silty Clay. 10YR 4/6 Dark Yellowish Brown. High Plasticity. Moist.
20		**CL** Silty Clay with Trace Sand. 7.5YR 4/6 Strong Brown. Medium Plasticity, Moist
30		**CL** Silty Clay. 7.5YR 4/6 Strong Bown. Medium Plasticiy. Moist
		SC Clayey Sand. 5YR 4/6 Yellowish Red. Medium to Fine Grained Sand. Moist.
40		**SC** Sand with Clay. 2.5YR 5/8 Red. Fine Grained Sand. Trace Rounded Gravel. Poorly Sorted. Moist
		SC Sand with Clay. 2.5 YR 5/8 Red. Medium Grained. Poorly Sorted. Moist.
50		**SW** Sand and Gravel. 2.5YR 5/8 Red. Medium to Coarse Grained. Subrounded Grains. Well Graded. Moist
60		**SP** Sand with Gravel. 2.5YR 5/8 Red. Fine to Medium Grained. Poorly Graded. Moist to Dry.

Well Completion



Well Description

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-256

TOTAL DEPTH: 145

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
70, 80, 90, 100, 110, 120				

SP
Sand wih Gravel. 5YR 6/8 Reddish Yellow. Fiine to Medium Grained Sand. Subangular Gravel. Poorly Graded. Moist

SW
Sand and Gravel. 5YR 5/8 Red. Sand is Medium to Coarse Grained. Angular to Subangular Gravel. Well Graded. Dry.

SP
Sand. 10YR 6/3 Pale Brown. Medium to Coarse Grained. Poorly Graded. Wet.

CH
Silty Clay. 10YR 4/1 Dark Grey. Medium to High Plasticity. Moist

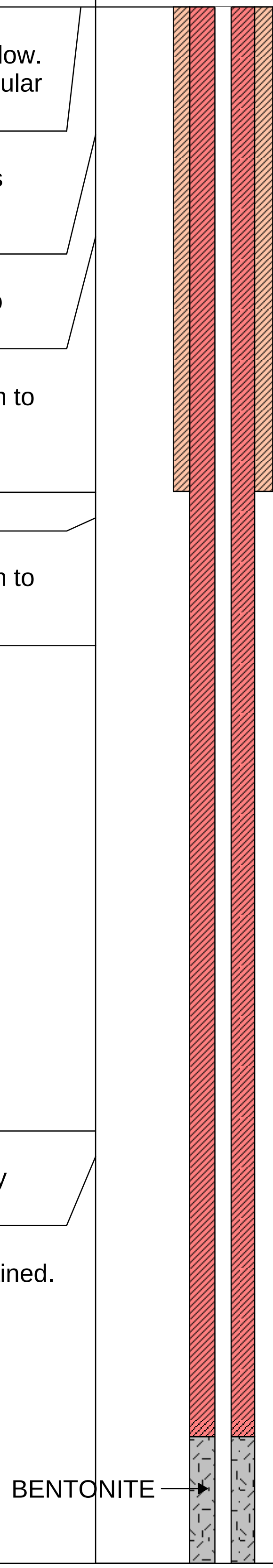
No Recovery

CH
Silty Clay. 10YR 4/1 Dark Grey. Medium to High Plasticity. Moist

CH
Silty Clay. 10YR 4/1 Dark Grey. High Plasticity. Moist

ML
Sandy Clay. 2.5 YR 4/1 Dark Grey. Very Silty. Fine Grained Sand. Moist

SC
Clayey Sand. 2.5YR 5/1 Grey. Fine Grained. Moist.



Created By: WTR

Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-256

TOTAL DEPTH: 145

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
130		**SP** Sand. 5YR 5/8 Yellowish Red. Fine Grained. Poorly Sorted. Dry.	SCREEN; 130.75-ft	
		SW Sand. 10YR 6/6 Brownish Yellow. Medium Grained. Poorly Sorted. Moist.	SAND PACK	
		SW Sand. 10YR 6/2 Light Brownish Grey. Medium Grained. Poorly Sorted. Wet.		
140		**CH** Silty Clay. 10YR 6/1 Grey. High Plasticity. Moist.		
		SW Sand. 10YR 6/2 Light Brownish Grey. Medium Grained. Poorly Sorted. Wet.	END CAP	
		End of Log		
150				
160				
170				
180				

Created By: WTR

Checked By: JBS

APPENDIX B

WELL INSTALLATION DIAGRAMS

WELL INSTALLATION DIAGRAM

WELL NO.: MW-252

PROJECT: IAQ Drilling
PROJECT NUMBER: 121803-008
SITE LOCATION: DDMT-MI
e2M PROJECT MANAGER: Tom Holmes
e2M FIELD STAFF: B. Sperry
DATE COMPLETED: 6/7/2010
WELL LOCATION: DDMT-MI

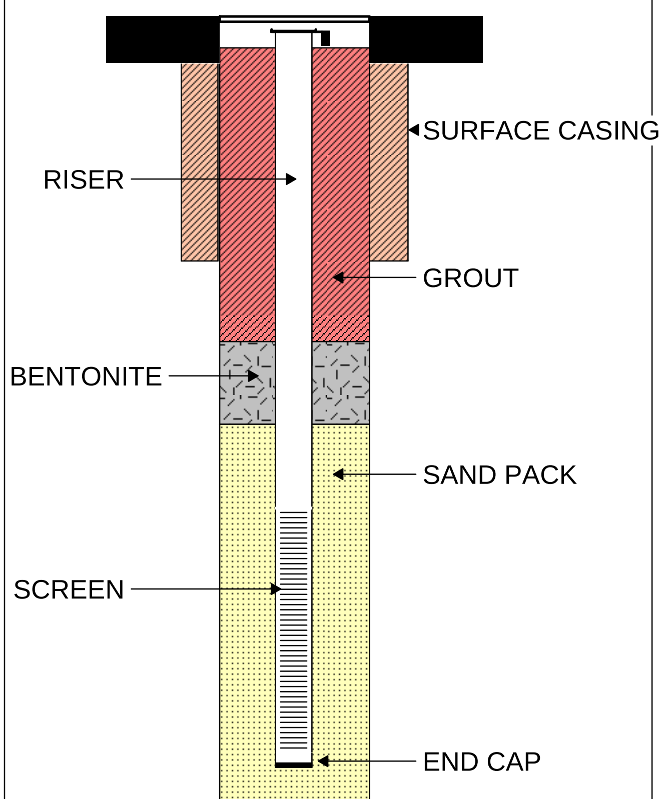
NORTHING: 278789.21
EASTING: 801364.7
GROUND SURFACE ELEVATION (ft, msl): 294.4
TOP OF CASING ELEVATION (ft, msl): 294.16
TOP OF SCREEN ELEVATION (ft, msl): 168.36

DRILLING CO.: Boart Longyear
DRILLING METHOD: Sonic
BOREHOLE DIAMETER (in): 6x10 and 3x5
SURFACE COMPLETION: Flush Mount
BOLLARDS: Yes
WELL DIAMETER (in): 2
TYPE OF SCREEN/RISER MATERIAL: PVC Schedule 80
SLOT SIZE OF SCREEN: 0.010 inch

TYPE OF FILTER PACK: Sand
GRADATION OF FILTER PACK: 8/16
QUANTITY OF FILTER PACK: 9-50 lb. Bags
TYPE OF BENTONITE IN SEAL: Medium
QUANTITY OF BENTONITE IN SEAL: 1.5-50 lb. Bags
TYPE OF GROUT: Portland Cement with bentonite powder
QUANTITY OF GROUT: 16-94 lb. Bags
DEVELOPMENT METHOD: Surge and pump (Waterra)
DATE DEVELOPED: 6/14 6/15/2010
DEPTH TO WATER (ft.btoc): 131.12 on 6/21/2010

NOTES: 6-inch Schedule 80 PVC surface casing installed to depth of 97.5 feet bgs, approximately 10 feet into the clay at the base of the fluvial aquifer.

Well Completion (Not to Scale)	Well Details



DIMENSIONS OF CONCRETE PAD: 3 x 3
SURFACE CASING: 97.5
LENGTH OF RISER (ft): 125.8
DEPTH TO TOP OF BENTONITE (ft, bgs): 112
DEPTH TO TOP OF SAND PACK (ft, bgs): 120
LENGTH OF SCREEN (ft): 20
LENGTH OF END CAP: 0.6
TOTAL DEPTH OF WELL (ft, btoc): 146
TOTAL DEPTH OF BORING (ft, bgs): 151

Prepared by: WTR **Date: 6/21/2010** **Checked by: JBS** **Date: 6/21/2010**

WELL INSTALLATION DIAGRAM

WELL NO.: MW-253

PROJECT: IAQ Drilling
PROJECT NUMBER: 121803-008
SITE LOCATION: DDMT-MI
e2M PROJECT MANAGER: Tom Holmes
e2M FIELD STAFF: B. Sperry
DATE COMPLETED: 6/9/2010
WELL LOCATION: DDMT-MI

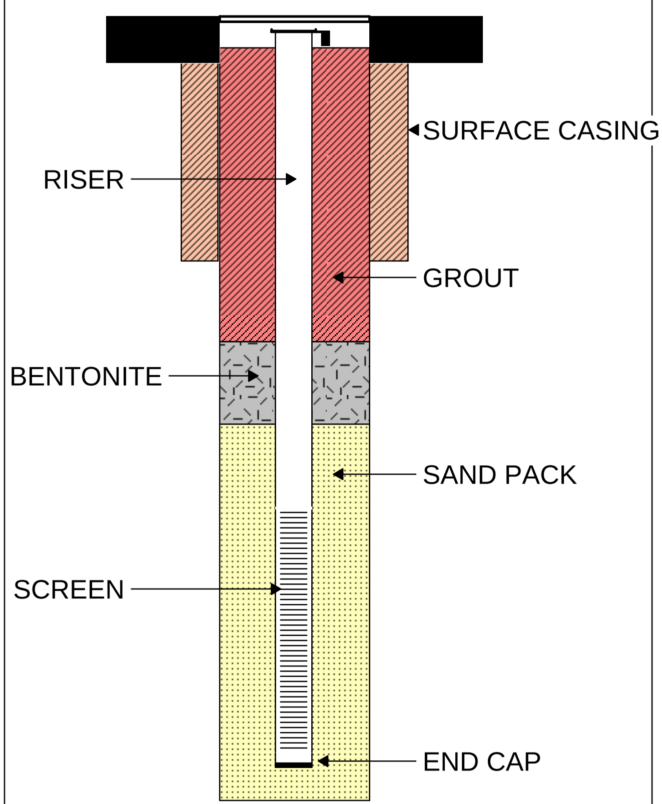
NORTHING: 278287.43
EASTING: 801191.424
GROUND SURFACE ELEVATION (ft, msl): 290.8
TOP OF CASING ELEVATION (ft, msl): 290.47
TOP OF SCREEN ELEVATION (ft, msl): 172.47

DRILLING CO.: Boart Longyear
DRILLING METHOD: Sonic
BOREHOLE DIAMETER (in): 6x10 and 3x5
SURFACE COMPLETION: Flush Mount
BOLLARDS: Yes
WELL DIAMETER (in): 2
TYPE OF SCREEN/RISER MATERIAL: PVC Schedule 80
SLOT SIZE OF SCREEN: 0.010 inch

TYPE OF FILTER PACK: Sand
GRADATION OF FILTER PACK: 8/16
QUANTITY OF FILTER PACK: 12-50 lb. Bags
TYPE OF BENTONITE IN SEAL: Medium
QUANTITY OF BENTONITE IN SEAL: 1.5-50 lb. Bags
TYPE OF GROUT: Portland Cement with bentonite powder
QUANTITY OF GROUT: 25-94 lb. Bags
DEVELOPMENT METHOD: Surge and pump (Waterra)
DATE DEVELOPED: 6/16/2010
DEPTH TO WATER (ft.btoc): 117.87 on 6/21/2010

NOTES: 6-inch schedule 80 PVC surface casing installed to depth of 117 feet bgs, approximately 10 feet into the clay

Well Completion (Not to Scale)	Well Details



DIMENSIONS OF CONCRETE PAD: 3 x 3

SURFACE CASING: 117

LENGTH OF RISER (ft): 118

DEPTH TO TOP OF BENTONITE (ft, bgs): 103

DEPTH TO TOP OF SAND PACK (ft, bgs): 111

LENGTH OF SCREEN (ft): 19.6

LENGTH OF END CAP: 0.6

TOTAL DEPTH OF WELL (ft, btoc): 138.2

TOTAL DEPTH OF BORING (ft, bgs): 157

Prepared by: WTR **Date: 6/21/2010** **Checked by: JBS** **Date: 6/21/2010**

WELL INSTALLATION DIAGRAM

WELL NO.: MW-254

PROJECT: Memphis Aquifer Drilling
PROJECT NUMBER: 121842-005
SITE LOCATION: DDMT-MI
e2M PROJECT MANAGER: Tom Holmes
e2M FIELD STAFF: B. Sperry
DATE COMPLETED: 8/1/2010
WELL LOCATION: DDMT-MI

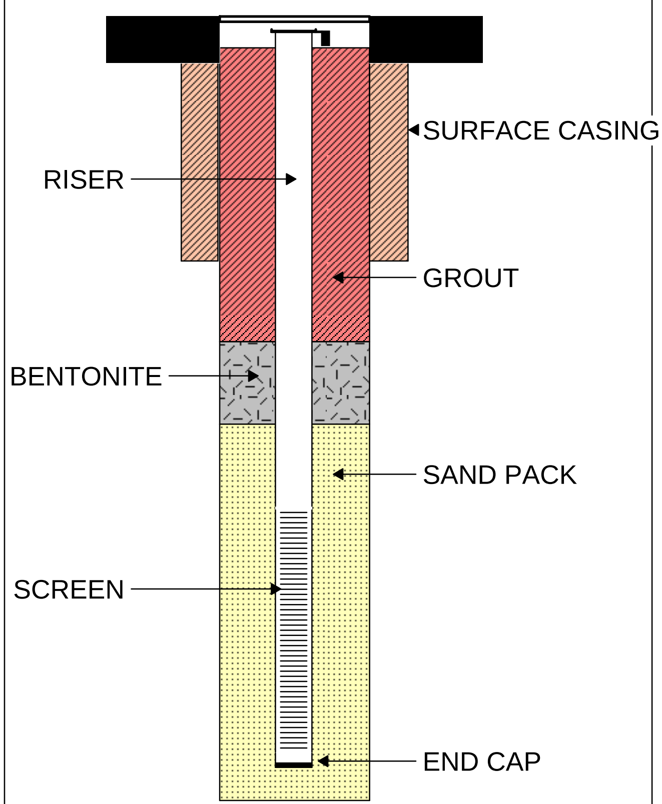
NORTHING: 279334.36
EASTING: 800857.53
GROUND SURFACE ELEVATION (ft, msl): 293.28
TOP OF CASING ELEVATION (ft, msl): 292.84
TOP OF SCREEN ELEVATION (ft, msl): 7.24

DRILLING CO.: WDC
DRILLING METHOD: Sonic
BOREHOLE DIAMETER (in): 6 x 10 and 4 x 6
SURFACE COMPLETION: Flush Mount
BOLLARDS: No
WELL DIAMETER (in): 2
TYPE OF SCREEN/RISER MATERIAL: PVC Schedule 80
SLOT SIZE OF SCREEN: 0.010 inch

TYPE OF FILTER PACK: Sand
GRADATION OF FILTER PACK: 10-20
QUANTITY OF FILTER PACK: 7-50 lb. Bags
TYPE OF BENTONITE IN SEAL: Enviro plug chips
QUANTITY OF BENTONITE IN SEAL: 1-50 lb. Bags
TYPE OF GROUT: Portland Cement with bentonite powder
QUANTITY OF GROUT: 40 / 94 lb bags
DEVELOPMENT METHOD: Grunfos pump
DATE DEVELOPED: 8/12/2010
DEPTH TO WATER (ft.btoc): 135.25

NOTES: 6-inch schedule 80 PVC surface casing installed to depth of 85 feet bgs, approximately 10 feet into the clay at the base of the fluvial aquifer. Boring washed to 306 ft during well installation.

Well Completion (Not to Scale)	Well Details



DIMENSIONS OF CONCRETE PAD: 3 x 3
SURFACE CASING: 85
LENGTH OF RISER (ft): 285.6
DEPTH TO TOP OF BENTONITE (ft, bgs): 274
DEPTH TO TOP OF SAND PACK (ft, bgs): 280
LENGTH OF SCREEN (ft): 20
LENGTH OF END CAP: 0.2
TOTAL DEPTH OF WELL (ft, btoc): 305.8
TOTAL DEPTH OF BORING (ft, bgs): 305

Prepared by: WTR **Date: 8/16/2010** **Checked by: JBS** **Date: 8/16/2010**

WELL INSTALLATION DIAGRAM

WELL NO.: MW-255

PROJECT: Memphis Aquifer Drilling
PROJECT NUMBER: 121842-005
SITE LOCATION: DDMT-MI
e2M PROJECT MANAGER: T. Holmes
e2M FIELD STAFF: B. Sperry
DATE COMPLETED: 7/30/2010
WELL LOCATION: DDMT-MI

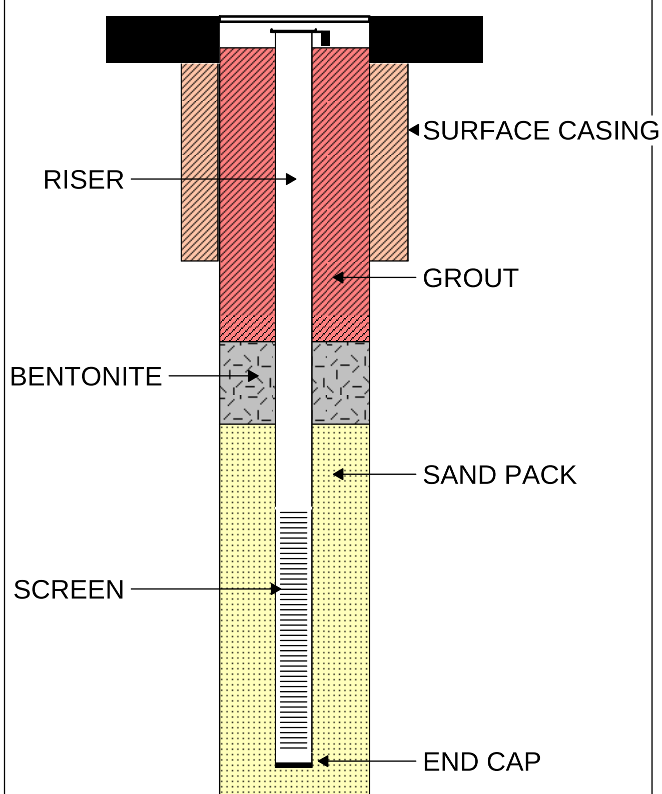
NORTHING: 279304.76
EASTING: 801226.84
GROUND SURFACE ELEVATION (ft, msl): 292.38
TOP OF CASING ELEVATION (ft, msl): 291.84
TOP OF SCREEN ELEVATION (ft, msl): 7.34

DRILLING CO.: WDC
DRILLING METHOD: Sonic
BOREHOLE DIAMETER (in): 6 x 10 and 4 x 6
SURFACE COMPLETION: Flush Mount
BOLLARDS: No
WELL DIAMETER (in): 2
TYPE OF SCREEN/RISER MATERIAL: PVC Schedule 80
SLOT SIZE OF SCREEN: 0.010 inch

TYPE OF FILTER PACK: Sand
GRADATION OF FILTER PACK: 10-20
QUANTITY OF FILTER PACK: 7-50 lb. Bags
TYPE OF BENTONITE IN SEAL: Enviro plug chips
QUANTITY OF BENTONITE IN SEAL: 2-50 lb. Bags
TYPE OF GROUT: Portland Cement with bentonite powder
QUANTITY OF GROUT: 80 / 42 lb bags
DEVELOPMENT METHOD: Pneumatic reclaimer pump
DATE DEVELOPED: 8/3/10
DEPTH TO WATER (ft.btoc): 135.17

NOTES: 6-inch schedule 80 PVC surface casing installed to depth of 82 feet bgs, approximately 10 feet into the clay at the base of the fluvial aquifer.

Well Completion (Not to Scale)



Well Details

DIMENSIONS OF CONCRETE PAD: 3 x 3

SURFACE CASING: 82

LENGTH OF RISER (ft): 284.5

DEPTH TO TOP OF BENTONITE (ft, bgs): 272

DEPTH TO TOP OF SAND PACK (ft, bgs): 280

LENGTH OF SCREEN (ft): 20

LENGTH OF END CAP: 0.2

TOTAL DEPTH OF WELL (ft, btoc): 304.7

TOTAL DEPTH OF BORING (ft, bgs): 305

Prepared by: WTR **Date: 8/16/2010** **Checked by: JBS** **Date: 8/16/2010**

WELL INSTALLATION DIAGRAM

WELL NO.: MW-256

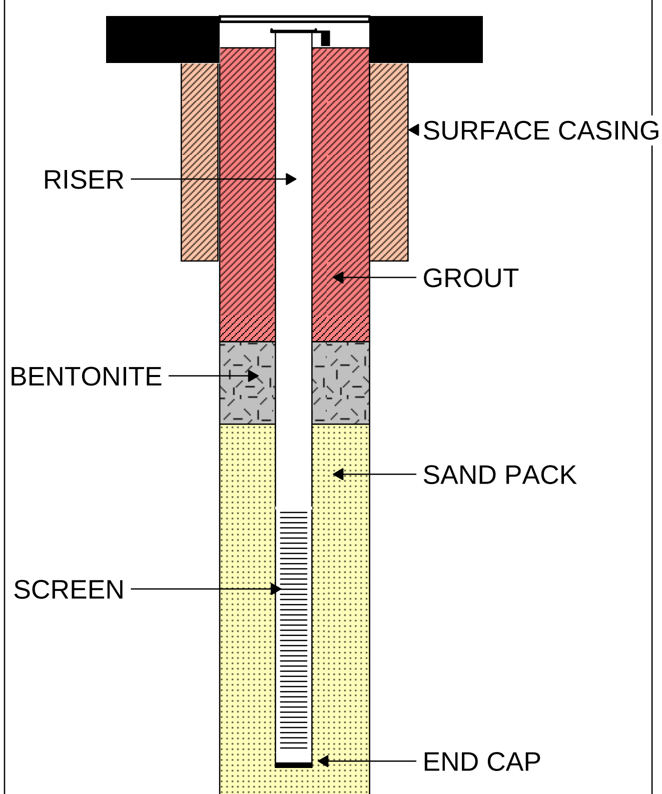
PROJECT: IAQ Drilling
PROJECT NUMBER: 121803-008
SITE LOCATION: DDMT-MI
e2M PROJECT MANAGER: Tom Holmes
e2M FIELD STAFF: K. Sedlak
DATE COMPLETED: 7/16/2010
WELL LOCATION: DDMT-MI

NORTHING: 279301.82
EASTING: 801243.8
GROUND SURFACE ELEVATION (ft, msl): 293.4
TOP OF CASING ELEVATION (ft, msl): 292.68
TOP OF SCREEN ELEVATION (ft, msl): 166.68

DRILLING CO.: Boart Longyear
DRILLING METHOD: Sonic
BOREHOLE DIAMETER (in): 6x10 and 4x6
SURFACE COMPLETION: Flush Mount
BOLLARDS: No
WELL DIAMETER (in): 2
TYPE OF SCREEN/RISER MATERIAL: PVC Schedule 80
SLOT SIZE OF SCREEN: 0.010 inch

TYPE OF FILTER PACK: DSI Well Gravel Pack
GRADATION OF FILTER PACK: 8-16 Sand
QUANTITY OF FILTER PACK: 6-0.5 cubic ft. Bags
TYPE OF BENTONITE IN SEAL: Enviro plug chips
QUANTITY OF BENTONITE IN SEAL: 1-50 lb. Bag
TYPE OF GROUT: Portland Cement with bentonite powder
QUANTITY OF GROUT: 11-94 lb. Bags/0.5 bag bentonite
DEVELOPMENT METHOD: Mega Monsoon Pump
DATE DEVELOPED: 7/18/2010
DEPTH TO WATER (ft.btoc): 130.75 on 7/21/2010

NOTES: 6-inch schedule 80 PVC surface casing installed to depth of 79 feet bgs, approximately 10 feet into the clay at the base of the fluvial aquifer. Boring washed to 147 feet bgs during well installation.

Well Completion (Not to Scale)	**Well Details**
	DIMENSIONS OF CONCRETE PAD: 3 x 3 SURFACE CASING: 79 LENGTH OF RISER (ft): 127 DEPTH TO TOP OF BENTONITE (ft, bgs): 116 DEPTH TO TOP OF SAND PACK (ft, bgs): 121 LENGTH OF SCREEN (ft): 20 LENGTH OF END CAP: 0.2 TOTAL DEPTH OF WELL (ft, btoc): 147 TOTAL DEPTH OF BORING (ft, bgs): 145

Prepared by: WTR **Date: 8/16/2010** **Checked by: JBS** **Date: 8/16/2010**

APPENDIX C

COMPLETE ANALYTICAL RESULTS

TABLE C-1
ANALYTICAL RESULTS, VOCs - APRIL 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	DR1-3	DR1-5	DR1-5A	DR1-6	DR1-6A	DR2-1
	Lab ID	L10040161-16	L10030780-17	L10030780-18	L10040095-14	L10040095-15	L10030780-19
	Date	4/5/2010	3/30/2010	3/30/2010	4/1/2010	4/1/2010	3/30/2010
Analyte	**Units**						
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	0.366 J	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	10.1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	0.205 J	<0.3	0.193 J	5.25
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.29 J	<1	3.58	1.37	4.05	9.88
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	2.33 J	7.3	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	13.9	22.2	59.4	225	43.5	98.5
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.47	<1	96.6	1.56	122	4.21
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top and bottom)
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE C-1
ANALYTICAL RESULTS, VOCs - APRIL 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	DR2-2	DR2-3	DR2-5	DR2-6	PMW101-04A	PMW101-04B
	Lab ID	L10040167-04	L10040167-05	L10040167-06	L10040095-06	L10040095-17	L10040095-18
	Date	4/7/2010	4/7/2010	4/7/2010	3/31/2010	4/1/2010	4/1/2010
Analyte	**Units**						
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	27.5	6.89	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	0.181 J	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	0.465 J	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1 UJ	<1 UJ	<1 UJ	<1	<1	<1
Carbon disulfide	µg/L	<1 UJ	<1 UJ	1.86	<1 UJ	<1 UJ	<1 UJ
Carbon tetrachloride	µg/L	7.46	5.88	217	8.59	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	0.255 J	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	1.44	0.925	69.3	3.31	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	3.3	0.888 J	71.7	24.9	29	0.708 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	0.805 J
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	69.2	34.2	98.7	20.9	33	35.7
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.63	2.03	33.2	3.81	6.93	3.87
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE C-1
ANALYTICAL RESULTS, VOCs - APRIL 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	PMW21-03 L10030780-20 3/30/2010	PMW21-05 L10040095-16 4/1/2010	PMW21-05 DUP-6 L10040095-19 4/1/2010	PMW92-03 L10040167-07 4/7/2010	PMW92-06 L10040167-08 4/7/2010	MW-21 L10030780-10 3/30/2010
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	92.7	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	0.425 J	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	1.11	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	0.953 J	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1 UJ	<1 UJ	<1
Carbon disulfide	µg/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Carbon tetrachloride	µg/L	<1	<1	<1	<1	98.3	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	0.292 J	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	48	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	1.11	0.851 J	0.907 J	112	85.4	2.27
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	21.2	<5	<5	<5	<5	2.12 J
Methylene chloride	µg/L	<1	<1	<1	0.311 B	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	59.7	57.7	56.3	66.6	148	146
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	16.2	5.71	5.5	18.2	33.5	8.59
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE C-1
ANALYTICAL RESULTS, VOCs - APRIL 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	MW-26 L10040095-01 3/31/2010	MW-39 L10040095-02 3/31/2010	MW-39 DUP-1 L10040095-08 3/31/2010	MW-39A L10040095-21 4/2/2010	MW-62 L10040167-01 4/7/2010	MW-64 L10030780-07 3/29/2010
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	1.03
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	0.584 J
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.264 J
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1 UJ	<1
Carbon disulfide	µg/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Carbon tetrachloride	µg/L	7.09	<1	<1	<1	0.485 J	3.56
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	1.14	<0.3	<0.3	<0.3	0.296 J	1.34
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.466 J	17.7	18.1	35.4	<1	0.482 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	38.9	37.4	38.8	43.8	0.474 J	23
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.63	12.3	12.5	11.4	178	38.8
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE C-1
ANALYTICAL RESULTS, VOCs - APRIL 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	MW-85 L10030780-11 3/30/2010	MW-88 L10030780-14 3/30/2010	MW-90 L10040095-22 4/2/2010	MW-92 L10040167-02 4/7/2010	MW-94A L10030780-08 3/29/2010	MW-97 L10040095-03 3/31/2010
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	0.364 J	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	0.843 J	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	0.651 J	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	1.78	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	12.5 J	<10	<10	13.9	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1 UJ	<1	<1
Carbon disulfide	µg/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Carbon tetrachloride	µg/L	116 J	10.4	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	14.9	1.74	3.94	<0.3	<0.3	0.249 J
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	1.69	2.15	0.424 J	123	3.15	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	6.66 J	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	38.1	46.2	58.3	4.76	27.7	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	12.1	3.83	8.55	1.99	7.83	36.8
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	0.791 J	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
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TABLE C-1
ANALYTICAL RESULTS, VOCs - APRIL 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	MW-98 L10040161-11 4/5/2010	MW-98 DUP-2 L10040161-17 4/5/2010	MW-100B L10030780-15 3/30/2010	MW-101T L10040161-12 4/5/2010	MW-101B L10040161-13 4/5/2010	MW-108 L10040095-11 4/1/2010
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	0.152 J	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1 UJ	<1	<1	<1 UJ
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.128 J	<0.3	<0.3	<0.3	<0.3	9.62
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.367 J	0.322 J	8.8	0.512 J	0.498 J	0.627 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	41	1.97 J	1.94 J	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	40.1	40.3	<1	82.9	99.6	4.29
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.99	2.92	<1	0.307 J	0.325 J	34.7
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	131 J	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE C-1
ANALYTICAL RESULTS, VOCs - APRIL 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	MW-113 L10030780-16 3/30/2010	MW-141 L10040095-23 4/2/2010	MW-197A L10040095-26 4/2/2010	MW-197B L10040095-27 4/2/2010	MW-199B L10040095-28 4/2/2010	MW-200 L10030780-09 3/29/2010
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	7.86	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	0.366 J	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	0.445 J	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10 UJ	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1	<1 UJ
Carbon tetrachloride	µg/L	72.2	<1	<1	<1	0.378 J	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	26.5	1.54	<0.3	<0.3	0.154 J	0.157 J
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	37.1	<1	2.22	16.6	<1	8.57
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	191	16.6	34	26.8	0.511 J	23.8
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	23.2	2.58	1.81	10.9	87.5	7.99
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	7.24	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE C-1
ANALYTICAL RESULTS, VOCs - APRIL 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

	Well ID	MW-202B	MW-202B DUP-3	MW-203A	MW-203B	MW-204A	MW-204B
	Lab ID	L10040161-01	L10040161-09	L10040095-29	L10040095-30	L10040161-02	L10040161-03
	Date	4/6/2010	4/6/2010	4/2/2010	4/2/2010	4/6/2010	4/6/2010
Analyte	**Units**						
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.613
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	0.577 J	0.564 J	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10 UJ	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1 UJ	<1 UJ	<1	<1	<1 UJ	<1 UJ
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	1.81	1.76	0.185 J	<0.3	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	4.11	9.53	6.88	2.33
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	0.612 J	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	21.4	20.6	162	31.8	37.3	23.5
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.78	3.81	2.43	6.74	1.79	3.71
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	5.51	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE C-1
ANALYTICAL RESULTS, VOCs - APRIL 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

	Well ID	MW-205A	MW-205B	MW-206A	MW-206B	MW-207A	MW-207B
	Lab ID	L10040161-04	L10040161-05	L10040161-06	L10040161-07	L10040095-12	L10040095-31
	Date	4/6/2010	4/6/2010	4/6/2010	4/6/2010	4/1/2010	4/2/2010
Analyte	**Units**						
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	0.527 J	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	0.752 J
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	9.02	1.35
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	31.8	19.8	14.8	6.56	0.893 J	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	0.531 J	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	32.3	24	22.3	12.3	10.7	15.3
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.77	10.9	11.5	7.5	46.4	92.1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	5.05	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
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TABLE C-1
ANALYTICAL RESULTS, VOCs - APRIL 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	MW-208A	MW-208B	MW-208B DUP-4	MW-209B	MW-210A	MW-210B
	Lab ID	L10040161-14	L10040161-15	L10040161-18	L10040161-08	L10040095-32	L10040095-33
	Date	4/5/2010	4/5/2010	4/5/2010	4/6/2010	4/2/2010	4/2/2010
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	0.555	0.58	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	3.94 J	<10	<10	<10 UJ	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1 UJ	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	0.658 J	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.184 J	0.179 J	0.243 J	0.156 J	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	20.9	1.81	1.92	<1	2.18	1.3
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	0.873 J	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	24.4	9.29	9.13	<1	14.7	10.3
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	6.48	45.1	45	21.2	6.37	7.06
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE C-1
ANALYTICAL RESULTS, VOCs - APRIL 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	MW-212	MW-217	MW-218	MW-218 DUP-5	MW-219
	Lab ID	L10040167-03	L10040095-04	L10040095-05	L10040095-09	L10040095-13
	Date	4/7/2010	3/31/2010	3/31/2010	3/31/2010	4/1/2010
Analyte	**Units**					
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	0.353 J	0.767	0.837	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	0.384 J	0.364 J	0.657
1,2-Dichloropropane	µg/L	<1	<1	0.471 J	0.481 J	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	0.276 B	0.226 B	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1 UJ	<1	<1	<1	<1
Carbon disulfide	µg/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Carbon tetrachloride	µg/L	0.277 J	65.6	7.56	7.66	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	4.4	2.42	2.42	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	1.33	0.303 J	0.284 J	0.393 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	29.7	11.2	11.5	10.6
Toluene	µg/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	31.5	34.6	32.8	33.2	0.868 J
Trichlorofluoromethane	µg/L	<1	0.354 J	0.576 J	0.561 J	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated
R : Rejected

TABLE C-2
ANALYTICAL RESULTS, VOCs - JUNE/AUGUST 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

	Well ID	MW-252	MW-253	MW-254	MW-255	MW-256
	Lab ID	L10060573-01	L10060573-02	L10080386-01	L10080210-01	L10080210-02
	Date	6/18/2010	6/18/2010	8/16/2010	8/9/2010	8/9/2010
Analyte	**Units**					
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1 UJ	<1 UJ
Carbon tetrachloride	µg/L	<1	<1	0.695 J	<1	0.302 J
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.156 J	0.241 J	<0.3	1.74
Chloromethane	µg/L	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	3.71	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	0.814 J	<1	8.71
Toluene	µg/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	0.344 J	2.28	<1	2.43
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, RL estimated

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	DR1-1 L10100302-01 10/9/2010	DR1-1A L10100302-17 10/9/2010	DR1-2 L10100199-11 10/5/2010	DR1-3 L10100199-33 10/6/2010	DR1-4 L10100199-34 10/6/2010	DR1-5 L10100199-14 10/5/2010	DR1-5A L10100199-15 10/5/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	0.176 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	0.433 J
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1 R	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.348	0.179 J	<0.3	<0.3	<0.3	0.197 J
Chloromethane	µg/L	0.532 J	0.617 J	<1	0.759 J	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	1.26	0.42 J	0.805 J	<1	<1	<1	3.88
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	4.06 J	5.64
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	2.56	1.33	2.1	9.13	0.435 J	18.3	70.4
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.304 J	3.6	<1	1.75	0.543 J	<1	110
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top and bottom)
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on blank data
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	DR1-6 L10100199-16 10/5/2010	DR1-6A L10100199-17 10/5/2010	DR1-7 L10100199-18 10/5/2010	DR1-7-LB-12 DUP-10 L10100199-21 10/5/2010	DR1-8 L10100199-35 10/6/2010	DR2-1 L10100482-03 10/14/2010	DR2-2 L10100407-19 10/12/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	0.207 J	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	0.416 J	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	0.476 J	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	0.149 J	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1 J	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	13.2	4.87
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.171 U	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.271 J	0.169 J	0.15 J	<0.3	6.9	0.63
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1 R
cis-1,2-Dichloroethene	µg/L	1.69	5.08	0.525 J	0.501 J	<1	14.3	1.06
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	239	60.1	3.81	3.7	<1	106	25.6
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.89	149	0.549 J	0.408 J	<1	5.23	2.45 B
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260E
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (toı
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	DR2-3 L10100199-29 10/6/2010	DR2-4 L10100407-27 10/13/2010	DR2-5 L10100407-28 10/13/2010	DR2-6 L10100252-14 10/7/2010	PMW21-03 L10100199-19 10/5/2010	PMW21-03-LB-12 DUP-11 L10100199-22 10/5/2010	PMW21-05 L10100199-36 10/6/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	19.7	9.15	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	0.241 J	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	0.456 J	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	6.7 J	<10	3.89 J	3.55 J	<10
Benzene	µg/L	<0.4	<0.4	0.169 J	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	0.689 J	<1	<1	<1	<1
Carbon tetrachloride	µg/L	5.81	4.56	25	74.4	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	0.407 J	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.828	0.716	21.5	16.1	<0.3	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.674 J	0.373 J	105	18.5	0.687 J	0.727 J	0.798 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	15.1	14.7	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	31.6	19.8	21.1	52.9	45.9	44.7	43.1
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.07	1.7	12.1	10.1	11.4	11	4.24
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (to
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	PMW92-03 L10100199-06 10/4/2010	PMW92-06 L10100199-07 10/4/2010	PMW101-04A L10100482-04 10/14/2010	PMW101-04B L10100199-20 10/5/2010	PZ-03 L10100482-11 10/15/2010	PZ-06 L10100482-12 10/15/2010	PZ-06 -LB-12 DUP-12 L10100482-13 10/15/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	105	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	0.305 J	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	0.577	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	0.232 J	0.736 J	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	7.14 J	<10	3.44 J	<10	10.6	7.13 J	4.36 J
Benzene	µg/L	<0.4	0.131 J	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1 J	<1 J	<1 J
Carbon tetrachloride	µg/L	<1	110	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	0.216 J	<0.5	<0.5	0.133 U	<0.5	0.133 U
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.26 J	41.1	<0.3	<0.3	0.203 J	<0.3	<0.3
Chloromethane	µg/L	<1	<1	0.612 J	<1	0.604 J	<1	<1
cis-1,2-Dichloroethene	µg/L	83	68.5 J	13.5 J	<1	0.287 J	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	1.07 J	1.12 J	<5	<5	<5
Methylene chloride	µg/L	<1	<1	0.366 U	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	104	141	44.6 J	28.7	2.04	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	19	33 J	7.89 J	3.09	1.23	<1	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	0.528 J	0.379 J	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	MW-16 L10100407-22 10/13/2010	MW-19 L10100302-18 10/11/2010	MW-21 L10100199-30 10/6/2010	MW-22 L10100407-01 10/12/2010	MW-23 L10100407-02 10/12/2010	MW24 L10100482-05 10/14/2010	MW-25A L10100252-01 10/7/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	0.671	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	3.13 J	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1 R	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1 J	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	2.74
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.128 U	<0.5
Chloroethane	µg/L	<1 R	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.411
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	2.39	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	0.506 J
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	83.5	<1	<1	<1	13.6
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	5.67	<1	<1	<1	0.386 J
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260E
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (to
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

	Well ID	MW-26	MW-34	MW-38	MW-38-LB-12 DUP-1	MW-39	MW-39A	MW-50
	Lab ID	L10100252-02	L10100199-26	L10100302-02	L10100302-10	L10100302-03	L10100302-04	L10100407-07
	Date	10/7/2010	10/6/2010	10/9/2010	10/9/2010	10/9/2010	10/9/2010	10/13/2010
Analyte	**Units**							
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	9.18	0.572	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	1.79	0.325	0.141 J	0.16 J	<0.3	<0.3	0.281 J
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1 R
cis-1,2-Dichloroethene	µg/L	0.606 J	<1	<1	<1	18.3	36	0.297 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	1.88 J
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	46.4	0.269 J	<1	<1	29.1	25.6	0.46 J
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.98	0.756 J	0.717 J	0.637 J	13.6	10.9	1.24 B
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	0.414 J	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	MW-52 L10100252-03 10/7/2010	MW-53 L10100407-08 10/13/2010	MW-55 L10100302-19 10/11/2010	MW-62 L10100482-06 10/14/2010	MW-63A L10100252-18 10/7/2010	MW-63B L10100252-19 10/7/2010	MW-64 L10100252-04 10/7/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.11
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	0.992 J	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	0.557 J	<1	0.628 J	0.682 J
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.529
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1 R	<1 R	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1 J	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	0.577 J	<1	<1	3.08
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	0.147 U	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.893	<0.3	<0.3	0.291 J	<0.3	1.71	1.17
Chloromethane	µg/L	<1	<1	<1	<1	0.641 J	<1	<1
cis-1,2-Dichloroethene	µg/L	0.608 J	<1	<1	<1	<1	0.372 J	0.423 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	0.533 J	<5	<5	0.794 J	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5.25	1.39	<1	0.447 J	1.69	7.47	20.8
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.838 J	<1	<1	119	1.37	3.55	34.1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (to
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	MW-64-LB-12 DUP-2	MW-66A	MW-85	MW-88	MW-89	MW-90	MW-92
	Lab ID	L10100252-15	L10100407-03	L10100482-01	L10100199-05	L10100252-05	L10100252-06	L10100302-05
	Date	10/7/2010	10/12/2010	10/14/2010	10/4/2010	10/8/2010	10/8/2010	10/9/2010
	Units							
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	0.98	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	1.03	<1
1,1-Dichloroethene	µg/L	0.707 J	<1	<1	<1	<1	0.834 J	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	7.28	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	0.494 J	0.574	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10	5.46 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1 R	<1	<1	<1 J	<1 J	<1
Carbon disulfide	µg/L	<1	<1	<1 J	<1	<1	<1	<1
Carbon tetrachloride	µg/L	3.17	<1	121	10.5	0.261 J	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	0.243 U	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	1.2	<0.3	27.1	1.85	0.212 J	4.07	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.453 J	<1	9.47	2.54	<1	0.483 J	119
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	20.9	3.31	39.2	56.1	1.43	47.9	20.7
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	34.8	<1	12.3	4.11	1.63	8.17	8.64
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	0.314 J

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (to
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	MW-93 L10100482-02 10/14/2010	MW-94A L10100302-20 10/11/2010	MW-96 L10100252-07 10/7/2010	MW-96-LB-12 DUP-3 L10100252-16 10/7/2010	MW-97 L10100302-13 10/9/2010	MW-98 L10100302-06 10/9/2010	MW-99 L10100407-04 10/12/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<0.5	0.365 J	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1 R	<1	<1	<1 R	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	2.45	2.94	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	0.557	0.572	0.368	0.127 J	0.252 J
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	3.17	0.34 J	0.381 J	<1	0.502 J	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	30	3.99	4.13	<1	35.4	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	6.89	<1	<1	49.8	2.85	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (to
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
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TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

	Well ID	MW-100B	MW-101T	MW-101B	MW-102B	MW-103	MW-104	MW-104-LB-12 DUP-4
	Lab ID	L10100199-31	L10100407-23	L10100407-26	L10100302-21	L10100252-20	L10100252-21	L10100252-26
	Date	10/6/2010	10/13/2010	10/13/2010	10/11/2010	10/7/2010	10/7/2010	10/7/2010
Analyte	**Units**							
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	2.68	1.15	0.936 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	1.98	1.96	1.54
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	2.66 J	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1 R	<1	<1	<1
Carbon disulfide	µg/L	<1	<1 J		<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	0.126 U	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	7.78	10.2	7.98
Chloromethane	µg/L	1.04	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	11	<1	0.264 J	<1	0.386 J	0.477 J	0.399 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	60.1	2.76 J	2.41 J	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	75.6	66.4	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	3.98	14.4	11.1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	132	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	MW-107T	MW-107B	MW-108	MW-113	MW-140	MW-141	MW-142
	Lab ID	L10100407-11	L10100407-12	L10100407-13	L10100482-07	L10100407-14	L10100252-08	L10100302-14
	Date	10/13/2010	10/13/2010	10/12/2010	10/14/2010	10/13/2010	10/8/2010	10/9/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	0.55 J	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	0.779 J	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	7.27	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	0.333 J	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1 J	<1 R
Carbon disulfide	µg/L	<1	<1	<1	<1 J	<1	<1	<1
Carbon tetrachloride	µg/L	0.6	0.629	<1	77.3	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	0.205 U	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.357	0.375	11.9	24.3	0.242 J	2.06	<0.3
Chloromethane	µg/L	0.718 J	0.743 J	<1 R	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	0.252 J	0.744 J	29.7	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	0.532 J	<5	6.93
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	4.26	4.22	5.23	149	1.18	19.6	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	0.358 J	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.17 B	2.2	37.7	19.9	0.971 J	3.18	6.71
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260E
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (to
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	MW-143	MW-197A	MW-197B	MW-197A-LB-12 DUP-5	MW-198	MW-199A	MW-199B
	Lab ID	L10100407-05	L10100302-24	L10100302-25	L10100302-34	L10100252-27	L10100252-22	L10100252-09
	Date	10/12/2010	10/11/2010	10/11/2010	10/11/2010	10/8/2010	10/7/2010	10/8/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1 J	<1 J	<1 J	<1 J	<1	<1 J
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	0.287 J
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	1.84	9.66	1.84	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	6.4	<5	<5	<5	<5	2.82 J	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	35	34.1	35.2	<1	<1	0.707 J
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	8.83	1.72	10.2	1.61	3.14	0.968 J	53.8
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	3.99 J	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	MW-200	MW-202A	MW-202B	MW-203A	MW-203B	MW-204A	MW-204A-LB-12 DUP-6
	Lab ID	L10100302-22	L10100302-07	L10100302-08	L10100302-15	L10100302-26	L10100252-28	L10100252-32
	Date	10/11/2010	10/9/2010	10/9/2010	10/9/2010	10/11/2010	10/8/2010	10/8/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	0.589 J	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10 J	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10 J	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1 R	<1 J	<1 J	<1 J
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.21 J	1.46	<0.3	<0.3	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	16.7	<1	0.299 J	5.32	6.65	4.36	4.14
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	0.789 J	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	31.5	1	23.1	143	31.9	47.2	43.8
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.24	1.43	3.43	2.55	6.76	1.83	1.58
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1 J	<1	<1	<1	5.11 J	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	MW-204B	MW-205A	MW-205B	MW-206A	MW-206B	MW-207A	MW-207B
	Lab ID	L10100302-27	L10100252-29	L10100302-28	L10100252-30	L10100252-10	L10100482-08	L10100407-15
	Date	10/11/2010	10/8/2010	10/11/2010	10/8/2010	10/8/2010	10/14/2010	10/12/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	1.52	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	0.68 J	0.205 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	0.849 J	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.462 J
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1 J	<1 J	<1 J	<1 J	<1 J	<1	<1 R
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1 J	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	1.85 J
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.163 U	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	12.1	6.99
Chloromethane	µg/L	<1	0.516 U	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	1.11	25.2	13.5	13.5	6.68	0.768 J	0.9 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	0.772 J
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	15.7	39.1	30.8	15.6	12.3	18.1	113
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5.35	9.03	10.7	12.2	8.81	36.2	53.6
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	1.2	4.59 J	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (top
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	MW-208A L10100252-31 10/8/2010	MW-208B L10100252-11 10/8/2010	MW-209A L10100302-09 10/9/2010	MW-209A-LB-12 DUP-7 L10100302-11 10/9/2010	MW-209B L10100252-12 10/8/2010	MW-210A L10100302-29 10/11/2010	MW-210B L10100302-30 10/11/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1 J	<1 J	<1	<1 R	<1 J	<1 J	<1 J
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	0.659 J	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.262 J	0.134 J	<0.3	0.217 J	0.13 J	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	25.7	1.45	<1	<1	<1	2.25	1.1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	2.7 J	2.12 J	<5	0.681 J	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	38	16.5	<1	<1	0.479 J	13.6	9.27
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	12.2	42.9	0.659 J	0.695 J	31.8	6.16	7.77
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260E
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (to
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

	Well ID	MW-211	MW-212	MW-214A	MW-214B	MW-215A	MW-215B	MW-215B-LB-12 DUP-8
	Lab ID	L10100407-16	L10100482-09	L10100252-25	L10100407-17	L10100199-32	L10100407-18	L10100407-21
	Date	10/13/2010	10/15/2010	10/7/2010	10/12/2010	10/6/2010	10/12/2010	10/12/2010
Analyte	**Units**							
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1 R	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.344	0.323 J	1.12 J	1.08	0.747 J	1.23 J	1.3
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.218 J	<0.3	5.01 J	3.79	1.03	0.63	0.569
Chloromethane	µg/L	<1	<1	<1	<1 R	<1	<1	<1 R
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	0.315 J	0.263 J	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	3.87 J	2.36 J	0.971 J	1.27 J	1.39 J
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.745 J	0.407 J	10.5 J	10	4.19	5.81	6.36
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.3	23.8	7.88 J	5.65 B	2.72	1.5	1.45 U
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (to
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	MW-216 L10100302-16 10/9/2010	MW-217 L10100252-13 10/7/2010	MW-218 L10100482-10 10/14/2010	MW-219 L10100199-27 10/6/2010	MW-229 L10100199-28 10/6/2010	MW-252 L10100199-03 10/6/2010	MW-253 L10100199-04 10/6/2010
1,1,1,2-Tetrachloroethane	µg/L	<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
1,1,2,2-Tetrachloroethane	µg/L	<0.5	0.403 J	1.18	<0.5	<0.5	<0.5	<0.5
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
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	0.316 J	0.536	0.645	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	0.23 J	0.534 J	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1 R	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1 J	<1	1.09 U	<1	<1
Carbon tetrachloride	µg/L	<1	48.8	8.81	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	3.73	2.98	<0.3	<0.3	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	0.819 J	0.373 J	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	6.79
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.285 J	27.4	13.7	5.57	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	37.9	37.6	0.575 J	<1	<1	2.99
Trichlorofluoromethane	µg/L	<1	0.585 J	0.786	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (to
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-3
ANALYTICAL RESULTS, VOCs - OCTOBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	MW-254 L10100199-23 10/5/2010	MW-255 L10100199-24 10/5/2010	MW-256 L10100199-01 10/5/2010	MW-256-LB-12 DUP-9 L10100199-02 10/5/2010
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	0.138 J	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.872 J	<1	0.32	0.295
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1
Chloroform	µg/L	0.223 J	<0.3	2.01	1.99
Chloromethane	µg/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.623 J	<1	9.44	9.53
Toluene	µg/L	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	2.07	0.297 J	2.77	2.76
Trichlorofluoromethane	µg/L	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
MW-101 and MW-107 sample at two intervals (to
MW-213 was Dry
DQE FLAGS:
J: Concentration estimated
B: Possible bias high or false positive based on bl
R : Rejected

TABLE C-4
ANALYTICAL RESULTS, VOCs - DECEMBER 2010 GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

	Well ID	MW-252	MW-252 DUP	MW-253	MW-254	MW-255	MW-256
	Lab ID	L10120348-01	L10120348-06	L10120348-02	L10120289-01	L10120289-02	L10120348-03
	Date	12/9/2010	12/9/2010	12/9/2010	12/8/2010	12/8/2010	12/9/2010
Analyte	**Units**						
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	1.18	<1	0.613 J
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.332	0.474	<0.3	0.29 J	<0.3	1.95
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	0.299 J	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1 UJ
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	6.29	<5	<5	<5
Methylene chloride	µg/L	<1	0.256 J	<1	<1	0.349 U	0.357 J
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	2.75	3.07	<1	0.854 J	<1	8.64
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.62	1.91 J	4.87 J	2.58	0.269 J	2.9 J
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, Concentration estimated
R : Rejected

TABLE C-5
ANALYTICAL RESULTS, VOCs - 2010 QA GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab ID Date Units	TB-041210-LS-11 L10030780-21 3/30/2010	TB-41310-LS-11 L10040095-10 3/31/2010	TB-41410-LS-11 L10040095-20 4/1/2010	TB-41510-LS-11 L10040095-34 4/2/2010	TB-42210-LS-11 L10040161-10 4/6/2010	TB-42310-LS-11 L10040161-19 4/5/2010
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1 UJ	<1 UJ	<1 UJ	<1	<1 UJ	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	0.421 J	<1	0.294 B
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, Concentration estimated
R : Rejected

TABLE C-5
ANALYTICAL RESULTS, VOCs - 2010 QA GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Sample ID / Lab ID / Date / Units	TB-41610-LS-11	LTM-RB1-LS-11	DRILL-FLUID-1	TB-8-9-10	TB-081610	TB-100610-LB-12
	Lab ID	L10040167-10	L10040095-07	L10080210-03	L10080210-04	L10080386-02	L10100199-10
	Date	4/7/2010	3/31/2010	8/1/2010	8/9/2010	8/16/2010	10/4/2010
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	1.09	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	2.7	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	1.83	<1	<1	<1
Bromomethane	µg/L	<1 UJ	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1 UJ	<1 UJ	<1 UJ	3.09 J	0.752 J	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	2.21	<0.3	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	3.38	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	0.258 J	<1	<1	0.308 U	0.415 J	0.352 J
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Toluene	µg/L	<1	0.47 J	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, Concentration estimated
R : Rejected

TABLE C-5
ANALYTICAL RESULTS, VOCs - 2010 QA GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab ID Date Units	TB-100710-LB-12 L10100199-25 10/5/2010	TB-100810-LB-12 L10100199-37 10/6/2010	TB-101110-LB-12 L10100252-17 10/7/2010	TB-101210-LB-12 L10100252-33 10/8/2010	TB-101310-LB-12 L10100302-12 10/9/2010	TB-101410-LB-12 L10100302-23 10/11/2010
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1 J	<1 R	<1 J
Carbon disulfide	µg/L	<1	0.896 J	0.656 J	1.31	<1	0.585 J
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chloromethane	µg/L	<1	0.837 J	<1	1.09	<1	0.536 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	0.268 J	0.363 J	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, Concentration estimated
R : Rejected

TABLE C-5
ANALYTICAL RESULTS, VOCs - 2010 QA GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

	Sample ID	TB-101510-LB-12	TB-101910-LB-12	TB-101810-LB-12	TB-101510-LB-12	LTM-RB2-LB-12	LTM-RB1-LB-12
	Lab ID	L10100407-06	L10100407-29	L10100482-14	L10100482-15	L10100407-20	L10100302-33
	Date	10/12/2010	10/13/2010	10/14/2010	10/15/2010	10/13/2010	10/11/2010
Analyte	**Units**						
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<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-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	0.186 J	<0.5	<0.5	0.212 U	0.199 J
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	11.8	10.8
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1 J	<1 J	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	0.133 U	0.142 U	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1 R	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chloromethane	µg/L	<1 R	<1	<1	<1	<1	0.591 U
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	0.373 J	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	0.362 J	0.33 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, Concentration estimated
R : Rejected

TABLE C-5
ANALYTICAL RESULTS, VOCs - 2010 QA GROUNDWATER SAMPLES
ANNUAL LONG-TERM MONITORING REPORT – 2010
Main Installation - Defense Depot Memphis, Tennessee

Analyte	Sample ID / Lab ID / Date / Units	TB-120610-DW-DEC2010 / L10120289-03 / 12/8/2010	TB-120610-DW-DEC2010 / L10120348-07 / 12/9/2010
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
1,1-Dichloropropene	µg/L	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2
1,2-Dibromoethane	µg/L	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1
2,2-Dichloropropane	µg/L	<1	<1
2-Chlorotoluene	µg/L	<1	<1
2-Hexanone	µg/L	<10	<10
4-Chlorotoluene	µg/L	<1	<1
Acetone	µg/L	<10	<10
Benzene	µg/L	<0.4	<0.4
Bromobenzene	µg/L	<1	<1
Bromochloromethane	µg/L	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5
Bromoform	µg/L	<1	<1
Bromomethane	µg/L	<1	<1
Carbon disulfide	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5
Chloroethane	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
Chloromethane	µg/L	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5
Dibromomethane	µg/L	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1
Ethylbenzene	µg/L	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1
m-,p-Xylene	µg/L	<2	<2
MEK (2-Butanone)	µg/L	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5
Methylene chloride	µg/L	0.55 J	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10
Naphthalene	µg/L	<1	<1
n-Butylbenzene	µg/L	<1	<1
n-Propylbenzene	µg/L	<1	<1
o-Xylene	µg/L	<1	<1
p-Isopropyltoluene	µg/L	<1	<1
sec-Butylbenzene	µg/L	<1	<1
Styrene	µg/L	<1	<1
tert-Butylbenzene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
Toluene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Trichlorofluoromethane	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

VOC samples analyzed using method 8260B
µg/L : micrograms per liter
<: Not detected at sample reporting limit
DQE FLAGS:
J: Concentration estimated
UJ: Non-Detect, Concentration estimated
R : Rejected

APPENDIX D

DATA QUALITY EVALUATION

DATA QUALITY EVALUATION

Long-Term Monitoring (LTM) at the Main Installation was conducted by HDR during five sample events in 2010. Wells were selected for sampling in accordance with the *Long-Term Groundwater Monitoring Plan (LTM Plan)* (CH2M Hill, 2004). Groundwater samples were submitted to Microbac Laboratories in Marietta, Ohio for analysis. The field and laboratory procedures were performed in accordance with the *Remedial Action Sampling and Analysis Plan, Rev. 0* (RA SAP) (MACTEC, 2005).

The data quality evaluation (DQE) process involves assessment of all field and laboratory procedures, including data validation in accordance with the RA SAP completed by Diane Short and Associates, Inc (DSA). The data validation reports are included in this appendix. (The first DQE report includes SDGs L10030650 and L10030693 that were not associated with this project. Due to a large sampling effort at DDMT, each SDG includes samples that were received in one cooler, which may have included samples from more than one project.) This assessment is designed to evaluate problems with the quality assurance (QA)/quality control (QC) associated with the laboratory data and potential impact to the data quality objectives (DQOs). The DQE findings are summarized in the following sections.

FIELD ACTIVITIES AND FIELD QUALITY CONTROL

The field effort included the collection of groundwater samples from designated wells and piezometers during the semi-annual and biennial LTM events in April and October 2010, respectively; baseline sampling events for new wells installed in June and July 2010; and subsequent sampling of the new wells in December 2010. The LTM well locations are shown on Figure 2 of the report. Field QC samples were collected at selected wells to evaluate sampling technique and decontamination procedures. These samples included field duplicates, trip blanks, and field equipment (rinsate) blanks. Additional samples were collected at selected locations for matrix spike/matrix spike duplicate (MS/MSD) analyses in the laboratory. Sample bottles met U.S. Environmental Protection Agency (USEPA) requirements for environmentally clean containers. Sample labels were pre-printed to facilitate sample tracking from the field through the laboratory. Documentation of the sampling was performed in the field to ensure that the samples collected, sample labels, chain-of-custody (COC) records, which were generated electronically using a personal digital assistant (PDA) supplied by the laboratory, and request for analysis were consistent. Where necessary, COC forms were filled out manually. Custody seals were placed on each sample cooler prior to shipment by common carrier.

ANALYTICAL METHODS

The groundwater samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs) by method SW 8260B.

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.

DQE SUMMARY

The objective of the DQE was to provide a review of the chemical data reports submitted by the laboratory and to assess the data in relation 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 in accordance with the DQE standard operating procedures (SOPs) 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 (bias) and Precision (Surrogates, Matrix Spike/Matrix Spike Duplicates (MS/MSD), LCS Recoveries)
- Laboratory Performance Criteria (Blanks, Instrument Performance Check)

Field QC parameters were evaluated through field duplicates, rinsate 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 DSA are included as attachments in this Appendix. The SDGs and associated groundwater samples are listed on Table D-1.

The following sections provide summary discussions of the required data qualifications for each sampling event. A Level III DQE was performed and the data quality indicators (DQIs), expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity, were assessed. This included the evaluation of sample integrity, holding times, trip blanks, rinsate blanks, method blanks, internal standards, surrogate recoveries, matrix spike/matrix spike duplicate (MS/MSD) recoveries, LCSs, and field duplicate precision. The results of the DQI assessment are provided 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). Field precision goals were met for the duplicate sample pairs collected during the five LTM sampling events. Laboratory precision is discussed in more detail in the attached narratives.

Accuracy

Accuracy or bias 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).

Although there were a number of elevated LCS recoveries observed in the October and December events, all associated data are qualified J and as such are valid. Accuracy goals based upon LCS were met. Further discussion of the LCS and MS/MSD recoveries is provided in the attached DQE narratives.

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 rinsate blank analysis help in providing this assessment.

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

Comparability

The selection of standardized methods and consistent laboratory practices facilitates the comparison of data between LTM events. Past LTM data are comparable to recent events. Consistent methodology has been maintained throughout the LTM sampling events.

Completeness

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

Data from the five LTM events in March, June, August, October and December 2010 were greater than 98% complete and therefore met the completeness DQO.

Sensitivity

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. Analytical sensitivity is expressed in terms of the reporting limit (RL), which is provided by the respective laboratories as their reasonable and defensible quantitation limit for environmental samples above the method detection limit (MDL), which is established by each laboratory using pure water or clean matrix. The analytical method RLs and MDLs were compared to groundwater protection standards as listed in the RA QAPP and were determined to meet the overall project objectives. (The MDLs for six VOCs [1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, 1,2-dichloroethane, bromodichloromethane, carbon tetrachloride, and Dibromochloromethane) were above the standards; however, as noted in the QAPP...”MDLs for these VOC … compounds are higher than their corresponding screening levels because current VOC … analytical method technology can not achieve MDLs lower than those listed.”]

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

Semi-Annual Event – April 2010

A total of 78 water samples including 59 groundwater field samples and 19 QA/QC samples (duplicates, MS/MSD, trip blanks, rinsate blanks) were collected from 58 LTM wells in March and April 2010.

Samples were collected from two screened intervals in MW101. The data are usable with qualifications as described below:

- Acetone and carbon disulfide were qualified as estimated J in two samples (MW85-LS-11 and MW141-LS-11) and carbon tetrachloride was qualified as estimated J in one sample (MW85-LS-11) based on MS/MSD recovery. The result could be biased low approximately proportional to the recovery.
- When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the analyte is detected, the result is qualified as J and data could be biased high proportional to the LCS %R. All results associated with low recoveries are qualified J. Only one of the affected samples had a detection above the RL; vinyl chloride in MW100B-LS-11 was qualified J due to a high LCS recovery. Forty-six samples had a low LCS for carbon disulfide and were qualified J. Two samples had a low LCS for acetone and were qualified J. Eight samples had a low LCS for bromomethane and were qualified J. With the exception of vinyl chloride, the analytes with low LCS recoveries were not contaminants of concern and will not impact the use of the data.
- Contamination (methylene chloride) was observed in one method blank. Whenever methylene chloride, acetone or 2-butanone is detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as U, the corrected method blank level. Such results are usable as non-detects.
- There were detections observed below the reporting limit in some trip blanks and rinsate blanks, including methylene chloride and 1,4-dichlorobenzene. When analytes are present in both the rinsate blank and the associated samples, the results in the samples are qualified in the same manner as for method blanks.
- 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).

New Well Installation Baseline Event – June 2010

A total of three water samples including two groundwater field samples and one QA/QC sample (trip blank) were collected from two newly installed wells, MW-252 and MW-253, in June 2010. Samples were analyzed for TCL VOCs. The data are usable with qualifications as described below:

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

New Well Event – August 2010

A total of five water samples including three groundwater field samples and two QA/QC samples (trip blanks, drill fluid) were collected from three newly-installed wells, MW-254, MW-255 and MW-256, in August 2010. Samples were analyzed for TCL VOCs. The data are usable with qualifications as described below:

- When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the analyte is detected, the result is qualified as J. Data could be biased high proportional to the LCS %R. All results associated with low recoveries are qualified. Carbon disulfide in two samples (MW-255-Base1 and MW-256-Base1) was qualified J based on low LCS recoveries. Carbon disulfide was not a contaminant of concern and will not impact the use of the data.

- Contamination (methylene chloride, carbon disulfide and hexachlorobutadiene) was observed in some method and trip blanks. These analytes were non-detect in the associated samples and did not require qualification.

- 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).

Biennial Event – October 2010

A total of 148 water samples including 111 groundwater field samples and 37 QA/QC samples (duplicates, MS/MSD, trip blanks, rinsate blanks) were collected from 109 LTM wells in October 2010. Samples were collected from two screened intervals in MW101 and MW107. Samples were analyzed for TCL VOCs. The data are usable with qualifications as described below:

- Several COC discrepancies were reviewed and determined not to have impacted data quality.

- TCE and cis-1,2-dichloroethene were qualified as estimated J in one sample (PMW92-06-LB-12) based on MS/MSD recovery. The results could be biased low approximately proportional to the recoveries.

- When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the analyte is detected, the result is qualified as J. Data could be biased high proportional to the LCS %R. All results associated with low recoveries are qualified. Bromomethane in 19 samples, carbon disulfide in ten samples, vinyl chloride in one sample and acetone in one sample were qualified J based on low LCS recoveries. Dichlorodifluoromethane in two samples (MW-214B-LB-12 and MW-215A-LB-12), chloromethane in three samples (DR1-1A-LB-12, MW107T-LB-12, and MW107B-LB-12), vinyl chloride in three samples (MW197B-LS-12, MW-203B-LS-12 and MW-205B-LS-12), acetone in one sample (PMW101-04A-LS-12) and carbon tetrachloride in two samples (MW-207B-LS-12 and MW-215B-LS-12) were qualified J based on elevated LCS recoveries. With the exception of carbon tetrachloride and vinyl chloride, the analytes with low or high LCS recoveries were not contaminants of concern and will not impact the use of the data.

- Detected analytes in two samples carbon tetrachloride, chloroform, MTBE, TCE and PCE in MW214A-LB-12; and acetone, chloromethane, cis-1,2-dichloroethene, methylene chloride, MTBE, TCE and PCE in PMW101-04A-LB-12) were qualified J due to high recoveries of the surrogate 1,4-dichloroethane-d4.
- Bromomethane was non-detect and qualified R (rejected) in 13 samples and chloromethane was non-detect and qualified R in one sample due to high %D with low response in continuing calibration standards.
- Contamination (methylene chloride, chlorobenzene, chloromethane, carbon disulfide and 1,4-dichlorobenzene) was observed in some method blanks and trip blanks and resulted in U qualifications for associated data. TCE was also detected in one method blank, and because TCE is a contaminant of concern, the associated sample results have been qualified B, with results possibly biased high. 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 U. Such results are usable as nondetects. For other targets, the factor used is 5x.
- 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).

New Well Event – December 2010

A total of ten water samples including five groundwater field samples and five QA/QC samples (duplicates, MS/MSD, trip blanks) were collected from three LTM wells in December 2010. Samples were analyzed for TCL VOCs. The data are usable with qualifications as described below:

- A COC discrepancy was reviewed and determined not to have impacted data quality.

- Dichlorodifluoromethane was qualified as non-detect estimated UJ in one sample (MW-256-DW-Dec2010) based on a low MS/MSD recovery.
- When a high LCS 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 J. Data could be biased high proportional to the LCS %R. All results associated with low recoveries are qualified. Trichloroethene in two samples (MW-253-DW-Dec2010 and MW-256-DW-Dec2010) was qualified J based on elevated LCS recoveries.
- Contamination (methylene chloride) was observed in one trip blank and resulted in a U qualification in sample MW-255-DW-Dec2010. 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 U. Such results are usable as nondetects.
- 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).

SUMMARY

The sample data from the April, June-August, October and December 2010 LTM events at the Main Installation met the data quality objectives and are of sufficient quality to support the evaluation of remedial actions.

TABLE D-1
SDG SUMMARY TABLE
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

SDG	Groundwater Samples			Quality Control Samples
Semi-Annual Sampling Event - March-April 2010				
L10030780	DR1-5-LS-11	MW64-LS-11	MW100B-LS-11	MW85-LS-11MS
	DR1-5A-LS-11	MW85-LS-11	MW113-LS-11	MW85-LS-11MSD
	DR2-1-LS-11	MW88-LS-11	MW-200-LS-11	TB-41210-LS-11
	MW21-LS-11	MW94-LS-11	PMW21-03-LS-11	
L10040095	DR1-6-LS-11	MW108-LS-11	MW-207B-LS-11	DUP-1-LS-11
	DR1-6A-LS-11	MW141-LS-11	MW-210A-LS-11	DUP-5-LS-11
	DR2-6-LS-11	MW197A-LS-11	MW-210B-LS-11	DUP-6-LS-11
	MW26-LS-11	MW197B-LS-11	MW-217-LS-11	MW141-LS-11MS
	MW39-LS-11	MW199B-LS-11	MW-218-LS-11	MW141-LS-11MSD
	MW39A-LS-11	MW-203A-LS-11	MW-219-LS-11	TB-41310-LS-11
	MW90-LS-11	MW-203B-LS-11	PMW21-05-LS-11	TB-41410-LS-11
	MW97-LS-11	MW-207A-LS-11	PMW101-04A-LS-11	TB-41510-LS-11
			PMW101-04B-LS-11	LTM-RB1-LS-11
L10040161	DR1-3-LS-11	MW-204A-LS-11	MW-206B-LS-11	DUP-2-LS-11
	MW98-LS-11	MW-204B-LS-11	MW-208A-LS-11	DUP-3-LS-11
	MW101B-LS-11	MW-205A-LS-11	MW-208B-LS-11	DUP-4-LS-11
	MW101T-LS-11	MW-205B-LS-11	MW-209B-LS-11	TB-42210-LS-11
	MW-202B-LS-11	MW-206A-LS-11		TB-42310-LS-11
L10040167	DR2-2-LS-11	MW62-LS-11	PMW92-03-LS-11	TB-41610-LS-11
	DR2-3-LS-11	MW92-LS-11	PMW92-06-LS-11	LTM-RB2-LS-11
	DR2-5-LS-11	MW-212-LS-11		
Deep Well Installation - Sampling June-August 2010				
L10060573	MW-252-Base-1	MW-253-Base-1		TB-6-18-10
L10080210	MW-255-Baseline-1	MW-256-Baseline-1		Drill-Fluid-1
L10080386	MW254-Baseline-1			TB-081610

TABLE D-1
SDG SUMMARY TABLE
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

SDG	Groundwater Samples			Quality Control Samples
Biennial Sampling Event - October 2010				
L10100199	DR1-2-LB-12	DR2-3-LB-12	MW-253-LB-12	DUP-9-LB-12
	DR1-3-LB-12	MW-21-LB-12	MW-254-LB-12	DUP-10-LB-12
	DR1-4-LB-12	MW-34-LB-12	MW-255-LB-12	DUP-11-LB-12
	DR1-5-LB-12	MW-88-LB-12	MW-256-LB-12	DR1-2-LB-12-MS
	DR1-5A-LB-12	MW-100B-LB-12	PMW21-03-LB-12	DR1-2-LB-12-MSD
	DR1-6-LB-12	MW-215A-LB-12	PMW21-05-LB-12	PMW92-06-LB-12-MS
	DR1-6A-LB-12	MW-219-LB-12	PMW92-03-LB-12	PMW92-06-LB-12-MSD
	DR1-7-LB-12	MW-229-LB-12	PMW92-06-LB-12	TB-100610-LB-12
	DR1-8-LB-12	MW-252-LB-12	PMW101-04B-LB-12	TB-100710-LB-12
				TB-100810-LB-12
L10100252	DR2-6-LB-12	MW90-LB-12	MW-204A-LB-12	DUP-2-LB-12
	MW25A-LB-12	MW96-LB-12	MW-205A-LB-12	DUP-3-LB-12
	MW26-LB-12	MW103-LB-12	MW-206A-LB-12	DUP-4-LB-12
	MW52-LB-12	MW104-LB-12	MW206B-LB-12	DUP-6-LB-12
	MW63A-LB-12	MW141-LB-12	MW-208A-LB-12	MW-199A-LB-12-MS
	MW63B-LB-12	MW-198-LB-12	MW208B-LB-12	MW-199A-LB-12-MSD
	MW64-LB-12	MW-199A-LB-12	MW209B-LB-12	TB-101110-LB-12
	MW89-LB-12	MW199B-LB-12	MW-214A-LB-12	TB-101210-LB-12
			MW217-LB-12	
L10100302	DR1-1-LB-12	MW94A-LB-12	MW-202A-LB-12	DUP-1-LB-12
	DR1-1A-LB-12	MW97-LB-12	MW-203A-LB-12	DUP-5-LB-12
	MW19-LB-12	MW98-LB-12	MW-203B-LB-12	DUP-7-LB-12
	MW38-LB-12	MW102B-LB-12	MW-204B-LB-12	MW-210B-LB-12-MS
	MW39-LB-12	MW142-LB-12	MW-205B-LB-12	MW-210B-LB-12-MSD
	MW39A-LB-12	MW-197A-LB-12	MW-209A-LB-12	TB-101310-LB-12
	MW55-LB-12	MW-197B-LB-12	MW-210A-LB-12	TB-101410-LB-12
	MW92-LB-12	MW-200-LB-12	MW-210B-LB-12	LTM-RB1-LB-12
			MW-216-LB-12	
L10100407	DR2-2-LB-12	MW53-LB-12	MW108-LB-12	DUP-8-LB-12
	DR2-4-LB-12	MW66A-LB-12	MW140-LB-12	MW53-LB-12-MS
	DR2-5-LB-12	MW99-LB-12	MW143-LB-12	MW53-LB-12-MSD
	MW16-LB-12	MW101B-LB-12	MW-207B-LB-12	MW101T-LB-12-MS
	MW22-LB-12	MW101T-LB-12	MW-211-LB-12	MW101T-LB-12-MSD
	MW23A-LB-12	MW107B-LB-12	MW-214B-LB-12	TB-101510-LB-12
	MW50-LB-12	MW107T-LB-12	MW-215B-LB-12	TB-101910-LB-12
				LTM-RB2-LB-12
L10100482	DR2-1-LB-12	MW93-LB-12	MW-218-LB-12	DUP-12-LB-12
	MW24-LB-12	MW113-LB-12	PMW101-04A-LB-12	TB-101510-LB-12
	MW62-LB-12	MW-207A-LB-12	PZ-03-LB-12	TB-101810-LB-12
	MW85-LB-12	MW-212-LB-12	PZ-06-LB-12	
Deep Well Sampling December 2010				
L10120289	MW254-DW-DEC2010	MW255-DW-DEC2010		TB-120610-DW-DEC2010
L10120348	MW252-DW-DEC2010	MW253-DW-DEC2010	MW256-DW-DEC2010	DUP1-DW-DEC2010
				MW256-DW-DEC2010-MS
				MW256-DW-DEC2010-MSD
				TB-120910-DW-DEC2010

ORGANIC DATA QUALITY REVIEW REPORT
VOLATILE ORGANICS SW-846 METHOD 8260B
8260B/5030B

SDG: L10030650, 10030693, 10030780

PROJECT: Memphis Defense Depot, Off Depot groundwater and LTM for e2m, Texas

LABORATORY: Microbac Laboratories, Inc., Marietta, OH

SAMPLE MATRIX: Water

SAMPLING DATE (Month/Year): March 2010

NO. OF SAMPLES: 104 aqueous samples; including 5 trip blanks, 2 rinse blanks, 7 field duplicates

ANALYSES REQUESTED: SW-846 8260B

SAMPLE NO.: See attached result forms and associated EDD

DATA REVIEWER: Diane Short

QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: ___________

Telephone Logs included Yes____ No _X__

Contractual Violations Yes____ No _X___

The project QAPP (11/05), the EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 1999 and 2001, and the SW-846 Method 8260B 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 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 report has been requested to include the following review: Holding times and sample integrity (chains of custody, sample log in), Calibrations, Summary QC.
Although the samples are collected and delivered together, the laboratory splits the samples into numerous analytical batches which are run on up to 3 different instruments. This compounds the validation work, the data tracking and paperwork. The reviewer iterates the request to minimize the environmental impact of the paperwork by analyzing client samples in the minimum number of analytical batches and on the same instrument. The variability in response of instruments to client compounds can add a precision variability to the data results.

B. Chain of Custody Documentation was complete and accurate.
Yes __X__ No ___
No qualifiers have been added for chain of custody issues and the project manager will update chains per the following notes to complete the project record.

Only the first page of the chain of custody documents were signed and dated by the laboratory. These are electronically-generated chain of custody documents, and there may be electronic signatures for these which we are not able to review. However, the hardcopy documents should be properly signed and dated by the sampler and the laboratory on each page. There is also no tracking to identify the gap in time from relinquishment to laboratory receipt.

C. Samples were received at the required temperature, preservation and intact with no bubbles.
Yes ___X___ No ____
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6^{o} C. The sample receipt conditions are fully compliant with applicable regulations.
There is no formal log-in verification for bubbles and sample integrity. The project manager, to date, has approved of the laboratory narrative to discuss any integrity outliers

II. ANALYTICAL REPORT FORMS
A. The Analytical Report or Data Sheets are present and complete for all requested analyses.
Yes _X_ 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 __X___ 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 _X__ 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 >0.01 for volatiles and 0.05 for semi-volatiles.
Yes __X__ No ____ NA____
Method 8260: Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common “poor responders”. Acetone, 2-butanone, and 4-methyl-2-pentanone are the compounds for which any

calibration response factors below 0.05 have been observed. The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response >0.01 < 0.05. No data have been qualified.

Most of the low-responding compounds are highly water-soluble and capable of hydrogen bonding with water. This decreases their purge efficiency and results in the relatively low response. The implication of this low purge efficiency is that a relatively low absolute recovery of such compounds is achieved in the purge step of the analysis. If this recovery is consistent, reasonable accuracy and precision can be achieved in a given matrix, which is indicated for the lab matrix by acceptable recoveries in LCS and calibration checks. However, this causes these targets to be more sensitive to matrix variations that impact purge efficiency (such as ionic strength or the presence of varying levels of soluble non-target organic material) than are the more hydrophobic compounds typically analyzed by this method, and as a result they are more likely to exhibit matrix bias.

2a.The relative standard deviation (RSD) for the five point calibration was within the 30% limit for the CCCs.
Yes _X__ 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, the average %RSD was <15%, or a linear curve was used.
Yes __X___ No ____ NA____

3. The 12 hour system Performance Check was performed as required in SW-846.
Yes __X__ No_____ NA____
An ICV is also reported with each batch and instrument. It has the same outliers as the LCS and in the same range, so data have been qualified per the results listed in the LCS section.

B. Continuing Calibrations
1. The midpoint standard was analyzed for each analysis at the required frequency and the QC criteria of > 0.05 (.01 for CLP 2001 VOA) were met.
Yes __X___ No ____ NA____

2. The percent difference (%D) limits of ± 25% were met. The 2001 NFG also allow for 40% D for the poor responders (pr). For other compounds the QAPP notes rejection of detected compounds with %D > 40%.
Yes __X___ No ____ NA___
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 or for a high recovery for undetected compounds. Data are qualified JC#, where # is the %D. There could be variability to the data as there is variability to the response.
The QAPP indicates that compounds in a run should be rejected if the %D is > 40%. We interpret this to mean that non-detects should be rejected and that detected targets should be J-qualified, which is the normal validation process for rejection. No data have been outside the noted criteria and no qualifiers are applied.

IV. GC/MS INSTRUMENT PERFORMANCE CHECK
The BFB (VOA) 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 QAPP of 70 – 130% for VOA and 45-135% for SVOA base/neutral fraction or 35-140% for the acid fraction. For SVOA, one surrogate per fraction is allowed to be at 15 – 150%.
Yes __X___ No ____

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE
A. 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 _____
There are 5 MS/MSD pair designated or analyzed by the laboratory for 94 client samples. This is a sufficient frequency for the number of field samples.

B. The MS and MSD percent recoveries were within the limits defined in the QAPP of VOA at 70 – 130% with 5 compounds allowed to be within 60 – 140%; SVOA at 45- 135%, 5 compounds allowed to be at 15 – 150%. Reject non-detects at < 15% for SVOA.
Yes _____ No __X__NA___
The full target list has been spiked. Outliers observed per the QAPP limits for Method 8260 MS/MSD runs are shown in the table below. For analytes where the parent sample concentration is > 4x the spike level, no qualifier is added because the level of the spike is similar to the normal variability expected in the method; hence recoveries for such cases are not meaningful. Data are qualified JMS#, where # is the %R. Data could be biased slightly low in proportion to the recovery. As carbon disulfide is low in all the LCS's, the low recovery appears to be laboratory related, not matrix related.

Lab ID	Client ID	Compound	Conc. ug/l	flag	RL	Qualifier
L10030780-11	MW85-LS-11	Acetone	12.5	M	10	JMS69D31
L10030780-11	MW85-LS-11	Carbon disulfide		U	1	JL77MS64
L10030780-11	MW85-LS-11	Carbon tetrachloride	116	M	1	JMS63
L10030650-02	MW-148-ODPM-4	Carbon disulfide		U	1	JL74MS68
L10030650-18	MW-242-ODPM-4	Bromomethane		U	1	JMS63
L10030650-18	MW-242-ODPM-4	MEK (2-Butanone)		U	10	JL78MS66
L10030693-21	MW-057-ODLA-1	Chloroform	50.7	M	0.3	JMS43

C. The MSD relative percent differences (RPD) were within the defined contract limits for VOA of 30% water, 40 soil, with 5 compounds allowed to be < 40%.RPD; for SVOA of 50% for water and 60% for soil and 5 compounds allowed to be > 60% RPD.
Yes ____ No __X__NA____
Qualifiers are added only when the MS or MSD recovery is also out of limits. Data are qualified JD#, where # is the RPD. As the RPD increases, the matrix precision decreases. One qualifications was required for this set of samples.

D. 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 __X__ No ____

B. The LCS percent recoveries were within the limits defined in the QAPP for VOA of 80-120% for water and 75 – 125% for soil. Five compounds are allowed to be 60 – 140%. No soil limits are defined in the QAPP and laboratory limits will be applied. If an LCS and LCSD are analyzed, both samples must have the same compounds out for data to be qualified.
Yes ______ No __X____
The full target list has been spiked. When a high LCS 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. Data could be biased high or low proportional to the LCS %R. All results associated with low recoveries are qualified. Dichlorodifluoromethane, and sometimes vinyl chloride, are consistently high in the ICV and the LCS standards. The compounds are not been detected and data are not qualified for high recovery with one exception for vinyl chloride.

The table below shows the outliers and the limits applied per the QAPP. The limits are specified per matrix. Only two recoveries are outside of the marginal exceedance limits (60-140). Qualifiers are added for all outliers as described here but the project manager may consider reversing some of these when the limits fall within the marginal exceedance limits. Please see the project EDD for a detailed list of qualifiers added.

Lab ID	Client ID	Compound	Conc ug/l	Flag	RL	MDL	Qualifier
L10030780-01	MW-78-ODLA-1	Bromomethane		U	1	0.5	JL76
L10030780-01	MW-78-ODLA-1	Carbon disulfide		U	1	0.5	JL74
L10030780-02	MW-132-ODLA-1	Bromomethane		U	1	0.5	JL76
L10030780-02	MW-132-ODLA-1	Carbon disulfide		U	1	0.5	JL74
L10030780-03	MW-172-ODLA-1	Bromomethane		U	1	0.5	JL76
L10030780-03	MW-172-ODLA-1	Carbon disulfide		U	1	0.5	JL74
L10030780-04	MW-228-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030780-05	RB-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030780-06	TB-031610-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030780-07	MW64-LS-11	Carbon disulfide		U	1	0.5	JL77
L10030780-08	MW94-LS-11	Carbon disulfide		U	1	0.5	JL77
L10030780-09	MW-200-LS-11	Carbon disulfide		U	1	0.5	JL77
L10030780-10	MW21-LS-11	Carbon disulfide		U	1	0.5	JL68
L10030780-11	MW85-LS-11	Carbon disulfide		U	1	0.5	JL77MS64
L10030780-14	MW88-LS-11	Carbon disulfide		U	1	0.5	JL68
L10030780-15	MW100B-LS-11	Carbon disulfide		U	1	0.5	JL68
L10030780-15	MW100B-LS-11	Vinyl chloride	131		5	1.25	JL134
L10030780-16	MW113-LS-11	Carbon disulfide		U	1	0.5	JL68
L10030780-17	DR1-5-LS-11	Carbon disulfide		U	1	0.5	JL68
L10030780-18	DR1-5A-LS-11	Carbon disulfide		U	1	0.5	JL68
L10030780-19	DR2-1-LS-11	Carbon disulfide		U	1	0.5	JL68
L10030780-20	PMW21-03-LS-11	Carbon disulfide		U	1	0.5	JL68
L10030780-21	TB-041210-LS-11	Carbon disulfide		U	1	0.5	JL68
L10030693-01	MW-248-ODPM-4	Carbon disulfide		U	1	0.5	JL76

L10030693-02	DUP-4-ODPM-4	Carbon disulfide		U	1	0.5	JL77
L10030693-03	MW-70-ODPM-4	Carbon disulfide		U	1	0.5	JL74
L10030693-04	MW-76-ODPM-4	Carbon disulfide		U	1	0.5	JL74
L10030693-05	MW-77-ODPM-4	Carbon disulfide		U	1	0.5	JL74
L10030693-06	MW-79-ODPM-4	Carbon disulfide		U	1	0.5	JL74
L10030693-07	MW-152-ODPM-4	Carbon disulfide		U	1	0.5	JL74
L10030693-08	MW-157-ODPM-4	Carbon disulfide		U	1	0.5	JL74
L10030693-09	MW-161-ODPM-4	Carbon disulfide		U	1	0.5	JL74
L10030693-10	MW-162-ODPM-4	Carbon disulfide		U	1	0.5	JL74
L10030693-11	MW-163-ODPM-4	Carbon disulfide		U	1	0.5	JL74
L10030693-12	MW-164-ODPM-4	Carbon disulfide		U	1	0.5	JL74
L10030693-13	ODPM-4-RB	Carbon disulfide		U	1	0.5	JL74
L10030693-14	DUP-2-ODPM-4	Carbon disulfide		U	1	0.5	JL74
L10030693-15	TB-31810-ODPM-3	Carbon disulfide		U	1	0.5	JL76
L10030693-16	MW-006-ODLA-1	Carbon disulfide		U	1	0.5	JL76
L10030693-17	MW-015-ODLA-1	Carbon disulfide		U	1	0.5	JL76
L10030693-18	MW-031-ODLA-1	Carbon disulfide		U	1	0.5	JL76
L10030693-19	MW-032-ODLA-1	Carbon disulfide		U	1	0.5	JL76
L10030693-20	MW-044-ODLA-1	Carbon disulfide		U	1	0.5	JL74
L10030693-21	MW-057-ODLA-1	Carbon disulfide		U	1	0.5	JL76
L10030693-24	MW-069-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030693-25	MW-071-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030693-26	MW-074-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030693-27	MW-075-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030693-28	MW-087-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030693-29	MW-144-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030693-30	MW-145-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030693-31	MW-147-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030693-32	MW-174-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030693-33	MW-176-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030693-34	MW-178-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030693-35	MW-179-ODLA-1	Carbon disulfide		U	1	0.5	JL77
L10030693-36	MW-180-ODLA-1	Carbon disulfide		U	1	0.5	JL78
L10030693-37	MW-187-ODLA-1	Carbon disulfide		U	1	0.5	JL78
L10030693-38	MW-190-ODLA-1	Carbon disulfide		U	1	0.5	JL78
L10030693-39	MW-221-ODLA-1	Carbon disulfide		U	1	0.5	JL78
L10030693-40	MW-222-ODLA-1	Carbon disulfide		U	1	0.5	JL78
L10030693-44	MW-224-ODLA-1	Carbon disulfide		U	1	0.5	JL78
L10030693-45	MW-225-ODLA-1	Carbon disulfide		U	1	0.5	JL78
L10030693-46	MW-226-ODLA-1	Carbon disulfide		U	1	0.5	JL78
L10030693-47	MW-227-ODLA-1	Carbon disulfide		U	1	0.5	JL78
L10030693-48	DUP-1-ODLA-1	Carbon disulfide		U	1	0.5	JL78

L10030693-49	DUP-2-ODLA-1	Carbon disulfide		U	1	0.5	JL78
L10030693-50	DUP-3-ODLA-1	Bromomethane		U	1	0.5	JL77
L10030693-50	DUP-3-ODLA-1	Carbon disulfide		U	1	0.5	JL70
L10030693-51	TB-31510-ODLA-1	Carbon disulfide		U	1	0.5	JL78
L10030650-02	MW-148-ODPM-4	Carbon disulfide		U	1	0.5	JL74MS68
L10030650-05	MW-149-ODPM-4	Acetone	3.8	F	10	2.5	JL78
L10030650-05	MW-149-ODPM-4	Carbon disulfide		U	1	0.5	JL73
L10030650-05	MW-149-ODPM-4	MEK (2-Butanone)		U	10	2.5	JL78
L10030650-05	MW-149-ODPM-4	MIBK (methyl isobutyl ketone)		Q	10	2.5	JL78
L10030650-07	MW-151-ODPM-4	Carbon disulfide		U	1	0.5	JL66
L10030650-09	MW-158-ODPM-4	Acetone	3.75	F	10	2.5	JL78
L10030650-09	MW-158-ODPM-4	Carbon disulfide	1.06		1	0.5	JL73
L10030650-09	MW-158-ODPM-4	MEK (2-Butanone)		U	10	2.5	JL78
L10030650-09	MW-158-ODPM-4	MIBK (methyl isobutyl ketone)		Q	10	2.5	JL78
L10030650-10	MW-158A-ODPM-4	Acetone	4.08	F	10	2.5	JL78
L10030650-10	MW-158A-ODPM-4	Carbon disulfide		U	1	0.5	JL73
L10030650-10	MW-158A-ODPM-4	MEK (2-Butanone)		U	10	2.5	JL78
L10030650-10	MW-158A-ODPM-4	MIBK (methyl isobutyl ketone)		Q	10	2.5	JL78
L10030650-11	MW-159-ODPM-4	Carbon disulfide	69		5	2.5	JL73
L10030650-12	MW-160-ODPM-4	Carbon disulfide		U	1	0.5	JL73
L10030650-13	MW-165-ODPM-4	Carbon disulfide		U	1	0.5	JL73
L10030650-14	MW-166-ODPM-4	Carbon disulfide		U	1	0.5	JL72
L10030650-15	MW-166A-ODPM-4	Carbon disulfide		U	1	0.5	JL72
L10030650-16	MW-232-ODPM-4	Carbon disulfide		U	1	0.5	JL73
L10030650-17	MW-241-ODPM-4	Carbon disulfide		U	1	0.5	JL73
L10030650-18	MW-242-ODPM-4	Acetone	4.85	F	10	2.5	JL78
L10030650-18	MW-242-ODPM-4	Carbon disulfide		U	1	0.5	JL73
L10030650-18	MW-242-ODPM-4	MEK (2-Butanone)		U	10	2.5	JL78MS66
L10030650-18	MW-242-ODPM-4	MIBK (methyl isobutyl ketone)		Q	10	2.5	JL78
L10030650-21	MW-243-ODPM-4	Acetone	5.07	F	10	2.5	JL78
L10030650-21	MW-243-ODPM-4	Carbon disulfide		U	1	0.5	JL73
L10030650-21	MW-243-ODPM-4	MEK (2-Butanone)		U	10	2.5	JL78
L10030650-21	MW-243-ODPM-4	MIBK (methyl isobutyl ketone)		Q	10	2.5	JL78
L10030650-25	MW-247-ODPM-4	Acetone	4.01	F	10	2.5	JL78
L10030650-25	MW-247-ODPM-4	Carbon disulfide		U	1	0.5	JL73
L10030650-25	MW-247-ODPM-4	MEK (2-Butanone)		U	10	2.5	JL78
L10030650-25	MW-247-ODPM-4	MIBK (methyl isobutyl ketone)		Q	10	2.5	JL78
L10030650-26	MW-249-ODPM-4	Acetone		F	10	2.5	JL78
L10030650-26	MW-249-ODPM-4	Carbon disulfide		U	1	0.5	JL73

L10030650-26	MW-249-ODPM-4	MEK (2-Butanone)		U	10	2.5	JL78
L10030650-26	MW-249-ODPM-4	MIBK (methyl isobutyl ketone)		Q	10	2.5	JL78
L10030650-27	MW-250-ODPM-4	Acetone	4.07	F	10	2.5	JL78
L10030650-27	MW-250-ODPM-4	Carbon disulfide		U	1	0.5	JL73
L10030650-27	MW-250-ODPM-4	MEK (2-Butanone)		U	10	2.5	JL78
L10030650-27	MW-250-ODPM-4	MIBK (methyl isobutyl ketone)		Q	10	2.5	JL78
L10030650-28	MW-251-ODPM-4	Acetone	4.49	F	10	2.5	JL78
L10030650-28	MW-251-ODPM-4	Carbon disulfide		U	1	0.5	JL73
L10030650-28	MW-251-ODPM-4	MEK (2-Butanone)		U	10	2.5	JL78
L10030650-28	MW-251-ODPM-4	MIBK (methyl isobutyl ketone)		Q	10	2.5	JL78
L10030650-31	TB-31910-ODPM-3	Carbon disulfide		U	1	0.5	JL74

In some cases, the laboratory analyzed both an LCS and an LCSD as there was no MS/MSD. In such cases, per the QAPP only results in which both recoveries are out of limits are qualified. An LCS/LCSD was performed for SDG L10030693, WG 327234; SDG L10030650 WG 326987, 326997 and 326996. In WG 327114, a compound (bromomethane, Methyl ethyl ketone, Methyl isobutyl ketone) was slightly low in the LCS or LCSD, but within range in the other QC pair. No qualifier has been applied.

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__X__ No ____
Method blanks are undetected for client compounds. Whenever methylene chloride, acetone, 2-butanone or phthalate esters are detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UMB#, where # is the corrected method blank level. Such results are usable as nondetects. For other targets, the factor used is 5x.

C. If Field Blanks were identified, no blank contamination was found.
Yes____ No __X__
There are 5 trip blanks (TB in the client ID) and 2 rinse blanks (RB in the client ID) for 8260. There are detections observed below the reporting limit in the trip blanks. When analytes are present in both the field blank and the associated samples, the results in the samples are qualified in the same manner as for method blanks. For clarity, the qualifiers used in this case are UTB# for trip blanks and URB# for rinse blanks, where # is the associated blank value. Qualifiers added are shown in the table below. Results so qualified are usable as non-detects.

Laboratory ID	**Client ID**	**Compound**	**Result ug/l**	**Flag**	**RL**	**MDL**	**Qualifier**
L10030780-01	MW-78-ODLA-1	1,4-Dichlorobenzene	0.198	F	0.5	0.125	URB1.04
L10030650-06	MW-150-ODPM-4	Methylene chloride	0.277	F	1	0.25	UTB.395
L10030650-13	MW-165-ODPM-4	1,4-Dichlorobenzene	0.159	F	0.5	0.125	URB1
L10030650-14	MW-166-ODPM-4	1,4-Dichlorobenzene	0.141	F	0.5	0.125	URB1
L10030693-12	MW-164-ODPM-4	1,4-Dichlorobenzene	0.193	F	0.5	0.125	URB.99

X. FIELD QC
If Field duplicates were identified, they met guidance for VOA of RPD of < 35% for water or < 50% for soils. For SVOA < 50% RPD for water, no soils RPD is defined in the QAPP. 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 ___ No ___ NA____
There are 7 identified field duplicates, in control. There are a few discrepancies between acetone and chloroform results, but they are well within the 2x RL limit and these are both common laboratory or field outliers.

SDG	Parent	Dup	Comment
L10030650	MW-54-ODPM-4	DUP-1-ODPM-4	OK
L10030650	MW-165A-ODPM-4	DUP-3-ODPM-4	OK
L10030693	MW248-ODPM-4	DUP-4-ODPM-4	OK
L10030693	MW-157-ODPM-4	DUP-2-ODPM-4	OK
L10030693	MW-006-ODLA-1	DUP-1-ODLA-1	OK
L10030693	MW-144-ODLA-1	DUP-2-ODLA-1	OK
L10030693	MW-187-ODLA-1	DUP-3-ODLA-1	OK

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____

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:

General Deliverables and Data Packages

This report has been requested to include the following review: Holding times and sample integrity (chains of custody, sample log in), Calibrations, Summary QC.
Although the samples are collected and delivered together, the laboratory splits the samples into numerous analytical batches which are run on up to 3 different instruments. This compounds the validation work, the data tracking and paperwork. The reviewer iterates the request to minimize the environmental impact of the paperwork by analyzing client samples in the minimum number of analytical batches and on the same instrument. The variability in response of instruments to client compounds can add a precision variability to the data results.

Chain of Custody:
No qualifiers have been added for chain of custody issues and the project manager will update chains per the following notes to complete the project record.

Only the first page of the chain of custody documents were signed and dated by the laboratory. These are electronically-generated chain of custody documents, and there may be electronic signatures for these which we are not able to review. However, the hardcopy documents should be properly signed and dated by the sampler and the laboratory on each page. There is also no tracking to identify the gap in time from relinquishment to laboratory receipt.

Sample Condition:
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6^{o} C. The sample receipt conditions are fully compliant with applicable regulations.
There is no formal log-in verification for bubbles and sample integrity. The project manager, to date, has approved of the laboratory narrative to discuss any integrity outliers

Calibration:
Method 8260: Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common “poor responders”. Acetone, 2-butanone, and 4-methyl-2-pentanone are the compounds for which any calibration response factors below 0.05 have been observed. The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response >0.01 < 0.05. No data have been qualified.
An ICV is also reported with each batch and instrument. It has the same outliers as the LCS and in the same range, so data have been qualified per the results listed in the LCS section.

Matrix Spikes:
There are 5 MS/MSD pairs designated or analyzed by the laboratory for 94 samples. This is a sufficient frequency for the number of field samples.
The full target list has been spiked. Outliers observed per the QAPP limits for Method 8260 MS/MSD runs are shown in the table in the text. For analytes where the parent sample concentration is > 4x the spike level, no qualifier is added because the level of the spike is similar to the normal variability expected in the method; hence recoveries for such cases are not meaningful. Data are qualified JMS#, where # is the %R. Data could be biased slightly low in proportion to the recovery. As carbon disulfide is low in all the LCS’s, the low recovery appears to be laboratory related, not matrix related.
Qualifiers are added for the MS or MSD precision. Data are qualified JD#, where # is the RPD. As the RPD increases, the matrix precision decreases. One qualifications was required for this set of samples.

Field Blanks:

There are 5 trip blanks (TB in the client ID) and 2 rinse blanks (RB in the client ID) for 8260. There are detections observed below the reporting limit in the trip blanks and rinse blanks. When analytes are present in both the field blank and the associated samples, the results in the samples are qualified in the same manner as for method blanks. For clarity, the qualifiers used in this case are UTB# for trip blanks and URB# for rinse blanks, where # is the associated blank value. Qualifiers added are shown in the table in the text. Results so qualified are usable as non-detects.

<u>LCS Recoveries:</u>
The full target list has been spiked. When a high LCS 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. Data could be biased high or low proportional to the LCS %R. All results associated with low recoveries are qualified and one detect for slightly high acetone. Dichlorodifluoromethane, and sometimes vinyl chloride, are consistently high in the ICV and the LCS standards. The compounds are not been detected and data are not qualified for high recovery with one exception for vinyl chloride.

The table in the text shows the outliers and the limits applied per the QAPP. The limits are specified per matrix. Only two recoveries are outside of the marginal exceedance limits (60-140). Qualifiers are added for all outliers as described here but the project manager may consider reversing some of these when the limits fall within the marginal exceedance limits. Please see the project EDD for a detailed list of qualifiers added.
In some cases, the laboratory analyzed both an LCS and an LCSD as there was no MS/MSD. In such cases, per the QAPP only results in which both recoveries are out of limits are qualified. An LCS/LCSD was performed for SDG L10030693, WG 327234; SDG L10030650 WG 326987, 326997 and 326996. In WG 327114, a compound (bromomethane, Methyl ethyl ketone, Methyl isobutyl ketone) was slightly low in the LCS or LCSD, but within range in the other QC pair. No qualifier has been applied.

<u>Field QC:</u>
There are 7 identified field duplicates, in control. There are a few discrepancies between acetone and chloroform results, but they are well within the 2x RL limit and these are both common laboratory or field outliers.

ORGANIC DATA QUALITY REVIEW REPORT
VOLATILE ORGANICS SW-846 METHOD 8260B
8260B/5030B

SDG: L10040095, 10040161, 10040167

PROJECT: Memphis Defense Depot, LS-11 for e2m, Texas

LABORATORY: Microbac Laboratories, Inc., Marietta, OH

SAMPLE MATRIX: Water

SAMPLING DATE (Month/Year): March, April 2010

NO. OF SAMPLES: 63 aqueous samples; including 6 trip blanks, 2 rinse blanks, 6 field duplicates

ANALYSES REQUESTED: SW-846 8260B

SAMPLE NO.: See attached result forms and associated EDD

DATA REVIEWER: Diane Short

QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: ___________

Telephone Logs included Yes____ No _X__

Contractual Violations Yes____ No _X___

The project QAPP (11/05), the EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 1999 and 2001, and the SW-846 Method 8260B 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 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 report has been requested to include the following review: Holding times and sample integrity (chains of custody, sample log in), Calibrations, Summary QC.

Although the samples are collected and delivered together, the laboratory splits the samples into numerous analytical batches which are run on up to 3 different instruments. This compounds the validation work, the data tracking and paperwork. The reviewer iterates the request to minimize the environmental impact of the paperwork by analyzing client samples in the minimum number of analytical batches and on the same instrument. The variability in response of instruments to client compounds can add a precision variability to the data results.

B. Chain of Custody Documentation was complete and accurate.

Yes __X__ No ___

No qualifiers have been added for chain of custody issues and the project manager will update chains per the following notes to complete the project record.

Only the first page of the chain of custody documents were signed and dated by the laboratory. These are electronically-generated chain of custody documents, and there may be electronic signatures for these which we are not able to review. However, the hardcopy documents should be properly signed and dated by the sampler and the laboratory on each page. There is also no tracking to identify the gap in time from relinquishment to laboratory receipt.

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

Yes ___X___ No ____

EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6^{o} C. The sample receipt conditions are fully compliant with applicable regulations.

There is no formal log-in verification for bubbles and sample integrity. The project manager, to date, has approved of the laboratory narrative to discuss any integrity outliers

II. ANALYTICAL REPORT FORMS

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

Yes _X_ 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 __X___ 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 _X__ 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 >0.01 for volatiles and 0.05 for semi-volatiles.

Yes __X__ No ____ NA____

Method 8260: Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common “poor responders”. Acetone, 2-butanone, and 4-methyl-2-pentanone are the compounds for which any calibration response factors below 0.05 have been observed. The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response >0.01 < 0.05. No data have been qualified.

Most of the low-responding compounds are highly water-soluble and capable of hydrogen bonding with water. This decreases their purge efficiency and results in the relatively low response. The implication of this low purge efficiency is that a relatively low absolute recovery of such compounds is achieved in the purge step of the analysis. If this recovery is consistent, reasonable accuracy and precision can be achieved in a given matrix, which is indicated for the lab matrix by acceptable recoveries in LCS and calibration checks. However, this causes these targets to be more sensitive to matrix variations that impact purge efficiency (such as ionic strength or the presence of varying levels of soluble non-target organic material) than are the more hydrophobic compounds typically analyzed by this method, and as a result they are more likely to exhibit matrix bias.

2a.The relative standard deviation (RSD) for the five point calibration was within the 30% limit for the CCCs.
Yes _X__ 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, the average %RSD was <15%, or a linear curve was used.
Yes __X___ No ____ NA____

3. The 12 hour system Performance Check was performed as required in SW-846.
Yes __X__ No_____ NA____
An ICV is also reported with each batch and instrument. It has the same outliers as the LCS and in the same range, so data have been qualified per the results listed in the LCS section.

B. Continuing Calibrations
1. The midpoint standard was analyzed for each analysis at the required frequency and the QC criteria of > 0.05 (.01 for CLP 2001 VOA) were met.
Yes __X___ No ____ NA____

2. The percent difference (%D) limits of ± 25% were met. The 2001 NFG also allow for 40% D for the poor responders (pr). For other compounds the QAPP notes rejection of detected compounds with %D > 40%.
Yes __X___ No ____ NA___
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 or for a high recovery for undetected compounds. Data are qualified JC#, where # is the %D. There could be variability to the data as there is variability to the response.
The QAPP indicates that compounds in a run should be rejected if the %D is > 40%. We interpret this to mean that non-detects should be rejected and that detected targets should be J-qualified, which is the normal validation process for rejection. No data have been outside the noted criteria and no qualifiers are applied.

IV. GC/MS INSTRUMENT PERFORMANCE CHECK
The BFB (VOA) 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 QAPP of 70 – 130% for VOA and 45-135% for SVOA base/neutral fraction or 35-140% for the acid fraction. For SVOA, one surrogate per fraction is allowed to be at 15 – 150%.
Yes __X___   No ____

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A. 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 _____   No _X____
There is only one MS/MSD pair designated or analyzed by the laboratory for 63 samples. This is an insufficient frequency for the number of field samples.

B. The MS and MSD percent recoveries were within the limits defined in the QAPP of VOA at 70 – 130% with 5 compounds allowed to be within 60 – 140%; SVOA at 45- 135%, 5 compounds allowed to be at 15 – 150%. Reject non-detects at < 15% for SVOA.
Yes _____   No __X__NA___
The full target list has been spiked. Outliers observed per the QAPP limits for Method 8260 MS/MSD runs are shown in the table below. For analytes where the parent sample concentration is > 4x the spike level, no qualifier is added because the level of the spike is similar to the normal variability expected in the method; hence recoveries for such cases are not meaningful. Data are qualified JMS#, where # is the %R. Data could be biased slightly low in proportion to the recovery. As carbon disulfide is low in all the LCS's, the low recovery appears to be laboratory related, not matrix related.

SDG- Lab ID	Client ID	Compound	Result	Flag	RL	MDL	Qualifier
L10040095-23	MW141-LS-11	Acetone		U	10	2.5	JMS68
L10040095-23	MW141-LS-11	Carbon disulfide		UM	1	0.5	JL73MS55

C. The MSD relative percent differences (RPD) were within the defined contract limits for VOA of 30% water, 40 soil, with 5 compounds allowed to be < 40%.RPD; for SVOA of 50% for water and 60% for soil and 5 compounds allowed to be > 60% RPD.
Yes __X__   No ____NA____
Qualifiers are added only when the MS or MSD recovery is also out of limits. Data are qualified JD#, where # is the RPD. As the RPD increases, the matrix precision decreases. No qualifications are required for this set of samples.

D. 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 __X__ No ____

B. The LCS percent recoveries were within the limits defined in the QAPP for VOA of 80-120% for water and 75 – 125% for soil. Five compounds are allowed to be 60 – 140%. No soil limits are defined in the QAPP and laboratory limits will be applied. If an LCS and LCSD are analyzed, both samples must have the same compounds out for data to be qualified.

Yes ______ No __X____
The full target list has been spiked. When a high LCS 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. Data could be biased high or low proportional to the LCS %R. All results associated with low recoveries are qualified. Dichlorodifluoromethane is consistently high in the ICV and the LCS standards. The compound has not been detected and data are not qualified for high recovery.

The table below shows the outliers and the limits applied per the QAPP. The limits are specified per matrix. Only two recoveries are outside of the marginal exceedance limits (60-140). Qualifiers are added for all outliers as described here but the project manager may consider reversing some of these when the limits fall within the marginal exceedance limits. Please see the project EDD for a detailed list of qualifiers added.

Lab ID	Client ID	compound	Conc ug/l	Flag	RL	MDL	Qualifier
L10040161-01	MW-202B-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040161-02	MW-204A-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040161-03	MW-204B-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040161-04	MW-205A-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040161-05	MW-205B-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040161-06	MW-206A-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040161-07	MW-206B-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040161-08	MW209B-LS-11	Acetone		U	10	2.5	JL75
L10040161-08	MW209B-LS-11	Carbon disulfide		U	1	0.5	JL77
L10040161-09	DUP-3-LS-11	Acetone		U	10	2.5	JL75
L10040161-09	DUP-3-LS-11	Carbon disulfide		U	1	0.5	JL77
L10040161-10	TB-42210-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040161-14	MW208A-LS-11	Acetone	3.94	F	10	2.5	JL122
L10040167-01	MW62-LS-11	Bromomethane		U	1	0.5	JL68
L10040167-01	MW62-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040167-02	MW92-LS-11	Bromomethane		U	1	0.5	JL68
L10040167-02	MW92-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040167-03	MW-212-LS-11	Bromomethane		U	1	0.5	JL68
L10040167-03	MW-212-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040167-04	DR2-2-LS-11	Bromomethane		U	1	0.5	JL68
L10040167-04	DR2-2-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040167-05	DR2-3-LS-11	Bromomethane		U	1	0.5	JL68
L10040167-05	DR2-3-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040167-06	DR2-5-LS-11	Bromomethane		UQ	1	0.5	JL68
L10040167-07	PMW92-03-LS-11	Bromomethane		U	1	0.5	JL65
L10040167-07	PMW92-03-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040167-08	PMW92-06-LS-11	Bromomethane		U	1	0.5	JL68
L10040167-08	PMW92-06-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040167-09	LTM-RB2-LS-11	Bromomethane		U	1	0.5	JL68
L10040167-09	LTM-RB2-LS-11	Carbon disulfide		U	1	0.5	JL73

L10040167-10	TB-41610-LS-11	Bromomethane		U	1	0.5	JL68
L10040167-10	TB-41610-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-01	MW26-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-02	MW39-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-03	MW97-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-04	MW-217-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-05	MW-218-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-06	DR2-6-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-07	LTM-RB1-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-08	DUP-1-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-09	DUP-5-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-10	TB-41310-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-11	MW108-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-12	MW-207A-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-13	MW-219-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-14	DR1-6-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-15	DR1-6A-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-16	PMW21-05-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-17	PMW101-04A-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-18	PMW101-04B-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-19	DUP-6-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-20	TB-41410-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-21	MW39A-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-22	MW90-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-23	MW141-LS-11	Carbon disulfide		UM	1	0.5	JL73MS55
L10040095-26	MW-197A-LS-11	Carbon disulfide		U	1	0.5	JL73
L10040095-27	MW-197B-LS-11	Carbon disulfide		U	1	0.5	JL73

In some cases, the laboratory analyzed both an LCS and an LCSD as there was no MS/MSD. In such cases, per the QAPP only results in which both recoveries are out of limits are qualified. An LCS/LCSD was performed for SDGL10040095, WG 327711; SDG L10040161 WG 327924. In both cases, carbon disulfide was slightly low (77-74%) in the LCS or LCSD, but within range in the other QC pair. No qualifier has been applied, except for Acetone which was slightly high in both QC samples.

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___

Methylene chloride was detected in some method blanks. Whenever methylene chloride, acetone, 2-butanone or phthalate esters are detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UMB#, where # is the corrected method blank level. Such results are usable as nondetects. For other targets, the factor used is 5x.

Laboratory ID	Client ID	Compound	Result ug/l	Flag	RL	MDL	Qualifier
L10040161-19	TB-42310-LS-11	Methylene chloride	0.294	F	1	0.25	UMB.412

C. If Field Blanks were identified, no blank contamination was found.
Yes____ No __X__
There are 6 trip blanks (TB in the client ID) and 2 rinse blanks (RB in the client ID) for 8260. There are detections observed below the reporting limit in the trip blanks. When analytes are present in both the field blank and the associated samples, the results in the samples are qualified in the same manner as for method blanks. For clarity, the qualifiers used in this case are UTB# for trip blanks and URB# for rinse blanks, where # is the associated blank value. Qualifiers added are shown in the table below. Results so qualified are usable as non-detects.

Laboratory ID	Client ID	Compound	Result ug/l	Flag	RL	MDL	Qualifier
L10040095-05	MW-218-LS-11	1,4-Dichlorobenzene	0.276	F	0.5	0.125	URB1.09
L10040095-09	DUP-5-LS-11	1,4-Dichlorobenzene	0.226	F	0.5	0.125	URB1.09
L10040167-07	PMW92-03-LS-11	Methylene chloride	0.311	F	1	0.25	UTB.258

X. FIELD QC

If Field duplicates were identified, they met guidance for VOA of RPD of < 35% for water or < 50% for soils. For SVOA < 50% RPD for water, no soils RPD is defined in the QAPP. 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 ___ No ___ NA____
There are 6 identified field duplicates, in control.

SDG	Parent (all ending in LS-11)	Dup	Comment
L10040095	MW-39	DUP-1	OK
L10040095	MW-218	DUP-5	OK
L10040095	PMW21-05	DUP-6	OK
L10040161	MW-98	DUP-2	OK
L10040161	MW-202B	DUP-3	OK
L10040161	MW-208B	DUP-4	OK

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____

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:

<u>General Deliverables and Data Packages</u>
This report has been requested to include the following review: Holding times and sample integrity (chains of custody, sample log in), Calibrations, Summary QC.
Although the samples are collected and delivered together, the laboratory splits the samples into numerous analytical batches which are run on up to 3 different instruments. This compounds the validation work, the data tracking and paperwork. The reviewer iterates the request to minimize the environmental impact of the paperwork by analyzing client samples in the minimum number of analytical batches and on the same instrument. The variability in response of instruments to client compounds can add a precision variability to the data results.

<u>Chain of Custody:</u>
No qualifiers have been added for chain of custody issues and the project manager will update chains per the following notes to complete the project record.

Only the first page of the chain of custody documents were signed and dated by the laboratory. These are electronically-generated chain of custody documents, and there may be electronic signatures for these which we are not able to review. However, the hardcopy documents should be properly signed and dated by the sampler and the laboratory on each page. There is also no tracking to identify the gap in time from relinquishment to laboratory receipt.

<u>Sample Condition:</u>
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6^{o} C. The sample receipt conditions are fully compliant with applicable regulations.
There is no formal log-in verification for bubbles and sample integrity. The project manager, to date, has approved of the laboratory narrative to discuss any integrity outliers

<u>Calibration:</u>
Method 8260: Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common “poor responders”. Acetone, 2-butanone, and 4-methyl-2-pentanone are the compounds for which any calibration response factors below 0.05 have been observed. The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory

has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response >0.01 < 0.05. No data have been qualified.
An ICV is also reported with each batch and instrument. It has the same outliers as the LCS and in the same range, so data have been qualified per the results listed in the LCS section.

Matrix Spikes:
There is only one MS/MSD pair designated or analyzed by the laboratory for 63 samples. This is an insufficient frequency for the number of field samples.
The full target list has been spiked. Outliers observed per the QAPP limits for Method 8260 MS/MSD runs are shown in the table in the text. For analytes where the parent sample concentration is > 4x the spike level, no qualifier is added because the level of the spike is similar to the normal variability expected in the method; hence recoveries for such cases are not meaningful. Data are qualified JMS#, where # is the %R. Data could be biased slightly low in proportion to the recovery. As carbon disulfide is low in all the LCS's, the low recovery appears to be laboratory related, not matrix related.

Method Blanks:
Methylene chloride was detected in some method blanks. Whenever methylene chloride, acetone, 2-butanone or phthalate esters are detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UMB#, where # is the corrected method blank level. Such results are usable as nondetects.   For other targets, the factor used is 5x.

Field Blanks:
There are 6 trip blanks (TB in the client ID) and 2 rinse blanks (RB in the client ID) for 8260. There are detections observed below the reporting limit in the trip blanks and rinse blanks. When analytes are present in both the field blank and the associated samples, the results in the samples are qualified in the same manner as for method blanks. For clarity, the qualifiers used in this case are UTB# for trip blanks and URB# for rinse blanks, where # is the associated blank value. Qualifiers added are shown in the table in the text. Results so qualified are usable as non-detects.

LCS Recoveries:
The full target list has been spiked. When a high LCS 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. Data could be biased high or low proportional to the LCS %R. All results associated with low recoveries are qualified and one detect for slightly high acetone.
Dichlorodifluoromethane is consistently high in the ICV and the LCS standards. The compound has not been detected and data are not qualified for high recovery.

The table in the text shows the outliers and the limits applied per the QAPP. The limits are specified per matrix. Only two recoveries are outside of the marginal exceedance limits (60-140). Qualifiers are added for all outliers as described here but the project manager may consider reversing some of these when the limits fall within the marginal exceedance limits. Please see the project EDD for a detailed list of qualifiers added.
In some cases, the laboratory analyzed both an LCS and an LCSD as there was no MS/MSD. In such cases, per the QAPP only results in which both recoveries are out of limits are qualified. An LCS/LCSD was performed for SDGL10040095, WG 327711; SDG L10040161 WG 327924. In both cases, carbon disulfide was slightly low (74-77%) in the LCS or LCSD, but within range in the other QC pair. No qualifier has been applied, except for Acetone which was slightly high in both QC samples.

Field QC:
There are 6 identified field duplicates, in control.

ORGANIC DATA QUALITY REVIEW REPORT
VOLATILE ORGANICS SW-846 METHOD 8260B
8260B/5030B

SDG: L10060573

PROJECT: Memphis Defense Depot, MI Intermediate Aquifer for e2m/HDR, Denver

LABORATORY: Microbac Laboratories, Inc., Marietta, OH

SAMPLE MATRIX: Water

SAMPLING DATE (Month/Year): June 2010

NO. OF SAMPLES: 3 aqueous samples; including 1 trip blank

ANALYSES REQUESTED: SW-846 8260B

SAMPLE NO.: MW-252-BASELINE-1, MW-253, TB-6-18-10

DATA REVIEWER: Diane Short

QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: ____________________

Telephone Logs included Yes____ No _X__

Contractual Violations Yes____ No _X___

The project QAPP (11/05), the EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 1999 and 2001, and the SW-846 Method 8260B 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 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 report has been requested to include the following review: Holding times and sample integrity (chains of custody, sample log in), Calibrations, Summary QC.

B. Chain of Custody Documentation was complete and accurate.
Yes __X__ No ___
No qualifiers have been added for chain of custody issues and the project manager will update chains per the following notes to complete the project record.

There is a gap from collection to laboratory receipt that is verified by a tracking number on the Cooler Inspection Form. There is no carrier identified however. The carrier needs to be added to the chain of custody as a step in the relinquishment process.

C. Samples were received at the required temperature, preservation and intact with no bubbles.
Yes _____ No __X__
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6^{o} C. The sample receipt conditions are fully compliant with applicable regulations.
The trip blank is noted as containing headspace > 6 mm. As these samples are not expected to initially contain any compounds, there is not expected to be any loss of compounds.

II. ANALYTICAL REPORT FORMS
A. The Analytical Report or Data Sheets are present and complete for all requested analyses.
Yes _X_ 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 __X___ 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 _X__ 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 >0.01 for volatiles and 0.05 for semi-volatiles.
Yes __X__ No ____ NA____
Method 8260: Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common “poor responders”. Acetone, 1,2-dibromo-3-chloropropane and 4-methyl-2-pentanone are the compounds for which any calibration response factors below 0.05 have been observed. The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response >0.01 < 0.05. No data have been qualified.

Most of the low-responding compounds are highly water-soluble and capable of hydrogen bonding with water. This decreases their purge efficiency and results in the relatively low response. The implication of this low purge efficiency is that a relatively low absolute recovery of such compounds is achieved in the purge step of the analysis. If this recovery is consistent, reasonable accuracy and precision can be achieved in a given matrix, which is indicated for the lab matrix by acceptable recoveries in LCS and calibration checks. However, this causes these targets to be more sensitive to matrix variations that impact purge efficiency (such as ionic strength or the presence of varying levels of soluble non-target organic material) than are the more hydrophobic compounds typically analyzed by this method, and as a result they are more likely to exhibit matrix bias.

2a.The relative standard deviation (RSD) for the five point calibration was within the 30% limit for the CCCs.
Yes _X__ 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, the average %RSD was <15%, or a linear curve was used.
Yes __X___ No ____ NA____

3. The 12 hour system Performance Check was performed as required in SW-846.
Yes __X__ No_____ NA____
An ICV is also reported with each batch and instrument.

B. Continuing Calibrations
1. The midpoint standard was analyzed for each analysis at the required frequency and the QC criteria of > 0.05 (.01 for CLP 2001 VOA) were met.
Yes __X___ No ____ NA____

2. The percent difference (%D) limits of $\pm$ 25% were met. The 2001 NFG also allow for 40% D for the poor responders (pr). For other compounds the QAPP notes rejection of detected compounds with %D > 40%.
Yes __X___ No ____ NA___
The QAPP indicates that compounds in a run should be rejected if the %D is > 40%. We interpret this to mean that non-detects should be rejected and that detected targets should be J-qualified, which is the normal validation process for rejection. No data have been outside the noted criteria and no qualifiers are applied.

IV. GC/MS INSTRUMENT PERFORMANCE CHECK
The BFB (VOA) 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 QAPP of 70 – 130% for VOA and 45-135% for SVOA base/neutral fraction or 35-140% for the acid fraction. For SVOA, one surrogate per fraction is allowed to be at 15 – 150%.
Yes __X___ No ____

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A. 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 _____ No _X____
There were no MS/MSD pairs designated on the chains nor analyzed by the laboratory for these samples. This is an insufficient frequency for the number of field samples, but these samples are part of an ongoing program and the project manager will assess the overall matrix accuracy and precision.

B. The MS and MSD percent recoveries were within the limits defined in the QAPP of VOA at 70 – 130% with 5 compounds allowed to be within 60 – 140%; SVOA at 45- 135%, 5 compounds allowed to be at 15 – 150%. Reject non-detects at < 15% for SVOA.
Yes _____ No ____NA__X_

C. The MSD relative percent differences (RPD) were within the defined contract limits for VOA of 30% water, 40 soil, with 5 compounds allowed to be < 40%.RPD; for SVOA of 50% for water and 60% for soil and 5 compounds allowed to be > 60% RPD.
Yes ____ No ____NA__X__

D. The MS/MSD were client samples.
Yes ___ No ____NA__X__

VIII. LABORATORY CONTROL SAMPLE
A. Laboratory Control Samples (LCS) was analyzed for every analysis performed and for every 20 samples.
Yes __X__ No ____

B. The LCS percent recoveries were within the limits defined in the QAPP for VOA of 80-120% for water and 75 – 125% for soil. Five compounds are allowed to be 60 – 140%. No soil limits are defined in the QAPP and laboratory limits will be applied. If an LCS and LCSD are analyzed, both samples must have the same compounds out for data to be qualified.
Yes ___X___ No ______
The full target list has been spiked. Only an LCS was reported. Usually and LCS duplicate is reported when there is no MS/MSD pair. This is not a violation of the method, but it is noted.

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_X___ No ____
Whenever methylene chloride, acetone, 2-butanone or phthalate esters are detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UMB#, where # is the corrected method blank level. Such results are usable as nondetects. For other targets, the factor used is 5x.

C. If Field Blanks were identified, no blank contamination was found.
Yes__X__ No ____
There was 1 trip blank, which was non-detect.

X. FIELD QC
If Field duplicates were identified, they met guidance for VOA of RPD of < 35% for water or < 50% for soils. For SVOA < 50% RPD for water, no soils RPD is defined in the QAPP. 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 ___ No __X_ NA____

There are no identified field duplicates.

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____

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:

General Deliverables and Data Packages
This report has been requested to include the following review: Holding times and sample integrity (chains of custody, sample log in), Calibrations, Summary QC.

Chain of Custody:
No qualifiers have been added for chain of custody issues and the project manager will update chains per the following notes to complete the project record.

There is a gap from collection to laboratory receipt that is verified by a tracking number on the Cooler Inspection Form. There is no carrier identified however. The carrier needs to be added to the chain of custody as a step in the relinquishment process.

Sample Condition:
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6^{o} C. The sample receipt conditions are fully compliant with applicable regulations.
The trip blank is noted as containing headspace > 6 mm. As these samples are not expected to initially contain any compounds, there is not expected to be any loss of compounds.

Matrix Spikes:

There were no MS/MSD pairs designated on the chains nor analyzed by the laboratory for these samples. This is an insufficient frequency for the number of field samples, but these samples are part of an ongoing program and the project manager will assess the overall matrix accuracy and precision.

Field Blanks:
There was 1 trip blank, which was non-detect.

Field QC:
There are no identified field duplicates.

ORGANIC DATA QUALITY REVIEW REPORT
VOLATILE ORGANICS SW-846 METHOD 8260B
8260B/5030B

SDG: L10080386, L10080210

PROJECT: Memphis Defense Depot, Deep Wells for e2m/HDR, Denver Project # 121842-005

LABORATORY: Microbac Laboratories, Inc., Marietta, OH

SAMPLE MATRIX: Water

SAMPLING DATE (Month/Year): August 2010

NO. OF SAMPLES: 6 aqueous samples; including 2 trip blanks

ANALYSES REQUESTED: SW-846 8260B

SAMPLE NO.: MW-255-BASELINE-1, MW-256- BASELINE-1, MW-254-BASELINE-1, DRILL FLUID-1, TB-8-9-10, TB-081610

DATA REVIEWER: Diane Short

QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: ____________________

Telephone Logs included Yes____ No _X__

Contractual Violations Yes____ No _X___

The project QAPP (11/05), the EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 1999 and 2001, and the SW-846 Method 8260B 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 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 report has been requested to include the following review: Holding times and sample integrity (chains of custody, sample log in), Calibrations, Summary QC.

B. Chain of Custody Documentation was complete and accurate.
Yes __X__ No ___
No qualifiers have been added for chain of custody issues and the project manager will update chains per the following notes to complete the project record.

There is a gap from collection to laboratory receipt that is verified by a tracking number on the Cooler Inspection Form. There is no carrier identified however. The carrier needs to be added to the chain of custody as a step in the relinquishment process.
In SDG L10080386, Drill Fluid-1 was collected on 8/1/10 and the other samples on 8/9/10. A tracking of the proper cooling and storage of this sample, away from any volatile substances, should be present in the project documentation.

C. Samples were received at the required temperature, preservation and intact with no bubbles.
Yes _____ No __X__
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6^{o} C. The sample receipt conditions are fully compliant with applicable regulations.
Both the trip blanks are noted as containing headspace > 6 mm. As these samples are not expected to initially contain any compounds, there is not expected to be any loss of compounds.

II. ANALYTICAL REPORT FORMS
A. The Analytical Report or Data Sheets are present and complete for all requested analyses.
Yes _X_ 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 __X___ 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 _X__ 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 >0.01 for volatiles and 0.05 for semi-volatiles.
Yes __X__ No ____ NA____
Method 8260: Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common “poor responders”. Acetone, 1,2-dibromo-3-chloropropane and 4-methyl-2-pentanone are the compounds for which any calibration response factors below 0.05 have been observed. The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the

spectral verification is available, the data are not qualified for response >0.01 < 0.05. No data have been qualified.

Most of the low-responding compounds are highly water-soluble and capable of hydrogen bonding with water. This decreases their purge efficiency and results in the relatively low response. The implication of this low purge efficiency is that a relatively low absolute recovery of such compounds is achieved in the purge step of the analysis. If this recovery is consistent, reasonable accuracy and precision can be achieved in a given matrix, which is indicated for the lab matrix by acceptable recoveries in LCS and calibration checks. However, this causes these targets to be more sensitive to matrix variations that impact purge efficiency (such as ionic strength or the presence of varying levels of soluble non-target organic material) than are the more hydrophobic compounds typically analyzed by this method, and as a result they are more likely to exhibit matrix bias.

2a.The relative standard deviation (RSD) for the five point calibration was within the 30% limit for the CCCs.
Yes _X__ 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, the average %RSD was <15%, or a linear curve was used.
Yes __X___ No ____ NA____

3. The 12 hour system Performance Check was performed as required in SW-846.
Yes __X__ No_____ NA____
An ICV is also reported with each batch and instrument. It has the same outliers as the LCS and in the same range, so data have been qualified per the results listed in the LCS section.

B. Continuing Calibrations
1. The midpoint standard was analyzed for each analysis at the required frequency and the QC criteria of > 0.05 (.01 for CLP 2001 VOA) were met.
Yes __X___ No ____ NA____

2. The percent difference (%D) limits of ± 25% were met. The 2001 NFG also allow for 40% D for the poor responders (pr). For other compounds the QAPP notes rejection of detected compounds with %D > 40%.
Yes __X___ No ____ NA___
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 or for a high recovery for undetected compounds as long as response factors are acceptable.
For the 8/17/10 CCAL, carbon disulfide was reported with a high bias at 39.5%D. Data for TB081610 are qualified JC39.5, where # is the %D. There could be variability to the data as there is variability to the response.
The QAPP indicates that compounds in a run should be rejected if the %D is > 40%. We interpret this to mean that non-detects should be rejected and that detected targets should be J-qualified, which is the normal validation process for rejection. No data have been outside the noted criteria and no qualifiers are applied.

IV. GC/MS INSTRUMENT PERFORMANCE CHECK
The BFB (VOA) 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 QAPP of 70 – 130% for VOA and 45-135% for SVOA base/neutral fraction or 35-140% for the acid fraction. For SVOA, one surrogate per fraction is allowed to be at 15 – 150%.
Yes __X___ No ____

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE
A. 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 _____ No _X____
There were no MS/MSD pairs designated on the chains nor analyzed by the laboratory for these samples. This is due to 'insufficient volume' collected for QC samples. This is an insufficient frequency for the number of field samples.

B. The MS and MSD percent recoveries were within the limits defined in the QAPP of VOA at 70 – 130% with 5 compounds allowed to be within 60 – 140%; SVOA at 45- 135%, 5 compounds allowed to be at 15 – 150%. Reject non-detects at < 15% for SVOA.
Yes _____ No ____NA__X_

C. The MSD relative percent differences (RPD) were within the defined contract limits for VOA of 30% water, 40 soil, with 5 compounds allowed to be < 40%.RPD; for SVOA of 50% for water and 60% for soil and 5 compounds allowed to be > 60% RPD.
Yes ____ No ____NA__X__

D. The MS/MSD were client samples.
Yes ___ No ____NA__X__

VIII. LABORATORY CONTROL SAMPLE
A. Laboratory Control Samples (LCS) was analyzed for every analysis performed and for every 20 samples.
Yes __X__ No ____

B. The LCS percent recoveries were within the limits defined in the QAPP for VOA of 80-120% for water and 75 – 125% for soil. Five compounds are allowed to be 60 – 140%. No soil limits are defined in the QAPP and laboratory limits will be applied. If an LCS and LCSD are analyzed, both samples must have the same compounds out for data to be qualified.
Yes ______ No __X____
The full target list has been spiked. When a high LCS recovery is associated with a non-detect (ND) 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. Data could be biased high or low proportional to the LCS %R. All results associated with low recoveries are qualified. Dichlorodifluoromethane is consistently high in the ICV and the LCS standards. The compound has not been detected and data are not qualified for high recovery.

The table below shows the outliers and the limits applied per the QAPP. The limits are specified per matrix. The LCS/LCSD recoveries are outside of the marginal exceedance limits (60-140).

SDG/ WG#	Compound	LCS/ LCSD %R	Qualifier
L10080386/ 339950	Carbon disulfide	155/ 154	JL155
	MTBE	130/ 130	None, all ND

	Vinyl chloride	146/ 138	None, ND
	Dichlordifluoromethane	131/ 124	None, ND
L100080210/339493	Carbon disulfide	73.7/ 67.4	JL67, all data
	Trichlorfluoromethane	122/ 112	None, ND
	Bromodichloromethane	122/115	None, both need to out

Lab ID	**Client ID**	**compound**	**Conc ug/l**	**Flag**	**RL**	**MDL**	**Qualifier**
L10080386-02	TB-081610	Carbon disulfide	0.752	Q	1	0.5	JL155
L10080210	MW-255-Baseline-1	Carbon disulfide		U	1	0.5	JL67
	MW-256-Baseline-1	Carbon disulfide		U	1	0.5	JL67
	Drill Fluid-1	Carbon disulfide		U	1	0.5	JL67
	TB-8-9-10	Carbon disulfide		U	1	0.5	JL67

In each case, the laboratory analyzed both an LCS and an LCSD as there was no MS/MSD. In such cases, per the QAPP only results in which both recoveries are out of limits are qualified.

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___
Methylene chloride was detected in some method blanks. Whenever methylene chloride, acetone, 2-butanone or phthalate esters are detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UMB#, where # is the corrected method blank level. Such results are usable as nondetects. For other targets, the factor used is 5x.

SDG	**Compound**	**Result ug/l**	**Flag**	**RL**	**MDL**	**Qualifier Sample**
L10080210	Methylene chloride	0.583	F	1	0.25	UMB.58, TB-081610
L10080386	Hexachlorobutadiene	0.407	F	.6	.25	None, ND

C. If Field Blanks were identified, no blank contamination was found.
Yes____ No __X__
There are 2 trip blanks (TB in the client ID) for 8260. There are detections observed below the reporting limit in the trip blanks. When analytes are present in both the field blank and the associated samples, the results in the samples are qualified in the same manner as for method blanks. For clarity, the qualifiers used in this case are UTB# for trip blanks and URB# for rinse blanks, where # is the associated blank value. No qualifiers added are shown in the table below. Results so qualified are usable as non-detects.

SDG	**Client ID**	**Compound**	**Result ug/l**	**Flag**	**RL**	**MDL**	**Qualifier**
L10080210	TB-081610	Carbon disulfide	3.09	F	1.0	0.5	None, ND
		Methylene chloride	0.308 UMB.58	F	1	0.25	None, UB from MB
L10080386		Carbon disulfide	.752	F	1.0	0.5	None, ND
		Methylene chloride	0.415	F	1	0.25	None, ND

X. FIELD QC
If Field duplicates were identified, they met guidance for VOA of RPD of < 35% for water or < 50% for soils. For SVOA < 50% RPD for water, no soils RPD is defined in the QAPP. 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 ___ No __X_ NA____
There are no identified field duplicates.

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____

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:

<u>General Deliverables and Data Packages</u>
This report has been requested to include the following review: Holding times and sample integrity (chains of custody, sample log in), Calibrations, Summary QC.

<u>Chain of Custody:</u>
No qualifiers have been added for chain of custody issues and the project manager will update chains per the following notes to complete the project record.

There is a gap from collection to laboratory receipt that is verified by a tracking number on the Cooler Inspection Form. There is no carrier identified however. The carrier needs to be added to the chain of custody as a step in the relinquishment process.
In SDG L10080386, Drill Fluid-1 was collected on 8/1/10 and the other samples on 8/9/10. A tracking of the proper cooling and storage of this sample, away from any volatile substances, should be present in the project documentation.

Sample Condition:
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6^{o} C. The sample receipt conditions are fully compliant with applicable regulations.
Both the trip blanks are noted as containing headspace > 6 mm. As these samples are not expected to initially contain any compounds, there is not expected to be any loss of compounds.

Initial Calibration:
Method 8260: Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common "poor responders". Acetone, 2-butanone, and 4-methyl-2-pentanone are the compounds for which any calibration response factors below 0.05 have been observed. The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response >0.01 < 0.05. No data have been qualified.
An ICV is also reported with each batch and instrument. It has the same outliers as the LCS and in the same range, so data have been qualified per the results listed in the LCS section.

Continuing Calibration:
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 or for a high recovery for undetected compounds as long as response factors are acceptable.
For the 8/17/10 CCAL, carbon disulfide was reported with a high bias at 39.5%D. Data for TB081610 are qualified JC39.5, where # is the %D. There could be variability to the data as there is variability to the response.

Matrix Spikes:
There were no MS/MSD pairs designated on the chains nor analyzed by the laboratory for these samples. This is due to 'insufficient volume' collected for QC samples. This is an insufficient frequency for the number of field samples.

Method Blanks:
Methylene chloride was detected in some method blanks. Whenever methylene chloride, acetone, 2-butanone or phthalate esters are detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UMB#, where # is the corrected method blank level. Such results are usable as nondetects. For other targets, the factor used is 5x.

SDG	Compound	Result ug/l	Flag	RL	MDL	Qualifier Sample
L10080210	Methylene chloride	0.583	F	1	0.25	UMB.58, TB-081610
L10080386	Hexachlorobutadiene	0.407	F	.6	.25	None, ND

Field Blanks:
There are 2 trip blanks (TB in the client ID) for 8260. There are detections observed below the reporting limit in the trip blanks. When analytes are present in both the field blank and the associated samples, the results in the samples are qualified in the same manner as for method blanks. For clarity, the qualifiers used in this case are UTB# for trip blanks and URB# for rinse blanks, where # is the associated blank value. No qualifiers added are shown in the table below.

LCS Recoveries:
The full target list has been spiked. When a high LCS recovery is associated with a non-detect (ND) 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. Data could be biased high or low proportional to the LCS %R. All results associated with low recoveries are qualified.

The table below shows the outliers and the limits applied per the QAPP. The limits are specified per matrix. The LCS/LCSD recoveries are outside of the marginal exceedence limits (60-140).

SDG/ WG#	Compound	LCS/ LCSD %R	Qualifier
L10080386/ 339950	Carbon disulfide	155/ 154	JL155
	MTBE	130/ 130	None, all ND
	Vinyl chloride	146/ 138	None, ND
	Dichlordifluoromethane	131/ 124	None, ND
L100080210/339493	Carbon disulfide	73.7/ 67.4	JL67, all data
	Trichlorfluoromethane	122/ 112	None, ND
	Bromodichloromethane	122/115	None, both need to be out

Field QC:
There are no identified field duplicates.

ORGANIC DATA QUALITY REVIEW REPORT
VOLATILE ORGANICS SW-846 METHOD 8260B
8260B/5030B

SDG: L10100252, L10100302, L10100407, L10100482, L10100199

PROJECT: Memphis Defense Depot , LB-12 Sampling for e2m, Denver

LABORATORY: Microbac Laboratories, Inc., Marietta, OH

SAMPLE MATRIX: Water

SAMPLING DATE (Month/Year): October 2010

NO. OF SAMPLES: 8260B: 140 aqueous samples; including 11 trip blanks,12 field duplicates

ANALYSES REQUESTED: SW-846 8260B

SAMPLE NO.: See attached result forms and associated EDD

DATA REVIEWER: Sammy Huntington and John Huntington

QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: ___________

Telephone Logs included Yes____ No _X__

Contractual Violations Yes____ No _X___

The project QAPP (11/05), the EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 1999 and 2001, and the SW-846 Method 8260B and 8270C 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 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 report has been requested to include the following review: Holding times and sample integrity (chains of custody, sample log in), Calibrations, Summary QC.

B. Chain of Custody Documentation was complete and accurate.

Yes __X__ No ___

No qualifiers have been added for chain of custody issues and the project manager will update chains per the following notes to complete the project record.

For both the projects, only the first page of the chain of custody documents were signed and dated by the laboratory. These are electronically-generated chain of custody documents, and there may be electronic signatures for these which we are not able to review. In addition, there are sample receipt acknowledgements from the laboratory. However, the hardcopy documents should be properly signed and dated by the laboratory on each page.

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

Yes ______ No ___X_

EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6^{o} C. The sample temperature conditions are fully compliant with applicable regulations.

SDG L10100252: The laboratory notes that one of 3 vials of ID DR2-6-LB-12 was received broken.
SDG L10100302: The laboratory notes that TB-101310-LB-12 had headspace > 6 mm in all three vials.
SDG L10100407: The laboratory notes that TB-101510-LB-12 and TB-101910-LB-12 had headspace > 6 mm in all three vials.
SDG L10100482: The laboratory notes that TB-101810-LB-12 and TB-1015810-LB-12 had headspace > 6 mm in all three vials.

The excessive headspace in the trip blanks could bias the results for trip blanks.
SDG L10100199: The laboratory has noted that one vial for the field duplicate DUP-10-LB-12 was received broken. However, the analysis was completed using the remaining intact vials.

II. ANALYTICAL REPORT FORMS

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

Yes _X_ 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 __X___ 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 _X__ 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 >0.01 for volatiles and 0.05 for semi-volatiles.

Yes __X__ No ____ NA____

Method 8260: Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common "poor responders". Acetone, 2-butanone, and 4-methyl-2-pentanone are the compounds for which any calibration response factors below 0.05 have been observed. The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response >0.01 < 0.05. No data have been qualified.

Most of the low-responding compounds are highly water-soluble and capable of hydrogen bonding with water. This decreases their purge efficiency and results in the relatively low response. The implication of this low purge efficiency is that a relatively low absolute recovery of such compounds is achieved in the purge step of the analysis. If this recovery is consistent, reasonable accuracy and precision can be achieved in a given matrix, which is indicated for the lab matrix by acceptable recoveries in LCS and calibration checks. However, this causes these targets to be more sensitive to matrix variations that impact purge efficiency (such as ionic strength or the presence of varying levels of soluble non-target organic material) than are the more hydrophobic compounds typically analyzed by this method, and as a result they are more likely to exhibit matrix bias.

2a.The relative standard deviation (RSD) for the five point calibration was within the 30% limit for the CCCs.
Yes _X__ 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, the average %RSD was <15%, or a linear curve was used.
Yes __X___ No ____ NA____

3. The 12 hour system Performance Check was performed as required in SW-846.
Yes __X__ 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 (.01 for CLP 2001 VOA) were met.
Yes __X___ No ____ NA____

2. The percent difference (%D) limits of $\pm$ 25% were met. The 2001 NFG also allow for 40% D for the poor responders (pr). For other compounds the QAPP notes rejection of detected compounds with %D > 40%.
Yes _____ No __X__ 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 or for a high recovery for undetected compounds. Data are qualified JC#, where # is the %D. There could be variability to the data as there is variability to the response. This requires that the RF is acceptable to verify the non-detect status, which is the case here.

The QAPP indicates that compounds in a run should be rejected if the %D is > 40%. We interpret this to mean that non-detects should be rejected and that detected targets should be J-qualified, which is the normal validation process for rejection. Professional judgment is that high bias CCVs with a %D above 40% should not be rejected for non-detects if the response factors are sufficient to ensure verification of the non-detect (as is the case here). Nonetheless, non-detects with %D values > 40% have been qualified as RC#, where # is the % D observed.

Method 8260 Outliers: The table below shows the outliers observed in CCVs for this method.

SDG	Batch	Analyte	%D	Bias	Qualifier
L10100252		All OK			None
L10100302	WG345886	Bromomethane	41.6	Low	RC42
	WG345910	Bromomethane	27.3	Low	None, ND
	WG346513	Chloroethane	37.9	High	None, ND
L10100407	WG346213	Bromomethane	43.1	Low	RC43
	WG346351	Chloromethane	62.2	High	RC62 ND, JC62 detect
	WG346436	Chloroethane	47.1	High	RC47
	WG346468	Bromomethane	62.6	Low	RC63
L10100482		All OK			None
L10100199	WG345594	Bromomethane	27..8	Low	None, samples ND
	WG345598	Chloroethane	26.5	High	None, samples ND
	WG345598	Chloroethane	37.7	High	None, samples ND
	WG345714	Chloroethane	37.7	High	None, samples ND

IV. GC/MS INSTRUMENT PERFORMANCE CHECK

The BFB (VOA) and 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 QAPP of 70 – 130% for VOA and 45-135% for SVOA base/neutral fraction or 35-140% for the acid fraction. For SVOA, one surrogate per fraction is allowed to be at 15 – 150%.
Yes _____ No __X__
Several surrogates were out of limits on the high side. Associated detections are qualified as JS#, where # is the recovery, and may be biased high approximately relative to the recovery observed. Non-detects are not qualified for elevated recoveries of surrogates.

SDG	Sample	Lab ID	Batch	Analyte	%R	Qualifier
L10100252	MW-214A-LB-12	L10100252-25	WG345888	1,2-Dichloroethane-d4	131	JS131 detects
L10100482	MW93-LB-12	L10100482-02	WG346634	1,2-Dichloroethane-d4	138	None, all ND
L10100482	PMW101-04A-LB-12	L10100482-04	WG346634	1,2-Dichloroethane-d4	122	JS122 detects

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A. 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 _____ No _____

There are 4 MS/MSDs for 86 non-QC client samples. This does not meet the recommendation of 1 per 20 field samples. As this is an ongoing project an overall adherence to the 1:20 frequency is monitored by the project manager.

The laboratory does run other MS/MSDs that are not associated with this project in some of the run batches to fulfill the method QC criteria.

SDG	Client Sample ID	Lab Sample ID
L10100252	MW-199A-LB-12	L10100252-22
L10100302	MW210B-LB-12	L10100302-30
L10100407	MW101T-LB-12	L10100407-23
	MW53-LB-12	L10100407-08
L10100199	DR1-2-LB-12MS	L10100199-12
	PMW92-06-LB-12MS	L10100199-08

B. The MS and MSD percent recoveries were within the limits defined in the QAPP of VOA at 70 – 130% with 5 compounds allowed to be within 60 – 140%; SVOA at 45- 135%, 5 compounds allowed to be at 15 – 150%. Reject non-detects at < 15% for SVOA.
Yes _____ No __X__NA___
The full target list has been spiked.

All data having recovery outliers out of QAPP limits have been qualified and the project manager will make the decision regarding which qualifiers can be removed per the 5 compound allowances.

Outliers observed per the QAPP limits for Method 8260 MS/MSD runs are shown in the table below. No qualifiers are required when recoveries are high and associated with non-detected targets.

SDG	Parent	Analyte	Sample Result ug/l	%MS	%MSD	MS bias	MSD bias	Qualifiers
L10100252	MW-199A-LB-12	Dichlorodifluoromethane	U	162	174	high	high	None, ND
L10100302	MW210B-LB-12	Chloromethane	U	147	149	high	high	None, ND
		Vinyl Chloride	U	145	140	high	high	None, ND
L10100407	MW101T-LB-12	Dichlorodifluoromethane	U	172	169	high	high	None, ND
L10100199	PMW92-06-LB-12	Carbon Disulfide	U	143	195	high	high	None, ND
		Carbon tetrachloride	110	8	-16	NA	NA	None, 4x
		cis-1,2-dichloroethene	69.5	53	OK	Low	NA	JMS53
		Trichloroethene	33	69.4	OK	Low	NA	JMS69
		Tetrachloroethene	141	-72	-32	NA	NA	None, 4X
	DR1-2-LB-12	Chloroethane	U	134	134	High	High	None, ND

C. The MSD relative percent differences (RPD) were within the defined contract limits for VOA of 30% water, 40 soil, with 5 compounds allowed to be < 40%.RPD; for SVOA of 50% for water and 60% for soil and 5 compounds allowed to be > 60% RPD.
Yes __X__ No ____NA____
Qualifiers are added only when the MS or MSD recovery is also out of limits. Data are qualified JD#, where # is the RPD. As the RPD increases, the matrix precision decreases.

D. 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 __X__ No ____

B. The LCS percent recoveries were within the limits defined in the QAPP for VOA of 80-120% for water and 75 – 125% for soil. Five compounds are allowed to be 60 – 140%. For SVOA 60 -120 for PAH and phthalates, 20 – 150% for phenols and amines. All other compounds 45 – 135% with 5 compounds allowed to be 15 – 150%. No soil limits are defined in the QAPP and laboratory limits will be applied. If an LCS and LCSD are analyzed, both samples must have the same compounds out for data to be qualified.
Yes ______ No __X____
The full target list has been spiked. When a high LCS 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. Data could be biased high proportional to the LCS %R. All results associated with low recoveries are qualified and data could be biased low. .

The table below shows the outliers and the limits applied per the QAPP. The limits are specified per matrix. Several recoveries are outside of the marginal exceedance limits (60-140). Qualifiers are added for all outliers as described here but the project manager may consider reversing some of these when the limits fall within the marginal exceedance limits. Please see the project EDD for a detailed list of qualifiers added.

SDG	Batch	Analytes	LCS % REC	LCSD % REC	LCS Bias	LCSD Bias	Qualifiers Required
L10100252	WG345780	Dichlorodifluoromethane	176	NA	High		None, ND
	WG345812	Bromomethane	73	78	Low	Low	JL73
	WG345873	Chloroethane		126		High	None, only LCSD out
	WG345873	Dichlorodifluoromethane	196	208	High	High	None, ND
	WG345873	Trichlorofluoromethane		122		High	None, only LCSD out
L10100252, L10100302	WG345888	Carbon Disulfide		77		Low	None, only LCSD out
	WG345888	Dichlorodifluoromethane	214	180	High	High	None, ND
L10100302	WG345886	Bromodichloromethane	121	124	High	High	None, ND
	WG345886	Bromomethane	57	66	Low	Low	JL57
	WG345886	Chloromethane	129	138	High	High	JL138 detect
	WG345886	Dichlorodifluoromethane	136	128	High	High	None, ND
	WG345886	Vinyl Chloride	133	139	High	High	None, ND
	WG345918	Bromodichloromethane	123	NA	High		None, ND
	WG345918	Bromomethane	75	NA	Low		JL75
	WG345918	Chloromethane	141	NA	High		JL141 detect
	WG345918	Dichlorodifluoromethane	134	NA	High		None, ND
	WG345918	Vinyl Chloride	144	NA	High		JL144 detections
	WG346065	2-Hexanone	77	NA	Low		JL77
	WG346065	Acetone	74	NA	Low		JL74
	WG346065	Dichlorodifluoromethane	214	NA	High		None, ND
L10100302,	WG346513	Carbon Disulfide		79		Low	None, only LCSD out

SDG	Batch	Analytes	LCS % REC	LCSD % REC	LCS Bias	LCSD Bias	Qualifiers Required
L10100407							
	WG346513	Chloroethane	134	138	High	High	None, ND
	WG346513	Chloromethane	164	171	High	High	JL171 detects
L10100407	WG346156	Dichlorodifluoromethane	201	NA	High		None, ND
	WG346213	1,1,2,2-Tetrachloroethane	NA	121		High	None, only LCSD out
	WG346213	1,2,3-Trichloropropane	121		High		None, only LCS out
	WG346213	Bromodichloromethane	122	124	High	High	None, ND
	WG346213	Bromomethane	58	65	Low	Low	JL59
	WG346213	Chloromethane	121	126	High	High	None, ND
	WG346213	Dichlorodifluoromethane		128		High	None, only LCSD out
	WG346213	Vinyl Chloride	124	130	High	High	None, ND
	WG346351	Chloroethane	139	NA	High		None, ND
	WG346351	Chloromethane	170	NA	High		JL170 detect
	WG346351	Dichlorodifluoromethane	127	NA	High		JL127 detect
	WG346436	Chloroethane	139	141	High	High	None, ND
	WG346436	Chloromethane	176	178	High	High	None, ND
	WG346436	Dichlorodifluoromethane	124	125	High	High	None, ND
	WG346468	Bromodichloromethane	123	NA	High		None, ND
	WG346468	Bromomethane	54	NA	Low		None, ND
	WG346468	Carbon Tetrachloride	122	NA	High		JL122 detects
	WG346468	Dichlorodifluoromethane	122	NA	High		None, ND
	WG346468	Vinyl Chloride	127	NA	High		None, ND
L10100407, L10100482	WG346520	Carbon Disulfide	74	NA	Low		JL74
	WG346520	Dichlorodifluoromethane	184	NA	High		None, ND
L10100482	WG346634	1,1,1-Trichloroethane		122		High	None, only LCSD out
	WG346634	1,1,2-Trichloroethane		121		High	None, only LCSD out
	WG346634	1,2,3-Trichloropropane		126		High	None, only LCSD out
	WG346634	1,2-Dibromo-3-Chloropropane		141		High	None, only LCSD out
	WG346634	1,2-Dibromo-3-Chloropropane	123		High		None, only LCS out
	WG346634	1,2-Dibromoethane		123		High	None, only LCSD out
	WG346634	1,2-Dichloroethane		139		High	None, only LCSD out
	WG346634	1,3-Dichloropropane		121		High	None, only LCSD out
	WG346634	2,2-Dichloropropane		126		High	None, only LCSD out
	WG346634	2-Butanone		149		High	None, only LCSD out
	WG346634	2-Butanone	123		High		None, only LCS out
	WG346634	2-Hexanone		134		High	None, only LCSD out
	WG346634	4-Methyl-2-Pentanone		129		High	None, only LCSD out

SDG	Batch	Analytes	LCS % REC	LCSD % REC	LCS Bias	LCSD Bias	Qualifiers Required
	WG346634	Acetone		125		High	None, only LCSD out
	WG346634	Bromodichloromethane		123		High	None, only LCSD out
	WG346634	Bromoform		122		High	None, only LCSD out
	WG346634	Carbon Disulfide	68		Low		None, only LCS out
	WG346634	Carbon Tetrachloride		124		High	None, only LCSD out
	WG346634	Dibromochloromethane		124		High	None, only LCSD out
	WG346634	Dibromomethane		123		High	None, only LCSD out
	WG346634	Dichlorodifluoromethane		184		High	None, only LCSD out
	WG346634	Dichlorodifluoromethane	162	High			None, only LCS out
	WG346634	tert-Butyl Methyl Ether		131		High	None, only LCS out
	WG346634	Trichlorofluoromethane		125		High	None, only LCS out
	WG346634	Vinyl Chloride		122		High	None, only LCS out
L10100199	WG345873	Dichlorodifluoromethane	196	208	High	High	JL208 detect
L10100199	WG345873	Trichlorofluoromethane	OK	122	NA	High	None, only one out
		Chloroethane	OK	126	NA	High	None, ND
	WG345598	Chloromethane	131	NA	High	NA	None, ND
		Dichlorodifluoromethane	130	NA	High	NA	None, ND
	WG345594	Dichlorodifluoromethane	130	NA	High	NA	None, ND
		Chloroethane	125	NA	High	NA	None, ND
		Chloromethane	139	NA	High	NA	None, ND
	WG345203	Dichlorodifluoromethane	131	NA	High	NA	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___

Methylene chloride was detected in some method blanks. Whenever methylene chloride, acetone, 2-butanone or phthalate esters are detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UMB#, where # is the corrected method blank level. Such results are usable as nondetects. For other targets, the factor used is 5x. In this case, chlorobenzene and trichloroethene were detected in some method blanks and are qualified as shown in the table below.

Method 8260 Method Blank Detections:

SDG	Batch	Analytes	Conc	Qualifier
L10100302	WG345918	Methylene Chloride	0.272	None, ND
L10100407	WG346156	Methylene Chloride	0.489	None, ND
L10100407	WG346520	Chlorobenzene	0.276	UMB.28 detects
L10100407	WG346213	Methylene Chloride	0.474	None, ND

L10100407	WG346351	Trichloroethene	1.14	UMB1.1 detects < 5x MB
L10100407	WG346436	Trichloroethene	0.401	None, ND
L10100407	WG346436	Trichloroethene	0.474	None, ND
L10100407	WG346213	Methylene Chloride	0.389	None, ND
L10100482	WG346520	Chlorobenzene	0.276	UMB.28 detects
L10100199	WG345598	Chloromethane	0.752	None, ND
L10100199	WG345598	Methylene Chloride	0.475	None, ND

C. If Field Blanks were identified, no blank contamination was found.
Yes____ No __X__
There are 11 trip blanks for 8260. There are detections observed below the reporting limit in the trip blanks. When analytes are present in both the trip blank and the associated samples, the results in the samples are qualified in the same manner as for method blanks. For clarity, the qualifiers used in this case are UTB# for trip blanks and UFB# for rinse blanks, where # is the associated blank value. Qualifiers added are shown in the table below. Results so qualified are usable as non-detects.

SDG	Sample ID	Analyte	Result	Qualifier
L10100252	TB-101110-LB-12	Carbon Disulfide	0.656J	None, ND
L10100252	TB-101210-LB-12	Carbon Disulfide	1.31	None, ND
L10100252	TB-101210-LB-12	Chloromethane	1.09	UTB1.09 detect
L10100252	TB-101210-LB-12	Methylene Chloride	0.268J	None, ND
L10100302	TB-101310-LB-12	Methylene Chloride	0.363J	None, ND
L10100302	TB-101410-LB-12	Carbon Disulfide	0.585J	None, ND
L10100302	TB-101410-LB-12	Chloromethane	0.536J	UTB.54 detect
L10100407	TB-101910-LB-12	1,4-Dichlorobenzene	0.186J	UTB.19 detect
L10100482	TB-101510-LB-12	Chlorobenzene	0.142J	U from MB
L10100482	TB-101810-LB-12	Chlorobenzene	0.133J	U from MB
L10100482	TB-101810-LB-12	Methylene Chloride	0.373J	UTB.37 detect
L10100199	TB-100610-LB-12	Methylene Chloride	0.352J	None, ND
L10100199	TB-100810-LB-12	Carbon Disulfide	0.896J	UTB.9 detect
L10100199	TB-100810-LB-12	Chloromethane	0.837J	None, ND

X. FIELD QC

If Field duplicates were identified, they met guidance for VOA of RPD of < 35% for water or < 50% for soils. For SVOA < 50% RPD for water, no soils RPD is defined in the QAPP. 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 12 identified field duplicates, in control.

SDG	Parent	Field Dup	Observations
L10100252	MW64 -LB-12	DUP-2-LB-12	OK
L10100252	MW96 -LB-12	DUP-3-LB-12	OK
L10100252	MW104 -LB-12	DUP-4-LB-12	OK
L10100252	MW-204A-LB-12	DUP-6-LB-12	OK
L10100302	MW38 -LB-12	DUP-1-LB-12	OK
L10100302	MW-197A-LB-12	DUP-5-LB-12	OK

SDG	Parent	Field Dup	Observations
L10100302	MW-209A-LB-12	DUP-7-LB-12	OK
L10100407	MW-215B-LB-12	DUP-8-LB-12	OK
L10100482	PZ-06 -LB-12	DUP-12-LB-12	OK
L10100199	MW-256-LB-12	DUP-9-LB-12	OK
L10100199	DR1-7-LB-12	DUP-10-LB-12	OK
L10100199	PMW21-03-LB-12	DUP-11-LB-12	OK

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____

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:

<u>Chain of Custody:</u>
No qualifiers have been added for chain of custody issues and the project manager will update chains per the following notes to complete the project record.

For both the projects, only the first page of the chain of custody documents were signed and dated by the laboratory. These are electronically-generated chain of custody documents, and there may be electronic signatures for these which we are not able to review. In addition, there are sample receipt acknowledgements from the laboratory. However, the hardcopy documents should be properly signed and dated by the laboratory on each page.

<u>Sample Preservation:</u>
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6^{o} C. The sample receipt conditions are fully compliant with applicable regulations.

SDG L10100252: The laboratory notes that one of 3 vials of ID DR2-6-LB-12 was received broken.
SDG: L10100199: The laboratory has noted that one vial for the field duplicate DUP-10-LB-12 was received broken. However, the analysis was completed using the remaining intact vials.

SDG L10100302: The laboratory notes that TB-101310-LB-12 had headspace > 6 mm in all three vials.
SDG L10100407: The laboratory notes that TB-101510-LB-12 and TB-101910-LB-12 had headspace > 6 mm in all three vials.
SDG L10100482: The laboratory notes that TB-101810-LB-12 and TB-1015810-LB-12 had headspace > 6 mm in all three vials.

The excessive headspace in the trip blanks could bias the results for trip blanks.

Continuing Calibrations:
See the table within the body of this report. 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 or for a high recovery for undetected compounds. Data are qualified JC#, where # is the %D. There could be variability to the data as there is variability to the response. This requires that the RF is acceptable to verify the non-detect status, which is the case here.

The QAPP indicates that compounds in a run should be rejected if the %D is > 40%. We interpret this to mean that non-detects should be rejected and that detected targets should be J-qualified, which is the normal validation process for rejection. Professional judgment is that high bias CCVs with a %D above 40% should not be rejected for non-detects if the response factors are sufficient to ensure verification of the non-detect (as is the case here). Nonetheless, non-detects with %D values > 40% have been qualified as RC#, where # is the % D observed.

Matrix Spikes:
There are 4 MS/MSDs for 86 non-QC client samples. This does not meet the recommendation of 1 per 20 field samples. As this is an ongoing project an overall adherence to the 1:20 frequency is monitored by the project manager.

The laboratory does run other MS/MSDs that are not associated with this project in some of the run batches to fulfill the method QC criteria.

Outliers observed per the QAPP limits for Method 8260 MS/MSD runs are shown in the table within the body of this report. No qualifiers are required when outlier recoveries are high and associated with non-detected targets.

Method Blanks:
Methylene chloride was detected in some method blanks. Whenever methylene chloride, acetone, 2-butanone or phthalate esters are detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UMB#, where # is the corrected method blank level. Such results are usable as nondetects. For other targets, the factor used is 5x. In this case, chlorobenzene and trichloroethene were detected in some method blanks and are qualified as shown in the table within the body of this report.

Field Blanks:
There are 11 trip blanks for 8260. There are detections observed below the reporting limit in the trip blanks. When analytes are present in both the trip blank and the associated samples, the results in the samples are qualified in the same manner as for method blanks. For clarity, the qualifiers used in this case are UTB# for trip blanks and UFB# for rinse blanks, where # is the associated blank value. Qualifiers added are shown in the table within the body of this report. Results so qualified are usable as non-detects.

LCS Recoveries:
The full target list has been spiked. When a high LCS 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. Data could be biased high proportional to the LCS %R. All results associated with low recoveries are qualified and could be biased low.

The table within the body of this report shows the outliers and the limits applied per the QAPP. The limits are specified per matrix. Several recoveries are outside of the marginal exceedance limits (60-140). Qualifiers are added for all outliers as described here but the project manager may consider reversing some of these when the limits fall within the marginal exceedance limits. Please see the project EDD for a detailed list of qualifiers added.

Surrogates:
Several surrogates were out of limits on the high side. Associated detections are qualified as JS#, where # is the recovery, and may be biased high approximately relative to the recovery observed. Non-detects are not qualified for elevated recoveries of surrogates.

Field QC:
There are 12 identified field duplicates, in control.

ORGANIC DATA QUALITY REVIEW REPORT
VOLATILE ORGANICS SW-846 METHOD 8260B
8260B/5030B

SDG: L10120348, L10120289

PROJECT: Memphis Defense Depot , DDMT Sampling for e2m, Denver ; 121803-008, 121842-005

LABORATORY: Microbac Laboratories, Inc., Marietta, OH

SAMPLE MATRIX: Water

SAMPLING DATE (Month/Year): December 2010

NO. OF SAMPLES: 8260B: 8 aqueous samples; including 2 trip blanks, 1 field duplicate

ANALYSES REQUESTED: SW-846 8260B

SAMPLE NO.: MW-252 -DW *, MW-253-DW*, MW-256-DW*, DUP-1-DW-*, TB-120910-DW-*; MW-254-DW-*, MW-255-DW-*, TB-120610-DW, where * is"DEC2010"

DATA REVIEWER: Diane Short

QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: ____________ __01/17,11__

Telephone Logs included Yes____ No _X__

Contractual Violations Yes____ No _X___

The project QAPP (11/05), the EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 1999 and 2001, and the SW-846 Method 8260B and 8270C 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 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 report has been requested to include the following review: Holding times and sample integrity (chains of custody, sample log in), Calibrations, Summary QC.
SDG 10120348: Note that although there are only 5 samples, 2 distinct QC sets on 2 different instruments were submitted for review including initial and continuing calibrations and all QC.

B. Chain of Custody Documentation was complete and accurate.
Yes __X__ No ___
No qualifiers have been added for chain of custody issues and the project manager will update chains per the following notes to complete the project record.

FedEx is noted as the courier. The log-in forms note the airbill tracking number.

Note regarding EDD: The trip blank ID in the EDD is incorrect. It is noted as TB-120610, rather than 120910 per the chain of custody ID.

C. Samples were received at the required temperature, preservation and intact with no bubbles.
Yes ______ No ___X_
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6^{o} C. The sample temperature conditions are fully compliant with applicable regulations.

II. ANALYTICAL REPORT FORMS

A. The Analytical Report or Data Sheets are present and complete for all requested analyses.
Yes _X_ 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 __X___ 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 _X__ 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 >0.01 for volatiles and 0.05 for semi-volatiles.
Yes __X__ No ____ NA____
Method 8260: Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common “poor responders”. Acetone, 2-butanone, and 4-methyl-2-pentanone are the compounds for which any calibration response factors below 0.05 have been observed. The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response >0.01 < 0.05. No data have been qualified.

Most of the low-responding compounds are highly water-soluble and capable of hydrogen bonding with water. This decreases their purge efficiency and results in the relatively low response. The implication of this low purge efficiency is that a relatively low absolute recovery of such compounds is achieved in the purge step of the analysis. If this recovery is consistent, reasonable accuracy and precision can be achieved in a given matrix, which is indicated for the lab matrix by acceptable recoveries in LCS and calibration checks. However, this causes these targets to be more sensitive to matrix variations that impact purge efficiency (such as ionic strength or the presence of varying levels of soluble non-target organic material) than are the more hydrophobic compounds typically analyzed by this method, and as a result they are more likely to exhibit matrix bias.

2a.The relative standard deviation (RSD) for the five point calibration was within the 30% limit for the CCCs.
Yes _X__ 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, the average %RSD was <15%, or a linear curve was used.
Yes __X___ No ____ NA____

3. The 12 hour system Performance Check was performed as required in SW-846.
Yes __X__ 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 (.01 for CLP 2001 VOA) were met.
Yes __X___ No ____ NA____

2. The percent difference (%D) limits of $\pm$ 25% were met. The 2001 NFG also allow for 40% D for the poor responders (pr). For other compounds the QAPP notes rejection of detected compounds with %D > 40%.
Yes __X___ No ____ NA___

IV. GC/MS INSTRUMENT PERFORMANCE CHECK
The BFB (VOA) and 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 QAPP of 70 – 130% for VOA and 45-135% for SVOA base/neutral fraction or 35-140% for the acid fraction. For SVOA, one surrogate per fraction is allowed to be at 15 – 150%.
Yes ___X__ No _____

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE
A. 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 _____

There is one MS/MSD, sample MW-256-DW-DEC2010. This meets the recommendation of 1 per 20 field samples.

B. The MS and MSD percent recoveries were within the limits defined in the QAPP of VOA at 70 – 130% with 5 compounds allowed to be within 60 – 140%; SVOA at 45- 135%, 5 compounds allowed to be at 15 – 150%. Reject non-detects at < 15% for SVOA.
Yes _____ No __X__NA___
The full target list has been spiked.

All data having recovery outliers out of QAPP limits have been qualified and the project manager will make the decision regarding which qualifiers can be removed per the 5 compound allowances. Data are qualified JMS#, where number is the %R. Data could be biased low proportional to the spike recovery.

Outliers observed per the QAPP limits for Method 8260 MS/MSD runs are shown in the table below. No qualifiers are required when recoveries are high and associated with non-detected targets.

SDG	Parent	Analyte	Sample Result ug/l	%MS	%MSD	Qualifiers
L10120348	MW-256-DW-DEC2010	Dichlorodifluoromethane	U	71	68	JMS68

C. The MSD relative percent differences (RPD) were within the defined contract limits for VOA of 30% water, 40 soil, with 5 compounds allowed to be < 40%.RPD; for SVOA of 50% for water and 60% for soil and 5 compounds allowed to be > 60% RPD.
Yes __X__ No ____NA____
Qualifiers are added only when the MS or MSD recovery is also out of limits. Data are qualified JD#, where # is the RPD. As the RPD increases, the matrix precision decreases. No qualifiers were required.

D. 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 __X__ No ____

B. The LCS percent recoveries were within the limits defined in the QAPP for VOA of 80-120% for water and 75 – 125% for soil. Five compounds are allowed to be 60 – 140%. For SVOA 60 -120 for PAH and phthalates, 20 – 150% for phenols and amines. All other compounds 45 – 135% with 5 compounds allowed to be 15 – 150%. No soil limits are defined in the QAPP and laboratory limits will be applied. If an LCS and LCSD are analyzed, both samples must have the same compounds out for data to be qualified.
Yes ______ No __X____
The full target list has been spiked. When a high LCS 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. Data could be biased high proportional to the LCS %R. All results associated with low recoveries are qualified and data could be biased low.

The table below shows the outliers and the limits applied per the QAPP. The limits are specified per matrix. Qualifiers are added for all outliers as described here but the project manager may consider reversing some of these when the limits fall within the marginal exceedance limits. Please see the project EDD for a detailed list of qualifiers added.

SDG	Batch	Analytes	LCS/LCSD % REC	Qualifiers Required
L10120348	351253 Inst. 8	Dichlorodifluoromethane	127	None, ND
		Bromomethane	122	None, ND
		Chloroethane	124	None, ND
		Bromoethane	126	None, ND
		Chloromethane	124	None, ND
		trichlorodifluoromethane	126	None, ND
		Vinyl Chloride	128	None, ND
		trichloroethene	125	JL125
L10120289	351195 Inst. 8	Dichlorodifluoromethane	87.1/79.7	Rounds to 80%, no qualifier applied

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__X_ No ____

C. If Field Blanks were identified, no blank contamination was found.
Yes__X__ No ____
There are 2 trip blanks for 8260.
10120348: There are no detections observed.
10120289: Methylene chloride at 0.550. Data are qualified UTB.550 and are fully usable as non-detected values.

X. FIELD QC
If Field duplicates were identified, they met guidance for VOA of RPD of < 35% for water or < 50% for soils. For SVOA < 50% RPD for water, no soils RPD is defined in the QAPP. 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 is 1 identified field duplicate pair, in control: DUP-1, MW-252-DW. Results are fully comparable.

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____

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:

<u>Chain of Custody:</u>
No qualifiers have been added for chain of custody issues and the project manager will update chains per the following notes to complete the project record.
FedEx is noted as the courier. The log-in forms note the airbill tracking number.

Note regarding EDD: The trip blank ID in the EDD for 10120348 is incorrect. It is noted as TB-120610, rather than 120910 per the chain of custody ID.

<u>Sample Preservation:</u>
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6^{o} C. The sample receipt conditions are fully compliant with applicable regulations.

<u>Matrix Spikes:</u>
There is one MS/MSD, sample MW-256-DW-DEC2010. This meets the recommendation of 1 per 20 field samples.
All data having recovery outliers out of QAPP limits have been qualified and the project manager will make the decision regarding which qualifiers can be removed per the 5 compound allowances. Data are qualified JMS#, where number is the %R. Data could be biased low proportional to the spike recovery. Only dichlorodifluoromethane is qualified JL68.

<u>Field Blanks:</u>
There are 2 trip blanks for 8260.
10120348: There are no detections observed.
10120289: Methylene chloride at 0.550. Data are qualified UTB.550 and are fully usable as non-detected values.

<u>LCS Recoveries:</u>
The full target list has been spiked. When a high LCS 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. Data could be biased high proportional to the LCS %R. All results associated with low recoveries are qualified and could be biased low.

The table within the body of this report shows the outliers and the limits applied per the QAPP. The limits are specified per matrix. Qualifiers are added for all outliers as described here but the project manager may consider reversing some of these when the limits fall within the marginal exceedance limits. Please see the project EDD for a detailed list of qualifiers added. Only trichloroethene is qualified JL125.

Field QC:
There is 1 identified field duplicate pair, in control: DUP-1, MW-252-DW.

APPENDIX E

HISTORICAL CVOC RESULTS

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-16

	Sample Name	MW162	MW163	MW164	MW364	MW165	MW16-63-68BL	MW-16	MW-16-LB-1	MW-16
	Sample Date	6/19/1997	9/23/1997	3/24/1998	3/24/1998	10/16/1998	3/20/2002	5/18/2004	10/16/2006	10/10/2008
Primary CVOCs	Units									
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<10	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<10	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	<10	<10	<10	<10	<10	--	<2	--	--
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<10	<1	<1 J	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<10	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	<1	<1	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<10	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	--	--	--	--	--	<1	<1	<1	<1
Trichloroethene	µg/L	<10	<10	<10	<10	<10	<1	<1	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<10	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-16

Primary CVOCs	Sample Name Sample Date Units	MW-16 10/13/2010
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
1,2-Dichloroethene (Total)	µg/L	--
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	<0.3
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	<1
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	<1
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-19

Primary CVOCs	**Sample Name** / **Sample Date** / Units	MW192 6/18/1997	MW193 9/24/1997	MW194 3/26/1998	MW195 10/17/1998	MW19-90-92BL 3/18/2002	MW-19 5/5/2004	MW-19-LB-1 10/17/2006	MW-19 10/9/2008	MW-19 10/11/2010
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	<10	<10	<10	<10	--	<2	--	--	--
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1 J	<1	<1	<1
Trichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-21

Primary CVOCs	Sample Name / Sample Date / Units	MW212 6/20/1997	MW213 9/27/1997	MW214 3/27/1998	MW215 10/19/1998	MW21NA 3/24/2000	MW21-98-103BL 3/20/2002	MW21-EBT-TS1-98.5-103.5 7/8/2002	MW21-EBT-TS2-98.5-103.5 7/29/2002
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	0.2 J	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	<10	<10	<10	2 J	--	--	--	--
Carbon tetrachloride	µg/L	<10	<10	<10	<10	0.4 J	<1	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	6	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	1	1.9	1.7	1.27
Tetrachloroethene	µg/L	63	62	76	120	78	90	110	125
trans-1,2-Dichloroethene	µg/L	--	--	--	--	0.2 J	<1	0.25 J	0.4 J
Trichloroethene	µg/L	14	12	16	31	39	76	66	53.6
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

MW-21

Primary CVOCs	Sample Name / Sample Date / Units	MW21-EBT-TS3-98.5-103.5 9/3/2002	MW21-EBT-TS4-98.5-103.5 10/7/2002	MW21-EBT-TS5-98.5-103.5 11/11/2002	MW21-EBT-TS6-98.5-103.5 12/16/2002	MW21-EBT-TS7-98.5-103.5 1/20/2003	MW21-EBT-TS8-98.5-103.5 2/24/2003
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.132 J	0.18 J	<1	0.171 J	<1	<1
cis-1,2-Dichloroethene	µg/L	1.02	1.63	1.32	1.22	0.985 J	1.68
Tetrachloroethene	µg/L	178	152	188	195	194	200
trans-1,2-Dichloroethene	µg/L	0.516 J	0.518 J	0.481 J	0.416 J	0.403 J	0.331 J
Trichloroethene	µg/L	38.1	49.2	37.6	38.3	32.4	50.7
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-21

Primary CVOCs	Sample Name / Sample Date / Units	MW21-EBT-TS9-98.5-103.5 3/24/2003	MW21-EBT-TS10-98.5-103.5 4/21/2003	MW21-EBT-TS11-98.5-103.5 5/19/2003	MW21-EBT-TS12-98.5-103.5 6/23/2003	MW21-EBT-TS13-98.5-103.5 7/21/2003	MW-21 3/31/2004	MW-21 11/12/2004
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<2.5	<2.5
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<2.5	<2.5
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	1.5 J	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<2.5	<2.5
Chloroform	µg/L	0.14 J	<1	<1	<1	<1	<2.5	<2.5
cis-1,2-Dichloroethene	µg/L	1.28	1.12	1.25	1.36	1.25	1.5 J	1.6 J
Tetrachloroethene	µg/L	190	171	172	159	120	75	71
trans-1,2-Dichloroethene	µg/L	0.342 J	0.304 J	<1	<1	<1	<2.5	<2.5
Trichloroethene	µg/L	38.6	33.8	38.6	34	33.6	20	17
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<2.5	<2.5

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-21

	Sample Name	MW-21	MW-21	MW-21-BL	MW-21-EBT-1	MW-21-EBT-2	MW-21-EBT-3	MW-21-EBT-4	MW-21-EBT-5
	Sample Date	2/21/2005	5/19/2005	8/8/2006	12/6/2006	3/7/2007	6/4/2007	9/18/2007	12/18/2007
Primary CVOCs	Units								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<0.3	0.129 J	0.126 J	<0.3	<0.3	0.137 J
cis-1,2-Dichloroethene	µg/L	1.1	0.99 J	1.33	1.17	1.66	1.53	1.95	2.12
Tetrachloroethene	µg/L	61	53	106	129	130 J	134	132	178
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	14	13	16.3	19.8	25	28.3	27.5	32.5
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-21

Primary CVOCs	**Sample Name** / **Sample Date** / Units	MW-21 3/14/2008	MW-21 6/16/2008	MW-21 12/11/2008	MW-21 3/13/2009	MW-21 10/5/2009	MW-21 3/30/2010	MW-21 10/6/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.184 J	0.157 J	0.183 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	1.83	2.26	2.44	2.3	2.3	2.27	2.39
Tetrachloroethene	µg/L	173	154	192	179	187	146	83.5
trans-1,2-Dichloroethene	µg/L	<1	0.252 J	0.274 J	<1	<1	<1	<1
Trichloroethene	µg/L	28.9	26.1	20.4	16.6	12.9	8.59	5.67
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-22

	Sample Name	MW222	MW223	MW224	MW225	MW22NA	MW22-99-104BL	MW-022	MW-22-LB-1	MW-22
	Sample Date	6/19/1997	9/25/1997	3/28/1998	10/19/1998	3/23/2000	3/18/2002	3/30/2004	10/18/2006	10/9/2008
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	<10	<10	<10	<10	--	--	<2	--	--
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	--	--	--	--	0.5 J	<1	<1	0.527 J	<1
Tetrachloroethene	µg/L	<10	2 J	<10	<10	0.9 J	0.27 J	<1	0.79 J	<1
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2 J	4 J	1 J	<10	1	<1	<1	0.531 J	0.329 J
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-22

	Sample Name	MW-22
	Sample Date	10/12/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
1,2-Dichloroethene (Total)	µg/L	--
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	<0.3
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	<1
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	<1
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated results based on QC data or reported
< Not detected at sample reporting limit

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-23

Primary CVOCs	Sample Name Sample Date Units	MW232 6/18/1997	MW233 9/26/1997	MW234 3/26/1998	MW235 10/19/1998	MW23NA 3/23/2000	MW23-95-100BL 3/18/2002	MW-23 5/19/2004	MW-23-LB-1 10/18/2006	MW-23 10/14/2008
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	<10	<10	<10	<10	--	--	<2	--	--
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-23

	Sample Name	MW-23
	Sample Date	10/12/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
1,2-Dichloroethene (Total)	µg/L	--
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	<0.3
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	<1
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	<1
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-24

	Sample Name	MW242	MW243	MW244	MW245	MW24NA	MW24-109-111BL	MW-24	MW-24-LB-1	MW-24
	Sample Date	6/19/1997	9/24/1997	4/2/1998	10/19/1998	3/22/2000	3/18/2002	5/19/2004	10/18/2006	10/14/2008
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	<10	<10	<10	<10	--	--	<2	--	--
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1	<1	<0.3	0.181 J
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-25A

Primary CVOCs	Sample Name Sample Date Units	MW25A-111102 11/11/2002	MW-25A 5/12/2004	MW-25A 2/21/2005	MW-25A-LB-1 10/2/2006	MW-25A-LS-3 4/13/2007	MW-25A-LA-5 10/3/2007	MW-25A 4/8/2008	MW-25A 10/10/2008
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	<2	--	--	--	--	--	--
Carbon tetrachloride	µg/L	2.01	2.3	2.4	2.66	2.54	2.38	2.15	1.67
Chloroform	µg/L	0.517 J	0.57J	0.59B	0.608	0.507	0.531	0.399	0.377
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5.64	8	9.3	8.61	10.3	9.24	6.64	4.91
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.453 J	0.6J	0.57J	0.352 J	0.525 J	0.433 J	0.352 J	0.45 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-25A

Primary CVOCs	Sample Name / Sample Date / Units	MW-25A 4/6/2009	MW-25A 10/7/2010
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--
Carbon tetrachloride	µg/L	1.54	2.74
Chloroform	µg/L	0.449	0.411
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	7.84	13.6
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	0.644 J	0.386 J
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-26

Primary CVOCs	Sample Name / Sample Date / Units	MW262 6/20/1997	MW263 9/26/1997	MW264 3/28/1998	MW265 10/20/1998	MW-26-106-BL 3/21/2002	MW26-EBT-TS13 7/24/2003	MW26-EBT-TS14 8/18/2003	MW-26 4/2/2004
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<5	<1	<1	<2.5
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<5	<1	<1	<2.5
1,2-Dichloroethene (Total)	µg/L	<10	<10	<10	<10	--	--	--	<5
Carbon tetrachloride	µg/L	4 J	4 J	4 J	4 J	3.7 J	3.29	5.17 J	5.3
Chloroform	µg/L	1 J	<10	2 J	1 J	<5	1.11	1.28	1.4 B
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<5	<1	<1	0.76 J
Tetrachloroethene	µg/L	12	11	14	16	8.1	7.92	13.8	25
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<5	<1	<1	<2.5
Trichloroethene	µg/L	2 J	2 J	2 J	2 J	1.6 J	1.72	1.9	2.1 J
Vinyl chloride	µg/L	<10	<10	<10	<10	<10	<1	<1	<2.5

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-26

Primary CVOCs	Sample Name Sample Date Units	MW-26 11/13/2004	MW-26 2/22/2005	MW-26 5/24/2005	MW-26-LB-1 10/2/2006	MW-26-LS-3 4/16/2007	MW-26-LA-5 10/1/2007	MW-26 4/7/2008	MW-26 10/8/2008	MW-26 4/7/2009
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	7.2	7.5	7.2	5.24	5.23	6.52	4.38	5.31	5.91
Chloroform	µg/L	1.6	1.7	1.8 B	0.935	1.05	1.29	0.976	1.14	1.16
cis-1,2-Dichloroethene	µg/L	0.64 J	0.71 J	0.57 J	0.45 J	0.313 J	0.41 J	<1	0.295 J	0.332 J
Tetrachloroethene	µg/L	40	40	35	25.5	20.1	29	13.7	21.1	25.3
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.3	2.2	2.5	1.77	1.56	1.75	1.3	1.54	1.33
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-26

Primary CVOCs	**Sample Name** / **Sample Date** / Units	MW-26 10/8/2009	MW-26 3/31/2010	MW-26 10/7/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--
Carbon tetrachloride	µg/L	4.81	7.09	9.18
Chloroform	µg/L	0.871	1.14	1.79
cis-1,2-Dichloroethene	µg/L	0.411 J	0.466 J	0.606 J
Tetrachloroethene	µg/L	27.3	38.9	46.4
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	1.59	1.63	1.98
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
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MW-34

Primary CVOCs	**Sample Name** / **Sample Date** / Units	MW342 6/19/1997	MW343 9/26/1997	MW344 3/27/1998	MW-34-Y1Q1 2/4/1999	MW-34-Y1Q2 5/25/1999	MW-34-Y1Q3 8/27/1999	MW-34-Y1Q4 11/3/1999
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	<10	<10	<10	--	--	--	--
Carbon tetrachloride	µg/L	<10	<10	<10	1.01	1.23	0.51J	<1
Chloroform	µg/L	2J	1J	<10	4.34	<1	0.66J	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	1.03	<1	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	--	--	--	<1	<1	<1	<1
Trichloroethene	µg/L	<10	<10	<10	4.39	<1	0.64J	<1
Vinyl chloride	µg/L	<10	<10	<10	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-34

Primary CVOCs	Sample Name Sample Date Units	MW-34-Y2Q1 2/16/2000	MW-34 5/18/2000	MW-34-Y2Q3 8/24/2000	MW-34-Y2Q4 11/7/2000	MW-34 2/20/2001	MW-34-Y3S2-A 10/3/2001	MW-34-Y3S2-B 10/3/2001
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	1.04	1.03	0.86J	<1	0.82J	<1	<1
Chloroform	µg/L	1.98	3.49	<1	<1	4.24	1.46	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.85J	2.15	2.55	1.43	1.62	<1	1.48
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

MW-34

	Sample Name	MW-34-Y3S2-C	MW34-147-152BL	MW-34-3_020410	MW-34-2_020410	MW-34-1_020410
	Sample Date	10/3/2001	3/18/2002	4/10/2002	4/10/2002	4/10/2002
Primary CVOCs	Units					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--
Carbon tetrachloride	µg/L	0.96J	0.7J	<1	<1	<1
Chloroform	µg/L	<1	3	<1	7.78	10.5
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2	0.93J	0.9J	0.97J	1.16
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

MW-34

	Sample Name	MW-34-3_021001	MW-34-1_021001	MW-34-2_021001	MW-34-3	MW-34-2	MW-34-1
	Sample Date	10/1/2002	10/1/2002	10/1/2002	4/8/2003	4/8/2003	4/8/2003
Primary CVOCs	Units						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	1.08
Chloroform	µg/L	<1	2.56	1.26	4.45	7.66	13.9
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	0.74	120	1.75
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
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MW-34

Primary CVOCs	Sample Name Sample Date Units	MW34-EBT-TS13 7/24/2003	MW-34-1 10/28/2003	MW-34-2 10/28/2003	MW-34-3 10/28/2003	MW-34,152 4/28/2004	MW-34,147 4/28/2004	MW-34,142 4/28/2004	MW-34,138 4/28/2004
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<4	<4
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<4	<4
1,2-Dichloroethene (Total)	µg/L		--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	0.19J	<4	<4
Chloroform	µg/L	<1	3	<1	<1	1.2	1.2	1.2J	1.1J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<4	<4
Tetrachloroethene	µg/L	<0.5	<1	<1	<1	<1	<1	<4	<4
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1J	<1J	<4J	<4J
Trichloroethene	µg/L	0.476 J	<1	<1	<1	0.29J	0.39J	<4	<4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<4	<4

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
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MW-34

Primary CVOCs	Sample Name / Sample Date / Units	MW-34 5/23/2004	MW34,152 10/20/2004	MW34,147.3 10/20/2004	MW34,142.3 10/20/2004	MW-34 11/11/2004	MW-34 2/23/2005	MW-34 5/23/2005	MW-34-LB-1 10/16/2006
1,1,1-Trichloroethane	µg/L	<1	<1J	<1J	<1J	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	0.4J	0.35J	0.64J	0.62J	0.55J	0.41J	0.44J	0.381 J
Chloroform	µg/L	0.29J	1.7	2.4	3.8	0.51B	1.1	0.31B	0.531
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.55J	<1	<1	<1	0.52J	0.37J	0.46J	0.336 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.5J	0.54J	0.83J	0.98J	0.49J	0.4J	0.67J	1.06
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-34

Primary CVOCs	Sample Name Sample Date Units	MW-34 10/1/2007	MW-34 11/7/2007	MW-34 10/13/2008	MW-34 10/8/2009	MW-34 10/6/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1 J	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1 J	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--
Carbon tetrachloride	µg/L	1.05	0.479	0.826 J	0.978 J	0.572
Chloroform	µg/L	0.434	0.371	0.345 J	0.236 J	0.325
cis-1,2-Dichloroethene	µg/L	<1	<1	<1 J	<1	<1
Tetrachloroethene	µg/L	0.753 J	0.34	0.451 J	0.358 J	0.269 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1 J	<1	<1
Trichloroethene	µg/L	1.38	1.39	0.885 J	1.11	0.756 J
Vinyl chloride	µg/L	<1	<1	<1 J	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
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MW-38

Primary CVOCs	Sample Name / Sample Date / Units	MW382 6/19/1997	MW383 9/25/1997	MW384 3/26/1998	MW385 10/17/1998	MW38-145-150BL 3/18/2002	MW-38 5/20/2004	MW-38-LB-1 10/17/2006	MW-38-LA-5 10/1/2007
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<9.1	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<1	<9.1	<1	<1
1,2-Dichloroethene (Total)	µg/L	<10	<10	<10	<10	--	<18	--	--
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<9.1	1.24	1.37
Chloroform	µg/L	<10	<10	<10	<10	<1	<9.1	0.513	0.646
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<9.1	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<9.1	<1	0.446 J
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<9.1	<1	<1
Trichloroethene	µg/L	<10	1 J	1 J	<10	<1	<9.1	4.63	4.37
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<9.1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-38

Primary CVOCs	Units	MW-38	MW-38	MW-38
	Sample Name	MW-38	MW-38	MW-38
	Sample Date	10/8/2008	10/5/2009	10/9/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	0.141 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	0.717 J
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-39

	Sample Name	MW392	MW393	MW394	MW395	MW39NA	MW39-107-112BL	MW-39	MW-39	MW-39
	Sample Date	6/20/1997	9/26/1997	3/27/1998	10/19/1998	3/23/2000	3/18/2002	4/1/2004	5/23/2004	11/9/2004
Primary CVOCs	Units									
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<3.3	<2.5	<4
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<3.3	<2.5	<4
1,2-Dichloroethene (Total)	µg/L	<10	<10	<10	<10	--	--	<6.7	<5	--
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<3.3	<2.5	<4
Chloroform	µg/L	<10	<10	<10	<10	<1	0.18 J	<3.3	<2.5	<4
cis-1,2-Dichloroethene	µg/L	--	--	--	--	0.4 J	0.48 J	<3.3	<2.5	<4
Tetrachloroethene	µg/L	6 J	9 J	8 J	8 J	12	8.2	120	95	130
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<3.3	<2.5	<4
Trichloroethene	µg/L	5 J	8 J	7 J	7 J	5	3.8	10	7.2	10
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<3.3	<2.5	<4

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-39

	Sample Name	MW-39	MW-39	MW-39-LB-1	MW-39-LS-3	MW-39-LA-5	MW-39	MW-39	MW-39	MW-39
	Sample Date	2/15/2005	5/16/2005	10/17/2006	4/13/2007	10/1/2007	4/9/2008	10/9/2008	4/9/2009	10/10/2009
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.17 J	0.17 B	<0.3	0.155 J	0.225 J	0.161 J	0.237 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.52 J	0.68 J	0.622 J	0.462 J	0.435 J	0.525 J	1.26 J	17.5	21.3
Tetrachloroethene	µg/L	79	110	149	106	111	100	158 J	62.9 J	50.9
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.6	11	8.94	8.17	8.81	9.3	6.15 J	11.6	13.9
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-39

	Sample Name	MW-39	MW-39
	Sample Date	3/31/2010	10/9/2010
Primary CVOCs	Units		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	17.7	18.3
Tetrachloroethene	µg/L	37.4	29.1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	12.3	13.6
Vinyl chloride	µg/L	<1	0.414 J

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-39A

Primary CVOCs	Sample Name Sample Date Units	MW-39A 5/23/2004	MW-39A 11/9/2004	MW-39A 2/15/2005	MW-39A 5/16/2005	MW-39A-LB-1 10/17/2006	MW-39A-LS-3 4/13/2007	MW-39A-LA-5 10/2/2007	MW-39A 4/7/2008
1,1,1-Trichloroethane	µg/L	<5	<6.7	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<5	<6.7	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	<10	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<5 J	<6.7	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<5	<6.7	0.22 J	0.23 B	0.251 J	0.215 J	0.215 J	0.257 J
cis-1,2-Dichloroethene	µg/L	<5	<6.7	0.59 J	0.51 J	0.418 J	0.4 J	0.362 J	0.499 J
Tetrachloroethene	µg/L	140	150	190	150	196	176	162	234
trans-1,2-Dichloroethene	µg/L	<5	<6.7	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5.8	8.3	8.7	7.9	4.68	4.04	4.4	4.63
Vinyl chloride	µg/L	<5	<6.7	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-39A

	Sample Name	MW-39A	MW-39A	MW-39A	MW-39A	MW-39A
	Sample Date	10/9/2008	4/9/2009	10/5/2009	4/2/2010	10/9/2010
Primary CVOCs	Units					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	0.866 J	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	0.16 J	0.145 J	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	12.2	7.61	24.4	35.4	36
Tetrachloroethene	µg/L	95.7	156	79.9	43.8	25.6
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	11.8	7.21	9.49	11.4	10.9
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-50

Primary CVOCs	Sample Name / Sample Date / Units	MW502 6/19/1997	MW503 9/24/1997	MW504 3/25/1998	MW505 10/16/1998	MW50-117.5-122.5BL 3/19/2002	MW-50 5/17/2004	MW-50-LB-1 10/18/2006	MW-50 10/13/2008	MW-50 10/13/2010
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1 J	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	<10	<10	<10	<10	--	0.52 J	--	--	--
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	0.25 J	0.23 J	0.746	0.469	0.281 J
cis-1,2-Dichloroethene	µg/L	--	--	--	--	0.48 J	0.52 J	0.483 J	0.321 J	0.297 J
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1	0.263 J	0.335 J	0.46 J
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<10	<10	<10	<10	1.2	1.1	1.5	1.12	1.24 B
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-52

Primary CVOCs	Sample Name / Sample Date / Units	MW522 6/18/1997	MW523 9/24/1997	MW524 3/25/1998	MW525 10/16/1998	MW52-96.5-101.5BL 3/19/2002	MW-52 5/6/2004	MW-52 2/21/2005	MW-52 10/2/2006	MW-52 4/16/2007
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	1 J	<10	1 J	<10	--	0.58 J	--	--	--
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	0.35 J	0.68 J	0.77 B	0.899	0.828
cis-1,2-Dichloroethene	µg/L	--	--	--	--	0.53 J	0.58 J	0.6 J	0.639 J	0.938 J
Tetrachloroethene	µg/L	4 J	2 J	4 J	<10	6.4	4.7	6.2	10.2	10.8
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1 J	<1	<1	<1
Trichloroethene	µg/L	<10	<10	1 J	<10	0.59 J	0.34 J	0.67 J	1.04	1.4
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1 J	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-52

Primary CVOCs	Sample Name / Sample Date / Units	MW-52 10/3/2007	MW-52 4/8/2008	MW-52 10/10/2008	MW-52 4/6/2009	MW-52 10/12/2009	MW-52 10/7/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.75	0.861	1.12 J	0.891	0.842	0.893
cis-1,2-Dichloroethene	µg/L	0.993 J	0.805 J	0.866 J	0.81 J	0.831 J	0.608 J
Tetrachloroethene	µg/L	9.62	9.4	6.86 J	5.85	6.07	5.25
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.17	1.16	1.17 J	1.12	1.06	0.838 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-53

	Sample Name	MW532	MW533	MW534	MW535	MW53-75-80BL	MW-53	MW-53-LB-1	MW-53	MW-53
	Sample Date	6/19/1997	9/26/1997	3/26/1998	10/19/1998	3/18/2002	5/10/2004	10/17/2006	10/13/2008	10/13/2010
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	μg/L	<10	<10	<10	<10	--	<2	--	--	--
Carbon tetrachloride	μg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Chloroform	μg/L	<10	<10	<10	<10	<1	<1	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	μg/L	--	--	--	--	<1	<1	<1	<1	<1
Tetrachloroethene	μg/L	<10	<10	<10	<10	0.6 J	0.59 J	2.26	2.25	1.39
trans-1,2-Dichloroethene	μg/L	--	--	--	--	<1	<1	<1	<1	<1
Trichloroethene	μg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Vinyl chloride	μg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1

Notes:
-- not analyzed
μg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-55

	Sample Name	MW552	MW553	MW554	MW555	MW55-71-73BL	MW-55	MW-55-LB-1	MW-55	MW-55
	Sample Date	6/18/1997	9/26/1997	3/25/1998	10/16/1998	3/18/2002	5/20/2004	10/16/2006	10/13/2008	10/11/2010
Primary CVOCs	Units									
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1 J	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1 J	<1
1,2-Dichloroethene (Total)	µg/L	<10	<10	<10	<10	--	<2	--	--	--
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1 J	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1	<0.3	<0.3 J	<0.3
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1 J	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1 J	<1
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1 J	<1
Trichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1 J	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1 J	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-62

Primary CVOCs	**Sample Name** / **Sample Date** / Units	MW625 10/26/1998	MW62NA 3/23/2000	MW62-94-95BL 3/18/2002	MW62 2/4/2004	MW62 4/7/2004	MW-62 5/11/2004	MW-62 2/18/2005	MW-62 5/16/2005	MW-62-LB-1 10/4/2006
1,1,1-Trichloroethane	µg/L	<10	<1	<1	<1	<1	<3.3	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<1	1.3	<0.5	<0.5	<3.3	0.23J	0.35J	<1
1,2-Dichloroethene (Total)	µg/L	<10	--	--	--	--	<6.7	--	--	--
Carbon tetrachloride	µg/L	<10	<1	<1	1.38	1.19	<3.3	0.56J	0.84J	0.279 J
Chloroform	µg/L	<10	0.2J	0.18J	0.368J	0.431J	<3.3	0.46J	0.23B	0.25 J
cis-1,2-Dichloroethene	µg/L	--	<1	190	0.418J	<1	<3.3	<1	1.3	0.26 J
Tetrachloroethene	µg/L	<10	<1	<1	0.318J	0.853	<3.3	1.1	0.34J	<1
trans-1,2-Dichloroethene	µg/L	--	<1	<1	<1	<1	<3.3	<1	<1	<1
Trichloroethene	µg/L	37	32	6.5	134	183	100	150	92	77.7 J
Vinyl chloride	µg/L	<10	<1	28	1.27	<1	<3.3	<1	1.2J	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-62

Primary CVOCs	Sample Name Sample Date Units	MW-62-LS-3 4/17/2007	MW-62-LA-5 10/3/2007	MW-62 4/9/2008	MW-62 10/14/2008	MW-62 4/10/2009	MW-62 10/10/2009	MW-62 4/7/2010	MW-62 10/14/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	0.72 J	1.02 J	<1	<1	<1	0.557 J
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	0.703 J	0.744 J	0.525 J	0.634 J	0.369 J	<1	0.485 J	0.577 J
Chloroform	µg/L	0.311	0.476	0.416	0.394 J	0.361	0.154 J	0.296 J	0.291 J
cis-1,2-Dichloroethene	µg/L	1.16	0.33 J	<1	<1	0.424 J	0.308 J	<1	<1
Tetrachloroethene	µg/L	0.362 J	0.8 J	0.413 J	0.39 J	0.33 J	<1	0.474 J	0.447 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	102	184	152	157 J	169	59.2	178	119
Vinyl chloride	µg/L	2.71	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-63A

Primary CVOCs	Sample Name Sample Date Units	MW63A 11/11/2002	MW-63A 5/7/2004	MW-63A 2/22/2005	MW-63A 10/23/2006	MW-63A 10/2/2007	MW-63A 10/8/2008	MW-63A 10/10/2009	MW-63A 10/7/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	<2	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	5.03	<1	<1	<0.3	<0.3	0.471 J	0.194 J	<0.3
cis-1,2-Dichloroethene	µg/L	0.42 J	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.466 J	0.32J	0.64J	1.24	1.23	<1	0.674 J	1.69
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.67	0.68J	0.63J	0.765 J	1.09	1.66 J	1.81	1.37
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-63B

Primary CVOCs	Sample Name Sample Date Units	MW63B 11/11/2002	MW63B 5/7/2004	MW63B 2/22/2005	MW-63B-LB-1 10/23/2006	MW-63B-LA-5 10/2/2007	MW-63B 10/7/2008	MW-63B 10/10/2009	MW-63B 10/7/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	0.709J	<1	<1	<1	<1	1.45	<1	0.628 J
1,2-Dichloroethene (Total)	µg/L	--	<2	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	11.1	1.8	1.5	0.604	1.44	2.9	1.23	1.71
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	0.401 J	0.253 J	0.372 J
Tetrachloroethene	µg/L	6.78	2.3	2.8	3.71	2.95	4.6	1.58	7.47
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.9	0.92J	1.1	1.12	2.1	4.56	3.1	3.55
Vinyl chloride	µg/L	<0.25	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-64

Primary CVOCs	Sample Name Sample Date Units	MW645 10/25/1998	MW64-108-110BL 3/18/2002	MW-64 4/1/2004	MW-64 2/21/2005	MW-64-LB-1 10/23/2006	MW-64-LS-3 4/17/2007	MW-64-LA-5 10/3/2007	MW-64 4/7/2008
1,1,1-Trichloroethane	µg/L	<10	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<1	0.55 J	0.35 J	<1	<1	<1	0.934 J
1,2-Dichloroethene (Total)	µg/L	<10	--	<2	--	--	--	--	--
Carbon tetrachloride	µg/L	2 J	3.3	3.3	3	2.9	3.26	2.82	3.68
Chloroform	µg/L	1 J	0.85 J	0.86 B	0.92 B	1.01	0.818	0.891	1.16
cis-1,2-Dichloroethene	µg/L	--	0.45 J	0.41 J	0.31 J	0.397	0.345 J	0.363 J	0.401 J
Tetrachloroethene	µg/L	10	10	16	18	18.2	18.1	17.1	22.5
trans-1,2-Dichloroethene	µg/L	--	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	28	45	39	34	28.9	30.6	30.2	35.7
Vinyl chloride	µg/L	<10	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-64

	Sample Name	MW-64	MW-64	MW-64	MW-64	MW-64
	Sample Date	10/8/2008	4/9/2009	10/8/2009	3/29/2010	10/7/2010
Primary CVOCs	Units					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	1.22	0.648 J	0.527 J	0.584 J	0.682 J
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--
Carbon tetrachloride	µg/L	3.3	3.37	2.78	3.56	3.08
Chloroform	µg/L	0.989	1.08	0.926	1.34	1.17
cis-1,2-Dichloroethene	µg/L	0.439 J	0.481 J	0.519 J	0.482 J	0.423 J
Tetrachloroethene	µg/L	22.3	23	23.8	23	20.8
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	36.4	38.1	41.5	38.8	34.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-66A

Primary CVOCs	Sample Name Sample Date Units	MW-66A 6/23/2004	MW-66A 11/13/2004	MW-66A 2/22/2005	MW-66A 5/23/2005	MW-66A-LB-1 10/18/2006	MW-66A 10/10/2008	MW-66A 10/12/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.7	2.2	1.8	2	1.79	1.78	3.31
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:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-85

	Sample Name	MW-85-1	MW-85-2	MW-85-3	MW-85-4	MW-85-5	MW-85-6	MW-85	MW-85	MW-85
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	4/2/2004	11/14/2004	2/22/2005
Primary CVOCs	Units									
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<4	<3.3	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<4	<3.3	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	17	--	--
Carbon tetrachloride	µg/L	77	110	140	130	120	110	110	120	110
Chloroform	µg/L	27	61	66	67	63	64	30	36	35
cis-1,2-Dichloroethene	µg/L	10	25	30	30	28	28	17	21	21
Tetrachloroethene	µg/L	34	45	67	54	49	31	46	57	51
trans-1,2-Dichloroethene	µg/L	<1	0.49 J	0.74 J	0.62 J	0.96 J	0.58 J	<4	<3.3	<1
Trichloroethene	µg/L	20	21	26	23	25	21	18	22	22
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<4	<3.3	<1

Notes::
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-85

	Sample Name	MW-85	MW-85-BL	MW-85-EBT-1	MW-85-EBT-2	MW-85-EBT-3	MW-85-EBT-4	MW-85-EBT-5
	Sample Date	5/20/2005	8/30/2006	12/8/2006	3/12/2007	5/29/2007	9/11/2007	12/10/2007
Primary CVOCs	Units							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1 J	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	110	188	179	123	106 J	75.1	34.3
Chloroform	µg/L	38	43.8	49.5	36.2	34.6	44.2	51.5
cis-1,2-Dichloroethene	µg/L	24	26.1	32.2	23.8	18.6	37.4	51
Tetrachloroethene	µg/L	48	74.8	73.4	58.6	37.8	32.5	21
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	24	25.1	24.4	20.3	15.5	14.3	9.15
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes::
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-85

Primary CVOCs	Sample Name / Sample Date / Units	MW-85 3/12/2008	MW-85 6/16/2008	MW-85 12/17/2008	MW-85 3/17/2009	MW-85 10/12/2009	MW-85 3/30/2010	MW-85 10/14/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	22.5	47.2	76.2	69.9	108	116 J	121
Chloroform	µg/L	38.6	8.03	9.84	8.51	10.4	14.9	27.1
cis-1,2-Dichloroethene	µg/L	59.2	39.1	7.45	7.29	1.3	1.69	9.47
Tetrachloroethene	µg/L	14.4	22	36.4	33.9	41	38.1	39.2
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7	10.4	14.4	11.6	15.1	12.1	12.3
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes::
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-88

	Sample Name	MW-88-1	MW-88-2	MW-88-3	MW-88-4	MW-88-5	MW-88-6	MW-88-7	MW-88-8	MW-88
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	7/8/2002
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	3.2	2.9	1.8	1.3	1	3.1	5.2	5.6	4.7
Chloroform	µg/L	1.1	1	0.64 J	0.51 J	0.42 J	1.2	1.9	1.9	1.9
cis-1,2-Dichloroethene	µg/L	2.1	1.8	1.1	0.81 J	0.63 J	0.94 J	1.4	1.5	1.5
Tetrachloroethene	µg/L	8.1	5.3	2.5	2.3	2.2	8.8	29	27	17
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.1	0.97 J	0.71 J	0.58 J	0.52 J	3.8	5.6	6.1	7.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-88

Primary CVOCs	Sample Name Sample Date Units	MW-88 7/29/2002	MW-88 9/3/2002	MW-88 10/7/2002	MW-88 11/11/2002	MW-88 12/16/2002	MW-88 1/20/2003	MW-88 3/24/2003	MW-88 4/21/2003	MW-88 5/19/2003	MW-88 6/23/2003
1,1,1-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	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	5.54	6.61	5.3	5.79	6.76 J	6.98	4.63	5.61 J	5.08	6.17 J
Chloroform	µg/L	2.1	1.86	1.81	1.89	1.88	1.64	1.23	1.43	1.71	1.93
cis-1,2-Dichloroethene	µg/L	1.37	0.93 J	1.23	1.66	1.22	0.99 J	0.793 J	0.869 J	1.1	1.32
Tetrachloroethene	µg/L	17.2	21.8	16.1	23.8	22.2	19.8	13.4	18.2	14.5	19.9
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.55	7.72	6.9	7.66	7.41	7.24	6.49	6.65	5.34	5.98
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-88

Primary CVOCs	Sample Name Sample Date Units	MW-88 7/21/2003	MW-88 8/18/2003	MW-88 4/1/2004	MW-88 11/13/2004	MW-88 2/22/2005	MW-088 5/23/2005	MW-88-LB-1 10/3/2006	MW-88-LS-3 4/13/2007	MW-88-LA-5 10/4/2007
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	1.5 J	--	--	--	--	--	--
Carbon tetrachloride	µg/L	8.17	7.3	7.9	6	6.2	3.5	8.59	3.88	4.83
Chloroform	µg/L	2.08	1.51	1.9 B	2.5	1.6	1.1 B	1.78	0.671	0.827
cis-1,2-Dichloroethene	µg/L	1.41 J	1.34	1.5	1.8	1.2	0.87 J	1.3	0.588 J	0.751 J
Tetrachloroethene	µg/L	21.8	21	22	22	20	14	26.4	18.5	21.3
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	6.26	5.37	4.8	3.6	3.8	2.7	3.5	2.94	3.42
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-88

Primary CVOCs	Sample Name Sample Date Units	MW-88 4/7/2008	MW-88 10/6/2008	MW-88 4/9/2009	MW-88 10/11/2009	MW-88 3/30/2010	MW-88 10/4/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--
Carbon tetrachloride	µg/L	2.66	3.69	4.87	7.12	10.4	10.5
Chloroform	µg/L	0.406	0.878	0.825	1.32	1.74	1.85
cis-1,2-Dichloroethene	µg/L	0.325 J	1.21	0.732 J	1.53	2.15	2.54
Tetrachloroethene	µg/L	16.6	32.8	31.7	39.4	46.2	56.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.11	3.65	3.26	3.83	3.83	4.11
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-89

Primary CVOCs	Sample Name / Sample Date / Units	MW-89 3/19/2002	MW-89 3/19/2002	MW-89 5/22/2004	MW-89 2/16/2005	MW-89-LB-1 10/24/2006	MW-89-LA-5 10/1/2007	MW-89 10/6/2008	MW-89 10/5/2009	MW-89 10/8/2010
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	<2	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	0.49 J	0.44 J	0.7 J	0.56 J	0.252 J	<1	0.261 J
Chloroform	µg/L	<1	<1	0.32 J	0.3 B	0.348	0.224 J	0.156 J	0.145 J	0.212 J
cis-1,2-Dichloroethene	µg/L	<1	<1	0.27 J	0.37 J	0.404 J	0.279 J	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	0.3 J	0.29 J	0.363 J	0.644 J	<1	0.251 J	1.43
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.89 J	<1	2	2.1	2.13	1.55	1.1	1.27	1.63
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-90

Primary CVOCs	Sample Name Sample Date Units	-- 3/19/2002	-- 3/19/2002	MW-90 5/22/2004	MW-90 2/16/2005	MW-90-LB-1 10/24/2006	MW-90-LS-3 4/16/2007	MW-90-LA-5 10/1/2007	MW-90 4/7/2008	MW-90 10/6/2008
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	0.49 J	0.46 J	<1	0.526 J	0.579 J	1.3	0.605 J
1,2-Dichloroethene (Total)	µg/L	--	--	<2	--	--	--	--	--	--
Carbon tetrachloride	µg/L	0.65 J	0.32 J	0.3 J	0.33 J	0.466 J	0.401 J	0.462 J	<1	0.288 J
Chloroform	µg/L	8.9	3.5	7.4	6.1	3.11	3.18	3.64	4.66	4.65
cis-1,2-Dichloroethene	µg/L	0.44 J	<1	0.29 J	0.29 J	0.294 J	0.313 J	0.36 J	0.484 J	0.335 J
Tetrachloroethene	µg/L	58	8.8	19	19	26.7	26.7	50.7	77.7	79.3
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	10	2.7	7.2	4.3	2.53	2.4	3.69	5.9	6.08
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-90

	Sample Name	MW-90	MW-90	MW-90	MW-90
	Sample Date	4/7/2009	10/10/2009	4/2/2010	10/8/2010
Primary CVOCs	Units				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	0.931 J	<1	0.651 J	0.834 J
1,2-Dichloroethene (Total)	µg/L	--	--	--	--
Carbon tetrachloride	µg/L	0.268 J	<1	<1	<1
Chloroform	µg/L	4.91	0.817	3.94	4.07
cis-1,2-Dichloroethene	µg/L	0.481 J	<1	0.424 J	0.483 J
Tetrachloroethene	µg/L	80.8	35	58.3	47.9
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	8.47	2.41	8.55	8.17
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-92

Primary CVOCs	Sample Name Sample Date Units	MW-92 11/30/2001	MW-92 11/30/2001	MW-92 11/30/2001	MW-92 11/30/2001	MW-92 11/30/2001	MW-92 11/30/2001	MW-92 4/1/2004	MW-92 11/14/2004	MW-92 2/24/2005
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<5	<6.7	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<5	<6.7	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	12	--	--
Carbon tetrachloride	µg/L	18	19	18	20	20	18	24	23	25
Chloroform	µg/L	6.2	6.5	6.1	6.7	6.9	7.7	9 B	9.4	8.6
cis-1,2-Dichloroethene	µg/L	6.1	6.6	6.2	7	7	3.2	12	12	11
Tetrachloroethene	µg/L	130	160	150	160	150	110	170	180	140
trans-1,2-Dichloroethene	µg/L	0.21 J	0.19 J	<1	<1	<1	<1	<5	<6.7	<1
Trichloroethene	µg/L	4.3	4.5	4.2	4.5	4.5	3	5.2	5.7 J	5.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<5	<6.7	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-92

Primary CVOCs	Sample Name Sample Date Units	MW-92 5/20/2005	MW-92-LB-1 10/5/2006	MW-92-LS-3 4/16/2007	MW-92-LA-5 10/4/2007	MW-92 4/8/2008	MW-92 10/9/2008	MW-92 4/10/2009	MW-92 10/10/2009	MW-92 4/7/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	0.984 J	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	21	27.2	7.67	6.45	6.3	<1	<1	<1	<1
Chloroform	µg/L	7.6	8.02	13.2	11	8.91	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	11	10.8	7.32	67.5	66.2	119	119	120	123
Tetrachloroethene	µg/L	160	193	159	55	65.9	0.499 J	<1	1.3	4.76
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	0.727 J	<1	<1	<1	<1
Trichloroethene	µg/L	5.5	6.14	5.01	3.12	4.22	<1	<1	1.72	1.99
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	1.64	<1	0.791 J

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-92

	Sample Name	MW-92
	Sample Date	10/9/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
1,2-Dichloroethene (Total)	µg/L	--
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	<0.3
cis-1,2-Dichloroethene	µg/L	119
Tetrachloroethene	µg/L	20.7
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	8.64
Vinyl chloride	µg/L	0.314 J

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-93

Primary CVOCs	Sample Name Sample Date Units	MW-93 11/30/2001	MW-93 11/30/2001	MW-93 11/30/2001	MW-93 11/30/2001	MW-93 11/30/2001	MW-93 11/30/2001	MW-93 11/30/2001	MW-93 5/7/2004	MW-93-LB-1 10/18/2006
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	<2	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.69 J	<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	2.4	7	7.5	7.1	7.3	0.16 J	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	0.19 J	0.64 J	0.84 J	0.77 J	0.86 J	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-93

Primary CVOCs	Sample Name Sample Date Units	MW-93 10/4/2007	MW-93 10/13/2008	MW-93 10/11/2009	MW-93 10/14/2010
1,1,1-Trichloroethane	µg/L	<1	<1 J	<1	<1
1,1-Dichloroethene	µg/L	<1	<1 J	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1 J	<1	<1
Chloroform	µg/L	<0.3	<0.3 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1 J	<1	<1
Tetrachloroethene	µg/L	<1	<1 J	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1 J	<1	<1
Trichloroethene	µg/L	<1	<1 J	<1	<1
Vinyl chloride	µg/L	<1	<1 J	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-94A

Primary CVOCs	Sample Name Sample Date Units	MW-94A 5/23/2004	MW-94A 11/10/2004	MW-94A 2/20/2005	MW-94A 5/17/2005	MW-94A-LB-1 10/24/2006	MW-94A-LS-3 4/16/2007	MW-94A-LA-5 10/4/2007	MW-94A 4/8/2008
1,1,1-Trichloroethane	µg/L	<1.4	<2	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1.4	<2	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	<2.9	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1.4 J	<2	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1.4	<2	0.19 J	<1	0.139 J	0.196 J	0.129 J	0.138 J
cis-1,2-Dichloroethene	µg/L	0.52 J	0.71 J	0.82 J	0.68 J	0.624 J	0.532 J	0.61 J	0.42 J
Tetrachloroethene	µg/L	37	47	42	47	52.2	48	43.5	27.3
trans-1,2-Dichloroethene	µg/L	<1.4	<2	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	4.2	6	6.5	5.8	5.58	6.08	7.44	9.49
Vinyl chloride	µg/L	<1.4	<2	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-94A

	Sample Name	MW-94A	MW-94A	MW-94A	MW-94A	MW-94A
	Sample Date	10/13/2008	4/9/2009	10/12/2009	3/29/2010	10/11/2010
Primary CVOCs	Units					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	0.147 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	1.93	3.06	2.74	3.15	3.17
Tetrachloroethene	µg/L	32.8	30	27.7	27.7	30
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	6.89	6.78	7.46	7.83	6.89
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-96

	Sample Name	MW-96-1	MW-96-2	MW-96-3	MW-96-4	MW-96-5	MW-96-6	MW-96	MW-96	MW-96
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	3/31/2004	11/15/2004	2/21/2005
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	0.67 J	--	--
Carbon tetrachloride	µg/L	1.8	<1	<1	<1	<1	<1	3.6	2.9	1.5
Chloroform	µg/L	2	2.7	3.8	5.6	6.3	5.9	0.69 B	0.6 J	0.5 B
cis-1,2-Dichloroethene	µg/L	0.23 J	<1	<1	<1	<1	<1	0.67 J	0.52 J	0.34 J
Tetrachloroethene	µg/L	19	0.88 J	0.21 J	0.3 J	0.13 J	0.14 J	8.9	6.1	3.4
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.19 J	<1	<1	<1	<1	<1	0.22 J	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-96

Primary CVOCs	Sample Name Sample Date Units	MW-96 5/20/2005	MW-96 5/20/2005	MW-96-LS-3 4/16/2007	MW-96-LA-5 10/4/2007	MW-96 10/10/2008	MW-96 4/6/2009	MW-96 10/8/2009	MW-96 10/7/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	3.4	3.4	3.47	3.4	1.03 J	0.69 J	2	2.45
Chloroform	µg/L	0.64 B	0.64 B	0.901	0.739	0.663 J	0.73	0.58	0.557
cis-1,2-Dichloroethene	µg/L	19	0.6 J	0.814 J	0.836 J	<1	<1	<1	0.34 J
Tetrachloroethene	µg/L	6.5	6.5	4.35	4.33	1.46 J	3	7.78	3.99
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	0.419 J	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-97

Primary CVOCs	**Sample Name** / **Sample Date** / Units	MW-97 11/30/2001	MW-97 11/30/2001	MW-97 11/30/2001	MW-97 11/30/2001	MW-97 11/30/2001	MW-97 11/30/2001	MW-97 11/30/2001	MW-97 11/30/2001	MW-97 3/31/2004
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	<2
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
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
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	0.14 J	2.2
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-97

	Sample Name	MW-97	MW-97-LB-1	MW-97-LS-3	MW-97-LA-5	MW-97	MW-97	MW-97	MW-97	MW-97
	Sample Date	2/21/2005	10/25/2006	4/16/2007	10/2/2007	4/8/2008	10/13/2008	4/10/2009	10/7/2009	3/31/2010
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.16 B	0.228 J	0.292 J	0.255 J	0.164 J	0.267 J	0.316	0.277 J	0.249 J
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
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5.8	14.7	18.8	25.7	21.8	29.6	31.3	37.4	36.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-97

	Sample Name	MW-97
	Sample Date	10/9/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
1,2-Dichloroethene (Total)	µg/L	--
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	0.368
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	<1
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	49.8
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-98

Primary CVOCs	Sample Name / Sample Date / Units	MW-98 11/30/2001	MW-98 11/30/2001	MW-98 11/30/2001	MW-98 11/30/2001	MW-98 11/30/2001	MW-98 4/1/2004	MW-98 11/10/2004	MW-98 2/16/2005	MW-98 5/19/2005
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	<2	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.23 J	0.26 J	0.24 J	0.26 J	0.24 J	<1	0.17 B	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	0.22 J	<1	<1
Tetrachloroethene	µg/L	1.5	3.7	7.7	5.5	4.4	17	31	33	28
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.46 J	0.9 J	0.88 J	0.89 J	0.83 J	1.2	2.2	2.1	2
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-98

Primary CVOCs	Sample Name Sample Date Units	MW-98-LB-1 10/25/2006	MW-98-LS-3 4/13/2007	MW-98-LA-5 10/3/2007	MW-98 4/7/2008	MW-98 10/10/2008	MW-98 4/10/2009	MW-98 10/7/2009	MW-98 4/5/2010	MW-98 10/9/2010
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.133 J	0.147 J	<0.3	<0.3	<0.3	<0.3	<0.3	0.128 J	0.127 J
cis-1,2-Dichloroethene	µg/L	0.252 J	<1	<1	<1	8.6 J	0.346 J	0.304 J	0.367 J	0.502 J
Tetrachloroethene	µg/L	33.1	35.2	36.9	34.8	25.5 J	30.1	38.8	40.1	35.4
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.37	2.63	2.69	1.93	2.34 J	2.18	2.79	2.99	2.85
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-99

Primary CVOCs	Sample Name / Sample Date / Units	MW-99 11/30/2001	MW-99 11/30/2001	MW-99 11/30/2001	MW-99 11/30/2001	MW-99 11/30/2001	MW-99 11/30/2001	MW-99 11/30/2001	MW-99 11/30/2001
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.14 J	0.14 J	0.13 J	0.15 J	<1	0.15 J	0.13 J	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<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	<1	<1	<1	0.14 J	<1	0.28 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
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MW-99

Primary CVOCs	**Sample Name** / **Sample Date** / Units	MW-99 11/30/2001	MW-99 11/30/2001	MW-99 5/18/2004	MW-99-LB-1 10/18/2006	MW-99-LA-5 10/3/2007	MW-99 10/9/2008	MW-99 10/7/2009	MW-99 10/12/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	<2	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1 J	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	0.22 J	0.2 J	0.265 J	0.238 J	0.252 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<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	0.38 J	0.58 J	0.28 J	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-100B

Primary CVOCs	Sample Name / Sample Date / Units	MW100B-EBT-TS1-110-115 7/8/2002	MW100B-EBT-TS2-110-115 7/29/2002	MW100B-EBT-TS3-110-115 9/3/2002	MW100B-EBT-TS4-110-115 10/7/2002	MW100B-EBT-TS5-110-115 11/11/2002	MW100B-EBT-TS6-100-115 12/16/2002
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.19 J	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	1.3	0.509 J	17.7	33.4	31.4	24.1
Tetrachloroethene	µg/L	49	1.56	25.3	14.5	1.77	2.35
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	0.269 J	<1	0.321 J
Trichloroethene	µg/L	72	22.8	33.1	11.6	2.27	2.06
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-100B

Primary CVOCs	Sample Name / Sample Date / Units	MW100B-EBT-TS7 1/20/2003	MW100B-EBT-TS8-110-115 2/24/2003	MW100B-EBT-TS9-100-115 3/24/2003	MW100B-EBT-TS10-110-115 4/21/2003	MW100B-EBT-TS11-110-115 5/19/2003	MW100B-EBT-TS12-110-115 6/23/2003
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--
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	26.4	28.7	59.4	61.3	75.2	88.2
Tetrachloroethene	µg/L	0.395 J	0.53	0.341 J	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	µg/L	<1	<1	0.274 J	0.323 J	0.333 J	0.356 J
Trichloroethene	µg/L	0.4 J	0.407 J	<1	<1	<1	<1
Vinyl chloride	µg/L	2.57	0.436 J	0.968 J	0.797 J	0.819 J	0.646 J

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-100B

Primary CVOCs	Sample Name Sample Date Units	MW100B-EBT-TS13-110-115 7/21/2003	MW-100B 3/30/2004	MW-100B 11/12/2004	MW-100B 2/18/2005	MW-100B 5/18/2005	MW-100B 10/23/2006	MW-100B 4/13/2007	MW-100B 10/2/2007	MW-100B 4/7/2008
1,1,1-Trichloroethane	µg/L	<1	<5	<5	<1	<3.3	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<5	<5	0.41 J	0.3 J	<1	<1	<1	0.746 J
1,2-Dichloroethene (Total)	µg/L	--	140	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<5	<5	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<5	<5	<1	<1	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	89	140	160	120	100	112	94.4	143	89.3
Tetrachloroethene	µg/L	<0.5	<5	<5	2.8	5.8	101	98.9	29.6	64.2
trans-1,2-Dichloroethene	µg/L	0.312 J	<5	<5	<1	<1	0.39 J	0.432 J	0.605 J	0.92 J
Trichloroethene	µg/L	<1	<5	<5	3.4	6.2	43.1	39.4	12.6	31.4
Vinyl chloride	µg/L	0.66 J	<5	<5	<1	0.29 J	0.716 J	0.595 J	1.02	0.836 J

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-100B

	Sample Name	MW-100B	MW-100B	MW-100B	MW-100B	MW-100B
	Sample Date	10/8/2008	4/8/2009	10/7/2009	3/30/2010	10/6/2010
Primary CVOCs	Units					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	0.973 J	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	158	22.3	21.5	8.8	11
Tetrachloroethene	µg/L	0.706 J	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	0.783 J	<1	<1	<1	<1
Trichloroethene	µg/L	0.309 J	<1	<1	<1	<1
Vinyl chloride	µg/L	1.75	94.6	85.2 J	131 J	132

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-101

	Sample Name	MW-101-89	MW-101-109	MW-101-124	MW-101	MW-101	MW-101,97.5	MW-101,129	MW-101,97.5
	Sample Date	12/21/2001	12/21/2001	12/21/2001	3/30/2004	11/11/2004	2/18/2005	2/18/2005	5/20/2005
Primary CVOCs	Units								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<20	<17	<1.4	<1.3	<1.2
1,1-Dichloroethene	µg/L	<1	<1	<1	<20	<17	<1.4	<1.3	<1.2
1,2-Dichloroethene (Total)	µg/L	--	--	--	<40	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<20	<17	<1.4	<1.3	<1.2
Chloroform	µg/L	0.38 J	<1	0.42 J	<20	<17	0.27 B	0.31 B	0.24 B
cis-1,2-Dichloroethene	µg/L	0.34 J	0.27 J	0.39 J	<20	<17	<1.4	0.3 J	0.32 J
Tetrachloroethene	µg/L	530	450	460	450	450 J	470	460	350
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<20	<17	<1.4	<1.3	<1.2
Trichloroethene	µg/L	0.95 J	0.87 J	0.84 J	<20	<17	0.47 J	0.43 J	<1.2
Vinyl chloride	µg/L	<1	<1	<1	<20	<17	<1.4	<1.3	<1.2

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-101

Primary CVOCs	Sample Name / Sample Date / Units	MW-101,129 5/20/2005	MW-101T 8/25/2006	MW-101B 8/25/2006	MW-101T 12/7/2006	MW-101B 12/7/2006	MW-101T 3/6/2007	MW-101B 3/6/2007	MW-101T 5/30/2007	MW-101B 5/30/2007
1,1,1-Trichloroethane	µg/L	<1.2	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1.2	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1.2	<1	<1	<1	<1	<1	<1	<1 J	<1 J
Chloroform	µg/L	0.23 B	0.261 J	0.233 J	0.155 J	0.156 J	0.164 J	0.129 J	0.148 J	0.206 J
cis-1,2-Dichloroethene	µg/L	<1.2	0.266 J	0.279 J	<1	<1	0.621 J	9.4	0.428 J	1.01
Tetrachloroethene	µg/L	340	251	239	196	192	192	193	123	135
trans-1,2-Dichloroethene	µg/L	<1.2	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.35 J	0.298 J	0.293 J	<1	<1	<1	0.358 J	0.364 J	0.311 J
Vinyl chloride	µg/L	<1.2	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-101

	Sample Name	MW-101T	MW-101B	MW-101T	MW-101B	MW-101T	MW-101B	MW-101T	MW-101B	MW-101T
	Sample Date	9/11/2007	9/11/2007	12/11/2007	12/11/2007	3/14/2008	3/14/2008	6/10/2008	6/10/2008	12/10/2008
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.162 J	0.164 J	<0.3	<0.3	0.149 J	<0.3	0.137 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.609 J	7.35	0.578	5.26	10.1	35.6	3.22	23.3	51.2
Tetrachloroethene	µg/L	134	147	125	120	113	81.3	101	78.9	16.5
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.46 J	0.646 J	0.305	0.843	1.37	2.17	1.09	4.15	1.63
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-101

Primary CVOCs	Sample Name / Sample Date / Units	MW-101B 12/10/2008	MW-101T 3/11/2009	MW-101B 3/11/2009	MW-101T 10/7/2009	MW-101B 10/7/2009	MW-101T 4/5/2010	MW-101B 4/5/2010	MW-101T 10/13/2010	MW-101B 10/13/2010
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	29.1	35.2	31.2	1.85	2.03	0.512 J	0.498 J	<1	0.264 J
Tetrachloroethene	µg/L	47	46.9	55.6	76.5	96.2	82.9	99.6	75.6	66.4
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.923 J	2.16	3.53	0.746 J	0.809 J	0.307 J	0.325 J	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-102B

	Sample Name	MW-102B	MW-102B	MW-102B	MW-102B	MW-102B	MW-102B
	Sample Date	5/8/2004	10/19/2006	10/3/2007	10/13/2008	10/8/2009	10/11/2010
Primary CVOCs	Units						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1 J	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1 J	<1	<1
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1 J	<1	<1
Chloroform	µg/L	<1	<0.3	<0.3	<0.3 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1 J	<1	<1
Tetrachloroethene	µg/L	<1	<1	0.308 J	<1 J	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1 J	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1 J	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1 J	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-103

	Sample Name	MW-103-10	MW-103-9	MW-103-8	MW-103-7	MW-103-6	MW-103-5	MW-103-4	MW-103-3	MW-103-2
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001
Primary CVOCs	Units									
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	1.1	1.1	1.2	1.4	1.2	1.5	1.1	1.4	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	16	17	16	17	16	15	14	16	4.3
cis-1,2-Dichloroethene	µg/L	0.39 J	0.37 J	0.36 J	0.39 J	0.36 J	0.34 J	0.33 J	0.39 J	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5.8	5.6	4.9	4.9	4.6	4.4	3.9	4.8	0.69 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-103

	Sample Name	MW-103-1	MW-103	MW-103	MW-103-LB-1	MW-103-LA-5	MW-103	MW-103	MW-103
	Sample Date	11/30/2001	5/11/2004	2/20/2005	10/3/2006	10/4/2007	10/6/2008	10/11/2009	10/7/2010
Primary CVOCs	Units								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	1.3	1.6	1.7	1.94	1.18	1.56	1.98
1,2-Dichloroethene (Total)	µg/L	--	0.44 J	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	1.9	12	13	12.2	11.7	11.1	8.02	7.78
cis-1,2-Dichloroethene	µg/L	<1	0.44 J	0.43 J	0.322 J	0.35 J	<1	0.314 J	0.386 J
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	0.3 J	4	4.4	5.04	6.63	5.27	5.44	3.98
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

MW-104

Primary CVOCs	Sample Name / Sample Date / Units	MW-104-10 11/30/2001	MW-104-9 11/30/2001	MW-104-8 11/30/2001	MW-104-7 11/30/2001	MW-104-6 11/30/2001	MW-104-5 11/30/2001	MW-104-4 11/30/2001	MW-104-3 11/30/2001
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	1.3	1.3	1.2	1.4	1.1	0.48 J	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	20	19	14	18	17	10	5	4.8
cis-1,2-Dichloroethene	µg/L	0.46 J	0.45 J	0.36 J	0.47 J	0.4 J	0.22 J	<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	24	20	19	19	16	6.4	1.3	1.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-104

	Sample Name	MW-104-2	MW-104-1	MW-104	MW-104	MW-104	MW-104	MW-104	MW-104	MW-104
	Sample Date	11/30/2001	11/30/2001	5/11/2004	2/21/2005	10/3/2006	4/13/2007	10/4/2007	4/8/2008	10/6/2008
Primary CVOCs	Units									
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	1.3	1.6	1.68	1.83	1.98	2.57	1.24
1,2-Dichloroethene (Total)	µg/L	--	--	<2	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	4.6	4	13	16	15.9	13.7	12.8	13.6	11.2
cis-1,2-Dichloroethene	µg/L	<1	<1	0.36 J	0.38 J	0.446 J	0.589 J	0.554 J	0.63 J	0.305 J
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.1	0.89 J	11	14	17.6	17	17.8	18.2	12.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
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MW-104

	Sample Name	MW-104	MW-104
	Sample Date	10/11/2009	10/7/2010
Primary CVOCs	Units		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	1.54	1.96
1,2-Dichloroethene (Total)	µg/L	--	--
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	8.45	10.2
cis-1,2-Dichloroethene	µg/L	0.473 J	0.477 J
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	14.1	14.4
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-107

	Sample Name	MW-107-147	MW-107-125B	MW-107	MW-107,153	MW-107,135.5	MW-107T-LB-1	MW-107B-LB-1
	Sample Date	12/21/2001	12/21/2001	5/26/2004	2/20/2005	2/20/2005	10/17/2006	10/17/2006
Primary CVOCs	Units							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	<2	--	--	--	--
Carbon tetrachloride	µg/L	0.6 J	0.52 J	0.28 J	0.31 J	0.34 J	<1	<1
Chloroform	µg/L	0.16 J	0.14 J	<1	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.29 J	0.34 J	0.25 J	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.67 J	0.95 J	<1	0.21 J	0.32 J	0.564 J	0.377 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.6	2.8	0.7 J	0.57 J	0.63 J	0.999 J	0.585 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-107

Primary CVOCs	Sample Name Sample Date Units	MW-107B-LA-5 10/2/2007	MW-107T 4/9/2008	MW-107B 4/9/2008	MW-107T 10/10/2008	MW-107B 10/10/2008	MW-107T 10/7/2009	MW-107B 10/7/2009	MW-107T 10/13/2010	MW-107B 10/13/2010
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	0.415 J	0.616 J	0.574 J	<1	<1	0.787 J	0.773 J	0.6	0.629
Chloroform	µg/L	<0.3	0.324	0.262 J	0.287 J	0.32 J	0.239 J	0.238 J	0.357	0.375
cis-1,2-Dichloroethene	µg/L	<1	0.283 J	0.265 J	0.385 J	0.449 J	0.257 J	<1	<1	0.252 J
Tetrachloroethene	µg/L	0.476 J	0.411 J	0.291 J	1.93	0.965 J	5.05	3.36	4.26	4.22
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.95 J	1.67	1.56	2.11	1.8 J	2.51	2.12	2.17 B	2.2
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
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MW-108

Primary CVOCs	Sample Name Sample Date Units	MW-108 12/21/2001	MW-108 5/25/2004	MW-108 2/22/2005	MW-108-LB-1 10/24/2006	MW-108-LS-3 4/16/2007	MW-108 10/1/2007	MW-108 4/7/2008	MW-108 10/10/2008	MW-108 4/7/2009
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	0.19 J	0.618 J	0.553 J	0.657 J	1.1	1.13 J	<1
1,2-Dichloroethene (Total)	µg/L	--	0.46 J	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	0.19 J	0.26 J	<1	<1	0.461 J	0.477 J	0.272 J	<1
Chloroform	µg/L	6.4	8.2	6.9	11.7	10.8	12.1	11.7	12.3 J	10.1
cis-1,2-Dichloroethene	µg/L	0.18 J	0.46 J	0.33 J	0.75 J	0.634 J	0.71 J	0.647 J	0.598 J	0.674 J
Tetrachloroethene	µg/L	2.6	3.3	3.3	5.41	6.03	5.03	3.93	3.72 J	4.49
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	6.4	15	28	32	33.5	38.4 J	32.7	28.5 J	28.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-108

Primary CVOCs	Units	MW-108	MW-108	MW-108
	Sample Name	MW-108	MW-108	MW-108
	Sample Date	10/5/2009	4/1/2010	10/12/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	0.779 J
1,2-Dichloroethene (Total)	µg/L	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	9.44	9.62	11.9
cis-1,2-Dichloroethene	µg/L	0.584 J	0.627 J	0.744 J
Tetrachloroethene	µg/L	4.39	4.29	5.23
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	29.1	34.7	37.7
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-113

Primary CVOCs	Sample Name / Sample Date / Units	MW-113-EBT-B-99.5-104.5 5/20/2002	MW113-EBT-TS1-99.5-104.5 7/8/2002	MW113-EBT-TS2-99.5-104.5 7/29/2002	MW113-EBT-TS3-99.5-104.5 9/3/2002	MW113-EBT-TS4-99.5-104.5 10/7/2002	MW113-EBT-TS5-99.5-104.5 11/11/2002
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--
Carbon tetrachloride	µg/L	30	50	69.1	60.7	64.5	59
Chloroform	µg/L	76	79	98	90.6	83.2	78.2
cis-1,2-Dichloroethene	µg/L	44	48	55.5	59.9	92.4	77.3
Tetrachloroethene	µg/L	30	45	59.3	112	80.4	97
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	15	20	26.7	29.4	28	31.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-113

Primary CVOCs	Sample Name Sample Date Units	MW113-EBT-TS6-99.5-104.5 12/16/2002	MW113-EBT-TS7-99.5-104.5 1/20/2003	MW113-EBT-TS9-99.5-104.5 3/24/2003	MW113-EBT-TS10-99.5-104.5 4/21/2003	MW113-EBT-TS11-99.5-104.5 5/19/2003	MW113-EBT-TS12-99.5-104.5 6/23/2003
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--
Carbon tetrachloride	µg/L	69.6 J	71.6	50.8	53.2 J	26	43.6 J
Chloroform	µg/L	87.6	93.8	70.8	81	84.4	89.8
cis-1,2-Dichloroethene	µg/L	83.4	94.1	69.7	71.2	71.6	93.9
Tetrachloroethene	µg/L	96.9	91.1	48.7	49.4	27.5	54.5
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	0.266 J	<1	<1
Trichloroethene	µg/L	32.7	30.4	23.3	21.1	15.3	19.7
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-113

Primary CVOCs	Sample Name / Sample Date / Units	MW113-EBT-TS13-99.5-104.5 7/21/2003	MW113-EBT-TS14-99.5-104.5 8/18/2003	MW-113 5/24/2004	MW-113 11/14/2004	MW-113 2/24/2005	MW-113 5/20/2005	MW-113-LB-1 10/23/2006	MW-113-LS-3 4/16/2007
1,1,1-Trichloroethane	µg/L	<1	<1	<5	<5	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<5	<5	<1 J	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	100	--	--	--	--	--
Carbon tetrachloride	µg/L	38	42.7	20	44	49	47	75.6	89.1
Chloroform	µg/L	89.7	80.4	27	34	39	36	33.8	35.9
cis-1,2-Dichloroethene	µg/L	102 J	109	100	110	87	78	54.9	46.3
Tetrachloroethene	µg/L	56.1	63.6	64	100	130	130	182	163
trans-1,2-Dichloroethene	µg/L	<1	<1	<5	<5	<1	<1	<1	<1
Trichloroethene	µg/L	19.3	18.5	8.8	15	21	22	25.9	24.1
Vinyl chloride	µg/L	<1	<1	<5	<5	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
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MW-113

Primary CVOCs	Sample Name Sample Date Units	MW-113 10/4/2007	MW-113 4/7/2008	MW-113 10/8/2008	MW-113 4/9/2009	MW-113 10/10/2009	MW-113 3/30/2010	MW-113 10/14/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	0.892 J	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	96.9	75.1	110	101	67.4	72.2	77.3
Chloroform	µg/L	36.4	30.9	45.3	39	29.5	26.5	24.3
cis-1,2-Dichloroethene	µg/L	50.2	37.8	59.6	57.1	49.5	37.1	29.7
Tetrachloroethene	µg/L	151	170	156 J	192	200	191	149
trans-1,2-Dichloroethene	µg/L	<1	0.354 J	<1	<1	<1	<1	0.358 J
Trichloroethene	µg/L	26	20.2	28.9	29.5	26.7	23.2	19.9
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-140

	Sample Name	MW-140	MW-140	MW-140	MW-140	MW-140-LB-1	MW-140-LA-5	MW-140	MW-140	MW-140
	Sample Date	5/27/2004	11/10/2004	2/17/2005	5/17/2005	10/23/2006	10/2/2007	10/9/2008	10/12/2009	10/13/2010
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	0.48 J	0.44 J	0.92 J	0.313 J	<1	<1	0.558 J	<1
Chloroform	µg/L	0.42 J	0.21 B	0.18 J	0.16 B	0.162 J	0.16 J	0.259 J	0.205 J	0.242 J
cis-1,2-Dichloroethene	µg/L	<1	0.28 J	0.22 J	0.22 J	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	0.38 J	0.42 J	0.42 J	0.424 J	0.59 J	0.933 J	0.806 J	1.18
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.54 J	1.4	1.4	1.3	1.49	1.19	1.41	1.25	0.971 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-141

Primary CVOCs	Sample Name / Sample Date / Units	MW-141 6/24/2004	MW-141 11/9/2004	MW-141 2/15/2005	MW-141 5/17/2005	MW-141-LB-1 10/23/2006	MW-141-LS-3 4/17/2007	MW-141 10/2/2007	MW-141 4/8/2008	MW-141 10/10/2008
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	0.82 J	<1	<1	<1	0.418 J	<1
Chloroform	µg/L	1.4	1.5 B	1.8	2 B	2.37	2.46	2.09	2.31	2.48 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5.9	19	26	31	27.6	21.3	18	16.9	19.7 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.2	2.1	2.2	2.8	3.56	3.02	2.52	2.47	3.24 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-141

Primary CVOCs	**Sample Name** / **Sample Date** / Units	MW-141 4/9/2009	MW-141 10/5/2009	MW-141 4/2/2010	MW-141 10/8/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	1.85	1.78	1.54	2.06
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	15.7	17.1	16.6	19.6
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	2.48	3.02	2.58	3.18
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-142

Primary CVOCs	Sample Name / Sample Date / Units	MW 142 5/26/2004	MW-142 11/9/2004	MW-142 2/16/2005	MW-142 5/17/2005	MW-142-LB-1 10/2/2006	MW-142-LA-5 10/3/2007	MW-142 10/8/2008	MW-142 10/8/2009	MW-142 10/9/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	0.3 J	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	0.36 J	<1	0.77 J	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	0.25 B	0.17 B	<1	<0.3	<0.3	<0.3	0.128 J	<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
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.3 J	1.4	0.65 J	0.39 J	0.371 J	0.709 J	1.61	2.74	6.71
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-143

	Sample Name	MW-143	MW-143	MW-143	MW-143	MW-143	MW-143	MW-143
	Sample Date	5/5/2004	11/11/2004	2/17/2005	5/17/2005	10/19/2006	10/13/2008	10/12/2010
Primary CVOCs	Units							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1 J	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1 J	<1
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1 J	<1
Chloroform	µg/L	<1	<1	<1	<1	<0.3	<0.3 J	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1 J	<1
Tetrachloroethene	µg/L	<1	<1 J	<1	<1	<1	<1 J	<1
trans-1,2-Dichloroethene	µg/L	<1 J	<1	<1	<1	<1	<1 J	<1
Trichloroethene	µg/L	<1	<1	<1	0.31 J	0.7 J	1.19 J	8.83
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1 J	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-197A

	Sample Name	MW-197A-LB-1	MW-197A-RW-2	MW-197A-LS-3	MW-197A-LQ-4	MW-197A-LA-5	MW-197A	MW-197A
	Sample Date	10/24/2006	1/24/2007	4/13/2007	7/9/2007	10/3/2007	4/8/2008	10/6/2008
Primary CVOCs	Units							
1,1,1-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	0.237 J	0.226 J	0.212 J	0.208 J	0.179 J	0.185 J	0.174 J
cis-1,2-Dichloroethene	µg/L	0.447 J	0.345 J	0.432 J	0.419 J	0.445 J	1.48	3.13
Tetrachloroethene	µg/L	130	125	114	103	87.3	82.8	54.8
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.04	2.04	2.28	2.31	2.42	2.42	2.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-197A

	Sample Name	MW-197A	MW-197A	MW-197A	MW-197A
	Sample Date	4/6/2009	10/6/2009	4/2/2010	10/11/2010
Primary CVOCs	Units				
1,1,1-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	0.13 J	0.187 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	3.69	2.57	2.22	1.84
Tetrachloroethene	µg/L	42.1	33.8	34	35
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	2.09	2.04	1.81	1.72
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

MW-197B

	Sample Name	MW-197B-LB-1	MW-197B-RW-2	MW-197B-LS-3	MW-197B-LQ-4	MW-197B-LA-5	MW-197B	MW-197B
	Sample Date	10/2/2006	1/24/2007	4/13/2007	7/9/2007	10/3/2007	4/8/2008	10/6/2008
Primary CVOCs	Units							
1,1,1-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	<0.3	0.227 J	0.208 J	<0.3	0.166 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.625 J	0.484 J	0.792 J	5.29	10.7	47.6	48.7
Tetrachloroethene	µg/L	179	166	138	134	105 J	38.6	16.7
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	8.51	8.76	9.11	10.2	10.3	9.01	9.77
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-197B

	Sample Name	MW-197B	MW-197B	MW-197B	MW-197B
	Sample Date	4/6/2009	10/6/2009	4/2/2010	10/11/2010
Primary CVOCs	Units				
1,1,1-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	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	38.2	25.9	16.6	9.66
Tetrachloroethene	µg/L	20.2	24.1	26.8	34.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	12.6	12.3	10.9	10.2
Vinyl chloride	µg/L	0.684 J	3.09	7.24	3.99 J

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-198

	Sample Name	MW-198-LB-1	MW-198-RW-2	MW-198-LS-3	MW-198-LQ-4	MW-198-LA-5	MW-198	MW-198	MW-198
	Sample Date	10/2/2006	1/24/2007	4/15/2007	7/10/2007	10/2/2007	4/9/2008	10/8/2008	4/9/2009
Primary CVOCs	Units								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	0.657 J	<1	<1	<1	0.679 J	0.524 J	<1
Carbon tetrachloride	µg/L	<1	0.915 J	0.32 J	0.267 J	0.438 J	0.326 J	<1	<1
Chloroform	µg/L	<0.3	0.2 J	0.146 J	<0.3	<0.3	<0.3	0.171 J	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<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	3.28	25.8	20.2	15.1	6.53	8.36	10.4 J	3.73
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-198

Primary CVOCs	Sample Name Sample Date Units	MW-198 10/12/2009	MW-198 10/8/2010
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	8.39	3.14
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-199A

Primary CVOCs	Sample Name Sample Date Units	MW-199A-LB-1 10/23/2006	MW-199A-RW-2 1/24/2007	MW-199A-LS-3 4/13/2007	MW-199A-LQ-4 7/12/2007	MW-199A-LA-5 10/2/2007	MW-199A 10/9/2008	MW-199A 10/5/2009
1,1,1-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	0.126 J	<0.3	<0.3	0.132 J	<0.3	0.137 J	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	0.361 J	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	0.419 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-199A

Primary CVOCs	Sample Name Sample Date Units	MW-199A 10/7/2010
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	<0.3
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	<1
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	0.968 J
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-199B

Primary CVOCs	Sample Name / Sample Date / Units	MW-199B-LB-1 10/23/2006	MW-199B-RW-2 1/24/2007	MW-199B-LS-3 4/13/2007	MW-199B-LQ-4 7/11/2007	MW-199B-LA-5 10/2/2007	MW-199B 4/8/2008	MW-199B 10/9/2008
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	0.581 J	<1	0.773 J	0.996 J
Carbon tetrachloride	µg/L	0.719 J	0.949 J	0.555 J	1.05	0.376 J	0.6 J	<1
Chloroform	µg/L	0.197 J	0.179 J	0.232 J	0.279 J	0.146 J	0.177 J	0.24 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.632 J	0.497 J	0.715 J	0.517 J	0.393 J	23.4	0.612 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	99.2 J	115	115	136	78.6	56.5	124
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-199B

Primary CVOCs	Sample Name Sample Date Units	MW-199B 4/9/2009	MW-199B 10/7/2009	MW-199B 4/2/2010	MW-199B 10/8/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.476 J	0.324 J	0.378 J	0.287 J
Chloroform	µg/L	0.217 J	0.158 J	0.154 J	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.494 J	0.694 J	0.511 J	0.707 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	115	93.2	87.5	53.8
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-200

Primary CVOCs	Sample Name Sample Date Units	MW-200A-LB-1 10/25/2006	MW-200-RW-2 1/24/2007	MW-200-LS-3 4/15/2007	MW-200-LQ-4 7/10/2007	MW-200-LA-5 10/3/2007	MW-200-LQ-6 4/8/2008	MW-200-LB-8 10/6/2008
1,1,1-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	<0.3	<0.3	0.146 J	<0.3	<0.3	0.206 J	0.175 J
cis-1,2-Dichloroethene	µg/L	0.466 J	0.303 J	0.532 J	0.543 J	0.419 J	0.345 J	0.531 J
Tetrachloroethene	µg/L	72	81.9	70.2	62.9	73.9	132	125
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5.47	5.94	7.49	7.49	6.88	4.13	3.42
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-200

Primary CVOCs	Sample Name Sample Date Units	MW-200 4/7/2009	MW-200 10/10/2009	MW-200 3/29/2010	MW-200 10/11/2010
1,1,1-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	<0.3	<0.3	0.157 J	<0.3
cis-1,2-Dichloroethene	µg/L	5.68	11.6	8.57	16.7
Tetrachloroethene	µg/L	74.7	25.6	23.8	31.5
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	4.82	8.04	7.99	7.24
Vinyl chloride	µg/L	<1	<1	<1	<1 J

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-202A

Primary CVOCs	Sample Name / Sample Date / Units	MW-202A-LB-1 10/23/2006	MW-202A-RW-2 1/24/2007	MW-202A-LS-3 4/16/2007	MW-202A-LQ-4 7/11/2007	MW-202A-LA-5 10/1/2007	MW-202A 4/7/2008	MW-202A 10/7/2008
1,1,1-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	0.365 J	0.749 J	0.382 J	0.904 J	0.552 J	0.695 J	<1
Chloroform	µg/L	0.232 J	0.198 J	0.213 J	0.249 J	0.238 J	0.225 J	0.17 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	0.251 J	<1	<1	<1
Tetrachloroethene	µg/L	0.257 J	0.326 J	0.316 J	0.371 J	0.672 J	0.443 J	0.262 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.85	1.59	1.88	2.22	1.66	1.77	1.21
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-202A

Primary CVOCs	Sample Name / Sample Date / Units	MW-202A 4/7/2009	MW-202A 10/6/2009	MW-202A 10/9/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	0.466 J	<1
Chloroform	µg/L	0.171 J	<0.3	0.21 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	0.399 J	0.294 J	1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	1.35	1.45	1.43
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-202B

Primary CVOCs	**Sample Name** / **Sample Date** / Units	MW-202B-LB-1 10/24/2006	MW-202B-RW-2 1/24/2007	MW-202B-LS-3 4/16/2007	MW-202B-LQ-4 7/11/2007	MW-202B-LA-5 10/2/2007	MW-202B 4/9/2008	MW-202B 10/7/2008
1,1,1-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	0.263 J	<1
Chloroform	µg/L	0.778	0.857	0.752	1.05	0.907	1.46	1.92
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5.51	8.42	8.6	8.16	3.82	16.3	21.3
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.811 J	1.27	1.46	2.2	1.36	2.21	2.57
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-202B

Primary CVOCs	Sample Name / Sample Date / Units	MW-202B 4/7/2009	MW-202B 10/6/2009	MW-202B 4/6/2010	MW-202B 10/9/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	0.506 J	<1	<1
Chloroform	µg/L	1.96	1.92	1.81	1.46
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	0.299 J
Tetrachloroethene	µg/L	19.5	18.6	21.4	23.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	3.3	3.79	3.78	3.43
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-203A

	Sample Name	MW-203A	MW-203A-LQ-4	MW-203A-LA-5	MW-203A-LQ-6	MW-203A	MW-203A	MW-203A	MW-203A
	Sample Date	4/17/2007	7/9/2007	10/3/2007	1/8/2008	4/8/2008	10/6/2008	4/9/2009	10/6/2009
Primary CVOCs	Units								
1,1,1-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 J	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	0.128 J	0.172 J	0.206 J	0.201 J	0.203 J	0.158 J
cis-1,2-Dichloroethene	µg/L	<1	<1	0.294 J	0.972 J	1.14	1.2	1.68	3.38
Tetrachloroethene	µg/L	62.6	69.1 J	86.8	108	144	143	170	149
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.27	1.46	1.69	1.93	2.03	2.11	2.23	2.34
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-203A

Primary CVOCs	Sample Name Sample Date Units	MW-203A 4/2/2010	MW-203A 10/9/2010
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	0.185 J	<0.3
cis-1,2-Dichloroethene	µg/L	4.11	5.32
Tetrachloroethene	µg/L	162	143
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	2.43	2.55
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-203B

Primary CVOCs	Sample Name Sample Date Units	MW-203B 4/27/2007	MW-203B-LQ-4 7/9/2007	MW-203B-LA-5 10/3/2007	MW-203B-LQ-6 1/8/2008	MW-203B 4/8/2008	MW-203B 10/6/2008	MW-203B 4/9/2009	MW-203B 10/6/2009
1,1,1-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 J	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	50.1	63.5	55	58.6	59.7	39.2	26.6	14.4
Tetrachloroethene	µg/L	38.4	21.1	13.9	9.39	10.8	19	21.1	24.8
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	8.97	7.68	7.92	6.31	6.25	11.3	9.15	9.16
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	0.358 J	7.12	5.14

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-203B

	Sample Name	MW-203B	MW-203B
	Sample Date	4/2/2010	10/11/2010
Primary CVOCs	Units		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	9.53	6.65
Tetrachloroethene	µg/L	31.8	31.9
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	6.74	6.76
Vinyl chloride	µg/L	5.51	5.11 J

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-204A

Primary CVOCs	Sample Name Sample Date Units	MW-204A 4/23/2007	MW-204A-LQ-4 7/10/2007	MW-204A-LA-5 10/2/2007	MW-204A-LQ-6 1/8/2008	MW-204A 4/7/2008	MW-204A 10/6/2008	MW-204A 4/7/2009	MW-204A 10/7/2009
1,1,1-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	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.763 J	0.785 J	0.846 J	0.922 J	1.05	0.769 J	1.21	6.45
Tetrachloroethene	µg/L	38.8	36.2	37	42.7	44.6 J	42	47.4	39.2 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.19	1.17	1.06	1.12	1.04	0.852 J	0.981 J	1.21
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-204A

Primary CVOCs	Sample Name Sample Date Units	MW-204A 4/6/2010	MW-204A 10/8/2010
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	6.88	4.36
Tetrachloroethene	µg/L	37.3	47.2
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	1.79	1.83
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-204B

	Sample Name	MW-204B	MW-204B-LQ-4	MW-204B-LA-5	MW-204B-LQ-6	MW-204B	MW-204B	MW-204B	MW-204B
	Sample Date	4/23/2007	7/11/2007	10/2/2007	1/8/2008	4/9/2008	10/6/2008	4/8/2009	10/6/2009
Primary CVOCs	Units								
1,1,1-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	<0.3	0.125 J	<0.3	<0.3	0.13	<0.3	<0.3	0.177 J
cis-1,2-Dichloroethene	µg/L	0.906 J	0.916 J	1.05	2.3	1.39	1.26	1.29	6.13
Tetrachloroethene	µg/L	26.3	17.2	19	24.5	20.2	29.4	16.3	14.9
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.37	4.88	4.7	3.2	4.27	2.53	4.98	4.95
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-204B

Primary CVOCs	Sample Name Sample Date Units	MW-204B 4/6/2010	MW-204B 10/11/2010
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	2.33	1.11
Tetrachloroethene	µg/L	23.5	15.7
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	3.71	5.35
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-205A

	Sample Name	MW-205A	MW-205A-LQ-4	MW-205A-LA-5	MW-205A-LQ-6	MW-205A	MW-205A	MW-205A	MW-205A
	Sample Date	4/23/2007	7/10/2007	10/3/2007	1/8/2008	4/7/2008	10/9/2008	4/10/2009	10/5/2009
Primary CVOCs	Units								
1,1,1-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	0.238 J	0.222 J	0.185 J	0.165 J	0.212 J	0.223 J	0.132 J	<0.3
cis-1,2-Dichloroethene	µg/L	0.337 J	0.465 J	0.538 J	3.12	1.14	9.58 J	16.8	23.5
Tetrachloroethene	µg/L	102	180	145	153	141	126 J	82.6	53.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.69	5.84	6.25	6.14	6.02	7.56 J	7.12	7.28
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-205A

Primary CVOCs	Sample Name / Sample Date / Units	MW-205A 4/6/2010	MW-205A 10/8/2010
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	31.8	25.2
Tetrachloroethene	µg/L	32.3	39.1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	7.77	9.03
Vinyl chloride	µg/L	<1	1.2

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-205B

	Sample Name	MW-205B	MW-205B-LQ-4	MW-205B-LA-5	MW-205B-LQ-6	MW-205B	MW-205B	MW-205B	MW-205B
	Sample Date	4/23/2007	7/10/2007	10/4/2007	1/8/2008	4/9/2008	10/9/2008	4/7/2009	10/7/2009
Primary CVOCs	Units								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	0.891 J	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.206 J	<0.3	0.15 J	0.146 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.546 J	0.616 J	4.41	26.4	22.4	43	38.8	29.5
Tetrachloroethene	µg/L	129	149	100	82.3	31.2	24.9	19.7	24.4
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.2	9.22	8.74	9.75	5.15	8.48	9.36	11.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	2.06 J

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-205B

	Sample Name	MW-205B	MW-205B
	Sample Date	4/6/2010	10/11/2010
Primary CVOCs	Units		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	19.8	13.5
Tetrachloroethene	µg/L	24	30.8
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	10.9	10.7
Vinyl chloride	µg/L	5.05	4.59 J

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-206A

Primary CVOCs	Sample Name / Sample Date / Units	MW-206A 4/15/2007	MW-206A-LQ-4 7/11/2007	MW-206A-LA-5 10/3/2007	MW-206A-LQ-6 1/8/2008	MW-206A 4/9/2008	MW-206A 10/13/2008	MW-206A 4/7/2009	MW-206A 10/7/2009
1,1,1-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	0.155 J	<0.3	0.166 J	0.174 J	0.173 J	0.134 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.607 J	0.765 J	0.762 J	0.717 J	0.78 J	5.2	14.2	18.6
Tetrachloroethene	µg/L	76.6	99.2	76.4	114	96.5	80.5	46.5	25.6
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	9.81	10.1	12.4	12	13.9	13.2	12.6	12.3
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-206A

Primary CVOCs	Sample Name / Sample Date / Units	MW-206A 4/6/2010	MW-206A 10/8/2010
1,1,1-Trichloroethane	μg/L	<1	<1
1,1-Dichloroethene	μg/L	<1	<1
Carbon tetrachloride	μg/L	<1	<1
Chloroform	μg/L	<0.3	<0.3
cis-1,2-Dichloroethene	μg/L	14.8	13.5
Tetrachloroethene	μg/L	22.3	15.6
trans-1,2-Dichloroethene	μg/L	<1	<1
Trichloroethene	μg/L	11.5	12.2
Vinyl chloride	μg/L	<1	<1

Notes:
-- not analyzed
μg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-206B

	Sample Name	MW-206B	MW-206B-LQ-4	MW-206B-LA-5	MW-206B-LQ-6	MW-206B	MW-206B	MW-206B	MW-206B
	Sample Date	4/15/2007	7/11/2007	10/3/2007	1/9/2008	4/9/2008	10/13/2008	4/7/2009	10/7/2009
Primary CVOCs	Units								
1,1,1-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	0.139 J	0.14 J	0.148 J	0.147 J	0.136 J	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.582 J	0.722 J	0.698 J	0.688 J	2.51	7.85	9.78	11
Tetrachloroethene	µg/L	57.2	77.5	64.9	69.5	69.1	36.4	22.8	17.3
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	8.94	11	11	11.7	11.5	9.91	9.31	9.57
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-206B

Primary CVOCs	Sample Name Sample Date Units	MW-206B 4/6/2010	MW-206B 10/8/2010
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	6.56	6.68
Tetrachloroethene	µg/L	12.3	12.3
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	7.5	8.81
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-207A

Primary CVOCs	Units	MW-207A 4/16/2007	MW-207A-LQ-4 7/10/2007	MW-207A-LA-5 10/3/2007	MW-207A-LQ-6 1/9/2008	MW-207A 4/9/2008	MW-207A 10/7/2008	MW-207A 4/10/2009	MW-207A 10/5/2009
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	0.867 J	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	0.44 J	<1	<1	<1	<1
Chloroform	µg/L	5.86	9.99	8.28	10.6	9.12	9.13	10.3	9.72
cis-1,2-Dichloroethene	µg/L	0.468 J	0.387 J	0.479 J	0.382 J	0.475 J	0.476 J	0.561 J	0.974 J
Tetrachloroethene	µg/L	7.92	8.32	10.3	10.5	12.1	13.7	9.75	11
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	21.4	18.6	21.6	24.3	24.2	26.9	47.4	52.7
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-207A

Primary CVOCs	Sample Name / Sample Date / Units	MW-207A / 4/1/2010	MW-207A / 10/14/2010
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	0.527 J	0.849 J
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	9.02	12.1
cis-1,2-Dichloroethene	µg/L	0.893 J	0.768 J
Tetrachloroethene	µg/L	10.7	18.1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	46.4	36.2
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-207B

Primary CVOCs	Sample Name / Sample Date / Units	MW-207B 4/16/2007	MW-207B-LQ-4 7/11/2007	MW-207B-LA-5 10/3/2007	MW-207B-LQ-6 1/9/2008	MW-207B 4/9/2008	MW-207B 10/7/2008	MW-207B 4/10/2009	MW-207B 10/6/2009
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	0.935 J	<1	<1	<1
Carbon tetrachloride	µg/L	1.36	1.91	1.37	1.13	1.22	0.916 J	0.851 J	1.23
Chloroform	µg/L	3.09	2.54	1.9	1.26	1.27	1.41	1.6	3.64
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	0.558 J
Tetrachloroethene	µg/L	35.7	32.5	23.7	13	13.1	18	25.5	63.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	12.1	17.6	62	109	96.2	75.3	102	67.5
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-207B

	Sample Name	MW-207B	MW-207B
	Sample Date	4/2/2010	10/12/2010
Primary CVOCs	Units		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	0.752 J	1.85 J
Chloroform	µg/L	1.35	6.99
cis-1,2-Dichloroethene	µg/L	<1	0.9 J
Tetrachloroethene	µg/L	15.3	113
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	92.1	53.6
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-208A

Primary CVOCs	Sample Name / Sample Date / Units	MW-208A 4/16/2007	MW-208A-LQ-4 7/10/2007	MW-208A-LA-5 10/4/2007	MW-208A-LQ-6 1/8/2008	MW-208A 4/8/2008	MW-208A 10/13/2008	MW-208A 4/7/2009	MW-208A 10/8/2009
1,1,1-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	0.216 J	0.228 J	0.214 J	0.221 J	0.217 J	0.21 J	0.18 J	<0.3
cis-1,2-Dichloroethene	µg/L	0.554 J	0.541 J	0.557 J	0.56 J	0.538 J	0.517 J	3.61	23.5
Tetrachloroethene	µg/L	174 J	193	163	198	189	182	163	92.8
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	8.12	8.26	8.44	8.45	7.64	9.8	9.8	10.9
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-208A

Primary CVOCs	Sample Name / Sample Date / Units	MW-208A 4/5/2010	MW-208A 10/8/2010
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	20.9	25.7
Tetrachloroethene	µg/L	24.4	38
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	6.48	12.2
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-208B

	Sample Name	MW-208B	MW-208B-LQ-4	MW-208B-LA-5	MW-208B-LQ-6	MW-208B	MW-208B	MW-208B	MW-208B
	Sample Date	4/16/2007	7/11/2007	10/4/2007	1/9/2008	4/8/2008	10/13/2008	4/7/2009	10/8/2009
Primary CVOCs	Units								
1,1,1-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	<0.3	0.131 J	<0.3	<0.3	<0.3	<0.3	0.165 J	0.136 J
cis-1,2-Dichloroethene	µg/L	1.12	1.3	1.08	0.932 J	1.51	1.4	2.14	2.06
Tetrachloroethene	µg/L	3.42	2.8	3.02	1.68	2.22	2.94	3.81	5.39
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	18.4	15.7	15	13.2	17.1	21.3	28	37.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-208B

Primary CVOCs	Sample Name Sample Date Units	MW-208B 4/5/2010	MW-208B 10/8/2010
1,1,1-Trichloroethane	μg/L	<1	<1
1,1-Dichloroethene	μg/L	<1	<1
Carbon tetrachloride	μg/L	<1	<1
Chloroform	μg/L	0.184 J	0.262 J
cis-1,2-Dichloroethene	μg/L	1.81	1.45
Tetrachloroethene	μg/L	9.29	16.5
trans-1,2-Dichloroethene	μg/L	<1	<1
Trichloroethene	μg/L	45.1	42.9
Vinyl chloride	μg/L	<1	<1

Notes:
-- not analyzed
μg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-209A

	Sample Name	MW-209A	MW-209A-LQ-4	MW-209A-LA-5	MW-209A-LQ-6	MW-209A	MW-209A	MW-209A	MW-209A
	Sample Date	4/23/2007	7/10/2007	10/4/2007	1/9/2008	4/9/2008	10/9/2008	4/9/2009	10/5/2009
Primary CVOCs	Units								
1,1,1-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	<0.3	0.165 J	0.136 J	0.131 J	0.159 J	0.175 J	<0.3	0.132 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.326 J	<1	<1	<1	<1	<1	0.323 J	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.576 J	0.487 J	0.404 J	0.467 J	0.523 J	0.611 J	0.495 J	0.568 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-209A

	Sample Name	MW-209A
	Sample Date	10/9/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	0.134 J
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	<1
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	0.659 J
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-209B

Primary CVOCs	Sample Name / Sample Date / Units	MW-209B 4/23/2007	MW-209B-LQ-4 7/11/2007	MW-209B-LA-5 10/5/2007	MW-209B-LQ-6 1/8/2008	MW-209B 4/9/2008	MW-209B 10/9/2008	MW-209B 4/9/2009	MW-209B 10/10/2009
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1 J	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1 J	<1	<1
Carbon tetrachloride	µg/L	0.327 J	0.962 J	1.86	0.474 J	0.681 J	0.611 J	0.668 J	0.725 J
Chloroform	µg/L	0.251 J	0.56	0.215 J	0.198 J	0.22 J	0.183 J	0.272 J	0.194 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1 J	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	0.357 J	<1	0.33 J	0.278 J	0.278 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1 J	<1	<1
Trichloroethene	µg/L	6.4	7.2	14.8	11.7	13	20 J	22.4	30.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1 J	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-209B

	Sample Name	MW-209B	MW-209B
	Sample Date	4/6/2010	10/8/2010
Primary CVOCs	Units		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	0.658 J	0.659 J
Chloroform	µg/L	0.243 J	0.217 J
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	0.479 J
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	21.2	31.8
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-210A

Primary CVOCs	Sample Name / Sample Date / Units	MW-210A 4/27/2007	MW-210A-LQ-4 7/9/2007	MW-210A-LA-5 10/4/2007	MW-210A-LQ-6 1/8/2008	MW-210A 4/8/2008	MW-210A 10/6/2008	MW-210A 4/6/2009	MW-210A 10/6/2009
1,1,1-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 J	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.201 J	0.199 J	<0.3	0.149 J	0.183 J	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.828 J	0.813 J	0.727 J	0.757 J	0.887 J	1.02	1.47	1.63
Tetrachloroethene	µg/L	38.2	36.1	28.8	23.3	28.2	19.4	16.9	8.48
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5.85	6.05	5.63	5.55	6.2	6.09	6.28	4.92
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-210A

Primary CVOCs	Sample Name / Sample Date / Units	MW-210A 4/2/2010	MW-210A 10/11/2010
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	0.156 J	0.13 J
cis-1,2-Dichloroethene	µg/L	2.18	2.25
Tetrachloroethene	µg/L	14.7	13.6
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	6.37	6.16
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-210B

	Sample Name	MW-210B	MW-210B-LQ-4	MW-210B-LA-5	MW-210B-LQ-6	MW-210B	MW-210B	MW-210B	MW-210B
	Sample Date	4/27/2007	7/9/2007	10/5/2007	1/8/2008	4/8/2008	10/6/2008	4/6/2009	10/6/2009
Primary CVOCs	Units								
1,1,1-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 J	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.15 J	<0.3	0.143 J	0.14 J	0.155 J	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.646 J	0.57 J	0.433 J	0.529 J	0.613 J	0.462 J	0.889 J	0.995 J
Tetrachloroethene	µg/L	32.4	24.4	21	19.8	20	12.6	12.2	9.39
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.29	8.42	10.7	8.46	7.84	7.49	7.2	7.78
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-210B

Primary CVOCs	Sample Name Sample Date Units	MW-210B 4/2/2010	MW-210B 10/11/2010
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	1.3	1.1
Tetrachloroethene	µg/L	10.3	9.27
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	7.06	7.77
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-211

	Sample Name	MW-211	MW-211-LQ-4	MW-211-LA-5	MW-211-LQ-6	MW-211	MW-211	MW-211	MW-211
	Sample Date	4/16/2007	7/10/2007	10/2/2007	1/9/2008	10/10/2008	4/10/2009	10/7/2009	10/13/2010
Primary CVOCs	Units								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	0.995 J	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	0.344
Chloroform	µg/L	0.139 J	<0.3	<0.3	0.214 J	2.24 J	2.71	1.24	0.218 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	0.502 J	0.431 J	0.469 J	0.811 J	0.745 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.536 J	0.576 J	0.436 J	0.602 J	1.18 J	1.38	1.2	1.3
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-212

	Sample Name	MW-212	MW-212-LQ-4	MW-212-LA-5	MW-212-LQ-6	MW-212	MW-212	MW-212	MW-212	MW-212
	Sample Date	4/27/2007	7/9/2007	10/3/2007	1/9/2008	4/8/2008	10/8/2008	4/10/2009	10/10/2009	4/7/2010
Primary CVOCs	Units									
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	0.761 J	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.257 J	0.479 J	0.568 J	0.635 J	0.519 J	<1	0.29 J	0.271 J	0.277 J
Chloroform	µg/L	0.289 J	0.135 J	0.13 J	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	0.516 J	<1	0.477 J	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	34.4	47.9	41.7	43.9	45.1	37.9 J	38	38.4	31.5
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-212

	Sample Name	MW-212
	Sample Date	10/15/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
Carbon tetrachloride	µg/L	0.323 J
Chloroform	µg/L	<0.3
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	0.407 J
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	23.8
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-214A

	Sample Name	MW-214A	MW-214A	MW-214A	MW-214A	MW-214A	MW-214A	MW-214A	MW-214A	MW-214A
	Sample Date	4/16/2007	7/10/2007	10/3/2007	1/9/2008	4/7/2008	10/7/2008	4/10/2009	10/11/2009	10/7/2010
Primary CVOCs	Units									
1,1,1-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	0.601 J	0.476 J	0.725 J	0.575 J	0.709 J	0.647 J	0.752 J	0.891 J	1.12 J
Chloroform	µg/L	2.63	2.32	2.26	2.02	2.06	1.58	2.22	2.21	5.01 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	8.83	6.81	6.99	7.29	6.22	4.81	4.51	4.64	10.5 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5.59	4.49	4.11	3.65	3.02	1.95	2.31	2.6	7.88 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
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MW-214B

Primary CVOCs	Sample Name Sample Date Units	MW-214B 4/17/2007	MW-214B-LQ-4 7/11/2007	MW-214B-LA-5 10/3/2007	MW-214B-LQ-6 1/9/2008	MW-214B 4/7/2008	MW-214B 10/21/2008	MW-214B 4/10/2009	MW-214B 10/11/2009
1,1,1-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	0.645 J	1.05	0.76 J	0.959 J	0.843 J	0.772 J	0.797 J	0.92 J
Chloroform	µg/L	2.06	1.85	1.47	1.44	1.22	1.27	1.47	1.8
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	6.4	6	4.89	5.44	4.55	4.39	4	4.14
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	4.24	3.83	3.06	2.88	2.36	2.28	1.93	2.25
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

MW-214B

	Sample Name	MW-214B
	Sample Date	10/12/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
Carbon tetrachloride	µg/L	1.08
Chloroform	µg/L	3.79
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	10
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	5.65 B
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-215A

Primary CVOCs	Sample Name Sample Date Units	MW-215A 4/16/2007	MW-215A-LQ-4 7/10/2007	MW-215A-LA-5 10/4/2007	MW-215A-LQ-6 1/9/2008	MW-215A 4/9/2008	MW-215A 10/7/2008	MW-215A 4/10/2009	MW-215A 10/12/2009
1,1,1-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	0.679 J	0.538 J	0.671 J	0.552 J	0.651 J	0.382 J	0.591 J	0.579 J
Chloroform	µg/L	1.66	1.67	1.76	1.68	1.66	1.44	1.52	1.43
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5.81	5.58	6.95	7.01	6.27	5.85	4.91	4.91
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.82	8.12	7.79	10.2	8.96	7.99	6.2	4.88
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-215A

	Sample Name	MW-215A
	Sample Date	10/6/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
Carbon tetrachloride	µg/L	0.747 J
Chloroform	µg/L	1.03
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	4.19
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	2.72
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-215B

	Sample Name	MW-215B	MW-215B-LQ-4	MW-215B-LA-5	MW-215B-LQ-6	MW-215B	MW-215B	MW-215B	MW-215B
	Sample Date	4/16/2007	7/9/2007	10/4/2007	1/9/2008	4/9/2008	10/7/2008	4/9/2009	10/12/2009
Primary CVOCs	Units								
1,1,1-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	0.956 J	1.01	0.894 J	0.856 J	0.988 J	0.271 J	0.97 J	1.17
Chloroform	µg/L	0.68	0.71	0.651	0.61	0.663	0.474	0.767	0.686
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	4.36	4.39	4.49	4.71	4.7	2.1	4.99	5.66
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.52	1.53	1.47	1.36	1.46	1.25	1.66	1.76
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

MW-215B

	Sample Name	MW-215B
	Sample Date	10/12/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
Carbon tetrachloride	µg/L	1.23 J
Chloroform	µg/L	0.63
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	5.81
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	1.5
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-216

Primary CVOCs	Sample Name Sample Date Units	MW-216 4/27/2007	MW-216-LQ-4 7/10/2007	MW-216-LA-5 10/2/2007	MW-216-LQ-6 1/8/2008	MW-216 10/6/2008	MW-216 4/6/2009	MW-216 10/12/2009	MW-216 10/9/2010
1,1,1-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 J	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.169 J	0.183 J	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	0.288 J	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	34.2	<1	<1	0.285 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	1.5	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-217

	Sample Name	MW-217	MW-217-LQ-4	MW-217-LA-5	MW-217-LQ-6	MW-217	MW-217	MW-217	MW-217	MW-217
	Sample Date	4/27/2007	7/9/2007	10/2/2007	1/9/2008	4/7/2008	10/8/2008	4/8/2009	10/8/2009	3/31/2010
Primary CVOCs	Units									
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	0.736 J	<1	<1	<1	<1
Carbon tetrachloride	µg/L	34.8	42.3 J	53.4	57.3	72.1	96.3 J	92.4	55.6	65.6
Chloroform	µg/L	5.05	5.33	5.18	7.43	8.56	13.4 J	9.43	5.24	4.4
cis-1,2-Dichloroethene	µg/L	1.34	1.45	1.89	2.43	2.88	4.8 J	3.58	1.8	1.33
Tetrachloroethene	µg/L	18.4	25.4 J	31.3	31.7	34.7	26.5 J	31.2	29.9	29.7
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	29.5	40.6 J	39.4	35.9	34.4	25.6 J	28.7	32.9	34.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-217

	Sample Name	MW-217
	Sample Date	10/7/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
Carbon tetrachloride	µg/L	48.8
Chloroform	µg/L	3.73
cis-1,2-Dichloroethene	µg/L	0.819 J
Tetrachloroethene	µg/L	27.4
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	37.9
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-218

	Sample Name	MW-218	MW-218-LQ-4	MW-218-LA-5	MW-218-LQ-6	MW-218	MW-218	MW-218	MW-218	MW-218
	Sample Date	4/17/2007	7/9/2007	10/2/2007	1/9/2008	4/7/2008	10/8/2008	4/8/2009	10/8/2009	3/31/2010
Primary CVOCs	Units									
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	0.626 J	0.652 J	0.651 J	<1	0.886 J	0.691 J	<1	<1	<1
Carbon tetrachloride	µg/L	15.1	13.3	17.6	15	17.7	15.6 J	15.7	10.1	7.56
Chloroform	µg/L	3.15	2.79	2.45	2.58	2.62	2.78 J	2.75	2.49	2.42
cis-1,2-Dichloroethene	µg/L	0.459 J	0.468 J	0.508 J	0.352 J	0.392 J	0.373 J	0.426 J	0.404 J	0.303 J
Tetrachloroethene	µg/L	17.7	16.7	18.5	17.2	17.4	12.2 J	15.2	16.3	11.2
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	44.2	47.6	42.8	42.5	40.7	35.9 J	37.1	42.5	32.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-218

	Sample Name	MW-218
	Sample Date	10/14/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
Carbon tetrachloride	µg/L	8.81
Chloroform	µg/L	2.98
cis-1,2-Dichloroethene	µg/L	0.373 J
Tetrachloroethene	µg/L	13.7
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	37.6
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-219

Primary CVOCs	Sample Name Sample Date Units	MW-219 4/27/2007	MW-219-LQ-4 7/10/2007	MW-219-LA-5 10/3/2007	MW-219-LQ-6 1/9/2008	MW-219 4/7/2008	MW-219 10/10/2008	MW-219 4/6/2009	MW-219 10/8/2009	MW-219 4/1/2010
1,1,1-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	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.643 J	1.06	1.01	0.875 J	0.928 J	1.14 J	1.15	0.935 J	0.393 J
Tetrachloroethene	µg/L	16.3	27.6	33.9	48	41.4	47 J	39.4	26.9	10.6
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.72	2.79	3.37	3.74	3.26	3.53 J	2.84	2.09	0.868 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-219

	Sample Name	MW-219
	Sample Date	10/6/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	<0.3
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	5.57
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	0.575 J
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-229

Primary CVOCs	Sample Name / Sample Date / Units	MW-229 10/5/2007	MW-229 1/9/2008	MW-229 10/8/2008	MW-229 4/8/2009	MW-229 10/8/2009	MW-229 10/6/2010
1,1,1-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	<0.3	<0.3	<0.3	<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
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
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
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MW-252

Primary CVOCs	**Sample Name** / **Sample Date** / Units	MW-252 6/18/2010	MW-252 10/6/2010	MW-252 12/9/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	0.332
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	2.75
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	1.62
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-253

	Sample Name	MW-253	MW-253	MW-253
	Sample Date	6/18/2010	10/6/2010	12/9/2010
Primary CVOCs	Units			
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	0.156	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	0.344	2.99	4.87
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
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MW-254

Primary CVOCs	Sample Name Sample Date Units	MW-254 8/16/2010	MW-254 10/5/2010	MW-254 12/8/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	0.695	0.872 J	1.18
Chloroform	µg/L	0.241	0.223 J	0.29
cis-1,2-Dichloroethene	µg/L	<1	<1	0.299
Tetrachloroethene	µg/L	0.814	0.623 J	0.854
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	2.28	2.07	2.58
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-255

Primary CVOCs	Sample Name Sample Date Units	MW-255 8/9/2010	MW-255 10/5/2010	MW-255 12/8/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	0.297 J	0.269
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

MW-256

	Sample Name	MW-256	MW-256	MW-256
	Sample Date	8/9/2010	10/5/2010	12/9/2010
Primary CVOCs	Units			
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	0.302	0.32	0.613
Chloroform	µg/L	1.74	2.01	1.95
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	8.71	9.44	8.64
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	2.43	2.77	2.9
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PMW21-03

Primary CVOCs	Sample Name / Sample Date / Units	PMW21-03 8/10/2006	PMW21-03 12/6/2006	PMW21-03 3/7/2007	PMW21-03 6/4/2007	PMW21-03 9/19/2007	PMW21-03 12/18/2007	PMW21-03 3/17/2008	PMW21-03 6/13/2008	PMW21-03 12/12/2008
1,1,1-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	J	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.173 J	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	2.55	0.527 J	0.485 J	0.355 J	0.636 J	0.403 J	0.407 J	0.504 J	19.2
Tetrachloroethene	µg/L	185	46.3	32.5	25.6	49	28.5	36.9	30.8	22.2
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	58	14.6	9.78	6.73	15.9	9.84	8.96	9.73	9.79
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PMW21-03

Primary CVOCs	**Sample Name** **Sample Date** Units	PMW21-03 3/12/2009	PMW21-03 3/30/2010	PMW21-03 10/5/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	57.4	1.11	0.687 J
Tetrachloroethene	µg/L	18.7	59.7	45.9
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	8.01	16.2	11.4
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PMW21-05

Primary CVOCs	Sample Name Sample Date Units	PMW21-05 8/10/2006	PMW21-05 12/5/2006	PMW21-05 3/7/2007	PMW21-05 6/5/2007	PMW21-05 9/18/2007	PMW21-05 12/18/2007	PMW21-05 3/14/2008	PMW21-05 6/16/2008
1,1,1-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	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.525 J	0.278 J	0.346 J	0.442 J	0.52 J	0.527 J	0.29 J	<1
Tetrachloroethene	µg/L	6.37	8.66	18.7	27.9	36.3	50.3	43.2	36.9
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	34.4	18.3	14	17.1	30.2	18.2	34.6	10.3
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PMW21-05

	Sample Name	PMW21-05	PMW21-05	PMW21-05	PMW21-05
	Sample Date	12/11/2008	3/12/2009	4/1/2010	10/6/2010
Primary CVOCs	Units				
1,1,1-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	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.865 J	1.47	0.851 J	0.798 J
Tetrachloroethene	µg/L	40.3	61.2	57.7	43.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	10.4	13	5.71	4.24
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PMW92-03

Primary CVOCs	Sample Name Sample Date Units	PMW92-03 8/30/2006	PMW92-03 12/7/2006	PMW92-03 3/8/2007	PMW92-03 5/30/2007	PMW92-03 9/12/2007	PMW92-03 12/12/2007	PMW92-03 3/11/2008	PMW92-03 6/11/2008
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	0.622 J
Carbon tetrachloride	µg/L	58.1	41.9	19.3	7.59	2.32	0.969 J	0.586 J	<1
Chloroform	µg/L	19.2	18.9	27.4	31	25.7	3.12	0.994	0.49
cis-1,2-Dichloroethene	µg/L	19.9	21.3	70.7	166	182	159	161	159
Tetrachloroethene	µg/L	252	252	170	54.4	31.8	30.9	30.8	27.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	11.5	12	9.92	7.03	5.09	6.91	4.66	8.79
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	0.262 J	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PMW92-03

Primary CVOCs	**Sample Name** / **Sample Date** / Units	PMW92-03 12/11/2008	PMW92-03 3/16/2009	PMW92-03 4/7/2010	PMW92-03 10/4/2010
1,1,1-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	0.151 J	<0.3	<0.3	0.26 J
cis-1,2-Dichloroethene	μg/L	159	139	112	83
Tetrachloroethene	μg/L	33.3	15.6	66.6	104
trans-1,2-Dichloroethene	μg/L	0.339 J	<1	<1	<1
Trichloroethene	μg/L	12.7	5.99	18.2	19
Vinyl chloride	μg/L	<1	<1	<1	0.528 J

Notes:
-- not analyzed
μg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PMW92-06

	Sample Name	PMW92-06	PMW92-06	PMW92-06	PMW92-06	PMW92-06	PMW92-06	PMW92-06	PMW92-06	PMW92-06
	Sample Date	8/30/2006	12/7/2006	3/12/2007	5/31/2007	9/11/2007	12/11/2007	3/11/2008	6/16/2008	12/8/2008
Primary CVOCs	Units									
1,1,1-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	182	132	114	117	53.2	1.53	<1	<1	<1
Chloroform	µg/L	82.7	68.9	79.4	85.8	114	78.7	22.9	1.11	<0.3
cis-1,2-Dichloroethene	µg/L	91.4	81.1	74.5	91.5	149	150	179	178	193
Tetrachloroethene	µg/L	179	173	155	153	69.7	6.76	2.01	0.785 J	0.67 J
trans-1,2-Dichloroethene	µg/L	0.443 J	0.31 J	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	39.7	37.8	34	36.4	21.5	2.31	0.747 J	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PMW92-06

Primary CVOCs	**Sample Name**	PMW92-06	PMW92-06	PMW92-06
	Sample Date	3/12/2009	4/7/2010	10/4/2010
	Units			
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	98.3	110
Chloroform	µg/L	<0.3	48	41.1
cis-1,2-Dichloroethene	µg/L	200	85.4	68.5 J
Tetrachloroethene	µg/L	3.88	148	141
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	2.98	33.5	33 J
Vinyl chloride	µg/L	<1	<1	0.379 J

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PMW101-04A

Primary CVOCs	**Sample Name**	PMW101-04A	PMW101-04A	PMW101-04A	PMW101-04A	PMW101-04A	PMW101-04A	PMW101-04A
	Sample Date	8/22/2006	12/5/2006	3/6/2007	5/31/2007	9/17/2007	12/14/2007	3/11/2008
	Units							
1,1,1-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 J	<1	<1	<1
Chloroform	µg/L	0.199 J	0.163 J	0.144 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	20.9	86.9	72.6	81.3
Tetrachloroethene	µg/L	199	176	177	138	12.2	5.89	5.7
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.26 J	<1	<1	1.2	1.31	0.294 J	0.559 J
Vinyl chloride	µg/L	<1	<1	<1	<1	0.277 J	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PMW101-04A

	Sample Name	PMW101-04A	PMW101-04A	PMW101-04A	PMW101-04A	PMW101-04A
	Sample Date	6/11/2008	12/8/2008	3/10/2009	4/1/2010	10/14/2010
Primary CVOCs	Units					
1,1,1-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	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	42.6	60.7	47	29	13.5 J
Tetrachloroethene	µg/L	4.64	13.9	22.6	33	44.6 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.65	2.65	6.83	6.93	7.89 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PMW101-04B

Primary CVOCs	**Sample Name** / **Sample Date** / Units	PMW101-04B 8/29/2006	PMW101-04B 12/5/2006	PMW101-04B 3/6/2007	PMW101-04B 5/31/2007	PMW101-04B 9/17/2007	PMW101-04B 12/14/2007	PMW101-04B 3/11/2008
1,1,1-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 J	<1	<1	<1
Chloroform	µg/L	<0.3	0.172 J	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.971 J	0.394 J	18.8	86.3	72.1	48.1	69.3
Tetrachloroethene	µg/L	90.4	109	104	19.1	14.1	29.3	5.33
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	23.2	9.06	3.04	1.24	1.65	2.91	1.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PMW101-04B

Primary CVOCs	Sample Name / Sample Date / Units	PMW101-04B 6/10/2008	PMW101-04B 12/10/2008	PMW101-04B 3/10/2009	PMW101-04B 4/1/2010	PMW101-04B 10/5/2010
1,1,1-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	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	52.2	26	37.2	0.708 J	<1
Tetrachloroethene	µg/L	12.8	37	22.4	35.7	28.7
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	4.85	5.02	2.39	3.87	3.09
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PZ-03

Primary CVOCs	Sample Name Sample Date Units	PZ-03 3/20/2002	PZ-03 5/26/2004	PZ-03 2/23/2005	PZ-03 10/5/2006	PZ-03 10/5/2007	PZ-03 10/14/2008	PZ-03 10/11/2009	PZ-03 10/15/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	<2	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	0.2 J	0.198 J	0.139 J	0.29 J	0.192 J	0.203 J
cis-1,2-Dichloroethene	µg/L	0.55 J	<1	0.26 J	<1	<1	<1	<1	0.287 J
Tetrachloroethene	µg/L	7.1	4.4	5	3.89	0.523 J	4.38	3.99	2.04
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.86 J	0.6 J	0.85 J	0.917 J	0.321 J	1.07	1.23	1.23
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

PZ-06

Primary CVOCs	**Sample Name** **Sample Date** Units	PZ-06 3/20/2002	PZ-06 5/12/2004	PZ-06 2/22/2005	PZ-06-LB-1 10/4/2006	PZ-06-LA-5 10/5/2007	PZ-06 10/14/2008	PZ-06 10/11/2009	PZ-06 10/15/2010
1,1,1-Trichloroethane	μg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	μg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	μg/L	--	<2	--	--	--	--	--	--
Carbon tetrachloride	μg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	μg/L	<1	<1	<1	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	μg/L	<1	<1	<1	<1	<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	<1	<1	<1	<1	<1	<1
Vinyl chloride	μg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
μg/L micrograms per liter
RL reporting limit

DQE FLAGS:
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-1

	Sample Name	DR1-1	DR1-1	DR1-1	DR1-1	DR1-1-LB-1	DR1-1-LA-5	DR1-1-LB-8	DR1-1-LA-10	DR1-1-LB-12
	Sample Date	5/21/2004	11/12/2004	2/17/2005	5/18/2005	10/23/2006	10/1/2007	10/8/2008	10/6/2009	10/9/2010
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	0.8J	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1J	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.24J	<1	<1	<1	<0.3	<0.3	0.126 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.8J	1.2	1	1.1	1.02	0.969 J	<1	1.08	1.26
Tetrachloroethene	µg/L	2.8	3.3	3.3J	3	2.46	2.49	2.69	2.12	2.56
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	0.3J	0.29J	0.3J	0.255 J	<1	0.399 J	0.328 J	0.304 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
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DR1-1A

	Sample Name	DR1 CLUSTER A	DR1-1A	DR1-1A	DR1-1A	DR1-1A-LB-1	DR1-1A-LS-3	DR1-1A-LA-5	DR1-1A-LS-7
	Sample Date	5/27/04	11/13/04	2/16/05	5/18/05	10/2/06	4/13/07	10/1/2007	4/8/2008
Primary CVOCs	Units								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	0.72J	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.66J	0.18J	0.21B	0.16B	0.324	0.313	0.307	0.274 J
cis-1,2-Dichloroethene	µg/L	0.72J	0.85J	1	0.75J	0.634	0.416 J	0.312 J	0.273 J
Tetrachloroethene	µg/L	1.5	1.8	1.8	1.6	1.18	0.959 J	0.813 J	0.776 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.5	4	6.9	5.2	6.28	4.57	3.61	3.21
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
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DR1-1A

	Sample Name	DR1-1A-LB-8	DR1-1A-LQ-9	DR1-1A-LA-10	DR1-1A-LB-12
	Sample Date	10/8/2008	4/8/2009	10/6/2009	10/9/2010
Primary CVOCs	Units				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	0.372 J	0.424	0.518	0.348
cis-1,2-Dichloroethene	µg/L	0.262 J	0.295 J	<1	0.42 J
Tetrachloroethene	µg/L	0.747 J	0.838 J	0.749 J	1.33
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	3.03 J	3.85	2.33	3.6
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-2

Primary CVOCs	Sample Name Sample Date Units	DR1-2 5/17/2004	DR1-2 11/11/2004	DR1-2 2/16/2005	DR1-2 5/19/2005	DR1-2-LB-1 10/24/2006	DR1-2-LA-5 10/1/2007	DR1-2-LB-8 10/7/2008	DR1-2-LA-10 10/6/2009	DR1-2-LB-12 10/5/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1 J	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1 J	<1	<1
1,2-Dichloroethene (Total)	µg/L	0.68J	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1 J	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	0.163	<0.3	0.131 J	0.17 J	0.179 J
cis-1,2-Dichloroethene	µg/L	0.68J	0.77J	0.67J	0.75J	0.602	0.48 J	0.595 J	0.607 J	0.805 J
Tetrachloroethene	µg/L	1.8	2.5J	2.3	2.1	1.82	1.52	1.5 J	1.47	2.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1 J	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	1.83 J	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1 J	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-3

	Sample Name	DR1-3	DR1-3	DR1-3	DR1-3	DR1-3-BL	DR1-3-EBT-1	DR1-3-EBT-2	DR1-3-EBT-3
	Sample Date	5/10/2004	11/11/2004	2/15/2005	5/17/2005	8/25/2006	12/5/2006	3/7/2007	6/1/2007
Primary CVOCs	Units								
1,1,1-Trichloroethane	µg/L	<1	<1.2	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1.2	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1.2	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1.2	<1	<1	<0.3	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1.2	<1	0.22J	<1	<1	27.6	32.9
Tetrachloroethene	µg/L	34	43J	46	47	45.7	54.7	8.31	2.18
trans-1,2-Dichloroethene	µg/L	<1	<1.2	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.6	3.2	3.7	4.1	4.18	5.13	2.74	0.572 J
Vinyl chloride	µg/L	<1	<1.2	<1	<1	<1	<1	<1	<1

Notes
-- not analyzed
µg/L micrograms per liter
RL: reporting limt

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-3

	Sample Name	DR1-3-EBT-4	DR1-3-EBT-5	DR1-3-EBT-6	DR1-3-EBT-7	DR1-3-EBT-8	DR1-3-EBT-9	DR1-3-LA-10
	Sample Date	9/19/2007	12/13/2007	3/14/2008	6/13/2008	12/11/2008	3/12/2009	10/6/2009
Primary CVOCs	Units							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	30.7	22.6	17	19.5	16.5	13.3	1.5
Tetrachloroethene	µg/L	0.45 J	0.904 J	2.12	2.95	2.59	2.43	10
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	0.303 J	1.28	2.02	1.32	1.26	2.15
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes
-- not analyzed
µg/L micrograms per liter
RL: reporting limt

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-3

	Sample Name	DR1-3-LS-11	DR1-3-LB-12
	Sample Date	4/5/2010	10/6/2010
Primary CVOCs	Units		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.29 J	<1
Tetrachloroethene	µg/L	13.9	9.13
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	2.47	1.75
Vinyl chloride	µg/L	<1	<1

Notes
-- not analyzed
µg/L micrograms per liter
RL: reporting limt

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-4

	Sample Name	DR1-4	DR1-4	DR1-4	DR1-4	DR1-4	DR1-4	DR1-4	DR1-4	DR1-4	DR1-4
	Sample Date	5/21/2004	11/11/2004	2/15/2005	5/17/2005	10/25/2006	4/13/2007	10/1/2007	4/7/2008	10/7/2008	4/8/2009
Primary CVOCs	Units										
1,1,1-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	<1
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1J	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	8.09	5.29	0.582 J	0.987 J	0.755 J
Tetrachloroethene	µg/L	4.8	8.3J	9.3	8.9	12.4	<1	<1	2.74	1.22	0.947 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.72J	1.1	1.1	1	1.33	<1	<1	0.573 J	1.69	0.393 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-4

	Sample Name	DR1-4	DR1-4
	Sample Date	10/6/2009	10/6/2010
Primary CVOCs	Units		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	0.844 J	0.435 J
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	0.64 J	0.543 J
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-5

Primary CVOCs	**Sample Name** / **Sample Date** / Units	DR1-5 5/22/2004	DR1-5 11/12/2004	DR1-5 2/18/2005	DR1-5 5/19/2005	DR1-5-LB-1 10/24/2006	DR1-5-LS-3 4/16/2007	DR1-5-LA-5 10/1/2007	DR1-5 4/7/2008	DR1-5 10/9/2008
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1J	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1J	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	0.129	<0.3	0.148 J	0.165 J	0.181 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	0.295 J
Tetrachloroethene	µg/L	4.3	11	17	15	57	69.2	69.9	95.8	69.2 J
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	4.28 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-5

	Sample Name	DR1-5	DR1-5	DR1-5	DR1-5
	Sample Date	4/8/2009	10/5/2009	3/30/2010	10/5/2010
Primary CVOCs	Units				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	53.2	37.3	22.2	18.3
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-5A

Primary CVOCs	Sample Name Sample Date Units	DR1 CLUSTER B 5/27/2004	DR1-5A 11/12/2004	DR1-5A 2/21/2005	DR1-5A 5/19/2005	DR1-5A-LB-1 10/23/2006	DR1-5A-LS-3 4/13/2007	DR1-5A-LA-5 10/1/2007	DR1-5A 4/8/2008
1,1,1-Trichloroethane	µg/L	<1.7	<5	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1.7	<5	0.25J	0.19J	<1	<1	<1	0.655 J
1,2-Dichloroethene (Total)	µg/L	1.7J	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1.7	<5	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.71J	<5	0.4B	0.29B	0.306	0.274 J	0.252 J	0.187 J
cis-1,2-Dichloroethene	µg/L	1.7	5.2	4.6	4.1	3.46	3.19	3.16	1.82
Tetrachloroethene	µg/L	24	47	55	47	50.9	49.6	46.8	34.9
trans-1,2-Dichloroethene	µg/L	<1.7	<5	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	47	110	110	100	98.1	84	78.6	58.7
Vinyl chloride	µg/L	<1.7	<5	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-5A

	Sample Name	DR1-5A	DR1-5A	DR1-5A	DR1-5A	DR1-5A
	Sample Date	10/9/2008	4/8/2009	10/5/2009	3/30/2010	10/5/2010
Primary CVOCs	Units					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	1.09 J	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	0.343 J	0.217 J	0.204 J	0.205 J	0.197 J
cis-1,2-Dichloroethene	µg/L	4.75 J	3.19	3.39	3.58	3.88
Tetrachloroethene	µg/L	59.7 J	56.3	54.9	59.4	70.4
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	114 J	95.7	92.8	96.6	110
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-6

Primary CVOCs	Sample Name Sample Date Units	DR1-6 6/26/2004	DR1-6 11/10/2004	DR1-6 2/17/2005	DR1-6 5/18/2005	DR1-6-LB-1 10/24/2006	DR1-6-LS-3 4/13/2007	DR1-6-LA-5 10/1/2007	DR1-6 4/8/2008	DR1-6 10/7/2008
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	3.3	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	3.3	6.2	4.1	3.8	1.59	1.91	1.42	1.09	1.38
Tetrachloroethene	µg/L	13	21	20	26	184	173	191 J	195	122
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.6	2.4	2.2	2.1	1.85	1.83	1.58	1.27	4.61
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-6

	Sample Name	DR1-6	DR1-6	DR1-6	DR1-6
	Sample Date	4/8/2009	10/6/2009	4/1/2010	10/5/2010
Primary CVOCs	Units				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	1.31	1.49	1.37	1.69
Tetrachloroethene	µg/L	197	183	225	239
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	1.44	1.59	1.56	1.89
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-6A

Primary CVOCs	Sample Name / Sample Date / Units	DR1-6A 6/26/2004	DR1-6A 11/10/2004	DR1-6A 2/17/2005	DR1-6A 5/18/2005	DR1-6A-LB-1 10/24/2006	DR1-6A-LS-3 4/13/2007	DR1-6A-LA-5 10/1/2007	DR1-6A 4/8/2008	DR1-6A 10/7/2008
1,1,1-Trichloroethane	µg/L	<3.3	<3.3	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	0.32B	<3.3	0.4J	0.21J	<1	<1	<1	0.781 J	1.08
1,2-Dichloroethene (Total)	µg/L	<6.7	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<3.3	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<3.3	0.17 J	<1	0.18	0.236 J	0.183 J	0.215 J	0.238 J
cis-1,2-Dichloroethene	µg/L	--	3J	4.1	3.5	4.81	5.98	4.24	2.99	3.81
Tetrachloroethene	µg/L	--	17	28	21	28.4	34.4	30.2	30.8	39.6
trans-1,2-Dichloroethene	µg/L	--	<3.3	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	9.1	88	140	97	118	139	107	110	142
Vinyl chloride	µg/L	--	<3.3	<1	<2	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting li mit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-6A

	Sample Name	DR1-6A	DR1-6A	DR1-6A	DR1-6A
	Sample Date	4/8/2009	10/6/2009	4/1/2010	10/5/2010
Primary CVOCs	Units				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	0.214 J	0.245 J	0.193 J	0.271 J
cis-1,2-Dichloroethene	µg/L	4.33	4.89	4.05	5.08
Tetrachloroethene	µg/L	32.5	43	43.5	60.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	125	163	122	149
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting li mit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-7

	Sample Name	DR1-7	DR1-7	DR1-7	DR1-7	DR1-7	DR1-7	DR1-7	DR1-7	DR1-7
	Sample Date	6/24/2004	11/12/2004	2/21/2005	5/17/2005	10/25/2006	10/1/2007	10/7/2008	10/6/2009	10/5/2010
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	0.46 J	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.18 J	0.19 J	<1	<1	<0.3	<0.3	0.163 J	<0.3	0.169 J
cis-1,2-Dichloroethene	µg/L	0.46 J	0.58 J	0.45 J	0.48 J	0.374 J	0.344 J	0.787 J	0.449 J	0.525 J
Tetrachloroethene	µg/L	30	26	27	27	5.68	5.15	4.35	4.75	3.81
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.6	1.8	2.2	2	0.76 J	0.812 J	1.6	0.622 J	0.549 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated,based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR1-8

	Sample Name	DR1-8	DR1-8	DR1-8	DR1-8	DR1-8	DR1-8	DR1-8	DR1-8	DR1-8
	Sample Date	6/24/2004	11/11/2004	2/18/2005	5/19/2005	10/18/2006	10/1/2007	10/7/2008	10/5/2009	10/6/2010
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1J	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	0.341 J	1.03	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR2-1

Primary CVOCs	Sample Name Sample Date Units	DR2-1 6/23/2004	DR2-1 11/14/2004	DR2-1 2/22/2005	DR2-1 5/19/2005	DR2-1-BL 8/31/2006	DR2-1-EBT-1 12/6/2006	DR2-1-EBT-2 3/8/2007	DR2-1-EBT-3 5/29/2007
1,1,1-Trichloroethane	µg/L	<5.3	<8.3	<1	<1	<1	<1	<1	<1 J
1,1-Dichloroethene	µg/L	<5.3	<8.3	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	16	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	25	35	24	32	32.3	29 J	22.6	25.7 J
Chloroform	µg/L	16	16	12	13	9.91	13.3	10	8.76
cis-1,2-Dichloroethene	µg/L	16	24	21	22	17	34.7	19.3	15.2
Tetrachloroethene	µg/L	180	280	190	250	176	191	194	160
trans-1,2-Dichloroethene	µg/L	<5.3	<8.3	<1	<1	0.319 J	<1	<1	<1
Trichloroethene	µg/L	7.3	9.8	7.8	9.1	8.51	8.49	7.91	7.21
Vinyl chloride	µg/L	<5.3	<8.3	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR2-1

	Sample Name	DR2-1-EBT-4	DR2-1-EBT-5	DR2-1	DR2-1	DR2-1	DR2-1	DR2-1	DR2-1
	Sample Date	9/12/2007	12/10/2007	3/10/2008	6/9/2008	12/12/2008	3/12/2009	10/10/2009	3/30/2010
Primary CVOCs	Units								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	13.4	15.5	1.26	2.8	20.4	22.7	7.39	10.1
Chloroform	µg/L	8.58	11.3	4.19	5.75	9.18	7.53	3.76	5.25
cis-1,2-Dichloroethene	µg/L	50.4	7.71	86.4	38.1	9.14	7.59	4.89	9.88
Tetrachloroethene	µg/L	138	192	33.7	50.7	137	150	66.2	98.5
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	4.54	5.72	12.7	5.36	5.46	5.09	2.61	4.21
Vinyl chloride	µg/L	1.25	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR2-1

	Sample Name	DR2-1
	Sample Date	10/14/2010
Primary CVOCs	Units	
1,1,1-Trichloroethane	µg/L	<1
1,1-Dichloroethene	µg/L	<1
1,2-Dichloroethene (Total)	µg/L	--
Carbon tetrachloride	µg/L	13.2
Chloroform	µg/L	6.9
cis-1,2-Dichloroethene	µg/L	14.3
Tetrachloroethene	µg/L	106
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	5.23
Vinyl chloride	µg/L	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR2-2

Primary CVOCs	**Sample Name** **Sample Date** Units	DR2-2 6/9/2004	DR2-2 11/13/2004	DR2-2 2/23/2005	DR2-2 5/19/2005	DR2-2-LB-1 10/3/2006	DR2-2-LS-3 4/13/2007	DR2-2-LA-5 10/1/2007	DR2-2 4/8/2008	DR2-2 10/9/2008
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	1.8	5	4.2	4.7	4.19	6.78	10.8	13.4	13.8
Chloroform	µg/L	0.64 J	1.5	1.5	1.2 B	1.05	1.76	2.86	3.65	3.87
cis-1,2-Dichloroethene	µg/L	<1	2.7	2.5	2.4	1.9	3.47	5.7	7.04	6.86
Tetrachloroethene	µg/L	10	36	16	40	23.2	49.2	76.7	124	120
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.6	4.1	2.8	3.8	3.13	3.49	4.04	4.25	3.96
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR2-2

	Sample Name	DR2-2	DR2-2	DR2-2	DR2-2
	Sample Date	4/10/2009	10/11/2009	4/7/2010	10/12/2010
Primary CVOCs	Units				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--
Carbon tetrachloride	µg/L	16.2	7.75	7.46	4.87
Chloroform	µg/L	4.23	1.91	1.44	0.63
cis-1,2-Dichloroethene	µg/L	7.39	4.79	3.3	1.06
Tetrachloroethene	µg/L	159	97.3	69.2	25.6
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	3.82	4.02	3.63	2.45 B
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR2-3

Primary CVOCs	Sample Name Sample Date Units	DR2-3 5/23/2004	DR2-3 11/14/2004	DR2-3 2/24/2005	DR2-3 5/20/2005	DR2-3-LB-1 10/3/2006	DR2-3-LS-3 4/15/2007	DR2-3-LA-5 10/1/2007	DR2-3 4/8/2008	DR2-3 10/10/2008
1,1,1-Trichloroethane	µg/L	<1.7	<1.4	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1.7	<1.4	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	1.4 J	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	4.1 J	5.6	6.1	4.7	4.2	4.29	4.12	4.72	4.97 J
Chloroform	µg/L	1.8	1.9	1.8 B	1.2 B	0.939	0.913	0.76	0.933	0.978 J
cis-1,2-Dichloroethene	µg/L	1.4 J	1.8	1.8	1.2	0.601 J	0.673 J	0.549 J	0.683 J	0.594 J
Tetrachloroethene	µg/L	47	43	33	33	22.8	23.9	20.6	28.3	22.1 J
trans-1,2-Dichloroethene	µg/L	<1.7	<1.4	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2	2.7	2.7	2.6	2.47	2.28	2.15	2.15	2.03 J
Vinyl chloride	µg/L	<1.7	<1.4	<1	<1	<1	<1	<1	<1	<1

Notes
- -- not analyzed
- µg/L micrograms per liter
- RL reporting limit

DQE FLAGS:
- J Estimated, based on QC data or below RL
- B Estimated. possibly biased high or false positive
- < Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR2-3

Primary CVOCs	**Sample Name** **Sample Date** Units	DR2-3 4/8/2009	DR2-3 10/10/2009	DR2-3 4/7/2010	DR2-3 10/6/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--
Carbon tetrachloride	µg/L	6.66	4.62	5.88	5.81
Chloroform	µg/L	1.19	0.861	0.925	0.828
cis-1,2-Dichloroethene	µg/L	1.41	0.816 J	0.888 J	0.674 J
Tetrachloroethene	µg/L	38.9	33.3	34.2	31.6
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	2.47	2.09	2.03	2.07
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated. possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR2-4

	Sample Name	DR2-4	DR2-4	DR2-4	DR2-4	DR2-4	DR2-4	DR2-4	DR2-4	DR2-4
	Sample Date	5/24/2004	11/14/2004	2/22/2005	5/20/2005	10/5/2006	10/1/2007	10/8/2008	10/11/2009	10/13/2010
Primary CVOCs	Units									
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	<2	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	2.2	3.8	3.7	3.6	4.06	3.96	3.55	3.34	4.56
Chloroform	µg/L	1	0.94 J	0.84 J	0.77 B	1.06	0.973	0.715	0.575	0.716
cis-1,2-Dichloroethene	µg/L	<1	0.27 J	0.22 J	0.22 J	<1	<1	0.304 J	0.414 J	0.373 J
Tetrachloroethene	µg/L	12	14	12	10	7.15	9.28	14.5	18	19.8
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.9	2.2	1.9	1.7	1.61	1.54	1.74	1.7	1.7
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR2-5

Primary CVOCs	Sample Name Sample Date Units	DR2-5 6/23/2004	DR2-5 11/14/2004	DR2-5 2/23/2005	DR2-5 5/23/2005	DR2-5-BL 8/31/2006	DR2-5-EBT-1 12/7/2006	DR2-5-EBT-2 3/13/2007	DR2-5-EBT-3 5/29/2007
1,1,1-Trichloroethane	µg/L	<6.7	<5.7	<1	<1	<1	<1	<1	<1 J
1,1-Dichloroethene	µg/L	<6.7	<5.7	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	44	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	240	200	200	260	142	100	130	132 J
Chloroform	µg/L	82	68	64	79	46.7	35.8	43	37.6
cis-1,2-Dichloroethene	µg/L	44	39	41	35J	31	27.7	32.9	25.9
Tetrachloroethene	µg/L	88	71	75	88	54.2	45.3	48.4	41.1
trans-1,2-Dichloroethene	µg/L	<6.7	<5.7	<1	<1	0.506 J	0.287 J	<1	<1
Trichloroethene	µg/L	29	25	32	21J	18.3	15.4	18.5	14.4
Vinyl chloride	µg/L	<6.7	<5.7	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR2-5

Primary CVOCs	Sample Name Sample Date Units	DR2-5-EBT-4 9/13/2007	DR2-5-EBT-5 12/10/2007	DR2-5 3/12/2008	DR2-5 6/18/2008	DR2-5 12/17/2008	DR2-5 3/13/2009	DR2-5 10/10/2009	DR2-5 4/7/2010	DR2-5 10/13/2010
1,1,1-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
1,2-Dichloroethene (Total)	µg/L	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	123	138	114	103	112 J	206	94.4	217	25
Chloroform	µg/L	42.2	43.6	40.9	37.2	37.9	68.8	52	69.3	21.5
cis-1,2-Dichloroethene	µg/L	30.5	33.7	32	29.2	34.5	62	47.2	71.7	105
Tetrachloroethene	µg/L	46.8	57.3	49.5	41.7	48.9	114	47.7	98.7	21.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	1.62	1.07	<1	<1	<1	<1
Trichloroethene	µg/L	16	18.9	17.5	13.7	17	35	20.7	33.2	12.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
< Not detected at or above RL

DR2-6

	Sample Name	DR2-6	DR2-6	DR2-6	DR2-6	DR2-6-LB-1	DR2-6-LS-3	DR2-6-LA-5	DR2-6	DR2-6
	Sample Date	6/22/2004	11/13/2004	2/24/2005	5/23/2005	10/17/2006	4/15/2007	10/1/2007	4/8/2008	10/8/2008
Primary CVOCs	Units									
1,1,1-Trichloroethane	µg/L	<1.7	<2	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1.7	<2	<1	<1	<1	<1	<1	<1	0.862 J
1,2-Dichloroethene (Total)	µg/L	7.3	--	--	--	--	--	--	--	--
Carbon tetrachloride	µg/L	34	66	7.2	68	82.7	92	82.8	29.2	39.6
Chloroform	µg/L	16	25	1.5 B	29	27.3	33.1	43.1	16.3	18.4
cis-1,2-Dichloroethene	µg/L	7.3	13	0.69 J	16	9.97	14.1	31.6	36	33
Tetrachloroethene	µg/L	44	75	36	78	77.2	90.8	115	48.3	70.5
trans-1,2-Dichloroethene	µg/L	<1.7	<2	<1	<1	<1	<1	<1	<1	0.552 J
Trichloroethene	µg/L	11	13	2.2	16	15.5	16.4	19.7	7.55	12.4
Vinyl chloride	µg/L	<1.7	<2	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

HISTORICAL ANALYTICAL RESULTS, PRIMARY CVOCs
ANNUAL LONG-TERM MONITORING REPORT - 2010
Main Installation - Defense Depot Memphis, Tennessee

DR2-6

Primary CVOCs	Sample Name Sample Date Units	DR2-6 4/7/2009	DR2-6 10/8/2009	DR2-6 3/31/2010	DR2-6 10/7/2010
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
1,2-Dichloroethene (Total)	µg/L	--	--	--	--
Carbon tetrachloride	µg/L	12.9	26.4	8.59	74.4
Chloroform	µg/L	7.83	10.3	3.31	16.1
cis-1,2-Dichloroethene	µg/L	29	23.8	24.9	18.5
Tetrachloroethene	µg/L	24.5	44.5	20.9	52.9
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	5.33	8.79	3.81	10.1
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE FLAGS:
J Estimated, based on QC data or below RL
B Estimated, possibly biased high or false positive
< Not detected at or above RL

APPENDIX F

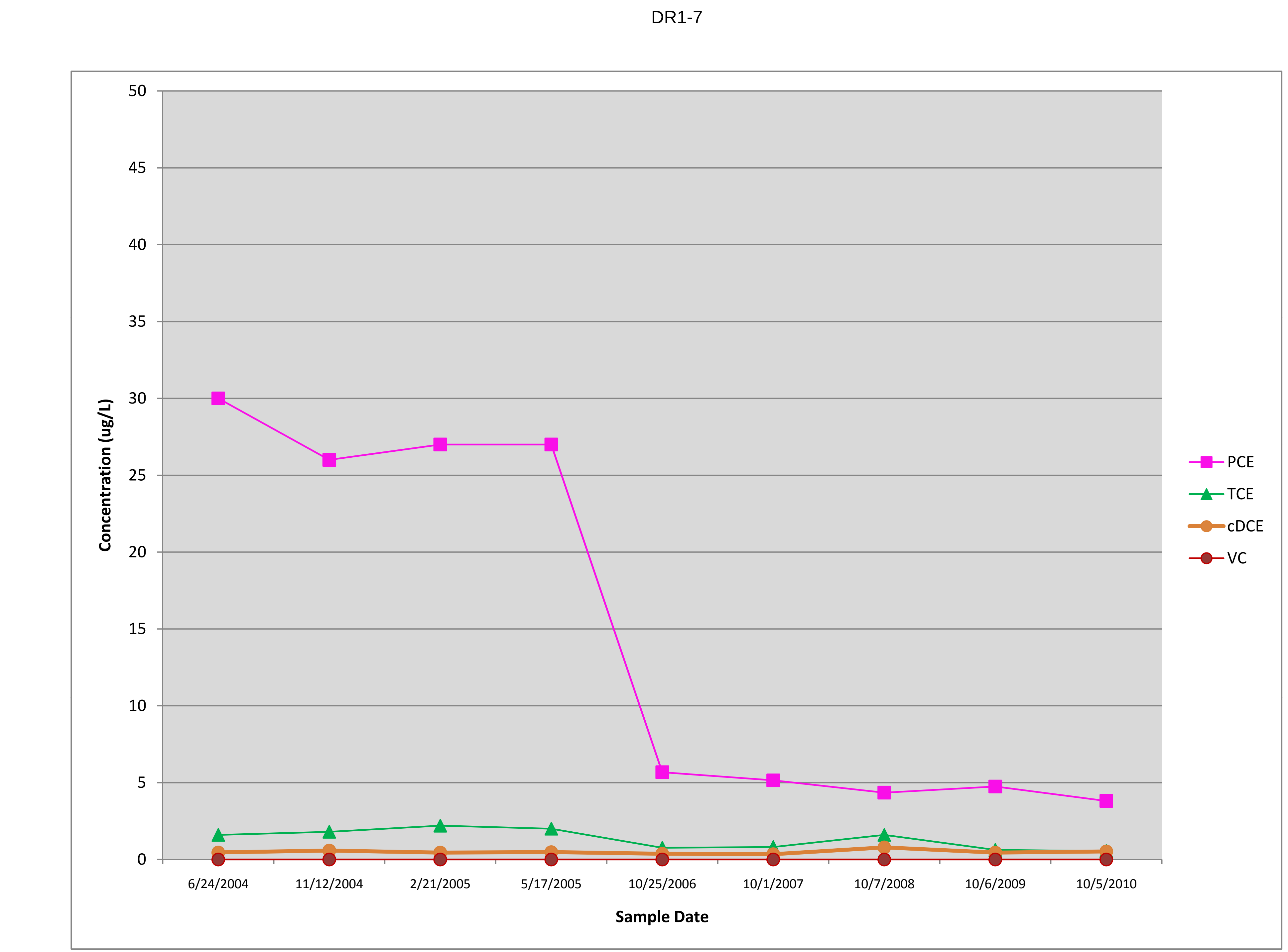
CVOC TIME-TREND PLOTS

APPENDIX F-1

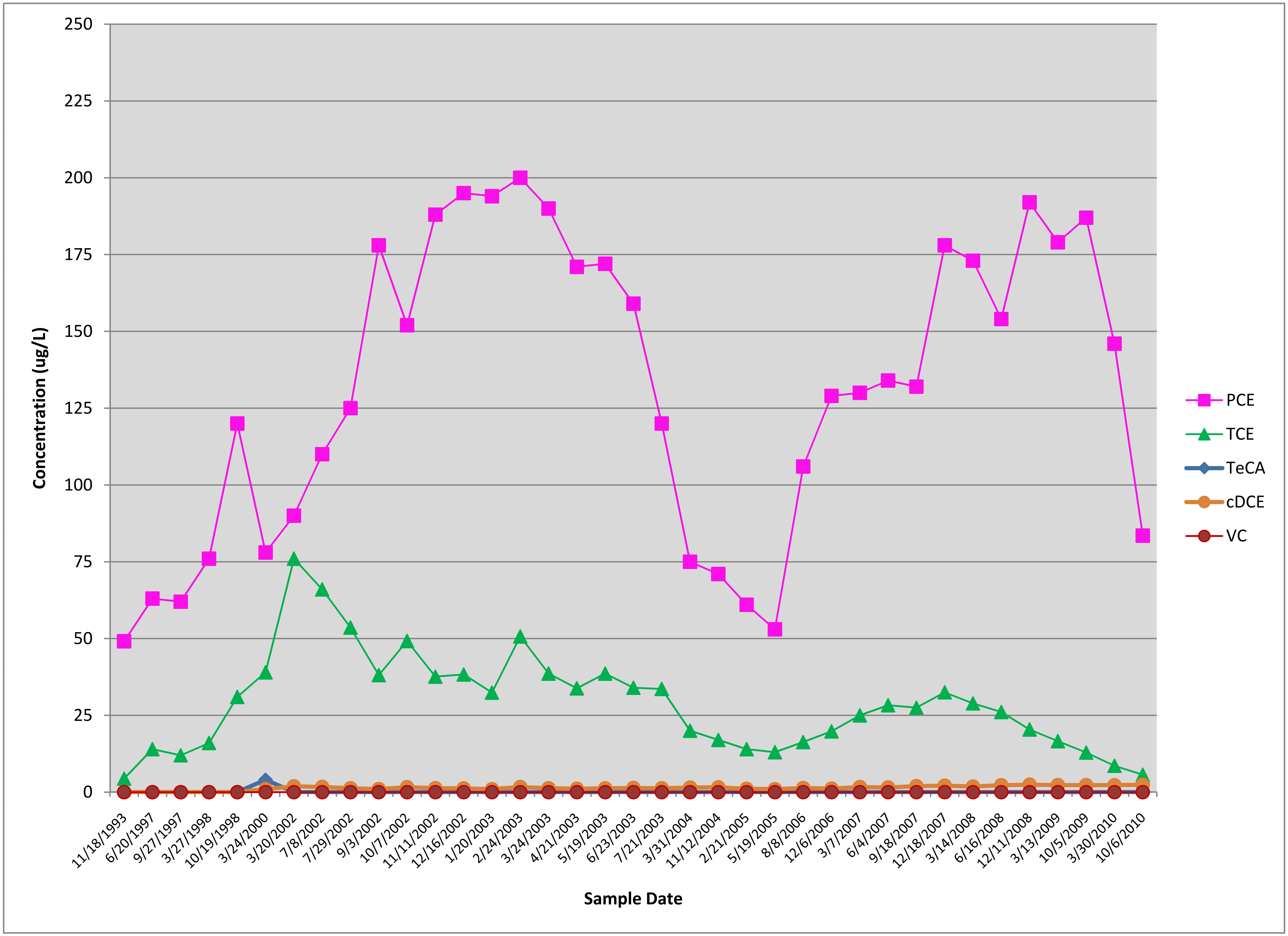
CVOC TIME-TREND PLOTS

TTA-1 North Wells

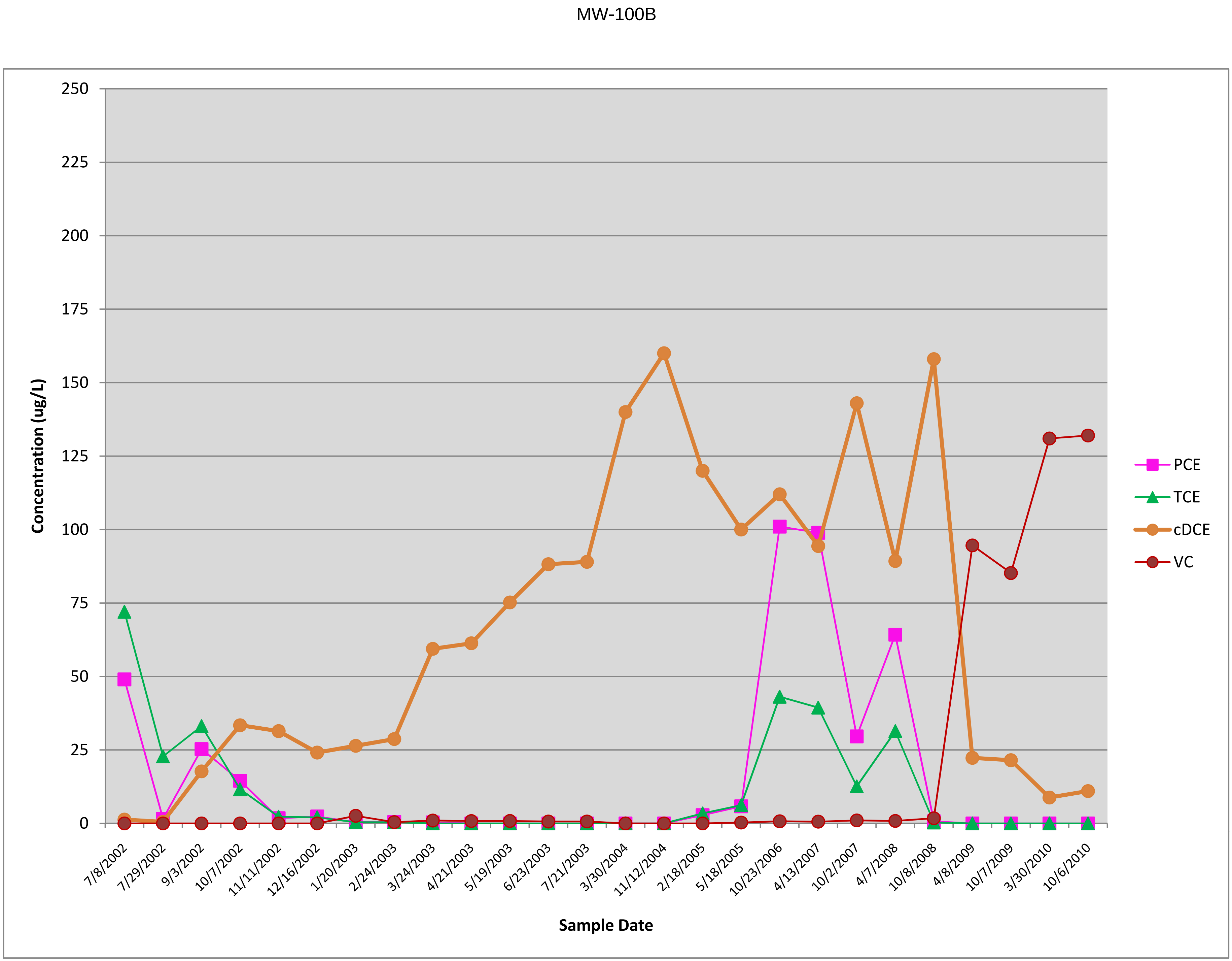
DR1-7, MW-21, MW-100B, MW-219, PMW21-03, PMW21-05

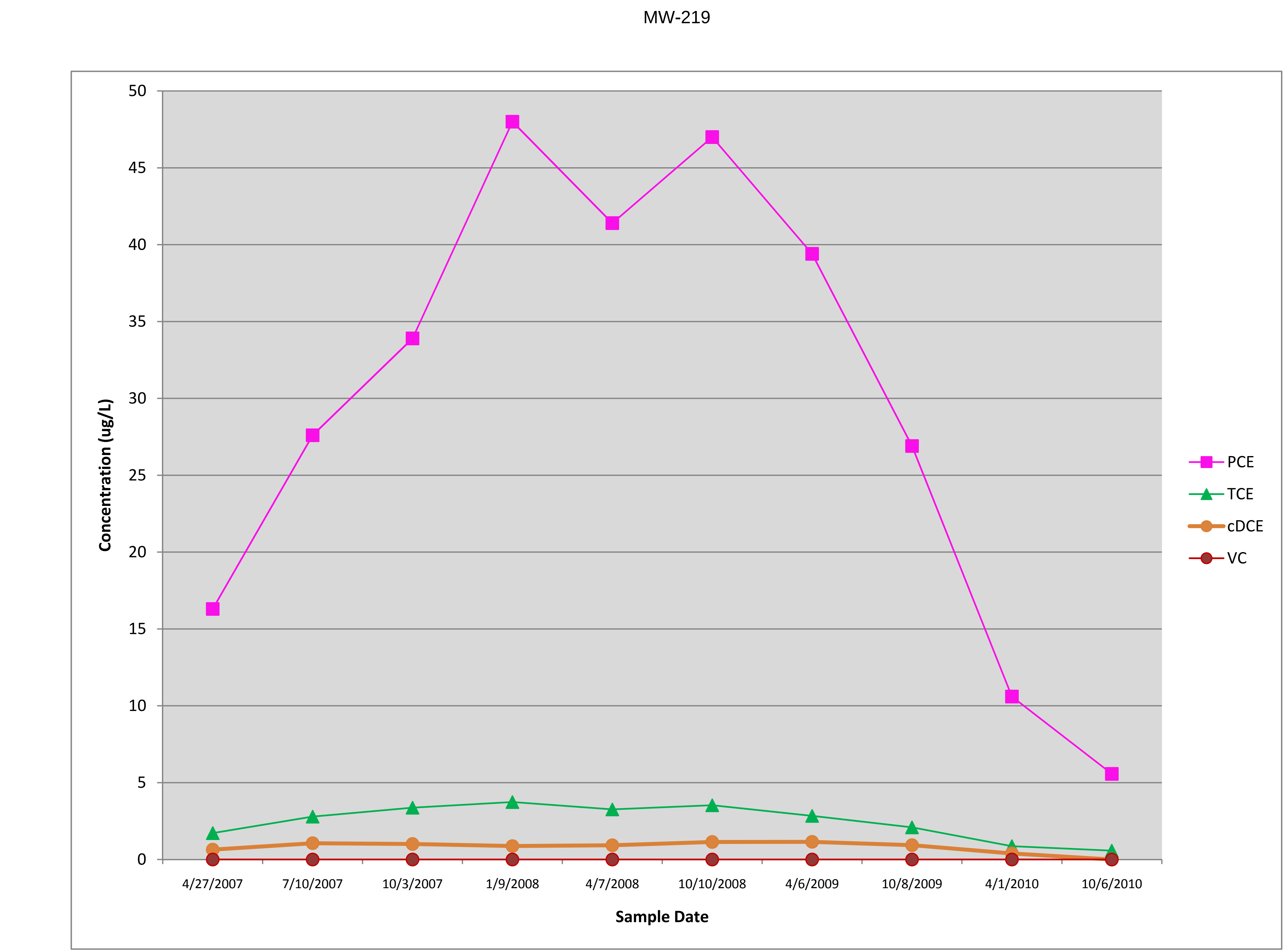

DR1-7
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
6/24/2004
11/12/2004
2/21/2005
5/17/2005
10/25/2006
10/1/2007
10/7/2008
10/6/2009
10/5/2010
Sample Date
PCE
TCE
cDCE
VC

MW-21

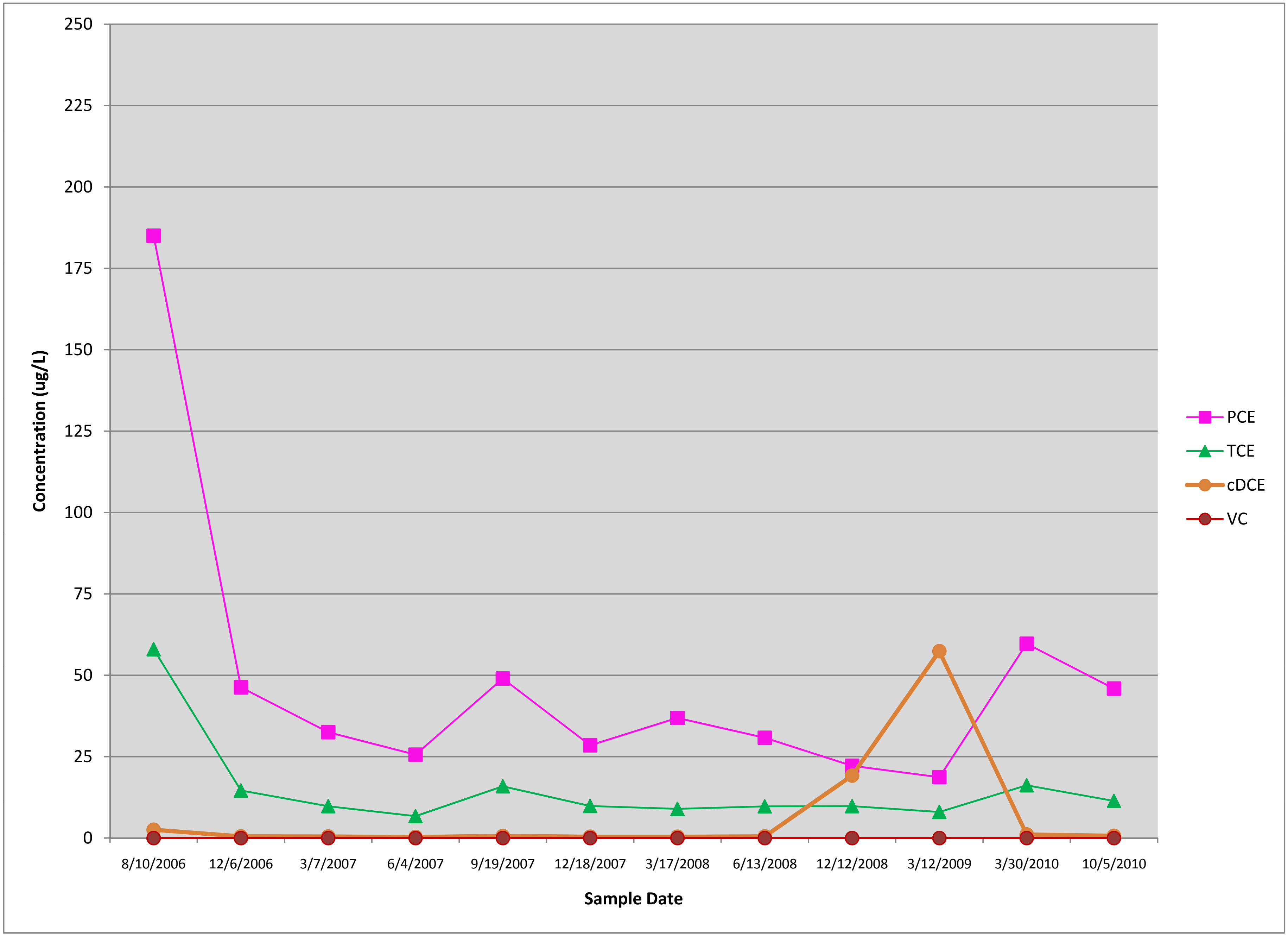


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
11/18/1993
6/20/1997
9/27/1997
3/27/1998
10/19/1998
3/24/2000
3/20/2002
7/8/2002
7/29/2002
9/3/2002
10/7/2002
11/11/2002
12/16/2002
1/20/2003
2/24/2003
3/24/2003
4/21/2003
5/19/2003
6/23/2003
7/21/2003
3/31/2004
11/12/2004
2/21/2005
5/19/2005
8/8/2006
12/6/2006
3/7/2007
6/4/2007
9/18/2007
12/18/2007
3/14/2008
6/16/2008
12/11/2008
3/13/2009
10/5/2009
3/30/2010
10/6/2010
Sample Date
PCE
TCE
TeCA
cDCE
VC

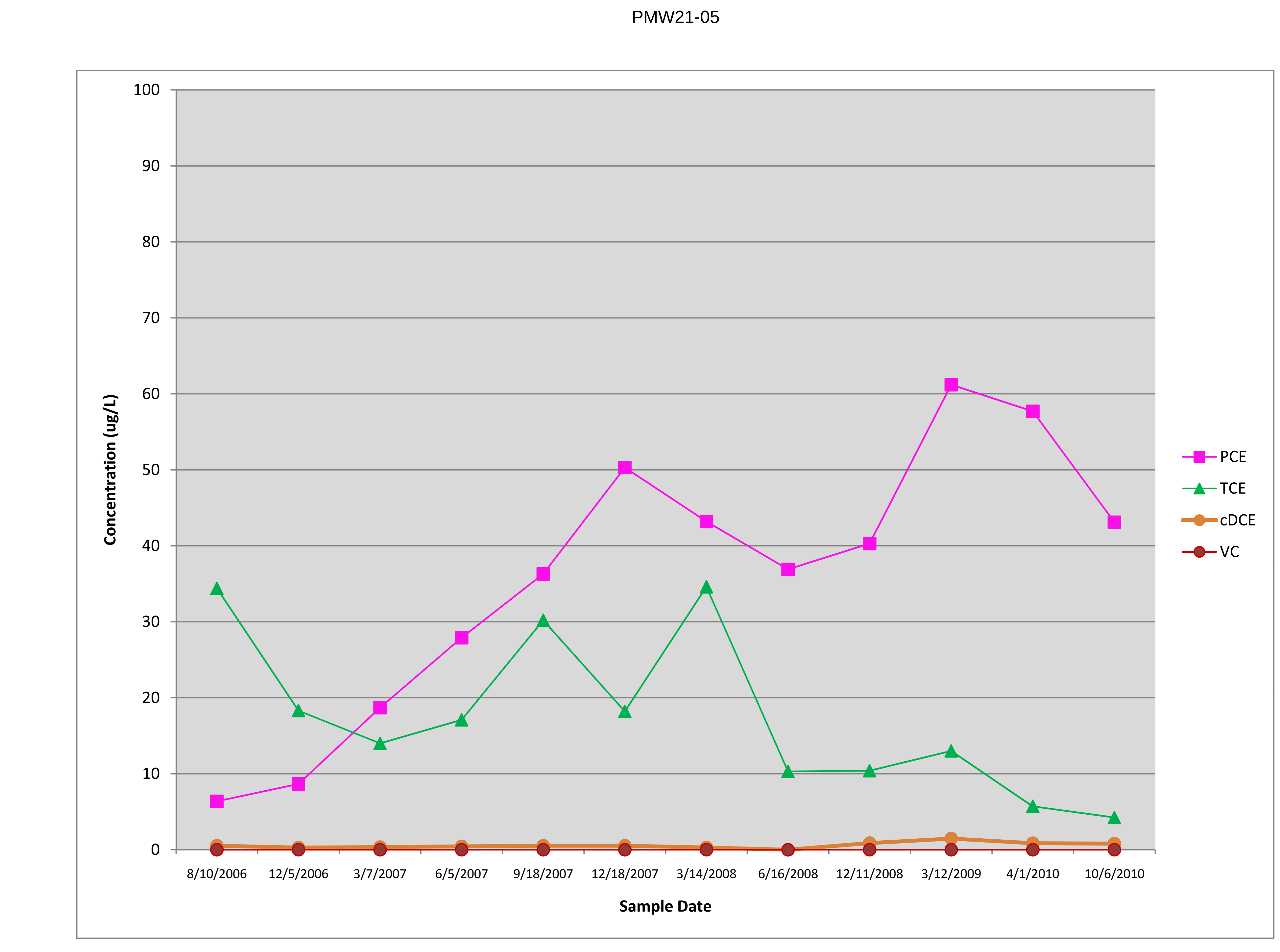

MW-100B
Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
7/8/2002
7/29/2002
9/3/2002
10/7/2002
11/11/2002
12/16/2002
1/20/2003
2/24/2003
3/24/2003
4/21/2003
5/19/2003
6/23/2003
7/21/2003
3/30/2004
11/12/2004
2/18/2005
5/18/2005
10/23/2006
4/13/2007
10/2/2007
4/7/2008
10/8/2008
4/8/2009
10/7/2009
3/30/2010
10/6/2010
Sample Date
PCE
TCE
cDCE
VC


MW-219
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
4/27/2007
7/10/2007
10/3/2007
1/9/2008
4/7/2008
10/10/2008
4/6/2009
10/8/2009
4/1/2010
10/6/2010
Sample Date
PCE
TCE
cDCE
VC

PMW21-03



250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
8/10/2006
12/6/2006
3/7/2007
6/4/2007
9/19/2007
12/18/2007
3/17/2008
6/13/2008
12/12/2008
3/12/2009
3/30/2010
10/5/2010
Sample Date
PCE
TCE
cDCE
VC


PMW21-05
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
8/10/2006
12/5/2006
3/7/2007
6/5/2007
9/18/2007
12/18/2007
3/14/2008
6/16/2008
12/11/2008
3/12/2009
4/1/2010
10/6/2010
Sample Date
PCE
TCE
cDCE
VC

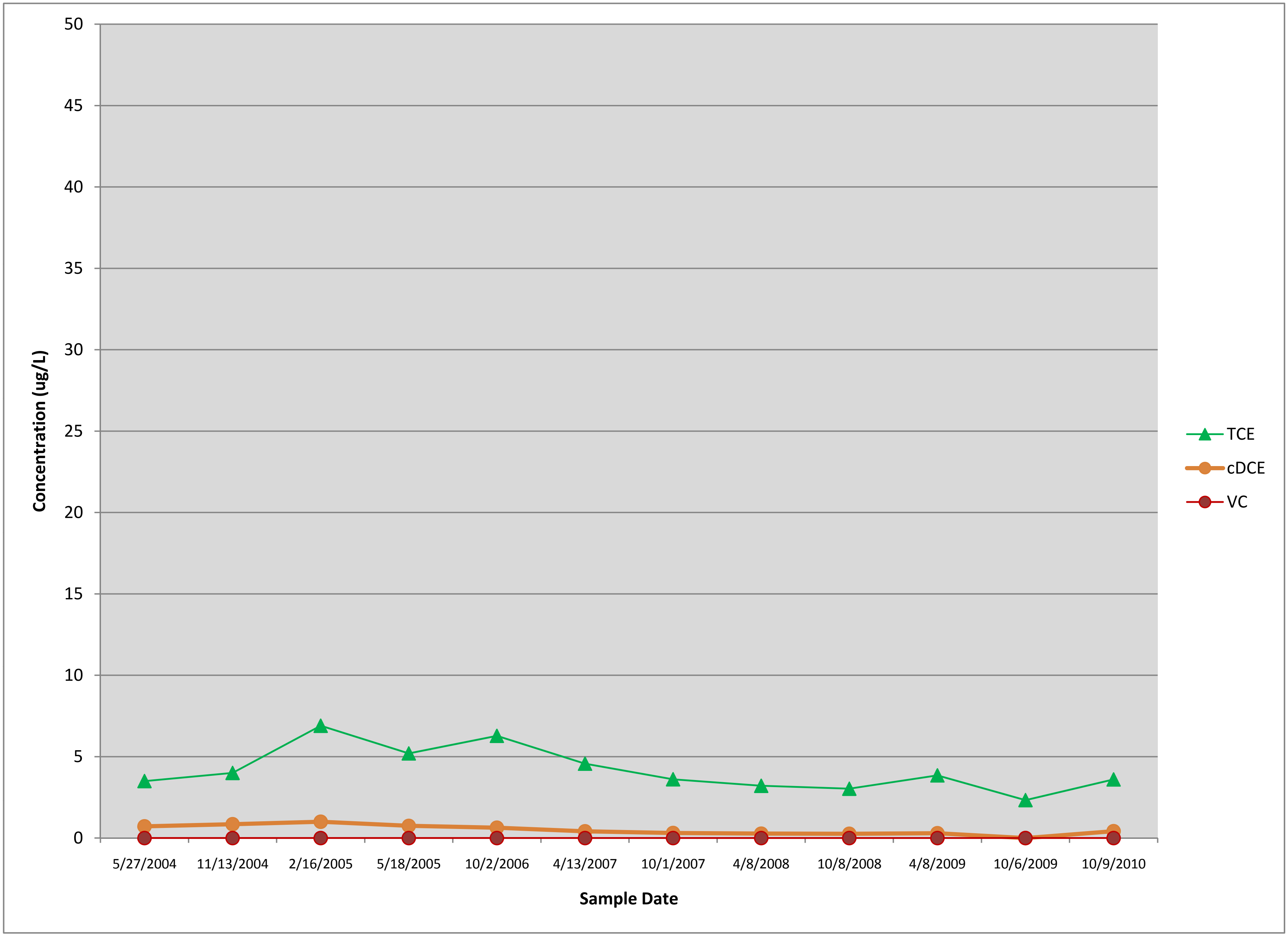
APPENDIX F-2

CVOC TIME-TREND PLOTS

TTA-1 South Wells

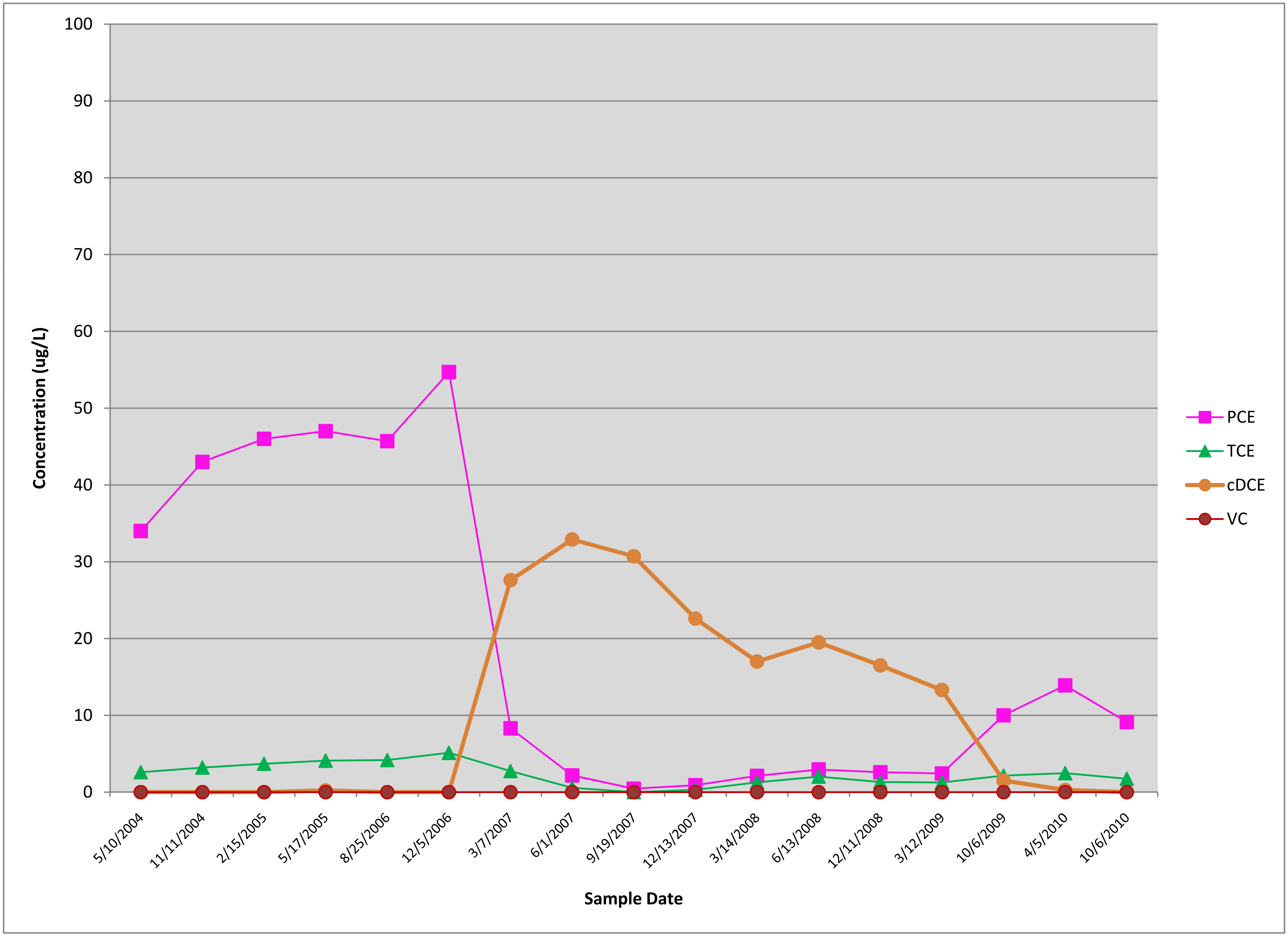
DR1-1A, DR1-3, DR1-4, DR1-5, DR1-5A, DR1-6, DR1-6A, MW-101, PMW101-04A, PMW101-04B

DR1-1A



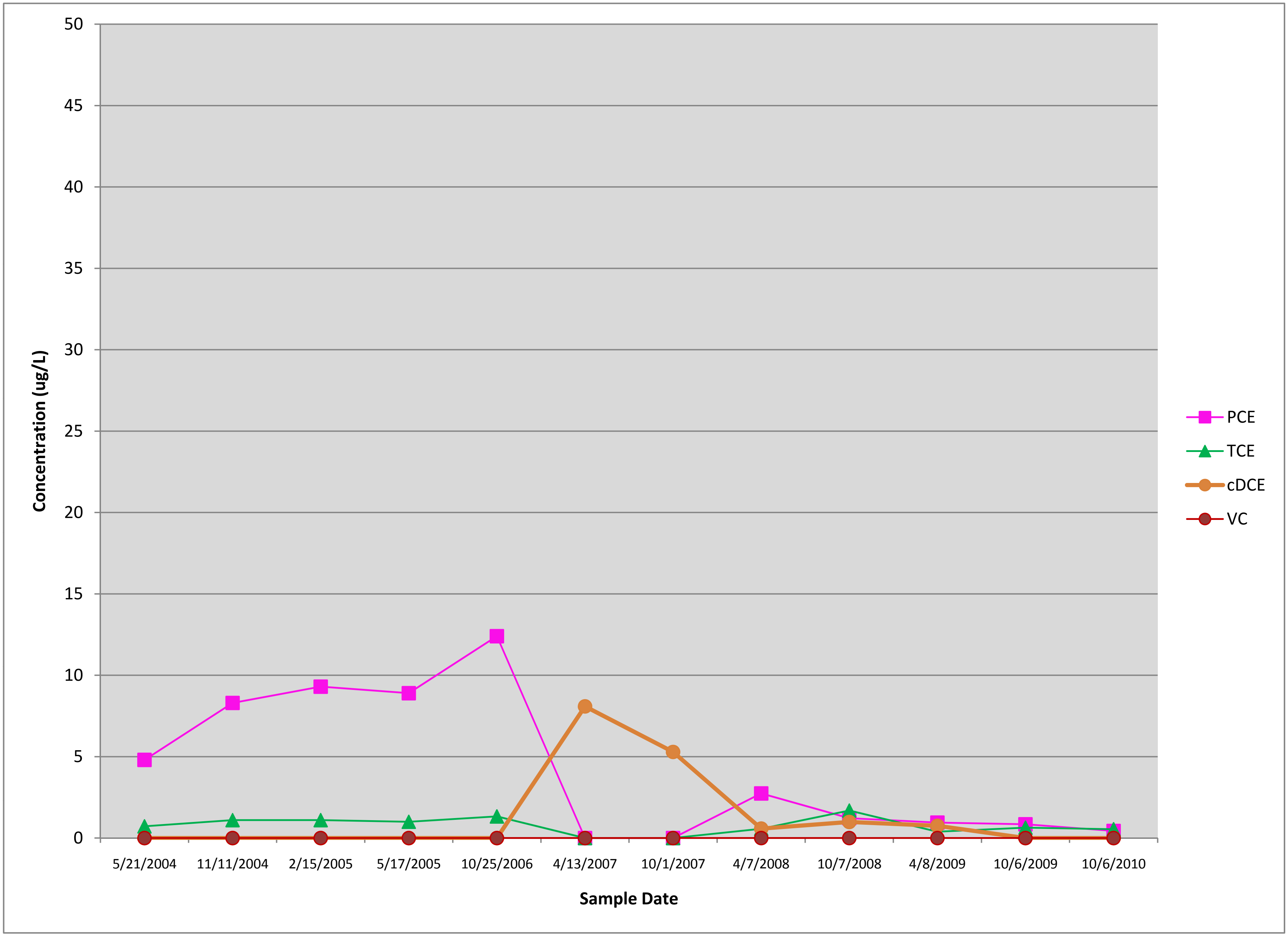
50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
5/27/2004
11/13/2004
2/16/2005
5/18/2005
10/2/2006
4/13/2007
10/1/2007
4/8/2008
10/8/2008
4/8/2009
10/6/2009
10/9/2010
Sample Date
TCE
cDCE
VC

DR1-3



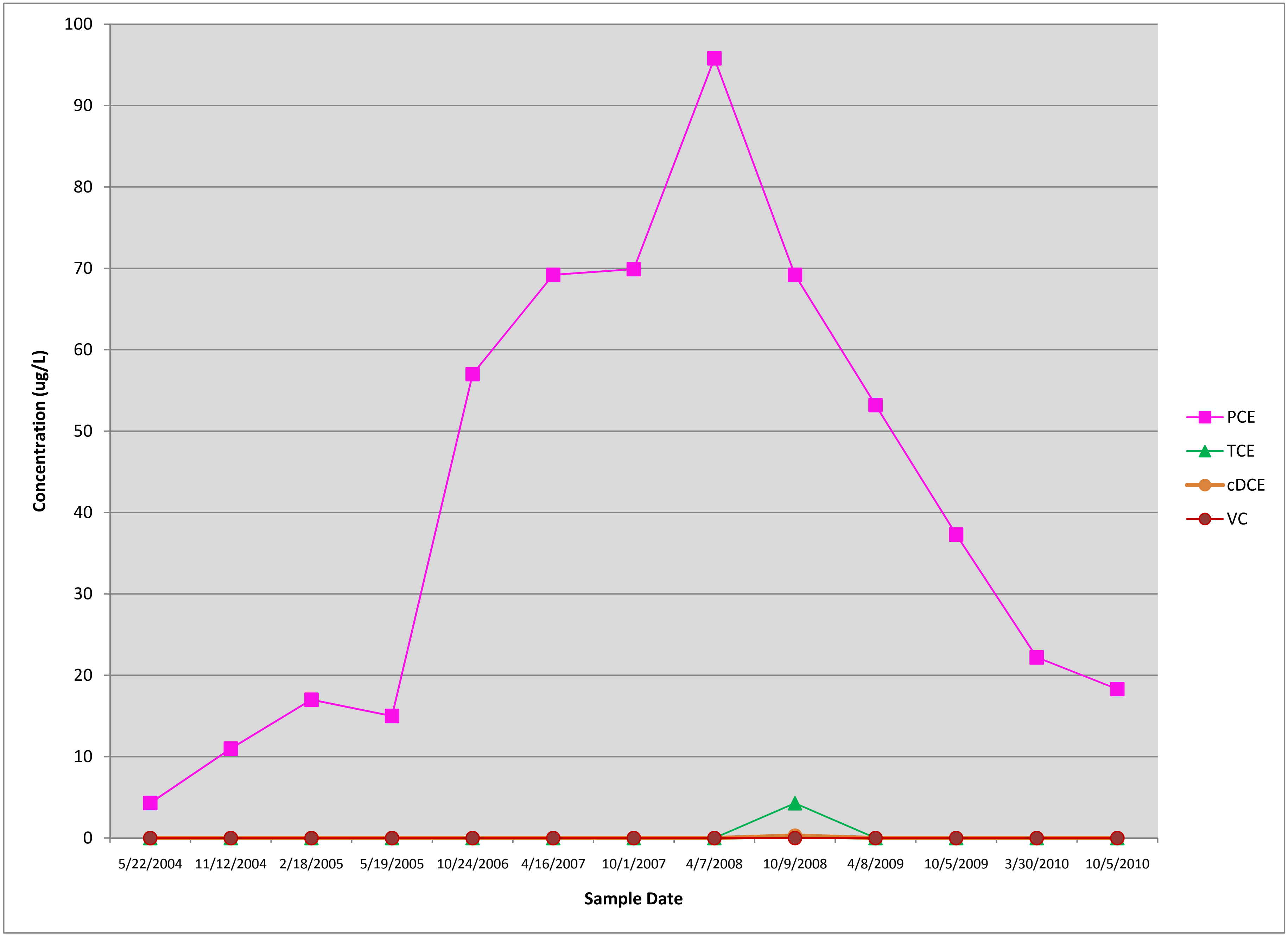
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
5/10/2004
11/11/2004
2/15/2005
5/17/2005
8/25/2006
12/5/2006
3/7/2007
6/1/2007
9/19/2007
12/13/2007
3/14/2008
6/13/2008
12/11/2008
3/12/2009
10/6/2009
4/5/2010
10/6/2010
Sample Date
PCE
TCE
cDCE
VC

DR1-4

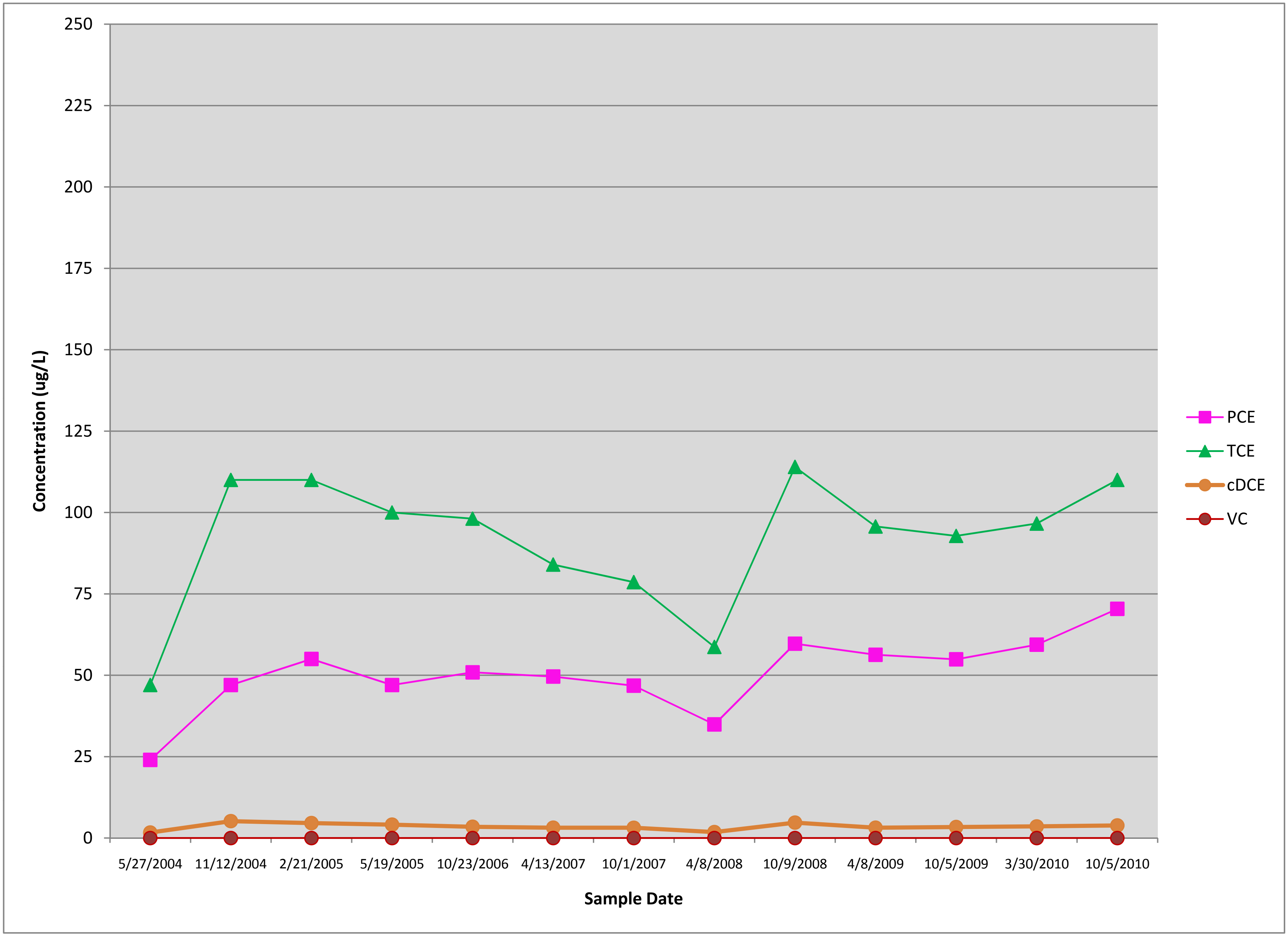


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
5/21/2004
11/11/2004
2/15/2005
5/17/2005
10/25/2006
4/13/2007
10/1/2007
4/7/2008
10/7/2008
4/8/2009
10/6/2009
10/6/2010
Sample Date
PCE
TCE
cDCE
VC

DR1-5

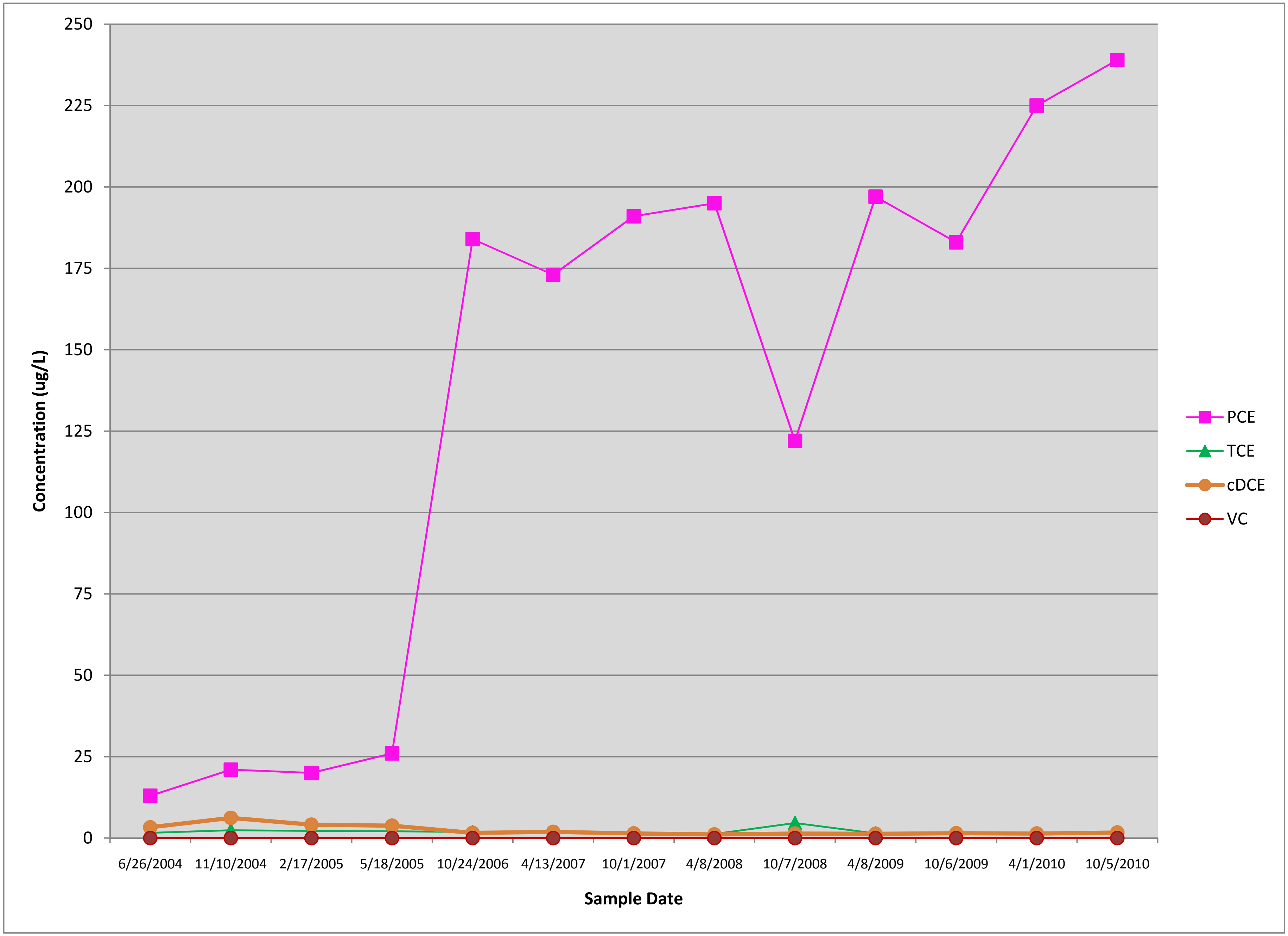

Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
5/22/2004
11/12/2004
2/18/2005
5/19/2005
10/24/2006
4/16/2007
10/1/2007
4/7/2008
10/9/2008
4/8/2009
10/5/2009
3/30/2010
10/5/2010
Sample Date
PCE
TCE
cDCE
VC

DR1-5A



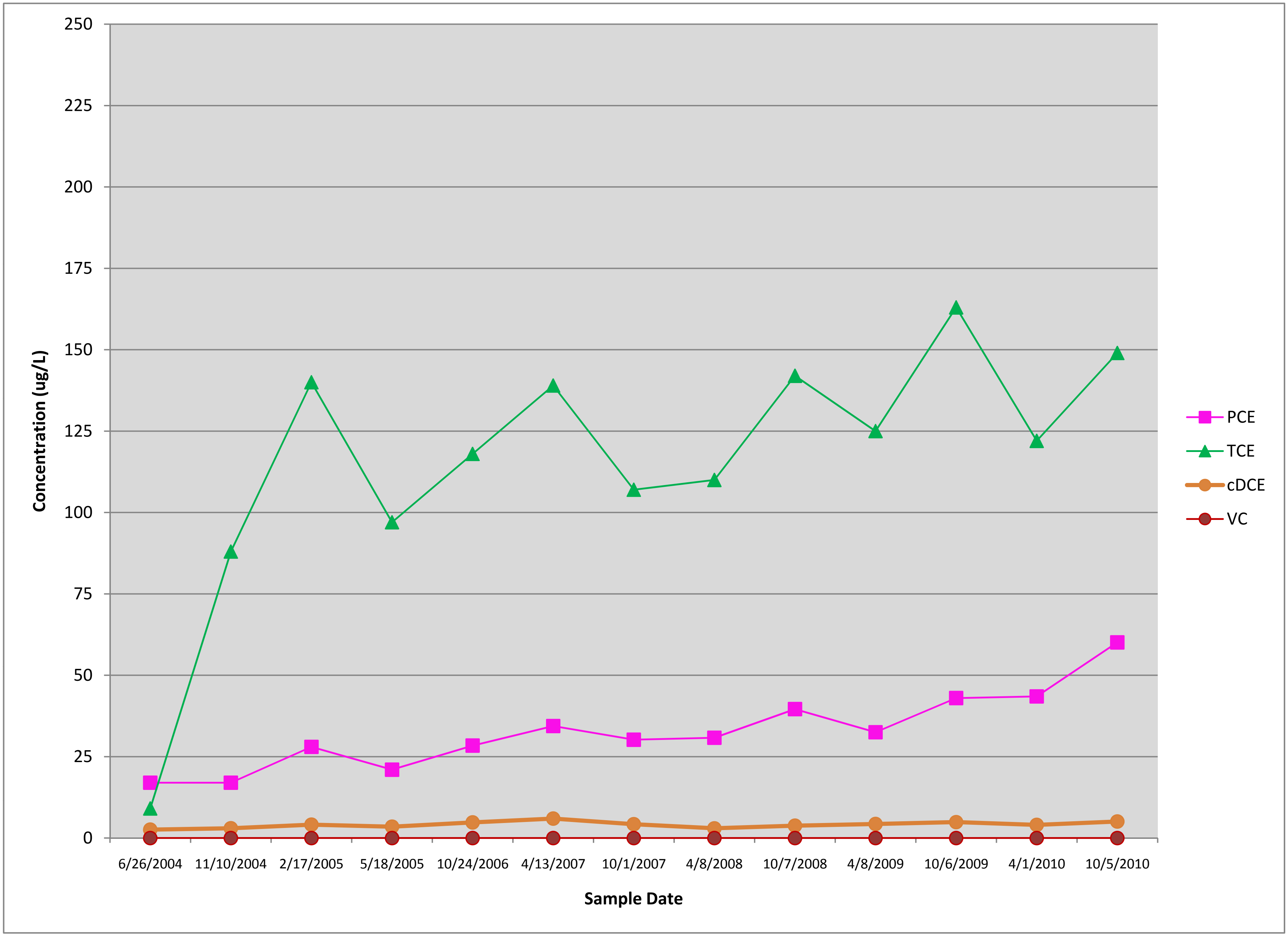
250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
5/27/2004
11/12/2004
2/21/2005
5/19/2005
10/23/2006
4/13/2007
10/1/2007
4/8/2008
10/9/2008
4/8/2009
10/5/2009
3/30/2010
10/5/2010
Sample Date
PCE
TCE
cDCE
VC

DR1-6



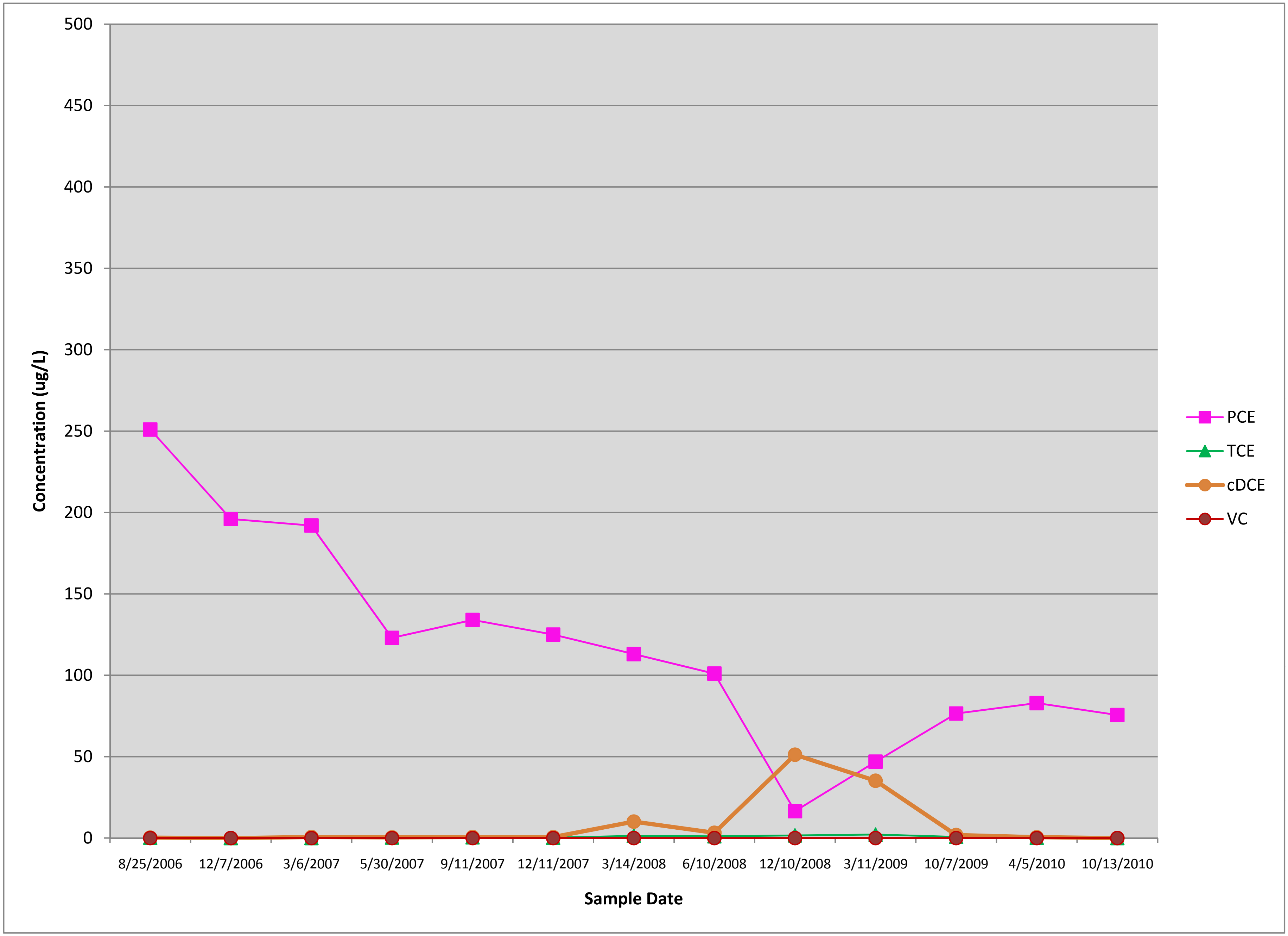
250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
6/26/2004
11/10/2004
2/17/2005
5/18/2005
10/24/2006
4/13/2007
10/1/2007
4/8/2008
10/7/2008
4/8/2009
10/6/2009
4/1/2010
10/5/2010
Sample Date
PCE
TCE
cDCE
VC

DR1-6A



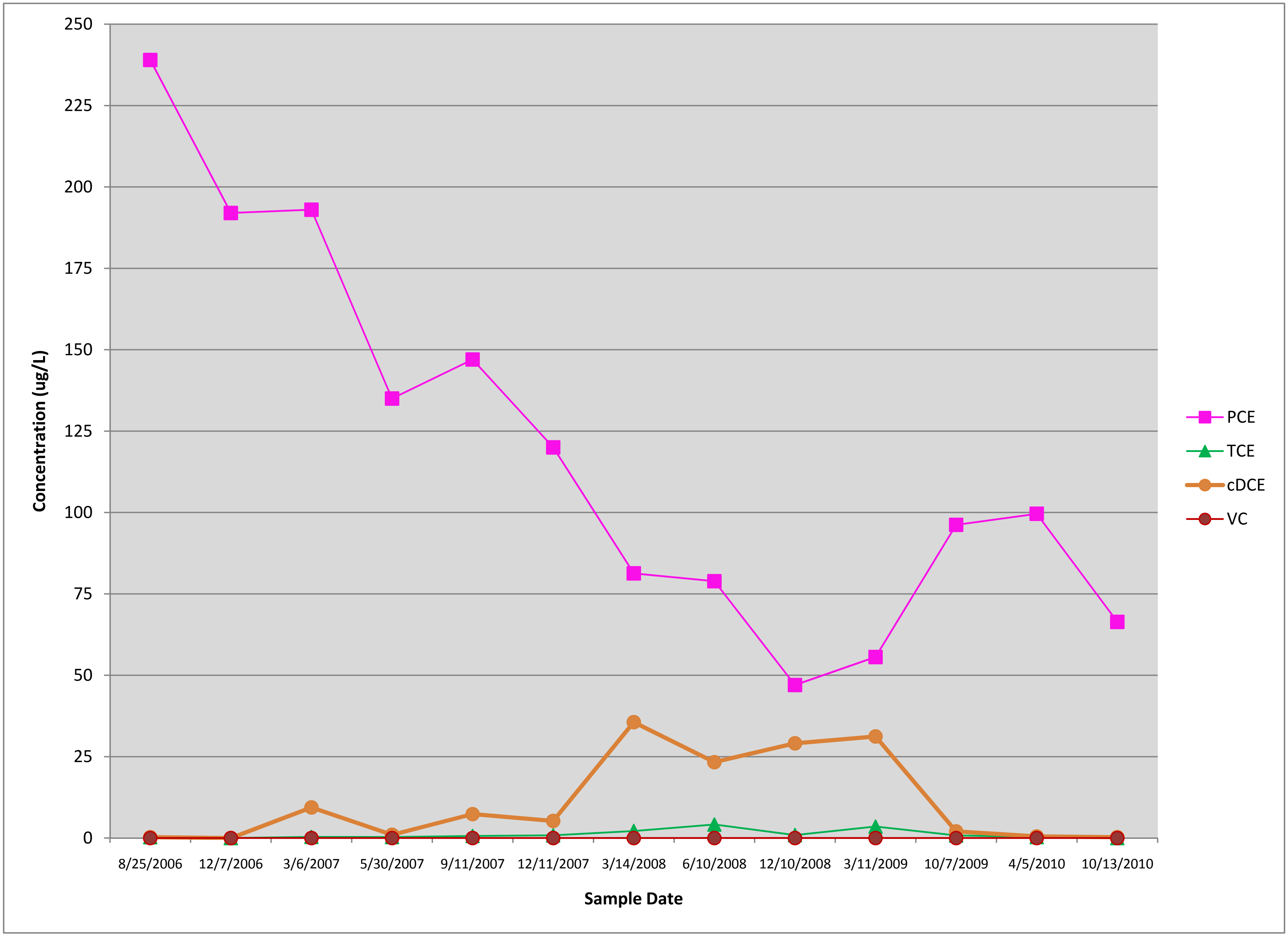
250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
6/26/2004
11/10/2004
2/17/2005
5/18/2005
10/24/2006
4/13/2007
10/1/2007
4/8/2008
10/7/2008
4/8/2009
10/6/2009
4/1/2010
10/5/2010
Sample Date
PCE
TCE
cDCE
VC

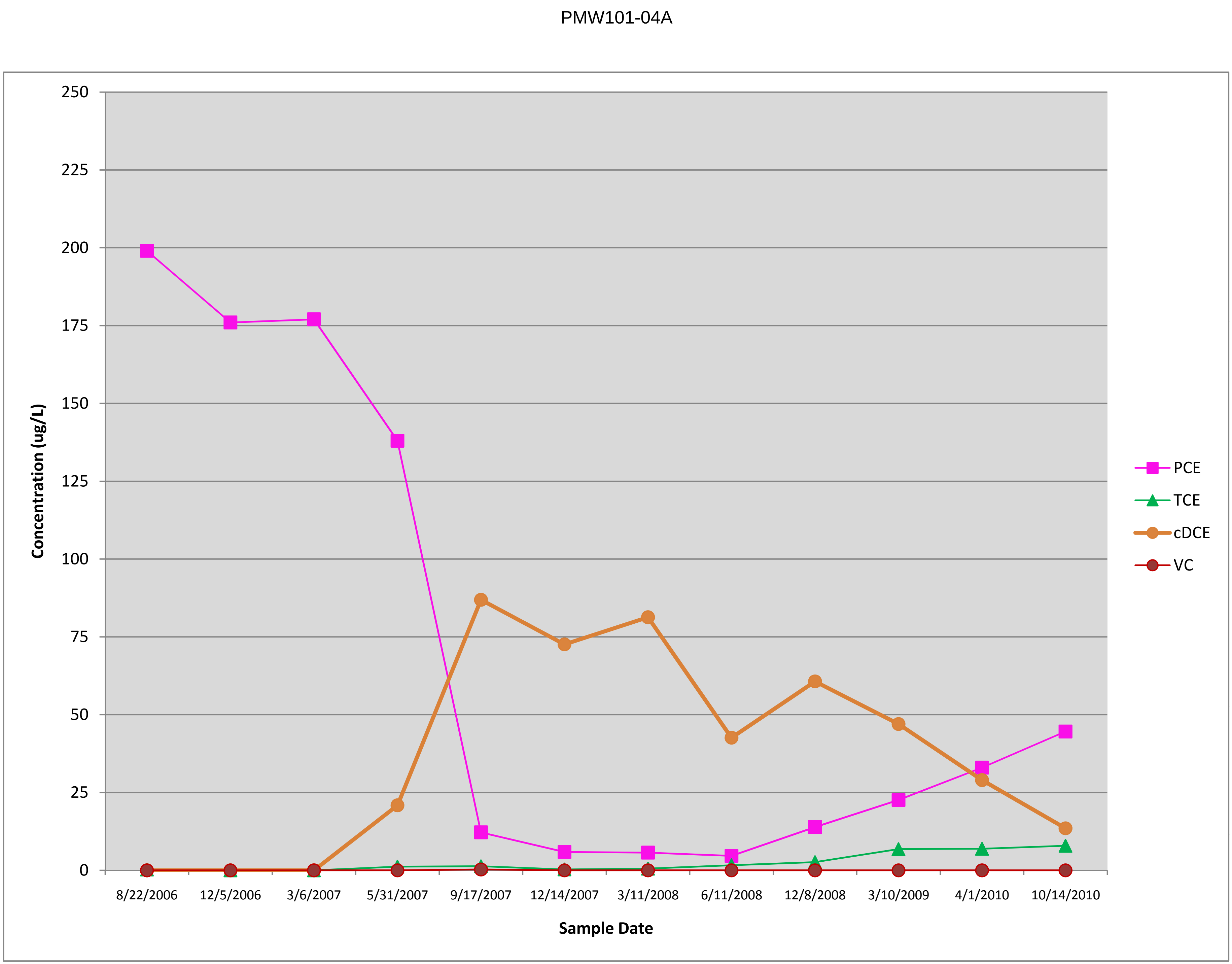
MW-101 TOP



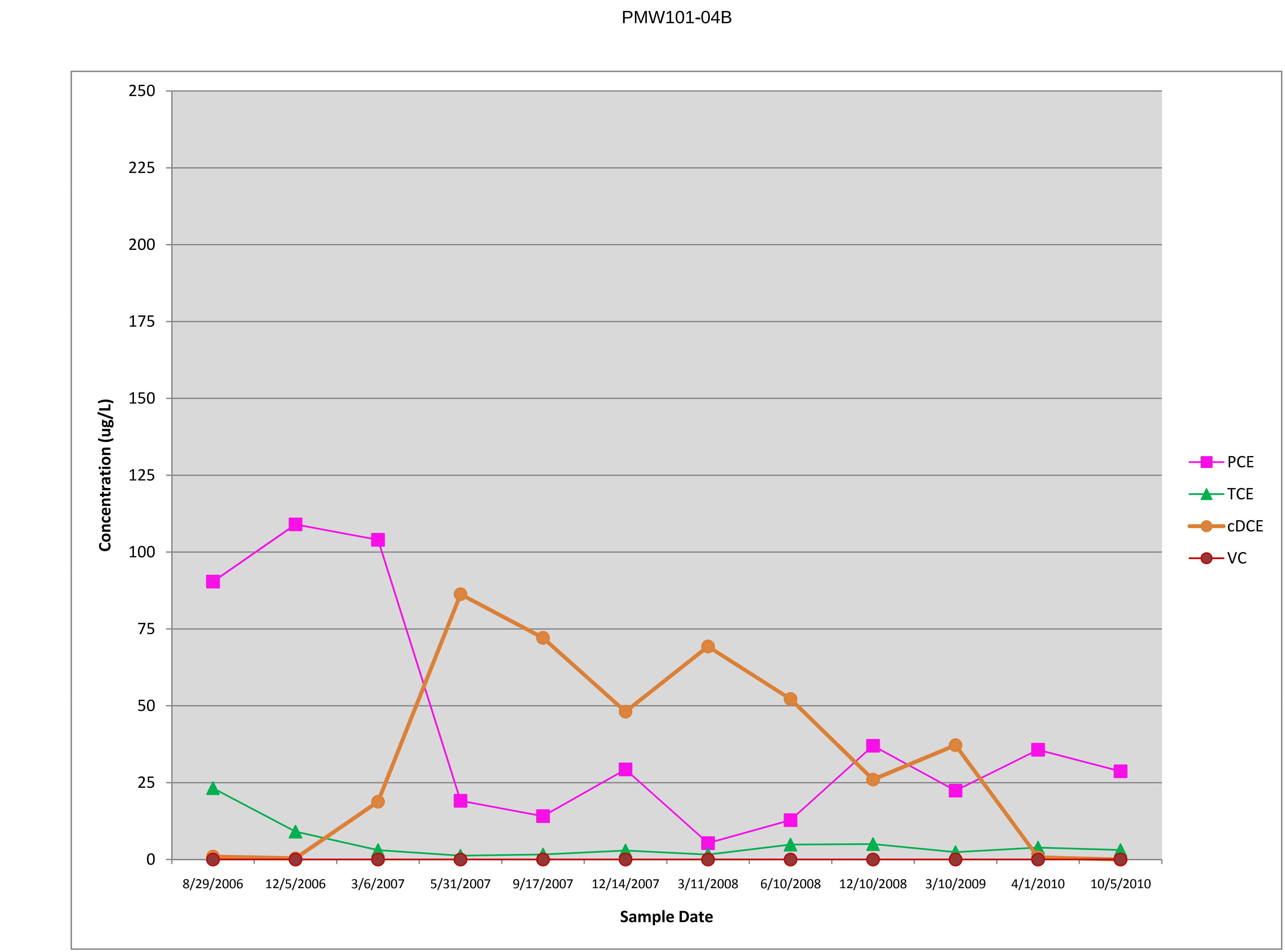
Concentration (ug/L)
500
450
400
350
300
250
200
150
100
50
0
8/25/2006
12/7/2006
3/6/2007
5/30/2007
9/11/2007
12/11/2007
3/14/2008
6/10/2008
12/10/2008
3/11/2009
10/7/2009
4/5/2010
10/13/2010
Sample Date
PCE
TCE
cDCE
VC

MW-101 BOTTOM





PMW101-04A
Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
8/22/2006
12/5/2006
3/6/2007
5/31/2007
9/17/2007
12/14/2007
3/11/2008
6/11/2008
12/8/2008
3/10/2009
4/1/2010
10/14/2010
Sample Date
PCE
TCE
cDCE
VC



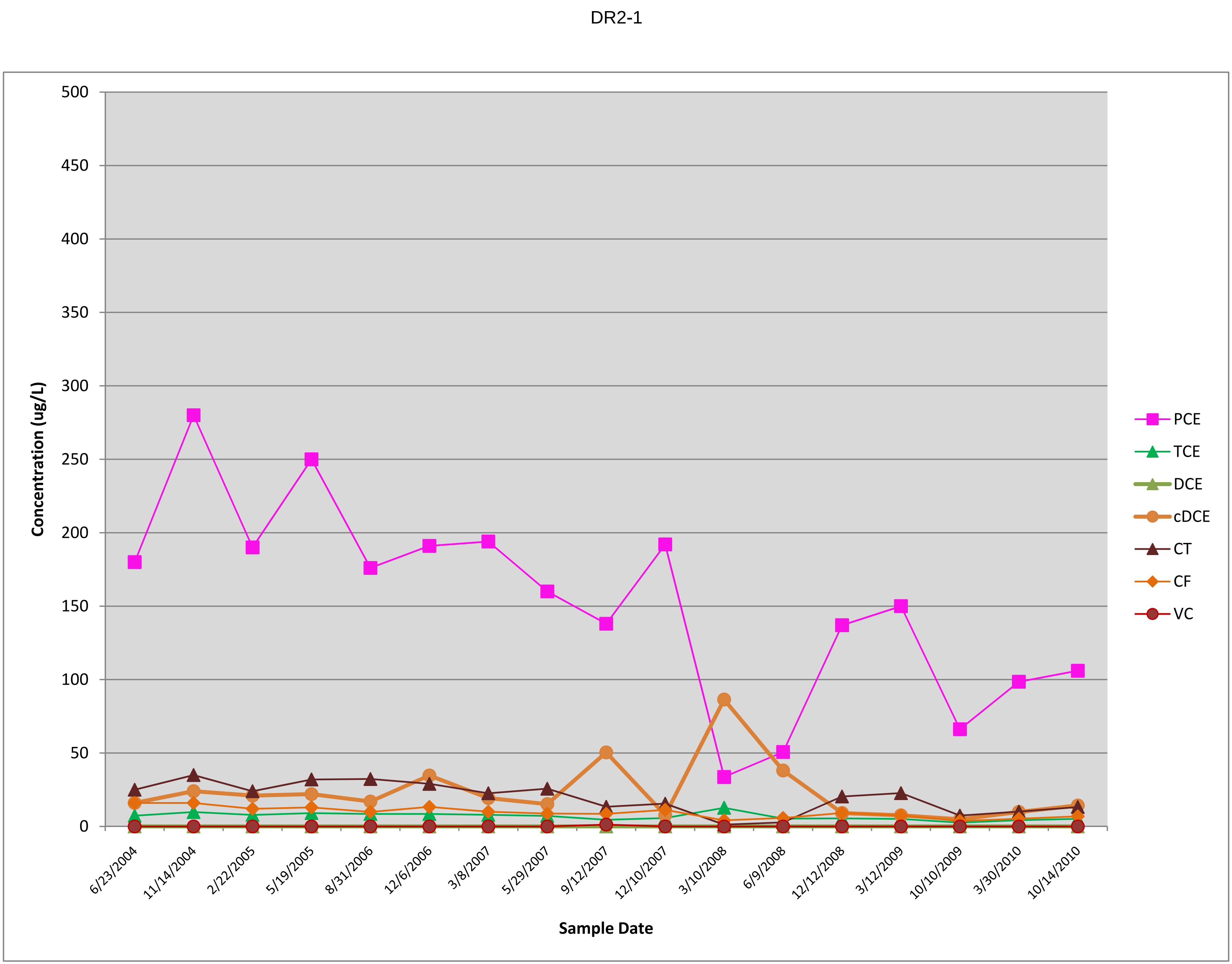
PMW101-04B
Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
8/29/2006
12/5/2006
3/6/2007
5/31/2007
9/17/2007
12/14/2007
3/11/2008
6/10/2008
12/10/2008
3/10/2009
4/1/2010
10/5/2010
Sample Date
PCE
TCE
cDCE
VC

APPENDIX F-3

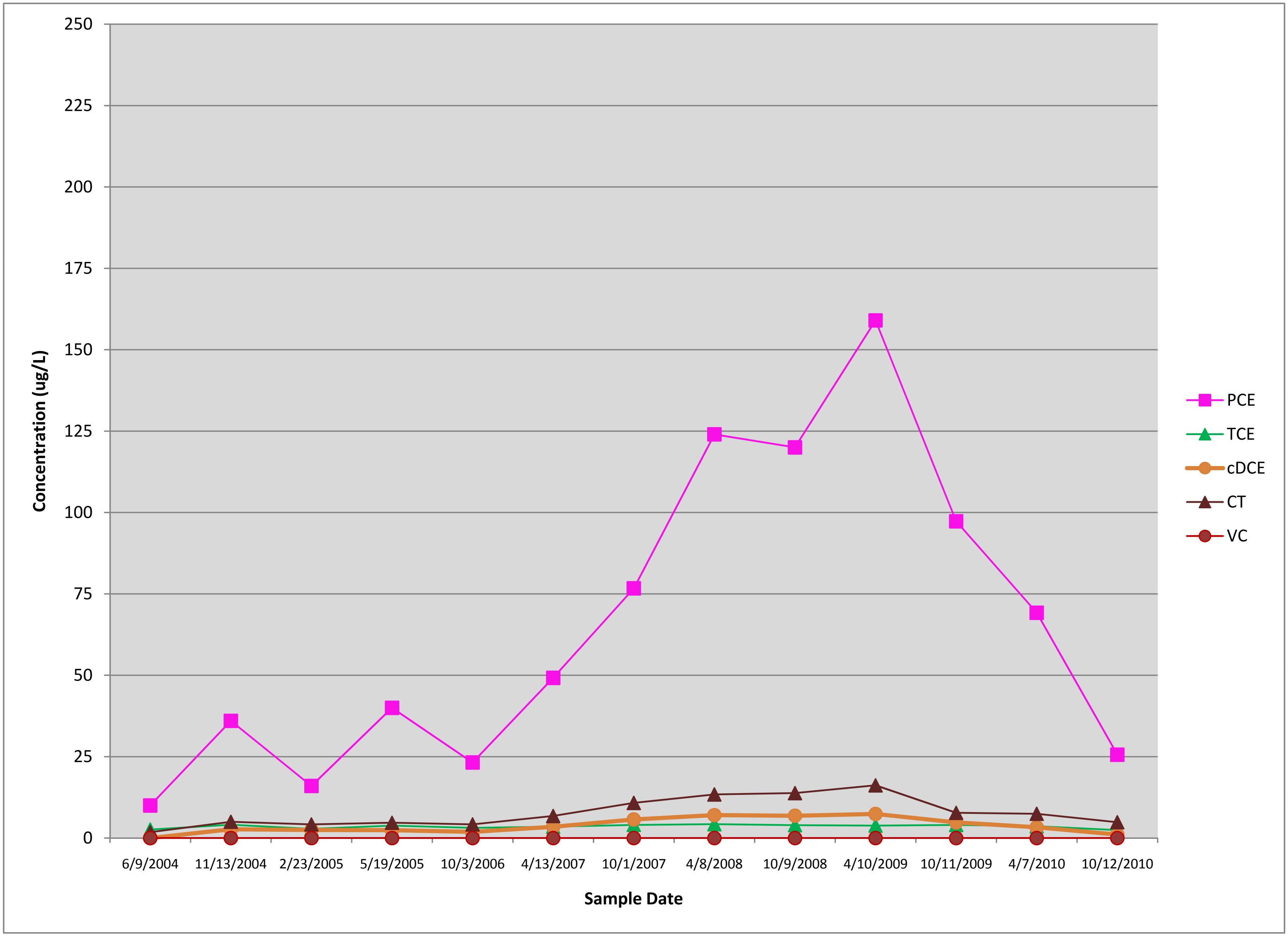
CVOC TIME-TREND PLOTS

TTA-2 Wells

DR2-1, DR2-2, DR2-3, DR2-4, DR2-5, DR2-6, MW-26, MW-64, MW-85, MW-88, MW-92, MW-96, MW-113, MW-217, MW-218, PMW92-03, PMW92-06

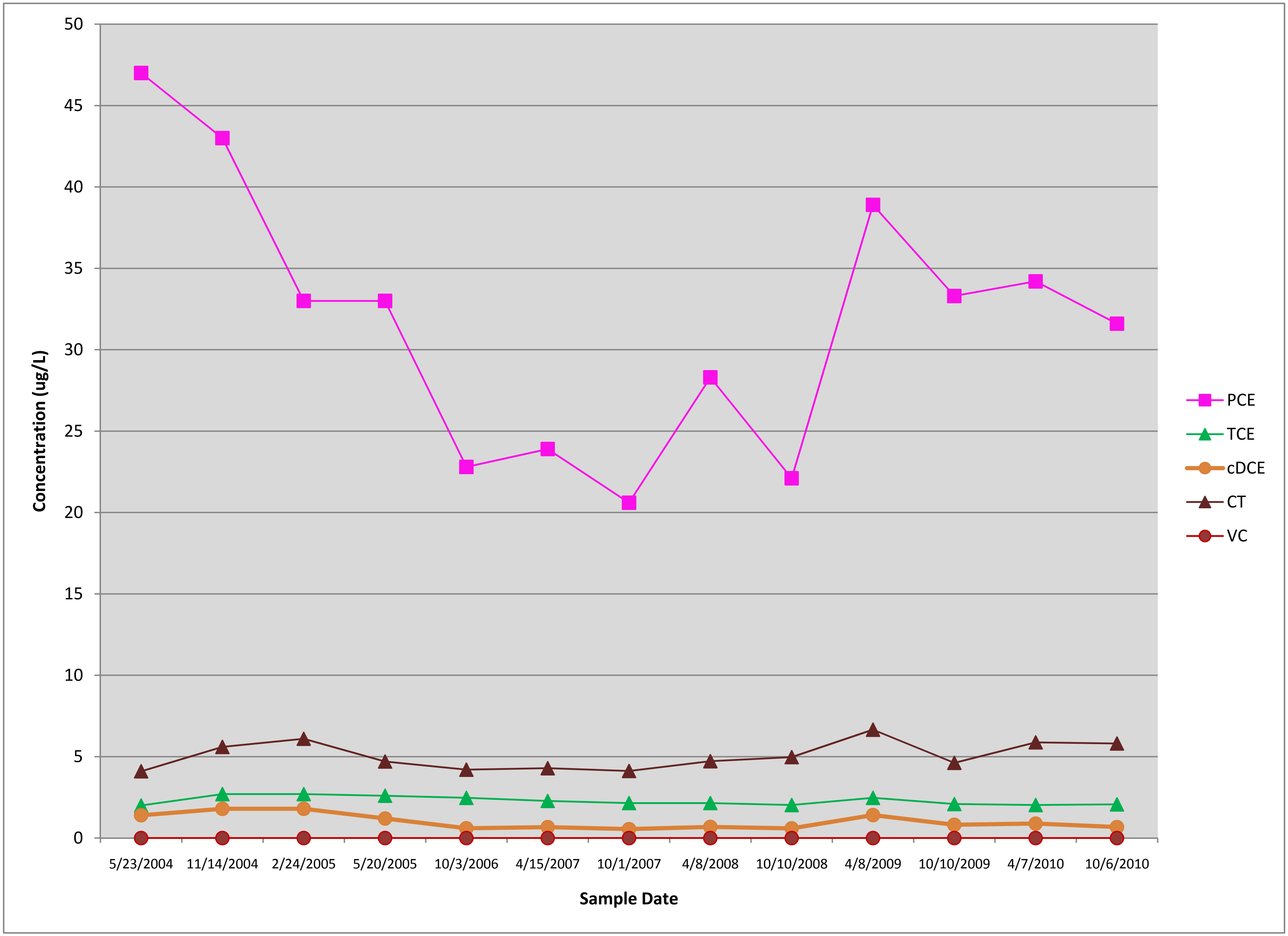

DR2-1
Concentration (ug/L)
500
450
400
350
300
250
200
150
100
50
0
6/23/2004
11/14/2004
2/22/2005
5/19/2005
8/31/2006
12/6/2006
3/8/2007
5/29/2007
9/12/2007
12/10/2007
3/10/2008
6/9/2008
12/12/2008
3/12/2009
10/10/2009
3/30/2010
10/14/2010
Sample Date
PCE
TCE
DCE
cDCE
CT
CF
VC

DR2-2



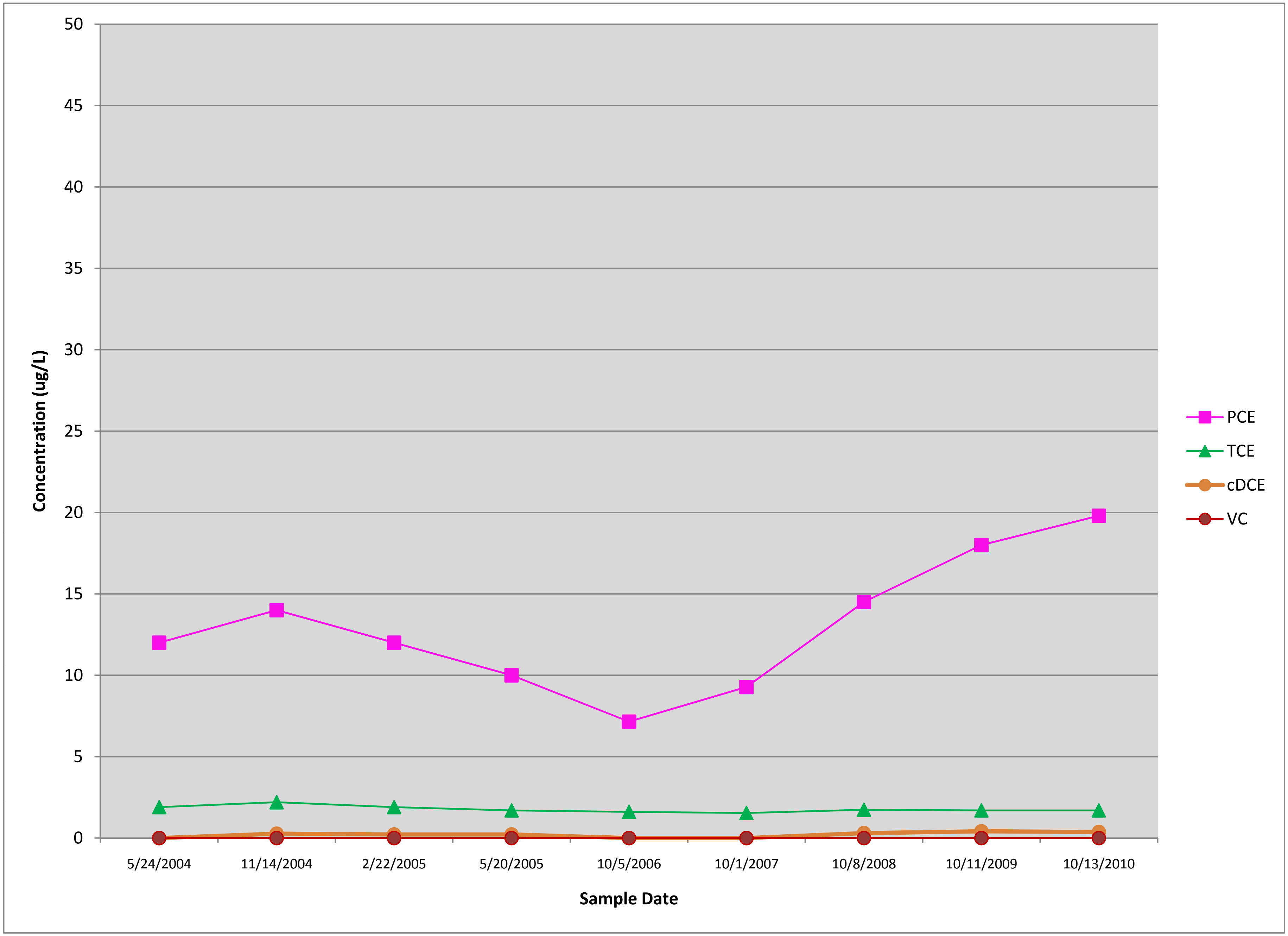
250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
6/9/2004
11/13/2004
2/23/2005
5/19/2005
10/3/2006
4/13/2007
10/1/2007
4/8/2008
10/9/2008
4/10/2009
10/11/2009
4/7/2010
10/12/2010
Sample Date
PCE
TCE
cDCE
CT
VC

DR2-3

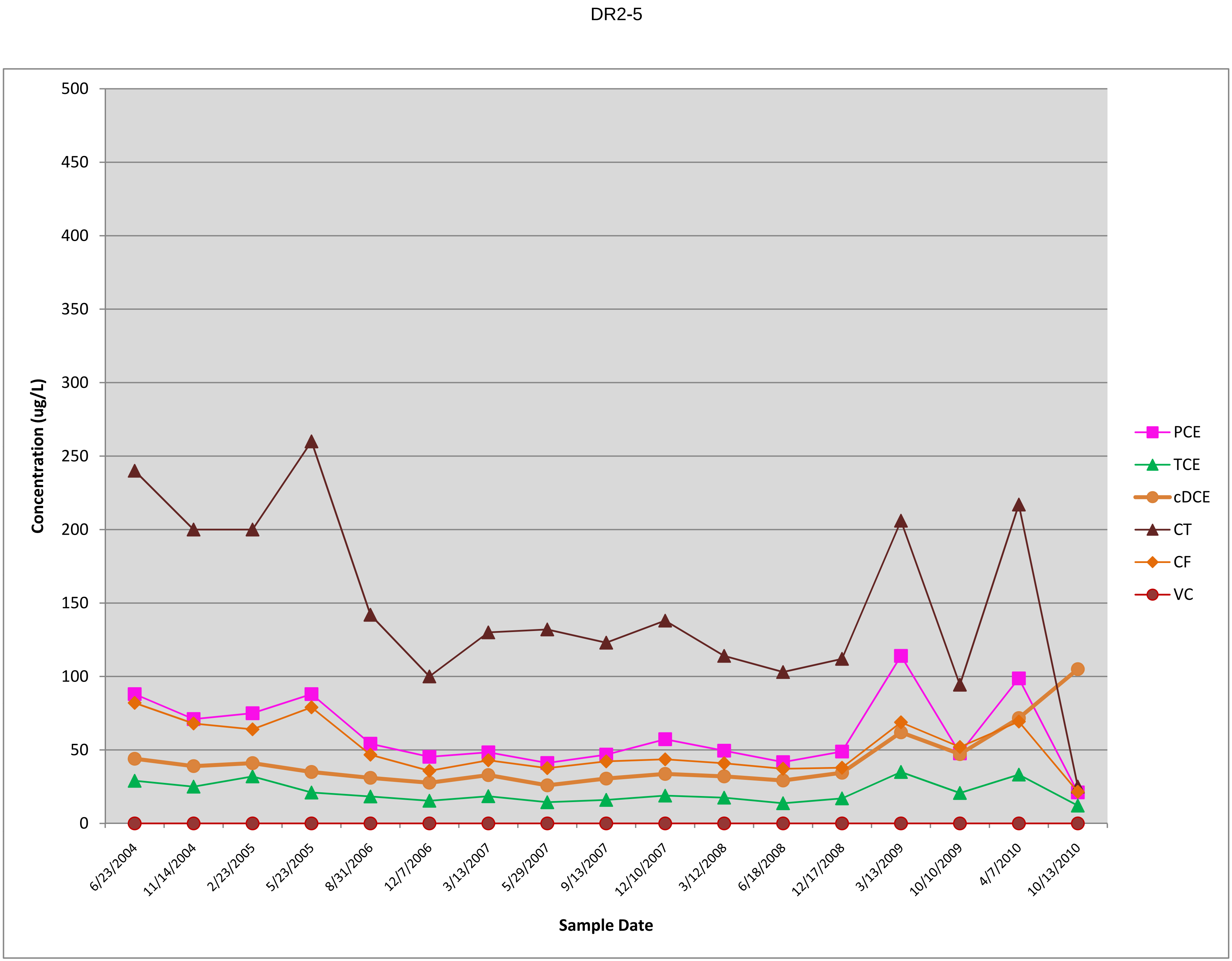


Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
5/23/2004
11/14/2004
2/24/2005
5/20/2005
10/3/2006
4/15/2007
10/1/2007
4/8/2008
10/10/2008
4/8/2009
10/10/2009
4/7/2010
10/6/2010
Sample Date
PCE
TCE
cDCE
CT
VC

DR2-4

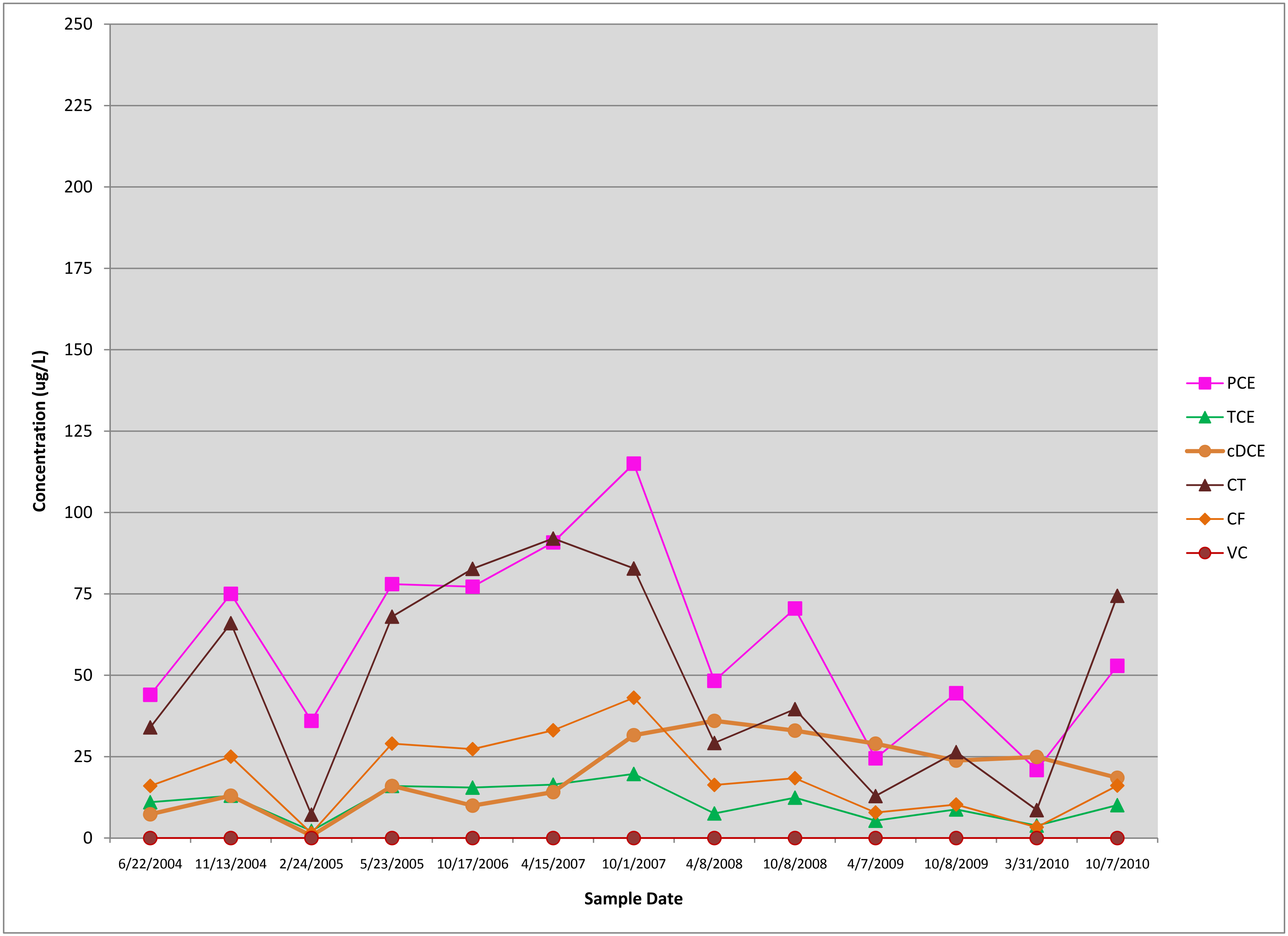


Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
5/24/2004
11/14/2004
2/22/2005
5/20/2005
10/5/2006
10/1/2007
10/8/2008
10/11/2009
10/13/2010
Sample Date
PCE
TCE
cDCE
VC



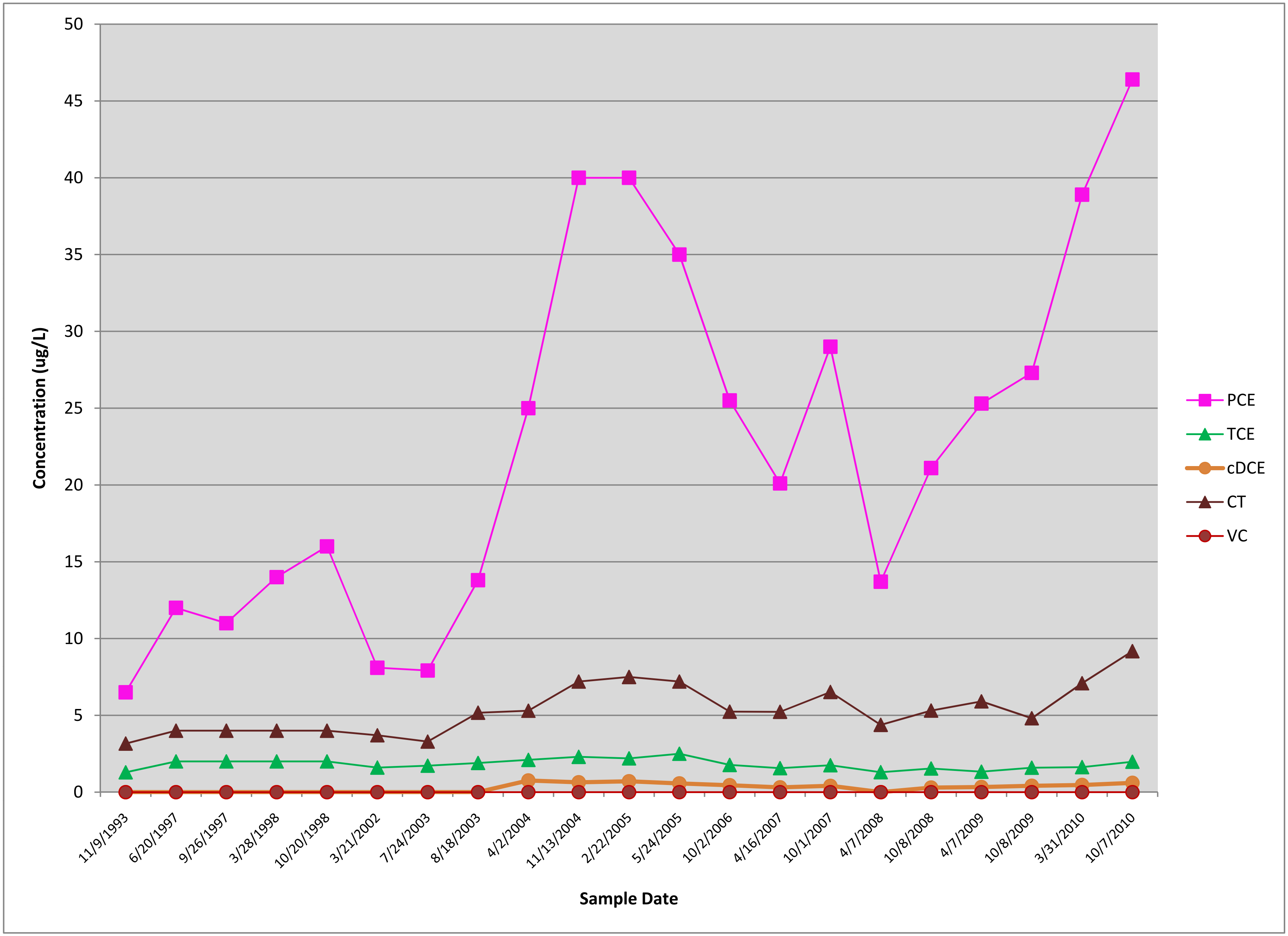
DR2-5
Concentration (ug/L)
500
450
400
350
300
250
200
150
100
50
0
6/23/2004
11/14/2004
2/23/2005
5/23/2005
8/31/2006
12/7/2006
3/13/2007
5/29/2007
9/13/2007
12/10/2007
3/12/2008
6/18/2008
12/17/2008
3/13/2009
10/10/2009
4/7/2010
10/13/2010
Sample Date
PCE
TCE
cDCE
CT
CF
VC

DR2-6

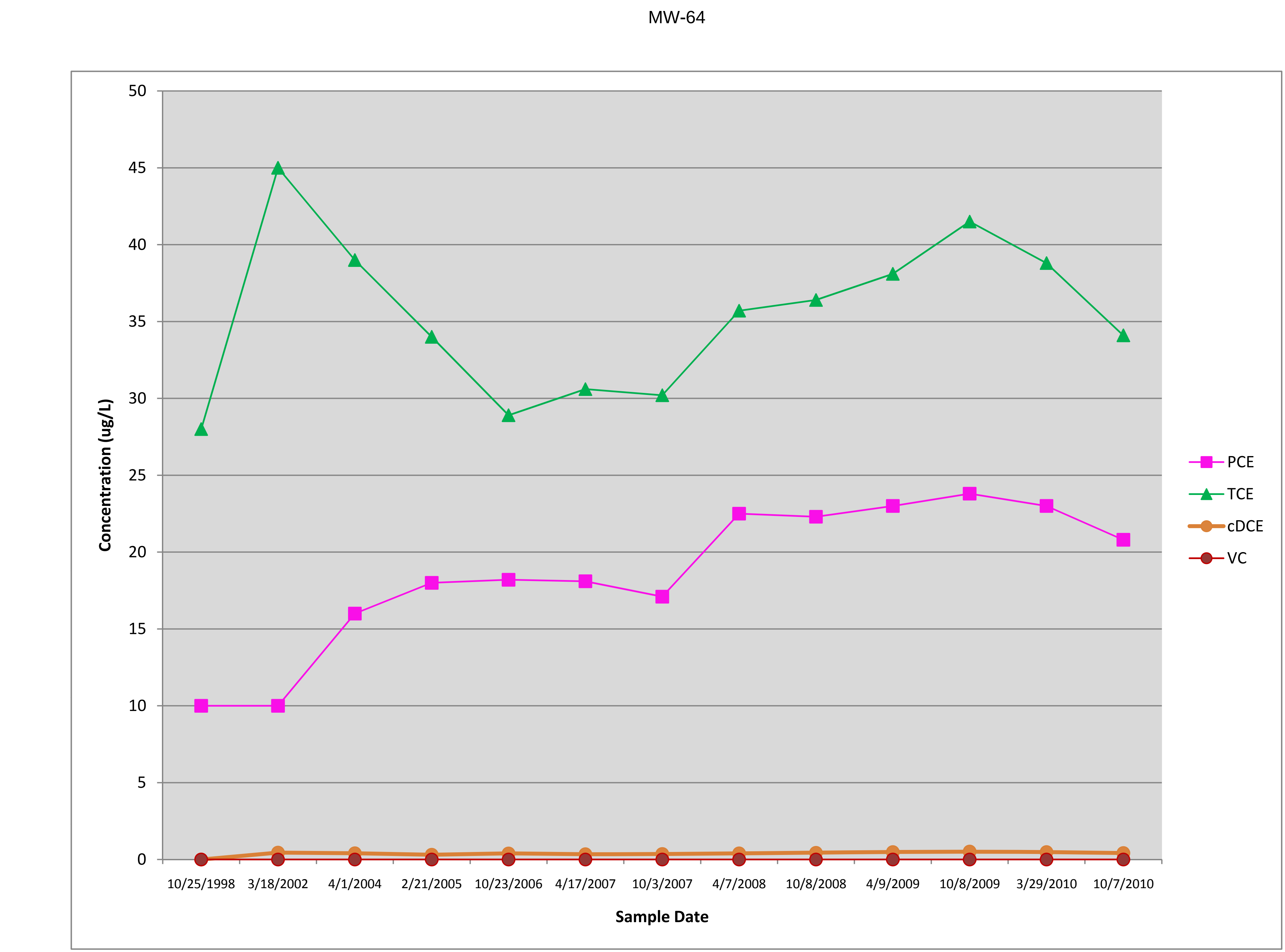


Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
6/22/2004
11/13/2004
2/24/2005
5/23/2005
10/17/2006
4/15/2007
10/1/2007
4/8/2008
10/8/2008
4/7/2009
10/8/2009
3/31/2010
10/7/2010
Sample Date
PCE
TCE
cDCE
CT
CF
VC

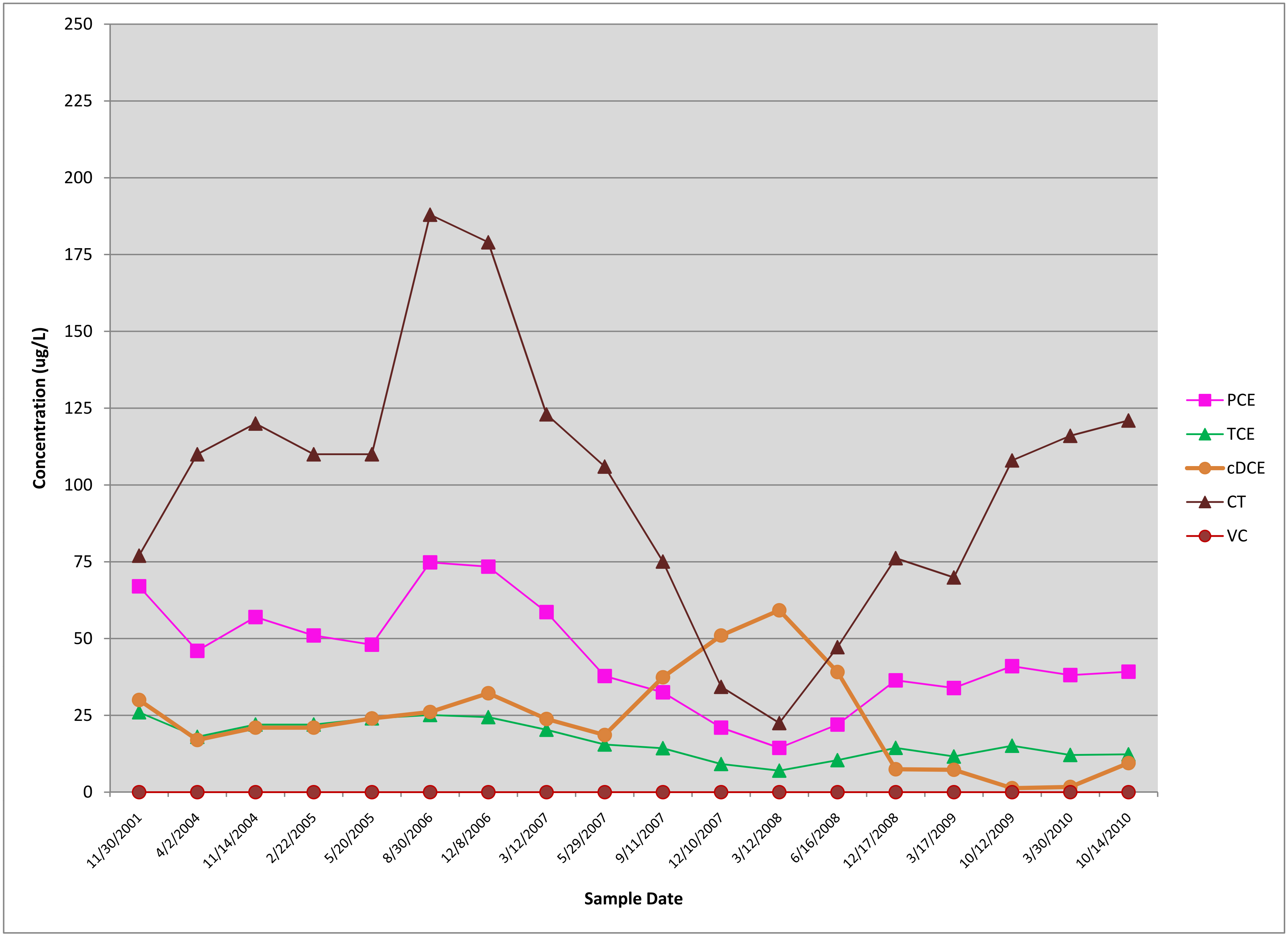
MW-26



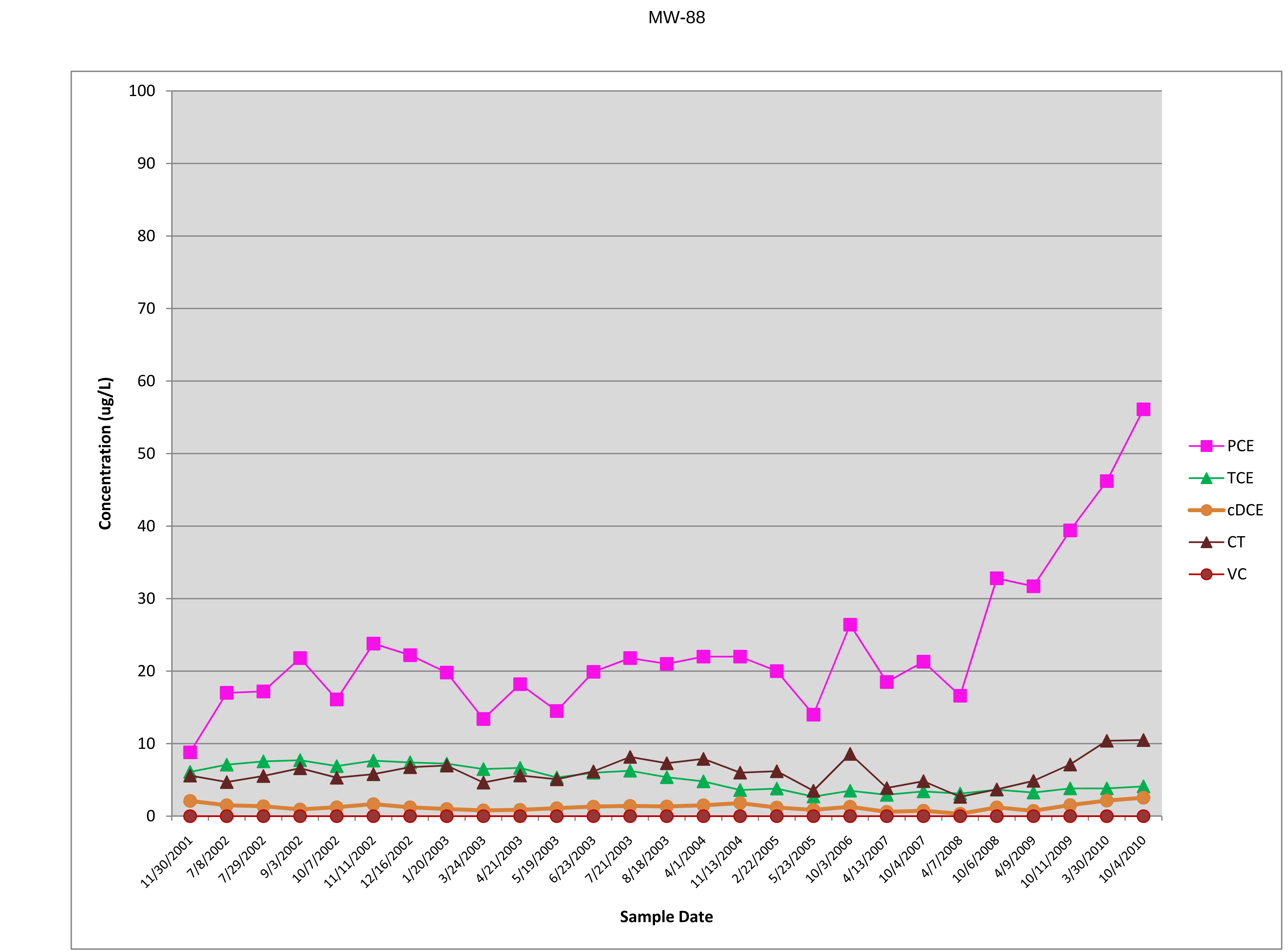
50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
11/9/1993
6/20/1997
9/26/1997
3/28/1998
10/20/1998
3/21/2002
7/24/2003
8/18/2003
4/2/2004
11/13/2004
2/22/2005
5/24/2005
10/2/2006
4/16/2007
10/1/2007
4/7/2008
10/8/2008
4/7/2009
10/8/2009
3/31/2010
10/7/2010
Sample Date
PCE
TCE
cDCE
CT
VC

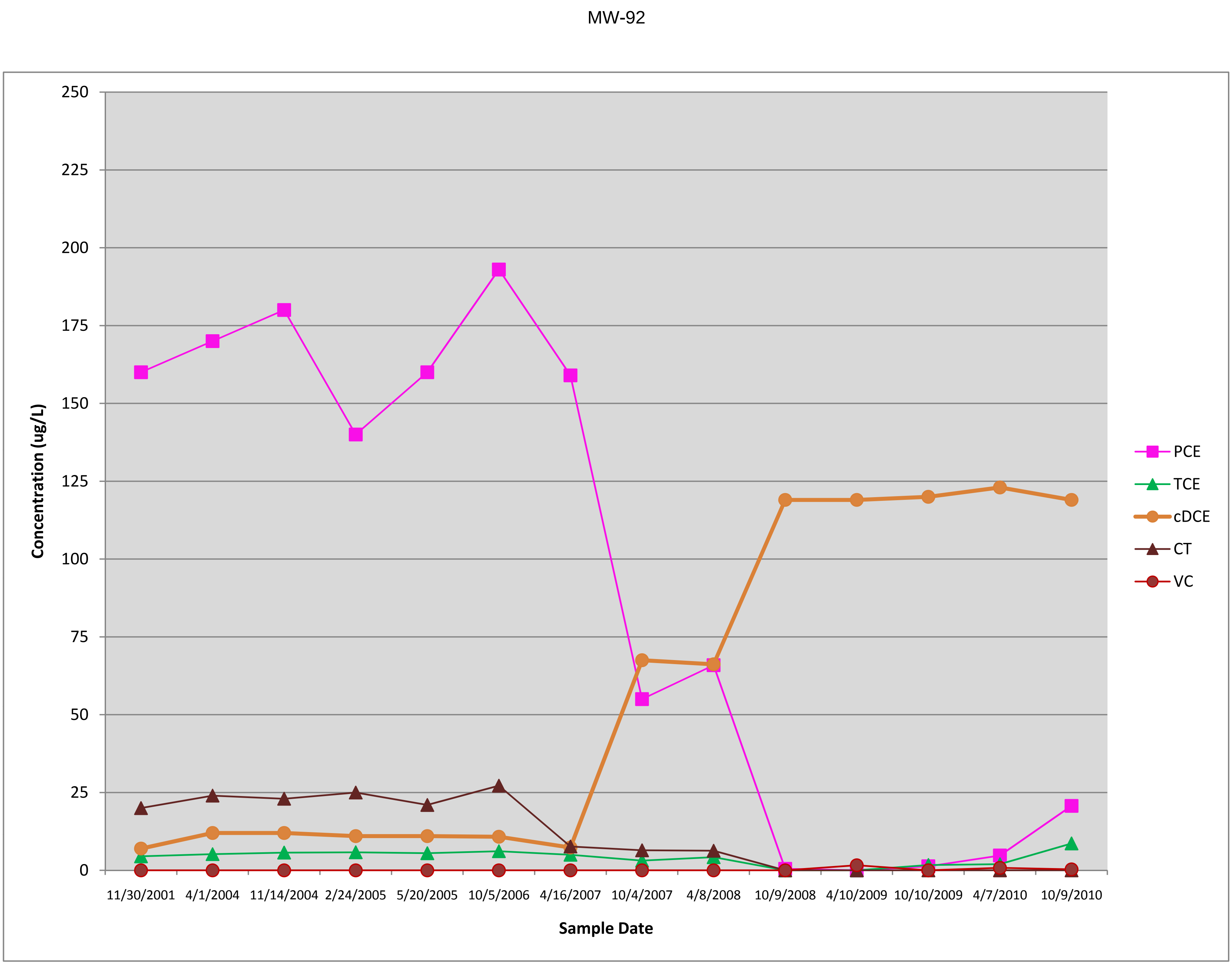

MW-64
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
10/25/1998
3/18/2002
4/1/2004
2/21/2005
10/23/2006
4/17/2007
10/3/2007
4/7/2008
10/8/2008
4/9/2009
10/8/2009
3/29/2010
10/7/2010
Sample Date
PCE
TCE
cDCE
VC

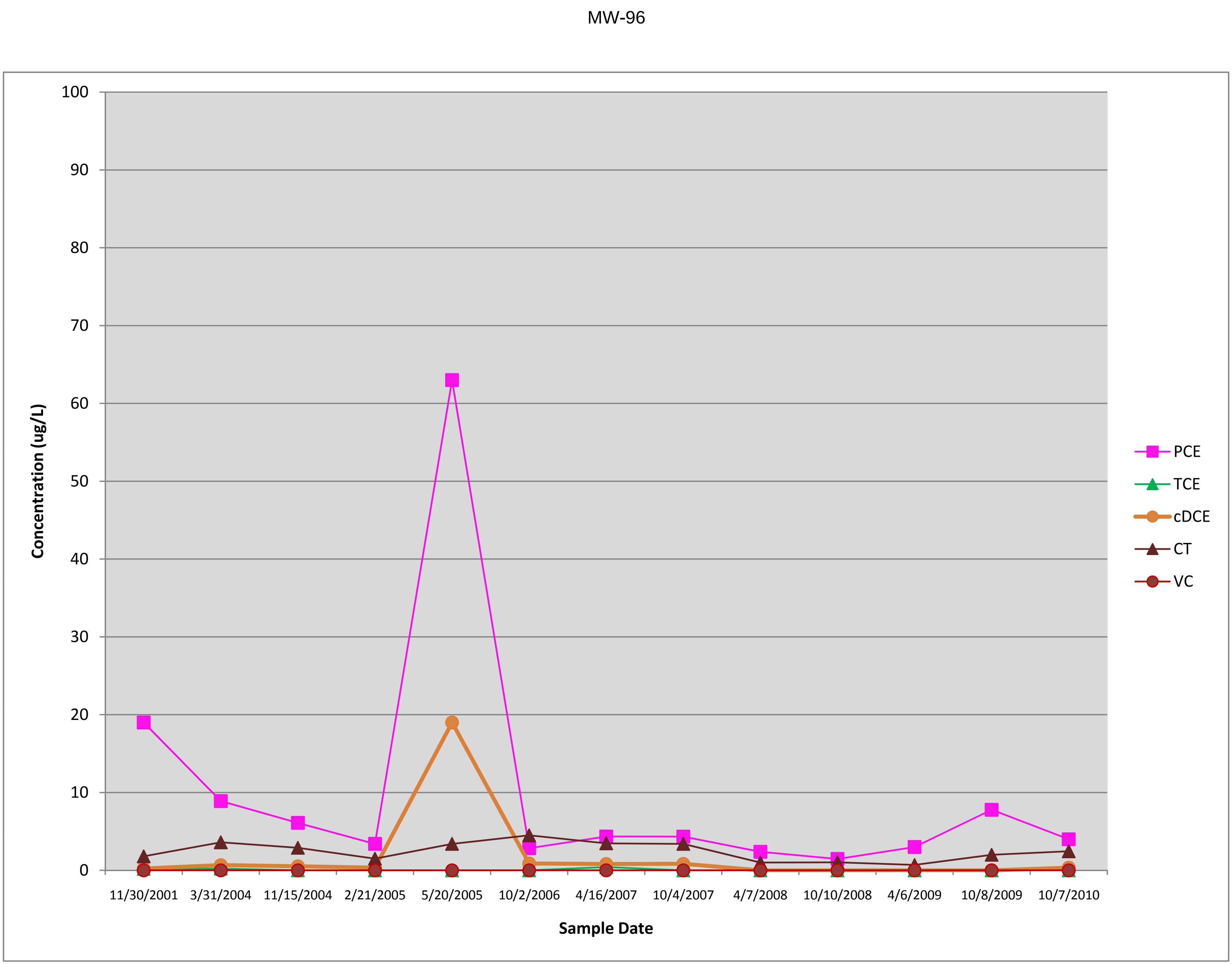
MW-85



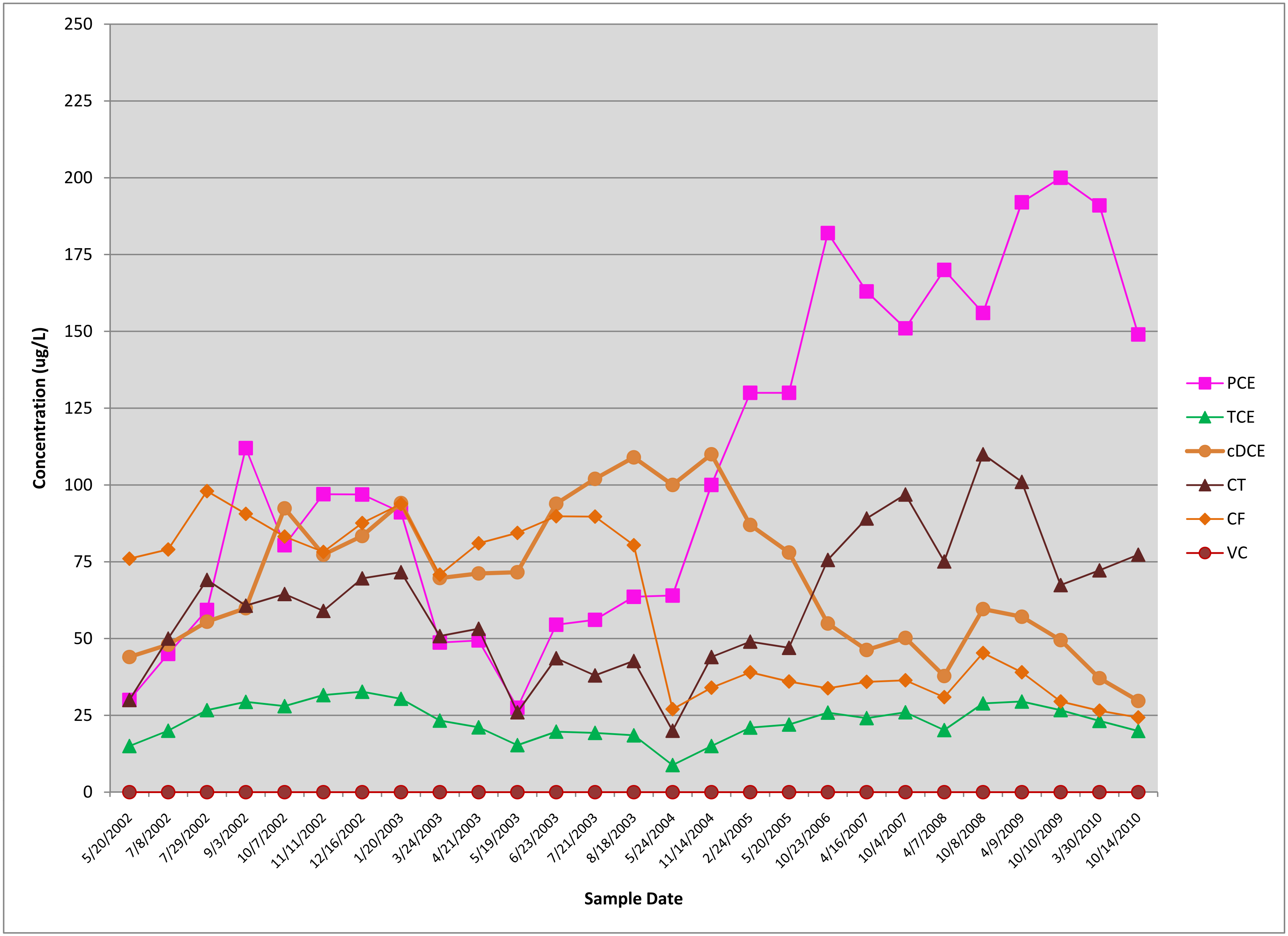
250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
11/30/2001
4/2/2004
11/14/2004
2/22/2005
5/20/2005
8/30/2006
12/8/2006
3/12/2007
5/29/2007
9/11/2007
12/10/2007
3/12/2008
6/16/2008
12/17/2008
3/17/2009
10/12/2009
3/30/2010
10/14/2010
Sample Date
PCE
TCE
cDCE
CT
VC


MW-88
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
11/30/2001
7/8/2002
7/29/2002
9/3/2002
10/7/2002
11/11/2002
12/16/2002
1/20/2003
3/24/2003
4/21/2003
5/19/2003
6/23/2003
7/21/2003
8/18/2003
4/1/2004
11/13/2004
2/22/2005
5/23/2005
10/3/2006
4/13/2007
10/4/2007
4/7/2008
10/6/2008
4/9/2009
10/11/2009
3/30/2010
10/4/2010
Sample Date
PCE
TCE
cDCE
CT
VC

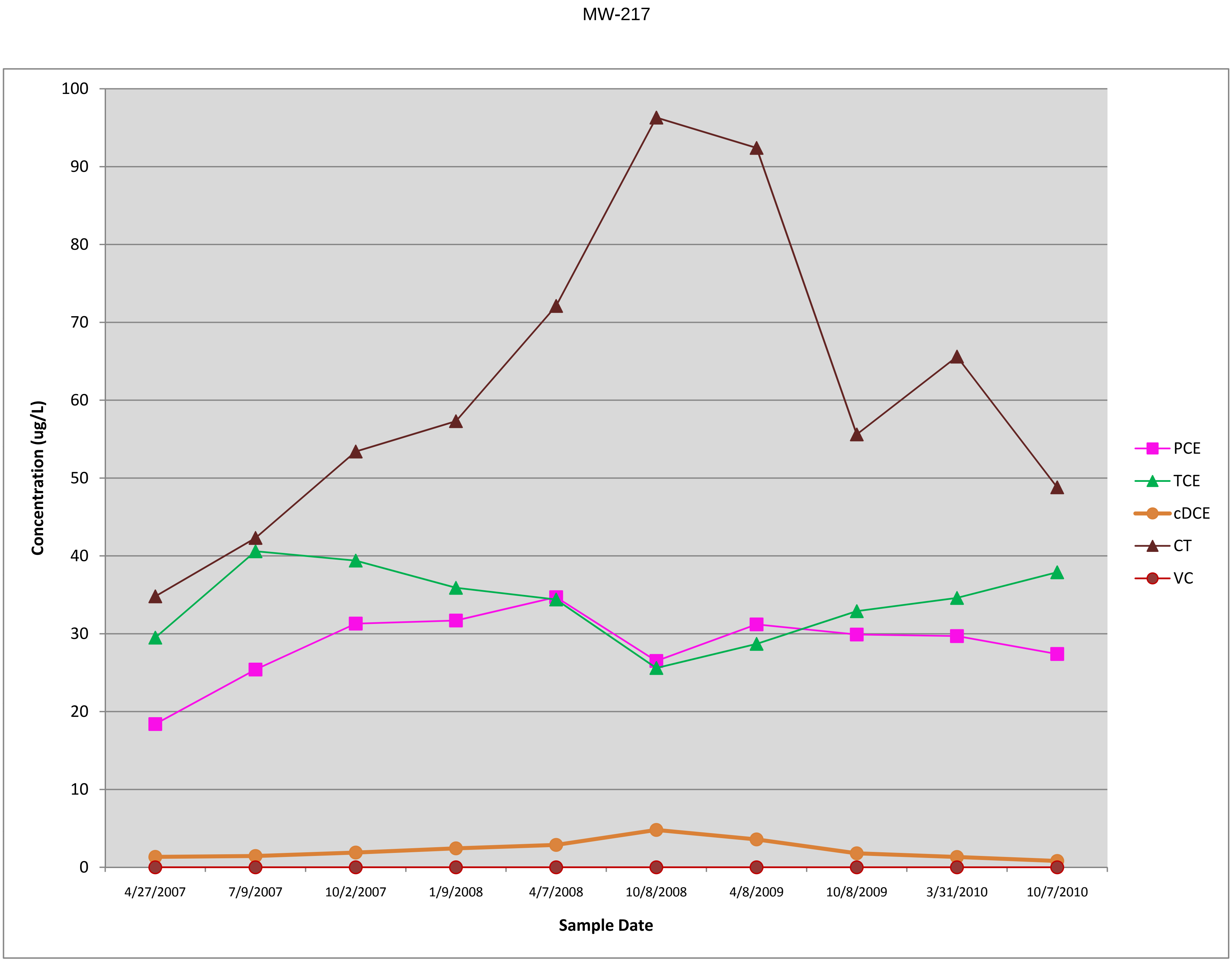

MW-92
Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
11/30/2001
4/1/2004
11/14/2004
2/24/2005
5/20/2005
10/5/2006
4/16/2007
10/4/2007
4/8/2008
10/9/2008
4/10/2009
10/10/2009
4/7/2010
10/9/2010
Sample Date
PCE
TCE
cDCE
CT
VC


MW-96
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
11/30/2001
3/31/2004
11/15/2004
2/21/2005
5/20/2005
10/2/2006
4/16/2007
10/4/2007
4/7/2008
10/10/2008
4/6/2009
10/8/2009
10/7/2010
Sample Date
PCE
TCE
cDCE
CT
VC

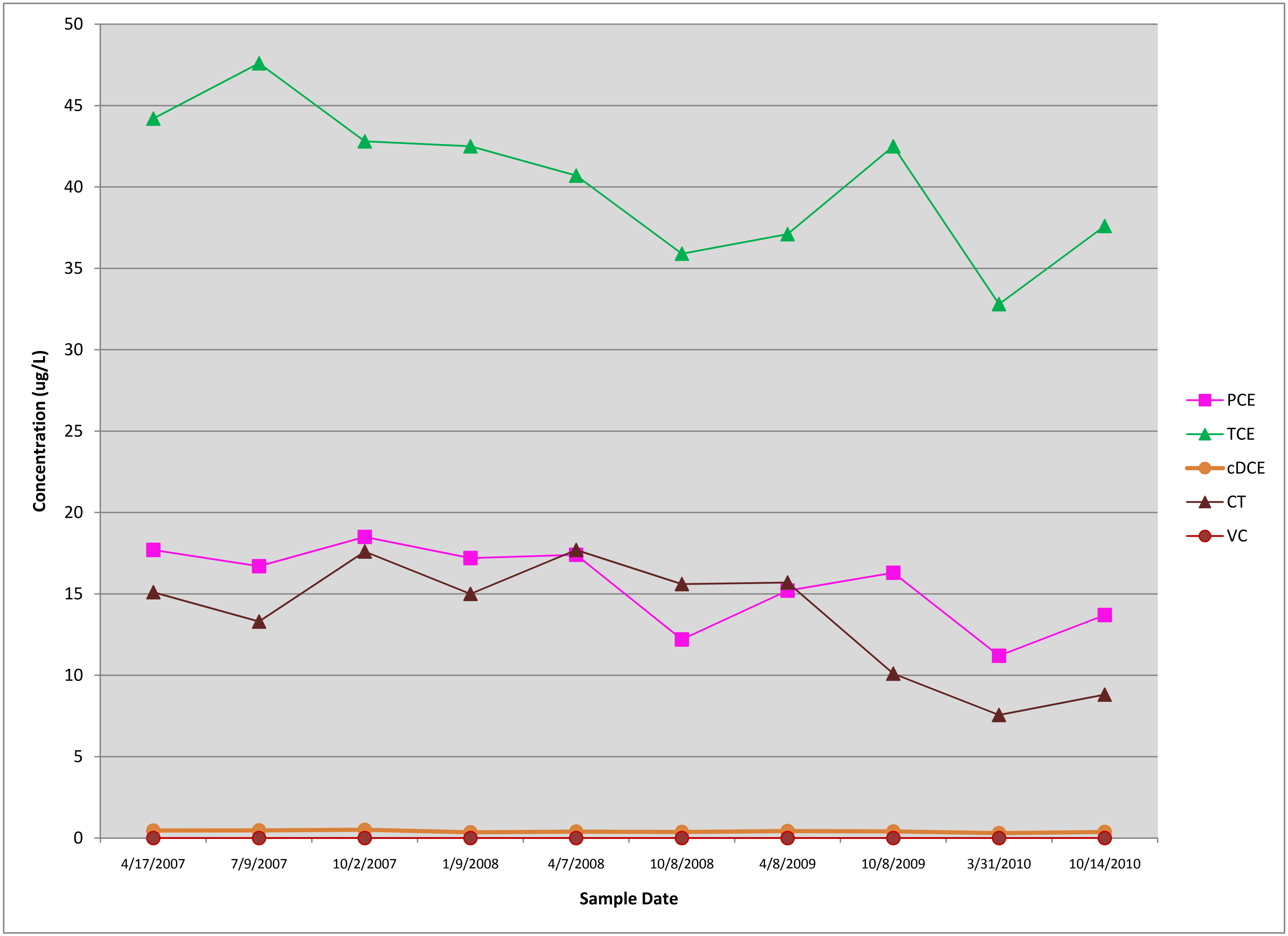
MW-113



Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
5/20/2002
7/8/2002
7/29/2002
9/3/2002
10/7/2002
11/11/2002
12/16/2002
1/20/2003
3/24/2003
4/21/2003
5/19/2003
6/23/2003
7/21/2003
8/18/2003
5/24/2004
11/14/2004
2/24/2005
5/20/2005
10/23/2006
4/16/2007
10/4/2007
4/7/2008
10/8/2008
4/9/2009
10/10/2009
3/30/2010
10/14/2010
Sample Date
PCE
TCE
cDCE
CT
CF
VC

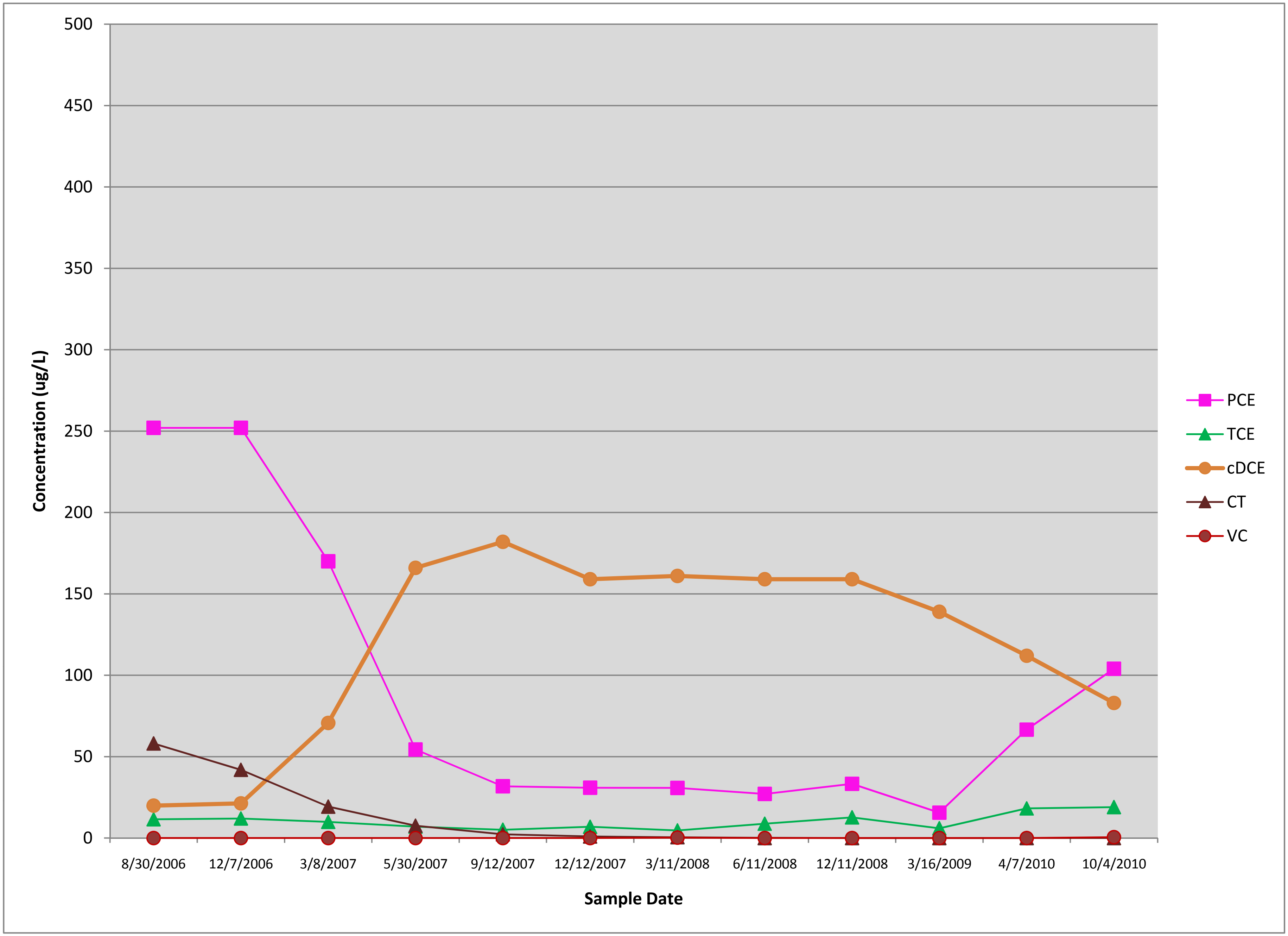

MW-217
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
4/27/2007
7/9/2007
10/2/2007
1/9/2008
4/7/2008
10/8/2008
4/8/2009
10/8/2009
3/31/2010
10/7/2010
Sample Date
PCE
TCE
cDCE
CT
VC

MW-218

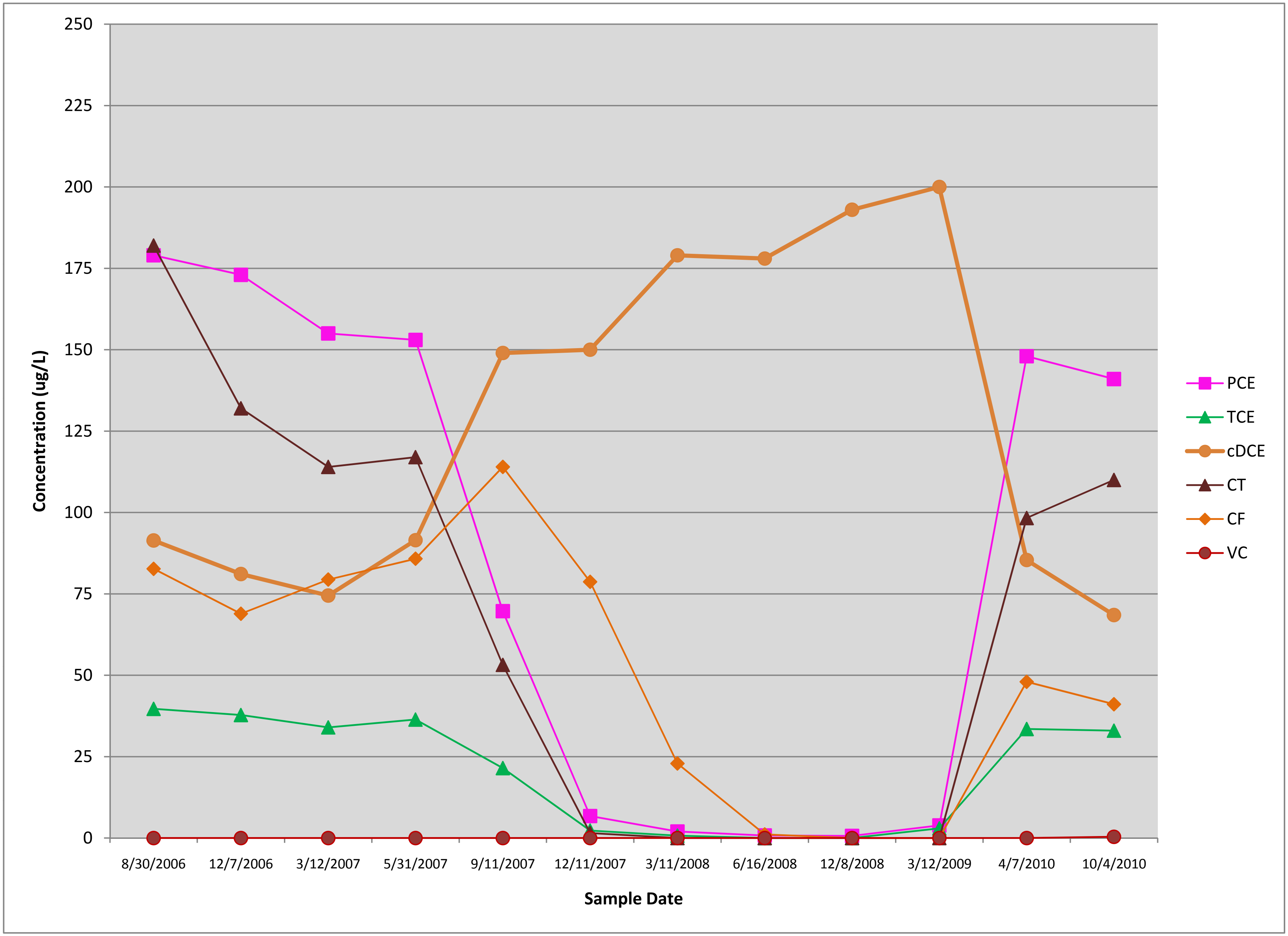


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
4/17/2007
7/9/2007
10/2/2007
1/9/2008
4/7/2008
10/8/2008
4/8/2009
10/8/2009
3/31/2010
10/14/2010
Sample Date
PCE
TCE
cDCE
CT
VC

PMW92-03


Concentration (ug/L)
500
450
400
350
300
250
200
150
100
50
0
8/30/2006
12/7/2006
3/8/2007
5/30/2007
9/12/2007
12/12/2007
3/11/2008
6/11/2008
12/11/2008
3/16/2009
4/7/2010
10/4/2010
Sample Date
PCE
TCE
cDCE
CT
VC

PMW92-06



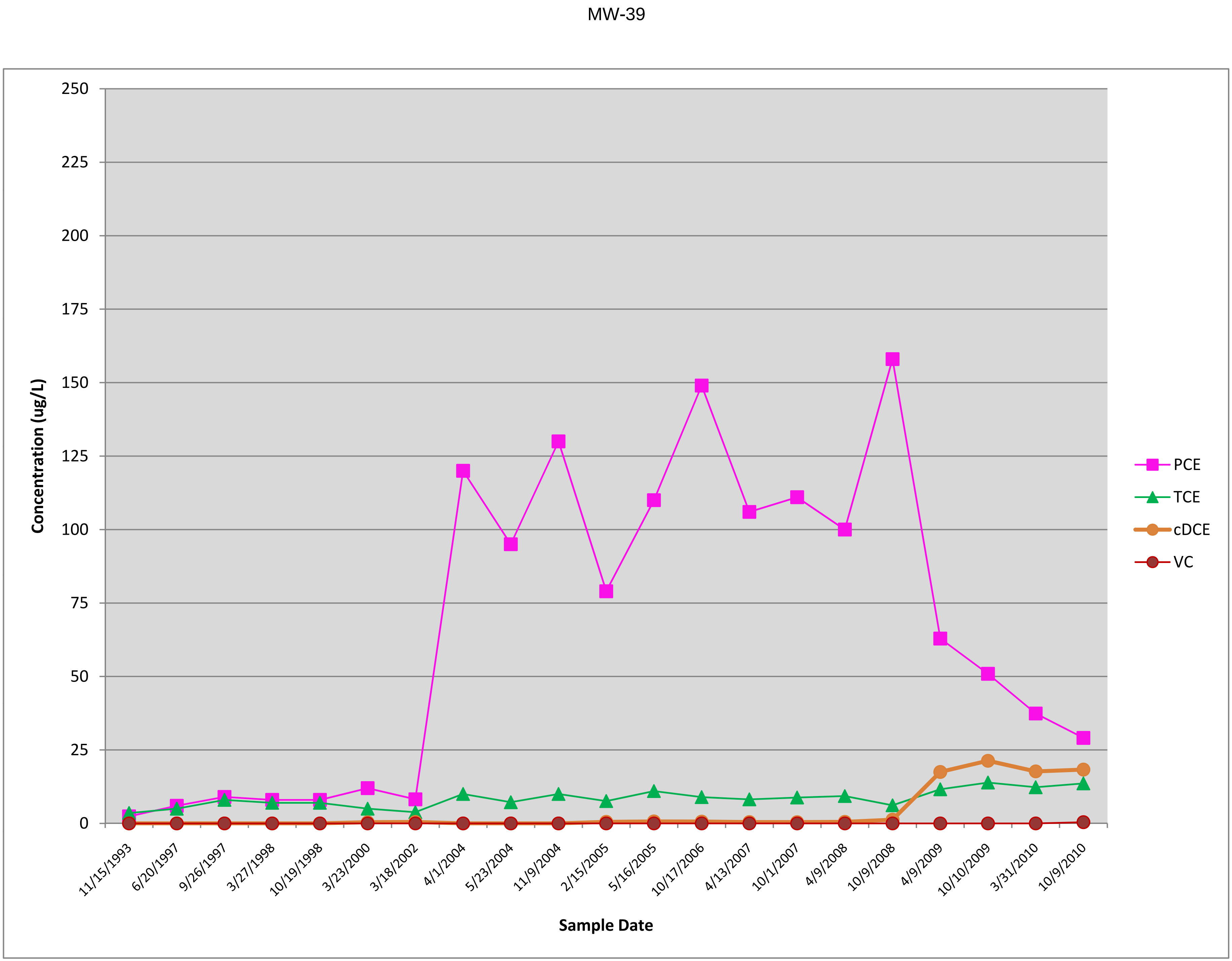
250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
8/30/2006
12/7/2006
3/12/2007
5/31/2007
9/11/2007
12/11/2007
3/11/2008
6/16/2008
12/8/2008
3/12/2009
4/7/2010
10/4/2010
Sample Date
PCE
TCE
cDCE
CT
CF
VC

APPENDIX F-4

CVOC TIME-TREND PLOTS

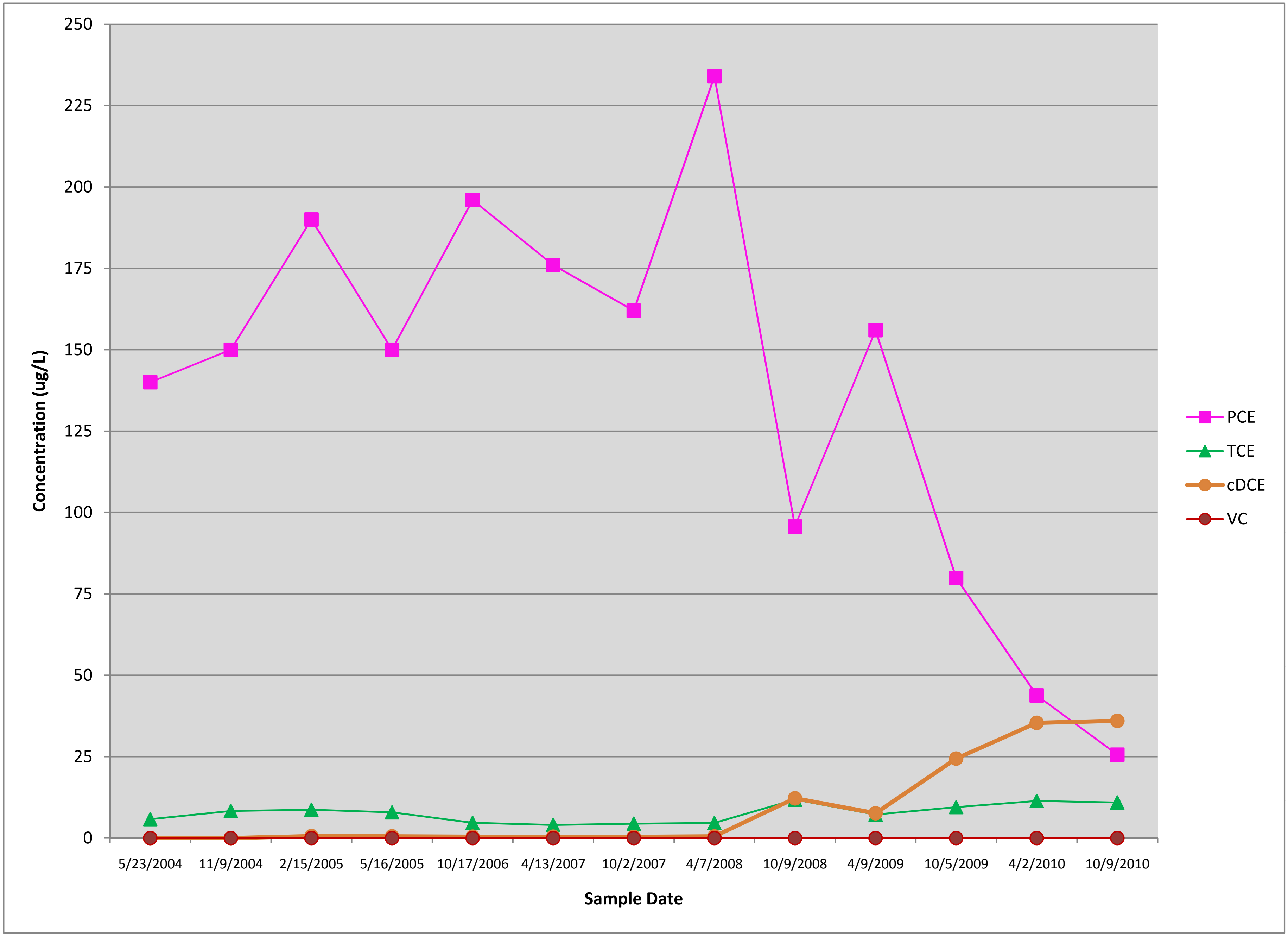
West Central Wells

MW-39, MW-39A, MW-94A, MW-98, MW-197A, MW-197B, MW-200, MW-203A, MW-203B, MW-204A, MW-204B, MW-205A, MW-205B, MW-206A, MW-206B, MW-208A, MW-208B, MW-210B, MW-214A, MW-214B, MW-215A, PZ-03

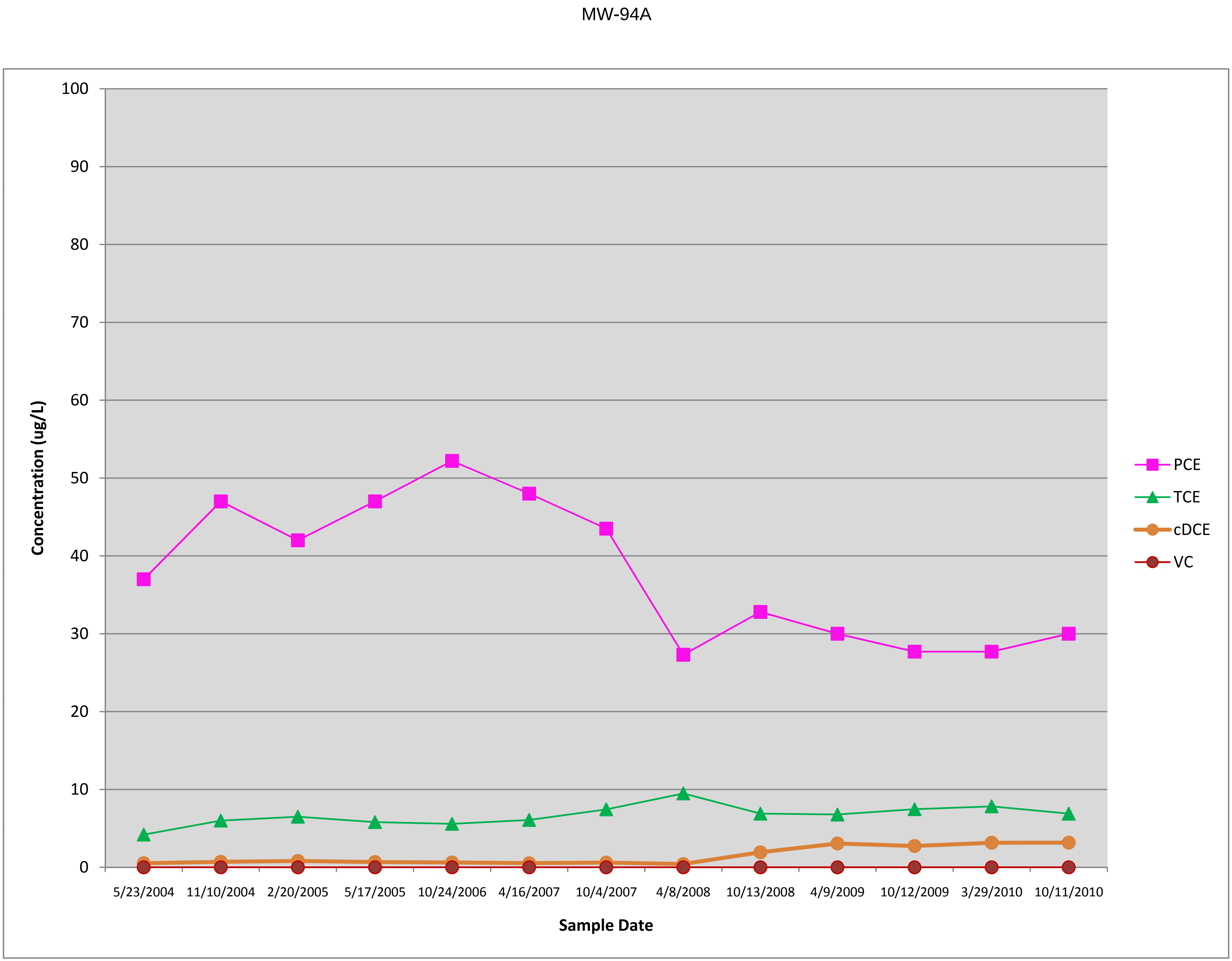


MW-39
Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
11/15/1993
6/20/1997
9/26/1997
3/27/1998
10/19/1998
3/23/2000
3/18/2002
4/1/2004
5/23/2004
11/9/2004
2/15/2005
5/16/2005
10/17/2006
4/13/2007
10/1/2007
4/9/2008
10/9/2008
4/9/2009
10/10/2009
3/31/2010
10/9/2010
Sample Date
PCE
TCE
cDCE
VC

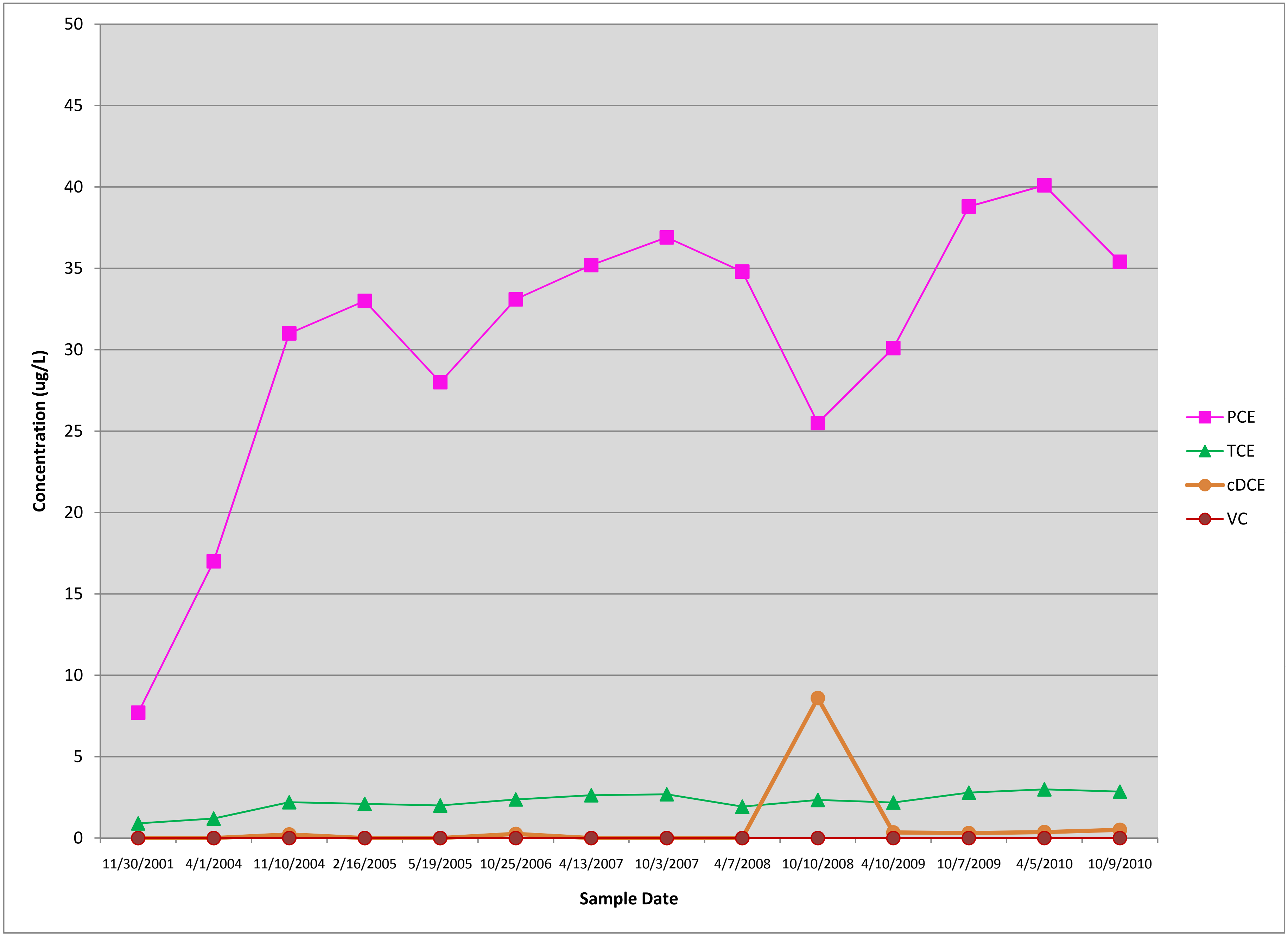
MW-39A



250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
5/23/2004
11/9/2004
2/15/2005
5/16/2005
10/17/2006
4/13/2007
10/2/2007
4/7/2008
10/9/2008
4/9/2009
10/5/2009
4/2/2010
10/9/2010
Sample Date
PCE
TCE
cDCE
VC

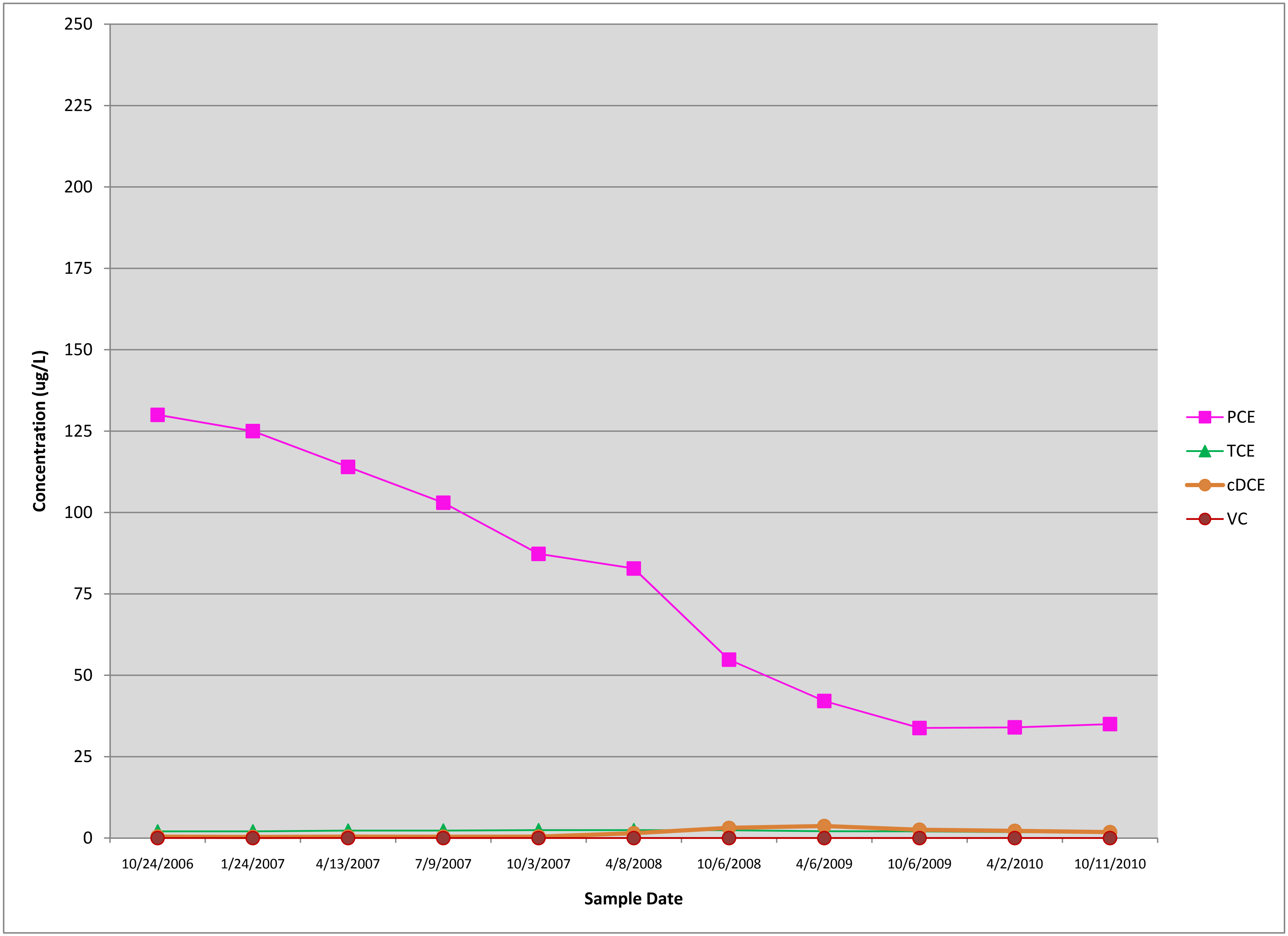

MW-94A
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
5/23/2004
11/10/2004
2/20/2005
5/17/2005
10/24/2006
4/16/2007
10/4/2007
4/8/2008
10/13/2008
4/9/2009
10/12/2009
3/29/2010
10/11/2010
Sample Date
PCE
TCE
cDCE
VC

MW-98

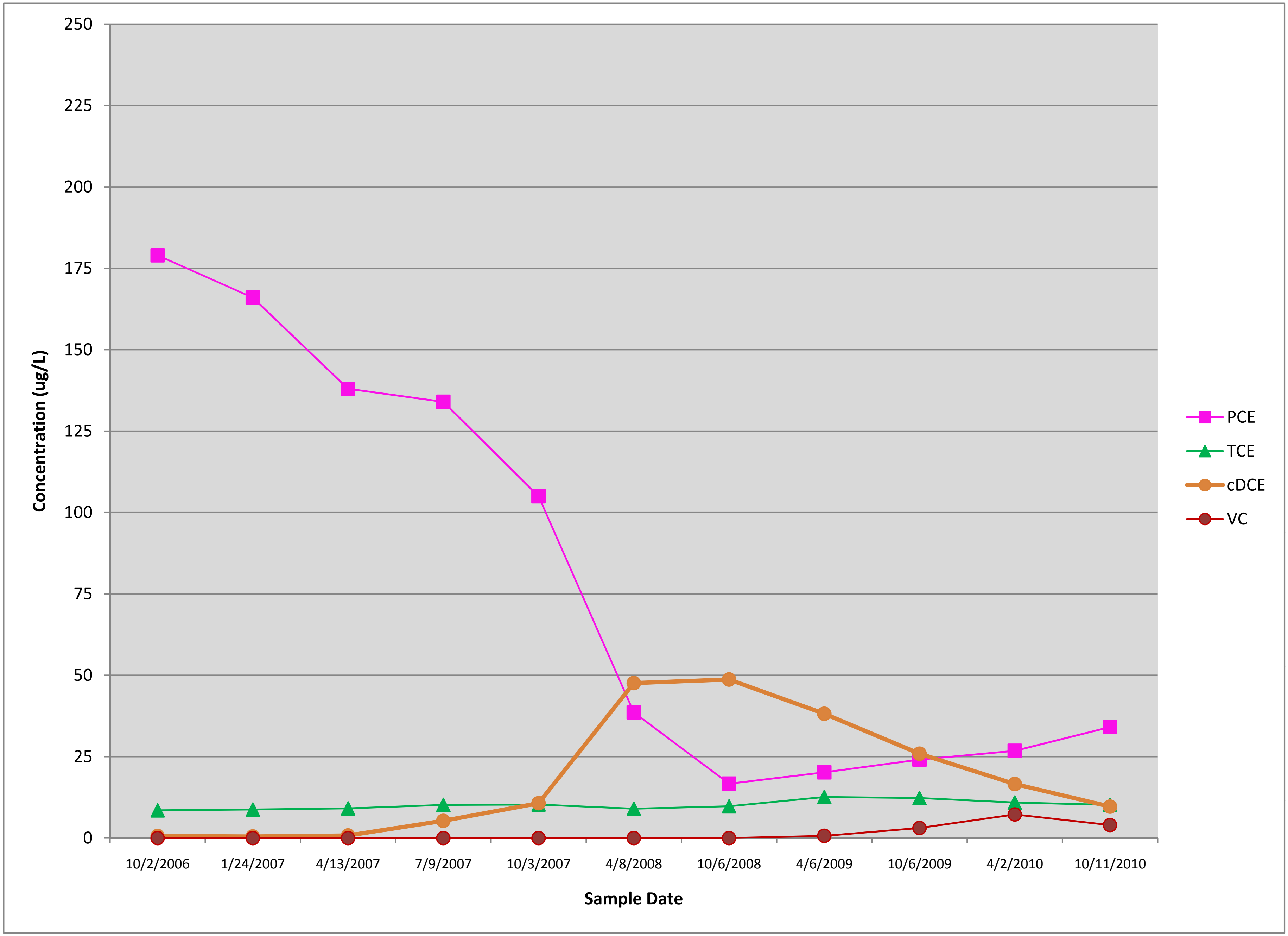


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
11/30/2001
4/1/2004
11/10/2004
2/16/2005
5/19/2005
10/25/2006
4/13/2007
10/3/2007
4/7/2008
10/10/2008
4/10/2009
10/7/2009
4/5/2010
10/9/2010
Sample Date
PCE
TCE
cDCE
VC

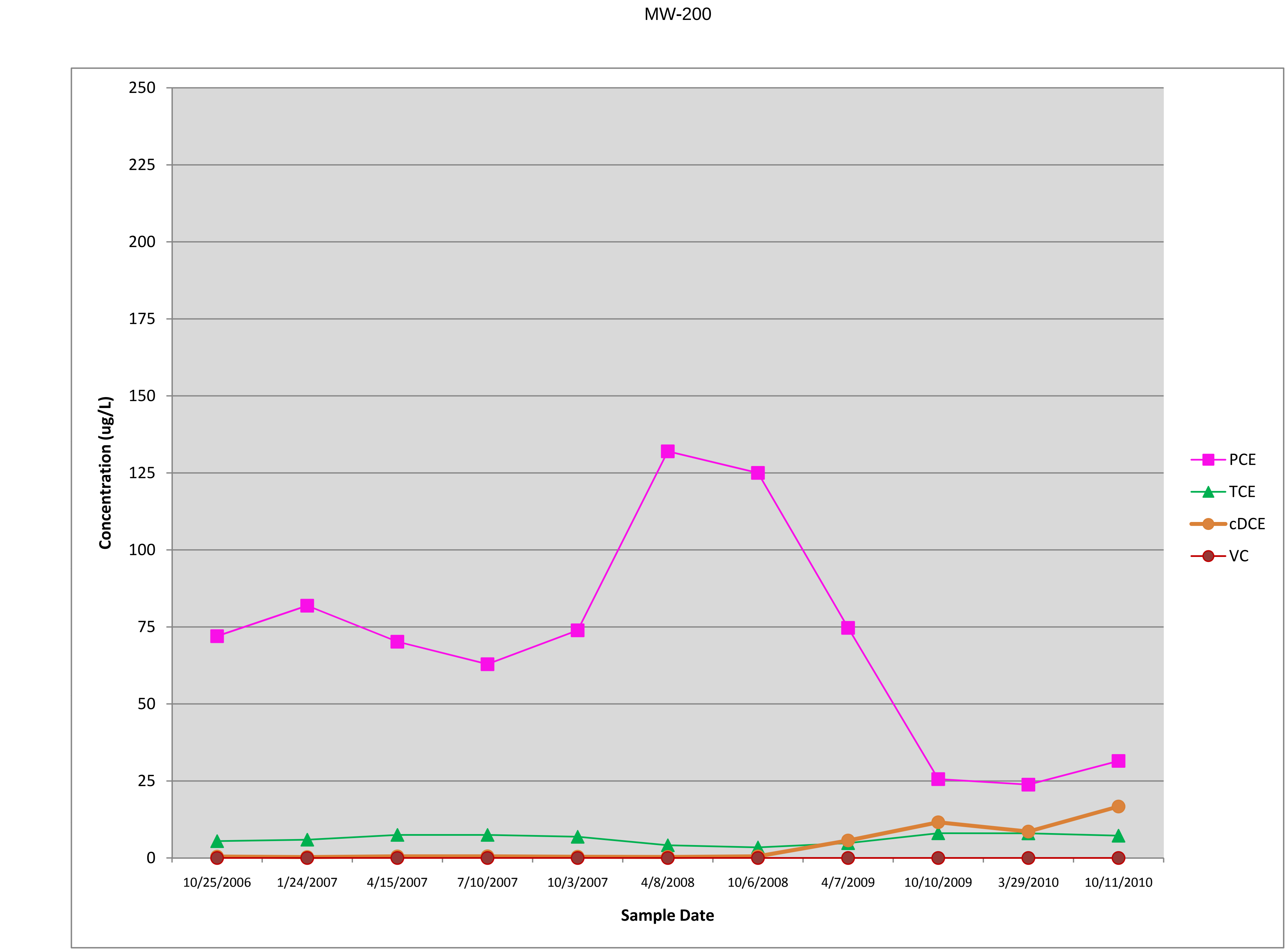
MW-197A

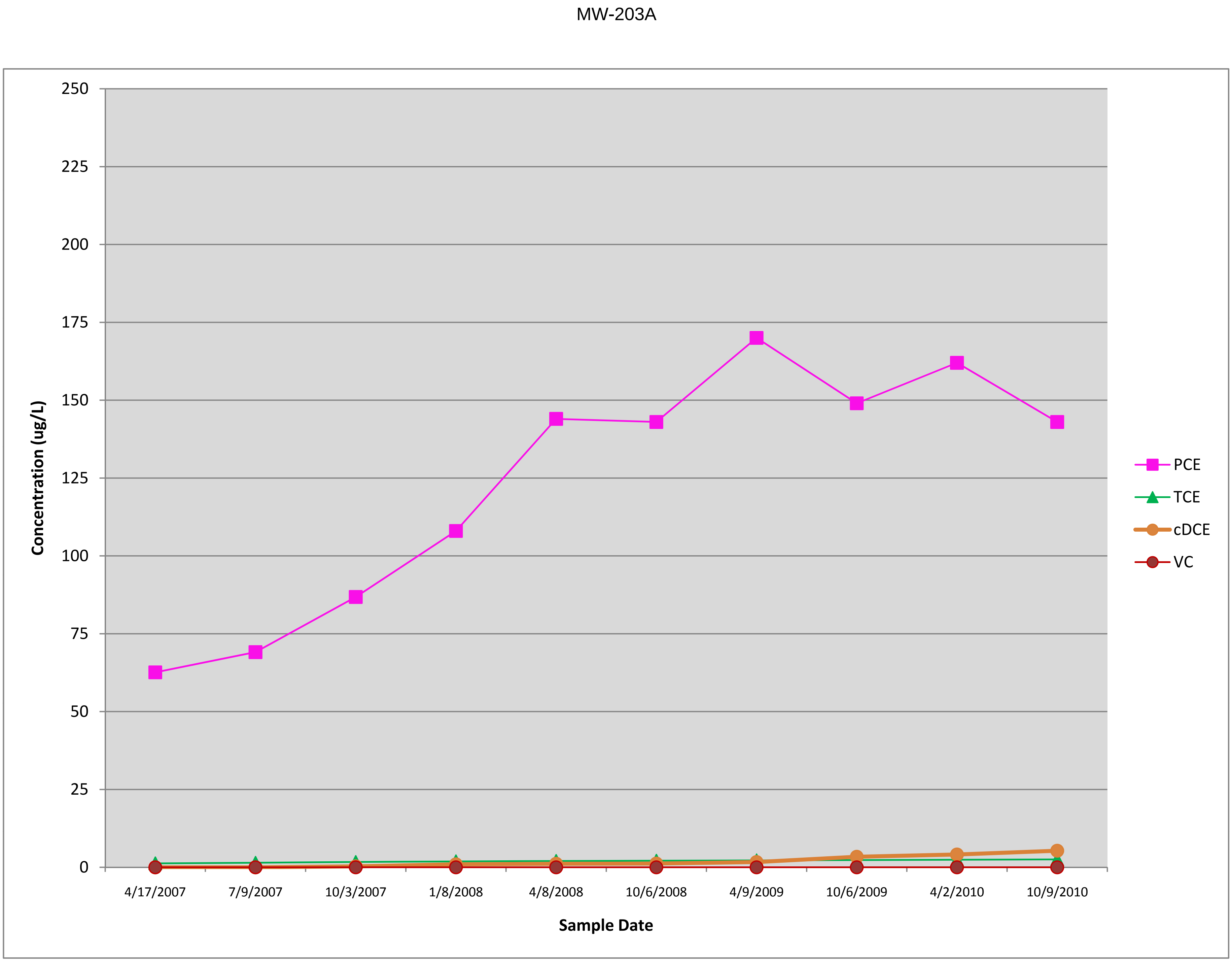

250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
10/24/2006
1/24/2007
4/13/2007
7/9/2007
10/3/2007
4/8/2008
10/6/2008
4/6/2009
10/6/2009
4/2/2010
10/11/2010
Sample Date
PCE
TCE
cDCE
VC

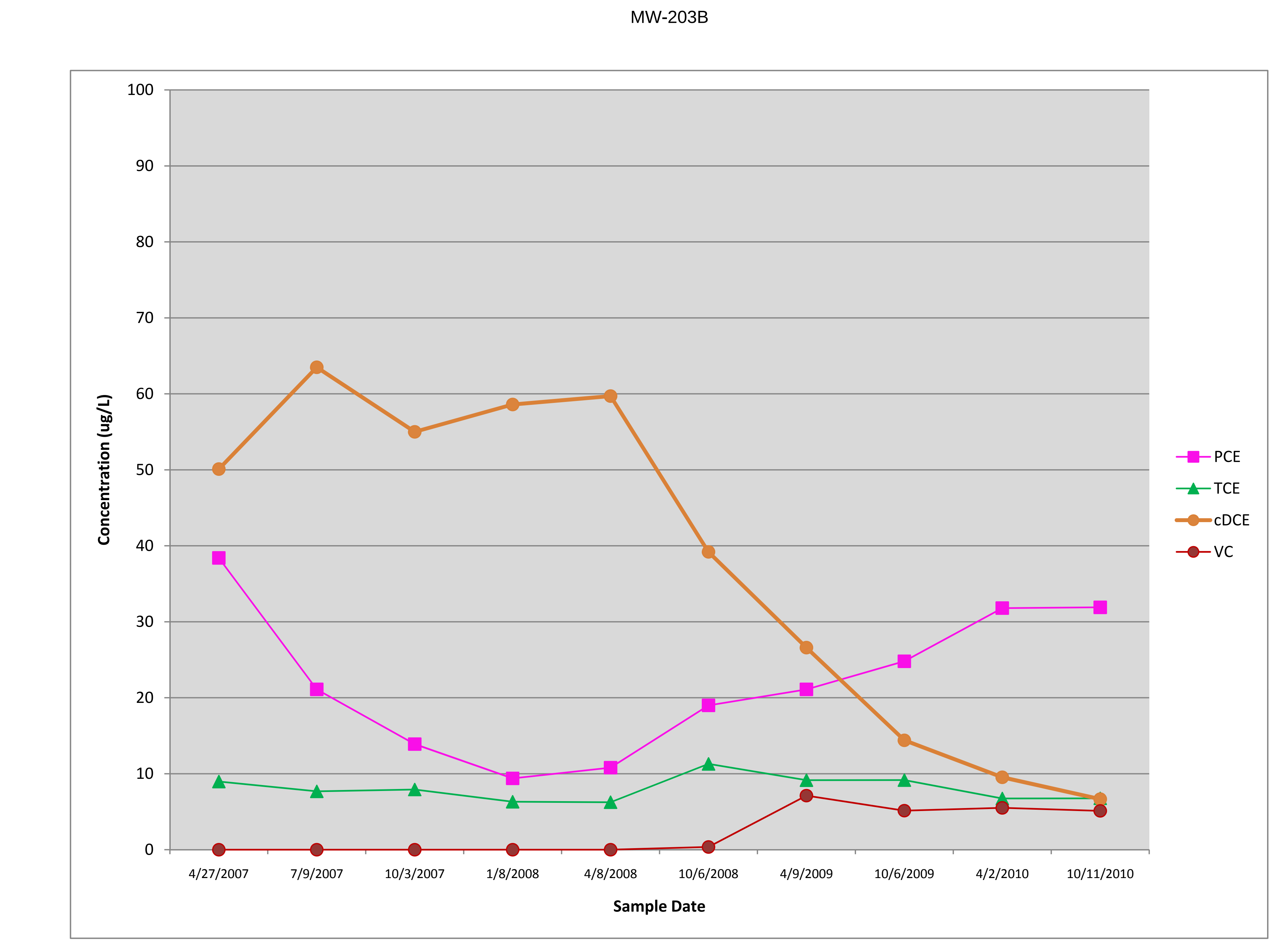
MW-197B

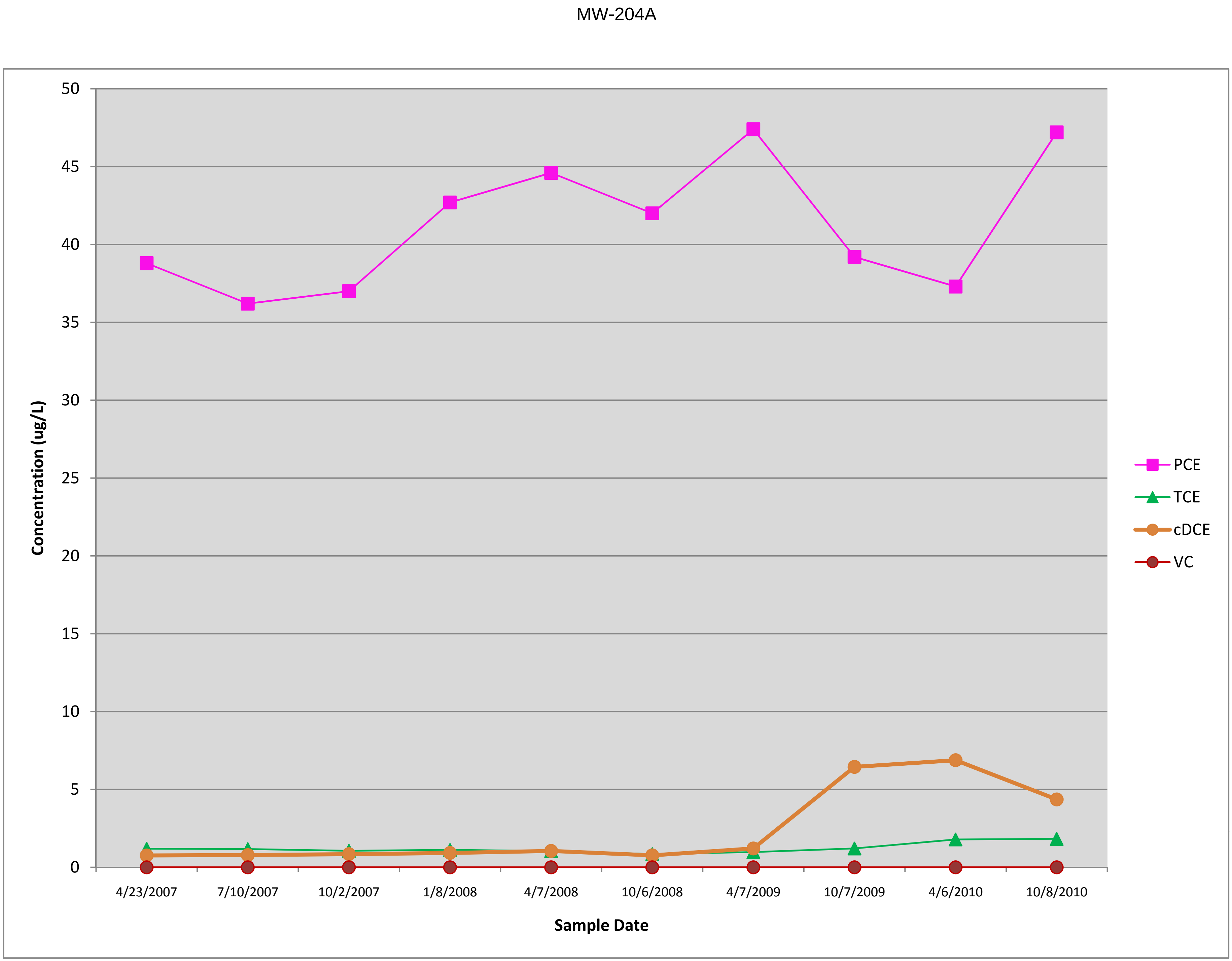


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
10/2/2006
1/24/2007
4/13/2007
7/9/2007
10/3/2007
4/8/2008
10/6/2008
4/6/2009
10/6/2009
4/2/2010
10/11/2010
Sample Date
PCE
TCE
cDCE
VC


MW-200
Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
10/25/2006
1/24/2007
4/15/2007
7/10/2007
10/3/2007
4/8/2008
10/6/2008
4/7/2009
10/10/2009
3/29/2010
10/11/2010
Sample Date
PCE
TCE
cDCE
VC

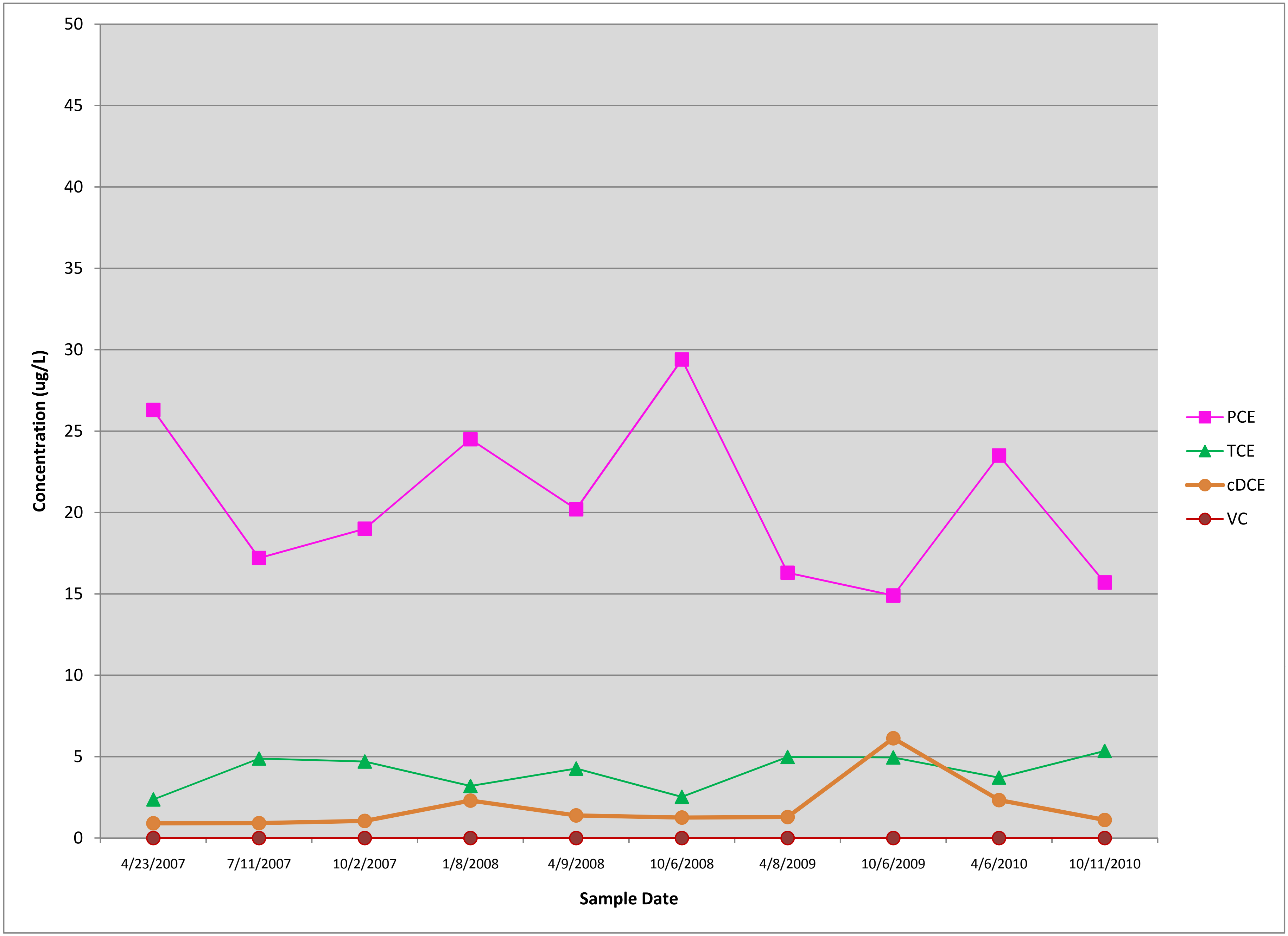

MW-203A
250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
4/17/2007
7/9/2007
10/3/2007
1/8/2008
4/8/2008
10/6/2008
4/9/2009
10/6/2009
4/2/2010
10/9/2010
Sample Date
PCE
TCE
cDCE
VC

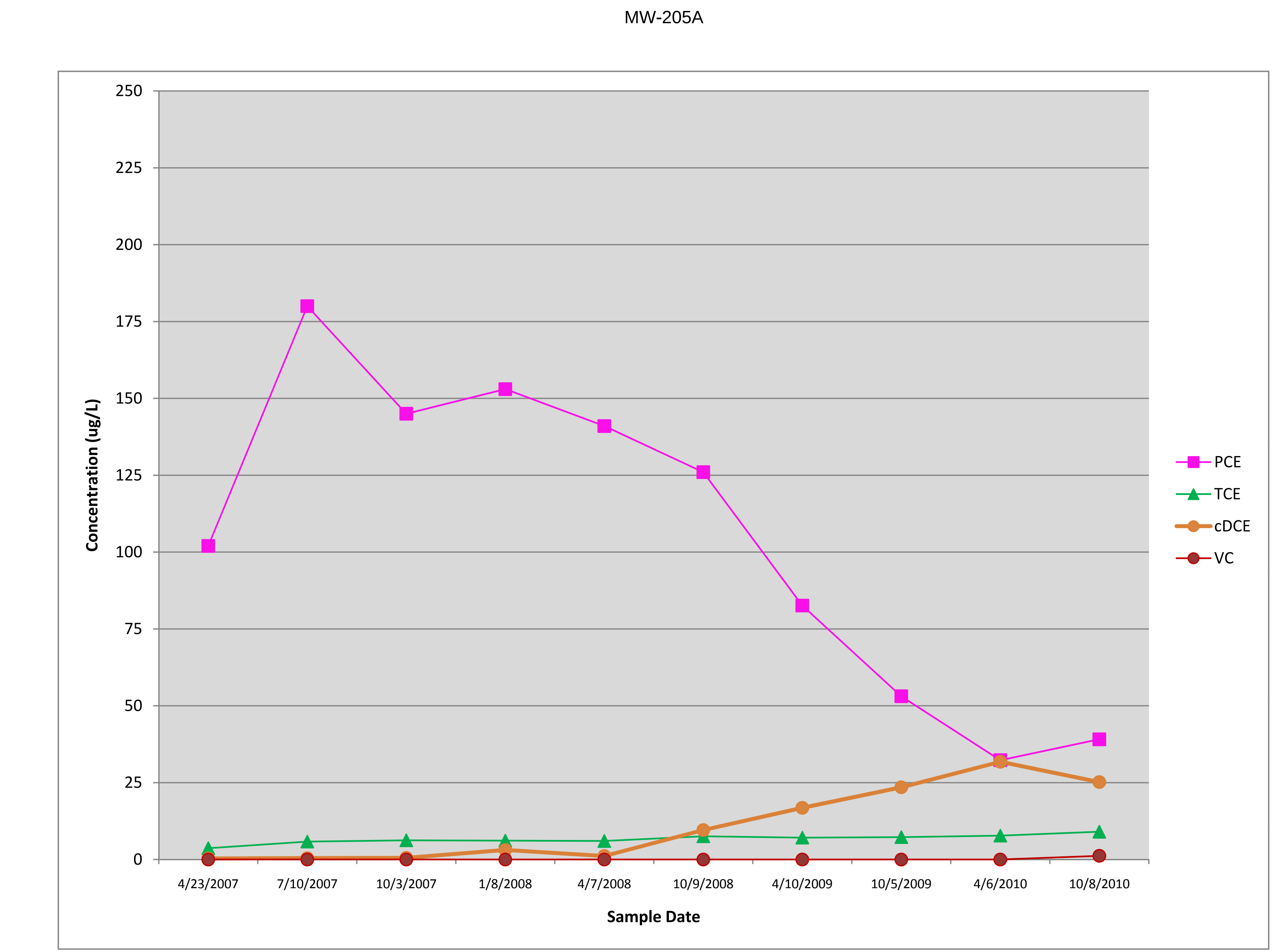

MW-203B
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
4/27/2007
7/9/2007
10/3/2007
1/8/2008
4/8/2008
10/6/2008
4/9/2009
10/6/2009
4/2/2010
10/11/2010
Sample Date
PCE
TCE
cDCE
VC



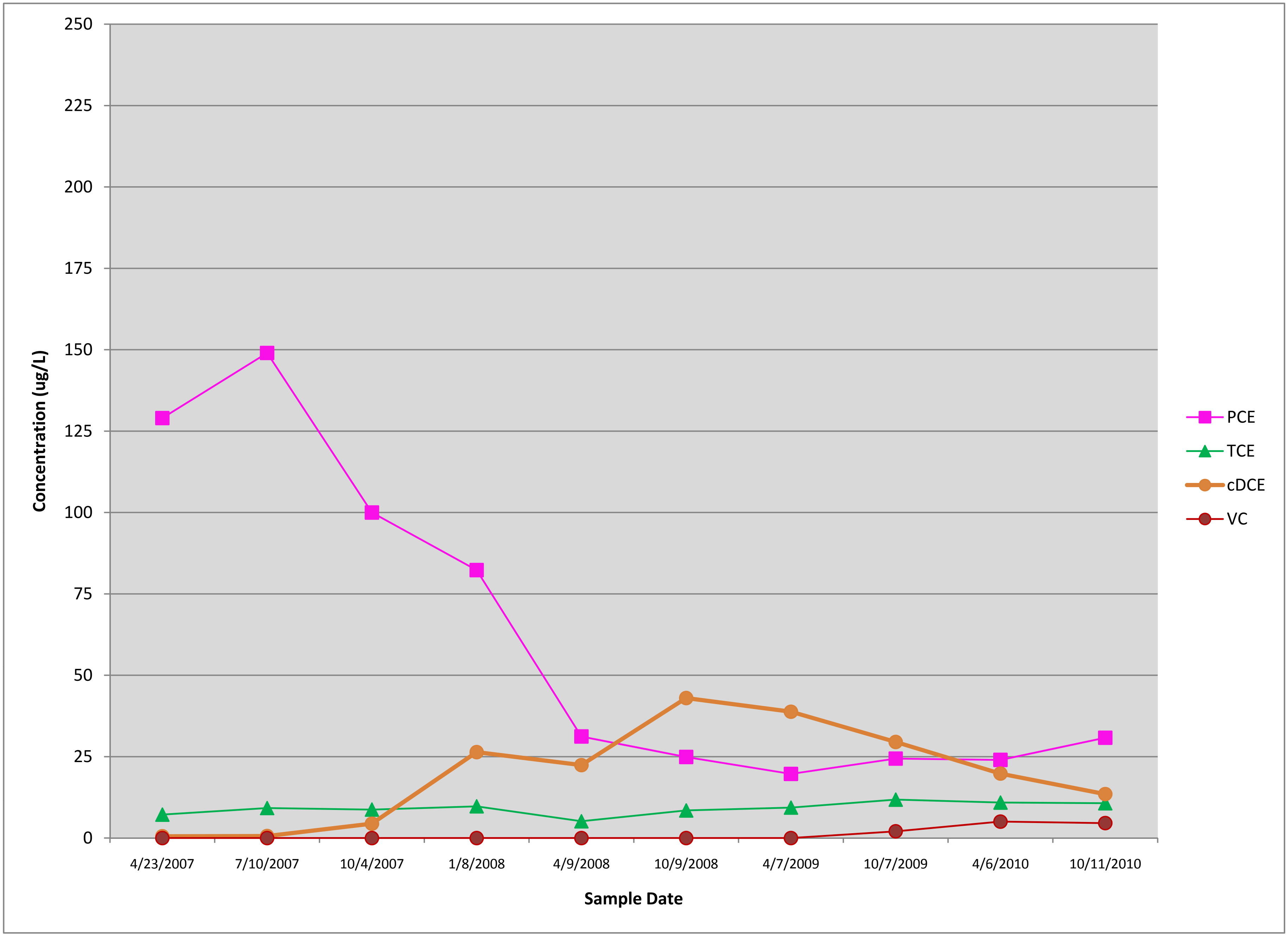
MW-204A
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
4/23/2007
7/10/2007
10/2/2007
1/8/2008
4/7/2008
10/6/2008
4/7/2009
10/7/2009
4/6/2010
10/8/2010
Sample Date
PCE
TCE
cDCE
VC

MW-204B


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
4/23/2007
7/11/2007
10/2/2007
1/8/2008
4/9/2008
10/6/2008
4/8/2009
10/6/2009
4/6/2010
10/11/2010
Sample Date
PCE
TCE
cDCE
VC

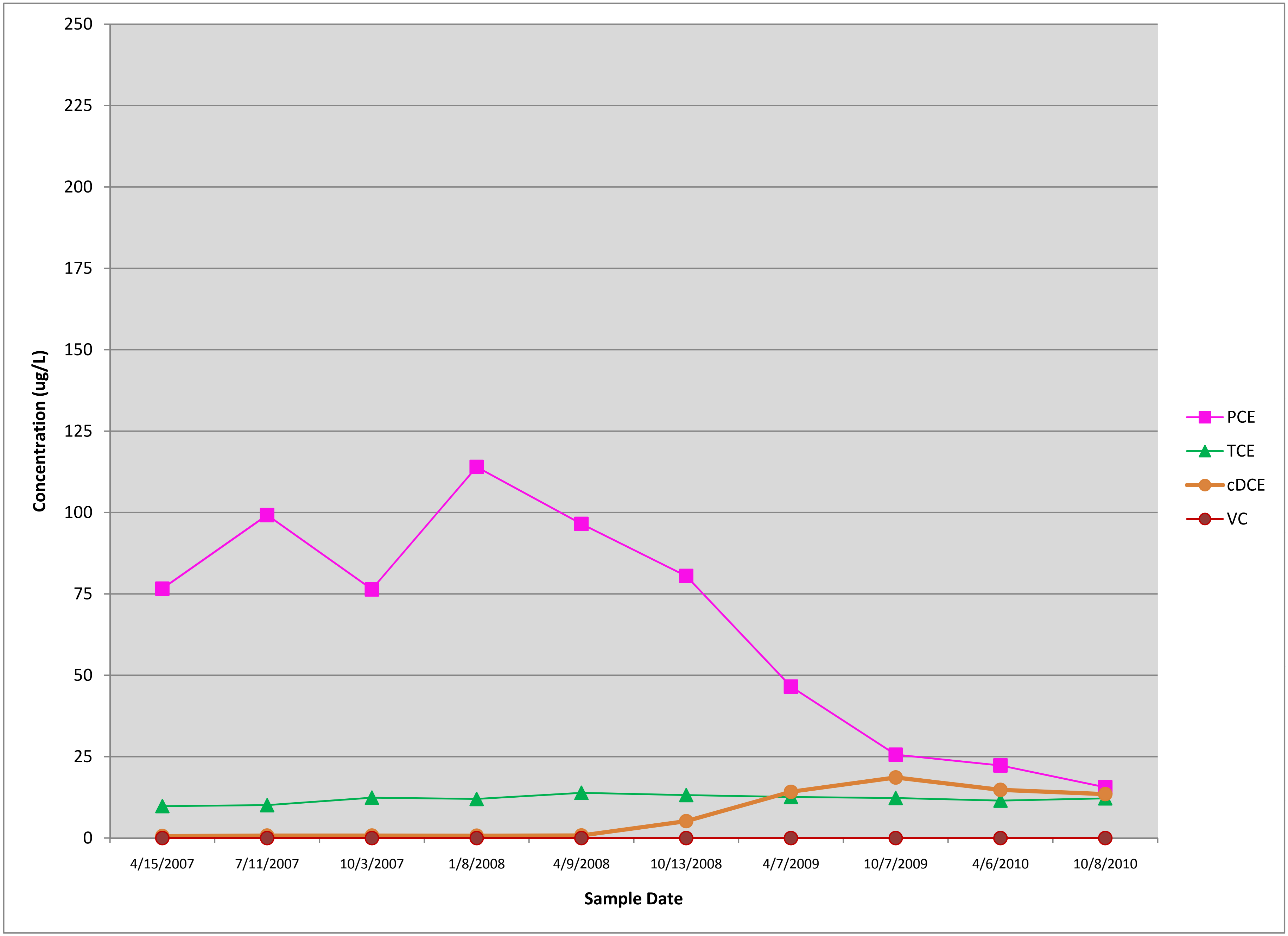

MW-205A
Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
4/23/2007
7/10/2007
10/3/2007
1/8/2008
4/7/2008
10/9/2008
4/10/2009
10/5/2009
4/6/2010
10/8/2010
Sample Date
PCE
TCE
cDCE
VC

MW-205B

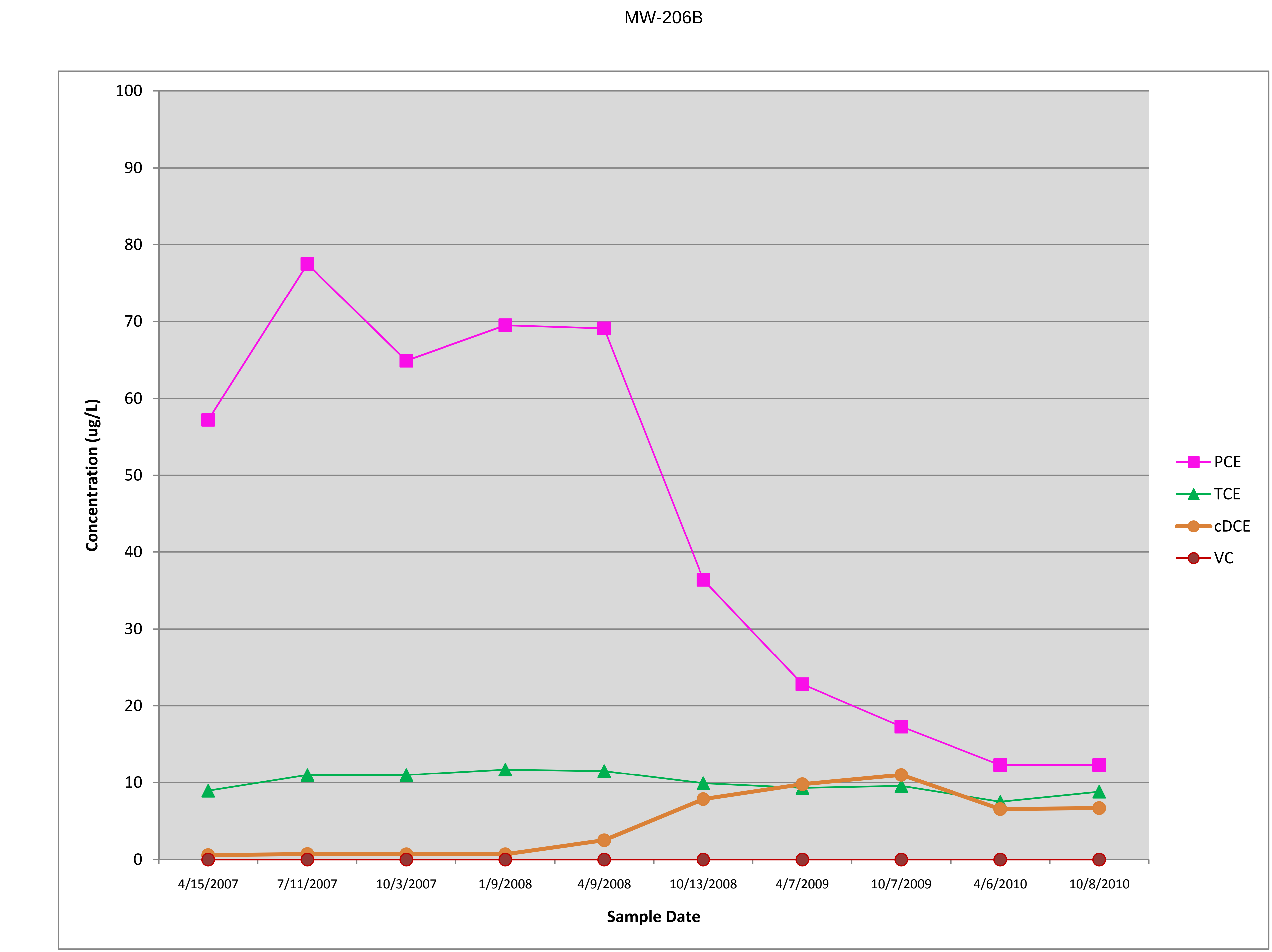


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
4/23/2007
7/10/2007
10/4/2007
1/8/2008
4/9/2008
10/9/2008
4/7/2009
10/7/2009
4/6/2010
10/11/2010
Sample Date
PCE
TCE
cDCE
VC

MW-206A

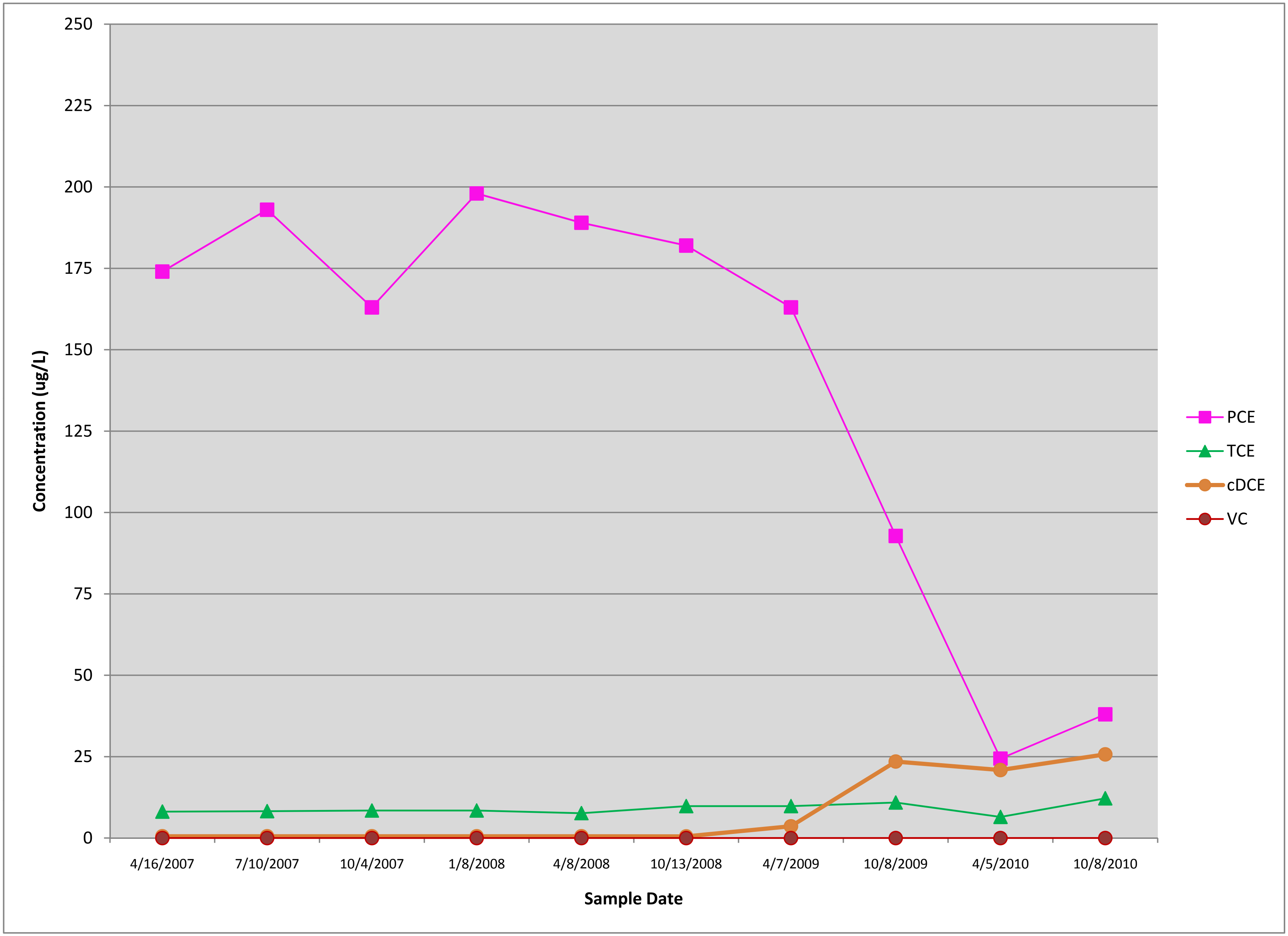


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
4/15/2007
7/11/2007
10/3/2007
1/8/2008
4/9/2008
10/13/2008
4/7/2009
10/7/2009
4/6/2010
10/8/2010
Sample Date
PCE
TCE
cDCE
VC

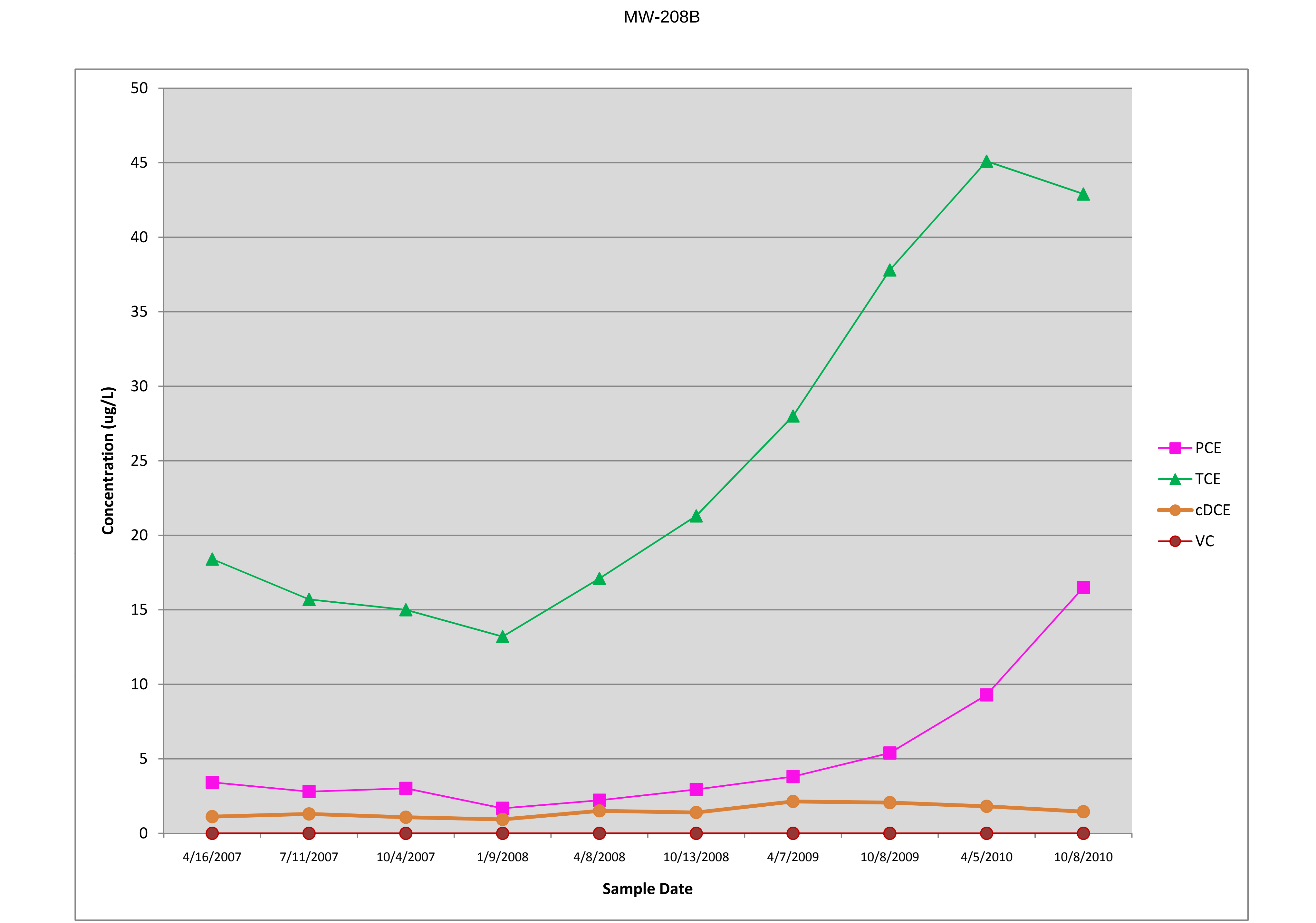


MW-206B
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
4/15/2007
7/11/2007
10/3/2007
1/9/2008
4/9/2008
10/13/2008
4/7/2009
10/7/2009
4/6/2010
10/8/2010
Sample Date
PCE
TCE
cDCE
VC

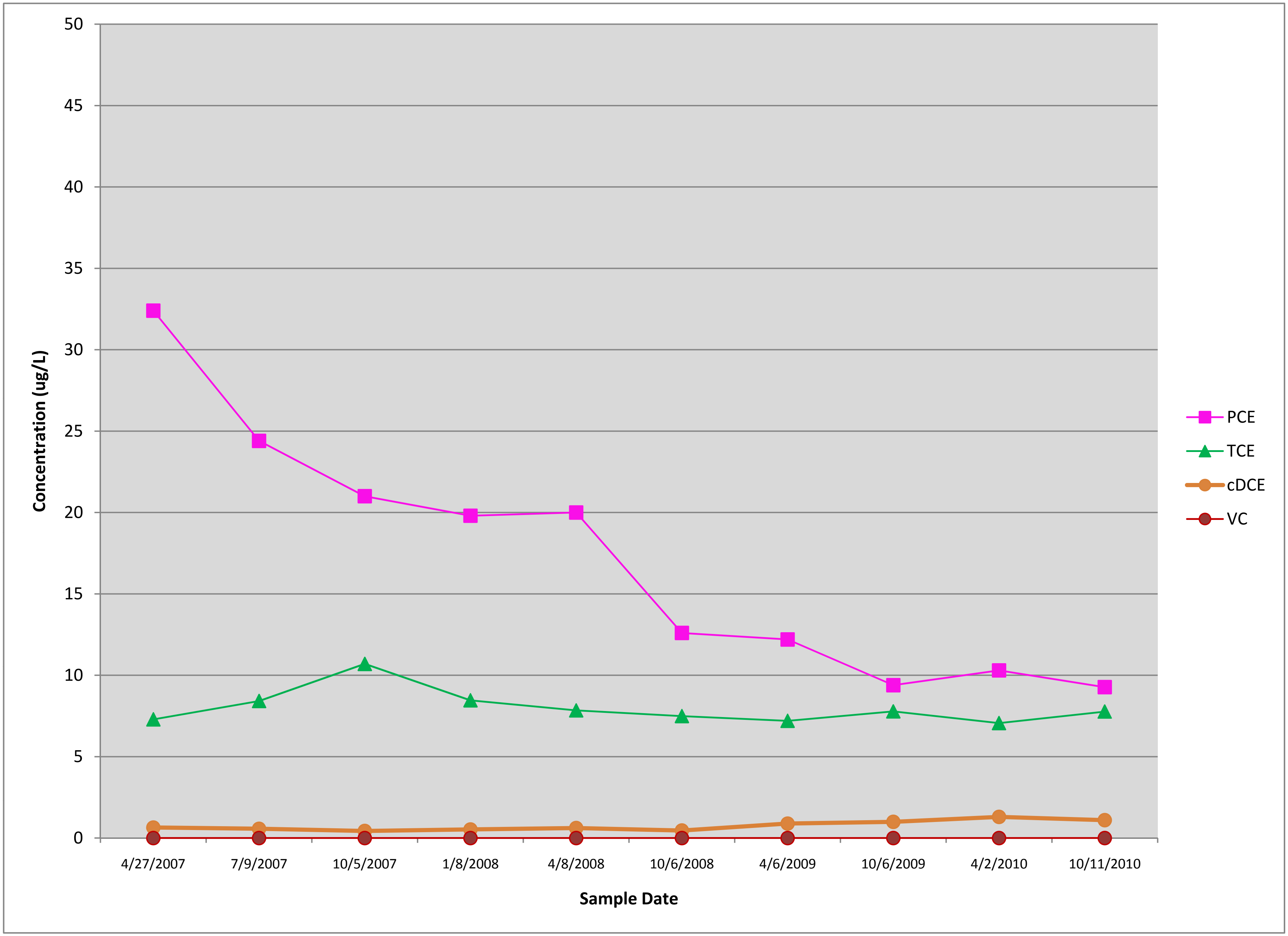
MW-208A



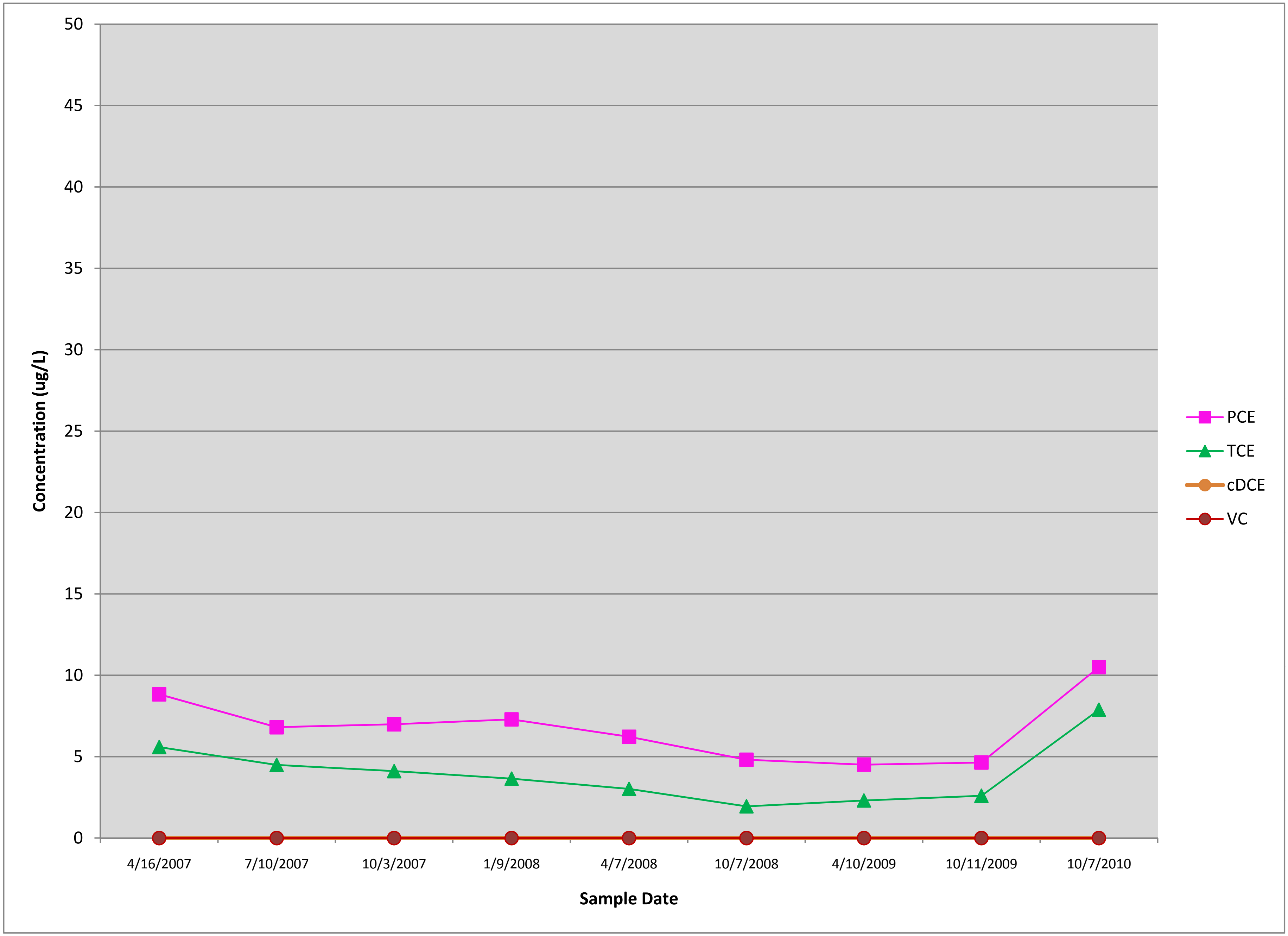
Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
4/16/2007
7/10/2007
10/4/2007
1/8/2008
4/8/2008
10/13/2008
4/7/2009
10/8/2009
4/5/2010
10/8/2010
Sample Date
PCE
TCE
cDCE
VC


MW-208B
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
4/16/2007
7/11/2007
10/4/2007
1/9/2008
4/8/2008
10/13/2008
4/7/2009
10/8/2009
4/5/2010
10/8/2010
Sample Date
PCE
TCE
cDCE
VC

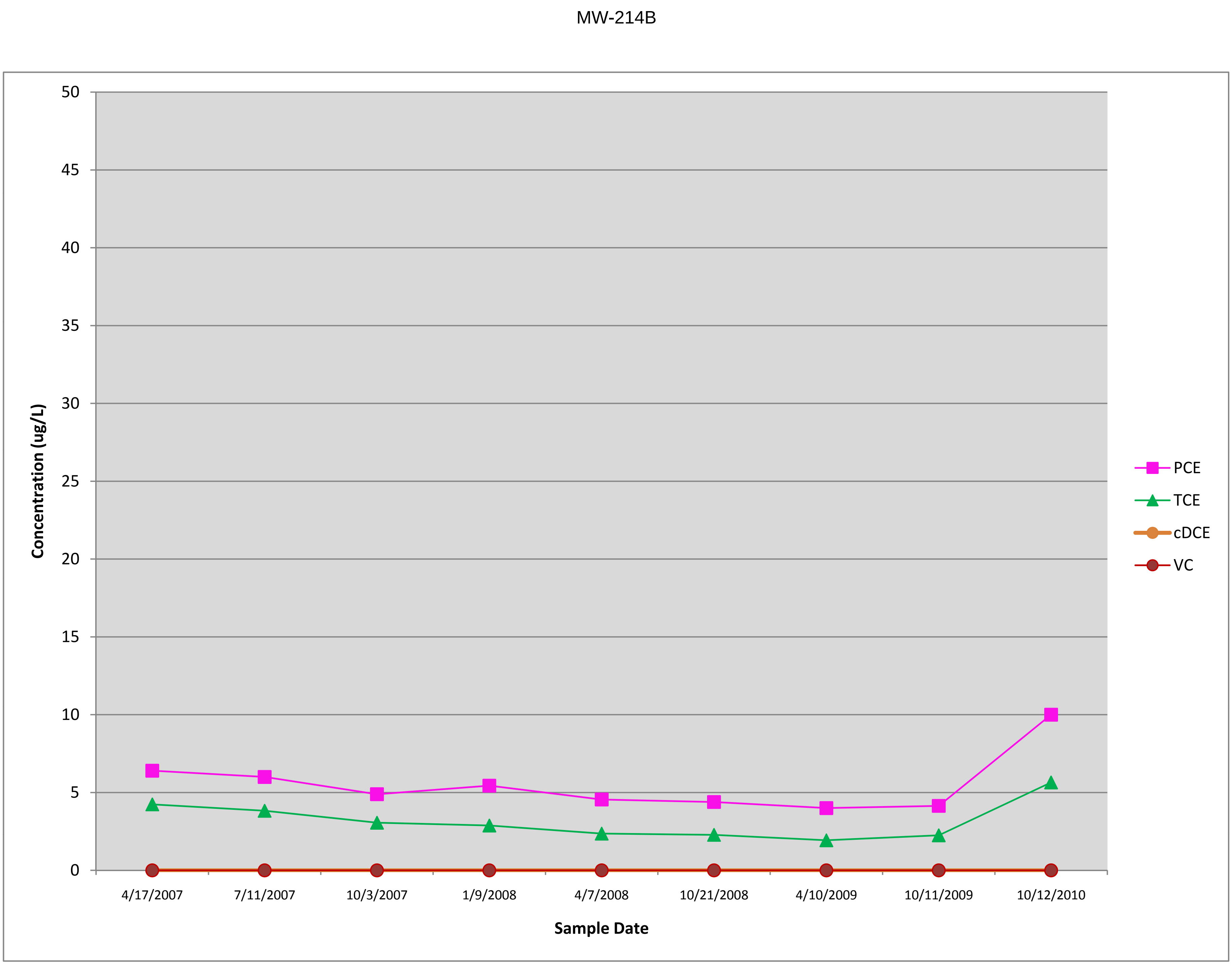
MW-210B


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
4/27/2007
7/9/2007
10/5/2007
1/8/2008
4/8/2008
10/6/2008
4/6/2009
10/6/2009
4/2/2010
10/11/2010
Sample Date
PCE
TCE
cDCE
VC

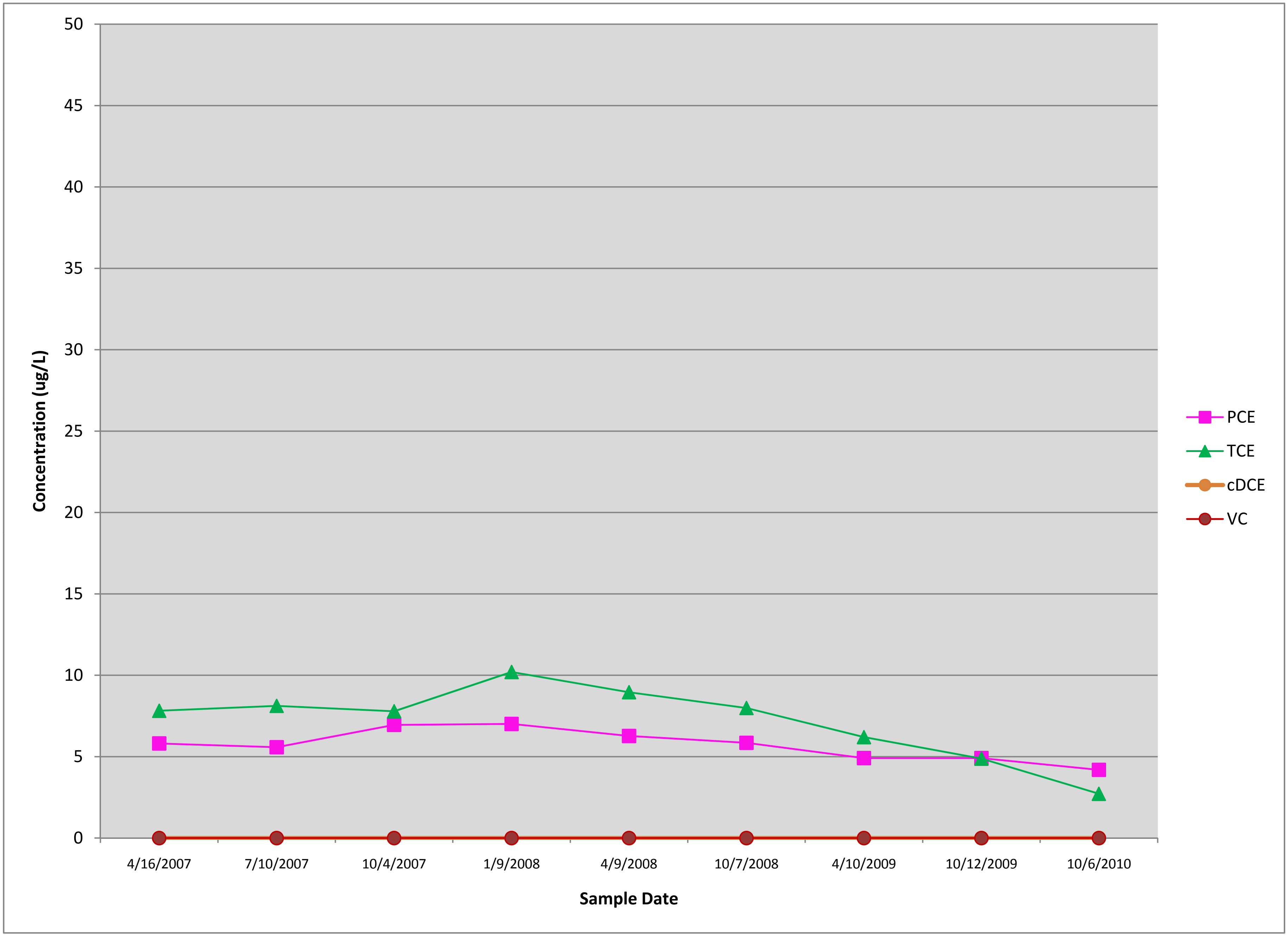
MW-214A

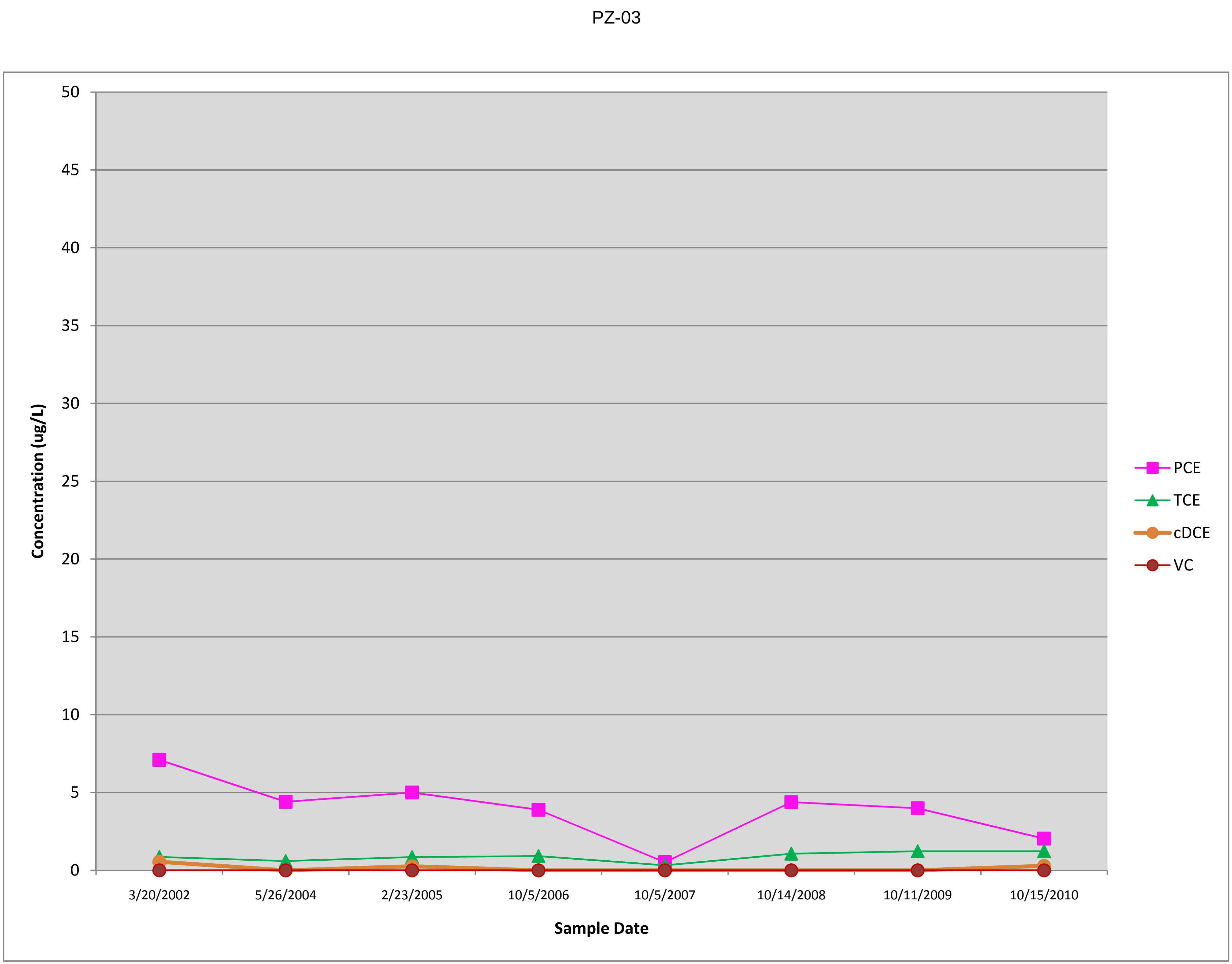


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
4/16/2007
7/10/2007
10/3/2007
1/9/2008
4/7/2008
10/7/2008
4/10/2009
10/11/2009
10/7/2010
Sample Date
PCE
TCE
cDCE
VC


MW-214B
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
4/17/2007
7/11/2007
10/3/2007
1/9/2008
4/7/2008
10/21/2008
4/10/2009
10/11/2009
10/12/2010
Sample Date
PCE
TCE
cDCE
VC

MW-215A


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
4/16/2007
7/10/2007
10/4/2007
1/9/2008
4/9/2008
10/7/2008
4/10/2009
10/12/2009
10/6/2010
Sample Date
PCE
TCE
cDCE
VC

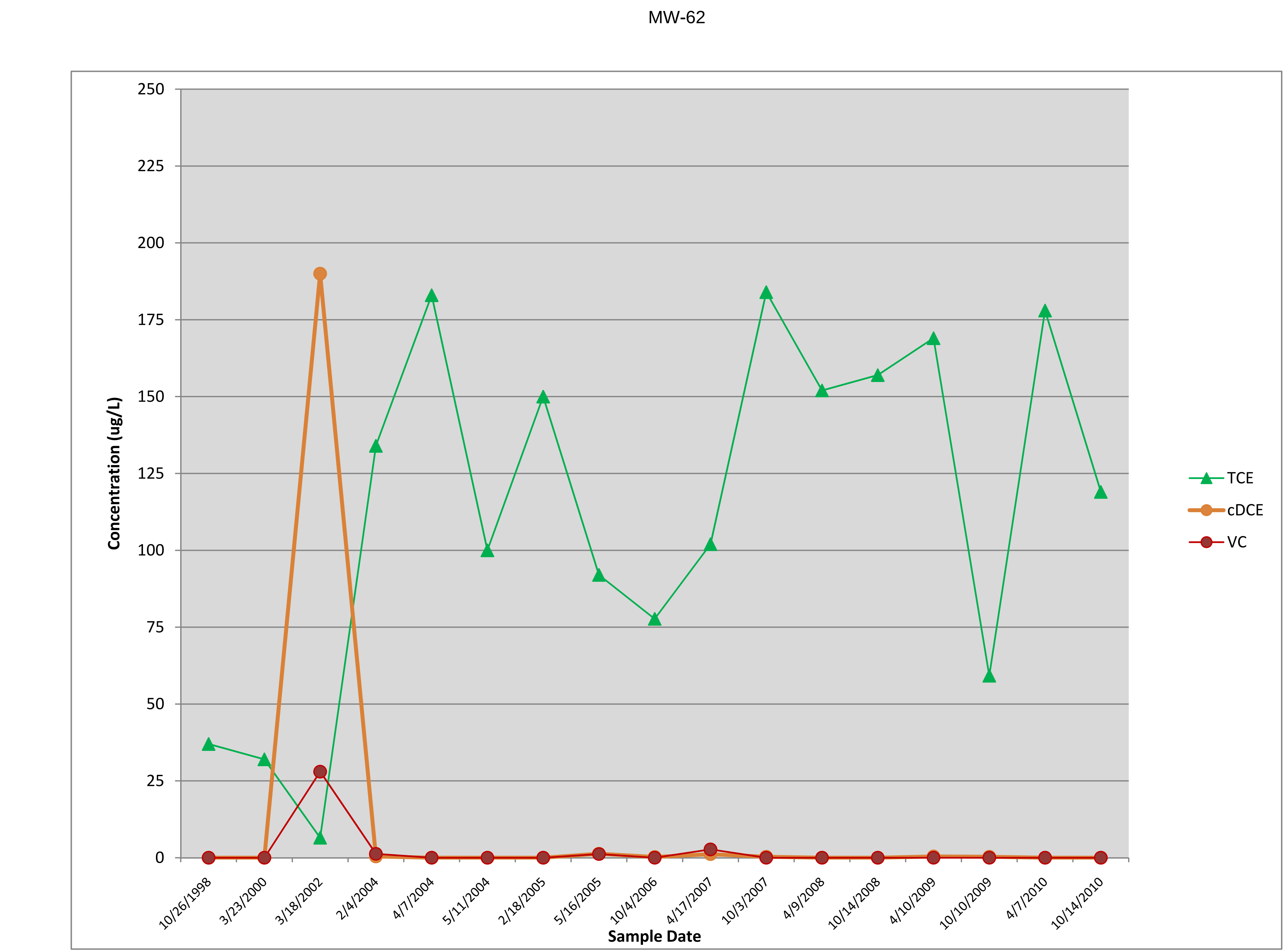

PZ-03
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
3/20/2002
5/26/2004
2/23/2005
10/5/2006
10/5/2007
10/14/2008
10/11/2009
10/15/2010
Sample Date
PCE
TCE
cDCE
VC

APPENDIX F-5

CVOC TIME-TREND PLOTS

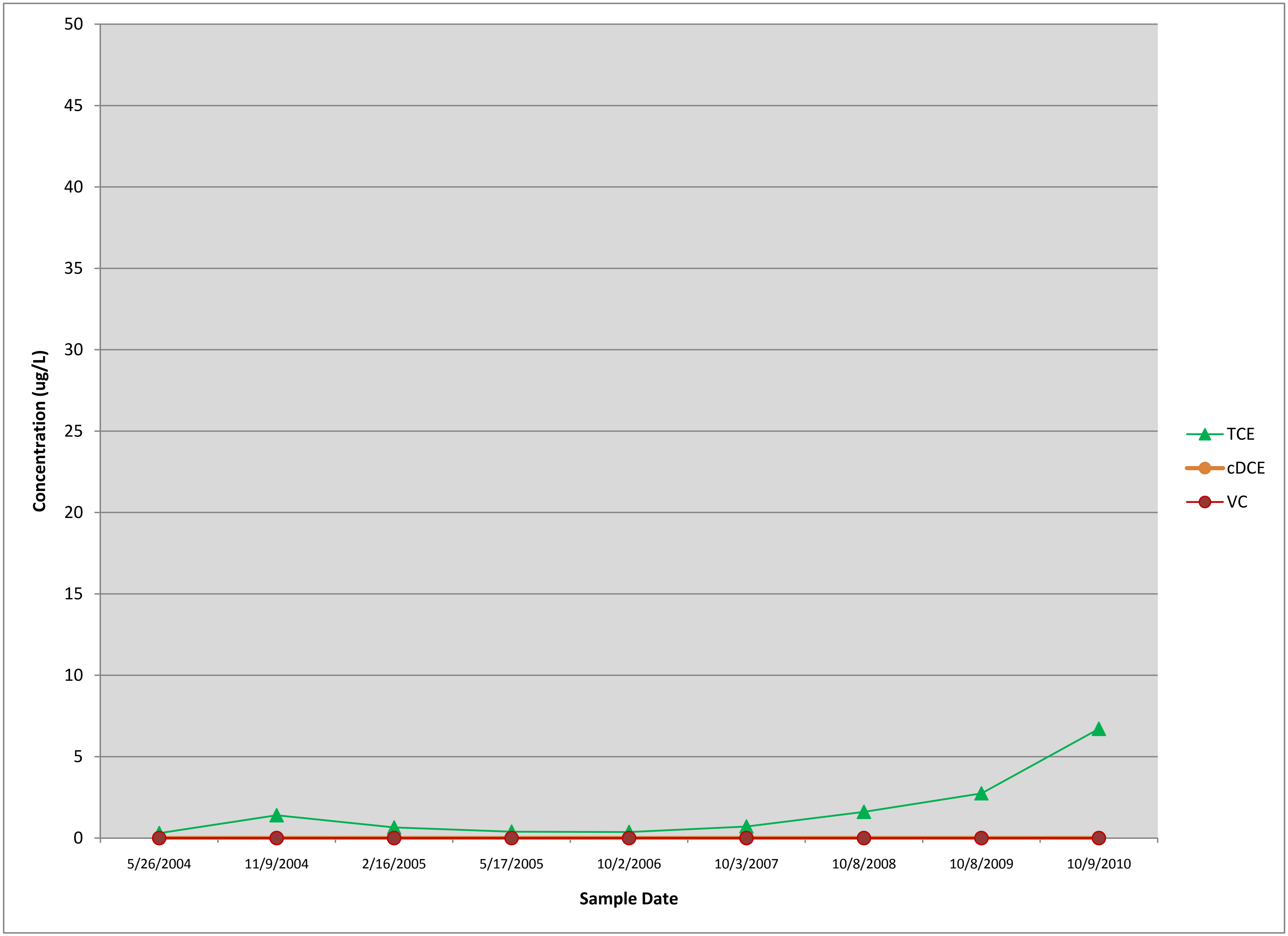
Bldg 835 Wells

MW-62, MW-142, MW-198, MW-199B, MW-209B, MW-212



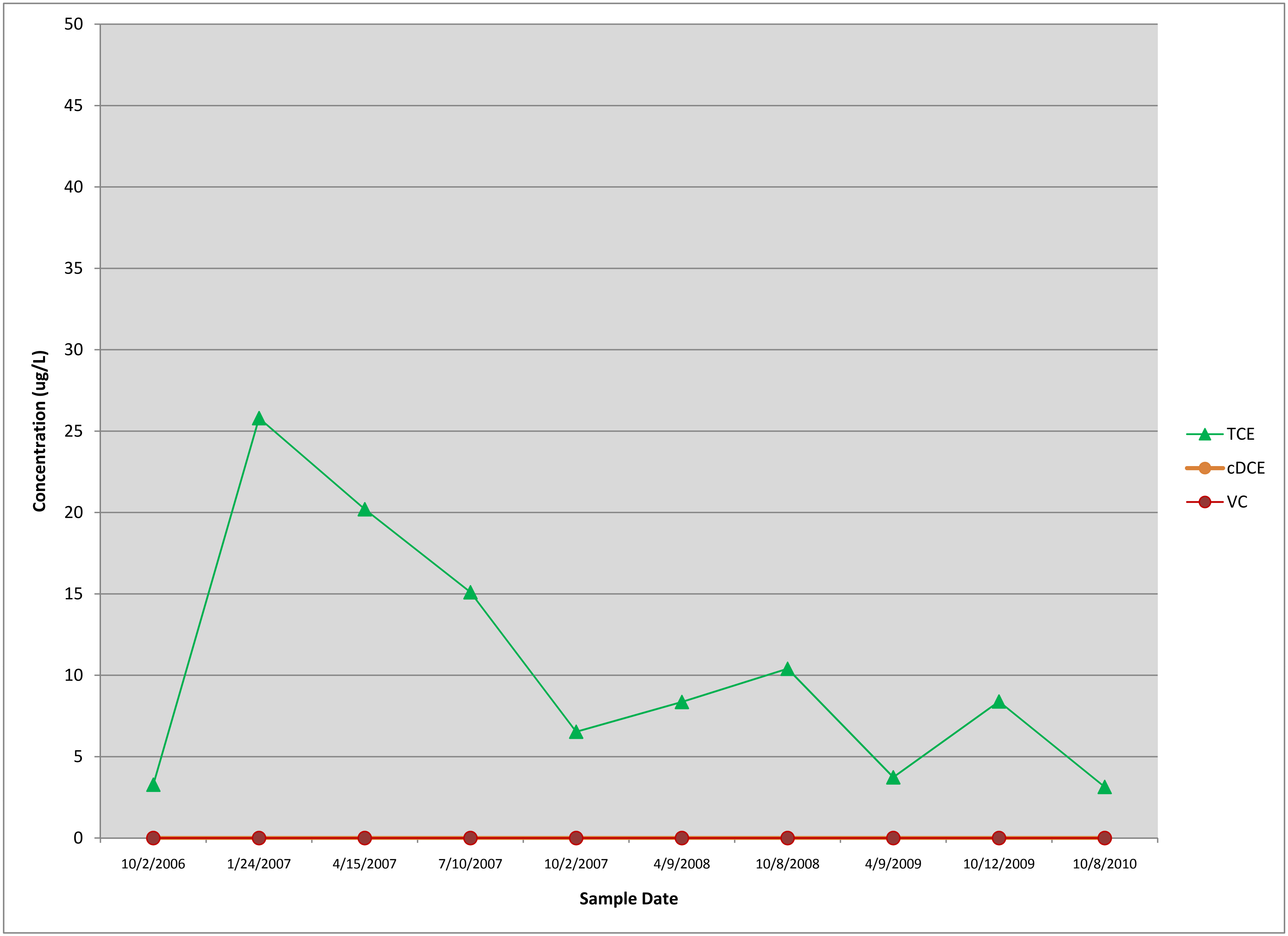
MW-62
Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
10/26/1998
3/23/2000
3/18/2002
2/4/2004
4/7/2004
5/11/2004
2/18/2005
5/16/2005
10/4/2006
4/17/2007
10/3/2007
4/9/2008
10/14/2008
4/10/2009
10/10/2009
4/7/2010
10/14/2010
Sample Date
TCE
cDCE
VC

MW-142



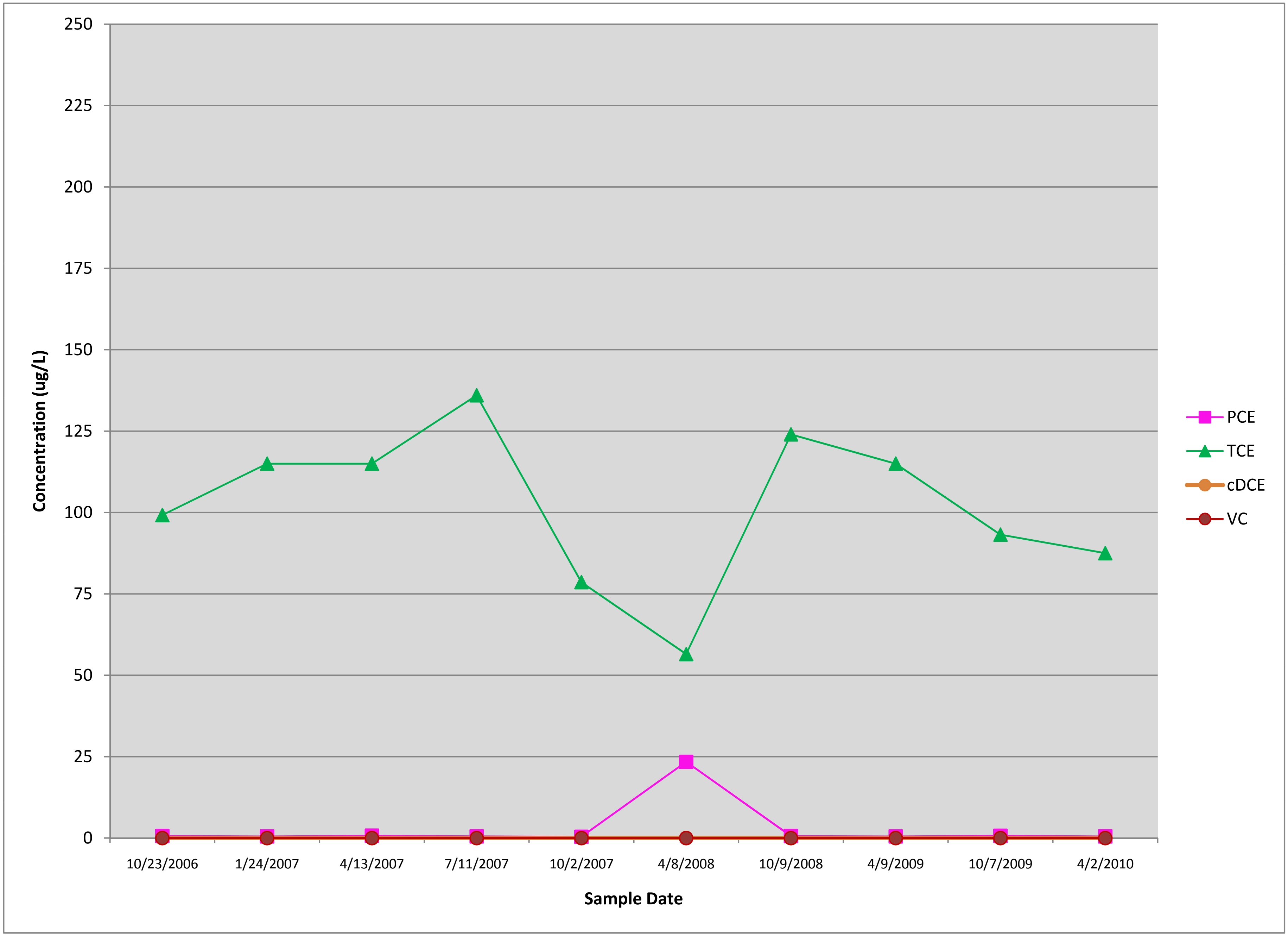
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
5/26/2004
11/9/2004
2/16/2005
5/17/2005
10/2/2006
10/3/2007
10/8/2008
10/8/2009
10/9/2010
Sample Date
TCE
cDCE
VC

MW-198



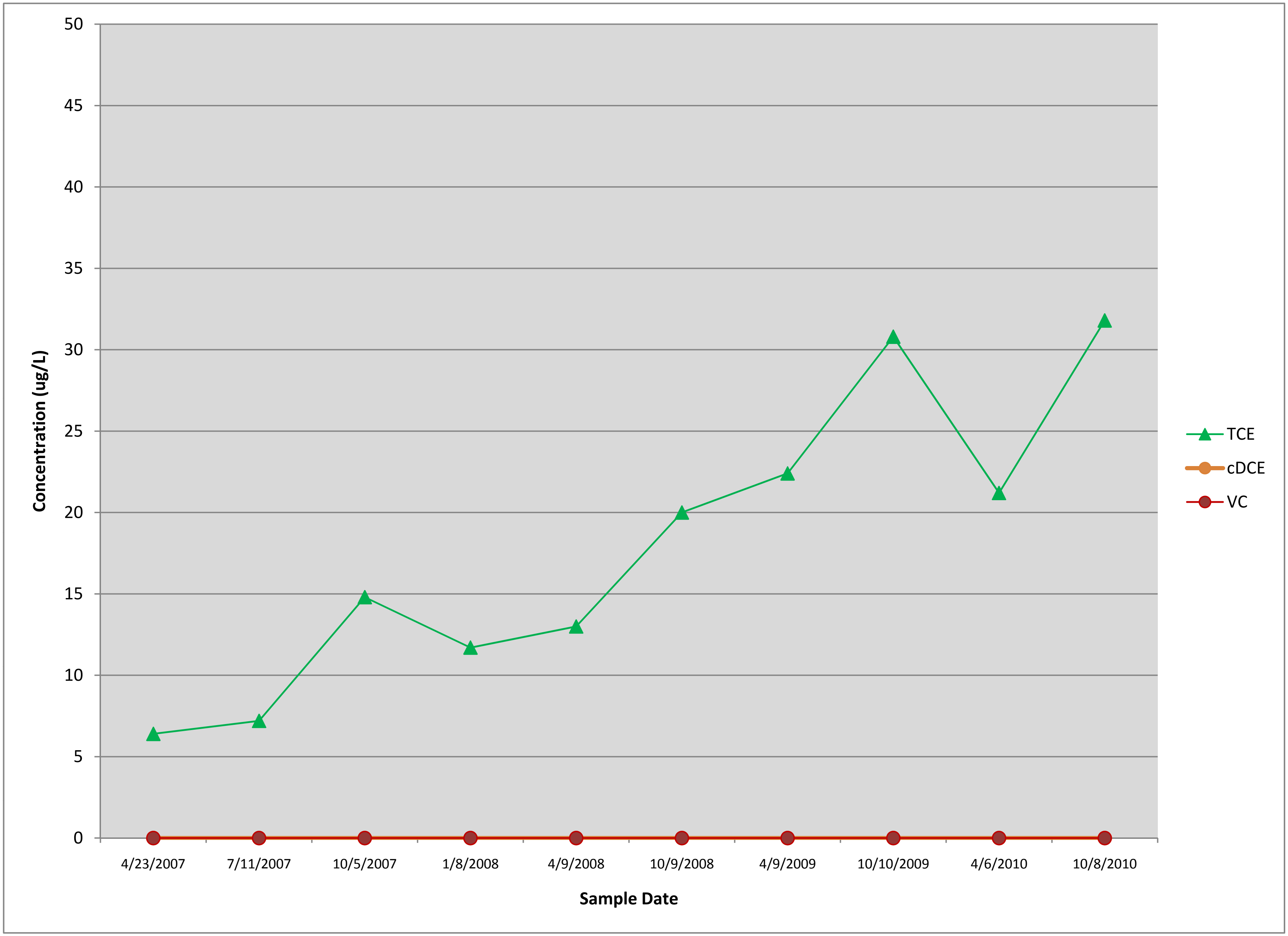
50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
10/2/2006
1/24/2007
4/15/2007
7/10/2007
10/2/2007
4/9/2008
10/8/2008
4/9/2009
10/12/2009
10/8/2010
Sample Date
TCE
cDCE
VC

MW-199B



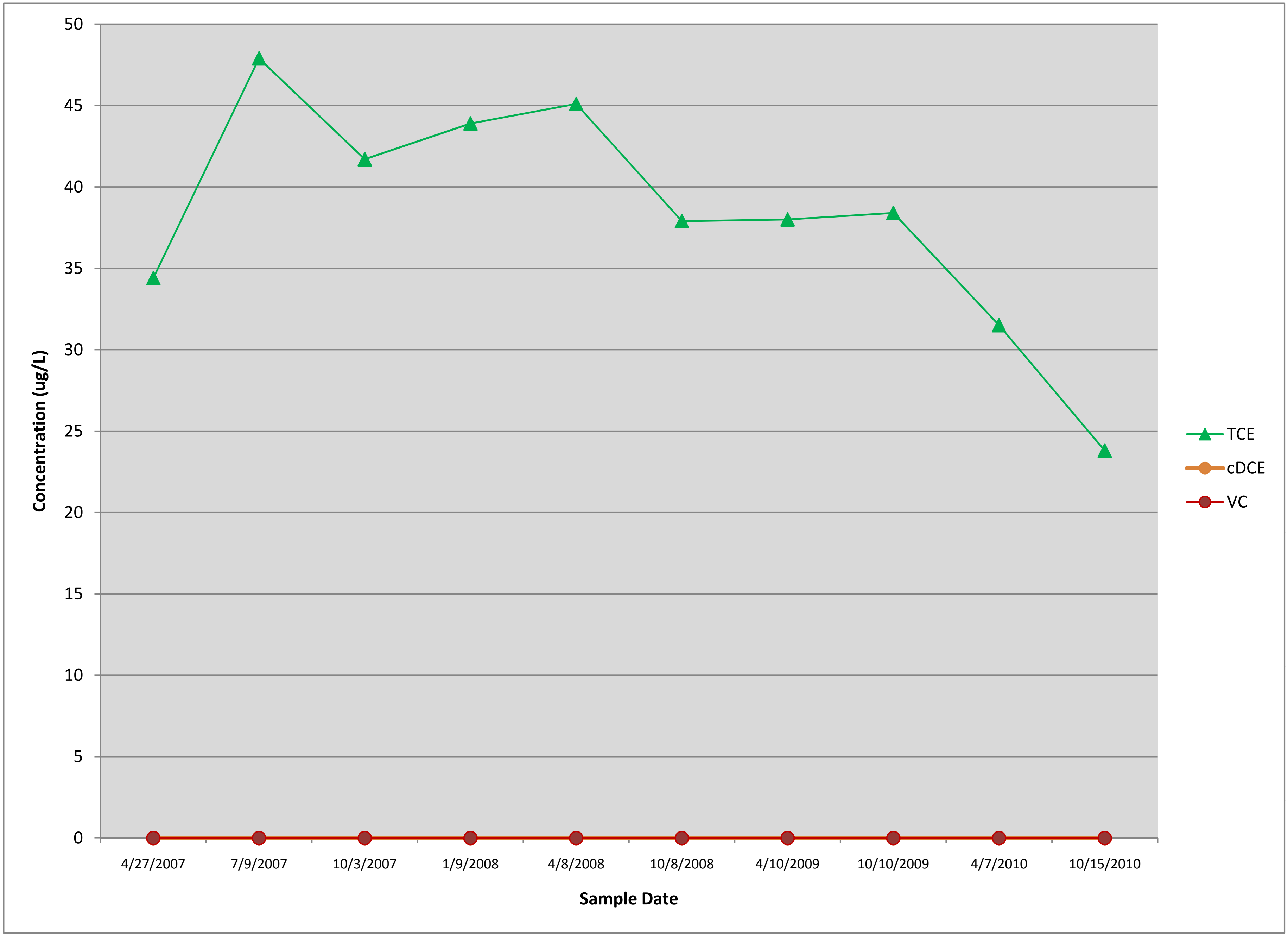
250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
10/23/2006
1/24/2007
4/13/2007
7/11/2007
10/2/2007
4/8/2008
10/9/2008
4/9/2009
10/7/2009
4/2/2010
Sample Date
PCE
TCE
cDCE
VC

MW-209B



50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
4/23/2007
7/11/2007
10/5/2007
1/8/2008
4/9/2008
10/9/2008
4/9/2009
10/10/2009
4/6/2010
10/8/2010
Sample Date
TCE
cDCE
VC

MW-212



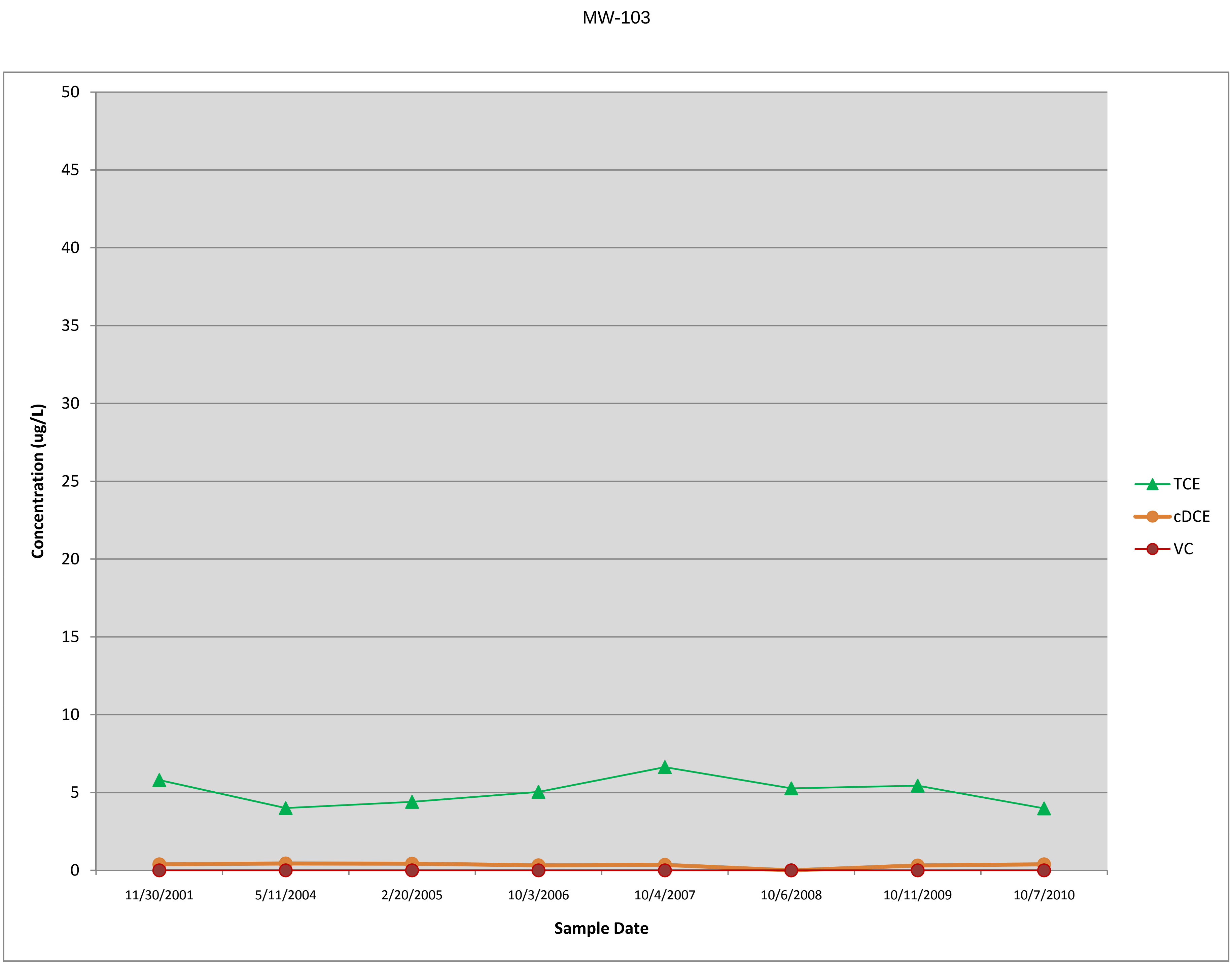
50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
4/27/2007
7/9/2007
10/3/2007
1/9/2008
4/8/2008
10/8/2008
4/10/2009
10/10/2009
4/7/2010
10/15/2010
Sample Date
TCE
cDCE
VC

APPENDIX F-6

CVOC TIME-TREND PLOTS

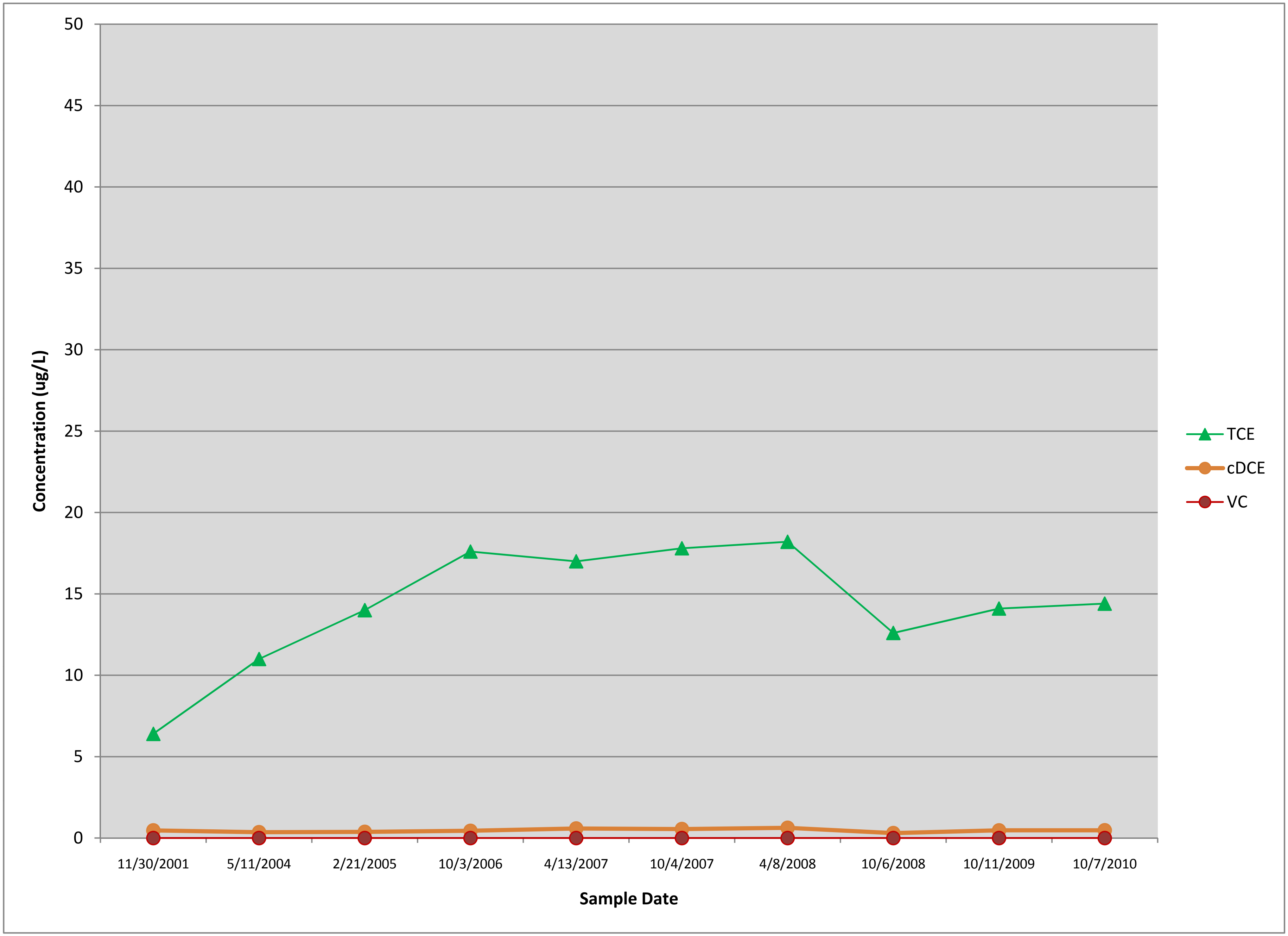
North Central Wells

MW-103, MW-104



MW-103
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
11/30/2001
5/11/2004
2/20/2005
10/3/2006
10/4/2007
10/6/2008
10/11/2009
10/7/2010
Sample Date
TCE
cDCE
VC

MW-104



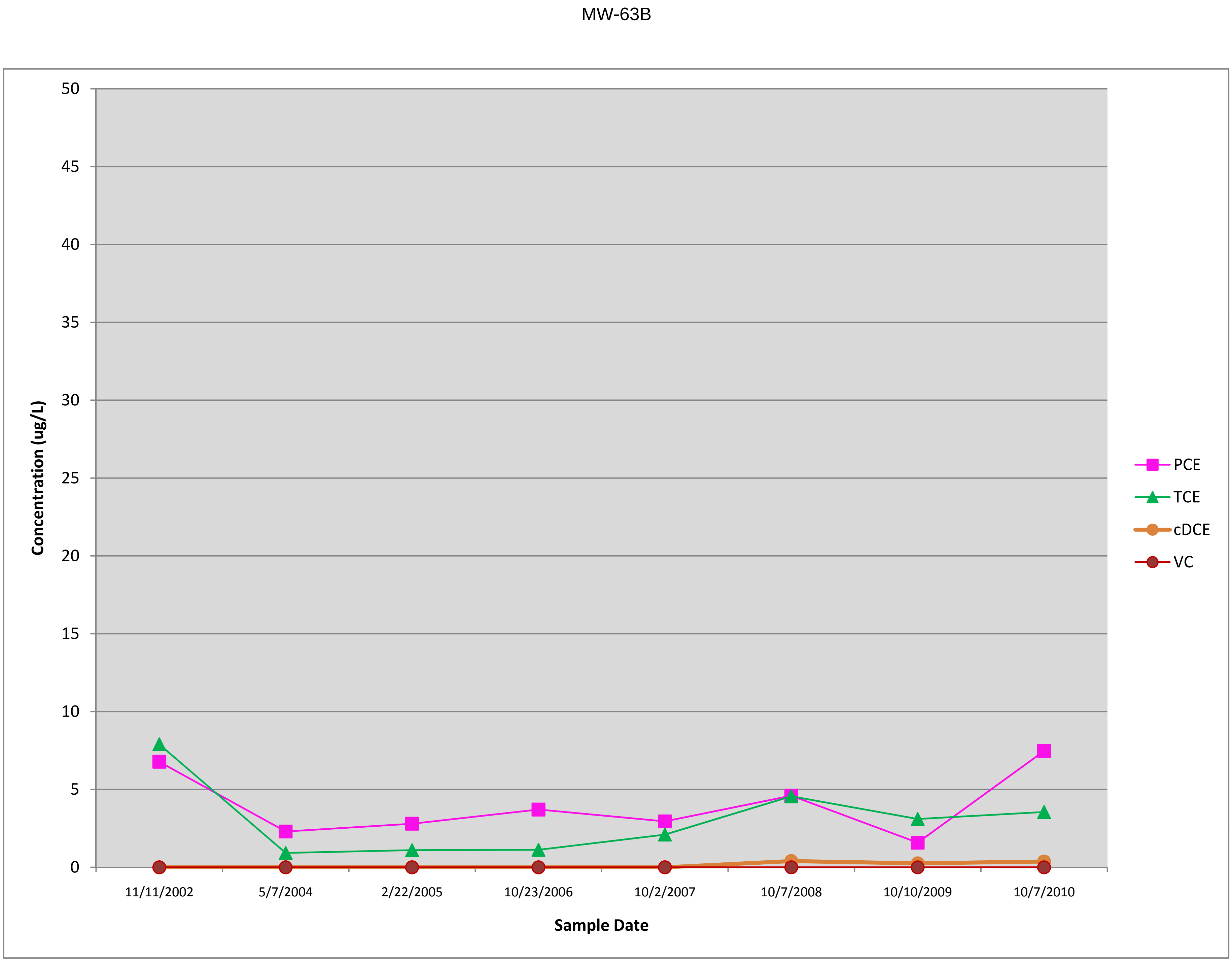
50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
11/30/2001
5/11/2004
2/21/2005
10/3/2006
4/13/2007
10/4/2007
4/8/2008
10/6/2008
10/11/2009
10/7/2010
Sample Date
TCE
cDCE
VC

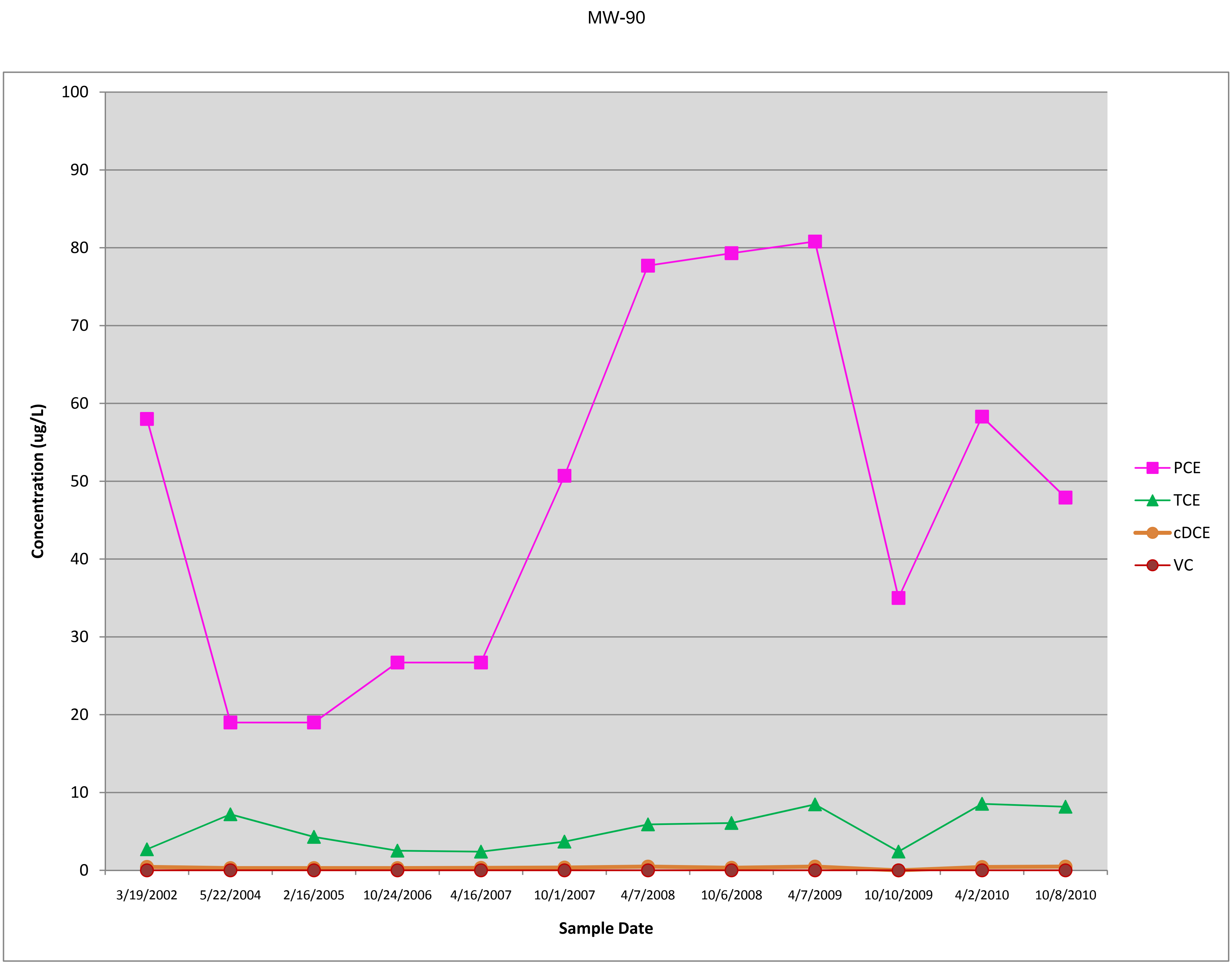
APPENDIX F-7

CVOC TIME-TREND PLOTS

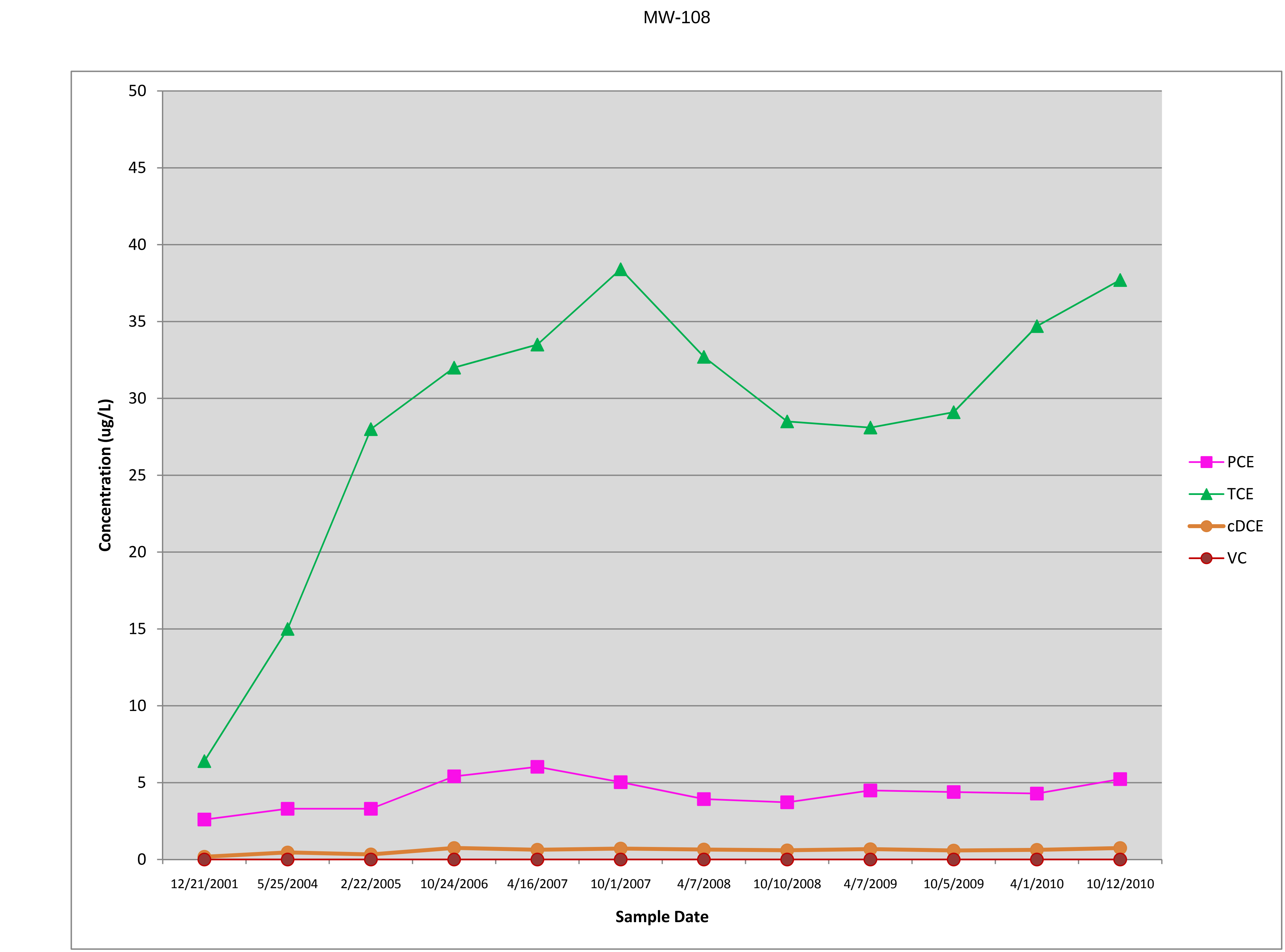
Sentinel Wells

**MW-63B, MW-90, MW-108, MW-141, MW-202B,
MW-207A, MW-207B, MW-210A, MW-256**

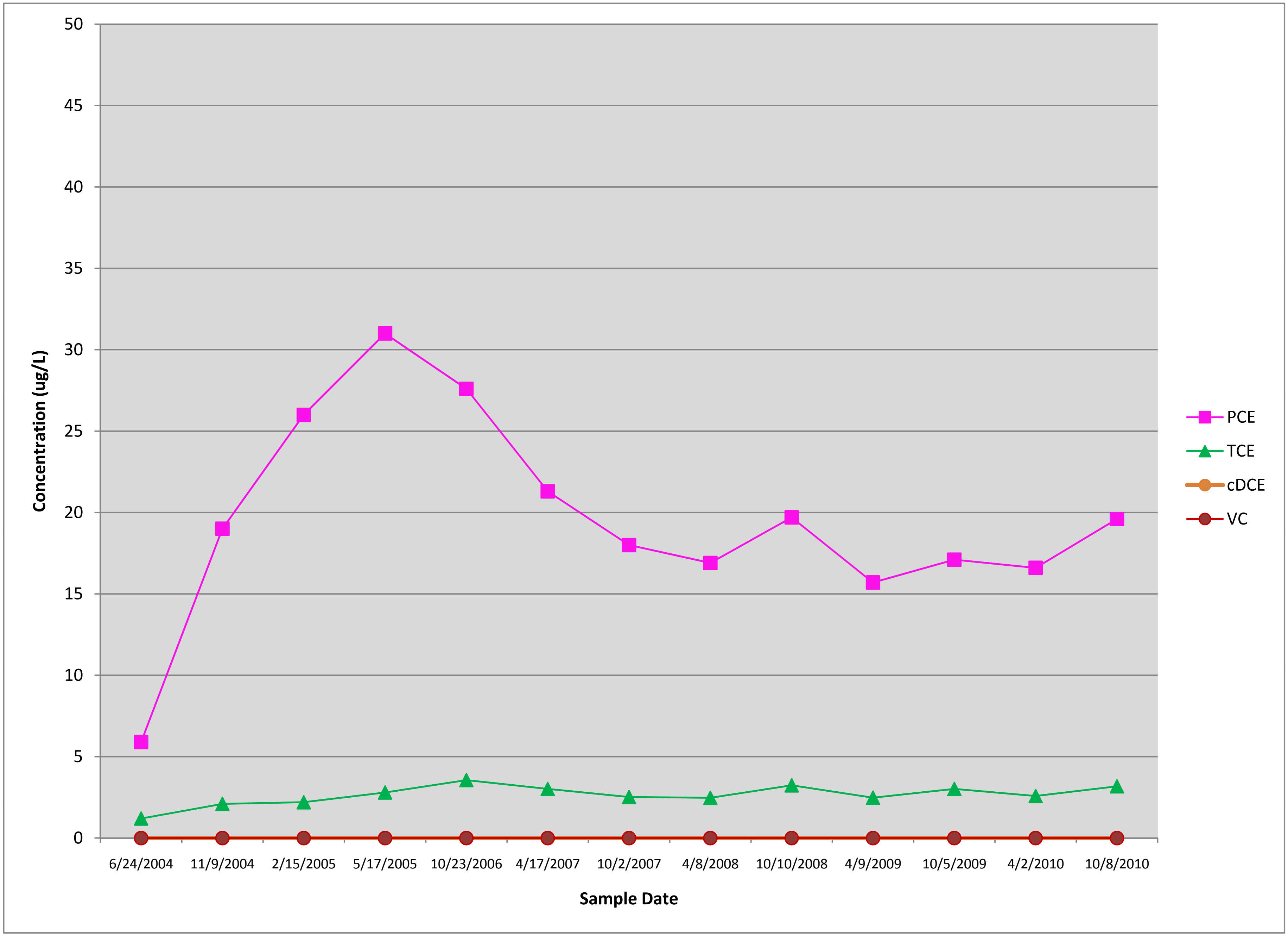

MW-63B
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
11/11/2002
5/7/2004
2/22/2005
10/23/2006
10/2/2007
10/7/2008
10/10/2009
10/7/2010
Sample Date
PCE
TCE
cDCE
VC



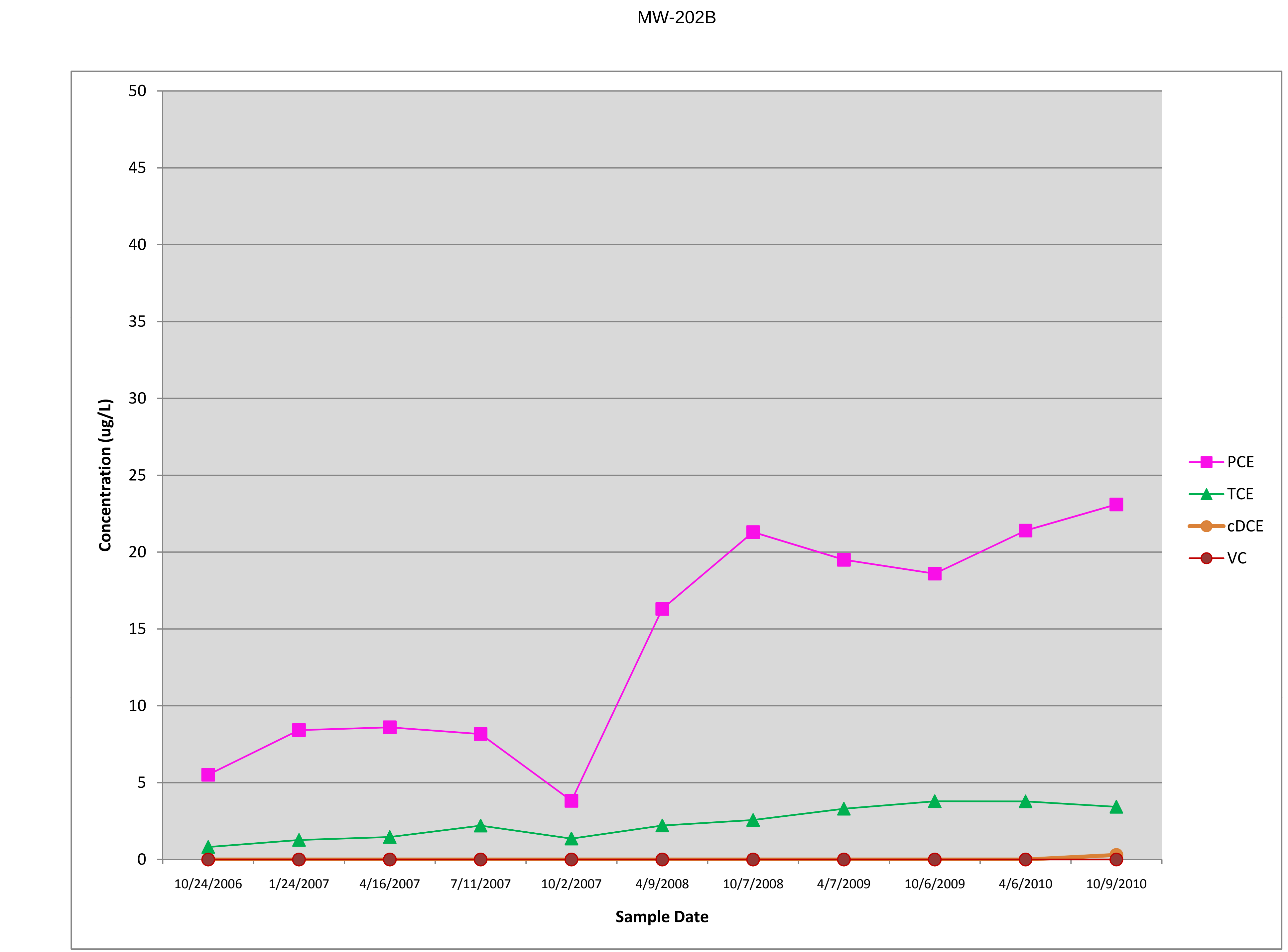
MW-90
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
3/19/2002
5/22/2004
2/16/2005
10/24/2006
4/16/2007
10/1/2007
4/7/2008
10/6/2008
4/7/2009
10/10/2009
4/2/2010
10/8/2010
Sample Date
PCE
TCE
cDCE
VC


MW-108
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
12/21/2001
5/25/2004
2/22/2005
10/24/2006
4/16/2007
10/1/2007
4/7/2008
10/10/2008
4/7/2009
10/5/2009
4/1/2010
10/12/2010
Sample Date
PCE
TCE
cDCE
VC

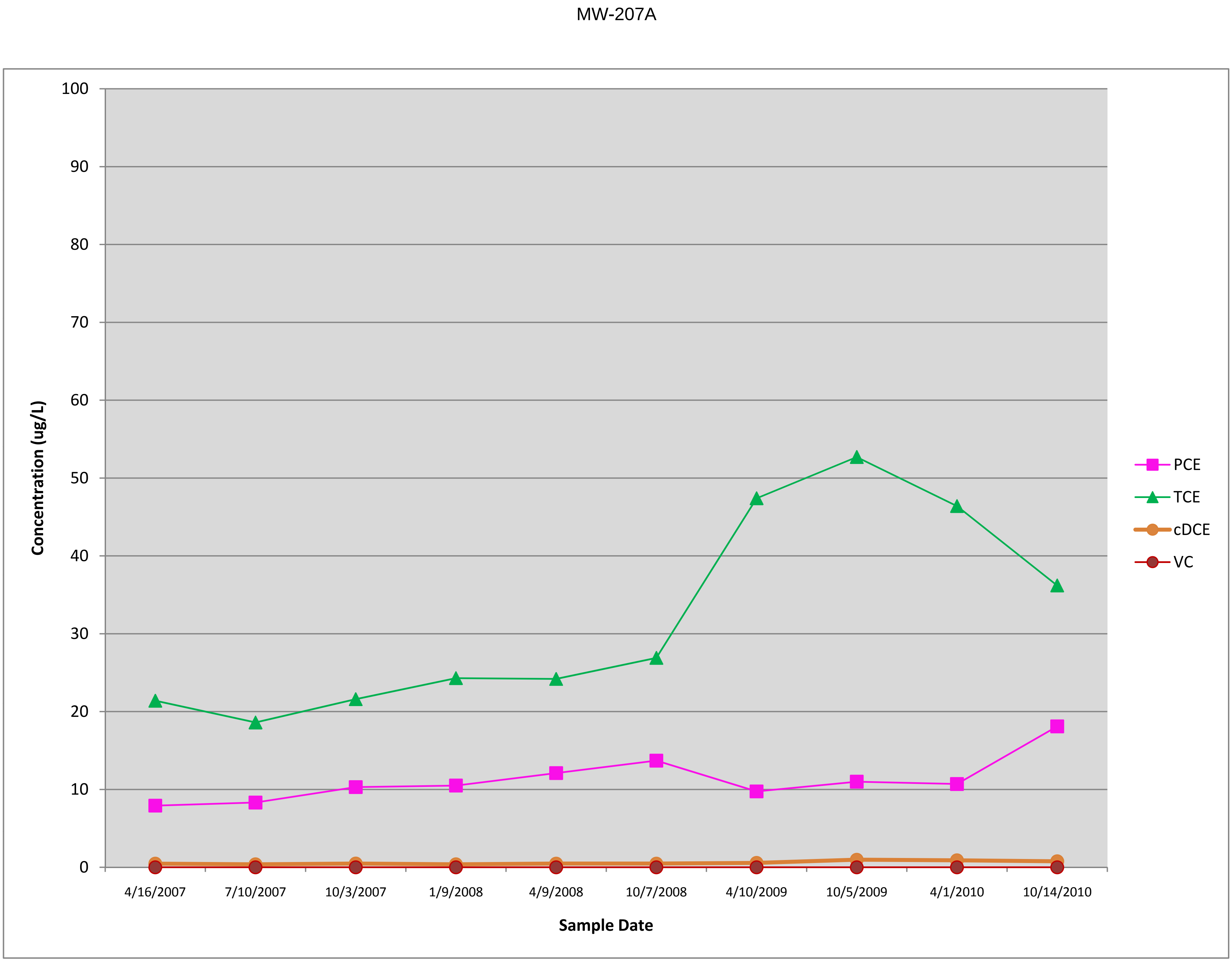
MW-141



50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
6/24/2004
11/9/2004
2/15/2005
5/17/2005
10/23/2006
4/17/2007
10/2/2007
4/8/2008
10/10/2008
4/9/2009
10/5/2009
4/2/2010
10/8/2010
Sample Date
PCE
TCE
cDCE
VC

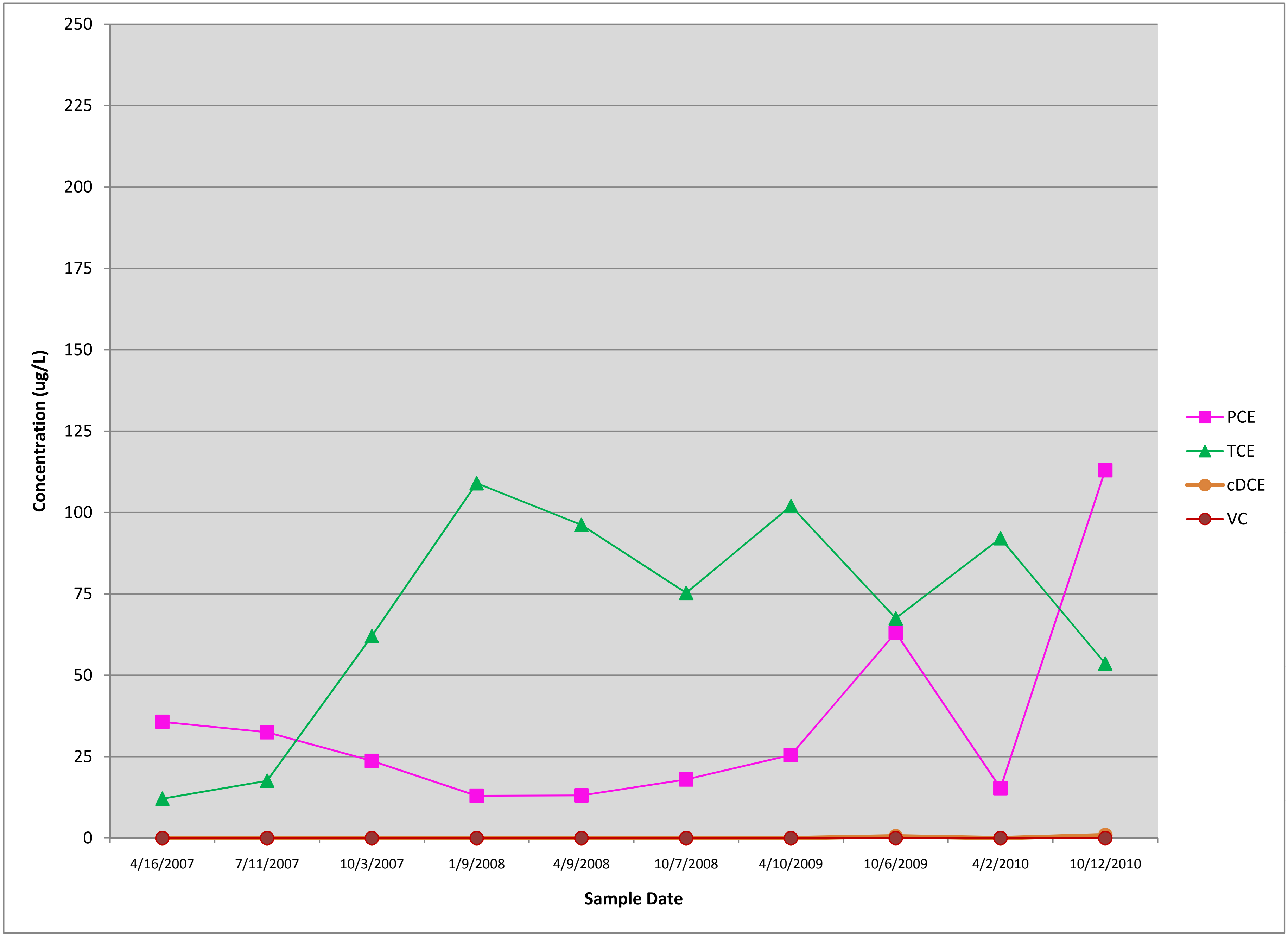


MW-202B
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
10/24/2006
1/24/2007
4/16/2007
7/11/2007
10/2/2007
4/9/2008
10/7/2008
4/7/2009
10/6/2009
4/6/2010
10/9/2010
Sample Date
PCE
TCE
cDCE
VC



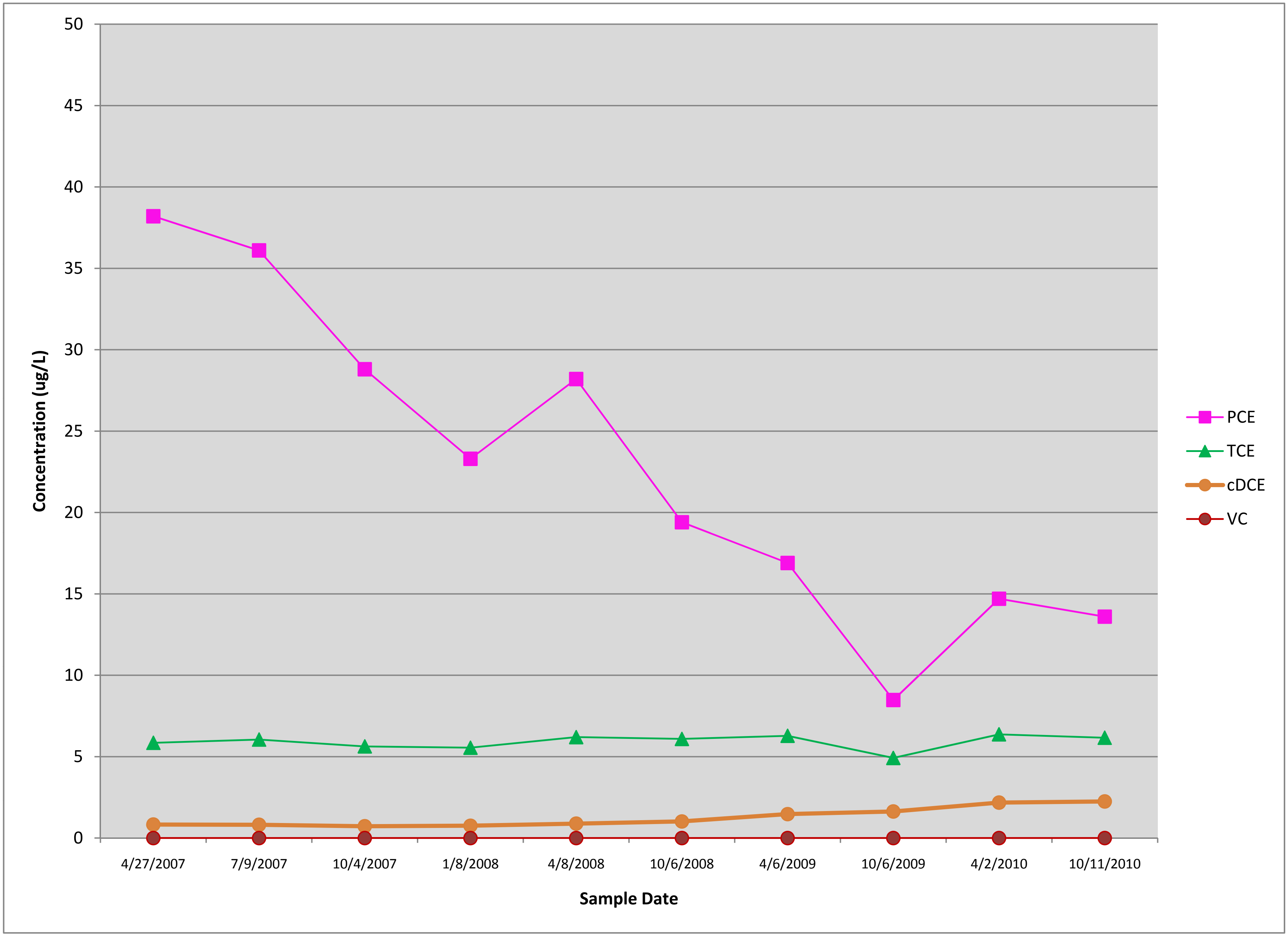
MW-207A
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
4/16/2007
7/10/2007
10/3/2007
1/9/2008
4/9/2008
10/7/2008
4/10/2009
10/5/2009
4/1/2010
10/14/2010
Sample Date
PCE
TCE
cDCE
VC

MW-207B



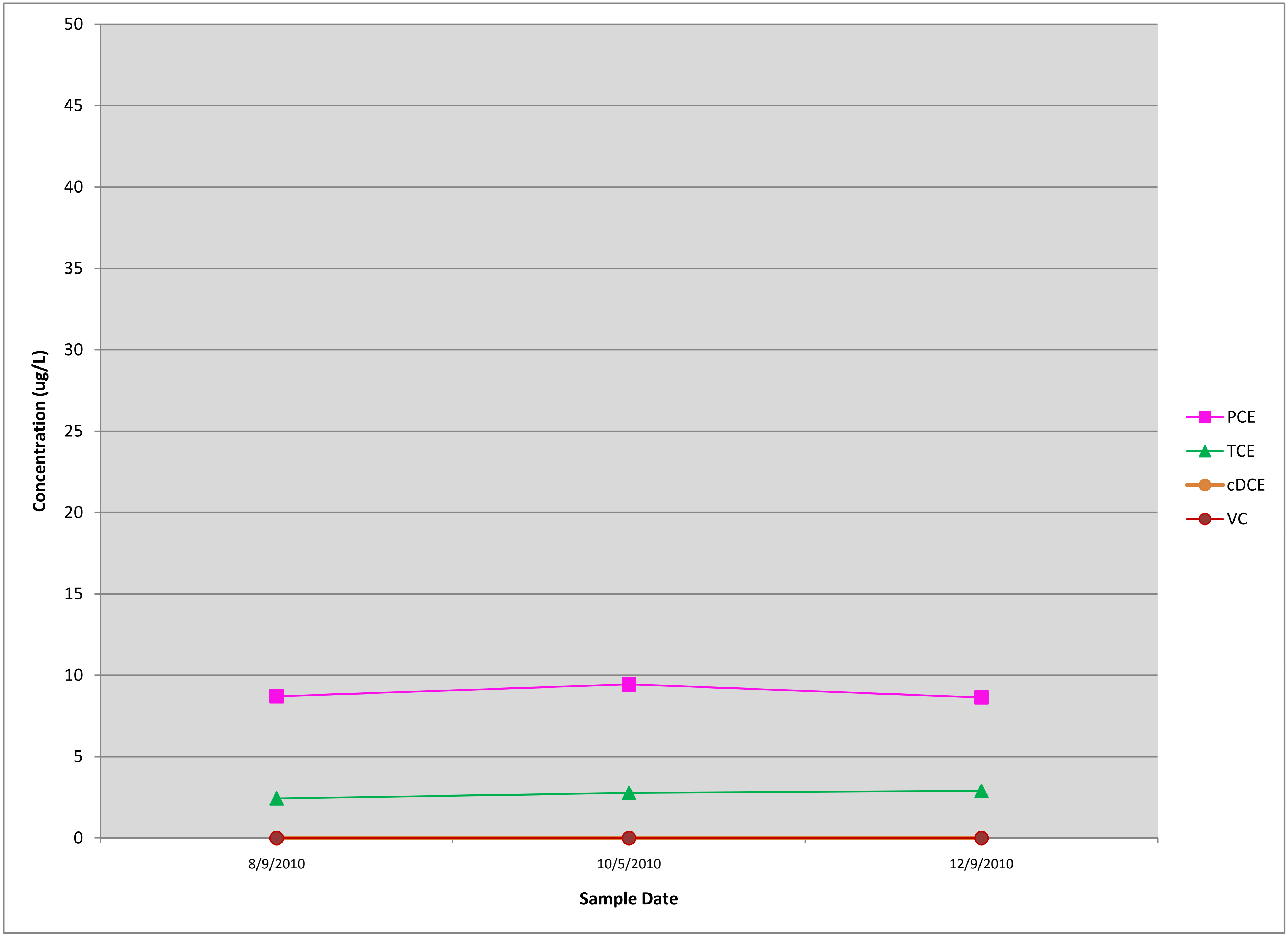
Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
4/16/2007
7/11/2007
10/3/2007
1/9/2008
4/9/2008
10/7/2008
4/10/2009
10/6/2009
4/2/2010
10/12/2010
Sample Date
PCE
TCE
cDCE
VC

MW-210A



50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
4/27/2007
7/9/2007
10/4/2007
1/8/2008
4/8/2008
10/6/2008
4/6/2009
10/6/2009
4/2/2010
10/11/2010
Sample Date
PCE
TCE
cDCE
VC

MW-256



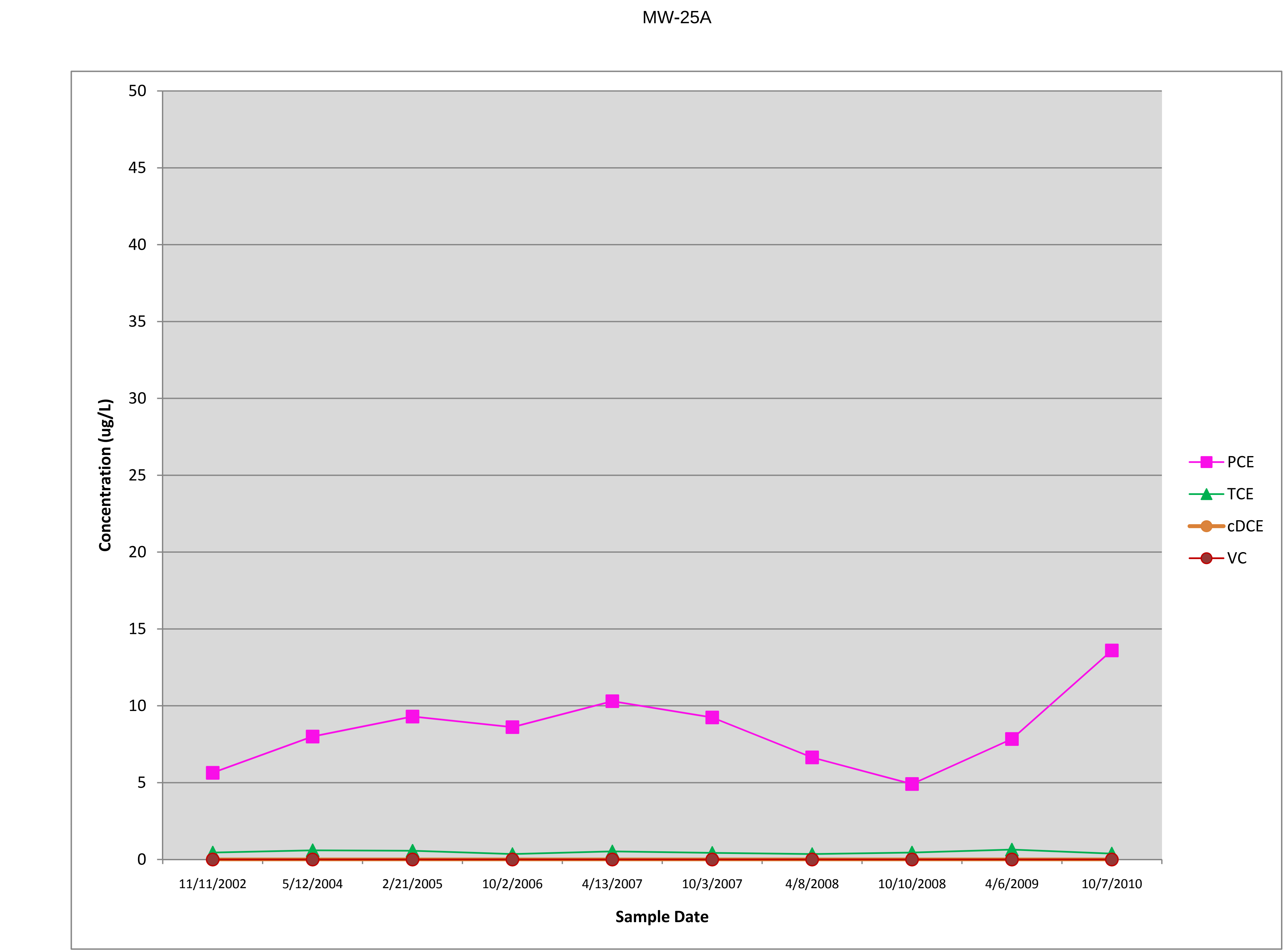
50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
8/9/2010
10/5/2010
12/9/2010
Sample Date
PCE
TCE
cDCE
VC

APPENDIX F-8

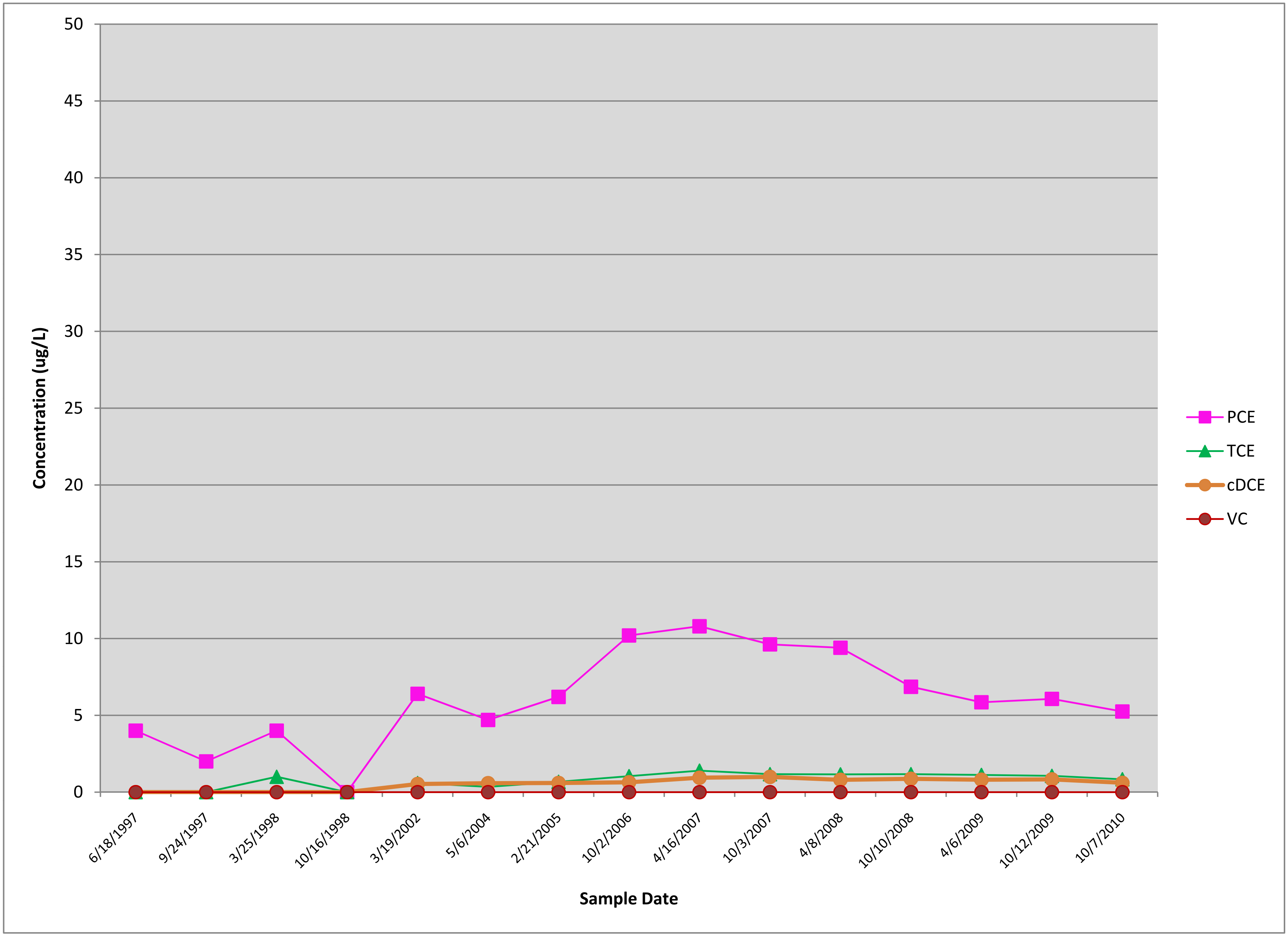
CVOC TIME-TREND PLOTS

Isolated Wells

MW-25A, MW-52, MW-97

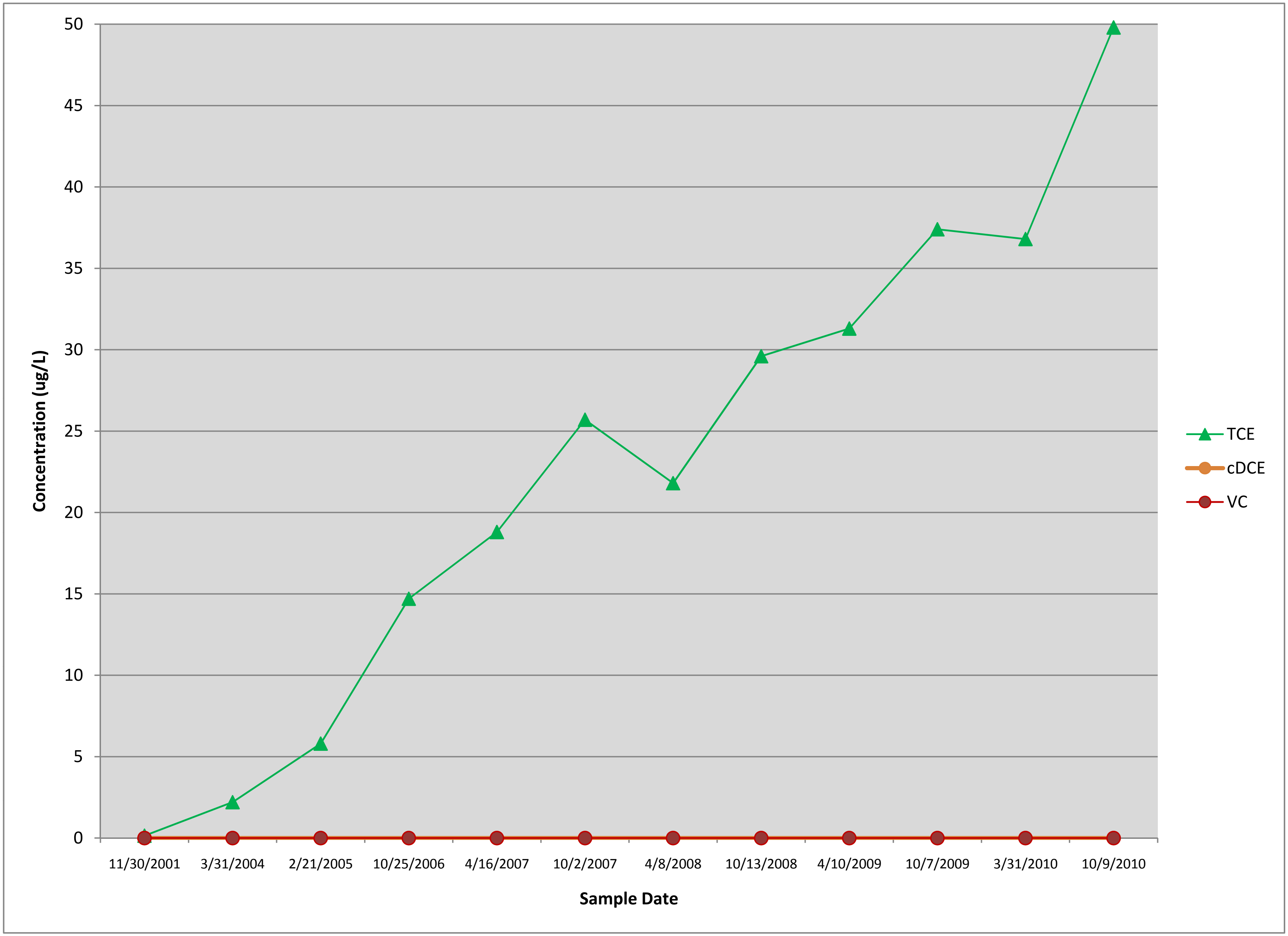

MW-25A
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
11/11/2002
5/12/2004
2/21/2005
10/2/2006
4/13/2007
10/3/2007
4/8/2008
10/10/2008
4/6/2009
10/7/2010
Sample Date
PCE
TCE
cDCE
VC

MW-52



50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
6/18/1997
9/24/1997
3/25/1998
10/16/1998
3/19/2002
5/6/2004
2/21/2005
10/2/2006
4/16/2007
10/3/2007
4/8/2008
10/10/2008
4/6/2009
10/12/2009
10/7/2010
Sample Date
PCE
TCE
cDCE
VC

MW-97



50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
11/30/2001
3/31/2004
2/21/2005
10/25/2006
4/16/2007
10/2/2007
4/8/2008
10/13/2008
4/10/2009
10/7/2009
3/31/2010
10/9/2010
Sample Date
TCE
cDCE
VC