URS

August 15, 2012

Mr. Doug Mackenzie
U.S Army Corps of Engineers
ATTN: CESPK-ED-EE
1325 J Street
Sacramento, CA 95814-2922

SUBJECT: Contract No. W91238-07-D-0006, Task Order 0004, Modesto Groundwater Superfund Site, Modesto, California
Quarterly Operations and Monitoring Report, Second Quarter 2012

Dear Mr. Mackenzie:

Enclosed is the Quarterly Operations and Monitoring Report, Second Quarter 2012. Text and appendices are provided on a compact disk included at the end of the report.

If you have any questions or comments, please call me at (916) 679-2279.

Sincerely,

Rich Beyak, PE
Project Manager

RB/gng

Enclosures

c: John Erwin, USACE
Verne Brown, USACE
Marie Lacey, USEPA Region 9 – 2 copies
Durin Linderholm, RWQCB
Jim Rohrer, DTSC
Robert Goodman, Esq.
J. Hawken Flanagan
Project File

URS Group, Inc.
Crown Corporate Center
2870 Gateway Oaks Drive, Suite 150
Sacramento, CA 95833-3200
Tel: 916.679.2000
Fax: 196.679-2833

QUARTERLY OPERATIONS AND MONITORING REPORT
GROUNDWATER TREATMENT AND SOIL VAPOR EXTRACTION REMEDIATION SYSTEMS
SECOND QUARTER 2012

MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

August 2012

Contract W91238-07-D-0006
Delivery Order No. 0004

Prepared for:
U.S. Army Corps of Engineers
Sacramento District

Prepared by:

URS
2870 Gateway Oaks Drive, Suite 150
Sacramento, California 95833

MODESTO GROUNDWATER SUPERFUND SITE
QUARTERLY OPERATIONS AND MONITORING REPORT
GROUNDWATER TREATMENT AND SOIL VAPOR
EXTRACTION REMEDIATION SYSTEMS
SECOND QUARTER 2012

This report was prepared by URS staff under our supervision. Interpretations, conclusions, and recommendations in the report are based on background information, design basis, and other data furnished to URS by the U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, and/or third parties. URS has relied on this information as furnished and is neither responsible for nor has confirmed the accuracy of this information. Our experience and professional judgment governed the data interpretation, conclusions, and recommendations presented in the report.

Elise Willmeth, PG
Professional Geologist 8537

Richard A. Beyak, PE
Senior Project Manager

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LIST OF ACRONYMS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials
bgs	below ground surface
BOD	biochemical oxygen demand
BTEX	benzene, toluene, ethylbenzene, and xylene
City	City of Modesto
CPT	cone penetrometer test
CSIA	compound-specific isotope analysis
DCE	dichloroethene
DO	dissolved oxygen
DQO	data quality objectives
EPA	U.S. Environmental Protection Agency
FB	field blank
FD	field duplicate
GAC	granular activated carbon
gpm	gallons per minute
GWT	groundwater treatment
LCS	laboratory control sample
LDC	Laboratory Data Consultants
MCL	maximum contaminant level
MDL	method detection limit
msl	mean sea level
MS/MSD	matrix spike/matrix spike duplicate
MWH	MHW Americas, Inc.
NS	normal sample
O&M	operation and maintenance
PARCC	precision, accuracy, representativeness, completeness, and comparability
PCE	tetrachloroethene
ppbv	parts per billion by volume
PQL	practical quantitation limit
P&ID	process and instrumentation diagram
QA	quality assurance
QC	quality control
qPCR	quantitative polymerase chain reaction
RPD	relative percent difference

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

SAP	sampling and analysis plan
scfm	standard cubic feet per minute
SM	standard method
SOP	standard operating procedure
SVE	soil vapor extraction
TB	trip blank
TCE	trichloroethene
TDS	total dissolved solid
TSS	total suspended solid
URS	URS Group, Inc.
VOC	volatile organic compound
µg/L	micrograms per liter
2Q12	second quarter 2012

1.0 INTRODUCTION

This is the second quarter 2012 (2Q12) Quarterly Operation and Monitoring (O&M) Report for the Modesto Groundwater Superfund Site. The reporting period is from April 1 through June 30, 2012. This report describes the monitoring and sampling program, summarizes the performance of the systems, and provides results of routine system operations. This report also summarizes the preliminary results for natural attenuation evaluation screening. This section provides an overview of the site history and report organization.

1.1 Site History

The City of Modesto (City) is located approximately 80 miles southeast of Sacramento, in Stanislaus County, California (Figure 1-1). The Modesto Groundwater Superfund Site is in a commercial area on McHenry Avenue, south of Orangeburg Avenue, behind Halford's Cleaners (941 McHenry Avenue).

In 1984, through routine sampling of water supply wells, the City discovered contamination in Municipal Well 11 (Figure 1-2) at the corner of Magnolia and Mensinger Avenues. Laboratory analysis of the Municipal Well 11 sample collected in 1984 indicated tetrachloroethene (PCE) in excess of the federal and state maximum contaminant level (MCL) of 5 micrograms per liter (µg/L). PCE is an industrial solvent commonly used in dry cleaning and was found to have originated at Halford's Cleaners, approximately 1,000 feet away from Municipal Well 11.

Municipal Well 11 was taken out of service by the City in 1984 and reactivated in April 1987 when levels of PCE and other chlorinated solvents were not detected at concentrations above MCLs. In February 1989, Municipal Well 11 was again taken out of service after PCE concentrations exceeded the MCL a second time. The well remained out of service until the City installed a wellhead granular activated carbon (GAC) treatment system in May 1991. The GAC system reduced the PCE concentration to below the MCL before the water entered the public supply system. Municipal Well 11 was returned to service in June 1991 and operated until October 1995, when the City indefinitely deactivated the well because naturally occurring uranium was detected above the MCL of 20 picoCuries per liter.

The Modesto Groundwater Superfund Site was placed on the U.S. Environmental Protection Agency's (EPA's) National Priorities List on March 31, 1989. In December 1989, the EPA's Emergency Response Section collected soil and soil vapor samples in the vicinity of Halford's Cleaners. Fifteen monitoring wells were installed and were sampled from 1992 to 1998. Based on the data obtained, the EPA selected the technology for treatment and removal of the contamination. A soil vapor extraction (SVE) system and a groundwater treatment (GWT) system were installed to remediate the source area and contain the groundwater contamination plume. Installation of the SVE and GWT systems was completed on May 16, 2000, and June 12, 2000, respectively.

Results from a site investigation conducted in 2007 and from a soil vapor rebound test conducted from late November 2006 through January 2007 identified significant vapor mass at the northwestern corner of the Halford's Cleaners building and possibly extending underneath the building (see *Soil Vapor Extraction System Optimization and Enhancement Methods, Modesto Groundwater Superfund Site* [MWH Americas, Inc. (MWH), 2008] for summary results). Initial sub-slab vapor sampling in buildings at and near the source area in February 2008 confirmed that high concentrations of PCE in vapor (up to 20,000 parts per billion by volume [ppbv]) were present under the concrete slab foundation of the Halford's Cleaners building (MWH, 2010a). An SVE optimization plan was implemented in November 2008, which included stopping extraction from SVE-01 and continued monitoring of PCE concentrations. Three additional SVE wells (SVE-02, SVE-03, and SVE-04) were installed within what is considered to

be the source area and connected to the SVE system for extraction, and the existing SVE well (SVE-01) was taken offline and has been used as a monitoring point since.

The groundwater monitoring well network also was expanded in 2008 and in 2011. In 2008, 16 additional groundwater monitoring wells were installed to evaluate the lateral and vertical extents of the groundwater plume. Section 2.3 of the *Quarterly Operations and Monitoring Report, Fourth Quarter 2008* (MWH, 2009) describes a dense non-aqueous-phase liquid investigation (none was reported). Nine additional wells were installed in 2011 to help delineate the lateral and horizontal extent of the PCE concentrations in groundwater that exceed the MCL. These installations are described and the well construction and boring logs are provided in the letter report *Groundwater Monitoring Well Installations, Modesto Groundwater Superfund Site* (URS Group, Inc. [URS], 2011a).

Two other PCE groundwater plumes, herein referred to as the Elwood's and McHenry Village plumes, have been identified within 1 mile of the Halford's Cleaners Site. The Elwood's plume is the more significant because of its close proximity to the Halford's plume and the potential for commingling of the groundwater plumes. The source area of the Elwood's plume is about 2,100 feet (0.4 mile) south of Halford's Cleaners near the intersection of Morris and McHenry Avenues. PCE has been detected at concentrations as high as 11,000 µg/L in samples from nine shallow monitoring wells at this location. The wells were originally installed to monitor a fuels release from a nearby 7-11 convenience store, which has subsequently been closed with regard to fuels cleanup. Elwood's Dry Cleaners was identified as a responsible party for PCE contamination discovered in groundwater samples from the fuels site. The wells were last sampled in the fall of 2005 and several have subsequently been destroyed. PCE was detected in the southern-most well at 8,100 µg/L in September 2005. To characterize downgradient portions of the plume, grab groundwater samples were collected from exploratory direct-push borings installed in 2002 or 2003. The borings were located at distances up to approximately 2,100 feet (0.4 mile) from Elwood's plume (MWH, 2010b). Three wells were installed between the Halford's plume (Modesto Groundwater Superfund Site) and the Elwood's plume in 2011. The two A zone wells indicate that the Halford's plume is defined to the south in the A zone; however, the concentrations at the B zone well exceeded the PCE MCL, indicating that there may be commingling of the Halford's and Elwood's plumes in the B zone.

The McHenry Village PCE plume is about 4,650 feet (0.9 mile) north of Halford's Cleaners, at the intersection of McHenry and Briggsmore Avenues. PCE from the McHenry Village site has impacted nearby Municipal Well 21. PCE is being actively remediated at this site and has been monitored in groundwater since about 1998 in several monitoring wells, including more recently in seven deeper wells screened in the equivalent to the B zone hydrostratigraphic interval. The most recent groundwater monitoring data from September 2008 show that PCE is present at concentrations as high as 64 µg/L in the deepest monitoring wells screened about 120 feet below ground surface (bgs). Thus, the vertical extent of the McHenry Village plume is not defined. Water levels from shallow monitoring wells at other cleanup sites in the region confirm the overall southeastern flow direction observed in the A and B zones at Halford's Cleaners. As such, it appears unlikely that PCE from the McHenry Village plume is affecting areas of the aquifer impacted by the Halford's release a mile south (MWH, 2010b).

1.2 Report Organization

This report is organized as follows:

Section 1.0 provides a brief history of the Modesto Groundwater Superfund Site.

Section 2.0 describes the remedial systems.

Section 3.0 describes the sampling programs.

Section 4.0 provides performance evaluations for the GWT and SVE systems, including a groundwater capture zone analysis. Preliminary results of sampling for natural attenuation evaluation screening is also summarized in this section.

Section 5.0 summarizes results and provides recommendations for the GWT and SVE system O&M programs and the natural attenuation sampling.

Section 6.0 provides an analytical data quality review.

Section 7.0 lists reference information for documents cited in this report.

Tables and figures are provided at the end of the report. The report is supported with the following appendices, which are provided on a compact disc at the end of the report:

Appendix A provides process and instrumentation diagrams (P&IDs) for the GWT and SVE systems.

Appendix B provides laboratory analytical data tables.

Appendix C provides a laboratory data validation report.

Appendix D provides system uptime logs.

Appendix E provides O&M process logs.

Appendix F provides operational history, including a brief discussion of the routine and non-routine O&M performed on the GWT and SVE systems.

Appendix G provides historical data, as follows:

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2.0 DESCRIPTION OF REMEDIAL SYSTEM

The Modesto Groundwater Superfund Site GWT and SVE systems are located behind Halford's Cleaners and between an auto repair shop and Season's Lodge (Figure 2-1). All SVE and GWT process equipment is contained within two metal storage containers in a fenced and locked compound in the parking lot behind Season's Lodge.

2.1 Groundwater Treatment System

The GWT system includes a single operating extraction well (EW-01 failed in 2004 and was replaced with EW-01R in 2006), an equalization tank, particulate filters, an air stripper, two liquid-phase GAC vessels, one vapor-phase GAC vessel, and two ion exchange units, as well as piping and control systems. The GWT system P&ID is included in Appendix A.

The liquid-phase GAC vessels act as polishing vessels treating the water from the air stripper. The vapor-phase GAC vessel treats the air stream from the air stripper. The ion exchange units are installed in series after the polishing carbon vessels and treat a slip stream of the total system flow to remove low levels of naturally occurring uranium from the groundwater before discharge to the City of Modesto sewer collection system. The design flow rate of the system is 50 gallons per minute (gpm).

The aboveground components of the system except the vapor GAC vessel are contained in an 8.5- by 8.5- by 20-foot metal storage container. The vapor GAC vessel is located next to the container within the fenced compound. A secondary containment unit is located underneath the storage container. If a leak occurs, water from the sump is pumped to the equalization tank and treated before it is discharged to the sewer. Additional information about the GWT system can be found in the *Groundwater Treatment System and Soil Vapor Extraction System Operation and Maintenance Manual, Modesto Groundwater Superfund Site* (O&M Manual) (URS, 2010a), which includes details on the operating equipment (manufacturers, models, standard settings, inspection frequency, troubleshooting, etc.).

The groundwater monitoring network consists of 40 wells located throughout the site in residential and business communities (Figure 2-2). Well construction details are provided in Table G-1 of Appendix G1.

2.2 Soil Vapor Extraction System

The SVE system includes three online extraction wells (SVE-02, SVE-03, and SVE-04), a blower, a condensate collection drum, air filters, silencers, one 2,000-pound GAC vessel used for vapor treatment, conveyance piping, control systems, and an air conditioning unit. The SVE system P&ID is included in Appendix A.

The SVE system is operated by the local programmable logic controller on site to allow for continuous 24-hr per day operation. Its design flow rate is 180 standard cubic feet per minute (scfm). Liquid that accumulates in the condensate collection drum is pumped to the equalization tank in the GWT system for treatment before discharge to the sewer.

The aboveground system except the vapor GAC vessel components are contained within an 8- by 8.5- by 12.75-foot metal storage container. The vapor GAC vessel is located next to the container within the fenced compound. Additional information about the SVE system can be found in the O&M Manual (URS, 2010a), which includes details on the operating equipment in the SVE trailer (manufacturers, models, standard settings, inspection frequency, troubleshooting, etc.).

The three extraction wells currently in operation (SVE-02, SVE-03, and SVE-04) are located approximately 3 to 5 feet from the northwestern corner of Halford's Cleaners in the alley north of the building, within what is considered to be the source area. Nine monitoring points surrounding the SVE wells (including three offline SVE wells) are sampled quarterly. Figure 2-3 shows the locations of the SVE wells, the vapor monitoring wells, and the conveyance piping configuration.

3.0 SAMPLING AND MONITORING PROGRAM

Sampling and monitoring at the Modesto Groundwater Superfund Site is performed in accordance with the *Sampling and Analysis Plan, Modesto Groundwater Superfund Site* (SAP) (URS, 2010b). Appendix B provides the schedule for samples collected during 2Q12, including sample locations and associated analytical test methods, phase (water, vapor, etc.), frequency, and date of sampling activity.

The quarterly sampling program consists of two types of sampling: site sampling and system sampling. The first round of sample collection for natural attenuation evaluation screening was also performed in 2Q12 and is described in this section.

3.1 Site Sampling and Monitoring

Site sampling to monitor groundwater includes collecting groundwater samples from the network of 40 groundwater monitoring wells and one groundwater extraction well for analysis by EPA Method E524.2. Site sampling to monitor the vadose zone includes collecting vapor samples from the three operating SVE wells, three offline SVE wells, and six vapor monitoring locations for analysis by EPA Method TO15. Sampling of groundwater and vapor wells during 2Q12 is described in Subsections 3.1.1 and 3.1.2, respectively. Natural attenuation evaluation screening sampling is described in Section 3.1.3.

3.1.1 Groundwater Sampling and Monitoring

URS measured depths to groundwater on April 2, 2012, and collected groundwater samples April 2 through 6, 2012. Depth-to-water measurements and groundwater samples were collected from 40 groundwater monitoring wells during the quarter to evaluate the influence of groundwater extraction on the PCE plume and estimate the extent of contamination, horizontal flow directions, and groundwater capture (groundwater that flows into the extraction well). Groundwater elevations are also used to evaluate potential vertical groundwater flow directions and to develop groundwater elevation contour maps. Depth to groundwater was measured from the top of casing using an electronic water level meter.

Groundwater samples were collected starting with the least contaminated groundwater monitoring well and continuing in order to the most contaminated groundwater monitoring well; the order of sampling is determined from previous quarterly analytical results. Groundwater samples were collected using low-flow purge methods in 14 monitoring wells and using three-volume purge-and-sample methods in MW-03A and the 25 most recently installed monitoring wells. Samples from the extraction well were collected from sample port number 1 (SP-01) at the GWT system influent. The samples were analyzed for volatile organic compounds (VOCs) using EPA Method E524.2.

The SAP describes sampling procedures. Water purged from the groundwater monitoring wells was transferred through a bag filter into the equalization tank inside the GWT system.

3.1.2 Soil Vapor Sampling and Monitoring

Soil vapor samples were collected from SVE and vapor monitoring points on April 5 and 6, 2012, using 400 milliliter Summa canisters. Samples were analyzed using EPA Method TO15.

3.1.3 Natural Attenuation Evaluation Screening

Natural attenuation evaluation screening sampling was performed to evaluate the potential that natural attenuation is occurring at the site. Round one of two rounds of sampling was performed during 2Q12.

The well array for round 1 consisted of 10 monitoring wells: five in the A zone (MW-04A, MW-05A, MW-08A, MW-15A, and MW-20A) and five in the B zone (MW-04B, MW-17B, MW-20B, MW-25B and MW-28B). These samples were analyzed for the following:

- alkalinity (Method SM2320)
- nitrate, sulfate, and chloride (Method E300.0)
- ferrous iron (Standard Operating Procedure [SOP]) 575
- ethane, ethene, methane, acetylene and carbon dioxide (Method RSK-175)
- total organic carbon (Method E415.3)
- sulfide (Method SM4500-S2)
- fatty acids (Method 300.0 M), and
- haloacetic acids (Method E552.2)

3.2 System Sampling and Monitoring

Sampling and monitoring of the GWT and SVE systems at the Modesto Groundwater Superfund Site were performed in accordance with the City of Modesto Conditional and Revocable Groundwater Discharge Permit Number GW 98-3 (City of Modesto, 2010) and the SAP (URS, 2010b). Generally, two categories of samples are collected from the remedial systems: compliance monitoring and performance monitoring. Compliance monitoring samples are collected to satisfy regulatory requirements; performance monitoring samples are collected to assess the contaminant removal process of the remedial systems.

3.2.1 Groundwater System Sampling and Monitoring

Compliance monitoring samples for the GWT system are collected monthly from the extraction well and system effluent during periods when the system is operating. System effluent samples are analyzed for VOCs monthly (Method 524.2), total dissolved solids (TDS) monthly (Method 2540C), total suspended solids (TSS) monthly (Method 2540D), biochemical oxygen demand (BOD) monthly (Method 5210B), and total uranium quarterly (Method D5174). Performance monitoring samples are collected quarterly from the various treatment system units to monitor the performance and efficiency of the individual units. The GWT system performance monitoring samples are collected from the carbon influent, carbon mid-bed, post carbon/pre-ion exchange, and ion exchange mid-bed and analyzed for VOCs (Method 524.2). Figures 1-1 and 1-2 in Appendix A illustrate the locations of the sampling ports for the GWT system. Analytical data tables are presented in Appendix B.

3.2.2 Soil Vapor System Sampling and Monitoring

Only system performance samples are collected at the SVE system. These samples are collected at the pre-GAC and stack sample ports. Influent and effluent samples are collected monthly for analysis by EPA Method TO15. Figure 1-3 in Appendix A illustrates the sampling port locations for the SVE system.

4.0 PERFORMANCE EVALUATION

Site and system performance evaluations are based on current and historical analytical results and are discussed in Sections 4.1 and 4.2, respectively. The site performance evaluation estimates the extent of contamination. System sampling helps evaluate the remedial progress of the GWT and SVE systems.

The first round of sampling for natural attenuation evaluation screening was performed in 2Q12. Preliminary results are discussed in Section 4.3.

A complete set of validated analytical data for groundwater and soil vapor samples collected during this reporting period is provided in Appendix B. Appendix C is the laboratory data validation report for this reporting period's analytical data. Section 6.0 provides a summary of the quality assurance (QA) and quality control (QC) results for the samples collected during 2Q12.

4.1 Site Performance

This section provides results of the groundwater and soil vapor well sampling events for 2Q12 (Sections 4.1.1 and 4.1.2, respectively). A stratigraphic conceptual model is shown on Figure 4-1. An analysis of vertical gradients is presented in Section 4.1.3, and a capture zone analysis is provided in Section 4.1.4.

4.1.1 Groundwater Monitoring and Sampling Results

Based on water levels measured on April 2, 2012, groundwater elevations ranged from 48.24 feet mean sea level (msl) at MW-22A to 50.73 feet msl at MW-11A in the A zone; 48.31feet msl at MW-16B to 49.60 feet msl at MW-09B in the B zone; and 48.25 feet msl at MW-16C to 49.76 feet msl at MW-04C in the C zone. Comparing 2Q12 and 1Q12 water levels, water elevations increased an average of 1.35 feet in A zone wells across the site; water elevations increased an average of 0.65 foot in B zone wells across the site; water elevations in C zone wells increased an average of approximately 0.55 foot across the site. A complete list of historical (starting in 2000) and current water level measurements is presented in Appendix G, Tables G-2(a) and G-2(b).

Potentiometric surface data, groundwater flow directions, and PCE concentration data for the A, B, and C zones are shown on Figures 4-2, 4-3, and 4-4, respectively. Potentiometric contours indicate that groundwater in the A and B zones flows southeast across the site. EW-01R operated at an average of approximately 46 gpm during 2Q12; however, the pump was off during water level measurements. Therefore, though water elevation contours indicate some flow towards the well, the usual depression is not apparent in the contours of the A zone (Figure 4-2). The average hydraulic gradient parallel to the direction of regional groundwater flow in the A zone was approximately 0.0009, or approximately 4.8 feet per mile. The average horizontal gradient in the B zone was approximately 0.0010, or 5.4 feet per mile. Groundwater in the C zone was flowing south-southeast (Figure 4-4) with a horizontal gradient of approximately 0.0011, or 5.9 feet per mile.

The primary gradient in the A zone across most of the site is southeast, which is consistent with previous quarters. The B and C zone gradients have been variable. The gradient in the B zone was southeast in 4Q10 through 2Q11 and in 4Q11through 2Q12 and east-southeast during 3Q10 and 3Q11. The more easterly flows during the third quarters of 2010 and 2011 may have been the result of increased pumping at municipal wells during the dryer months of the year.

The 2Q12 horizontal gradient in the C zone was south-southeast. In general, the gradient direction in the C zone has been observed to be more westerly during the third quarters (either southwest or south-

southwest) and more easterly during the fourth and first quarters (southeast or south-southeast). Flow in the C zone has been variable during the second quarters: west in 2Q09, south-southwest in the northern site and southeast in the southern site in 2Q10, and south-southeast in 2Q11 and 2Q12. As discussed in previous groundwater reports for the site, the gradients in this deeper zone are strongly influenced by regional supply well pumping that increases during the spring and summer months (MWH, 2010a). Pumping histories from January 2000 through August 2009 for City supply wells surrounding the site are compiled in *Groundwater Remediation Optimization Methods, Modesto Groundwater Superfund Sites* (MWH, 2010b, Appendix B).

To evaluate the potential hydraulic influence on the extents of PCE plumes from operation of City of Modesto Municipal Water Supply Wells No. 6 and No. 7 on distribution of the PCE plumes, URS installed transducers in six A zone, five B zone, and three C zone monitoring wells from June 28 through December 7, 2011. Results of the evaluation indicated that municipal well pumping has a greater effect on C zone water levels than on A or B zone levels and municipal well pumping increases the prevailing downward gradient between the A zone and B zone and between the B zone and the C zone. Increases in the downward gradient can result in downward migration of PCE beneath portions of the site.

The southern portion of the plume is most likely to be influenced by supply well pumping because Municipal Wells 6 and 7 are southeast and southwest, respectively, of the southern boundary of the plume. Municipal Well 7 may be impacted by PCE contamination before Municipal Well 6 because Municipal Well 7 operates at approximately twice the pumping rate of Municipal Well 6 and the B zone plume appears to be closer to Municipal Well 7. Additional details on this evaluation are provided in *the Interpretation of Local Groundwater Level Changes and Influences from City of Modesto Municipal Water Supply Wells Nos. 6 and 7 Technical Memorandum* (URS, 2012a).

4.1.1.1 PCE

In 2Q12, PCE was detected at concentrations exceeding the MCL of 5 µg/L at the extraction well and 20 monitoring wells. The distribution of PCE concentrations greater than 5 µg/L in groundwater is illustrated with isoconcentration contour lines (lines of equal concentration) on Figures 4-2 and 4-3 for the A and B zones, respectively. There are no PCE isoconcentration contours in the C zone on Figure 4-4 because there were no detections at the C zone wells that exceeded MCLs. The distribution of PCE concentrations is also illustrated on generalized geologic cross-sections that dissect the site along northwest to southeast (Figure 4-5) and west to east (Figure 4-6) lines. Appendix G, Tables G-3(a) and G-3(b), includes historical and current quarterly groundwater monitoring well analytical results and pH levels from water samples. Figures G-4(a) through G-4(an) (Appendix G-4) show PCE time series plots for each monitoring well for the period from February 1992 through 2Q12.

A Zone

As depicted on Figure 4-2[1], the PCE MCL plume is approximately 1,800 feet long parallel to the primary gradient and 2,000 feet wide in the east-west, cross gradient direction. The MCL plume is defined in all directions except the west. The PCE concentration (36 µg/L) at MW-23A, installed in 2011 as the furthest

[1] Groundwater analytical results from the HydroPunch groundwater samples collected during the cone penetrometer (CPT) investigation of May 2011 are posted on Figure 4-2 and have been used along with the monitoring well data to contour PCE concentrations in the A zone. The CPT investigation was performed to identify the optimal location for an A zone extraction well near the highest PCE concentrations that had been known historically on site at MW-04A (URS, 2011b). Concentrations of PCE at MW-04A have been as high as 3,000 µg/L and only decreased to less than 1,000 four times since 2Q05, twice in the last two quarters.

western monitoring well in the PCE plume, exceeded the MCL in 2Q12. PCE concentrations at MW-21A (1 µg/L) and MW-22 A (no detection) indicate that the A zone plume is bounded to the south.

Concentrations of PCE at wells other than at MW-04A are consistent with previous quarters. Results from MW-04A are anomalous. The concentration of PCE at MW-04A decreased from 2,200 µg/L in 4Q11 to 130 µg/L in 1Q12 and 71 µg/L in 2Q12. The 2Q12 analytical results for trichloroethene (TCE) and cis-1,2-dichloroethene (DCE) do not confirm the 1Q12 detections; cis-1,2-DCE decreased from 73 µg/L in 1Q12 to 0.4 µg/L in 2Q12; and TCE decreased from 7.2 µg/L in 1Q12 to 0.4 µg/L in 2Q12.

The long axes of the A zone plume with concentrations between 5 and 50 µg/L and greater than 1,000 µg/L parallel the primary groundwater gradient direction. The extent of the 5 to 50 µg/L portion of the plume was drawn farther west than depicted in previous quarters because of the 36 µg/L concentration in the sample from the recently installed well MW-23A. The portion of the plume that had HydroPunch sample concentrations greater than 1,000 µg/L encloses an area that is approximately 750 feet in the east-west direction and less than 200 feet in the downgradient direction; however, there are concentrations greater than 100 µg/L downgradient from the CPT investigation locations beyond the location of MW-20A where the concentration of PCE at MW-20A was 160 µg/L in 2Q12 (Figure 4-2). The east-west orientation of high concentrations and concentrations less than 50 µg/L may be the result of three potentially interacting components: hydrostratigraphy, influences of municipal well hydraulic gradients, and/or a secondary source of PCE. These components are described in greater detail in the *Implications of Results from the Cone Penetrometer Testing (CPT)/HydroPunch Investigation, Modesto Groundwater Superfund Site, Technical Memorandum* (URS, 2011c).

The 1,000 µg/L PCE isoconcentration contour is bounded to the southwest by the concentration at MW-06A (10 µg/L in 2Q12 and less than 100 µg/L since 1Q04) and to the east by the concentration at MW-12A (15 µg/L in 2Q12 and less than 50 µg/L since 3Q01). However, the 6,300 µg/L PCE concentration at 81 to 83 feet bgs at location CPT6 suggests that the extent of the 1,000 µg/L PCE concentrations may be farther west (Figure 4-2). An additional CPT investigation was performed in June 2012 to confirm the result at CPT6 and to define the PCE concentrations exceeding 1,000 µg/L in the A zone. Results of this investigation will be documented in a report to be issued in late August 2012.

The PCE concentrations at MW-13A and MW-14A have fluctuated seasonally (Figures G-4[q and r]) from just above to below the PCE MCL, resulting in changes in the shape of the A zone plume several times annually. In 2Q12, PCE concentrations were 15 µg/L at MW-13A and 25 µg/L at MW-14A (both above the MCL). In previous reports (e.g., MWH, 2010a), concentration fluctuations at these wells were attributed to potential influences from pumping of municipal supply wells to the west or northwest, perhaps from Municipal Well 8, 14, or 17 (Figure 1-2). Municipal well pumping may be the cause of the PCE concentration at MW-23A (36 µg/L). PCE was detected in Municipal Wells 14 and 8, located 2,375 feet (0.45 mile) west and 5,320 feet (1.0 mile) west-southwest of Halford's. Municipal Wells 8 and 14 have been offline since 2007 and 2006, respectively (MWH, 2010b); however, the plume may have been drawn toward Municipal Wells 8 or 14 before they were shutdown. Municipal Well 17, which has remained in consistent operation, could have hydraulic influence on the plume because it has a 4-foot-long screened interval about 25 feet lower than the screened zones of MW-13A and MW-14A; however, it is located more than 3,500 feet northwest of the monitoring wells and data are insufficient to determine whether the hydraulic influence of pumping at Municipal Well 17 is affecting the PCE plume. Municipal Wells 6 and 7, on the other hand, are located closer to the plume than Municipal Wells 14 and 17 and are operating consistently; the *Interpretation of Local Groundwater Level Changes and Influences from City of Modesto Municipal Water Supply Wells Nos. 6 and 7 Technical Memorandum* (URS, 2012) indicates that water levels at some A zone monitoring wells had slight responses when Municipal Wells 6 and 7 were operating. Municipal Well 6 is screened in the A and B zones and, though Municipal Well 7 is

screened below the A zone (in B zone), pumping at Municipal Wells 6 and 7 may be affecting the A zone plume.

The PCE concentration at the operating extraction well (EW-01R) during 2Q12 was 130 µg/L (14 percent lower than the concentration of 150 µg/L in 1Q12).

B Zone

Figure 4-3 depicts the B zone PCE plume and potentiometric surface contours. In 2Q12, PCE was detected above the MCL at eight of the B zone wells. The plume is approximately 2,600 feet long parallel to the primary gradient direction (northwest/southeast) and 1,600 feet wide. Concentrations decreased in 2Q12 to less than the MCL at MW-04B and increased to 8.8 µg/L (greater than the MCL) at MW16B, the farthest downgradient B zone well. The PCE plume in the B zone is undefined in the western, northwestern, and southeastern directions (Figure 4-3).

Data from the recently installed B zone wells indicate that the axis of the 50 to 99 µg/L plume trends northwest to southeast. The highest concentration of PCE in the B zone (120 µg/L) was reported at the newly installed well MW-25B, which is approximately 1,500 feet southeast of the source area. The concentration at MW-29B decreased from 100 µg/L in 1Q12 to 70 µg/L in 2Q12. The PCE concentration at MW-29B was 150 µg/L when the well was first installed and sampled in 4Q11. Therefore, the plume with concentrations greater than 100 µg/L was decreased in size from a large plume encompassing MW-20B, MW-25B, and MW-29B in 4Q11, to two smaller plumes when concentrations decreased to 68 µg/L at MW-20B in 1Q12, to only one small plume encompassing MW-25B in 2Q12.

The 2Q12 concentration of 120 µg/L PCE at MW-25B indicates that the plume remains undefined in the southern direction, and there is still the possibility that the plume is commingled with the Elwood's plume in the B zone.

The B zone plume shape has likely been influenced by pumping at municipal wells. The *Interpretation of Local Groundwater Level Changes and Influences from City of Modesto Municipal Water Supply Wells Nos. 6 and 7 Technical Memorandum* (URS, 2012) indicates that water levels at most B zone monitoring wells had slight responses when Municipal Wells 6 and 7 were operating. Municipal Well 6 is screened in the A and B zones and Municipal Well 7 is screened in B zone; therefore, pumping at Municipal Wells 6 and 7 may be affecting the B zone plume.

C Zone

Groundwater elevation contours for the C zone and PCE concentration data are shown on Figure 4-4. There were no detections of PCE exceeding the MCL in 2Q12 among the samples from the five wells screened in the C zone. Consequently, no PCE plume is shown on Figure 4-4. The last reported and only detection from the C zone wells that exceeded the MCL was 8.7 µg/L at MW-4C in 4Q08.

4.1.1.2 Other VOCs

Benzene was reported in samples from five wells in 2Q12; however, all concentrations were less than or equal to the MCL of 1 µg/L (MW-17B had a concentration of 1 µg/L). There were no detections at any wells during the 2Q10, 4Q10, or 4Q11 events. Benzene concentrations exceeded the MCL during the 3Q10, 1Q11, 2Q11, 3Q11, and 1Q12 sampling events.

Other than PCE and benzene, the only VOC concentration that exceeded its MCL during the 2Q12 sampling event was carbon tetrachloride reported at MW-18A at 0.7 µg/L. The MCL of carbon tetrachloride is 0.5 µg/L.

Halford's is not likely to be the source of the benzene or carbon tetrachloride concentrations in groundwater because these VOCs have not been detected at MW-01A, MW-05A, MW-08A, or EW-01R—the wells located nearest to Halford's Cleaners. For that reason, no further speculation about the sources of these VOCs in the monitoring wells at this site is provided, as this report is an evaluation of the contamination from Halford's Cleaners.

4.1.2 Soil Vapor Sampling Results

Samples were collected from the three operating SVE wells on April 5, 2012. Analytical results listed in Appendix G, Tables G-5(a) and G-5(b) are summarized below and posted on Figure 4-7:

- SVE-02 (screened interval 7 to 12 bgs): PCE concentration increased from 180 ppbv in 1Q12 to 270 ppbv in 2Q12.
- SVE-03 (screened interval 13 to 23 bgs): PCE concentration increased from 140 ppbv in 1Q12 to 220 ppbv in 2Q12.
- SVE-04 (screened interval 28 to 38 bgs): PCE concentration increased from 17 ppbv in 1Q12 to 22 ppbv in 2Q12.

Comparison of 2Q12 to 1Q12 soil vapor monitoring well PCE sample results shows an increase at six wells, a decrease at one well, and samples from two wells continue to have concentrations less than the detection limit.

The highest concentration detected in a soil vapor monitoring well was 160 ppbv at OSVE-10, a 5-foot-deep well located within the building footprint of Halfords' Cleaners (Figure 4-7). PCE concentrations detected at soil vapor monitoring wells screened deeper than 16 feet were less than 11 ppbv (DP-01B, DP-05B, DP-06B, and SVE-01), except DP-01A which had a PCE concentration of 110 ppbv.

4.1.3 Analysis of Vertical Groundwater Gradients

Vertical gradients were calculated using 2Q12 data at one well pair with screen intervals in the A zone, seven well pairs with screens in the A or B zones, and at five well pairs with screens in the B or C zones (Table 4-1). For comparison, Table 4-1 also lists vertical gradients calculated for last quarter and last year.

There was a potential for an upward gradient within the A zone between MW-21A and MW-22A. Four of the seven A zone – B zone well pairs and four of the five B zone – C zone well pairs indicated a potential for an upward gradient. Results for the remaining well pairs indicated a potential for a downward gradient. The same four of the seven A zone – B zone well pairs indicated a potential for upward gradients in 2Q11; however, all five B zone – C zone well pairs indicated a potential for downward gradients in 2Q11. The directions of vertical gradients for some of these well pairs are shown by arrows on Figure 4-5.

4.1.4 Extraction Well EW-01R Capture Zone Analysis

Estimates of groundwater plume capture from extraction well EW-01R are shown on Figures 4-5 and 4-8. EW-01R was not operating during water level measurements; therefore, groundwater elevation contours

could not be used as a line of evidence to estimate the extent of capture in 2Q12. The extent of capture was estimated using particle tracks developed with the site's groundwater model (MWH, 2010b) presented on Figure 4-5 and projected onto Figure 4-8.

Groundwater elevations calculated from water levels measured at A, B, and C zone wells during 2Q12 were contoured using the Natural Neighbor function in ArcGIS 10 and adjusted using professional hydrogeologic judgment. A curved line consisting of the estimated stagnation points is the empirical capture zone illustrated in purple on Figure 4-8. A new and expanded transient groundwater flow model for the site and surrounding region was developed to support the *Groundwater Remediation Optimization Methods, Modesto Groundwater Superfund Site* (MWH, 2010b, Appendix B). The A zone capture zone estimated with the model's simulation of EW-01R pumping at 50 gpm is illustrated on Figure 4-8 as the sweep of groundwater flow lines toward the well based on backward particle tracking (i.e., particles released at the well and modeled backwards to determine their starting points). The actual average operating flow rate at this well in 2Q12 was 46 gpm. The average operating flow rate is calculated by dividing the volume pumped from the well during the quarter by the operating time.

Though 2Q12 groundwater contours could not be used to estimate capture because EW-01R was not operating during water level measurements, contours developed using water elevations for the all quarters since 2010 indicate that the horizontal estimates of capture for EW-01R based on the two lines of evidence are in good agreement. The downgradient extent of capture is interpreted to be within 100 feet of MW-04A (Figure 4-8).

An estimate of the vertical extent of capture by EW-01R is illustrated on Figure 4-5. The downgradient extent of capture depicted in profile view (downgradient from MW-04A) is based on the empirical and modeled lines of evidence. The vertical capture zone extent below the screen of EW-01R is an estimate based on water level data, modeling, and vertical gradients. The groundwater model results suggest (1) there is an upward vertical gradient beneath the extraction well and (2) groundwater entering the bottom portion of the well's screen may originate from the B zone sands (MWH, 2010a). Vertical gradients calculated using 2Q12 groundwater elevation data from wells near EW-01R (MW-04A, MW-04B well pair [Figure 4-5] and MW-08A, MW-09B well pair [not shown on figure]) were upward from the B to the A zone. There was also an upward gradient between MW-4B and MW-4C. These upward gradients corroborate the model's prediction of upward vertical groundwater captured at EW-01R.

4.2 System Performance

System compliance and performance samples were collected to evaluate the effectiveness of the remedial systems. Water, vapor, and media samples were collected according to requirements in the SAP (URS, 2010b) and the City of Modesto Conditional and Revocable Groundwater Discharge Permit (Permit Number GW98 3) (City of Modesto, 2010). Treatment system effluent samples collected during the reporting period for vapor emissions and sewer discharge were below maximum allowable discharge limits.

4.2.1 Groundwater Treatment System Results

During 2Q12, the GWT system operated for approximately 1,686 hours (out of 2,184 hours possible during the quarter), an uptime of approximately 77 percent. System uptime logs and graphical representation of the GWT system operation time are presented in Appendix D, Figures D-1 through D-3.

The GWT system treated a total of approximately 5.42 million gallons of water and removed approximately 6.2 pounds of PCE during this reporting period. To date (since August 2001), the system

has treated approximately 195 million gallons of water and removed approximately 511 pounds of PCE. Figure 4-9 illustrates the cumulative PCE mass removed by the GWT system.

The influent PCE concentrations were 130 µg/L during the quarter. Samples were also analyzed for uranium. A summary of treatment system analytical results is provided in Appendix G-6, Tables G-6(a) and G-6(b); PCE results for this reporting period are summarized in Table 4-2.

4.2.2 Soil Vapor Extraction System Results

During 2Q12, the SVE system operated for 1,960 hours (out of 2,184 hours possible during the quarter), an uptime of 90 percent. Monthly system uptime logs and graphical representation of the SVE system operation time are presented in Appendix D, Figures D-4 through D-6.

The SVE system operated at an average flow rate of 132 scfm and removed approximately 0.34 pound of VOCs during this quarter. The total cumulative VOC mass removed through June 7, 2012, is approximately 3,461 pounds. Figure 4-10 illustrates the cumulative PCE mass removed by the SVE system.

The influent PCE concentrations ranged from 5.1 to 45 ppbv during the reporting period. Monthly SVE system samples collected in SUMMA canisters were sent to the EPA Region 9 laboratory in Richmond, California, for VOC analysis. A summary of SVE treatment system analytical results is provided in Appendix G-7, Tables G-7(a) and G-7(b); PCE results for this reporting period are summarized in Table 4-3.

4.3 Preliminary Results of Sampling for Natural Attenuation Evaluation Screening

The first round of sample collection for natural attenuation evaluation screening was performed in 2Q12. In accordance with the *Modesto Groundwater Superfund Site Natural Attenuation Screening Evaluation Work Plan* (work plan) (URS, 2012c), groundwater samples were collected from five A zone monitoring wells (MW-04A, MW-05A, MW-08A, MW-15A, and MW-20A) and five B zone monitoring wells (MW-04B, MW-17B, MW-20B, MW-25B, and MW-28B). All normal samples were collected and analyzed as described in the work plan.

The objective of the two rounds of sampling and analysis identified in the work plan is to evaluate whether one or more destructive/transformative natural attenuation processes are active in the PCE plume. That objective cannot be attained until the second round of sampling and analysis is complete. The following paragraphs summarize and interpret the results of the first sampling round.

Analyses performed on the first round of 10 normal samples provided results for inorganic analytes, TOC, carbon dioxide, dissolved gases, volatile fatty acids, haloacetic acid, and VOCs. The analyte list with normal sample numbers and QC samples is shown in Table 4-4. Dissolved oxygen (DO), oxidation-reduction potential (redox), temperature, and pH were also measured in the field for each of the 10 samples. Natural attenuation screening parameter data and PCE concentrations are shown on Figure 4-11 for the A zone and Figure 4-12 for the B zone wells that were sampled. Parameter data for volatile fatty acids, haloacetic acids, and acetylene are not shown on the figure because all results from first-round samples are less than detection limits.

Biodegradation Screening. As stated in the data quality objectives (DQOs) in the work plan, the potential for anaerobic biodegradation in the site's PCE plume will be evaluated by comparison of geochemical parameter results with numerical criteria in the EPA technical protocol. Preliminary

"weighting values" obtained from first-round parameter results are shown with the numerical criteria and resulting weighting values in Table 4-4. With the exception of MW-04A, the preliminary weighting values are lower than the "action level" value of 6 identified in the DQOs, and, therefore, the values suggest inadequate evidence of anaerobic biodegradation. However, the results and weighing values are preliminary, and there is some evidence to suggest biodegradation may be occurring in some areas of the PCE plume.

There is potential that biodegradation may be occurring in the area of MW-04A. Nitrate and sulfate concentrations in the well are lower than the criteria. The first-round redox value was negative. TCE and 1,2-DCE, daughter products of PCE degradation, have been detected at the well, and DCE concentrations increased to greater than the concentration of TCE in 1Q12. The detection of methane in the first-round sample suggests that methanogenic bacteria, which could degrade PCE, are present near the well. The detection of sulfide may indicate the presence of sulfur-reducing bacteria.

At MW-17B there is also potential that biodegradation may occur. The sulfate concentration was less than 20 milligrams per liter (mg/L), and the TOC concentration (7 mg/L) was higher than at any other well sampled in the first round. The redox reading was lower than in most of the first-round well samples. BTEX compounds were detected, and the detection of methane suggests that methanogenic bacteria may be active. The detection of sulfide suggests the presence of sulfur-reducing bacteria at the well.

There is potential that biodegradation may occur at MW-20B. The sulfate concentration was less than 20 mg/L in the wells. Benzene was detected. Sulfide was detected, suggesting the presence of sulfur-reducing bacteria at the well.

There is potential that biodegradation may occur at MW-25B and MW-28B. The sulfate concentrations at these wells in the first round were less than 20 mg/L. The detection of methane at each well suggests than methanogenic bacteria may be active at the wells.

The spatial relationship of MW-17B, MW-25B, and MW-28B in the southern part of the B zone PCE plume in conjunction with the presence of methane suggests that conditions in that portion of the plume may be favorable for biodegradation. MW-20B that is also in the southern portion of the B zone did not have a methane detection; however, it did have a detection of sulfide.

The first-round results for MW-5A, MW-8A, and MW-20A did not have sufficient indicators of conditions that would support biodegradation. MW-15A was identified as the well upgradient from the source, and its results do not suggest biodegradation could occur. The high concentrations of carbon dioxide (42 mg/L) and alkalinity (360 mg/L) at MW-15A potentially make it a less-than-ideal location to collect "background" values for those parameters.

Abiotic Degradation Screening. The first-round results for acetic acid, haloacetic acid, ethene, ethane, and acetylene do not suggest that abiotic degradation is occurring anywhere in the PCE plume. However, the results are preliminary. An additional round of sampling for the indicators of abiotic degradation and compound-specific isotope analysis (CSIA) at select wells could more fully evaluate the potential for abiotic degradation.

Recommendations for the second round of natural attenuation sampling are presented in Section 5.3.

5.0 RECOMMENDATIONS

A summary of observations and recommendations for the GWT and SVE systems are provided in this section. A summary of recommendations for natural attenuation evaluation sampling is also provided.

5.1 GWT System – Summary Observations and Recommendations

The PCE MCL plume is only partially captured in the A zone (Figures 4-5 and 4-8). Based on 2Q12 data, the known extent of the plume is approximately 2,000 feet wide and 1,800 feet long in the A zone (Figure 4-2) and approximately 1,600 feet wide and 2,600 feet long in the B zone (Figure 4-3).

Data collected in 2Q12 and previous quarters indicate that PCE concentrations are defined in the A zone except west of MW-13A, MW-14A, and the recently installed well MW-23A. Concentrations at MW-13A and MW-14A, located at the western portion of the plume, have historically fluctuated above and below the MCL from quarter to quarter (Figure G-4q and r). Concentrations at both these wells and MW-23A exceeded the PCE MCL in 2Q12, and the time series trend for MW-14A (Figure G-4r) indicates that PCE is increasing at this well. Two additional wells are recommended to the northwest and west of MW-14A and MW-23A to address these data gaps. Another well may also be needed west of MW-13A if concentrations continue to exceed the MCL at this well.

The PCE MCL plume in the B zone is undefined to the northwest, west, and southeast. Concentrations at MW-25B (south portion of the plume) and MW28B and MW-29B (west portion of the plume) all have exceeded the PCE MCL since their installation in September 2011, and the PCE concentration at MW-09B (located in the northern portion of the plume) fluctuates quarterly from just above to just below the MCL (4.0 µg/L in 2Q12). Therefore, additional monitoring wells are recommended: one or two wells to the south and two or three wells to the north, northwest, and west to define the extent of concentrations exceeding the MCL in these directions.

There were no detections of PCE exceeding the MCL in wells screened in the C zone in 2Q12, and concentrations in this zone have been less than the MCL since 1Q09. Therefore, no additional wells are recommended in the C zone. However, because of the effect of municipal well pumping on C zone water levels, Municipal Well 7 should be operated at a flow rate similar to Municipal Well 6 to reduce potential for affecting PCE plume migration, and PCE concentrations should continue to be monitored at Municipal Wells 6 and 7 (URS, 2012a).

The current GWT system (extraction well EW-01R) was designed as an interim measure with an objective of source control and mass removal within the northern portion of the groundwater plume where PCE concentrations in shallow zones have historically been the highest (MWH, 2010b). Concentrations of PCE in groundwater have migrated from the source horizontally and downward into the A, B, and C zones. A groundwater investigation was performed during May and June 2011 to identify the optimal location for an A zone extraction well near the highest PCE concentrations identified on site at MW-04A (URS, 2011b). Groundwater analytical results from the HydroPunch groundwater samples collected during the May/June 2011 CPT investigation indicated that the 1,000 µg/L PCE plume is larger than depicted in previous quarterly reports, and its long axis trends (approximately 750 feet from east to west) and almost perpendicular to the primary southeast gradient direction in the A zone (URS, 2011d). Because the vertical and horizontal extents of the PCE concentrations exceeding 1,000 µg/L in the A zone were not defined with the data from the May/June 2011 CPT investigation, additional groundwater samples were collected in June 2012 from locations to the west, southwest, east, and south using CPT technology. These new CPT locations and sampling depths are identified in the *Final Letter Work Plan Addendum, Additional HydroPunch/CPT Investigation, Modesto Groundwater Superfund Site* (URS,

2012b). Results from that investigation will be used to evaluate the vertical and horizontal extent of the PCE concentrations exceeding 1,000 µg/L and documented in a pending report.

5.2 Soil Vapor Extraction – Summary Observations and Recommendations

The SVE treatment system's 2Q12 average influent sample concentrations were lower than the 1Q12 average. Monthly samples entering the treatment system had PCE concentrations of 5.1, 45, and 7.1 ppbv in April, May, and June, respectively. Concentrations at all three operating extraction wells were higher in 2Q12 than in 1Q12. There may be dilution in concentration between the wells and the SVE system inlet. The total PCE mass removed was slightly up from 0.22 pound in 1Q12 to 0.34 pound in 2Q12.

Soil vapor concentrations and mass removal rates curves for the SVE system have become asymptotic (Figure 4-10). The system has become inefficient (removing less than 0.35 pound of PCE from the vadose zone during 2Q12). Good engineering practice dictates that shutdown of extraction wells is warranted; however, the system has been operated principally to reduce the risk to building occupants that could be posed by PCE vapor intrusion from the vadose zone. If well shutdown and rebound monitoring are implemented, monitoring of indoor air concentrations should also be undertaken to assure indoor air risk does not reach unacceptable levels.

5.3 Recommendations for Natural Attenuation Evaluation Sampling

In the light of the interpretation of first-round results of the natural attenuation evaluation summarized in Section 4.3, the following are recommended for the second-round sampling for the natural attenuation evaluation at the site:

- Collect samples for bacterial evaluation by quantitative polymerase chain reaction (qPCR) and carbon13/carbon12 CSIA at MW-4A, MW-17B, MW-20B, MW-25B, and MW-28B.
- Collect samples for carbon13/carbon12 CSIA at MW-5A and MW-8A because these are probable release locations of PCE to groundwater and carbon isotope ratios in those samples may be indicative of undegraded PCE; however, bacterial evaluation is not warranted at these locations.
- Collect samples for natural attenuation parameters and CSIA at MW-20A and MW-24B. Although these wells were not sampled in the first-round, they are in A zone and B zone plume locations downgradient from potential sources, and they have potential to show isotope fractionation resulting from degradation. Bacterial analyses at these wells are not warranted.
- Change the analytical method for ferrous iron to a field analysis with Method 8146 and a Hach test kit. The EPA Region 9 laboratory detection limit for ferrous iron is too high to identify ferrous iron concentrations near 1 mg/L that are expected in a plume that is undergoing degradation.

6.0 QUALITY CONTROL SUMMARY REPORT

6.1 Introduction

This section summarizes QA and QC results for the samples collected and data generated during the period of April through June 2012 at the Modesto Groundwater Superfund Site, Modesto, California. Sampling activity protocols are provided in the SAP (URS, 2010b) and work plan (URS, 2012c). Based on the data review, all data collected during this period are of known and acceptable quality in relation to the DQOs of this project. All data are considered usable as qualified for the intended purposes.

Between April 2 and June 7, 2012, field samples, field duplicates, and field QC samples were collected for groundwater and air samples. Water samples were collected from the GWT system and existing monitoring wells. Air samples were collected from the GWT and SVE systems. Contaminants of concern at the Modesto Groundwater Superfund Site are indicated in Table B-1 of Appendix B. Samples were submitted for chemical analyses as presented in Table B-2 of Appendix B. Analyses performed include the following:

Site and system sampling and monitoring analyses:

EPA Region 9 Laboratory

- TDS by Standard Method (SM) 2540C: 3 normal samples (NS)
- TSS by SM2540D: 3 NS
- BOD by SM5210B: 3 NS
- VOCs in water by EPA Method 524.2: 49 NS, 5 field duplicates (FDs), 4 trip blanks (TBs), 2 field blanks (FBs), and 8 matrix spike/matrix spike duplicates (MS/MSD)
- VOCs in air by EPA Method TO15: 24 NS and 3 FDs

GEL Laboratories, LLC

- Total uranium by ASTM D5174: 15 NS, one FD, five MS/duplicates, and one FB

Natural attenuation analyses:

EPA Region 9 Laboratory

- Dissolved gases and carbon dioxide by RSK-175: 10 NS, 1 FD, 1 TB, and 1 MS/MSD
- Anions by E300.0 : 10 NS, 1 FD, and 2 MS/MSD
- Total organic carbon by E415.3: 10 NS, 1 FD, and 2 MS/MSD
- Alkalinity by SM2320B: 10 NS and 1 FD
- Sulfide by SM4500-S2: 10 NS and 1 FD
- Ferrous Iron by SOP 575: 10 NS and 1 FD

EMAX Laboratories

- Acetylene by RSK-175: 10 NS, 1FD, and 1MS/MSD
- Fatty Acids by E300.0 M: 10 NS and 1FD

Test America Laboratories, Inc.

- Haloacetic Acids by E552.2: 10 NS and 1 FD

Sample results are summarized in Appendix B, Table B-3.

Analytical chemistry services are provided by the EPA Region 9 laboratory in Richmond, California; GEL Laboratories, LLC, in South Carolina; EMAX Laboratories in Torrance, California; and Test America Laboratories, Inc. in Irvine, California. All laboratories are certified by the California Department of Health Services through the Environmental Laboratory Accreditation Program to perform hazardous waste analyses.

The URS project chemist reviewed ASTM Method D5174, RSK-175 (acetylene), 300.0 M, and E552.2 using criteria established in analytical methods and the laboratories SOPs'. Laboratory Data Consultants (LDC) performed data validation of all other sample results using the criteria established in the SAP, analytical methods, and EPA Region 9 laboratory SOPs as wells as the National Functional Guidelines for Superfund Organic Methods Data Review (2008). The sample results validated by LDC were validated electronically. Data validation reports and qualified data tables are provided in Appendix C. Several data validation flags were used in the validation process. The definitions of these qualifier flags are as follows:

U Indicates the compound or analyte was analyzed for but not detected at or above the reported quantitation limit.

UJ Indicates the compound or analyte was analyzed for but not detected at or above the stated limit. The sample detection limit is an estimated value.

J Indicates the analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.

R Quality control indicates that the result is not usable. The presence or absence of the compound or analyte cannot be verified or the reported result is compromised as to be unusable.

6.2 Data Quality Objectives

DQOs are qualitative and quantitative statements that specify the quality of the data required to meet the goals of site investigations and support decisions made in remedial response activities. Data quality was assessed in terms of its precision, accuracy, representativeness, completeness, and comparability (PARCC). These criteria are briefly defined in the following sections. The results of the field and laboratory QC checks are evaluated against the DQOs, and the quality of the data is assessed according to the PARCC parameters. QC sample results that fall outside of these criteria serve to signal the production of unacceptable or biased data that could result in the implementation of corrective action or the qualification of data.

6.2.1 Precision

Precision is a measurement of mutual agreement among individual measurements of the same property, usually under prescribed conditions. Data evaluated to assess precision consist of results from the analysis of field duplicate pairs and MS/MSD samples. The precision measurement is established using the relative percent difference (RPD) between the duplicate sample results, and is expressed as follows:

$$RPD = \frac{\lfloor X_1 - X_2 \rfloor}{\left[\left(X_1 + X_2 / 2\right)\right]} \times 100$$

where:

X_1 and X_2 represent the individual concentrations of the target analyte in the two replicate analyses.

6.2.2 Accuracy

Accuracy is defined as the proximity of the mean of a set of results to the true value. Accuracy is assessed through the evaluation of initial and continuing calibration data, as well as laboratory control sample (LCS) recoveries, surrogate standard recoveries, and MS recoveries, which are expressed as a percent recovery according to the following equation:

$$\text{percent recovery} = \frac{(\text{spiked sample conc.} - \text{sample conc.})}{\text{known conc. of spike}} \times 100$$

6.2.3 Representativeness

Representativeness is defined as the degree to which sample data accurately and precisely represent the characteristics of the site, parameter variations at a sampling point, or environmental conditions. Representativeness, in terms of sample integrity for this investigation, was qualitatively evaluated based on the analysis of trip blanks, field blanks, and method blank samples. In addition, sample collection and handling methods and the cooler receipt forms were reviewed to confirm that samples were received under proper storage conditions.

6.2.4 Completeness

Two types of completeness have been evaluated for this project. Analytical completeness is the number of unqualified results related to the total number of results reported, expressed as a percentage. The analytical completeness goal is 90 percent. Technical completeness is the number of valid results related to the total number of results reported, expressed as a percentage. The technical completeness goal for this project is 95 percent.

6.2.5 Comparability

Data comparability is achieved by using standard analytical methods and reporting limits, and by using standard units of measurements, as specified in the methods. Comparability is a qualitative parameter.

6.3 Quality Control Results

The following sections summarize the data review process and results in terms of PARCC criteria, as defined in Section 2.2.5 of the SAP. Qualified data based on this review process are provided in Appendix C.

6.3.1 Precision and Accuracy

Precision and accuracy were evaluated based on the results of QC samples collected by the field team and QC samples that originated in the laboratory. The calculated RPD for MS/MSDs and field duplicate pairs

provided information on the precision of sampling and analytical procedures. MS/MSD analyses were associated with all samples for this sampling event. All data were reviewed for accuracy based on the surrogate spike, MS/MSD, and LCS percent recoveries. In addition, initial and continuing calibration data were reviewed for analytical accuracy. The criteria used for the evaluation are provided in the quality assurance project plan in the SAP (URS, 2010b). Data validation findings are provided in Appendix C. Field duplicate results are included in the results summary table (Table B-3 in Appendix B); MS/MSD recovery and RPD outliers are summarized in Table B-4.

6.3.2 Representativeness

Representativeness was evaluated through the analysis of field blank, trip blank, and method blank samples. Additionally, sample collection and handling methods and the cooler receipt forms were reviewed. All sample bottles were received in good condition and the chain-of-custody documents agreed with the sample labels.

Trip blanks are required to accompany each cooler of aqueous samples sent to the laboratory for analysis of VOCs. One trip blank accompanied each cooler for each of the sampling dates. Trip blank detections can be found in Table B-3 (Appendix B).

Field blanks are used to determine if potential sample contamination has occurred during the sample collection process. Field blanks are analyzed using the same analytical procedures as the associated samples. Field blank detections are provided in Table B-3 (Appendix B).

Method blanks are processed through the same analytical procedures as the associated samples. Method blanks are analyzed with each batch of samples to provide information on contamination originating in the analytical process. Method blank detections are indicated in the data validation report in Appendix C.

6.3.3 Completeness

Completeness of data was evaluated by assuring that all analytical requests were met, samples were received in proper condition, and all analyses were performed within the appropriate holding times. Overall analytical completeness (94.5 percent) exceeded the project goal of 90 percent. Overall technical completeness for this data set (100 percent) exceeded the project goal of 95 percent. Refer to Appendix C for a breakdown of completeness by method.

6.3.4 Comparability

Comparability was evaluated for this sampling event by analyzing all samples according to the specified EPA analytical methods, which use standard units of measurement. Necessary sample dilutions, due to the presence of elevated target compound concentrations, did not affect data usability and comparability. Results for some analytes are reported below the practical quantitation limit (PQL) but above the method detection limit (MDL). The “J” flag has been applied to results reported between the MDL and the PQL.

6.4 Summary of Data Reliability

Based on this evaluation, all data collected during this period are of known and acceptable quality in relation to the DQOs of this project. All data are considered usable as qualified for the intended purposes.

7.0 REFERENCES

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URS, 2012b. *Final Letter Work Plan Addendum, Additional HydroPunch/CPT Investigation, Modesto Groundwater Superfund Site*. April 27.

URS, 2012c. *Modesto Groundwater Superfund Site Natural Attenuation Screening Evaluation Work Plan.* February

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TABLES

Table 4-1 Vertical Gradients, Second Quarter 2012

Well No.	Monitoring Zone	Groundwater Elevation (feet msl)	2Q12 Vertical Gradient	1Q12 Vertical Gradient	2Q11 Vertical Gradient
MW-21A	A	48.33	0.0023	-0.009	not applicable*
MW-22A	A	48.24			
MW-04A	A	49.23	0.0008	0.0042	0.0041
MW-04B	B	49.28			
MW-08A	A	49.53	0.0009	0.0034	0.0047
MW-09B	B	49.6			
MW-10A	A	48.93	0.002	0.0019	0.0016
MW-10B	B	49.1			
MW-16A	A	48.35	-0.0008	-0.0004	-0.0004
MW-16B	B	48.31			
MW-17A	A	48.6	0.0006	0.0019	0.0006
MW-17B	B	48.63			
MW-19A	A	48.64	-0.008	-0.0089	-0.0095
MW-19B	B	48.27			
MW-20A	A	48.55	-0.0014	0.0013	-0.0014
MW-20B	B	48.44			
MW-4B	B	49.28	0.0058	0.0077	-0.0052
MW-4C	C	49.76			
MW-10B	B	49.1	0.0015	0.0054	-0.0081
MW-10C	C	49.2			
MW-16B	B	48.31	-0.0006	-0.0006	-0.0074
MW-16C	C	48.25			
MW-17B	B	48.63	0.0017	0.0018	-0.0066
MW-17C	C	48.79			
MW-20B	B	48.44	0.0063	0.0048	-0.0023
MW-20C	C	48.9			

*wells not installed in 2Q11

msl = mean sea level
2Q11 = second quarter 2011
positive gradient = upward
negative gradient = downward

Table 4-2. GWT System Sample Results: April - June 2012

Sample Port	Location	Sample Date Date	Sample Code	pH	PCE (µg/L)
SP-01	Extraction Well 1R	4/5/2012	N	7.39	130
		5/8/2012	N	7.56	130
		6/7/2012	N	7.56	120
		6/7/2012	FD	7.56	130
SP-03	Carbon Influent	4/5/2012	N	NC	0.3 J
SP-04	Carbon Mid Bed	4/5/2012	N	NC	<0.5
SP-05	Post Carbon Pre-Ion Exchange	4/5/2012	N	NC	<0.5
SP-07	GWT Effluent	4/5/2012	N	8.26	<0.5
		5/8/2012	N	8.02	<0.5
		6/7/2012	N	8.28	<0.5

FD = field duplicate
GWT = groundwater treatment system
J = estimated value
N = normal sample
NC = not collected
PCE = tetrachloroethene
µg/L = micrograms per liter
< = less than

Table 4-3. SVE System Sample Results: April - June 2012

Sample Port	Location	Sample Date	Sample Code	PCE (ppbv)
SP-11	SVE Pre-GAC	4/5/2012	N	5.1
		5/8/2012	N	45
		6/7/2012	N	7.1
SP-12	SVE Stack	4/5/2012	N	4.4
		5/8/2012	N	1.5 J
		6/7/2012	N	1.5 J
		6/7/2012	FD	<2.4

FD = field duplicate
GAC = granular activated carbon
J = estimated concentration
N = normal sample
PCE = tetrachloroethene
ppbv = parts per billion by volume
SVE = soil vapor extraction
< = less than

Table 4-4. Preliminary Scoring of Groundwater Parameters Indicative of Natural Attenuation, Modesto Groundwater Superfund Site

Parameter	Units	Expression Value	Potential Points	MW4A	Points	MW4B	Points	MW5A	Points	MW8A	Points	MW15A	Points	MW17B	Points	MW20A	Points	MW20B	Points	MW25B	Points	MW28B	Points
Dissolved Oxygen	mg/L	<0.5	3	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dissolved Oxygen	mg/L	>1	-3	6.39	-3	5.59	-3	8.05	-3	7.88	-3	6.73	-3	6.32	-3	6.6	-3	5.84	-3	5.23	-3	5.91	-3
Nitrate	mg/L	<1	2	0.12	2	3.8		26		4		14		4.2		11		4.9		4.3		4.8	
Iron II	mg/L	>1	3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Sulfate	mg/L	<20	2	2.9	2	5.5	2	38		38		43		19	2	54		11	2	12	2	15	2
Sulfide	mg/L	>1	3	0.62		ND		ND		0.64		ND		0.55		ND		0.55		ND		ND	
Methane	mg/L	>0.1	2	0.0012		ND		ND		ND		ND		0.0014		ND		ND		0.0009		0.0007	
Redox	mV	<50	1	-8	1	154		186		167		164		73		155		135		108		113	
Redox	mV	<-100	2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
pH		5<pH<9	0	7.37		7.28		6.96		7.2		7.17		7.03		7.06		7.37		7.36		7.16	
Total Organic Carbon	mg/L	>20	2	2.1		1.4		0.46		0.4		0.44		7.3		2.5		0.75		0.44		0.39	
Temperature	C	>20	1	22.07	1	21.57	1	19.07		20.94	1	21.91	1	19.8		22.23	1	21.56	1	20.87	1	19.96	
Carbon Dioxide[a]	mg/L	84	1	4.1		4.9		37		40		42		16		28		6.5		6.3		10	
Alkalinity[a]	mg/L	720	1	54		130		370		400		360		210		410		180		190		220	
Chloride[a]	mg/L	140	2	2.7		14		75		63		70		50		66		22		27		37	
Volatile Fatty Acids	mg/L	>0.1		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
BTEX	mg/L	>0.1	2	ND		ND		ND		ND		ND		2.9	2	ND		0.3	2	ND		ND	
Ethene/Ethane	mg/L	>0.01	2	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Ethene/Ethane	mg/L	>0.1	3	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
cis-1,2-Dichloroethene[b]		note 3	2	0.4 J	2	0.5	2	ND		2J	2	1	2	ND		ND		ND		ND		ND	
trans-1,2-Dichloroethene			0	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1-Dicloroethene		note 1	2	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
TCE[b]		note 2	2	0.4 J	2	ND		5J	2	4J	2	0.25J	2	ND		1	2	1	2	ND		ND	
PCE			0	71		4.4		92		29		ND		20		160		65		120		43	
vinyl Chloride			2	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Totals					**7**		**2**		**-1**		**2**		**2**		**1**		**0**		**4**		**0**		**-1**

[a] The expression values for carbon dioxide, alkalinity, and chloride concentrations are 2 times background concentrations assuming MW-15A results represent background conditions.
[b] Includes highest historical result.

C = Celsius
DCE = dichloroethene
J = estimated value
mg/L = milligrams per liter
mV = millivolt
NA = not applicable; measured value is greater than the expression value
ND = not detected
PCE = tetrachloroethene
TCE = trichloroethene

Note 1: points awarded if it can be shown to be a daughter product of TCE.
Note 2: points awarded if it can be shown to be a daughter product of PCE.
Note 3: points awarded if it can be shown to be a daughter product of TCE. If cis-1,2-DCE is greater than 80% of total DCE, it is likely a daughter product of TCE.

FIGURES

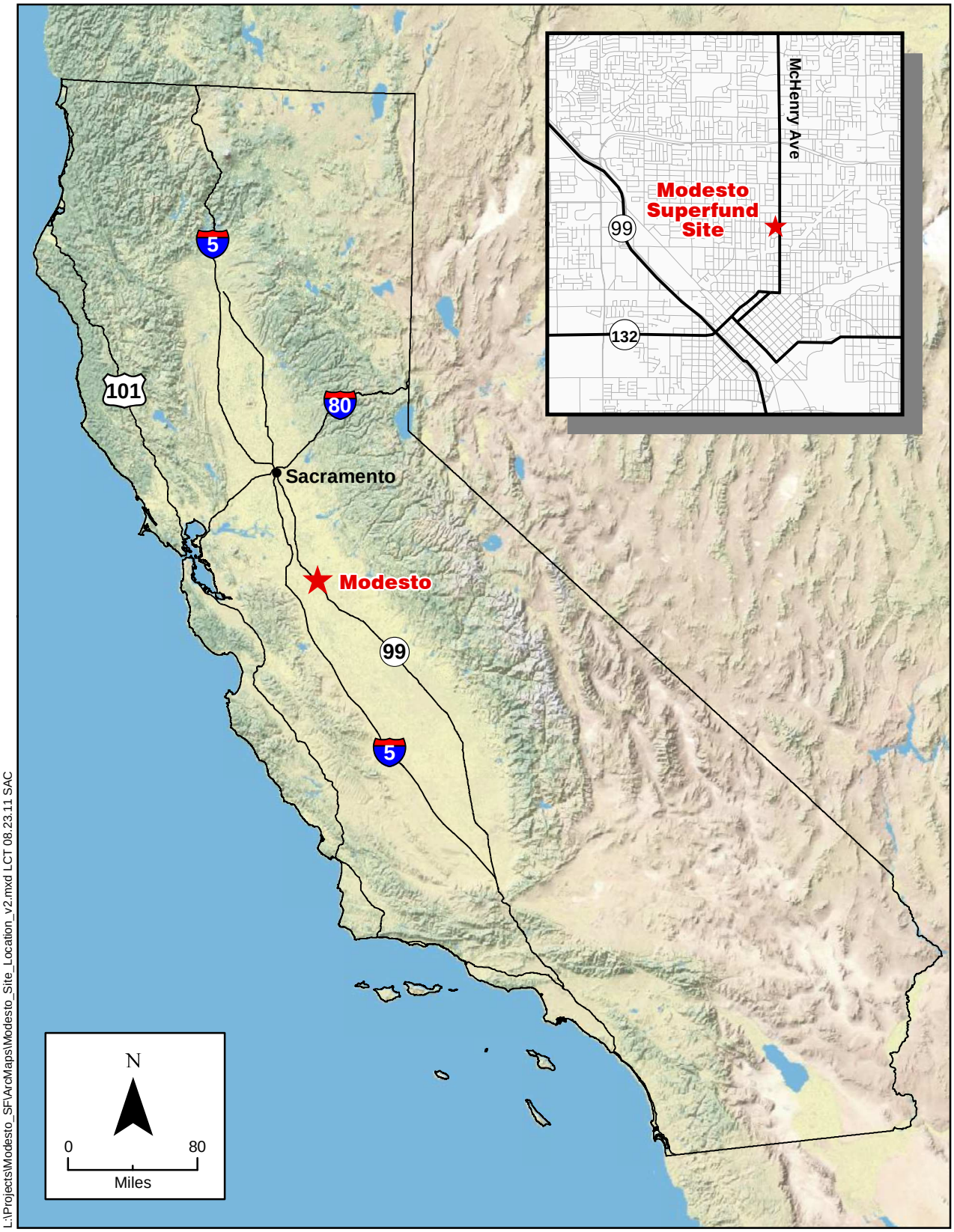

Figure 1-1. Site Location, Modesto Groundwater Superfund Site, Modesto, California

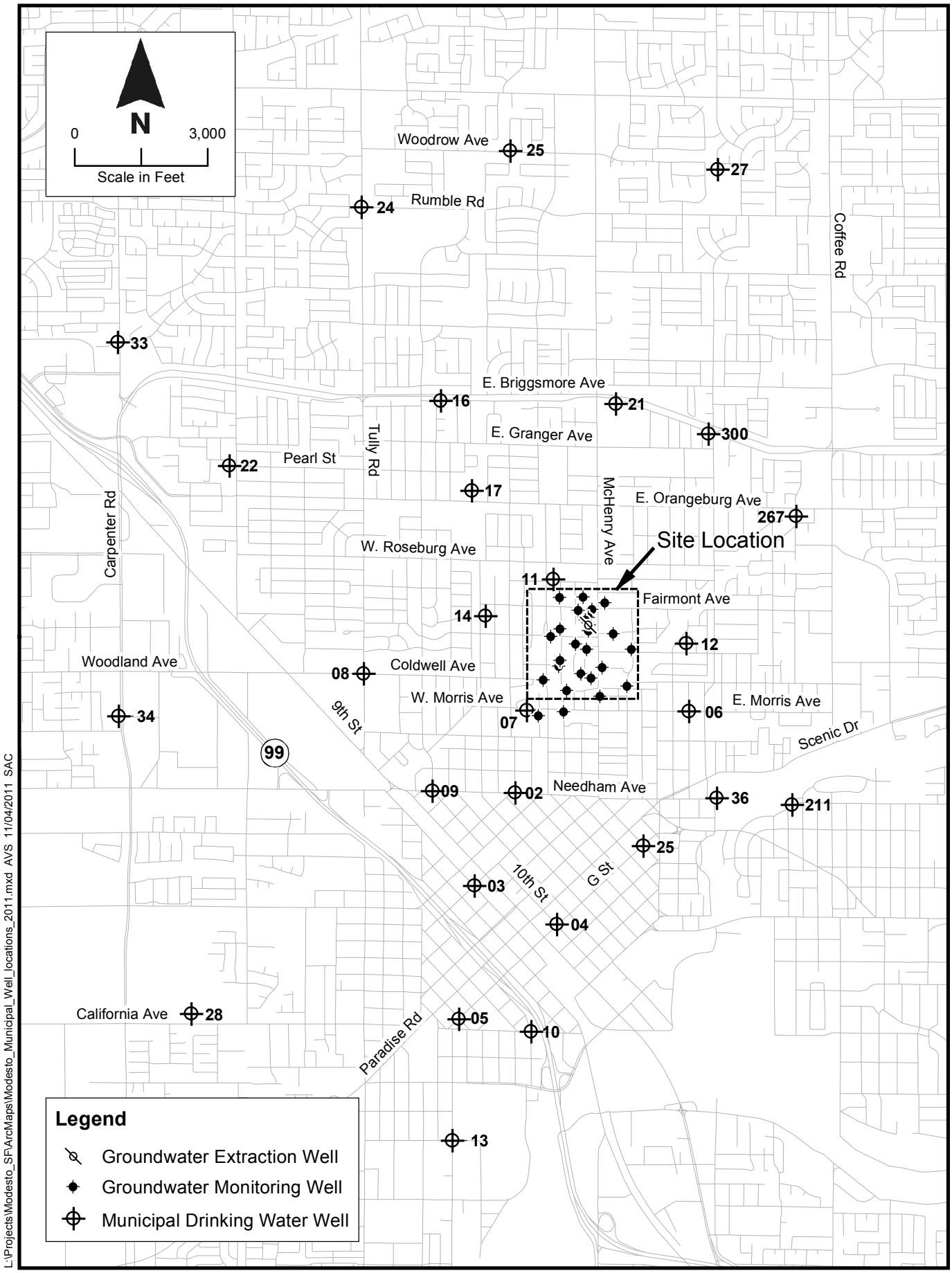

Figure 1-2 Municipal Well Locations, Modesto Groundwater Superfund Site

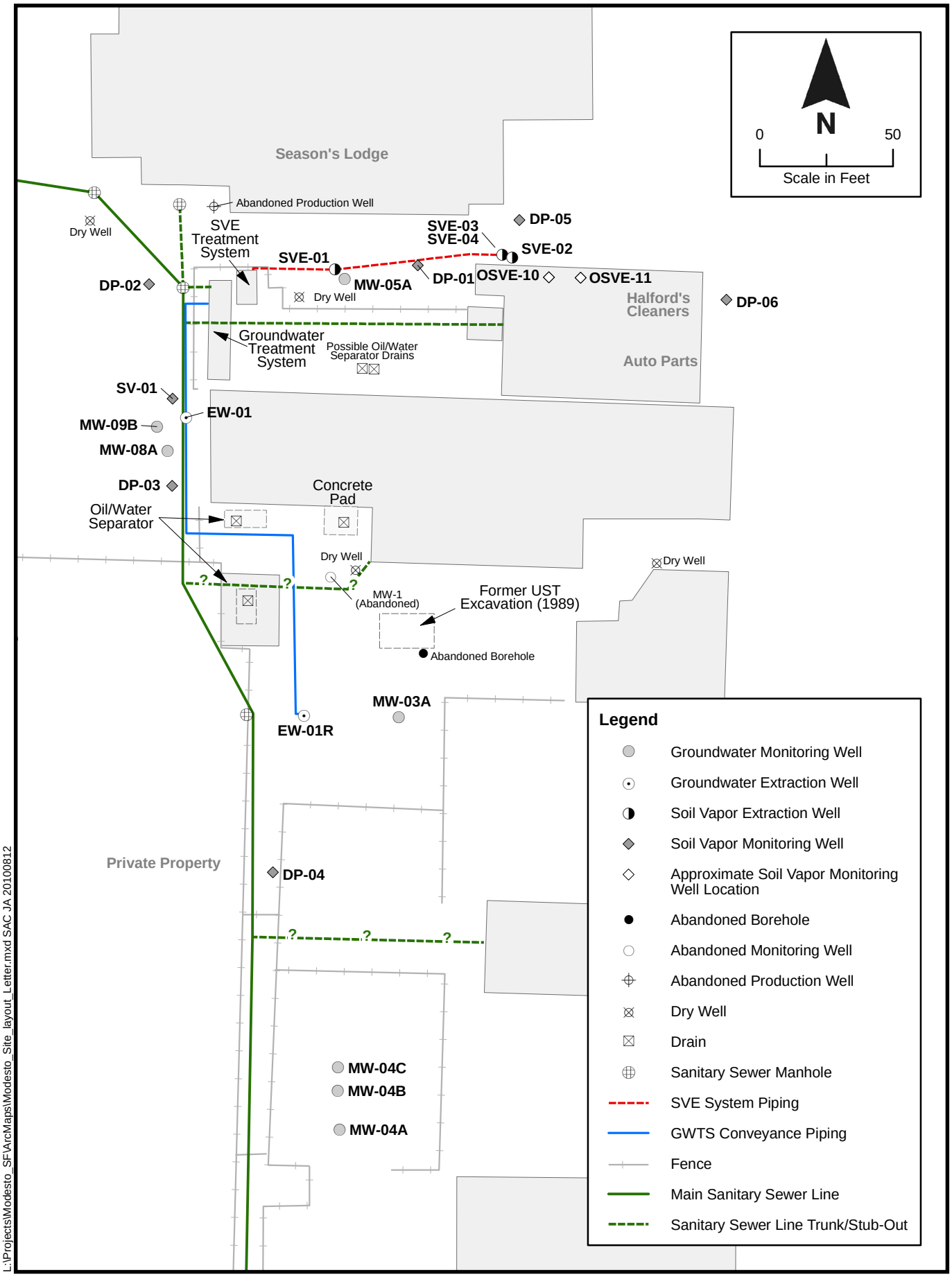

Figure 2-1. Site Layout
Modesto Groundwater Superfund Site

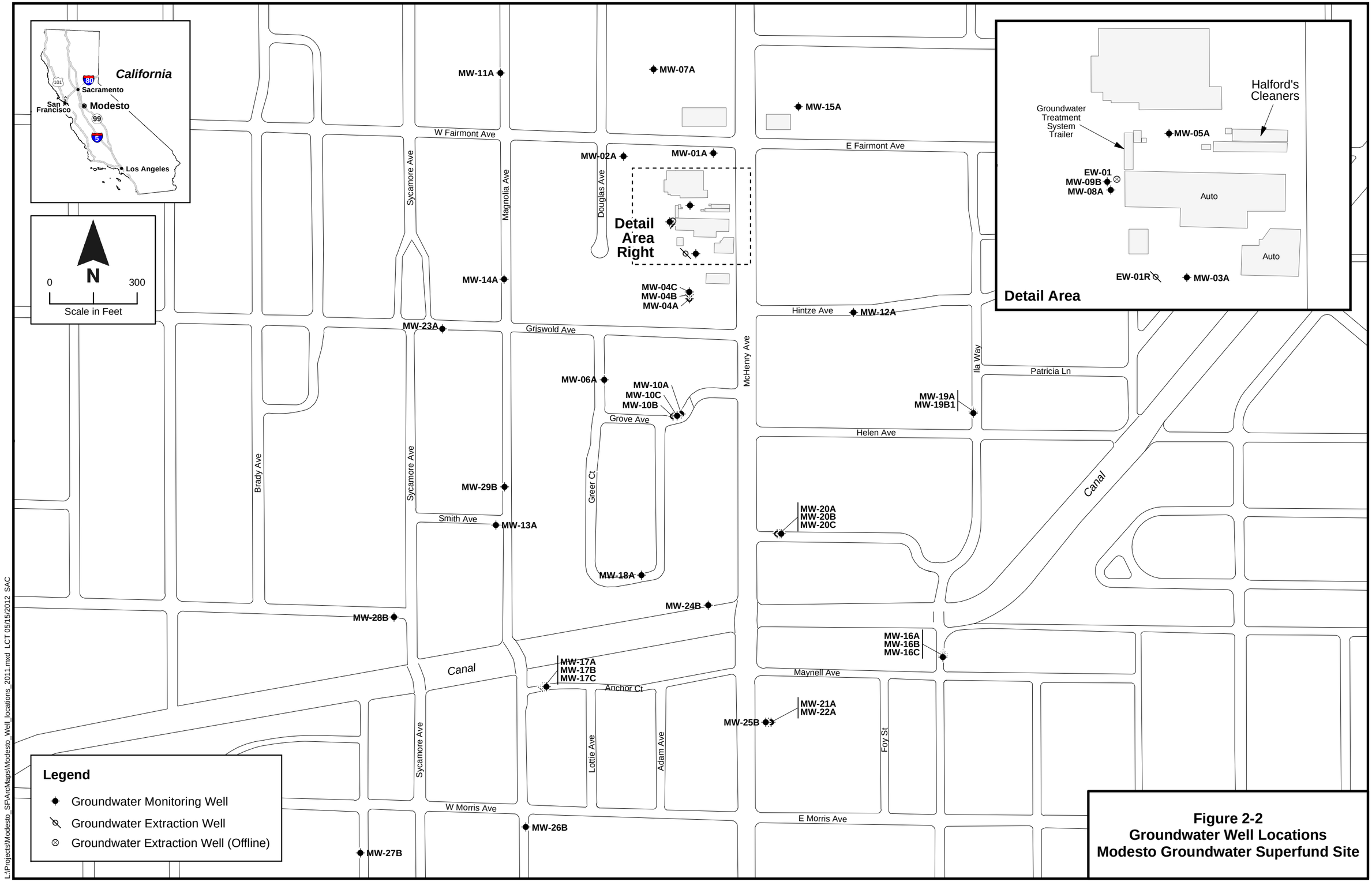

Figure 2-2
Groundwater Well Locations
Modesto Groundwater Superfund Site

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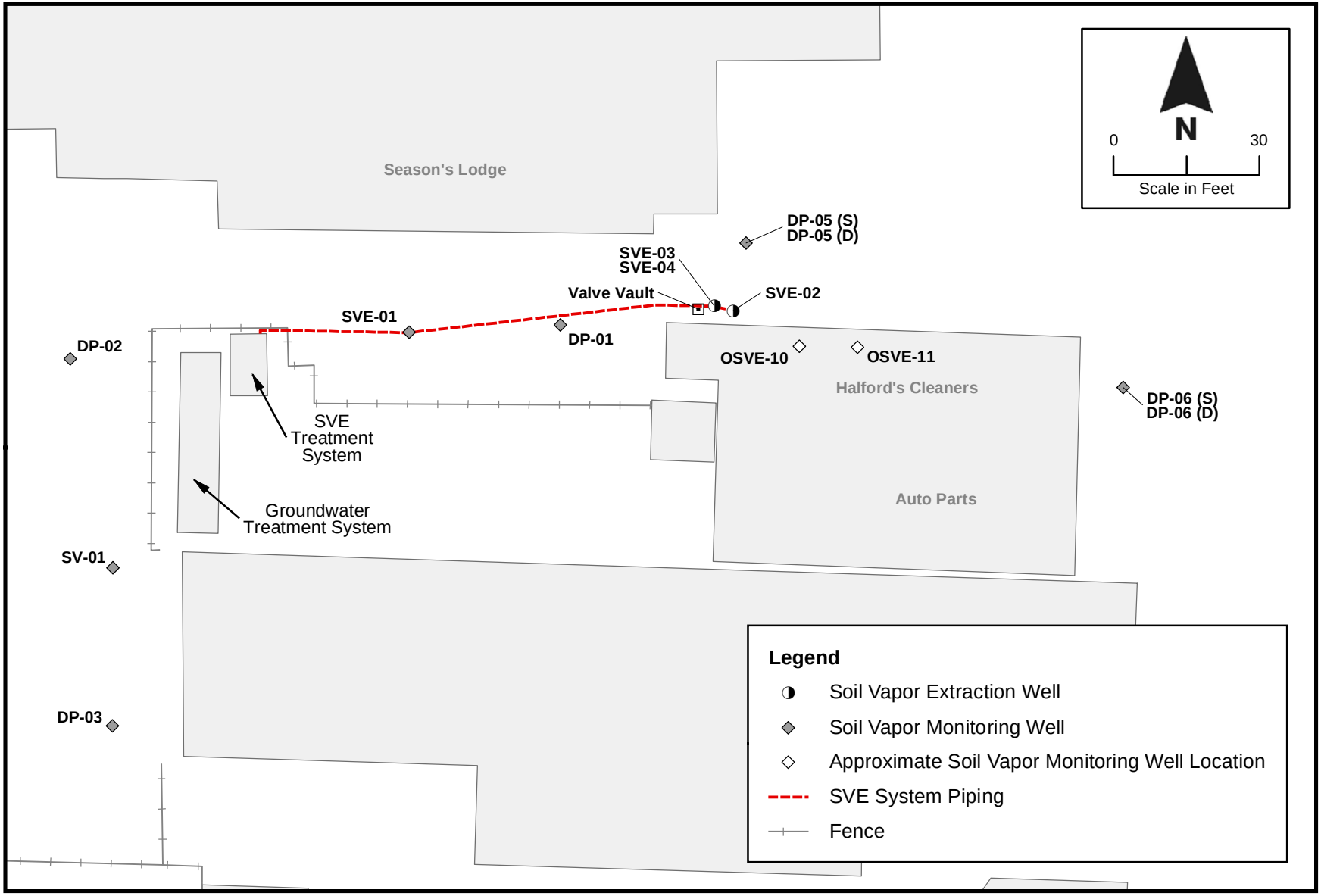
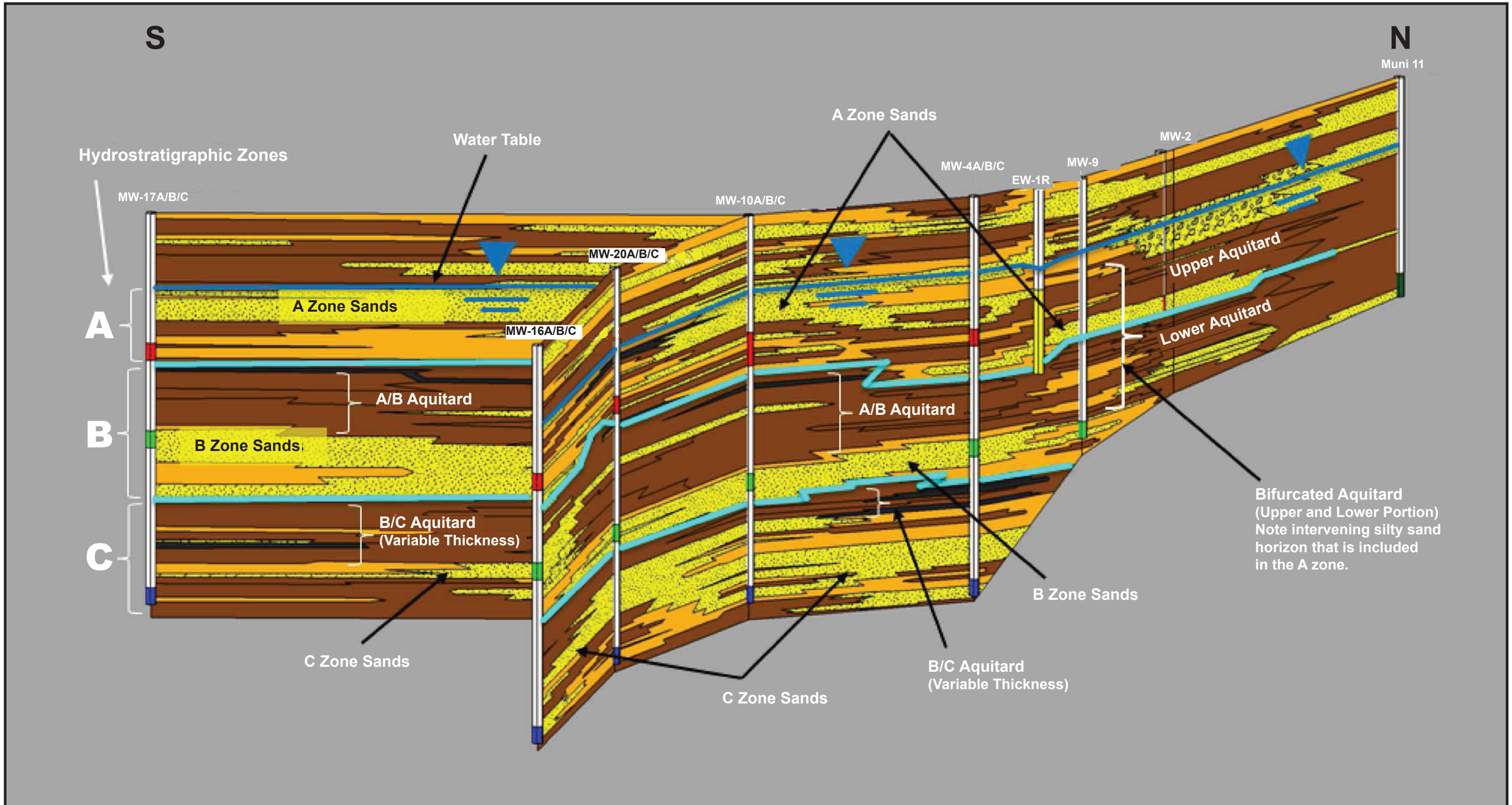


Figure 2-3. Soil Vapor Well Locations, Halford's Cleaners Area, Modesto Groundwater Superfund Site



LEGEND:

- SAND
- SILTY SAND
- SILT
- CLAY
- WATER TABLE SURFACE (A Zone)

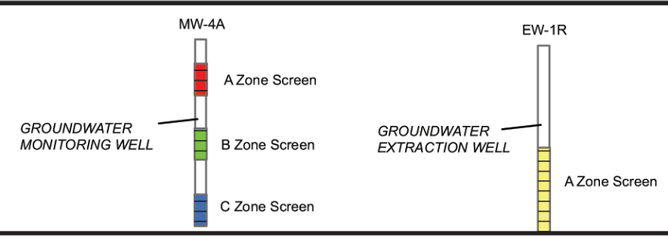


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Figure 4-1
Stratigraphic Conceptual Model
Modesto Groundwater Superfund Site

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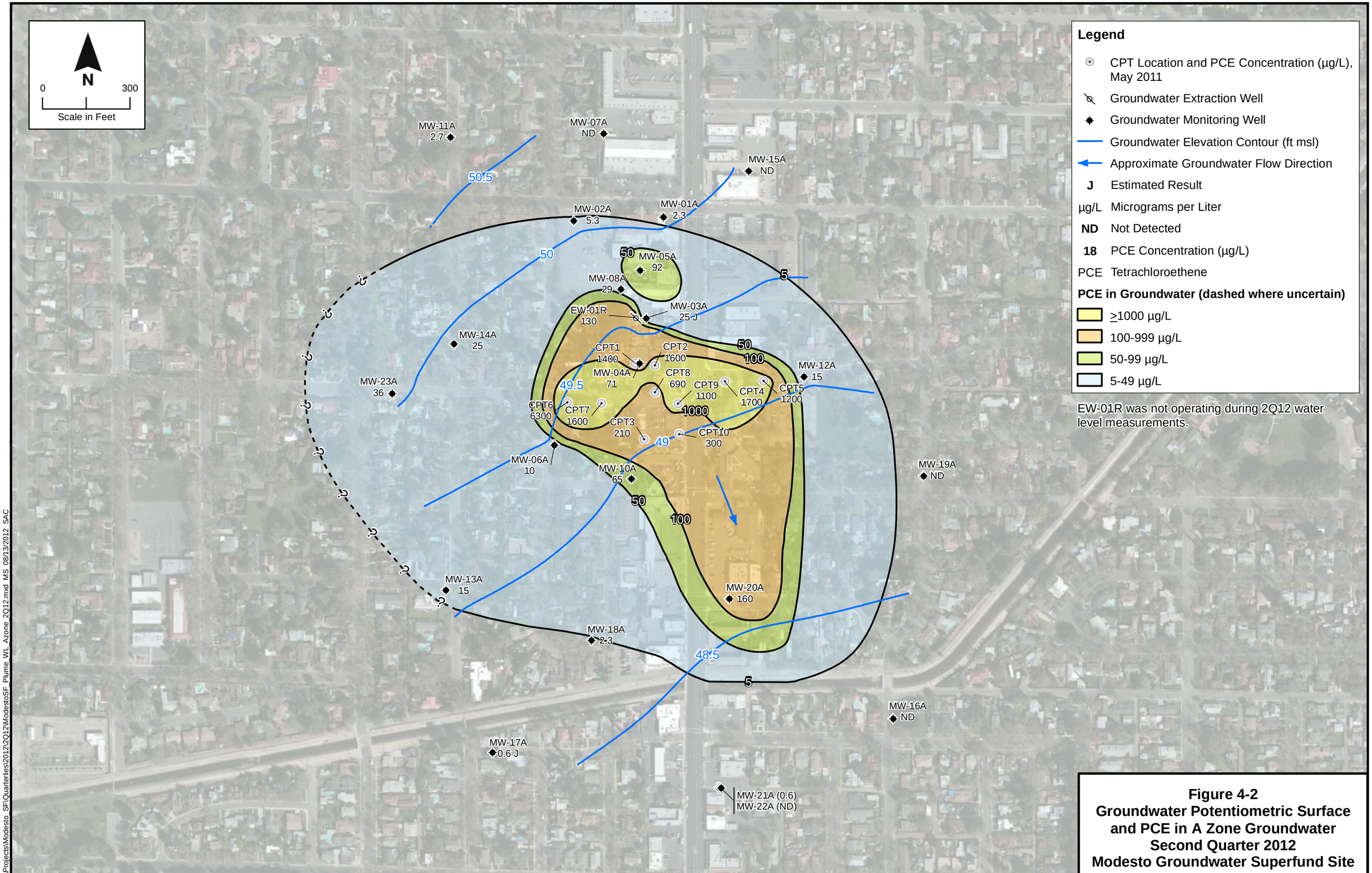

Figure 4-2
Groundwater Potentiometric Surface and PCE in A Zone Groundwater
Second Quarter 2012
Modesto Groundwater Superfund Site

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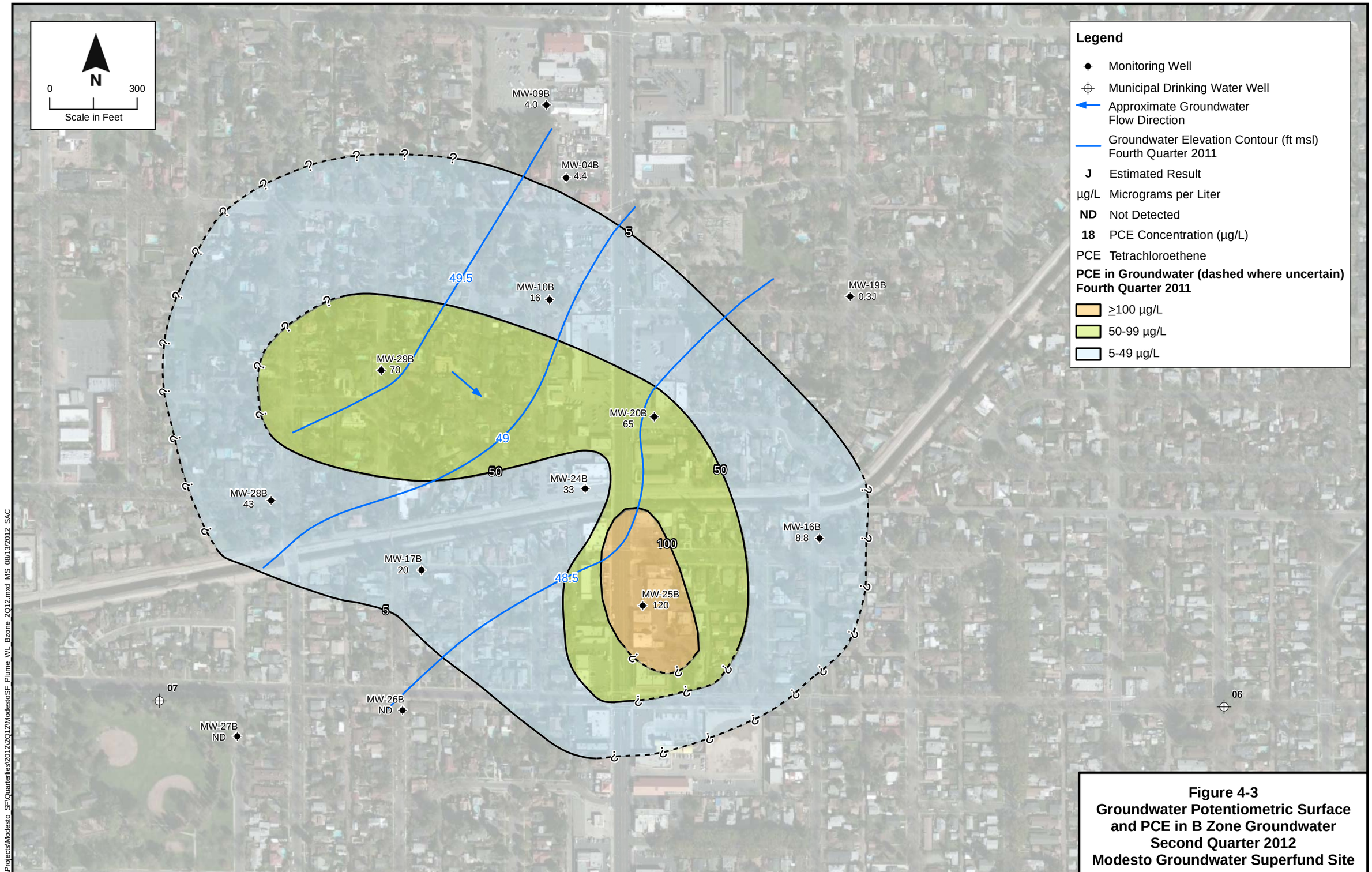

Figure 4-3
Groundwater Potentiometric Surface and PCE in B Zone Groundwater
Second Quarter 2012
Modesto Groundwater Superfund Site

Figure 4-4
Groundwater Potentiometric Surface and PCE in C Zone Groundwater
Second Quarter 2012
Modesto Groundwater Superfund Site

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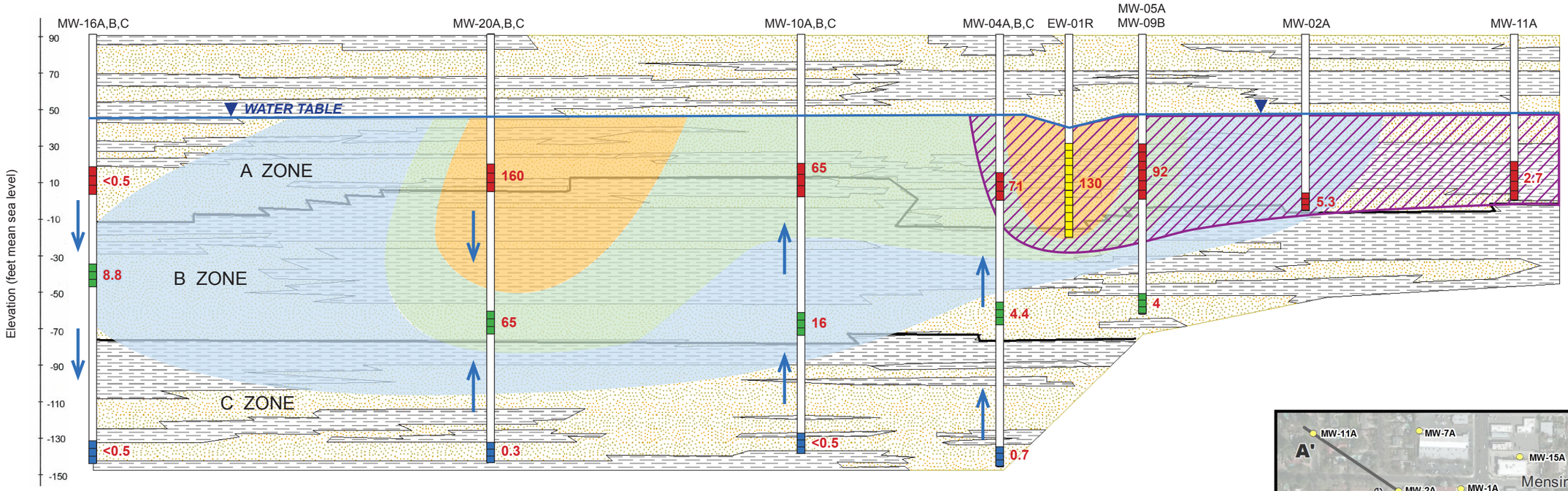
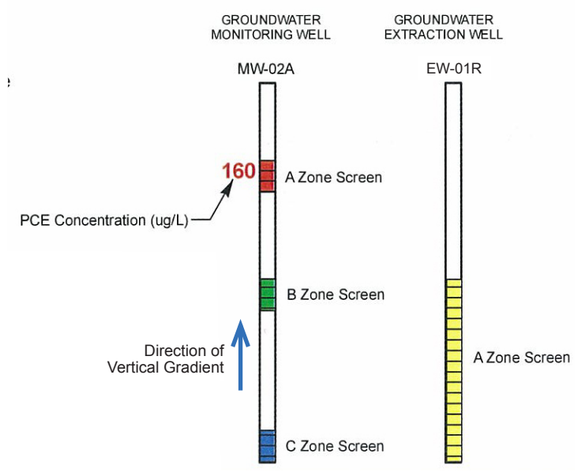


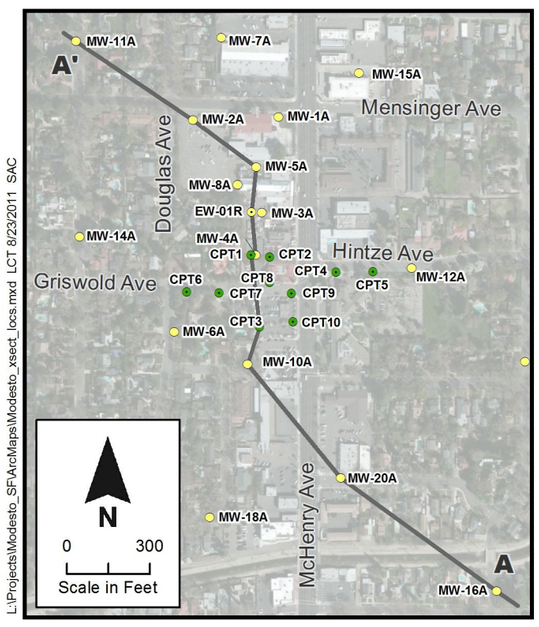
Legend

- Water Table Surface
- µ/L Micrograms per Liter
- Sand and Silty Sand
- Cemented Very Fine Grained Sand, Silt, or Clay
- EW-1R Interpreted Capture Zone

PCE Plume Concentration

- 5.0-49 µg/L
- 50-99 µg/L
- 100-999 µg/L
- ≥ 1,000 µg/L





0 200
SCALE IN FEET

URS

Adapted from:
MWH source file

Figure 4-5
Cross-Section A-A'
Extraction Well EW-1R
Estimated Capture Zone
Second Quarter 2012
Modesto Groundwater Superfund Site

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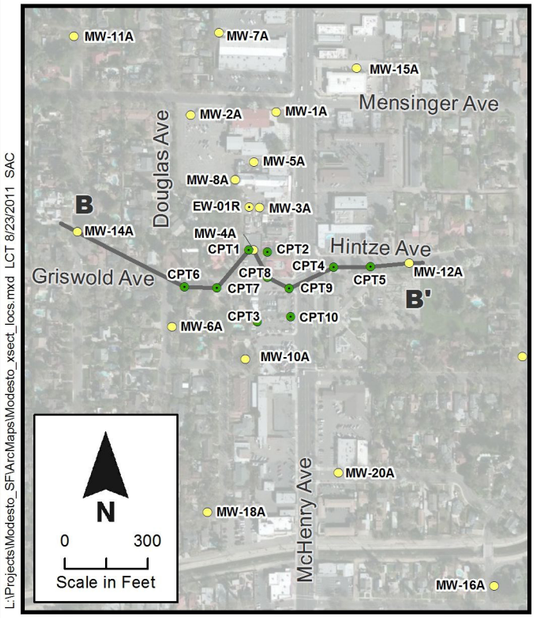

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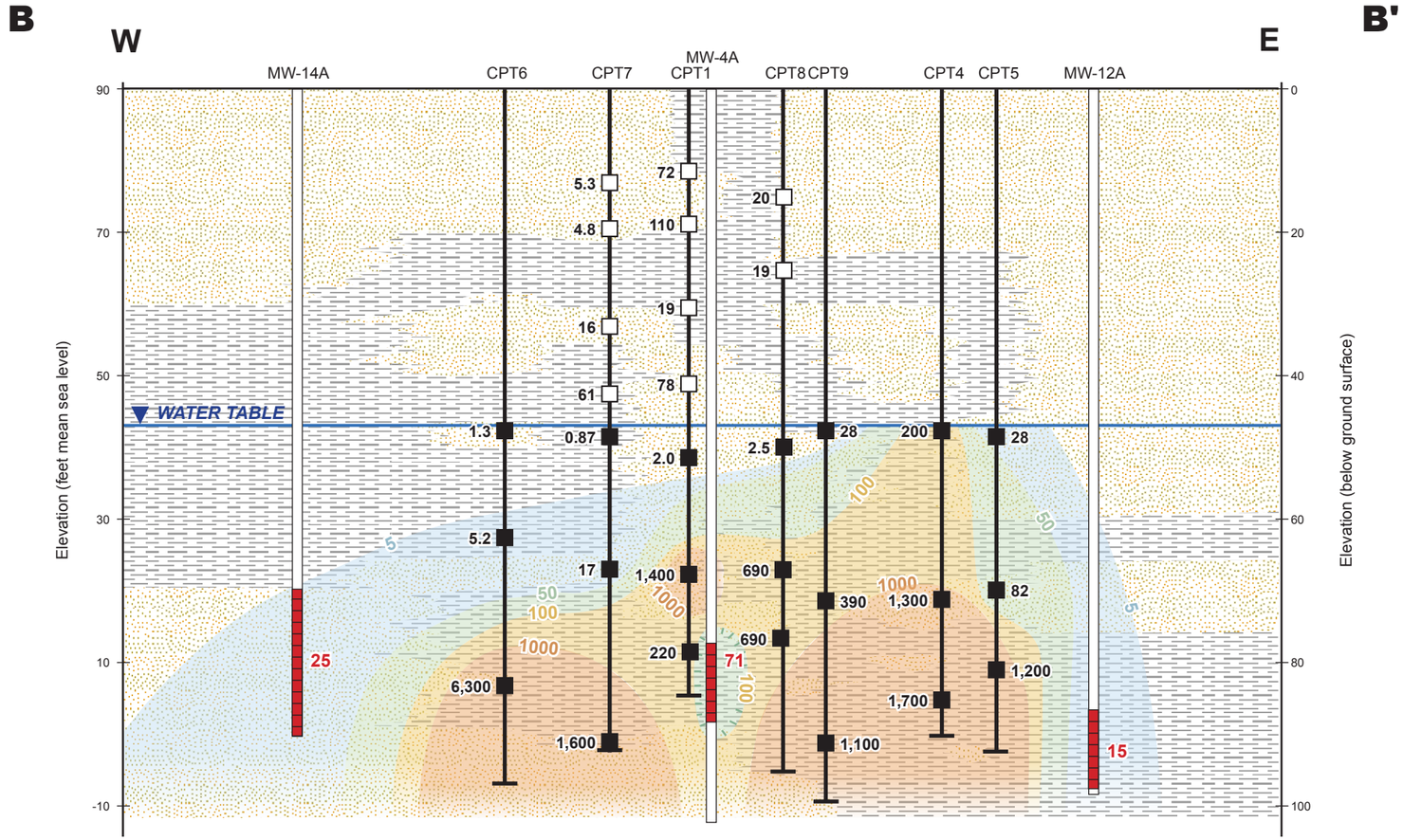

Legend

- Water Table Surface
- μ/L Micrograms per Liter
- 5.3 ☐ Soil Vapor Sample PCE Concentration (ppbv) (May/June 2011)
- 5.2 ■ Hydropunch Groundwater Sample PCE Concentration (μg/L) (May/June 2011)
- 23 Well Screen, PCE Concentration (μg/L) (April 2012)

- Sand and Silty Sand
- Cemented Very Fine Grained Sand, Silt, or Clay

PCE Concentration

- 5.0-49 μg/L
- 50-99 μg/L
- 100-999 μg/L
- >1,000 μg/L

0 250
SCALE IN FEET

URS

Figure 4-6
Cross-Section B-B'
Second Quarter 2012
Modesto Groundwater Superfund Site

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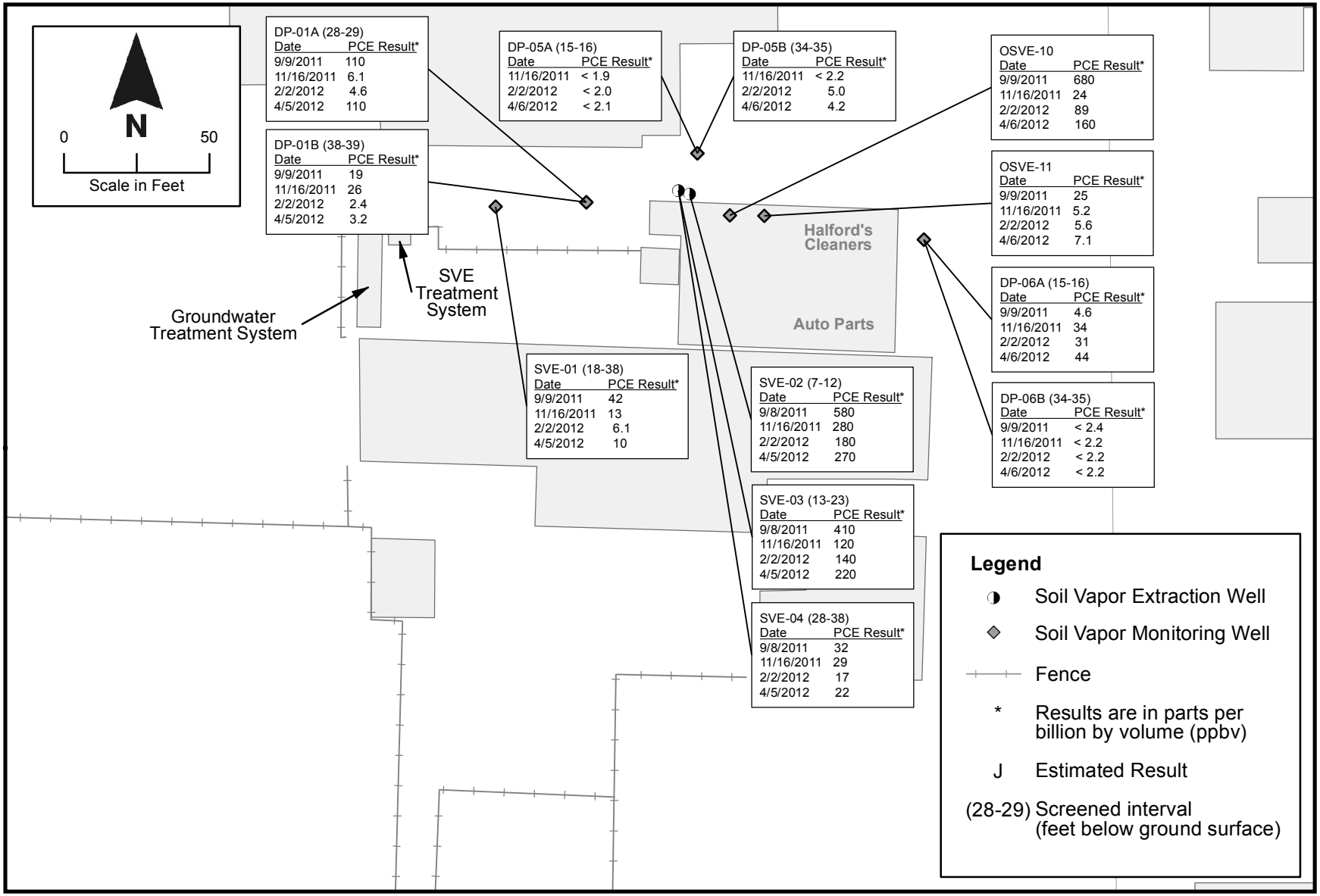


Figure 4-7. Soil Vapor Analytical Results, Third Quarter 2011 through Second Quarter 2012 Modesto Groundwater Superfund Site

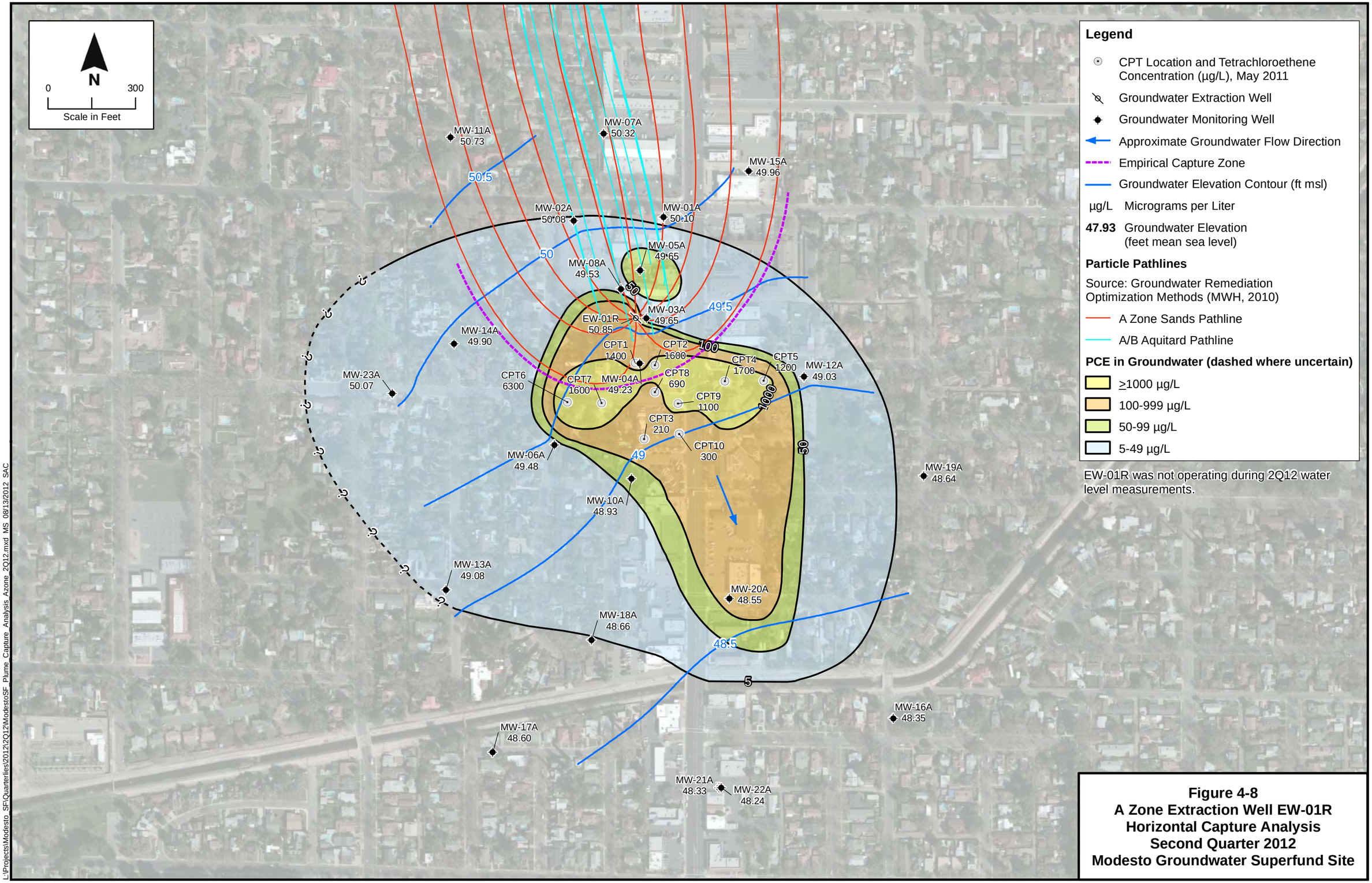
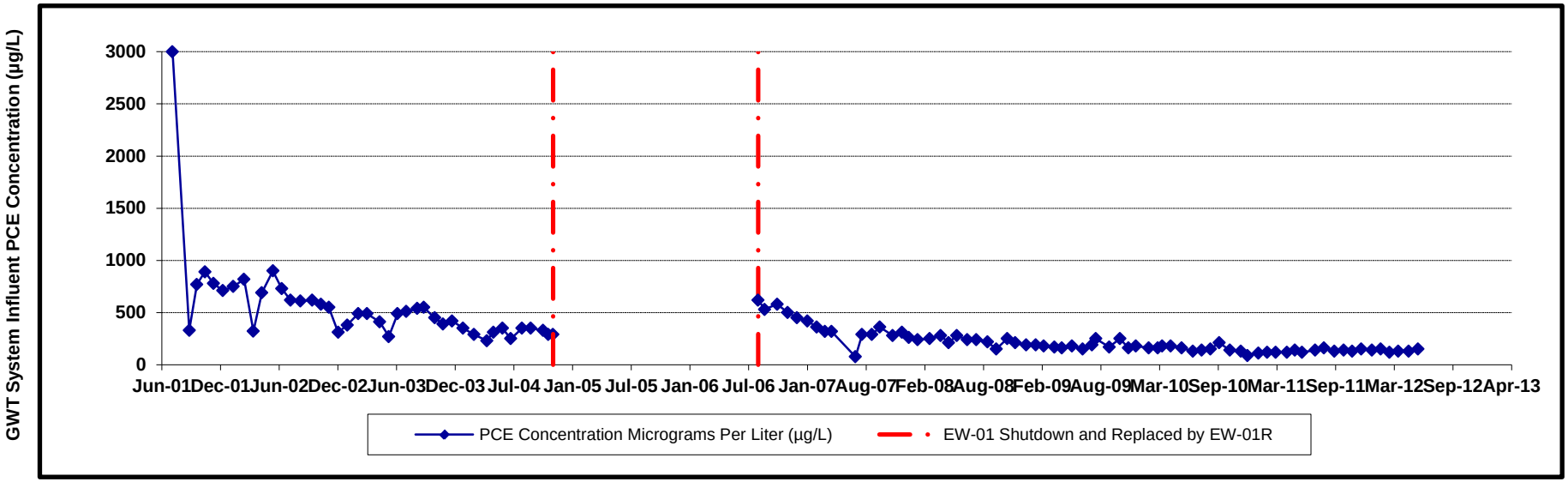


Figure 4-8
A Zone Extraction Well EW-01R
Horizontal Capture Analysis
Second Quarter 2012
Modesto Groundwater Superfund Site

L:\Projects\Modesto_SF\Quarterlies\2012\2Q12\ModestoSF_Plume_Capture_Analysis_Azone_2Q12.mxd MS 08/13/2012 SAC

Figure 4-9
Cumulative PCE Mass Removed by the Groundewater Treatment System
Modesto Groundwater Superfund Site



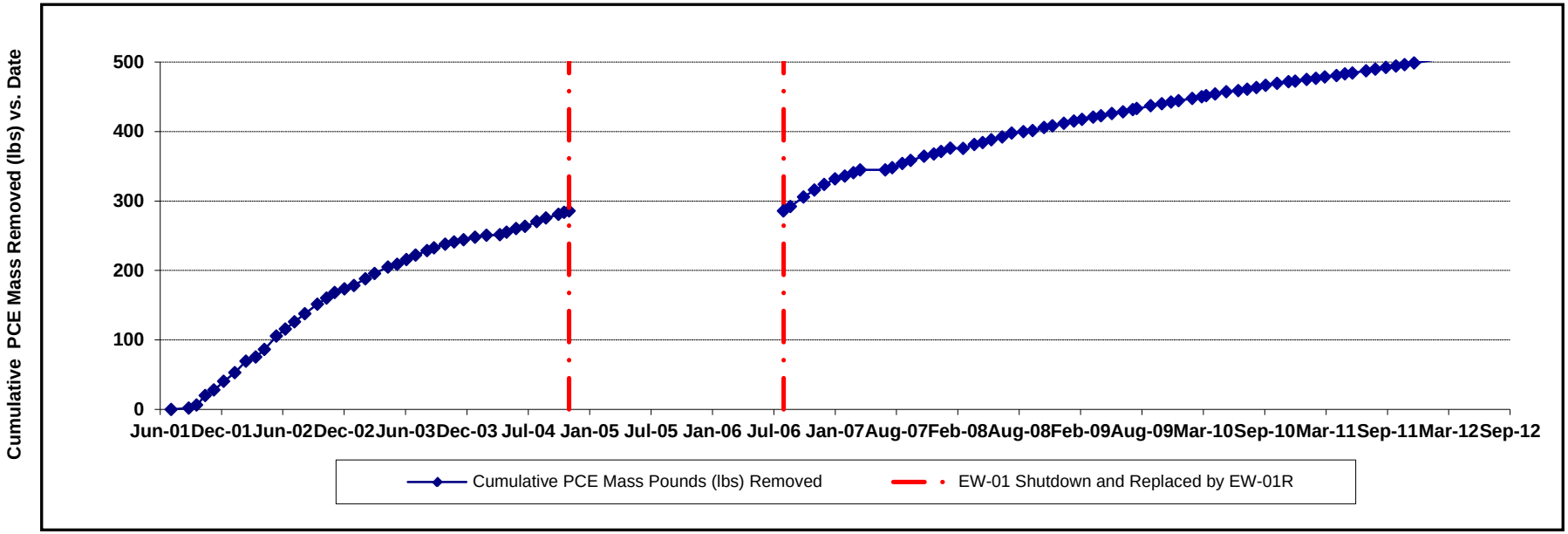
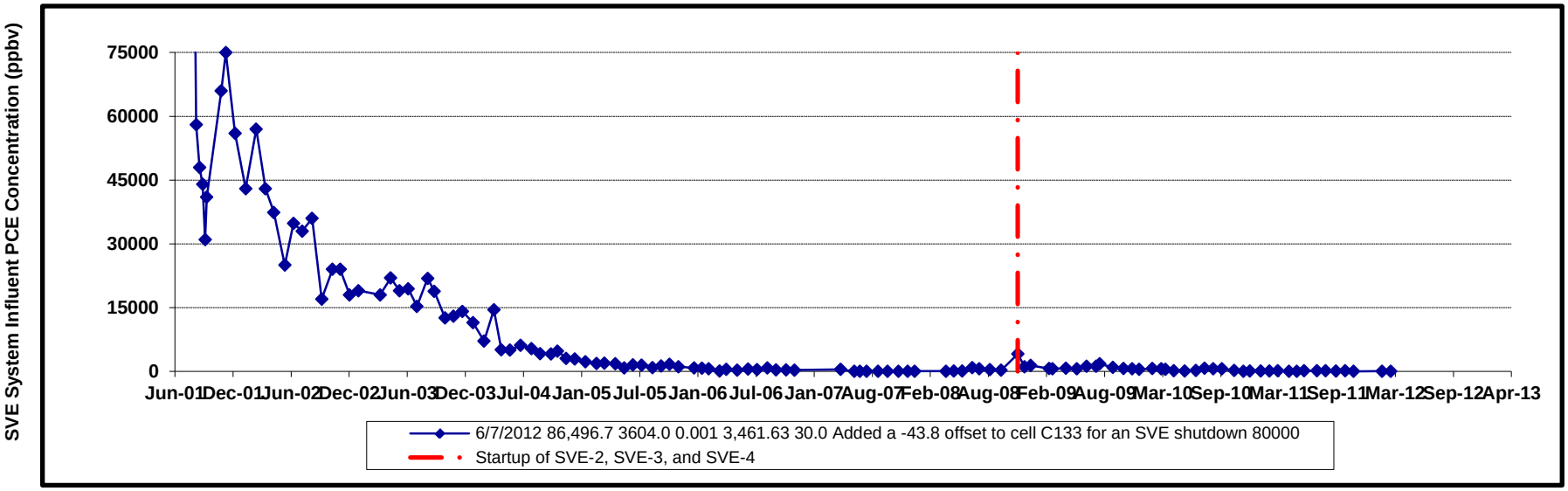
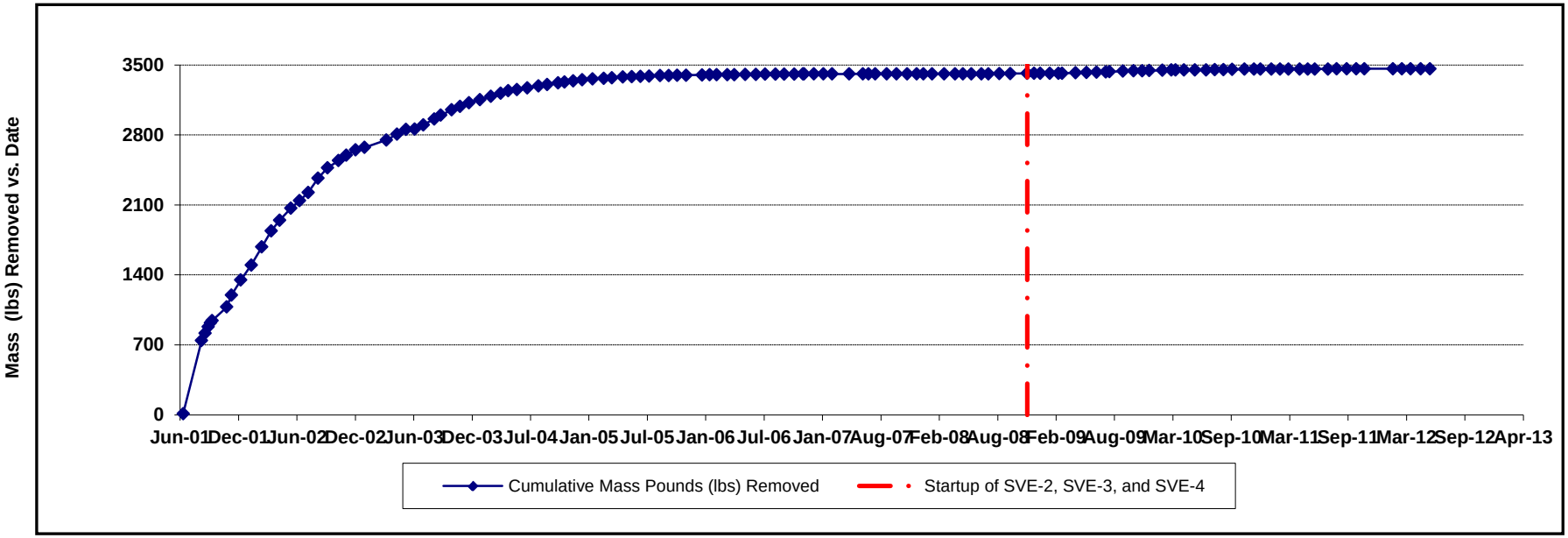
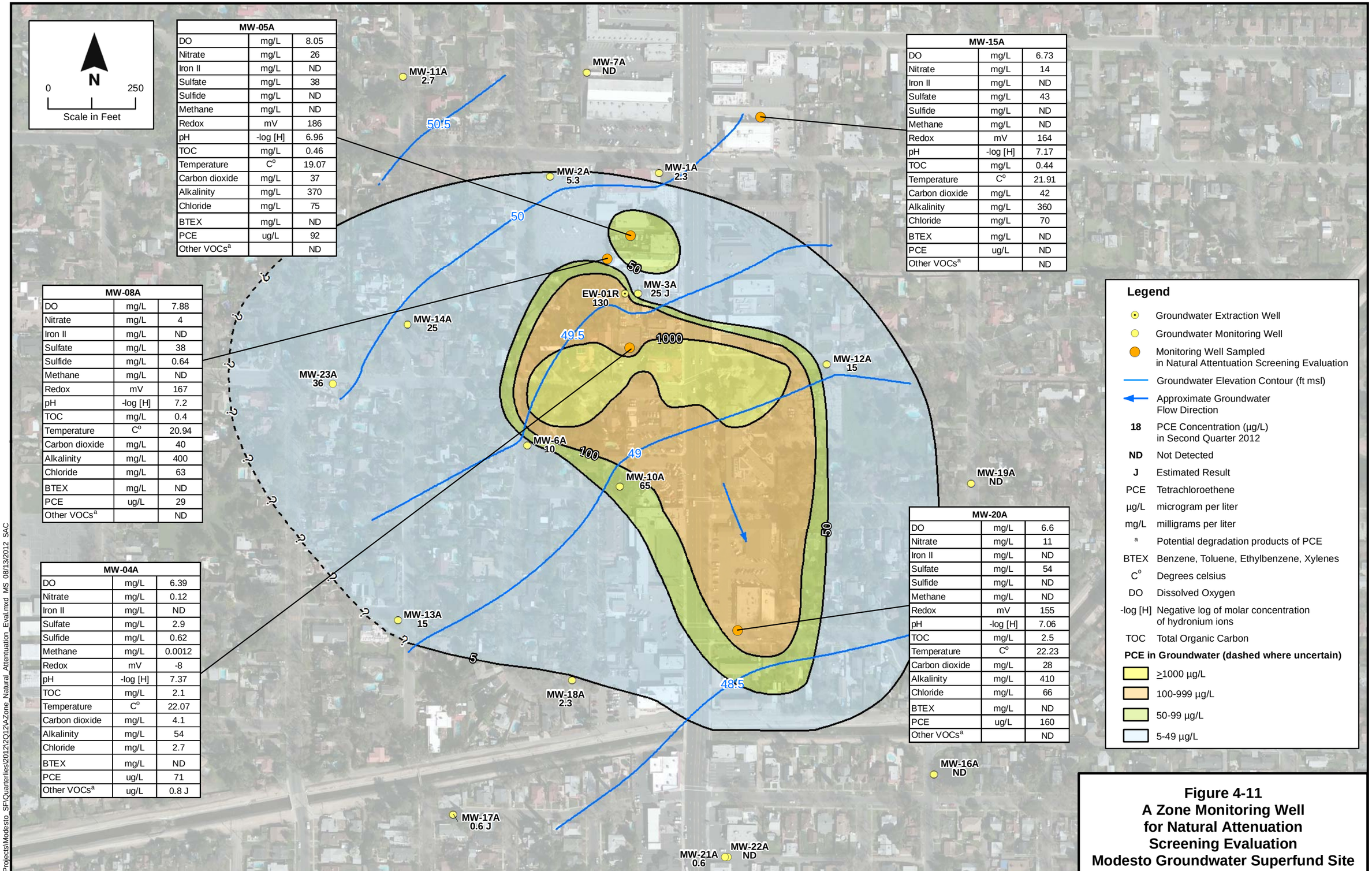


Figure 4-10
Cumulative Mass Removed by the Soil Vapor Extraction System
Modesto Groundwater Superfund Site







MW-05A		
DO	mg/L	8.05
Nitrate	mg/L	26
Iron II	mg/L	ND
Sulfate	mg/L	38
Sulfide	mg/L	ND
Methane	mg/L	ND
Redox	mV	186
pH	-log [H]	6.96
TOC	mg/L	0.46
Temperature	C°	19.07
Carbon dioxide	mg/L	37
Alkalinity	mg/L	370
Chloride	mg/L	75
BTEX	mg/L	ND
PCE	ug/L	92
Other VOCs[a]		ND

MW-15A		
DO	mg/L	6.73
Nitrate	mg/L	14
Iron II	mg/L	ND
Sulfate	mg/L	43
Sulfide	mg/L	ND
Methane	mg/L	ND
Redox	mV	164
pH	-log [H]	7.17
TOC	mg/L	0.44
Temperature	C°	21.91
Carbon dioxide	mg/L	42
Alkalinity	mg/L	360
Chloride	mg/L	70
BTEX	mg/L	ND
PCE	ug/L	ND
Other VOCs[a]		ND

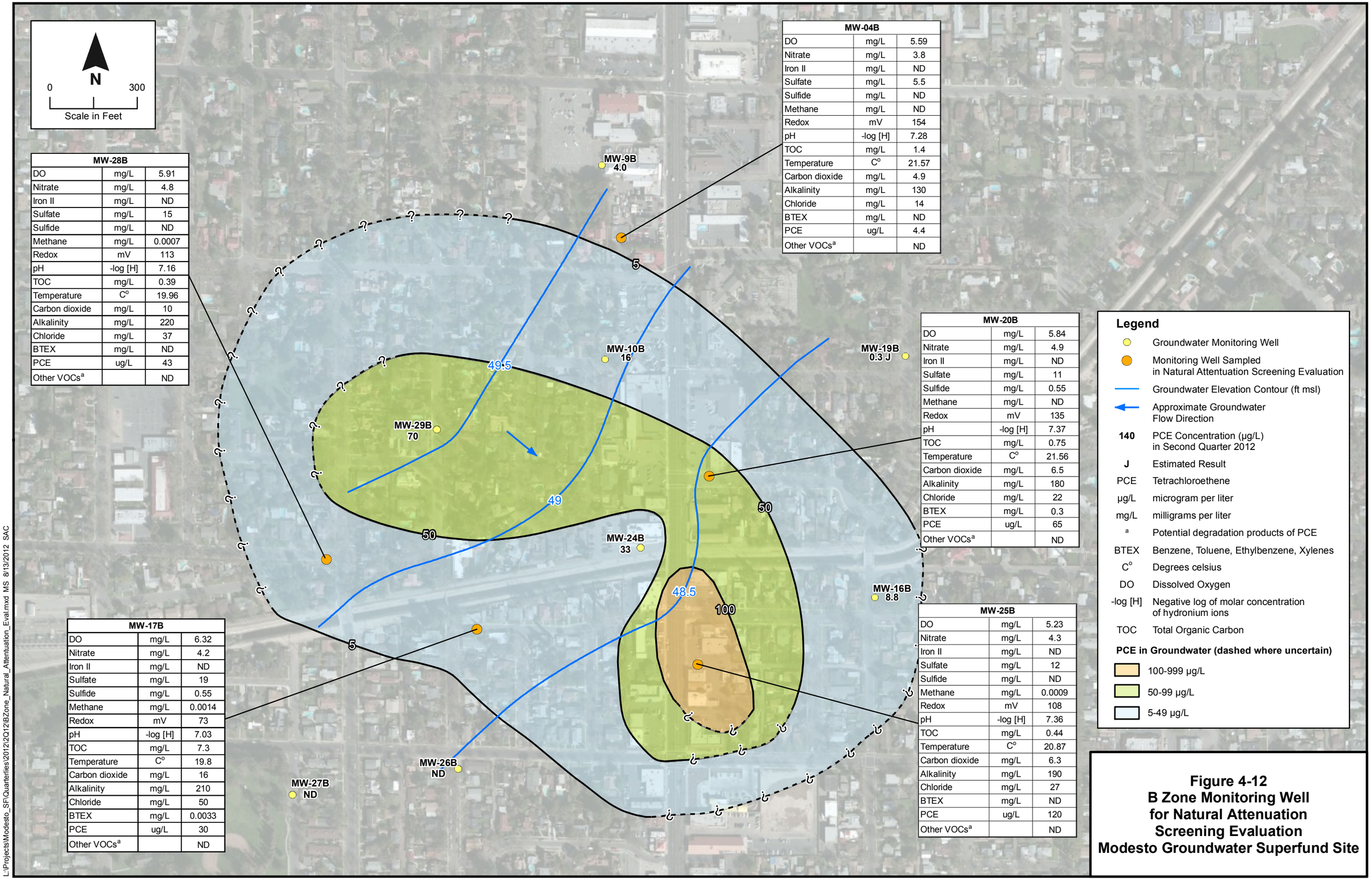
MW-08A		
DO	mg/L	7.88
Nitrate	mg/L	4
Iron II	mg/L	ND
Sulfate	mg/L	38
Sulfide	mg/L	0.64
Methane	mg/L	ND
Redox	mV	167
pH	-log [H]	7.2
TOC	mg/L	0.4
Temperature	C°	20.94
Carbon dioxide	mg/L	40
Alkalinity	mg/L	400
Chloride	mg/L	63
BTEX	mg/L	ND
PCE	ug/L	29
Other VOCs[a]		ND

MW-04A		
DO	mg/L	6.39
Nitrate	mg/L	0.12
Iron II	mg/L	ND
Sulfate	mg/L	2.9
Sulfide	mg/L	0.62
Methane	mg/L	0.0012
Redox	mV	-8
pH	-log [H]	7.37
TOC	mg/L	2.1
Temperature	C°	22.07
Carbon dioxide	mg/L	4.1
Alkalinity	mg/L	54
Chloride	mg/L	2.7
BTEX	mg/L	ND
PCE	ug/L	71
Other VOCs[a]	ug/L	0.8 J

MW-20A		
DO	mg/L	6.6
Nitrate	mg/L	11
Iron II	mg/L	ND
Sulfate	mg/L	54
Sulfide	mg/L	ND
Methane	mg/L	ND
Redox	mV	155
pH	-log [H]	7.06
TOC	mg/L	2.5
Temperature	C°	22.23
Carbon dioxide	mg/L	28
Alkalinity	mg/L	410
Chloride	mg/L	66
BTEX	mg/L	ND
PCE	ug/L	160
Other VOCs[a]		ND

Figure 4-11
A Zone Monitoring Well for Natural Attenuation Screening Evaluation
Modesto Groundwater Superfund Site

L:\Projects\Modesto_SF\Quarterlies\2012\2Q12\AZone_Natural_Attentuation_Eval.mxd MS 08/13/2012 SAC



MW-04B		
DO	mg/L	5.59
Nitrate	mg/L	3.8
Iron II	mg/L	ND
Sulfate	mg/L	5.5
Sulfide	mg/L	ND
Methane	mg/L	ND
Redox	mV	154
pH	-log [H]	7.28
TOC	mg/L	1.4
Temperature	C°	21.57
Carbon dioxide	mg/L	4.9
Alkalinity	mg/L	130
Chloride	mg/L	14
BTEX	mg/L	ND
PCE	ug/L	4.4
Other VOCs[a]		ND

MW-28B		
DO	mg/L	5.91
Nitrate	mg/L	4.8
Iron II	mg/L	ND
Sulfate	mg/L	15
Sulfide	mg/L	ND
Methane	mg/L	0.0007
Redox	mV	113
pH	-log [H]	7.16
TOC	mg/L	0.39
Temperature	C°	19.96
Carbon dioxide	mg/L	10
Alkalinity	mg/L	220
Chloride	mg/L	37
BTEX	mg/L	ND
PCE	ug/L	43
Other VOCs[a]		ND

MW-20B		
DO	mg/L	5.84
Nitrate	mg/L	4.9
Iron II	mg/L	ND
Sulfate	mg/L	11
Sulfide	mg/L	0.55
Methane	mg/L	ND
Redox	mV	135
pH	-log [H]	7.37
TOC	mg/L	0.75
Temperature	C°	21.56
Carbon dioxide	mg/L	6.5
Alkalinity	mg/L	180
Chloride	mg/L	22
BTEX	mg/L	0.3
PCE	ug/L	65
Other VOCs[a]		ND

MW-17B		
DO	mg/L	6.32
Nitrate	mg/L	4.2
Iron II	mg/L	ND
Sulfate	mg/L	19
Sulfide	mg/L	0.55
Methane	mg/L	0.0014
Redox	mV	73
pH	-log [H]	7.03
TOC	mg/L	7.3
Temperature	C°	19.8
Carbon dioxide	mg/L	16
Alkalinity	mg/L	210
Chloride	mg/L	50
BTEX	mg/L	0.0033
PCE	ug/L	30
Other VOCs[a]		ND

MW-25B		
DO	mg/L	5.23
Nitrate	mg/L	4.3
Iron II	mg/L	ND
Sulfate	mg/L	12
Sulfide	mg/L	ND
Methane	mg/L	0.0009
Redox	mV	108
pH	-log [H]	7.36
TOC	mg/L	0.44
Temperature	C°	20.87
Carbon dioxide	mg/L	6.3
Alkalinity	mg/L	190
Chloride	mg/L	27
BTEX	mg/L	ND
PCE	ug/L	120
Other VOCs[a]		ND

Figure 4-12
B Zone Monitoring Well for Natural Attenuation Screening Evaluation
Modesto Groundwater Superfund Site

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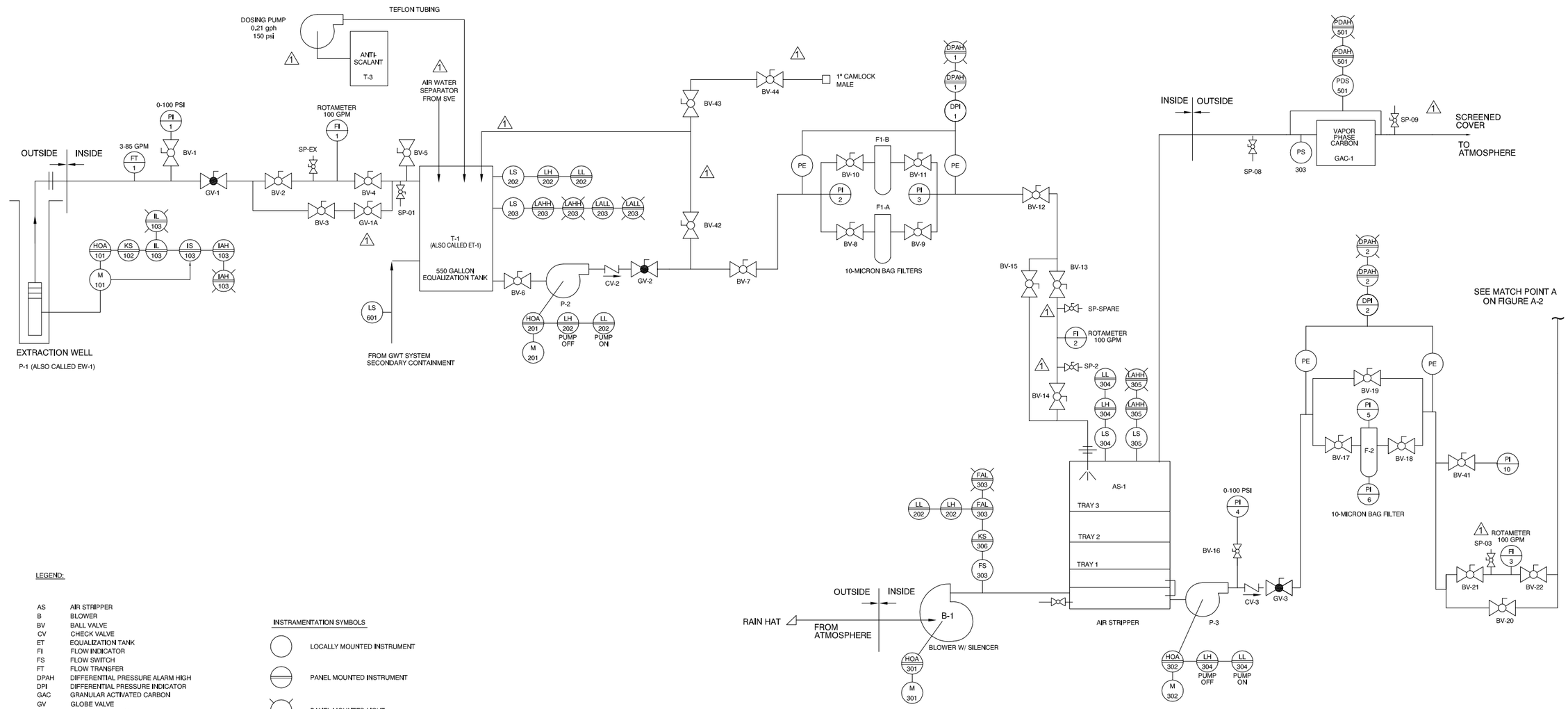
Appendix A
Treatment System Process and Instrumentation Diagrams



LEGEND:

AS	AIR STRIPPER
B	BLOWER
BV	BALL VALVE
CV	CHECK VALVE
ET	EQUALIZATION TANK
FI	FLOW INDICATOR
FS	FLOW SWITCH
FT	FLOW TRANSFER
DPAH	DIFFERENTIAL PRESSURE ALARM HIGH
DPI	DIFFERENTIAL PRESSURE INDICATOR
GAC	GRANULAR ACTIVATED CARBON
GV	GLOBE VALVE
HOA	HAND - OFF - AUTO
IAH	ELECTRICAL CURRENT ALARM HIGH
IEX	ION EXCHANGE
IL	ELECTRICAL CURRENT LOW
IS	ELECTRICAL CURRENT SWITCH
KS	TIME SWITCH
LAHH	LEVEL ALARM HIGH HIGH
LH	LEVEL HIGH
LL	LEVEL LOW
LS	LEVEL SWITCHES
M	MOTOR
P	PUMP
PDAH	PRESSURE DIFFERENTIAL ALARM HIGH
PDS	PRESSURE DIFFERENTIAL SWITCHES
PE	PRESSURE ELEMENT
PI	PRESSURE INDICATOR
SP	SAMPLE PORT
T	TANKS

INSTRAMENTATION SYMBOLS

- LOCALLY MOUNTED INSTRUMENT
- PANEL MOUNTED INSTRUMENT
- PANEL MOUNTED LIGHT
- FLANGED GLOBE VALVE
- UNION
- BALL VALVE
- FLANGE
- SAMPLE PORT
- CHECK VALVE

REFERENCES
TITLE

NOTE: REFERENCE
DESIGN BY
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ORIGINAL DRAWING REFERENCED FROM
MONTGOMERY WATSON HARZA

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Sacramento, CA 95833-3200
TEL: (916) 679-2000
FAX: (916) 679-2900

MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

GROUNDWATER TREATMENT P&ID

JOB NO.
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SHEET NO. **1-1**

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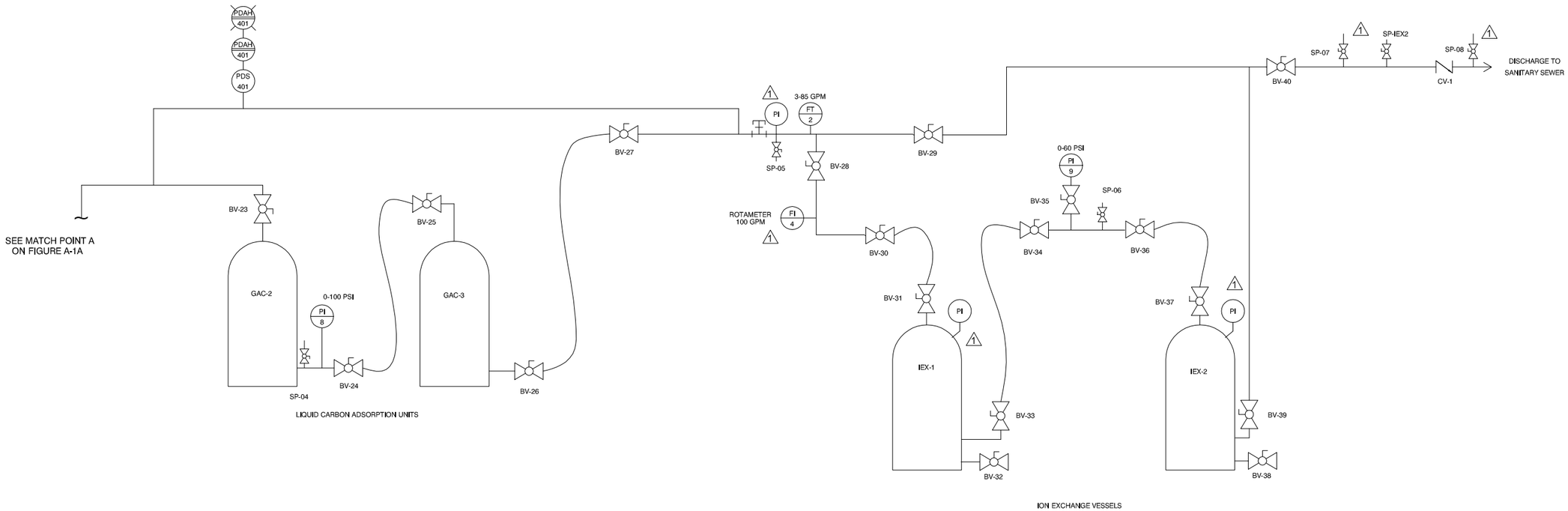

LEGEND:

AS	AIR STRIPPER
B	BLOWER
BV	BALL VALVE
CV	CHECK VALVE
ET	EQUALIZATION TANK
FI	FLOW INDICATOR
FS	FLOW SWITCH
FT	FLOW TRANSFER
DPAH	DIFFERENTIAL PRESSURE ALARM HIGH
DPI	DIFFERENTIAL PRESSURE INDICATOR
GAC	GRANULAR ACTIVATED CARBON
GV	GLOBE VALVE
HOA	HAND - OFF - AUTO
IAH	ELECTRICAL CURRENT ALARM HIGH
IEX	ION EXCHANGE
IL	ELECTRICAL CURRENT LOW
IS	ELECTRICAL CURRENT SWITCH
KS	TIME SWITCH
LAHH	LEVEL ALARM HIGH HIGH
LH	LEVEL HIGH
LL	LEVEL LOW
LS	LEVEL SWITCHES
M	MOTOR
P	PUMP
PDAH	PRESSURE DIFFERENTIAL ALARM HIGH
PDS	PRESSURE DIFFERENTIAL SWITCHES
PE	PRESSURE ELEMENT
PI	PRESSURE INDICATOR
SP	SAMPLE PORT
T	TANKS

INSTRAMENTATION SYBOLS

- LOCALLY MOUNTED INSTRUMENT
- PANEL MOUNTED INSTRUMENT
- PANEL MOUNTED LIGHT
- BALL VALVE
- SAMPLE PORT
- CHECK VALVE

REFERENCES
TITLE

NOTE: REFERENCE
DESIGN BY
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APPROVED BY:		

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2870 Gateway Oaks Drive, Ste. 150
Sacramento, CA 95833-3200
TEL: (916) 679-2000
FAX: (916) 679-2900

MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

GROUNDWATER TREATMENT P&ID

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SHEET NO. 1-2

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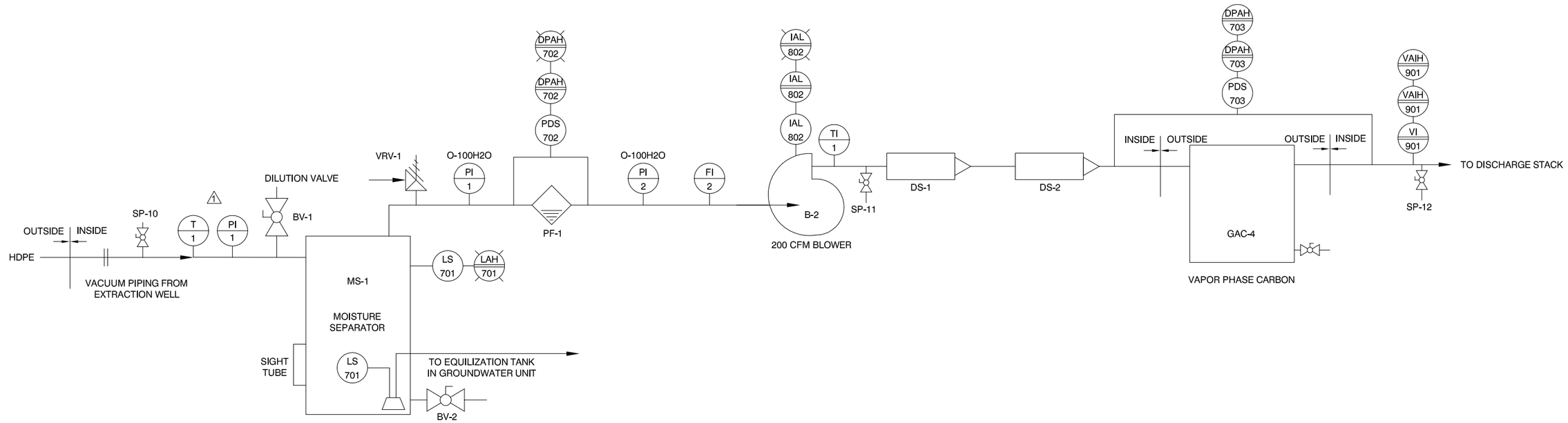

KEY

A ALARM, ACTIVATED
B BALL, BLOWER
C CARBON, CONTROL
D DISCHARGE, DIFFERENTIAL
F FILTER, FLOW
G GRANULAR
E ELECTRIC CURRENT,
I INDICATOR
L LEVEL, LIGHTING, LOW
M MOTOR, MOISTURE
P PANEL, PARTICULATE, PORT, POWER, PRESSURE R RELIEF
S SAMPLING, SENSOR, SEPARATOR, SILENCER, SWITCH
T TEMPERATURE, TRANSFORMER
V VALVE, VACUUM, VOLATILE ORGANIC COMPOUND

REFERENCES
TITLE

NOTE: REFERENCE
DESIGN BY
DIVERSIFIED REMEDIATION AND CONTROLS, INC.
ORIGINAL DRAWING REFERENCED FROM
MONTGOMERY WATSON HARZA

NOTES:
1. ALL VACUUM PROCESS PIPING IS 4" Ø SCH80 PVC
2. DISCHARGE STACK IS 8" Ø SCH80 PVC

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APPROVED BY:		

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2870 Gateway Oaks Drive, Ste. 150
Sacramento, CA 95833-3200
TEL: (916) 679-2000
FAX: (916) 679-2900

MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

SOIL VAPOR EXTRACTION P&ID

JOB NO.
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SHEET NO. **1-3**

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Appendix B
Laboratory Analytical Data Tables

Table B1	**Site Contaminants of Concern**
Table B2	**Sample Cross Reference**
Table B3	**Results Summary, Second Quarter 2012, Modesto Superfund Site**
Table B4	**Matrix Spike and Matrix Spike Duplicate Recovery Outliers Summary**

TABLE B1

SITE CONTAMINANTS OF CONCERN
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Contaminant of Concern	Discharge Limit
Tetrachloroethene (PCE)	0.5 μg/L
Toluene	15 μg/L
Uranium, total	20 pCi/L
pH	5-12

Notes:
μg/L - micrograms per liter
pCi/L - picoCuries per liter

TABLE B2

SAMPLE CROSS REFERENCE
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Analytical Method
4/2/2012	MW-19A-2Q12	1204017-14	N	524.2
4/2/2012	MW-19B-2Q12	1204017-15	N	524.2
4/2/2012	MW-10B-2Q12	1204018-09	N	524.2
4/2/2012	MW-10C-2Q12	1204018-10	N	524.2
4/3/2012	MW-4A-2Q12	1204006-01	N	300.0
4/3/2012	MW-4A-2Q12	1204006-01	N	415.3
4/3/2012	MW-4A-2Q12	1204006-01	N	2320B
4/3/2012	MW-4A-2Q12	1204006-01	N	4500-S2
4/3/2012	MW-4A-2Q12	1204006-01	N	IMM Ferrous
4/3/2012	MW-4A-2Q12	1204006-01	N	RSK-175
4/3/2012	MW-5A-2Q12	1204006-02	N	524.2
4/3/2012	MW-5A-2Q12	1204006-02	N	300.0
4/3/2012	MW-5A-2Q12	1204006-02	N	415.3
4/3/2012	MW-5A-2Q12	1204006-02	N	2320B
4/3/2012	MW-5A-2Q12	1204006-02	N	IMM Ferrous
4/3/2012	MW-5A-2Q12	1204006-02	N	RSK-175
4/3/2012	MW-8A-2Q12	1204006-03	N	524.2
4/3/2012	MW-8A-2Q12	1204006-03	N	300.0
4/3/2012	MW-8A-2Q12	1204006-03	N	415.3
4/3/2012	MW-8A-2Q12	1204006-03	N	2320B
4/3/2012	MW-8A-2Q12	1204006-03	N	4500-S2
4/3/2012	MW-8A-2Q12	1204006-03	N	IMM Ferrous
4/3/2012	MW-8A-2Q12	1204006-03	N	RSK-175
4/3/2012	MW-15A-2Q12	1204006-04	N	300.0
4/3/2012	MW-15A-2Q12	1204006-04	N	2320B
4/3/2012	MW-15A-2Q12	1204006-04	N	IMM Ferrous
4/3/2012	MW-85A-2Q12	1204006-05	FD	300.0
4/3/2012	MW-85A-2Q12	1204006-05	FD	415.3
4/3/2012	MW-85A-2Q12	1204006-05	FD	2320B
4/3/2012	MW-85A-2Q12	1204006-05	FD	4500-S2
4/3/2012	MW-85A-2Q12	1204006-05	FD	IMM Ferrous
4/3/2012	MW-95A-2Q12	1204006-06	FD	524.2
4/3/2012	MW-302-2Q12	1204017-02	TB	RSK-175
4/3/2012	MW-15A-2Q12	1204017-12	N	524.2
4/3/2012	MW-15A-2Q12	1204017-12	N	415.3
4/3/2012	MW-15A-2Q12	1204017-12	N	4500-S2
4/3/2012	MW-15A-2Q12	1204017-12	N	RSK-175
4/3/2012	MW-26B-2Q12	1204017-20	N	524.2
4/3/2012	MW-5A-2Q12	1204018-01	N	4500-S2
4/3/2012	MW-27B-2Q12	1204018-02	N	524.2
4/3/2012	MW-85A-2Q12	1204018-07	FD	RSK-175
4/3/2012	MW-16A-2Q12	1204018-15	N	524.2
4/3/2012	MW-16B-2Q12	1204018-16	N	524.2
4/3/2012	MW-16C-2Q12	1204018-17	N	524.2
4/3/2012	MW-4A-2Q12	1204018-20	N	524.2
4/3/2012	MW-15A-2Q12	440-7818-1	N	552.2
4/3/2012	MW-8A-2Q12	440-7818-10	N	552.2

TABLE B2

SAMPLE CROSS REFERENCE
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Analytical Method
4/3/2012	MW-96A-2Q12	440-7818-11	FD	552.2
4/3/2012	MW-4A-2Q12	440-7818-7	N	552.2
4/3/2012	MW-5A-2Q12	440-7818-9	N	552.2
4/3/2012	MW-8A-2Q12DUP	B2D0010-DUP1	DUP	300.0
4/3/2012	MW-8A-2Q12MS	B2D0010-MS1	MS	300.0
4/3/2012	MW-8A-2Q12MSD	B2D0010-MSD1	MSD	300.0
4/3/2012	MW-8A-2Q12MS	B2D0012-MS1	MS	524.2
4/3/2012	MW-8A-2Q12MSD	B2D0012-MSD1	MSD	524.2
4/3/2012	MW-8A-2Q12DUP	B2D0013-DUP1	DUP	IMM Ferrous
4/3/2012	MW-8A-2Q12MS	B2D0028-MS1	MS	RSK-175
4/3/2012	MW-8A-2Q12MSD	B2D0028-MSD1	MSD	RSK-175
4/3/2012	MW-27B-2Q12MS	B2D0030-MS1	MS	524.2
4/3/2012	MW-27B-2Q12MSD	B2D0030-MSD1	MSD	524.2
4/3/2012	MW-8A-2Q12MS	B2D0036-MS1	MS	415.3
4/3/2012	MW-8A-2Q12MSD	B2D0036-MSD1	MSD	415.3
4/3/2012	MW-8A-2Q12DUP	B2D0037-DUP1	DUP	4500-S2
4/3/2012	MW-26B-2Q12MS	B2D0041-MS1	MS	524.2
4/3/2012	MW-26B-2Q12MSD	B2D0041-MSD1	MSD	524.2
4/3/2012	MW-8A-2Q12DUP	B2D0045-DUP1	DUP	2320B
4/3/2012	MW-15A-2Q12	D055-01	N	M300
4/3/2012	MW-15A-2Q12	D055-01	N	RSK-175
4/3/2012	MW-4A-2Q12	D055-07	N	M300
4/3/2012	MW-4A-2Q12	D055-07	N	RSK-175
4/3/2012	MW-5A-2Q12	D055-09	N	M300
4/3/2012	MW-5A-2Q12	D055-09	N	RSK-175
4/3/2012	MW-8A-2Q12	D055-10	N	M300
4/3/2012	MW-8A-2Q12	D055-10	N	RSK-175
4/3/2012	MW-96A-2Q12	D055-11	FD	M300
4/3/2012	MW-302-2Q12	D055-12	TB	RSK-175
4/4/2012	MW-302-2Q12	1204017-01	TB	524.2
4/4/2012	MW-9B-2Q12	1204017-05	N	524.2
4/4/2012	MW-17C-2Q12	1204017-13	N	524.2
4/4/2012	MW-1A-2Q12	1204017-16	N	524.2
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4/4/2012	MW-22A-2Q12	1204017-18	N	524.2
4/4/2012	MW-23A-2Q12	1204017-19	N	524.2
4/4/2012	MW-6A-2Q12	1204018-03	N	524.2
4/4/2012	MW-7A-2Q12	1204018-05	N	524.2
4/4/2012	MW-10A-2Q12	1204018-08	N	524.2
4/4/2012	MW-11A-2Q12	1204018-11	N	524.2
4/4/2012	MW-12A-2Q12	1204018-12	N	524.2
4/4/2012	MW-13A-2Q12	1204018-13	N	524.2
4/4/2012	MW-14A-2Q12	1204018-14	N	524.2
4/4/2012	MW-17A-2Q12	1204018-18	N	524.2
4/4/2012	MW-2A-2Q12	1204018-19	N	524.2
4/4/2012	MW-302-2Q12MS	B2D0029-MS1	MS	524.2
4/4/2012	MW-302-2Q12MSD	B2D0029-MSD1	MSD	524.2
4/4/2012	MW-10A-2Q12MS	B2D0040-MS1	MS	524.2

TABLE B2

SAMPLE CROSS REFERENCE
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Analytical Method
4/4/2012	MW-10A-2Q12MSD	B2D0040-MSD1	MSD	524.2
4/5/2012	EFF-0401	301320001	N	ASTM D 5174
4/5/2012	EW-1-0401	301320002	N	ASTM D 5174
4/5/2012	IEX Mid-0401	301320003	N	ASTM D 5174
4/5/2012	MW-105-0401	301320004	FD	ASTM D 5174
4/5/2012	Pre IEX-0401	301320005	N	ASTM D 5174
4/5/2012	EFF-0401	1202633175	DUP	ASTM D 5174
4/5/2012	EFF-0401	1202633176	MS	ASTM D 5174
4/5/2012	CRB EFF-0401	1204013-01	N	524.2
4/5/2012	CRB INF-0401	1204013-02	N	524.2
4/5/2012	CRB Mid-0401	1204013-03	N	524.2
4/5/2012	EFF-0401	1204013-04	N	524.2
4/5/2012	EFF-0401	1204013-04	N	2540C
4/5/2012	EFF-0401	1204013-04	N	2540D
4/5/2012	EFF-0401	1204013-04	N	5210B
4/5/2012	EW-1-0401	1204013-05	N	524.2
4/5/2012	MW-303-2Q12	1204013-06	TB	524.2
4/5/2012	MW-403-2Q12	1204013-07	FB	524.2
4/5/2012	GWTP Pr GAC-0401	1204014-01	N	TO-15
4/5/2012	GWTP Stack-0401	1204014-02	N	TO-15
4/5/2012	SVE Pre GAC-0401	1204014-03	N	TO-15
4/5/2012	SVE Stack-0401	1204014-04	N	TO-15
4/5/2012	MW-302-2Q12	1204017-03	TB	RSK-175
4/5/2012	MW-402-2Q12	1204017-04	FB	524.2
4/5/2012	MW-4B-2Q12	1204017-06	N	524.2
4/5/2012	MW-4B-2Q12	1204017-06	N	300.0
4/5/2012	MW-4B-2Q12	1204017-06	N	415.3
4/5/2012	MW-4B-2Q12	1204017-06	N	2320B
4/5/2012	MW-4B-2Q12	1204017-06	N	4500-S2
4/5/2012	MW-4B-2Q12	1204017-06	N	IMM Ferrous
4/5/2012	MW-4B-2Q12	1204017-06	N	RSK-175
4/5/2012	MW-17B-2Q12	1204017-07	N	524.2
4/5/2012	MW-17B-2Q12	1204017-07	N	300.0
4/5/2012	MW-17B-2Q12	1204017-07	N	415.3
4/5/2012	MW-17B-2Q12	1204017-07	N	2320B
4/5/2012	MW-17B-2Q12	1204017-07	N	4500-S2
4/5/2012	MW-17B-2Q12	1204017-07	N	IMM Ferrous
4/5/2012	MW-17B-2Q12	1204017-07	N	RSK-175
4/5/2012	MW-20A-2Q12	1204017-08	N	524.2
4/5/2012	MW-20A-2Q12	1204017-08	N	300.0
4/5/2012	MW-20A-2Q12	1204017-08	N	415.3
4/5/2012	MW-20A-2Q12	1204017-08	N	2320B
4/5/2012	MW-20A-2Q12	1204017-08	N	4500-S2
4/5/2012	MW-20A-2Q12	1204017-08	N	IMM Ferrous
4/5/2012	MW-20A-2Q12	1204017-08	N	RSK-175
4/5/2012	MW-20B-2Q12	1204017-09	N	524.2
4/5/2012	MW-20B-2Q12	1204017-09	N	300.0
4/5/2012	MW-20B-2Q12	1204017-09	N	415.3

TABLE B2

SAMPLE CROSS REFERENCE
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Analytical Method
4/5/2012	MW-20B-2Q12	1204017-09	N	2320B
4/5/2012	MW-20B-2Q12	1204017-09	N	4500-S2
4/5/2012	MW-20B-2Q12	1204017-09	N	IMM Ferrous
4/5/2012	MW-20B-2Q12	1204017-09	N	RSK-175
4/5/2012	MW-25B-2Q12	1204017-10	N	524.2
4/5/2012	MW-25B-2Q12	1204017-10	N	300.0
4/5/2012	MW-25B-2Q12	1204017-10	N	415.3
4/5/2012	MW-25B-2Q12	1204017-10	N	2320B
4/5/2012	MW-25B-2Q12	1204017-10	N	4500-S2
4/5/2012	MW-25B-2Q12	1204017-10	N	IMM Ferrous
4/5/2012	MW-25B-2Q12	1204017-10	N	RSK-175
4/5/2012	MW-28B-2Q12	1204017-11	N	524.2
4/5/2012	MW-28B-2Q12	1204017-11	N	300.0
4/5/2012	MW-28B-2Q12	1204017-11	N	415.3
4/5/2012	MW-28B-2Q12	1204017-11	N	2320B
4/5/2012	MW-28B-2Q12	1204017-11	N	4500-S2
4/5/2012	MW-28B-2Q12	1204017-11	N	IMM Ferrous
4/5/2012	MW-28B-2Q12	1204017-11	N	RSK-175
4/5/2012	MW-75B-2Q12	1204018-04	FD	524.2
4/5/2012	MW-80B-2Q12	1204018-06	FD	524.2
4/5/2012	MW-3A-2Q12	1204020-01	N	524.2
4/5/2012	MW-4C-2Q12	1204020-07	N	524.2
4/5/2012	DP-1A-2Q12	1204021-01	N	TO-15
4/5/2012	DP-1B-2Q12	1204021-02	N	TO-15
4/5/2012	DP-99B-2Q12	1204021-07	FD	TO-15
4/5/2012	SVE-1-2Q12	1204021-10	N	TO-15
4/5/2012	SVE-2-2Q12	1204021-11	N	TO-15
4/5/2012	SVE-3-2Q12	1204021-12	N	TO-15
4/5/2012	SVE-4-2Q12	1204021-13	N	TO-15
4/5/2012	SVE-98-2Q12	1204021-14	FD	TO-15
4/5/2012	MW-17B-2Q12	440-7818-2	N	552.2
4/5/2012	MW-20A-2Q12	440-7818-3	N	552.2
4/5/2012	MW-20A-2Q12	440-7818-3 M	MS	552.2
4/5/2012	MW-20B-2Q12	440-7818-4	N	552.2
4/5/2012	MW-25B-2Q12	440-7818-5	N	552.2
4/5/2012	MW-28B-2Q12	440-7818-6	N	552.2
4/5/2012	MW-4B-2Q12	440-7818-8	N	552.2
4/5/2012	CRB Mid-0401MS	B2D0021-MS1	MS	524.2
4/5/2012	CRB Mid-0401MSD	B2D0021-MSD1	MSD	524.2
4/5/2012	MW-4B-2Q12MS	B2D0022-MS1	MS	300.0
4/5/2012	MW-4B-2Q12MSD	B2D0022-MSD1	MSD	300.0
4/5/2012	EFF-0401DUP	B2D0023-DUP1	DUP	2540C
4/5/2012	EFF-0401DUP	B2D0023-DUP2	DUP	2540D
4/5/2012	MW-20A-2Q12DUP	B2D0027-DUP1	DUP	IMM Ferrous
4/5/2012	MW-20A-2Q12MS	B2D0036-MS2	MS	415.3
4/5/2012	MW-20A-2Q12MSD	B2D0036-MSD2	MSD	415.3
4/5/2012	GWTP Pr GAC-0401DUP	B2D0043-DUP1	DUP	TO-15
4/5/2012	MW-20A-2Q12DUP	B2D0045-DUP2	DUP	2320B

TABLE B2

SAMPLE CROSS REFERENCE
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Analytical Method
4/5/2012	GWTP Stack-0401DUP	B2D0058-DUP2	DUP	TO-15
4/5/2012	SVE-98-2Q12DUP	B2D0063-DUP1	DUP	TO-15
4/5/2012	MW-17B-2Q12	D055-02	N	M300
4/5/2012	MW-17B-2Q12	D055-02	N	RSK-175
4/5/2012	MW-20A-2Q12	D055-03	N	M300
4/5/2012	MW-20A-2Q12	D055-03	N	RSK-175
4/5/2012	MW-20A-2Q12MS	D055-03M	MS	M300
4/5/2012	MW-20A-2Q12MS	D055-03M	MS	RSK-175
4/5/2012	MW-20A-2Q12MSD	D055-03S	MS	RSK-175
4/5/2012	MW-20A-2Q1DUP	D055-03D	DUP	M300
4/5/2012	MW-20B-2Q12	D055-04	N	M300
4/5/2012	MW-20B-2Q12	D055-04	N	RSK-175
4/5/2012	MW-25B-2Q12	D055-05	N	M300
4/5/2012	MW-25B-2Q12	D055-05	N	RSK-175
4/5/2012	MW-28B-2Q12	D055-06	N	M300
4/5/2012	MW-28B-2Q12	D055-06	N	RSK-175
4/5/2012	MW-4B-2Q12	D055-08	N	M300
4/5/2012	MW-4B-2Q12	D055-08	N	RSK-175
4/6/2012	MW-29B-2Q12	1204020-02	N	524.2
4/6/2012	MW-82A-2Q12	1204020-03	FD	524.2
4/6/2012	MW-18A-2Q12	1204020-04	N	524.2
4/6/2012	MW-24B-2Q12	1204020-05	N	524.2
4/6/2012	MW-20C-2Q12	1204020-06	N	524.2
4/6/2012	DP-5A-2Q12	1204021-03	N	TO-15
4/6/2012	DP-5B-2Q12	1204021-04	N	TO-15
4/6/2012	DP-6A-2Q12	1204021-05	N	TO-15
4/6/2012	DP-6B-2Q12	1204021-06	N	TO-15
4/6/2012	OSVE-10-2Q12	1204021-08	N	TO-15
4/6/2012	OSVE-11-2Q12	1204021-09	N	TO-15
4/6/2012	MW-82A-2Q12MS	B2D0051-MS2	MS	524.2
4/6/2012	MW-82A-2Q12MSD	B2D0051-MSD2	MSD	524.2
4/24/2012	EFF-0404	303179001	N	ASTM D 5174
4/24/2012	IEXMID-0404	303179002	N	ASTM D 5174
4/24/2012	PREIEX-0404	303179003	N	ASTM D 5174
4/24/2012	IEXEFF-0404	303179004	N	ASTM D 5174
4/24/2012	EFF-0404	1202644941	DUP	ASTM D 5174
4/24/2012	EFF-0404	1202644942	MS	ASTM D 5174
5/2/2012	EFF-0501	303688001	N	ASTM D 5174
5/2/2012	EFF-0501	1202652575	DUP	ASTM D 5174
5/2/2012	EFF-0501	1202652576	MS	ASTM D 5174
5/8/2012	EFF-0502	304016001	N	ASTM D 5174
5/8/2012	EFF-0502	1205020-01	N	524.2
5/8/2012	EFF-0502	1205020-01	N	2540C
5/8/2012	EFF-0502	1205020-01	N	2540D
5/8/2012	EFF-0502	1205020-01	N	5210B
5/8/2012	EW-1-0502	1205020-02	N	524.2
5/8/2012	MW-304-2Q12	1205020-03	TB	524.2
5/8/2012	GWTP Pr GAC-0502	1205023-01	N	TO-15

TABLE B2

SAMPLE CROSS REFERENCE
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Analytical Method
5/8/2012	GWTP Stack-0502	1205023-02	N	TO-15
5/8/2012	SVE Pre GAC-0502	1205023-03	N	TO-15
5/8/2012	SVE Stack-0502	1205023-04	N	TO-15
5/8/2012	EFF-0502MS	B2E0064-MS2	MS	524.2
5/8/2012	EFF-0502MSD	B2E0064-MSD2	MSD	524.2
5/8/2012	EFF-0502DUP	B2E0068-DUP1	DUP	2540C
5/8/2012	EFF-0502DUP	B2E0068-DUP2	DUP	2540D
5/8/2012	GWTP Pr GAC-0502DUP	B2E0097-DUP1	DUP	TO-15
5/17/2012	EFF-0503	304705001	N	ASTM D 5174
5/17/2012	IEXMID-0503	304705002	N	ASTM D 5174
5/17/2012	PREIEX-0503	304705003	N	ASTM D 5174
5/17/2012	IEXEFF-0503	304705004	N	ASTM D 5174
5/17/2012	EFF-0503	1202664972	DUP	ASTM D 5174
5/17/2012	EFF-0503	1202664973	MS	ASTM D 5174
6/7/2012	EFF-0602	305705001	N	ASTM D 5174
6/7/2012	EFF-0602	1202678797	DUP	ASTM D 5174
6/7/2012	EFF-0602	1202678798	MS	ASTM D 5174
6/7/2012	MW-305-2Q12	1206014-01	TB	524.2
6/7/2012	EFF-0602	1206014-02	N	524.2
6/7/2012	EFF-0602	1206014-02	N	2540C
6/7/2012	EFF-0602	1206014-02	N	2540D
6/7/2012	EFF-0602	1206014-02	N	5210B
6/7/2012	EW-1-0602	1206014-03	N	524.2
6/7/2012	MW-101-0602	1206014-04	FD	524.2
6/7/2012	GWTP Pr GAC-0602	1206016-01	N	TO-15
6/7/2012	GWTP Stack-0602	1206016-02	N	TO-15
6/7/2012	MW-112-0602	1206016-03	FD	TO-15
6/7/2012	SVE Pre GAC-0602	1206016-04	N	TO-15
6/7/2012	SVE Stack-0602	1206016-05	N	TO-15
6/7/2012	EFF-0602MS	B2F0028-MS1	MS	524.2
6/7/2012	EFF-0602MSD	B2F0028-MSD1	MSD	524.2
6/7/2012	EFF-0602DUP	B2F0029-DUP1	DUP	2540C
6/7/2012	EFF-0602DUP	B2F0029-DUP2	DUP	2540D
6/7/2012	GWTP Pr GAC-0602DUP	B2F0030-DUP1	DUP	TO-15

2Q12 = second quarter, 2012
DUP = laboratory duplicate
EFF = effluent
EW = extraction well
FB = field blank
FD = field duplicate
GWT = groundwater treatment
MS = matrix spike
MSD = matrix spike duplicate
MW = monitoring well
N = normal sample
SVE = soil vapor extraction
TB = trip blank

TABLE B3. RESULTS SUMMARY
FIRST QUARTER 2011, MODESTO GROUNDWATER SUPERFUND SITE

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
IEXEFF	IEXEFF-0404	WG	ASTM D 5174	N	4/24/2012	Total Uranium	13.6	1	PCI/L	
	IEXEFF-0503				5/17/2012	Total Uranium	0.191	1	PCI/L	
0000BLANK	MW-302-2Q12	WQ	RSK-175	TB	4/3/2012	METHANE	0.700		ug/L	J
	MW-302-2Q12	WQ	524.2	TB	4/4/2012	No Analytes Detected				
	MW-302-2Q12	WQ	RSK-175	TB	4/5/2012	No Analytes Detected				
	MW-303-2Q12	00	524.2	TB	4/5/2012	No Analytes Detected				
	MW-304-2Q12	WQ			5/8/2012	ACETONE	6.70		ug/L	J
						BROMODICHLOROMETHANE	5.80		ug/L	
						CHLOROFORM	53		ug/L	
	MW-305-2Q12				6/7/2012	No Analytes Detected				
	MW-402-2Q12	WQ	524.2	FB	4/5/2012	No Analytes Detected				
	MW-403-2Q12	00				No Analytes Detected				
DP-1A	DP-1A-2Q12	GS	TO-15	N	4/5/2012	TETRACHLOROETHENE	110		ppbv	
DP-1B	DP-1B-2Q12	GS	TO-15	N	4/5/2012	TETRACHLOROETHENE	2.40		ppbv	J
	DP-99B-2Q12	GS	TO-15	FD	4/5/2012	TETRACHLOROETHENE	3.20		ppbv	
DP-5A	DP-5A-2Q12	GS	TO-15	N	4/6/2012	1,2,4-TRIMETHYLBENZENE	1.80		ppbv	J
						BENZENE	1.40		ppbv	J
						m&p-Xylene	3.40		ppbv	J
						O-XYLENE	1.20		ppbv	J
						TOLUENE	4.10		ppbv	
DP-5B	DP-5B-2Q12	GS	TO-15	N	4/6/2012	BENZENE	2.80		ppbv	
						CHLOROFORM	16		ppbv	
						METHYLENE CHLORIDE	1.30		ppbv	J
						TETRACHLOROETHENE	4.20		ppbv	
						TOLUENE	1.50		ppbv	J
DP-6A	DP-6A-2Q12	GS	TO-15	N	4/6/2012	CHLOROFORM	1.90		ppbv	J
						TETRACHLOROETHENE	44		ppbv	
DP-6B	DP-6B-2Q12	GS	TO-15	N	4/6/2012	CHLOROFORM	1.80		ppbv	J
MW-01A	MW-1A-2Q12	WG	524.2	N	4/4/2012	TETRACHLOROETHENE	2.30		ug/L	

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
MW-02A	MW-2A-2Q12	WG	524.2	N	4/4/2012	CHLOROFORM	2.60		ug/L	
						TETRACHLOROETHENE	5.30		ug/L	
MW-03A	MW-3A-2Q12	WG	524.2	N	4/5/2012	CHLOROFORM	1		ug/L	J+
						TETRACHLOROETHENE	25		ug/L	J+
MW-04A	MW-4A-2Q12	WG	524.2	N	4/3/2012	1,1,2-TRICHLOROETHANE	2.80		ug/L	
	MW-4A-2Q12	WG	M300	N	4/3/2012	ACETIC ACID			MG/L	
	MW-4A-2Q12	WG	2320B	N	4/3/2012	Bicarbonate Alkalinity	54		mg/L	
	MW-4A-2Q12	WG	M300	N	4/3/2012	BUTYRIC ACID			MG/L	
	MW-4A-2Q12	WG	RSK-175	N	4/3/2012	Carbon Dioxide	4100		ug/L	
	MW-4A-2Q12	WG	300.0	N	4/3/2012	CHLORIDE	2.70		mg/L	
	MW-4A-2Q12	WG	524.2	N	4/3/2012	CIS-1,2-DICHLOROETHENE	0.400		ug/L	J
	MW-4A-2Q12	WG	M300	N	4/3/2012	LACTIC ACID			MG/L	
	MW-4A-2Q12	WG	RSK-175	N	4/3/2012	METHANE	1.20		ug/L	
	MW-4A-2Q12	WG	300.0	N	4/3/2012	NITRATE AS N	0.120		mg/L	
	MW-4A-2Q12	WG	IMM Ferrous	N	4/3/2012	No Analytes Detected				
	MW-4A-2Q12	WG	552.2	N	4/3/2012	No Analytes Detected				
	MW-4A-2Q12	WG	M300	N	4/3/2012	PROPIONIC ACID			MG/L	
						PYRUVIC ACID			MG/L	
	MW-4A-2Q12	WG	300.0	N	4/3/2012	SULFATE AS SO4	2.90		mg/L	
	MW-4A-2Q12	WG	4500-S2	N	4/3/2012	SULFIDE	0.620		mg/L	J
	MW-4A-2Q12	WG	524.2	N	4/3/2012	TETRACHLOROETHENE	71		ug/L	
	MW-4A-2Q12	WG	2320B	N	4/3/2012	Total Alkalinity	54		mg/L	
	MW-4A-2Q12	WG	415.3	N	4/3/2012	Total Organic Carbon	2.10		mg/L	
	MW-4A-2Q12	WG	524.2	N	4/3/2012	TRICHLOROETHENE	0.400		ug/L	J
	MW-96A-2Q12	WQ	M300	FD	4/3/2012	ACETIC ACID			MG/L	
		WG				BUTYRIC ACID			MG/L	
						LACTIC ACID			MG/L	
						PROPIONIC ACID			MG/L	
						PYRUVIC ACID			MG/L	

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
MW-04A continued . . .										
	MW-96A-2Q12	WG	552.2	N	4/3/2012	No Analytes Detected				
MW-04B	MW-4B-2Q12	WG	M300	N	4/5/2012	ACETIC ACID			MG/L	
	MW-4B-2Q12	WG	2320B	N	4/5/2012	Bicarbonate Alkalinity	130		mg/L	
	MW-4B-2Q12	WG	M300	N	4/5/2012	BUTYRIC ACID			MG/L	
	MW-4B-2Q12	WG	RSK-175	N	4/5/2012	Carbon Dioxide	4900		ug/L	
	MW-4B-2Q12	WG	300.0	N	4/5/2012	CHLORIDE	14		mg/L	
	MW-4B-2Q12	WG	M300	N	4/5/2012	LACTIC ACID			MG/L	
	MW-4B-2Q12	WG	300.0	N	4/5/2012	NITRATE AS N	3.80		mg/L	
	MW-4B-2Q12	WG	IMM Ferrous	N	4/5/2012	No Analytes Detected				
	MW-4B-2Q12	WG	552.2	N	4/5/2012	No Analytes Detected				
	MW-4B-2Q12	WG	4500-S2	N	4/5/2012	No Analytes Detected				
	MW-4B-2Q12	WG	M300	N	4/5/2012	PROPIONIC ACID			MG/L	
						PYRUVIC ACID			MG/L	
	MW-4B-2Q12	WG	300.0	N	4/5/2012	SULFATE AS SO4	5.50		mg/L	
	MW-4B-2Q12	WG	524.2	N	4/5/2012	TETRACHLOROETHENE	4.40		ug/L	
	MW-4B-2Q12	WG	2320B	N	4/5/2012	Total Alkalinity	130		mg/L	
	MW-4B-2Q12	WG	415.3	N	4/5/2012	Total Organic Carbon	1.40		mg/L	
MW-04C	MW-4C-2Q12	WG	524.2	N	4/5/2012	BENZENE	0.400		ug/L	J
						TETRACHLOROETHENE	0.700		ug/L	
MW-05A	MW-5A-2Q12	WG	552.2	N		No Analytes Detected				
	MW-5A-2Q12	WG	M300	N	4/3/2012	ACETIC ACID			MG/L	
	MW-5A-2Q12	WG	2320B	N	4/3/2012	Bicarbonate Alkalinity	370		mg/L	
	MW-5A-2Q12	WG	M300	N	4/3/2012	BUTYRIC ACID			MG/L	
	MW-5A-2Q12	WG	RSK-175	N	4/3/2012	Carbon Dioxide	37000		ug/L	
	MW-5A-2Q12	WG	300.0	N	4/3/2012	CHLORIDE	75		mg/L	
	MW-5A-2Q12	WG	M300	N	4/3/2012	LACTIC ACID			MG/L	
	MW-5A-2Q12	WG	300.0	N	4/3/2012	NITRATE AS N	26		mg/L	
	MW-5A-2Q12	WG	IMM Ferrous	N	4/3/2012	No Analytes Detected				
	MW-5A-2Q12	WG	M300	N	4/3/2012	PROPIONIC ACID			MG/L	

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
MW-05A continued . . .										
						PYRUVIC ACID			MG/L	
	MW-5A-2Q12	WG	300.0	N	4/3/2012	SULFATE AS SO4	38		mg/L	
	MW-5A-2Q12	WG	4500-S2	N	4/3/2012	SULFIDE	0.540		mg/L	J
	MW-5A-2Q12	WG	524.2	N	4/3/2012	TETRACHLOROETHENE	92		ug/L	
	MW-5A-2Q12	WG	2320B	N	4/3/2012	Total Alkalinity	370		mg/L	
	MW-5A-2Q12	WG	415.3	N	4/3/2012	Total Organic Carbon	0.460		mg/L	J
	MW-95A-2Q12	WG	524.2	FD	4/3/2012	TETRACHLOROETHENE	78		ug/L	
MW-06A	MW-6A-2Q12	WG	524.2	N	4/4/2012	BROMODICHLOROMETHANE	0.300		ug/L	J
						CHLOROFORM	6.20		ug/L	
						TETRACHLOROETHENE	10		ug/L	
MW-07A	MW-7A-2Q12	WG	524.2	N	4/4/2012	CHLOROFORM	1.30		ug/L	
MW-08A	MW-8A-2Q12	WG	M300	N	4/3/2012	ACETIC ACID			MG/L	
	MW-8A-2Q12	WG	2320B	N	4/3/2012	Bicarbonate Alkalinity	400		mg/L	
	MW-8A-2Q12	WG	M300	N	4/3/2012	BUTYRIC ACID			MG/L	
	MW-8A-2Q12	WG	RSK-175	N	4/3/2012	Carbon Dioxide	40000		ug/L	J-
	MW-8A-2Q12	WG	300.0	N	4/3/2012	CHLORIDE	63		mg/L	
	MW-8A-2Q12	WG	524.2	N	4/3/2012	CHLOROFORM	3.50		ug/L	
	MW-8A-2Q12	WG	M300	N	4/3/2012	LACTIC ACID			MG/L	
	MW-8A-2Q12	WG	300.0	N	4/3/2012	NITRATE AS N	4		mg/L	
	MW-8A-2Q12	WG	IMM Ferrous	N	4/3/2012	No Analytes Detected				
	MW-8A-2Q12	WG	552.2	N	4/3/2012	No Analytes Detected				
	MW-8A-2Q12	WG	M300	N	4/3/2012	PROPIONIC ACID			MG/L	
						PYRUVIC ACID			MG/L	
	MW-8A-2Q12	WG	300.0	N	4/3/2012	SULFATE AS SO4	38		mg/L	
	MW-8A-2Q12	WG	4500-S2	N	4/3/2012	SULFIDE	0.640		mg/L	J
	MW-8A-2Q12	WG	524.2	N	4/3/2012	TETRACHLOROETHENE	29		ug/L	
	MW-8A-2Q12	WG	2320B	N	4/3/2012	Total Alkalinity	400		mg/L	
	MW-8A-2Q12	WG	415.3	N	4/3/2012	Total Organic Carbon	0.400		mg/L	J
MW-09B	MW-9B-2Q12	WG	524.2	N	4/4/2012	TETRACHLOROETHENE	4		ug/L	

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
MW-10A	MW-10A-2Q12	WG	524.2	N	4/4/2012	1,1,2-TRICHLOROETHANE	1.70		ug/L	J-
						CHLOROFORM	4.70		ug/L	
						TETRACHLOROETHENE	65		ug/L	
MW-10B	MW-10B-2Q12	WG	524.2	N	4/2/2012	TETRACHLOROETHENE	16		ug/L	
MW-10C	MW-10C-2Q12	WG	524.2	N	4/2/2012	No Analytes Detected				
MW-11A	MW-11A-2Q12	WG	524.2	N	4/4/2012	CHLOROFORM	2.10		ug/L	
						TETRACHLOROETHENE	2.70		ug/L	
MW-12A	MW-12A-2Q12	WG	524.2	N	4/4/2012	1,1,2-TRICHLOROETHANE	0.500		ug/L	
						BROMODICHLOROMETHANE	0.400		ug/L	J
						CHLOROFORM	7.50		ug/L	
						TETRACHLOROETHENE	15		ug/L	
						TRICHLOROFLUOROMETHANE	0.400		ug/L	J
MW-13A	MW-13A-2Q12	WG	524.2	N	4/4/2012	CHLOROFORM	1.50		ug/L	
						TETRACHLOROETHENE	15		ug/L	
MW-14A	MW-14A-2Q12	WG	524.2	N	4/4/2012	CHLOROFORM	0.300		ug/L	J
						TETRACHLOROETHENE	25		ug/L	
MW-15A	MW-15A-2Q12	WG	M300	N	4/3/2012	ACETIC ACID			MG/L	
	MW-15A-2Q12	WG	2320B	N	4/3/2012	Bicarbonate Alkalinity	360		mg/L	
	MW-15A-2Q12	WG	M300	N	4/3/2012	BUTYRIC ACID			MG/L	
	MW-15A-2Q12	WG	RSK-175	N	4/3/2012	Carbon Dioxide	42000		ug/L	
	MW-15A-2Q12	WG	300.0	N	4/3/2012	CHLORIDE	70		mg/L	
	MW-15A-2Q12	WG	524.2	N	4/3/2012	CHLOROFORM	0.400		ug/L	J
	MW-15A-2Q12	WG	M300	N	4/3/2012	LACTIC ACID			MG/L	
	MW-15A-2Q12	WG	300.0	N	4/3/2012	NITRATE AS N	14		mg/L	
	MW-15A-2Q12	WG	IMM Ferrous	N	4/3/2012	No Analytes Detected				
	MW-15A-2Q12	WG	552.2	N	4/3/2012	No Analytes Detected				
	MW-15A-2Q12	WG	4500-S2	N	4/3/2012	No Analytes Detected				
	MW-15A-2Q12	WG	M300	N	4/3/2012	PROPIONIC ACID			MG/L	

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
MW-15A continued . . .										
						PYRUVIC ACID			MG/L	
	MW-15A-2Q12	WG	300.0	N	4/3/2012	SULFATE AS SO4	43		mg/L	
	MW-15A-2Q12	WG	2320B	N	4/3/2012	Total Alkalinity	360		mg/L	
	MW-15A-2Q12	WG	415.3	N	4/3/2012	Total Organic Carbon	0.440		mg/L	J
	MW-85A-2Q12	WG	2320B	FD	4/3/2012	Bicarbonate Alkalinity	350		mg/L	
	MW-85A-2Q12	WG	RSK-175	FD	4/3/2012	Carbon Dioxide	42000		ug/L	
	MW-85A-2Q12	WG	300.0	FD	4/3/2012	CHLORIDE	70		mg/L	
						NITRATE AS N	14		mg/L	
	MW-85A-2Q12	WG	IMM Ferrous	FD	4/3/2012	No Analytes Detected				
	MW-85A-2Q12	WG	4500-S2	FD	4/3/2012	No Analytes Detected				
	MW-85A-2Q12	WG	300.0	FD	4/3/2012	SULFATE AS SO4	43		mg/L	
	MW-85A-2Q12	WG	2320B	FD	4/3/2012	Total Alkalinity	350		mg/L	
	MW-85A-2Q12	WG	415.3	FD	4/3/2012	Total Organic Carbon	0.430		mg/L	J
MW-16A	MW-16A-2Q12	WG	524.2	N	4/3/2012	CHLOROFORM	0.700		ug/L	
MW-16B	MW-16B-2Q12	WG	524.2	N	4/3/2012	CHLOROFORM	0.700		ug/L	
						TETRACHLOROETHENE	8.80		ug/L	
MW-16C	MW-16C-2Q12	WG	524.2	N	4/3/2012	No Analytes Detected				
MW-17A	MW-17A-2Q12	WG	524.2	N	4/4/2012	CHLOROFORM	5		ug/L	
						TETRACHLOROETHENE	0.600		ug/L	J
MW-17B	MW-17B-2Q12	WG	524.2	N	4/5/2012	1,2,4-TRIMETHYLBENZENE	0.400		ug/L	J
	MW-17B-2Q12	WG	M300	N	4/5/2012	ACETIC ACID			MG/L	
	MW-17B-2Q12	WG	524.2	N	4/5/2012	ACETONE	4.60		ug/L	
						BENZENE	1		ug/L	
	MW-17B-2Q12	WG	2320B	N	4/5/2012	Bicarbonate Alkalinity	210		mg/L	
	MW-17B-2Q12	WG	M300	N	4/5/2012	BUTYRIC ACID			MG/L	
	MW-17B-2Q12	WG	RSK-175	N	4/5/2012	Carbon Dioxide	16000		ug/L	
	MW-17B-2Q12	WG	524.2	N	4/5/2012	CARBON TETRACHLORIDE	0.300		ug/L	J
	MW-17B-2Q12	WG	300.0	N	4/5/2012	CHLORIDE	50		mg/L	
	MW-17B-2Q12	WG	524.2	N	4/5/2012	ETHYLBENZENE	0.500		ug/L	

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
MW-17B continued . . .										
	MW-17B-2Q12	WG	M300	N	4/5/2012	LACTIC ACID			MG/L	
	MW-17B-2Q12	WG	524.2	N	4/5/2012	M&P-XYLENE	1.40		ug/L	
	MW-17B-2Q12	WG	300.0	N	4/5/2012	NITRATE AS N	4.20		mg/L	
	MW-17B-2Q12	WG	IMM Ferrous	N	4/5/2012	No Analytes Detected				
	MW-17B-2Q12	WG	552.2	N	4/5/2012	No Analytes Detected				
	MW-17B-2Q12	WG	524.2	N	4/5/2012	O-XYLENE	0.400		ug/L	J
	MW-17B-2Q12	WG	M300	N	4/5/2012	PROPIONIC ACID			MG/L	
						PYRUVIC ACID			MG/L	
	MW-17B-2Q12	WG	300.0	N	4/5/2012	SULFATE AS SO4	19		mg/L	
	MW-17B-2Q12	WG	4500-S2	N	4/5/2012	SULFIDE	0.550		mg/L	J
	MW-17B-2Q12	WG	524.2	N	4/5/2012	TETRACHLOROETHENE	20		ug/L	
	MW-17B-2Q12	WG	2320B	N	4/5/2012	Total Alkalinity	210		mg/L	
	MW-17B-2Q12	WG	415.3	N	4/5/2012	Total Organic Carbon	7.30		mg/L	
MW-17C	MW-17C-2Q12	WG	524.2	N	4/4/2012	BENZENE	0.500		ug/L	
						ETHYLBENZENE	0.200		ug/L	J
						M&P-XYLENE	0.500		ug/L	J
						TETRACHLOROETHENE	0.300		ug/L	J
MW-18A	MW-18A-2Q12	WG	524.2	N	4/6/2012	1,2,4-TRIMETHYLBENZENE	0.300		ug/L	J
						ACETONE	2.10		ug/L	J
						BENZENE	0.700		ug/L	
						CARBON TETRACHLORIDE	0.600		ug/L	
						CHLOROFORM	1.30		ug/L	
						ETHYLBENZENE	0.300		ug/L	J
						M&P-XYLENE	1.30		ug/L	
						O-XYLENE	0.500		ug/L	
						TETRACHLOROETHENE	2.30		ug/L	
						TOLUENE	0.200		ug/L	J
	MW-82A-2Q12	WG	524.2	FD	4/6/2012	1,2,4-TRIMETHYLBENZENE	0.300		ug/L	J
						BENZENE	0.700		ug/L	

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
MW-18A continued . . .										
						CARBON TETRACHLORIDE	0.700		ug/L	
						CHLOROFORM	0.900		ug/L	
						ETHYLBENZENE	0.300		ug/L	J
						M&P-XYLENE	1.30		ug/L	
						O-XYLENE	0.400		ug/L	J
						TETRACHLOROETHENE	2		ug/L	
						TOLUENE	0.200		ug/L	J
MW-19A	MW-19A-2Q12	WG	524.2	N	4/2/2012	CHLOROFORM	1.40		ug/L	
MW-20A	MW-20A-2Q12	WG	M300	N	4/5/2012	ACETIC ACID			MG/L	
	MW-20A-2Q12	WG	2320B	N	4/5/2012	Bicarbonate Alkalinity	410		mg/L	
	MW-20A-2Q12	WG	M300	N	4/5/2012	BUTYRIC ACID			MG/L	
	MW-20A-2Q12	WG	RSK-175	N	4/5/2012	Carbon Dioxide	28000		ug/L	
	MW-20A-2Q12	WG	300.0	N	4/5/2012	CHLORIDE	66		mg/L	
	MW-20A-2Q12	WG	524.2	N	4/5/2012	CHLOROFORM	5.30		ug/L	
						DICHLORODIFLUOROMETHANE	4.90		ug/L	
	MW-20A-2Q12	WG	M300	N	4/5/2012	LACTIC ACID			MG/L	
	MW-20A-2Q12	WG	300.0	N	4/5/2012	NITRATE AS N	11		mg/L	
	MW-20A-2Q12	WG	IMM Ferrous	N	4/5/2012	No Analytes Detected				
	MW-20A-2Q12	WG	552.2	N	4/5/2012	No Analytes Detected				
	MW-20A-2Q12	WG	4500-S2	N	4/5/2012	No Analytes Detected				
	MW-20A-2Q12	WG	M300	N	4/5/2012	PROPIONIC ACID			MG/L	
						PYRUVIC ACID			MG/L	
	MW-20A-2Q12	WG	300.0	N	4/5/2012	SULFATE AS SO4	54		mg/L	
	MW-20A-2Q12	WG	524.2	N	4/5/2012	TETRACHLOROETHENE	160		ug/L	
	MW-20A-2Q12	WG	2320B	N	4/5/2012	Total Alkalinity	410		mg/L	
	MW-20A-2Q12	WG	415.3	N	4/5/2012	Total Organic Carbon	2.50		mg/L	
MW-20B	MW-20B-2Q12	WG	M300	N	4/5/2012	ACETIC ACID			MG/L	
	MW-20B-2Q12	WG	524.2	N	4/5/2012	ACETONE	2.20		ug/L	J

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
MW-20B continued . . .										
						BENZENE	0.300		ug/L	J
	MW-20B-2Q12	WG	2320B	N	4/5/2012	Bicarbonate Alkalinity	180		mg/L	
	MW-20B-2Q12	WG	M300	N	4/5/2012	BUTYRIC ACID			MG/L	
	MW-20B-2Q12	WG	RSK-175	N	4/5/2012	Carbon Dioxide	6500		ug/L	
	MW-20B-2Q12	WG	300.0	N	4/5/2012	CHLORIDE	22		mg/L	
	MW-20B-2Q12	WG	M300	N	4/5/2012	LACTIC ACID			MG/L	
	MW-20B-2Q12	WG	300.0	N	4/5/2012	NITRATE AS N	4.90		mg/L	
	MW-20B-2Q12	WG	IMM Ferrous	N	4/5/2012	No Analytes Detected				
	MW-20B-2Q12	WG	552.2	N	4/5/2012	No Analytes Detected				
	MW-20B-2Q12	WG	M300	N	4/5/2012	PROPIONIC ACID			MG/L	
						PYRUVIC ACID			MG/L	
	MW-20B-2Q12	WG	300.0	N	4/5/2012	SULFATE AS SO4	11		mg/L	
	MW-20B-2Q12	WG	4500-S2	N	4/5/2012	SULFIDE	0.550		mg/L	J
	MW-20B-2Q12	WG	524.2	N	4/5/2012	TETRACHLOROETHENE	65		ug/L	
	MW-20B-2Q12	WG	2320B	N	4/5/2012	Total Alkalinity	180		mg/L	
	MW-20B-2Q12	WG	415.3	N	4/5/2012	Total Organic Carbon	0.750		mg/L	
	MW-80B-2Q12	WG	524.2	FD	4/5/2012	1,1,2-TRICHLOROETHANE	2.20		ug/L	
						BENZENE	0.500		ug/L	
						ETHYLBENZENE	0.200		ug/L	J
						M&P-XYLENE	0.600		ug/L	J
						O-XYLENE	0.200		ug/L	J
						TETRACHLOROETHENE	65		ug/L	
MW-20C	MW-20C-2Q12	WG	524.2	N	4/6/2012	BENZENE	0.300		ug/L	J
						TETRACHLOROETHENE	0.300		ug/L	J
MW-25B	MW-25B-2Q12	WG	M300	N	4/5/2012	ACETIC ACID			MG/L	
						BUTYRIC ACID			MG/L	
						LACTIC ACID			MG/L	
	MW-25B-2Q12	WG	RSK-175	N	4/5/2012	No Analytes Detected				
	MW-25B-2Q12	WG	552.2	N	4/5/2012	No Analytes Detected				

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
MW-25B continued . . .										
	MW-25B-2Q12	WG	M300	N	4/5/2012	PROPIONIC ACID			MG/L	
						PYRUVIC ACID			MG/L	
MW-28B	MW-28B-2Q12	WG	552.2	N		No Analytes Detected				
	MW-28B-2Q12	WG	M300	N	4/5/2012	ACETIC ACID			MG/L	
						BUTYRIC ACID			MG/L	
						LACTIC ACID			MG/L	
	MW-28B-2Q12	WG	RSK-175	N	4/5/2012	No Analytes Detected				
	MW-28B-2Q12	WG	M300	N	4/5/2012	PROPIONIC ACID			MG/L	
						PYRUVIC ACID			MG/L	
MW-19B1	MW-19B-2Q12	WG	524.2	N	4/2/2012	TETRACHLOROETHENE	0.300		ug/L	J
OSVE-10	OSVE-10-2Q12	GS	TO-15	N	4/6/2012	TETRACHLOROETHENE	160		ppbv	
OSVE-11	OSVE-11-2Q12	GS	TO-15	N	4/6/2012	CIS-1,2-DICHLOROETHENE	1.10		ppbv	J
						TETRACHLOROETHENE	7.10		ppbv	
SP-01	EW-1-0401	SP	524.2	N	4/5/2012	CHLOROFORM	3.20		ug/L	
						TETRACHLOROETHENE	130		ug/L	
	EW-1-0401	WG	ASTM D 5174	N	4/5/2012	Total Uranium	55.3	1	PCI/L	
	EW-1-0502	WG	524.2	N	5/8/2012	TETRACHLOROETHENE	130		ug/L	
	EW-1-0602	WG	524.2	FD	6/7/2012	CHLOROFORM	3.20		ug/L	
						TETRACHLOROETHENE	120		ug/L	J+
	MW-101-0602	WG	524.2	N	6/7/2012	CHLOROFORM	3.10		ug/L	
						TETRACHLOROETHENE	130		ug/L	
SP-03	CRB INF-0401	SP	524.2	N	4/5/2012	TETRACHLOROETHENE	0.300		ug/L	J
SP-04	CRB Mid-0401	SP	524.2	N	4/5/2012	No Analytes Detected				
SP-05	CRB EFF-0401	SP	524.2	N	4/5/2012	No Analytes Detected				
	MW-105-0401	WG	ASTM D 5174	FD	4/5/2012	Total Uranium	55.4	1	PCI/L	
	Pre IEX-0401	WG	ASTM D 5174	N	4/5/2012	Total Uranium	56.1	1	PCI/L	
	PREIEX-0404				4/24/2012	Total Uranium	21.8	1	PCI/L	
	PREIEX-0503				5/17/2012	Total Uranium	57.9	1	PCI/L	
SP-06	IEX Mid-0401	WG	ASTM D 5174	N	4/5/2012	Total Uranium	25.6	1	PCI/L	

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
SP-06 continued . . .										
	IEXMID-0404				4/24/2012	Total Uranium	13.7	1	PCI/L	
	IEXMID-0503				5/17/2012	Total Uranium	30.6	1	PCI/L	
SP-07	EFF-0401		5210B	N	4/5/2012	Biochemical Oxygen Demand	2		mg/L	
	EFF-0401		524.2	N	4/5/2012	No Analytes Detected				
	EFF-0401		2540D	N	4/5/2012	No Analytes Detected				
	EFF-0401		2540C	N	4/5/2012	TOTAL DISSOLVED SOLIDS	630		mg/L	
	EFF-0401	WG	ASTM D 5174	N	4/5/2012	Total Uranium	22.5	1	PCI/L	
	EFF-0404				4/24/2012	Total Uranium	15.4	1	PCI/L	
	EFF-0501				5/2/2012	Total Uranium	19.2	1	PCI/L	
	EFF-0502	WG	2540D	N	5/8/2012	No Analytes Detected				
	EFF-0502	WG	524.2	N	5/8/2012	No Analytes Detected				
	EFF-0502	WG	ASTM D 5174	N	5/8/2012	No Analytes Detected				
	EFF-0502	WG	5210B	N	5/8/2012	No Analytes Detected				
	EFF-0502	WG	2540C	N	5/8/2012	TOTAL DISSOLVED SOLIDS	660		mg/L	
	EFF-0503	WG	ASTM D 5174	N	5/17/2012	Total Uranium	7.98	1	PCI/L	
	EFF-0602	WG	524.2	N	6/7/2012	No Analytes Detected				
	EFF-0602	WG	5210B	N	6/7/2012	No Analytes Detected				
	EFF-0602	WG	2540D	N	6/7/2012	No Analytes Detected				
	EFF-0602	WG	2540C	N	6/7/2012	TOTAL DISSOLVED SOLIDS	640		mg/L	
	EFF-0602	WG	ASTM D 5174	N	6/7/2012	Total Uranium	14.5	1	PCI/L	
SP-08	GWTP Pr GAC-0401	SP	TO-15	N	4/5/2012	1,1-DICHLOROETHANE	1.90		ppbv	J
						CHLOROFORM	9.70		ppbv	
						TETRACHLOROETHENE	310		ppbv	J
						TRICHLOROETHENE	3.50		ppbv	
	GWTP Pr GAC-0502	GS			5/8/2012	CHLOROFORM	8.20		ppbv	
						TETRACHLOROETHENE	330		ppbv	
	GWTP Pr GAC-0602				6/7/2012	CHLOROFORM	7.70		ppbv	
						TETRACHLOROETHENE	260		ppbv	
SP-09	GWTP Stack-0401	SP	TO-15	N	4/5/2012	BENZENE	3.20		ppbv	

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
SP-09 continued . . .										
						CHLOROFORM	6.60		ppbv	
						TETRACHLOROETHENE	200		ppbv	
	GWTP Stack-0502	GS			5/8/2012	BENZENE	4.60		ppbv	
						CHLOROFORM	6.90		ppbv	
						TETRACHLOROETHENE	300		ppbv	
	GWTP Stack-0602				6/7/2012	BENZENE	4.10		ppbv	
						CHLOROFORM	6.80		ppbv	
						TETRACHLOROETHENE	230		ppbv	
SP-11	SVE Pre GAC-0401	SP	TO-15	N	4/5/2012	BENZENE	1.20		ppbv	J
						TETRACHLOROETHENE	5.10		ppbv	
						TOLUENE	2.40		ppbv	
	SVE Pre GAC-0502	GS			5/8/2012	CHLOROFORM	3.10		ppbv	
						TETRACHLOROETHENE	45		ppbv	
	SVE Pre GAC-0602				6/7/2012	TETRACHLOROETHENE	7.10		ppbv	
SP-12	MW-112-0602	GS	TO-15	N	6/7/2012	CHLOROFORM	8.60		ppbv	
	SVE Stack-0401	SP			4/5/2012	CHLOROFORM	22		ppbv	
						CIS-1,2-DICHLOROETHENE	1.60		ppbv	J
						TETRACHLOROETHENE	4.40		ppbv	
	SVE Stack-0502	GS			5/8/2012	CHLOROFORM	9.10		ppbv	
						DICHLORODIFLUOROMETHANE	1.20		ppbv	J
						TETRACHLOROETHENE	1.50		ppbv	J
	SVE Stack-0602	GS	TO-15	FD	6/7/2012	CHLOROFORM	11		ppbv	
						TETRACHLOROETHENE	1.50		ppbv	J
SVE-01	SVE-1-2Q12	GS	TO-15	N	4/5/2012	TETRACHLOROETHENE	10		ppbv	
SVE-02	SVE-2-2Q12	GS	TO-15	N	4/5/2012	1,2-DICHLOROBENZENE	3.10		ppbv	
						1,4-DICHLOROBENZENE	1.40		ppbv	J
						BENZENE	1.60		ppbv	J
						CIS-1,2-DICHLOROETHENE	1.50		ppbv	J

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
SVE-02 continued . . .										
						TETRACHLOROETHENE	270		ppbv	
						TRICHLOROETHENE	85		ppbv	
SVE-03	SVE-3-2Q12	GS	TO-15	N	4/5/2012	TETRACHLOROETHENE	220		ppbv	
						TRICHLOROETHENE	3.90		ppbv	
	SVE-98-2Q12	GS	TO-15	FD	4/5/2012	TETRACHLOROETHENE	170		ppbv	
						TRICHLOROETHENE	13		ppbv	
SVE-04	SVE-4-2Q12	GS	TO-15	N	4/5/2012	1,2-DICHLOROBENZENE	2.30		ppbv	
						1,4-DICHLOROBENZENE	1.10		ppbv	J
						CHLOROFORM	19		ppbv	
						TETRACHLOROETHENE	22		ppbv	
						TRICHLOROETHENE	87		ppbv	

Matrix
GS = soil gas
WG = groundwater
WQ = water quality

Sample Type
FD = Field Duplicate
FB = Field Blank
N = Normal Sample
TB = Trip Blank

Units
mg/L = milligrams/Liter
ppbv = parts per billion volume
pci/L = picoCuries/Liter
µg/L = micrograms/Liter

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result

Qualified Results

J = Analyte concentration considered an estimated value because one or more quality control specifications were not met.

J+ = Analyte concentration considered an estimated value because one or more quality control specifications were not met, potential high bias.

TABLE B4

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY OUTLIERS SUMMARY
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Analytical Method	Laboratory Work Order	Field Sample Identification	Analyte	MS Recovery (%)	MSD Recovery (%)	Control Limits (%)	Accuracy Acceptance	RPD (%)	RPD Control Limits (%)	Precision Acceptance
E524.2	12097A	CRB Mid-0401	1,3-Dichorobenzene	83	76	77-120	no	8	20	yes
			Bromobenzene	84	76	77-120	no	10	20	yes
			Bromodichoromethane	79	84	87-130	no	7	20	yes
			Dibromomethane	81	74	77-120	no	9	20	yes
	12097D	MW-26B-2Q12	Bromodichoromethane	82	84	87-130	no	2	20	yes
	12097E	MW-10A-2Q12	1,1,2-Trichloroethane	72	68	74-131	no	3	20	yes
		MW-27B-2Q12	cis-1,3-Dichloropropene	47	40	67-138	no	16	20	yes
			trans-1,3-Dichloropropene	42	33	65-150	no	24	20	no
	12101A	MW-82A-2Q12	Toluene	113	121	68-120	no	7	20	yes
RSK-175	12095A	MW-8A-2Q12	Carbon dioxide	106	60	70-130	no	11	20	yes

Notes:
Results not meeting criteria for MW-302-2Q12 are not included in this table, since this is a trip blank.
% - Percent
MS - Matrix Spike
MSD - Matrix Spike Duplicate
NR - Not Reported due to high native sample concentration
RPD - Relative Percent Difference

Appendix C
Laboratory Data Validation Reports

- **Laboratory Data Consultants, Inc.**
- **URS Group, Inc.**

Laboratory Data Consultants, Inc.

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

URS Corporation
2870 Gateway Oaks Drive, Suite 300
Sacramento, CA 95833
ATTN: Ms. Debbie Casagrande

July 3, 2012

SUBJECT: Modesto Superfund Site Quality Control Summary Report (QCSR) for Quarterly and Monthly Sampling Events, Staged Electronic Data Deliverables (SEDD) and Automated Data Review (ADR) deliverables – 2nd Quarter 2012

Dear Ms. Casagrande,

Enclosed are the Quality Control Summary Report (QCSR), validation worksheets, Staged Electronic Data Deliverables (SEDD) and Automated Data Review (ADR) electronic deliverables for the eleven EPA Region 9 Laboratory's sample delivery groups (SDG) listed below. The SDGs are associated with the sampling period of April 2 to June 7, 2012. Not all of the analytical methods may have been required in each of the laboratory SDGs.

LDC Project #: 27780 and 27881	
SDG #	**Analytical Methods**
12095A 12097A 12097B 12097D 12097E 12101A 12101B 12129C 12130B 12160A 12160B	EPA Method 524.2 (EPA Region 9 SOP 354, revison 9) EPA Method TO-15 (EPA Region 9 SOP 311, revison 1) Method RSK-175 (EPA Region 9 SOP 325, revision 2) EPA Method 300.0 (EPA Region 9 SOP 530, revision 8) EPA Method 415.3 (EPA Region 9 SOP 553, revision 1) SM 2320B (EPA Region 9 SOP 560, revison 7) SM 2540C (EPA Region 9 SOP 461, revison 6) SM 2540D (EPA Region 9 SOP 462, revison 6) SM 4500-S2 (EPA Region 9 SOP 565, revison 5) SM 5210B (EPA Region 9 SOP 1133, revison 4) Ferrous Iron by Laboratory SOP (EPA Region 9 SOP 575, revison 1)

The data validation was performed in accordance with the criteria specified in the EPA Region 9 Standard Operating Procedures (SOP), as well as the National Functional Guidelines for Superfund Organics Methods Data Review (2008) and for Inorganic Methods Data Review (2010). Where specific guidance was not available, the data have been evaluated in a conservative manner consistent with industry standards using professional experience.

The following QCSR deliverables and supporting documents are contained in this report:

- Sample ID Cross Reference and Data Review Level
- Primary and Field QC Samples by Method
- Detected Target Analytes
- Overall Qualified Results Summary
- Completeness Reports
- Reasons for Qualified Results
- Data Qualification Summary Reports
- Manual Data Validation Review Worksheets and ADR reports

If you have any questions, please feel free to contact us at (760) 634-0437.

Sincerely,

Andrew Kong
Senior Chemist/Project Manager

Laboratory Data Consultants, Inc.
Quality Control Summary Report (QCSR)
Modesto Superfund Site
Quarterly and Monthly Sampling Events
Analytical Data for Samples Collected by URS
During the Period of
April 2 to June 7, 2012

Prepared for:

URS Corporation
Crown Corporate Center
2870 Gateway Oaks Drive
Suite 300
Sacramento, CA 95833

Prepared by:

Laboratory Data Consultants, Inc. (LDC)
7750 El Camino Real, Suite 2L
Carlsbad, CA 92009

Reported: July 3, 2012

Andrew Kong, Senior Chemist/Project Manager
Laboratory Data Consultants, Inc.

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APPENDICES

Appendix A DATA QUALIFICATION SUMMARY REPORTS
Appendix B MANUAL VALIDATION LEVEL III & IV WORKSHEETS AND ADR REPORTS

LIST OF ACRONYMS

ADR	Automated Data Review
CA	California
DU	Sample Duplicate
EPA	US Environmental Protection Agency
GW	Groundwater
GW	Groundwater Monitoring Program
LCS	Laboratory Control Sample
LDC	Laboratory Data Consultants, Inc.
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NFG	National Functional Guidelines
RL	Reporting Limit
ND	Non-detected
PCE	Tetrachloroethene
QCSR	Quality Control Summary Report
RL	Reporting Limit
RPD	Relative Percent Difference
SAP	Sampling and Analysis Plan
SDG	Sample Delivery Group
SEDD	Staged Electronic Data Deliverables
SM	Standard Methods
SOP	Standard Operating Procedure
SVE	Soil Vapor Extraction
URS	URS Corporation
VOCs	Volatile Organic Compounds

EXECUTIVE SUMMARY

This Quality Control Summary Report (QCSR) has been prepared by Laboratory Data Consultants, Inc. (LDC) for URS Corporation (URS) for the Modesto Superfund Site in Modesto, California (CA). The purpose of this report is to provide the data user with an independent evaluation of the results generated by the laboratory. The data reviewed in this report were analyzed by U.S. Environmental Protection Agency (EPA) Region 9 Laboratory located in Richmond, CA. The Region 9 laboratory is certified in the State of California by the Department of Health Services. URS Corporation located in Sacramento, CA, collected the samples analyzed for this report.

The data validation was performed in accordance with the EPA Region 9 Laboratory's internal control limits specified in the EPA Region 9 Laboratory's Standard Operating Procedures (SOPs), "Sampling and Analysis Plan, Modesto Groundwater Superfund Site, Modesto, California" (SAP), (June 2010, U.S. Army Corps of Engineers, Sacramento District, and URS), as well as the "National Functional Guidelines (NFG) for Superfund Organic Methods Data Review" (USEPA 2008) and the "National Functional Guidelines for Inorganic Data Review" (USEPA 2010).

Seventy three field samples, nine field duplicates, and eight field Quality Control (QC) samples were reported in eleven EPA Region 9 Laboratory's sample delivery groups (SDGs) for the R12S70 Modesto Groundwater (GW) Treatment System Spring 2012 Monthly Sampling and the R12S64 April-June 2012 Quarterly Groundwater Monitoring and Soil Vapor Extraction (SVE) sampling efforts.

The laboratory provided electronic data in Staged Electronic Data Deliverables (SEDD) files. The SEDD deliverable was processed through the Automated Data Review (ADR) program in order to produce SEDD and ADR deliverable formats, as requested by URS. Any resulting data validation qualifiers from ADR have been appended to the SEDD and ADR files.

Data review was based primarily on the EPA Region 9 Laboratory's internal control limits specified in the EPA Region 9 Laboratory's SOPs and the "Modesto Groundwater Superfund Site SAP" (June 2010) as well as the NFG for Superfund Organics Methods Data Review and for Inorganic Data Review (USEPA 2008, 2010), using biased qualifiers. In the case where no QC acceptance criteria were specified for this analysis, data were evaluated against the appropriate method references and Standard Methods. Where additional guidance was needed, data were evaluated against QC and data validation criteria provided in the NFG for Superfund Organics Methods Data Review and for Inorganic Data Review (USEPA 2008, 2010), using biased qualifiers. Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

For this review, approximately ten percent of project data were subjected to USEPA Level IV equivalent validation with raw data recalculations, and the remaining 90 percent were subjected to USEPA Level III equivalent validation. All sample results from the sampling period were subjected to automated and manual review through an evaluation of QC results, sample holding

times, cooler temperatures, sample preservation, initial and continuing calibration, surrogate recoveries, matrix spikes/matrix spike duplicates, laboratory duplicates, laboratory control samples, method blanks, and reporting limits. Level IV equivalent validation was designated to the following: SDG 12095A (one sample for Dissolved Gases and Carbon Dioxide by Method RSK-175), SDG 12097D (one sample for Dissolved Gases and Carbon Dioxide by Method RSK-175, Alkalinity by SM 2320B, Anions by EPA Method 300.0, Sulfide by SM 4500-S2, Total Organic Carbon by EPA Method 415.3, and Ferrous Iron by Laboratory SOP 575), SDG 12097E (five samples for Volatile Organic Compounds (VOCs) by EPA Method 524.2), and SDG 12101B (three samples for VOCs by EPA Method TO-15). There were no significant findings in the Level IV equivalent validation. However, some sample data were qualified based upon the review of the instrument calibration data.

The following items were evaluated by automated review:

- Holding Times
- Cooler Temperatures
- Blanks
- Surrogates - (organics)
- Matrix Spike/Matrix Spike Duplicates (MS/MSD) or Sample Duplicates (DUP)
- Laboratory Control Samples (LCS)
- Reporting Limits (RL)
- Field QC Samples

The evaluation of the associated initial and continuing instrument calibrations, internal standards, sample preservation, and Level IV recalculations and data verifications from the raw data packages were performed by manual review.

The ADR was performed using bias indicators and reason codes for data qualification, where applicable. Appendix A contains a summary of data qualifications and the reasons for qualified results. The results of the ADR are included in Appendix B of this report, along with manual validation worksheets.

Data Qualifier Definitions

Through the data review process, the data were assigned validation qualifiers. The qualifiers assigned by LDC are based on a technical assessment of the data and represent outliers from each of the data review components (blank contamination, holding time, etc.). The following are definitions of the data qualifiers that may appear in this report:

Data Qualifier	Definition
U	Indicates the compound or analyte was analyzed for, but not detected at or above the reported sample quantitation limit. The result is considered non-detected (ND) at the reported value. This qualifier is added before any additional qualifiers for all ND results.
UJ	Indicates the compound or analyte was analyzed for, but not detected. The sample detection limit is an estimated value due to QC failure or data limitations.
J	Indicates the compound or analyte is positively identified, but the reported concentration is an estimate due to QC failure or data limitations.
J+	Indicates the compound or analyte is positively identified, but the reported concentration is an estimate due to QC failure or data limitations. A high quantitative bias exists in the data.
J-	Indicates the compound or analyte is positively identified, but the reported concentration is an estimate due to QC failure or data limitations. A low quantitative bias exists in the data.
R	Quality control indicates the data is not usable. The presence or absence of the compound or analyte cannot be verified or the reported result is compromised as to be unusable.

Data qualified with the "R" qualifier are considered unusable or rejected. Data qualified with the "J" qualifier are considered as estimated. The data user must determine the appropriate use of estimated data.

The data quality assessment is summarized by reporting analytical completeness. The following equations were used to calculate completeness.

%Analytical Completeness = (Number of unqualified results/Number of reported results) X 100

The analytical completeness, which included all QC parameters, attained for the field samples in the sampling effort is presented in Table 5.

%Contract Compliance Completeness = (Number of contract compliant results/Number of reported results) X 100

The contract compliance completeness, which included all QC parameters, attained for the field samples in the sampling effort is presented in Table 6.

%Technical Completeness = (Number of results not rejected/Number of reported results) X 100

The technical completeness, which included all QC parameters, attained for the field samples in the sampling effort is presented in Table 7.

Based on review of the analytical data and associated QC results, the sample data were assessed to be valid with minor qualifications. A summary of the overall quality of data is as follows:

2.0 Quarterly and Monthly Sampling Events

Based on review of the analytical data and associated QC results, the overall analytical completeness (number of unqualified results divided by the number of reported results) for the sampling effort was 94.4%.

- VOCs by EPA Method 524.2 had analytical completeness of 93.8%,
- VOCs by EPA Method TO-15 had analytical completeness of 97.4%,
- Dissolved Gases and Carbon Dioxide by Method RSK-175 had analytical completeness of 89.6%,
- Anions by EPA Method 300.0 had analytical completeness of 100.0%,
- Total Organic Carbon by EPA Method 415.3 had analytical completeness of 45.5%,
- Alkalinity by SM 2320B had analytical completeness of 100.0%,
- Total Dissolved Solids by SM 2450C had analytical completeness of 100.0%,
- Total Suspended Solids by SM 2450D had analytical completeness of 100.0%,
- Sulfide by SM 4500-S2 had analytical completeness of 54.5%,
- Biochemical Oxygen Demand by SM 5210B had analytical completeness of 100.0%
- Ferrous Iron by Laboratory SOP 575 had analytical completeness of 100.0%,

If data qualifiers due to trace values were excluded from this calculation, the analytical completeness would be 94.7% for VOCs by EPA Method 524.2, 99.4% for VOCs by EPA Method TO-15, 91.7% for Dissolved Gases and Carbon Dioxide by Method RSK-175, 100.0% for Total Organic Carbon by EPA Method 415.3, and 100.0% for Sulfide by SM 4500-S2.

The overall contract compliance completeness (number of contract compliant results divided by the number of reported results) for the sampling effort was 94.9%.

- VOCs by EPA Method 524.2 had analytical completeness of 94.3%,

- VOCs by EPA Method TO-15 had analytical completeness of 97.5%,
- Dissolved Gases and Carbon Dioxide by Method RSK-175 had analytical completeness of 91.7%,
- Anions by EPA Method 300.0 had analytical completeness of 100.0%,
- Total Organic Carbon by EPA Method 415.3 had analytical completeness of 45.5%,
- Alkalinity by SM 2320B had analytical completeness of 100.0%,
- Total Dissolved Solids by SM 2450C had analytical completeness of 100.0%,
- Total Suspended Solids by SM 2450D had analytical completeness of 100.0%,
- Sulfide by SM 4500-S2 had analytical completeness of 54.5%,
- Biochemical Oxygen Demand by SM 5210B had analytical completeness of 100.0%
- Ferrous Iron by Laboratory SOP 575 had analytical completeness of 100.0%,

If data qualifiers due to trace values were excluded from this calculation, the contract completeness would be 95.3% for VOCs by EPA Method 524.2, 99.5% for VOCs by EPA Method TO-15, 93.8% for Dissolved Gases and Carbon Dioxide by Method RSK-175, 100.0% for Total Organic Carbon by EPA Method 415.3, and 100.0% for Sulfide by SM 4500-S2.

The overall technical completeness (number of non-rejected results divided by the number of reported results) for the sampling effort was 100.0%.

- VOCs by EPA Method 524.2 had analytical completeness of 100.0%,
- VOCs by EPA Method TO-15 had analytical completeness of 100.0%,
- Dissolved Gases and Carbon Dioxide by Method RSK-175 had analytical completeness of 100.0%,
- Anions by EPA Method 300.0 had analytical completeness of 100.0%,
- Total Organic Carbon by EPA Method 415.3 had analytical completeness of 100.0%,
- Alkalinity by SM 2320B had analytical completeness of 100.0%,
- Total Dissolved Solids by SM 2450C had analytical completeness of 100.0%,
- Total Suspended Solids by SM 2450D had analytical completeness of 100.0%,
- Sulfide by SM 4500-S2 had analytical completeness of 100.0%,

- Biochemical Oxygen Demand by SM 5210B had analytical completeness of 100.0%

- Ferrous Iron by Laboratory SOP 575 had analytical completeness of 100.0%,

The analytical, contract compliance and technical completeness reports are in Tables 5, 6, and 7, respectively.

Appendix A presents a detailed description of the qualified sample results by analytical method.

The overall quality of data by analytical method is summarized below:

Volatile Organic Compounds by EPA 524.2 (EPA Region 9 SOP 354, revision 9)

The analytical completeness for VOCs by EPA 524.2 was 93.8%.

Thirty seven of the 3781 sample results were qualified as estimated due to trace values reported between the method detection limit (MDL) and the RL. One hundred and fifty-six results were qualified as estimated due to initial calibration non-conformances, fourteen results were qualified as estimated due to initial calibration verification non-conformances, and thirty nine results were qualified as estimated due to continuing calibration non-conformances. Seventeen results were qualified as estimated due to matrix spike/matrix spike duplicate (MS/MSD) percent recoveries outside the control limit. Four results were qualified as estimated due to surrogate percent recoveries outside the control limit. One chloroform result was qualified as non-detected (U) due to contamination in trip blank MW-304-2Q12. Table 8 lists specific samples and reasons for all qualified results with the exception of results that are not assessed by ADR (internal standards, professional judgment, etc.).

MS/MSD analyses were performed on samples MW-8A-2Q12 (SDG 12095A), CRB Mid-0401 (SDG 12097A), MW-302-2Q12 (SDG 12097D), MW-26B-2Q12 (SDG 12097D), MW-27B-2Q12 (SDG 12097E), MW-10A-2Q12 (SDG 12097E), MW-82A-2Q12 (SDG 12101A), EFF-0502 (SDG 12129C), and EFF-0602 (SDG 12160A). All acceptance criteria were met with the exceptions noted above.

Four trip blank samples and 2 field blank samples were collected and analyzed for VOCs. No contaminants were detected in the trip blanks or field blanks with the exceptions noted above.

Sample MW-95A-2Q12 was identified as a field duplicate of sample MW-5A-2Q12 (SDG 12095A), sample MW-75B-2Q12 (SDG 12097E) was identified as a field duplicate of sample MW-25B-2Q12 (SDG 12097D), sample MW-80B-2Q12 (SDG 12097E) was identified as a field duplicate of sample MW-20B-2Q12 (SDG 12097D), sample MW-82A-2Q12 was identified as a field duplicate of sample MW-18A-2Q12 (SDG 12101A), and sample MW-101-0602 was identified as a field duplicate of sample EW-1-0602 (SDG 12160A). No data were qualified based upon the field duplicate result. The RPDs between the results were within the criteria in Table 2-10 of the SAP.

Volatile Organic Compounds by EPA TO-15 (EPA Region 9 SOP 311, revision 2)

The analytical completeness for VOCs by EPA TO-15 was 97.4%.

Twenty of the 1012 sample results were qualified as estimated due to trace values reported between the MDL and the RL. Five 1,2,4-trichlorobenzene results were qualified as estimated due to initial calibration verification non-conformances. One tetrachloroethene result was qualified as estimated due to DUP RPDs above the control limit. Table 8 lists specific samples and reasons for all qualified results with the exception of results that are not assessed by ADR (internal standards, professional judgment, etc.).

DUP analyses were performed on samples GWTP Pr GAC-0401 (SDG 12097B), GWTP Stack-0401 (SDG 12097B), SVE-98-2Q12 (SDG 12101B), GWTP Pr GAC-0502 (SDG 12130B), and GWTP Pr GAC-0602 (SDG 12160B). All acceptance criteria were met with the exceptions noted above.

Sample DP-99B-2Q12 was identified as a field duplicate of sample DP-1B-2Q12 (SDG 12101B), sample SVE-98-2Q12 was identified as a field duplicate of sample SVE-2-2Q12 (SDG 12101B), and sample MW-112-0602 was identified as a field duplicate of sample SVE-Stack-0602 (SDG 12160B). No data were qualified based upon the field duplicate result. The RPDs between the results were within the criteria in Table 2-10 of the SAP.

Dissolved Gases and Carbon Dioxide by Method RSK-175 (EPA Region 9 SOP 325, revision 2)

The analytical completeness for Dissolved Gases and Carbon Dioxide by Method RSK-175 was 89.6%.

One of the 48 sample results were qualified as estimated due to trace values reported between the MDL and the RL. One carbon dioxide result was qualified as estimated due to matrix spike/matrix spike duplicate (MS/MSD) recovery outside the control limit. Three methane results were qualified as non-detected (U) due to contamination in trip blank MW-302-2Q12. Table 8 lists specific samples and reasons for all qualified results with the exception of results that are not assessed by ADR (internal standards, professional judgment, etc.).

MS/MSD analysis was performed on sample MW-8A-2Q12 (SDG 12095A). All acceptance criteria were met with the exceptions noted above.

One trip blank sample was collected and analyzed for dissolved gases and carbon dioxide. No contaminants were detected in the trip blank with the exceptions noted above.

Sample MW-85A-2Q12 (SDG 12097E) was identified as a field duplicate of sample MW-15A-2Q12 (SDG 12097D). No data were qualified based upon the field duplicate result. The RPDs between the results were within the criteria in Table 2-10 of the SAP.

Anions by EPA Method 300.0 (EPA Region 9 SOP 530, revision 8)

The analytical completeness for Anions by EPA Method 300.0 was 100.0%.

MS/MSD analyses were performed on samples MW-8A-2Q12 (SDG 12095A) and MW-4B-2Q12 (SDG 12097D). All acceptance criteria were met.

DUP analysis was performed on sample MW-8A-2Q12 (SDG 12095A). All acceptance criteria were met.

Sample MW-85A-2Q12 was identified as a field duplicate of sample MW-15A-2Q12 (SDG 12095A). No data were qualified based upon the field duplicate result. The RPDs between the results were within the criteria in Table 2-10 of the SAP.

Total Organic Carbon by EPA Method 415.3 (EPA Region 9 SOP 553, revision 1)

The analytical completeness for Total Organic Carbon by EPA Method 415.3 was 45.5%.

Six of the 11 sample results were qualified as estimated due to trace values reported between the MDL and the RL. Table 8 lists specific samples and reasons for all qualified results with the exception of results that are not assessed by ADR (internal standards, professional judgment, etc.).

MS/MSD analyses were performed on samples MW-8A-2Q12 (SDG 12095A) and MW-20A-2Q12 (SDG 12097D). All acceptance criteria were met.

Sample MW-85A-2Q12 (SDG 12095A) was identified as a field duplicate of sample MW-15A-2Q12 (SDG 12097D). No data were qualified based upon the field duplicate result. The RPDs between the results were within the criteria in Table 2-10 of the SAP.

Alkalinity by SM 2320B (EPA Region 9 SOP 560, revision 7)

The analytical completeness for Alkalinity by SM 2320B was 100.0%.

DUP analyses were performed on samples MW-8A-2Q12 (SDG 12095A) and MW-20A-2Q12 (SDG 12097D). All acceptance criteria were met.

Sample MW-85A-2Q12 was identified as a field duplicate of sample MW-15A-2Q12 (SDG 12095A). No data were qualified based upon the field duplicate result. The RPDs between the results were within the criteria in Table 2-10 of the SAP.

Total Dissolved Solids by SM 2540C (EPA Region 9 SOP 461, revision 7)

The analytical completeness for Total Dissolved Solids by SM 2540C was 100.0%.

DUP analyses were performed on samples EFF-0401 (SDG 12097A), EFF-0502 (SDG 12129C), and EFF-0602 (SDG 12160A). All acceptance criteria were met.

Field duplicates were not collected during this sampling event.

Total Suspended Solids by SM 2540D (EPA Region 9 SOP 462, revision 7)

The analytical completeness for Total Suspended Solids by SM 2540D was 100.0%.

DUP analyses were performed on samples EFF-0401 (SDG 12097A), EFF-0502 (SDG 12129C), and EFF-0602 (SDG 12160A). All acceptance criteria were met.

Field duplicates were not collected during this sampling event.

Sulfide by SM 4500-S2 (EPA Region 9 SOP 565, revision 5)

The analytical completeness for Sulfide by SM 4500-S2 was 54.5%.

Five of the 11 sample results were qualified as estimated due to trace values reported between the MDL and the RL. Table 8 lists specific samples and reasons for all qualified results with the exception of results that are not assessed by ADR (internal standards, professional judgment, etc.).

DUP analysis was performed on sample MW-8A-2Q12 (SDG 12095A). All acceptance criteria were met.

Sample MW-85A-2Q12 (SDG 12095A) was identified as a field duplicate of sample MW-15A-2Q12 (SDG 12097D). No data were qualified based upon the field duplicate result. The RPDs between the results were within the criteria in Table 2-10 of the SAP.

Biochemical Oxygen Demand by SM 5210B (EPA Region 9 SOP 1133, revision 6)

The analytical completeness for Biochemical Oxygen Demand by SM 5210B was 100.0%.

Field duplicates were not collected during this sampling event.

Ferrous Iron by Laboratory SOP 575 (EPA Region 9 SOP 575, revision 1)

The analytical completeness for Ferrous Iron by Laboratory SOP 575 was 100.0%.

DUP analyses were performed on samples MW-8A-2Q12 (SDG 12095A) and MW-20A-2Q12 (SDG 12097D). All acceptance criteria were met.

Sample MW-85A-2Q12 was identified as a field duplicate of sample MW-15A-2Q12 (SDG 12095A). No data were qualified based upon the field duplicate result. The RPDs between the results were within the criteria in Table 2-10 of the SAP.

Table 1

Sample ID Cross Reference

Table 1: Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
02-Apr-2012	MW-19A-2Q12	1204017-14	N	5030B	524.2	III
02-Apr-2012	MW-19B-2Q12	1204017-15	N	5030B	524.2	III
02-Apr-2012	MW-10B-2Q12	1204018-09	N	5030B	524.2	IV
02-Apr-2012	MW-10C-2Q12	1204018-10	N	5030B	524.2	III
03-Apr-2012	MW-302-2Q12	1204017-02	TB	None	RSK-175	III
03-Apr-2012	MW-27B-2Q12	1204018-02	N	5030B	524.2	III
03-Apr-2012	MW-27B-2Q12MS	B2D0030-MS1	MS	5030B	524.2	III
03-Apr-2012	MW-27B-2Q12MSD	B2D0030-MSD1	MSD	5030B	524.2	III
03-Apr-2012	MW-5A-2Q12	1204006-02	N	5030B	524.2	III
03-Apr-2012	MW-5A-2Q12	1204006-02	N	Gen Prep	300.0	III
03-Apr-2012	MW-5A-2Q12	1204006-02	N	Gen Prep	415.3	III
03-Apr-2012	MW-5A-2Q12	1204006-02	N	None	2320B	III
03-Apr-2012	MW-5A-2Q12	1204006-02	N	None	IMM Ferrous	III
03-Apr-2012	MW-5A-2Q12	1204006-02	N	None	RSK-175	III
03-Apr-2012	MW-95A-2Q12	1204006-06	FD	5030B	524.2	III
03-Apr-2012	MW-5A-2Q12	1204018-01	N	None	4500-S2	III
03-Apr-2012	MW-26B-2Q12	1204017-20	N	5030B	524.2	III
03-Apr-2012	MW-26B-2Q12MS	B2D0041-MS1	MS	5030B	524.2	III
03-Apr-2012	MW-26B-2Q12MSD	B2D0041-MSD1	MSD	5030B	524.2	III
03-Apr-2012	MW-8A-2Q12	1204006-03	N	5030B	524.2	III
03-Apr-2012	MW-8A-2Q12	1204006-03	N	Gen Prep	300.0	III
03-Apr-2012	MW-8A-2Q12	1204006-03	N	Gen Prep	415.3	III
03-Apr-2012	MW-8A-2Q12	1204006-03	N	None	2320B	III
03-Apr-2012	MW-8A-2Q12	1204006-03	N	None	4500-S2	III
03-Apr-2012	MW-8A-2Q12	1204006-03	N	None	IMM Ferrous	III
03-Apr-2012	MW-8A-2Q12	1204006-03	N	None	RSK-175	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Table 1: Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
03-Apr-2012	MW-8A-2Q12DUP	B2D0010-DUP1	DUP	Gen Prep	300.0	III
03-Apr-2012	MW-8A-2Q12MS	B2D0010-MS1	MS	Gen Prep	300.0	III
03-Apr-2012	MW-8A-2Q12MSD	B2D0010-MSD1	MSD	Gen Prep	300.0	III
03-Apr-2012	MW-8A-2Q12MS	B2D0012-MS1	MS	5030B	524.2	III
03-Apr-2012	MW-8A-2Q12MSD	B2D0012-MSD1	MSD	5030B	524.2	III
03-Apr-2012	MW-8A-2Q12DUP	B2D0013-DUP1	DUP	None	IMM Ferrous	III
03-Apr-2012	MW-8A-2Q12MS	B2D0028-MS1	MS	None	RSK-175	III
03-Apr-2012	MW-8A-2Q12MSD	B2D0028-MSD1	MSD	None	RSK-175	III
03-Apr-2012	MW-8A-2Q12MS	B2D0036-MS1	MS	Gen Prep	415.3	III
03-Apr-2012	MW-8A-2Q12MSD	B2D0036-MSD1	MSD	Gen Prep	415.3	III
03-Apr-2012	MW-8A-2Q12DUP	B2D0037-DUP1	DUP	None	4500-S2	III
03-Apr-2012	MW-8A-2Q12DUP	B2D0045-DUP1	DUP	None	2320B	III
03-Apr-2012	MW-8A-2Q12MS	B2D0046-MS1	MS	None	RSK-175	III
03-Apr-2012	MW-8A-2Q12MSD	B2D0046-MSD1	MSD	None	RSK-175	III
03-Apr-2012	MW-16A-2Q12	1204018-15	N	5030B	524.2	III
03-Apr-2012	MW-15A-2Q12	1204006-04	N	Gen Prep	300.0	III
03-Apr-2012	MW-15A-2Q12	1204006-04	N	None	2320B	III
03-Apr-2012	MW-15A-2Q12	1204006-04	N	None	IMM Ferrous	III
03-Apr-2012	MW-85A-2Q12	1204006-05	FD	Gen Prep	300.0	III
03-Apr-2012	MW-85A-2Q12	1204006-05	FD	Gen Prep	415.3	III
03-Apr-2012	MW-85A-2Q12	1204006-05	FD	None	2320B	III
03-Apr-2012	MW-85A-2Q12	1204006-05	FD	None	4500-S2	III
03-Apr-2012	MW-85A-2Q12	1204006-05	FD	None	IMM Ferrous	III
03-Apr-2012	MW-15A-2Q12	1204017-12	N	5030B	524.2	III
03-Apr-2012	MW-15A-2Q12	1204017-12	N	Gen Prep	415.3	III
03-Apr-2012	MW-15A-2Q12	1204017-12	N	None	4500-S2	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Table 1: Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
03-Apr-2012	MW-15A-2Q12	1204017-12	N	None	RSK-175	III
03-Apr-2012	MW-85A-2Q12	1204018-07	FD	None	RSK-175	III
03-Apr-2012	MW-16C-2Q12	1204018-17	N	5030B	524.2	III
03-Apr-2012	MW-4A-2Q12	1204006-01	N	Gen Prep	300.0	III
03-Apr-2012	MW-4A-2Q12	1204006-01	N	Gen Prep	415.3	III
03-Apr-2012	MW-4A-2Q12	1204006-01	N	None	2320B	III
03-Apr-2012	MW-4A-2Q12	1204006-01	N	None	4500-S2	III
03-Apr-2012	MW-4A-2Q12	1204006-01	N	None	IMM Ferrous	III
03-Apr-2012	MW-4A-2Q12	1204006-01	N	None	RSK-175	IV
03-Apr-2012	MW-4A-2Q12	1204018-20	N	5030B	524.2	III
03-Apr-2012	MW-16B-2Q12	1204018-16	N	5030B	524.2	IV
04-Apr-2012	MW-302-2Q12	1204017-01	TB	5030B	524.2	III
04-Apr-2012	MW-302-2Q12MS	B2D0029-MS1	MS	5030B	524.2	III
04-Apr-2012	MW-302-2Q12MSD	B2D0029-MSD1	MSD	5030B	524.2	III
04-Apr-2012	MW-9B-2Q12	1204017-05	N	5030B	524.2	III
04-Apr-2012	MW-2A-2Q12	1204018-19	N	5030B	524.2	III
04-Apr-2012	MW-11A-2Q12	1204018-11	N	5030B	524.2	III
04-Apr-2012	MW-1A-2Q12	1204017-16	N	5030B	524.2	III
04-Apr-2012	MW-14A-2Q12	1204018-14	N	5030B	524.2	IV
04-Apr-2012	MW-13A-2Q12	1204018-13	N	5030B	524.2	IV
04-Apr-2012	MW-7A-2Q12	1204018-05	N	5030B	524.2	III
04-Apr-2012	MW-12A-2Q12	1204018-12	N	5030B	524.2	III
04-Apr-2012	MW-23A-2Q12	1204017-19	N	5030B	524.2	III
04-Apr-2012	MW-10A-2Q12	1204018-08	N	5030B	524.2	III
04-Apr-2012	MW-10A-2Q12MS	B2D0040-MS1	MS	5030B	524.2	III
04-Apr-2012	MW-10A-2Q12MSD	B2D0040-MSD1	MSD	5030B	524.2	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Table 1: Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
04-Apr-2012	MW-6A-2Q12	1204018-03	N	5030B	524.2	IV
04-Apr-2012	MW-17C-2Q12	1204017-13	N	5030B	524.2	III
04-Apr-2012	MW-17A-2Q12	1204018-18	N	5030B	524.2	III
04-Apr-2012	MW-21A-2Q12	1204017-17	N	5030B	524.2	III
04-Apr-2012	MW-22A-2Q12	1204017-18	N	5030B	524.2	III
05-Apr-2012	MW-302-2Q12	1204017-03	TB	None	RSK-175	III
05-Apr-2012	MW-28B-2Q12	1204017-11	N	5030B	524.2	III
05-Apr-2012	MW-28B-2Q12	1204017-11	N	Gen Prep	300.0	III
05-Apr-2012	MW-28B-2Q12	1204017-11	N	Gen Prep	415.3	III
05-Apr-2012	MW-28B-2Q12	1204017-11	N	None	2320B	III
05-Apr-2012	MW-28B-2Q12	1204017-11	N	None	4500-S2	III
05-Apr-2012	MW-28B-2Q12	1204017-11	N	None	IMM Ferrous	III
05-Apr-2012	MW-28B-2Q12	1204017-11	N	None	RSK-175	III
05-Apr-2012	SVE-1-2Q12	1204021-10	N	None	TO-15	III
05-Apr-2012	MW-303-2Q12	1204013-06	TB	5030B	524.2	III
05-Apr-2012	MW-403-2Q12	1204013-07	FB	5030B	524.2	III
05-Apr-2012	DP-1A-2Q12	1204021-01	N	None	TO-15	III
05-Apr-2012	EW-1-0401	1204013-05	N	5030B	524.2	III
05-Apr-2012	EFF-0401	1204013-04	N	5030B	524.2	III
05-Apr-2012	EFF-0401	1204013-04	N	None	2540C	III
05-Apr-2012	EFF-0401	1204013-04	N	None	2540D	III
05-Apr-2012	EFF-0401	1204013-04	N	None	5210B	III
05-Apr-2012	MW-17B-2Q12	1204017-07	N	5030B	524.2	III
05-Apr-2012	MW-17B-2Q12	1204017-07	N	Gen Prep	300.0	IV
05-Apr-2012	MW-17B-2Q12	1204017-07	N	Gen Prep	415.3	IV
05-Apr-2012	MW-17B-2Q12	1204017-07	N	None	2320B	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Table 1: Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
05-Apr-2012	MW-17B-2Q12	1204017-07	N	None	4500-S2	IV
05-Apr-2012	MW-17B-2Q12	1204017-07	N	None	IMM Ferrous	IV
05-Apr-2012	MW-17B-2Q12	1204017-07	N	None	RSK-175	III
05-Apr-2012	EFF-0401DUP	B2D0023-DUP1	DUP	None	2540C	III
05-Apr-2012	EFF-0401DUP	B2D0023-DUP2	DUP	None	2540D	III
05-Apr-2012	DP-1B-2Q12	1204021-02	N	None	TO-15	III
05-Apr-2012	DP-99B-2Q12	1204021-07	FD	None	TO-15	III
05-Apr-2012	CRB INF-0401	1204013-02	N	5030B	524.2	III
05-Apr-2012	CRB Mid-0401	1204013-03	N	5030B	524.2	III
05-Apr-2012	CRB Mid-0401MS	B2D0021-MS1	MS	5030B	524.2	III
05-Apr-2012	CRB Mid-0401MSD	B2D0021-MSD1	MSD	5030B	524.2	III
05-Apr-2012	CRB EFF-0401	1204013-01	N	5030B	524.2	III
05-Apr-2012	SVE-2-2Q12	1204021-11	N	None	TO-15	III
05-Apr-2012	GWTP Pr GAC-0401	1204014-01	N	None	TO-15	III
05-Apr-2012	GWTP Pr GAC-0401DUP	B2D0043-DUP1	DUP	None	TO-15	III
05-Apr-2012	GWTP Stack-0401	1204014-02	N	None	TO-15	III
05-Apr-2012	GWTP Stack-0401DUP	B2D0058-DUP2	DUP	None	TO-15	III
05-Apr-2012	SVE-3-2Q12	1204021-12	N	None	TO-15	III
05-Apr-2012	SVE-98-2Q12	1204021-14	N	None	TO-15	III
05-Apr-2012	SVE-98-2Q12DUP	B2D0063-DUP1	DUP	None	TO-15	III
05-Apr-2012	SVE-4-2Q12	1204021-13	N	None	TO-15	III
05-Apr-2012	MW-25B-2Q12	1204017-10	N	5030B	524.2	III
05-Apr-2012	MW-25B-2Q12	1204017-10	N	Gen Prep	300.0	III
05-Apr-2012	MW-25B-2Q12	1204017-10	N	Gen Prep	415.3	III
05-Apr-2012	MW-25B-2Q12	1204017-10	N	None	2320B	III
05-Apr-2012	MW-25B-2Q12	1204017-10	N	None	4500-S2	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Table 1: Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
05-Apr-2012	MW-25B-2Q12	1204017-10	N	None	IMM Ferrous	III
05-Apr-2012	MW-25B-2Q12	1204017-10	N	None	RSK-175	III
05-Apr-2012	MW-75B-2Q12	1204018-04	FD	5030B	524.2	III
05-Apr-2012	SVE Pre GAC-0401	1204014-03	N	None	TO-15	III
05-Apr-2012	SVE Stack-0401	1204014-04	N	None	TO-15	III
05-Apr-2012	MW-402-2Q12	1204017-04	FB	5030B	524.2	III
05-Apr-2012	MW-3A-2Q12	1204020-01	N	5030B	524.2	III
05-Apr-2012	MW-20B-2Q12	1204017-09	N	5030B	524.2	III
05-Apr-2012	MW-20B-2Q12	1204017-09	N	Gen Prep	300.0	III
05-Apr-2012	MW-20B-2Q12	1204017-09	N	Gen Prep	415.3	III
05-Apr-2012	MW-20B-2Q12	1204017-09	N	None	2320B	III
05-Apr-2012	MW-20B-2Q12	1204017-09	N	None	4500-S2	III
05-Apr-2012	MW-20B-2Q12	1204017-09	N	None	IMM Ferrous	III
05-Apr-2012	MW-20B-2Q12	1204017-09	N	None	RSK-175	III
05-Apr-2012	MW-80B-2Q12	1204018-06	FD	5030B	524.2	III
05-Apr-2012	MW-20A-2Q12	1204017-08	N	5030B	524.2	III
05-Apr-2012	MW-20A-2Q12	1204017-08	N	Gen Prep	300.0	III
05-Apr-2012	MW-20A-2Q12	1204017-08	N	Gen Prep	415.3	III
05-Apr-2012	MW-20A-2Q12	1204017-08	N	None	2320B	III
05-Apr-2012	MW-20A-2Q12	1204017-08	N	None	4500-S2	III
05-Apr-2012	MW-20A-2Q12	1204017-08	N	None	IMM Ferrous	III
05-Apr-2012	MW-20A-2Q12	1204017-08	N	None	RSK-175	IV
05-Apr-2012	MW-20A-2Q12DUP	B2D0027-DUP1	DUP	None	IMM Ferrous	III
05-Apr-2012	MW-20A-2Q12MS	B2D0036-MS2	MS	Gen Prep	415.3	III
05-Apr-2012	MW-20A-2Q12MSD	B2D0036-MSD2	MSD	Gen Prep	415.3	III
05-Apr-2012	MW-20A-2Q12DUP	B2D0045-DUP2	DUP	None	2320B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Table 1: Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
05-Apr-2012	MW-4B-2Q12	1204017-06	N	5030B	524.2	III
05-Apr-2012	MW-4B-2Q12	1204017-06	N	Gen Prep	300.0	III
05-Apr-2012	MW-4B-2Q12	1204017-06	N	Gen Prep	415.3	III
05-Apr-2012	MW-4B-2Q12	1204017-06	N	None	2320B	III
05-Apr-2012	MW-4B-2Q12	1204017-06	N	None	4500-S2	III
05-Apr-2012	MW-4B-2Q12	1204017-06	N	None	IMM Ferrous	III
05-Apr-2012	MW-4B-2Q12	1204017-06	N	None	RSK-175	III
05-Apr-2012	MW-4B-2Q12MS	B2D0022-MS1	MS	Gen Prep	300.0	III
05-Apr-2012	MW-4B-2Q12MSD	B2D0022-MSD1	MSD	Gen Prep	300.0	III
05-Apr-2012	MW-4C-2Q12	1204020-07	N	5030B	524.2	III
06-Apr-2012	MW-82A-2Q12	1204020-03	FD	5030B	524.2	III
06-Apr-2012	MW-18A-2Q12	1204020-04	N	5030B	524.2	III
06-Apr-2012	MW-82A-2Q12MS	B2D0051-MS2	MS	5030B	524.2	III
06-Apr-2012	MW-82A-2Q12MSD	B2D0051-MSD2	MSD	5030B	524.2	III
06-Apr-2012	DP-5A-2Q12	1204021-03	N	None	TO-15	III
06-Apr-2012	DP-5B-2Q12	1204021-04	N	None	TO-15	IV
06-Apr-2012	DP-6A-2Q12	1204021-05	N	None	TO-15	IV
06-Apr-2012	DP-6B-2Q12	1204021-06	N	None	TO-15	III
06-Apr-2012	MW-20C-2Q12	1204020-06	N	5030B	524.2	III
06-Apr-2012	OSVE-11-2Q12	1204021-09	N	None	TO-15	IV
06-Apr-2012	OSVE-10-2Q12	1204021-08	N	None	TO-15	III
06-Apr-2012	MW-24B-2Q12	1204020-05	N	5030B	524.2	III
06-Apr-2012	MW-29B-2Q12	1204020-02	N	5030B	524.2	III
08-May-2012	MW-304-2Q12	1205020-03	TB	5030B	524.2	III
08-May-2012	EW-1-0502	1205020-02	N	5030B	524.2	III
08-May-2012	EFF-0502	1205020-01	N	5030B	524.2	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Table 1: Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-May-2012	EFF-0502	1205020-01	N	None	2540C	III
08-May-2012	EFF-0502	1205020-01	N	None	2540D	III
08-May-2012	EFF-0502	1205020-01	N	None	5210B	III
08-May-2012	EFF-0502MS	B2E0064-MS2	MS	5030B	524.2	III
08-May-2012	EFF-0502MSD	B2E0064-MSD2	MSD	5030B	524.2	III
08-May-2012	EFF-0502DUP	B2E0068-DUP1	DUP	None	2540C	III
08-May-2012	EFF-0502DUP	B2E0068-DUP2	DUP	None	2540D	III
08-May-2012	GWTP Pr GAC-0502	1205023-01	N	None	TO-15	III
08-May-2012	GWTP Pr GAC-0502DUP	B2E0097-DUP1	DUP	None	TO-15	III
08-May-2012	GWTP Stack-0502	1205023-02	N	None	TO-15	III
08-May-2012	SVE Pre GAC-0502	1205023-03	N	None	TO-15	III
08-May-2012	SVE Stack-0502	1205023-04	N	None	TO-15	III
07-Jun-2012	MW-305-2Q12	1206014-01	TB	5030B	524.2	III
07-Jun-2012	EW-1-0602	1206014-03	N	5030B	524.2	III
07-Jun-2012	MW-101-0602	1206014-04	FD	5030B	524.2	III
07-Jun-2012	EFF-0602	1206014-02	N	5030B	524.2	III
07-Jun-2012	EFF-0602	1206014-02	N	None	2540C	III
07-Jun-2012	EFF-0602	1206014-02	N	None	2540D	III
07-Jun-2012	EFF-0602	1206014-02	N	None	5210B	III
07-Jun-2012	EFF-0602MS	B2F0028-MS1	MS	5030B	524.2	III
07-Jun-2012	EFF-0602MSD	B2F0028-MSD1	MSD	5030B	524.2	III
07-Jun-2012	EFF-0602DUP	B2F0029-DUP1	DUP	None	2540C	III
07-Jun-2012	EFF-0602DUP	B2F0029-DUP2	DUP	None	2540D	III
07-Jun-2012	GWTP Stack-0602	1206016-02	N	None	TO-15	III
07-Jun-2012	GWTP Pr GAC-0602	1206016-01	N	None	TO-15	III
07-Jun-2012	GWTP Pr GAC-0602DUP	B2F0030-DUP1	DUP	None	TO-15	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Table 1: Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
07-Jun-2012	SVE Pre GAC-0602	1206016-04	N	None	TO-15	III
07-Jun-2012	SVE Stack-0602	1206016-05	N	None	TO-15	III
07-Jun-2012	MW-112-0602	1206016-03	FD	None	TO-15	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Table 2

Primary and Field QC Samples by Method

Table 2: Primary and Field QC Samples by Method

Analytical Method	Matrix	Primary Samples	Field Duplicates	Trip Blanks	Equipment Blanks	Field Blanks
2320B	AQ	10	1	None	None	None
2540C	AQ	3	None	None	None	None
2540D	AQ	3	None	None	None	None
300.0	AQ	10	1	None	None	None
415.3	AQ	10	1	None	None	None
4500-S2	AQ	10	1	None	None	None
5210B	AQ	3	None	None	None	None
524.2	AQ	48	6	4	None	2
IMM Ferrous	AQ	10	1	None	None	None
RSK-175	AQ	10	1	1	None	None
TO-15	Air	25	2	None	None	None

Table 3

Detected Target Analytes

Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12095A								
2320B	MW-15A-2Q12	AQ	N					
				Bicarbonate Alkalinity	10	360		mg/L
				Total Alkalinity	10	360		mg/L
2320B	MW-4A-2Q12	AQ	N					
				Bicarbonate Alkalinity	10	54		mg/L
				Total Alkalinity	10	54		mg/L
2320B	MW-5A-2Q12	AQ	N					
				Bicarbonate Alkalinity	10	370		mg/L
				Total Alkalinity	10	370		mg/L
2320B	MW-85A-2Q12	AQ	FD					
				Bicarbonate Alkalinity	10	350		mg/L
				Total Alkalinity	10	350		mg/L
2320B	MW-8A-2Q12	AQ	N					
				Bicarbonate Alkalinity	10	400		mg/L
				Total Alkalinity	10	400		mg/L
300.0	MW-15A-2Q12	AQ	N					
				CHLORIDE	2.0	70		mg/L
				NITRATE AS N	0.10	14		mg/L
				SULFATE AS SO4	0.50	43		mg/L
300.0	MW-4A-2Q12	AQ	N					
				CHLORIDE	1.0	2.7		mg/L
				NITRATE AS N	0.10	0.12		mg/L
				SULFATE AS SO4	0.50	2.9		mg/L
300.0	MW-5A-2Q12	AQ	N					
				CHLORIDE	5.0	75		mg/L
				NITRATE AS N	0.50	26		mg/L
				SULFATE AS SO4	0.50	38		mg/L
300.0	MW-85A-2Q12	AQ	FD					
				CHLORIDE	2.0	70		mg/L
				NITRATE AS N	0.10	14		mg/L
				SULFATE AS SO4	0.50	43		mg/L
300.0	MW-8A-2Q12	AQ	N					
				CHLORIDE	2.0	63		mg/L
				NITRATE AS N	0.10	4.0		mg/L
				SULFATE AS SO4	0.50	38		mg/L
415.3	MW-4A-2Q12	AQ	N					
				Total Organic Carbon	0.50	2.1		mg/L
415.3	MW-5A-2Q12	AQ	N					
				Total Organic Carbon	0.50	0.46J		mg/L
415.3	MW-85A-2Q12	AQ	FD					
				Total Organic Carbon	0.50	0.43J		mg/L
415.3	MW-8A-2Q12	AQ	N					
				Total Organic Carbon	0.50	0.40J		mg/L

**Note: This report excludes laboratory detects that were qualified as ND due to Blank Contamination*

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12095A								
4500-S2	MW-4A-2Q12	AQ	N					
				SULFIDE	1.0	0.62J		mg/L
4500-S2	MW-8A-2Q12	AQ	N					
				SULFIDE	1.0	0.64J		mg/L
524.2	MW-5A-2Q12	AQ	N					
				TETRACHLOROETHENE	5.0	92		ug/L
524.2	MW-8A-2Q12	AQ	N					
				CHLOROFORM	0.5	3.5		ug/L
				TETRACHLOROETHENE	1.0	29		ug/L
524.2	MW-95A-2Q12	AQ	FD					
				TETRACHLOROETHENE	5.0	78		ug/L
RSK-175	MW-4A-2Q12	AQ	N					
				Carbon Dioxide	3000	4100		ug/L
				METHANE	1.2	1.2		ug/L
RSK-175	MW-5A-2Q12	AQ	N					
				Carbon Dioxide	3000	37000		ug/L
RSK-175	MW-8A-2Q12	AQ	N					
				Carbon Dioxide	3000	40000J-		ug/L
SDG: 12097A								
2540C	EFF-0401	AQ	N					
				TOTAL DISSOLVED SOLIDS	20	630		mg/L
5210B	EFF-0401	AQ	N					
				Biochemical Oxygen Demand	2.0	2.0		mg/L
524.2	CRB INF-0401	AQ	N					
				TETRACHLOROETHENE	0.5	0.3J		ug/L
524.2	EW-1-0401	AQ	N					
				CHLOROFORM	0.5	3.2		ug/L
				TETRACHLOROETHENE	5.0	130		ug/L

**Note: This report excludes laboratory detects that were qualified as ND due to Blank Contamination*

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Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12097B								
TO-15	GWTP Pr GAC-0401	Air	N					
				1,1-DICHLOROETHANE	2.3	1.9J		ppbv
				CHLOROFORM	2.3	9.7		ppbv
				TETRACHLOROETHENE	23	310J		ppbv
				TRICHLOROETHENE	2.3	3.5		ppbv
TO-15	GWTP Stack-0401	Air	N					
				BENZENE	2.2	3.2		ppbv
				CHLOROFORM	2.2	6.6		ppbv
				TETRACHLOROETHENE	55	200		ppbv
TO-15	SVE Pre GAC-0401	Air	N					
				BENZENE	2.3	1.2J		ppbv
				TETRACHLOROETHENE	2.3	5.1		ppbv
				TOLUENE	2.3	2.4		ppbv
TO-15	SVE Stack-0401	Air	N					
				CHLOROFORM	2.2	22		ppbv
				CIS-1,2-DICHLOROETHENE	2.2	1.6J		ppbv
				TETRACHLOROETHENE	2.2	4.4		ppbv

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N = Normal Sample *TB = Trip Blank*
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Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12097D								
2320B	MW-17B-2Q12	AQ	N					
				Bicarbonate Alkalinity	10	210		mg/L
				Total Alkalinity	10	210		mg/L
2320B	MW-20A-2Q12	AQ	N					
				Bicarbonate Alkalinity	10	410		mg/L
				Total Alkalinity	10	410		mg/L
2320B	MW-20B-2Q12	AQ	N					
				Bicarbonate Alkalinity	10	180		mg/L
				Total Alkalinity	10	180		mg/L
2320B	MW-25B-2Q12	AQ	N					
				Bicarbonate Alkalinity	10	190		mg/L
				Total Alkalinity	10	190		mg/L
2320B	MW-28B-2Q12	AQ	N					
				Bicarbonate Alkalinity	10	220		mg/L
				Total Alkalinity	10	220		mg/L
2320B	MW-4B-2Q12	AQ	N					
				Bicarbonate Alkalinity	10	130		mg/L
				Total Alkalinity	10	130		mg/L
300.0	MW-17B-2Q12	AQ	N					
				CHLORIDE	1.0	50		mg/L
				NITRATE AS N	0.10	4.2		mg/L
				SULFATE AS SO4	0.50	19		mg/L
300.0	MW-20A-2Q12	AQ	N					
				CHLORIDE	2.0	66		mg/L
				NITRATE AS N	0.10	11		mg/L
				SULFATE AS SO4	1.0	54		mg/L
300.0	MW-20B-2Q12	AQ	N					
				CHLORIDE	1.0	22		mg/L
				NITRATE AS N	0.10	4.9		mg/L
				SULFATE AS SO4	0.50	11		mg/L
300.0	MW-25B-2Q12	AQ	N					
				CHLORIDE	1.0	27		mg/L
				NITRATE AS N	0.10	4.3		mg/L
				SULFATE AS SO4	0.50	12		mg/L
300.0	MW-28B-2Q12	AQ	N					
				CHLORIDE	1.0	37		mg/L
				NITRATE AS N	0.10	4.8		mg/L
				SULFATE AS SO4	0.50	15		mg/L
300.0	MW-4B-2Q12	AQ	N					
				CHLORIDE	1.0	14		mg/L
				NITRATE AS N	0.10	3.8		mg/L
				SULFATE AS SO4	0.50	5.5		mg/L

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Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12097D								
415.3	MW-15A-2Q12	AQ	N					
				Total Organic Carbon	0.50	0.44J		mg/L
415.3	MW-17B-2Q12	AQ	N					
				Total Organic Carbon	0.50	7.3		mg/L
415.3	MW-20A-2Q12	AQ	N					
				Total Organic Carbon	0.50	2.5		mg/L
415.3	MW-20B-2Q12	AQ	N					
				Total Organic Carbon	0.50	0.75		mg/L
415.3	MW-25B-2Q12	AQ	N					
				Total Organic Carbon	0.50	0.44J		mg/L
415.3	MW-28B-2Q12	AQ	N					
				Total Organic Carbon	0.50	0.39J		mg/L
415.3	MW-4B-2Q12	AQ	N					
				Total Organic Carbon	0.50	1.4		mg/L
4500-S2	MW-17B-2Q12	AQ	N					
				SULFIDE	1.0	0.55J		mg/L
4500-S2	MW-20B-2Q12	AQ	N					
				SULFIDE	1.0	0.55J		mg/L
524.2	MW-15A-2Q12	AQ	N					
				CHLOROFORM	0.5	0.4J		ug/L
524.2	MW-17B-2Q12	AQ	N					
				1,2,4-TRIMETHYLBENZENE	0.5	0.4J		ug/L
				ACETONE	4.0	4.6		ug/L
				BENZENE	0.5	1.0		ug/L
				CARBON TETRACHLORIDE	0.5	0.3J		ug/L
				ETHYLBENZENE	0.5	0.5		ug/L
				M&P-XYLENE	1.0	1.4		ug/L
				O-XYLENE	0.5	0.4J		ug/L
				TETRACHLOROETHENE	0.5	20		ug/L
524.2	MW-17C-2Q12	AQ	N					
				BENZENE	0.5	0.5		ug/L
				ETHYLBENZENE	0.5	0.2J		ug/L
				M&P-XYLENE	1.0	0.5J		ug/L
				TETRACHLOROETHENE	0.5	0.3J		ug/L
524.2	MW-19A-2Q12	AQ	N					
				CHLOROFORM	0.5	1.4		ug/L
524.2	MW-19B-2Q12	AQ	N					
				TETRACHLOROETHENE	0.5	0.3J		ug/L
524.2	MW-1A-2Q12	AQ	N					
				TETRACHLOROETHENE	0.5	2.3		ug/L

**Note: This report excludes laboratory detects that were qualified as ND due to Blank Contamination*

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Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12097D								
524.2	MW-20A-2Q12	AQ	N					
				CHLOROFORM	0.5	5.3		ug/L
				DICHLORODIFLUOROMETHANE	0.5	4.9		ug/L
				TETRACHLOROETHENE	10	160		ug/L
524.2	MW-20B-2Q12	AQ	N					
				ACETONE	4.0	2.2J		ug/L
				BENZENE	0.5	0.3J		ug/L
				TETRACHLOROETHENE	5.0	65		ug/L
524.2	MW-21A-2Q12	AQ	N					
				BENZENE	0.5	0.5		ug/L
				CHLOROFORM	0.5	4.1		ug/L
				ETHYLBENZENE	0.5	0.2J		ug/L
				TETRACHLOROETHENE	0.5	0.6		ug/L
524.2	MW-22A-2Q12	AQ	N					
				CHLOROFORM	0.5	4.6		ug/L
524.2	MW-23A-2Q12	AQ	N					
				1,1,2-TRICHLOROETHANE	0.5	1.6		ug/L
				BENZENE	0.5	0.2J		ug/L
				CHLOROFORM	0.5	3.8		ug/L
				TETRACHLOROETHENE	2.5	36		ug/L
524.2	MW-25B-2Q12	AQ	N					
				TETRACHLOROETHENE	5.0	120		ug/L
524.2	MW-26B-2Q12	AQ	N					
				BENZENE	0.5	0.3J		ug/L
524.2	MW-28B-2Q12	AQ	N					
				TETRACHLOROETHENE	2.5	43		ug/L
524.2	MW-4B-2Q12	AQ	N					
				TETRACHLOROETHENE	0.5	4.4		ug/L
524.2	MW-9B-2Q12	AQ	N					
				TETRACHLOROETHENE	0.5	4.0		ug/L
RSK-175	MW-15A-2Q12	AQ	N					
				Carbon Dioxide	3000	42000		ug/L
RSK-175	MW-17B-2Q12	AQ	N					
				Carbon Dioxide	3000	16000		ug/L
RSK-175	MW-20A-2Q12	AQ	N					
				Carbon Dioxide	3000	28000		ug/L
RSK-175	MW-20B-2Q12	AQ	N					
				Carbon Dioxide	3000	6500		ug/L
RSK-175	MW-25B-2Q12	AQ	N					
				Carbon Dioxide	3000	6300		ug/L
RSK-175	MW-28B-2Q12	AQ	N					
				Carbon Dioxide	3000	10000		ug/L

**Note: This report excludes laboratory detects that were qualified as ND due to Blank Contamination*

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12097D								
RSK-175	MW-302-2Q12	AQ	TB					
				METHANE	1.2	0.7J		ug/L
RSK-175	MW-4B-2Q12	AQ	N					
				Carbon Dioxide	3000	4900		ug/L

**Note: This report excludes laboratory detects that were qualified as ND due to Blank Contamination*

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12097E								
4500-S2	MW-5A-2Q12	AQ	N					
				SULFIDE	1.0	0.54J		mg/L
524.2	MW-10A-2Q12	AQ	N					
				1,1,2-TRICHLOROETHANE	0.5	1.7J-		ug/L
				CHLOROFORM	0.5	4.7		ug/L
				TETRACHLOROETHENE	5.0	65		ug/L
524.2	MW-10B-2Q12	AQ	N					
				TETRACHLOROETHENE	0.5	16		ug/L
524.2	MW-11A-2Q12	AQ	N					
				CHLOROFORM	0.5	2.1		ug/L
				TETRACHLOROETHENE	0.5	2.7		ug/L
524.2	MW-12A-2Q12	AQ	N					
				1,1,2-TRICHLOROETHANE	0.5	0.5		ug/L
				BROMODICHLOROMETHANE	0.5	0.4J		ug/L
				CHLOROFORM	0.5	7.5		ug/L
				TETRACHLOROETHENE	0.5	15		ug/L
				TRICHLOROFLUOROMETHANE	0.5	0.4J		ug/L
524.2	MW-13A-2Q12	AQ	N					
				CHLOROFORM	0.5	1.5		ug/L
				TETRACHLOROETHENE	0.5	15		ug/L
524.2	MW-14A-2Q12	AQ	N					
				CHLOROFORM	0.5	0.3J		ug/L
				TETRACHLOROETHENE	0.5	25		ug/L
524.2	MW-16A-2Q12	AQ	N					
				CHLOROFORM	0.5	0.7		ug/L
524.2	MW-16B-2Q12	AQ	N					
				CHLOROFORM	0.5	0.7		ug/L
				TETRACHLOROETHENE	0.5	8.8		ug/L
524.2	MW-17A-2Q12	AQ	N					
				CHLOROFORM	1.0	5.0		ug/L
				TETRACHLOROETHENE	1.0	0.6J		ug/L
524.2	MW-2A-2Q12	AQ	N					
				CHLOROFORM	0.5	2.6		ug/L
				TETRACHLOROETHENE	0.5	5.3		ug/L
524.2	MW-4A-2Q12	AQ	N					
				1,1,2-TRICHLOROETHANE	0.5	2.8		ug/L
				CIS-1,2-DICHLOROETHENE	0.5	0.4J		ug/L
				TETRACHLOROETHENE	2.5	71		ug/L
				TRICHLOROETHENE	0.5	0.4J		ug/L
524.2	MW-6A-2Q12	AQ	N					
				BROMODICHLOROMETHANE	0.5	0.3J		ug/L
				CHLOROFORM	0.5	6.2		ug/L
				TETRACHLOROETHENE	0.5	10		ug/L

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Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12097E								
524.2	MW-75B-2Q12	AQ	FD					
				1,1,2-TRICHLOROETHANE	0.5	4.1		ug/L
				TETRACHLOROETHENE	5.0	98J-		ug/L
524.2	MW-7A-2Q12	AQ	N					
				CHLOROFORM	0.5	1.3		ug/L
524.2	MW-80B-2Q12	AQ	FD					
				1,1,2-TRICHLOROETHANE	0.5	2.2		ug/L
				BENZENE	0.5	0.5		ug/L
				ETHYLBENZENE	0.5	0.2J		ug/L
				M&P-XYLENE	1.0	0.6J		ug/L
				O-XYLENE	0.5	0.2J		ug/L
				TETRACHLOROETHENE	2.5	65		ug/L
RSK-175	MW-85A-2Q12	AQ	FD					
				Carbon Dioxide	3000	42000		ug/L

**Note: This report excludes laboratory detects that were qualified as ND due to Blank Contamination*

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12101A								
524.2	MW-18A-2Q12	AQ	N					
				1,2,4-TRIMETHYLBENZENE	0.5	0.3J		ug/L
				ACETONE	4.0	2.1J		ug/L
				BENZENE	0.5	0.7		ug/L
				CARBON TETRACHLORIDE	0.5	0.6		ug/L
				CHLOROFORM	0.5	1.3		ug/L
				ETHYLBENZENE	0.5	0.3J		ug/L
				M&P-XYLENE	1.0	1.3		ug/L
				O-XYLENE	0.5	0.5		ug/L
				TETRACHLOROETHENE	0.5	2.3		ug/L
				TOLUENE	0.5	0.2J		ug/L
524.2	MW-20C-2Q12	AQ	N					
				BENZENE	0.5	0.3J		ug/L
				TETRACHLOROETHENE	0.5	0.3J		ug/L
524.2	MW-24B-2Q12	AQ	N					
				BENZENE	0.5	0.3J		ug/L
				TETRACHLOROETHENE	1.0	33		ug/L
524.2	MW-29B-2Q12	AQ	N					
				1,1,2-TRICHLOROETHANE	0.5	2.7		ug/L
				BENZENE	0.5	0.2J		ug/L
				TETRACHLOROETHENE	5.0	70		ug/L
524.2	MW-3A-2Q12	AQ	N					
				CHLOROFORM	0.5	1.0J+		ug/L
				TETRACHLOROETHENE	0.5	25J+		ug/L
524.2	MW-4C-2Q12	AQ	N					
				BENZENE	0.5	0.4J		ug/L
				TETRACHLOROETHENE	0.5	0.7		ug/L
524.2	MW-82A-2Q12	AQ	FD					
				1,2,4-TRIMETHYLBENZENE	0.5	0.3J		ug/L
				BENZENE	0.5	0.7		ug/L
				CARBON TETRACHLORIDE	0.5	0.7		ug/L
				CHLOROFORM	0.5	0.9		ug/L
				ETHYLBENZENE	0.5	0.3J		ug/L
				M&P-XYLENE	1.0	1.3		ug/L
				O-XYLENE	0.5	0.4J		ug/L
				TETRACHLOROETHENE	0.5	2.0		ug/L
				TOLUENE	0.5	0.2J		ug/L

**Note: This report excludes laboratory detects that were qualified as ND due to Blank Contamination*

N = Normal Sample *TB = Trip Blank*
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Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12101B								
TO-15	DP-1A-2Q12	Air	N					
				TETRACHLOROETHENE	37	110		ppbv
TO-15	DP-1B-2Q12	Air	N					
				TETRACHLOROETHENE	3.1	2.4J		ppbv
TO-15	DP-5A-2Q12	Air	N					
				1,2,4-TRIMETHYLBENZENE	2.1	1.8J		ppbv
				BENZENE	2.1	1.4J		ppbv
				M&P-XYLENE	4.1	3.4J		ppbv
				O-XYLENE	2.1	1.2J		ppbv
				TOLUENE	2.1	4.1		ppbv
TO-15	DP-5B-2Q12	Air	N					
				BENZENE	2.2	2.8		ppbv
				CHLOROFORM	2.2	16		ppbv
				METHYLENE CHLORIDE	2.2	1.3J		ppbv
				TETRACHLOROETHENE	2.2	4.2		ppbv
				TOLUENE	2.2	1.5J		ppbv
TO-15	DP-6A-2Q12	Air	N					
				CHLOROFORM	2.2	1.9J		ppbv
				TETRACHLOROETHENE	2.2	44		ppbv
TO-15	DP-6B-2Q12	Air	N					
				CHLOROFORM	2.2	1.8J		ppbv
TO-15	DP-99B-2Q12	Air	FD					
				TETRACHLOROETHENE	2.9	3.2		ppbv
TO-15	OSVE-10-2Q12	Air	N					
				TETRACHLOROETHENE	37	160		ppbv
TO-15	OSVE-11-2Q12	Air	N					
				CIS-1,2-DICHLOROETHENE	2.2	1.1J		ppbv
				TETRACHLOROETHENE	2.2	7.1		ppbv
TO-15	SVE-1-2Q12	Air	N					
				TETRACHLOROETHENE	2.3	10		ppbv
TO-15	SVE-2-2Q12	Air	N					
				1,2-DICHLOROBENZENE	2.0	3.1		ppbv
				1,4-DICHLOROBENZENE	2.0	1.4J		ppbv
				BENZENE	2.0	1.6J		ppbv
				CIS-1,2-DICHLOROETHENE	2.0	1.5J		ppbv
				TETRACHLOROETHENE	20	270		ppbv
				TRICHLOROETHENE	20	85		ppbv
TO-15	SVE-3-2Q12	Air	N					
				TETRACHLOROETHENE	20	220		ppbv
				TRICHLOROETHENE	2.0	3.9		ppbv

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Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12101B								
TO-15	SVE-4-2Q12	Air	N					
				1,2-DICHLOROBENZENE	2.0	2.3		ppbv
				1,4-DICHLOROBENZENE	2.0	1.1J		ppbv
				CHLOROFORM	2.0	19		ppbv
				TETRACHLOROETHENE	2.0	22		ppbv
				TRICHLOROETHENE	29	87		ppbv
TO-15	SVE-98-2Q12	Air	FD					
				TETRACHLOROETHENE	31	170		ppbv
				TRICHLOROETHENE	2.0	13		ppbv
SDG: 12129C								
2540C	EFF-0502	AQ	N					
				TOTAL DISSOLVED SOLIDS	20	660		mg/L
524.2	EW-1-0502	AQ	N					
				TETRACHLOROETHENE	5.0	130		ug/L
524.2	MW-304-2Q12	AQ	TB					
				ACETONE	4.0	6.7J		ug/L
				BROMODICHLOROMETHANE	0.5	5.8		ug/L
				CHLOROFORM	2.5	53		ug/L
SDG: 12130B								
TO-15	GWTP Pr GAC-0502	Air	N					
				CHLOROFORM	2.2	8.2		ppbv
				TETRACHLOROETHENE	22	330		ppbv
TO-15	GWTP Stack-0502	Air	N					
				BENZENE	2.4	4.6		ppbv
				CHLOROFORM	2.4	6.9		ppbv
				TETRACHLOROETHENE	24	300		ppbv
TO-15	SVE Pre GAC-0502	Air	N					
				CHLOROFORM	2.5	3.1		ppbv
				TETRACHLOROETHENE	2.5	45		ppbv
TO-15	SVE Stack-0502	Air	N					
				CHLOROFORM	2.4	9.1		ppbv
				DICHLORODIFLUOROMETHANE	2.4	1.2J		ppbv
				TETRACHLOROETHENE	2.4	1.5J		ppbv

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Table 3: Detected Target Analytes

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Units
SDG: 12160A								
2540C	EFF-0602	AQ	N					
				TOTAL DISSOLVED SOLIDS	20	640		mg/L
524.2	EW-1-0602	AQ	FD					
				CHLOROFORM	0.5	3.2		ug/L
				TETRACHLOROETHENE	5.0	120J+		ug/L
524.2	MW-101-0602	AQ	N					
				CHLOROFORM	0.5	3.1		ug/L
				TETRACHLOROETHENE	5.0	130		ug/L
SDG: 12160B								
TO-15	GWTP Pr GAC-0602	Air	N					
				CHLOROFORM	2.4	7.7		ppbv
				TETRACHLOROETHENE	24	260		ppbv
TO-15	GWTP Stack-0602	Air	N					
				BENZENE	2.4	4.1		ppbv
				CHLOROFORM	2.4	6.8		ppbv
				TETRACHLOROETHENE	24	230		ppbv
TO-15	MW-112-0602	Air	N					
				CHLOROFORM	2.5	8.6		ppbv
TO-15	SVE Pre GAC-0602	Air	N					
				TETRACHLOROETHENE	2.3	7.1		ppbv
TO-15	SVE Stack-0602	Air	FD					
				CHLOROFORM	2.3	11		ppbv
				TETRACHLOROETHENE	2.3	1.5J		ppbv

**Note: This report excludes laboratory detects that were qualified as ND due to Blank Contamination*

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Table 4

Overall Qualified Results

Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12095A										
415.3	MW-5A-2Q12	AQ	N							
				Total Organic Carbon	0.50	0.46J,C1		J	mg/L	RI
415.3	MW-85A-2Q12	AQ	FD							
				Total Organic Carbon	0.50	0.43J,C1		J	mg/L	RI
415.3	MW-8A-2Q12	AQ	N							
				Total Organic Carbon	0.50	0.40J,C1		J	mg/L	RI
4500-S2	MW-4A-2Q12	AQ	N							
				SULFIDE	1.0	0.62J,C1		J	mg/L	RI
4500-S2	MW-8A-2Q12	AQ	N							
				SULFIDE	1.0	0.64J,C1		J	mg/L	RI
524.2	MW-5A-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C3,		UJ	ug/L	IcRsd, Ccv
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C4		UJ	ug/L	Ccv
524.2	MW-8A-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C3,		UJ	ug/L	IcRsd, Ccv
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C4		UJ	ug/L	Ccv
524.2	MW-95A-2Q12	AQ	FD							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C3,		UJ	ug/L	IcRsd, Ccv
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C4		UJ	ug/L	Ccv
RSK-175	MW-8A-2Q12	AQ	N							
				Carbon Dioxide	3000	40000J, Q4		J-	ug/L	Ms

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12097A										
524.2	CRB EFF-0401	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
524.2	CRB INF-0401	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				TETRACHLOROETHENE	0.5	0.3J,C1		J	ug/L	RI
524.2	CRB Mid-0401	AQ	N							
				1,3-DICHLOROBENZENE	0.5	0.5J,U,Q4		UJ	ug/L	Ms
				BROMOBENZENE	0.5	0.5J,U,Q4		UJ	ug/L	Ms
				BROMODICHLOROMETHANE	0.5	0.5J,U,Q4		UJ	ug/L	Ms
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				DIBROMOMETHANE	0.5	0.5J,U,Q4		UJ	ug/L	Ms
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
524.2	EFF-0401	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
524.2	EW-1-0401	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12097A										
524.2	MW-303-2Q12	AQ	TB							
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
524.2	MW-403-2Q12	AQ	FB							
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
SDG: 12097B										
TO-15	GWTP Pr GAC-0401	Air	N							
				1,1-DICHLOROETHANE	2.3	1.9J,C1		J	ppbv	RI
				TETRACHLOROETHENE	23	310J,Q5		J	ppbv	Ld
TO-15	SVE Pre GAC-0401	Air	N							
				BENZENE	2.3	1.2J,C1		J	ppbv	RI
TO-15	SVE Stack-0401	Air	N							
				CIS-1,2-DICHLOROETHENE	2.2	1.6J,C1		J	ppbv	RI

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12097D										
415.3	MW-15A-2Q12	AQ	N							
				Total Organic Carbon	0.50	0.44J,C1		J	mg/L	RI
415.3	MW-25B-2Q12	AQ	N							
				Total Organic Carbon	0.50	0.44J,C1		J	mg/L	RI
415.3	MW-28B-2Q12	AQ	N							
				Total Organic Carbon	0.50	0.39J,C1		J	mg/L	RI
4500-S2	MW-17B-2Q12	AQ	N							
				SULFIDE	1.0	0.55J,C1		J	mg/L	RI
4500-S2	MW-20B-2Q12	AQ	N							
				SULFIDE	1.0	0.55J,C1		J	mg/L	RI
524.2	MW-15A-2Q12	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				CHLOROFORM	0.5	0.4J,C1		J	ug/L	RI
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
524.2	MW-17B-2Q12	AQ	N							
				1,2,4-TRIMETHYLBENZENE	0.5	0.4J,C1		J	ug/L	RI
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd, Icv
				CARBON TETRACHLORIDE	0.5	0.3J,C1		J	ug/L	RI
				CIS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				O-XYLENE	0.5	0.4J,C1		J	ug/L	RI
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12097D										
524.2	MW-17C-2Q12	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				ETHYLBENZENE	0.5	0.2J,C1		J	ug/L	RI
				M&P-XYLENE	1.0	0.5J,C1		J	ug/L	RI
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				TETRACHLOROETHENE	0.5	0.3J,C1		J	ug/L	RI
524.2	MW-19A-2Q12	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
524.2	MW-19B-2Q12	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				TETRACHLOROETHENE	0.5	0.3J,C1		J	ug/L	RI
524.2	MW-1A-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				BROMOMETHANE	0.5	0.5J,U,C 3,		UJ	ug/L	IcRsd, Icv,
				CIS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd, Ccv

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12097D										
524.2	MW-20A-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				BROMOMETHANE	0.5	0.5J,U,C3,		UJ	ug/L	IcRsd, Icv,
				CIS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd, Ccv
524.2	MW-20B-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,A-0		UJ	ug/L	IcRsd
				ACETONE	4.0	2.2J,A-01,		J	ug/L	RI
				BENZENE	0.5	0.3J,A-01,		J	ug/L	RI
				BROMOMETHANE	0.5	0.5J,U,A-0		UJ	ug/L	IcRsd, Icv
				CIS-1,3-DICHLOROPROPENE	0.5	0.5J,U,A-0		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,A-0		UJ	ug/L	IcRsd, Ccv
524.2	MW-21A-2Q12	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				ETHYLBENZENE	0.5	0.2J,C1		J	ug/L	RI
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
524.2	MW-22A-2Q12	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12097D										
524.2	MW-23A-2Q12	AQ	N							
				BENZENE	0.5	0.2J,C1		J	ug/L	RI
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
524.2	MW-25B-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				BROMOMETHANE	0.5	0.5J,U,C3,		UJ	ug/L	IcRsd, Icv,
				CIS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd, Ccv
524.2	MW-26B-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5U		UJ	ug/L	IcRsd
				BENZENE	0.5	0.3J,C1		J	ug/L	RI
				BROMODICHLOROMETHANE	0.5	0.5J,U,Q4		UJ	ug/L	Ms
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
524.2	MW-28B-2Q12	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd, Icv
				CIS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12097D										
524.2	MW-302-2Q12	AQ	TB							
				1,1,2,2-TETRACHLOROETHANE	0.5	0.5J,U,Q 4,		UJ	ug/L	Ms
				1,1,2-TRICHLOROETHANE	0.5	0.5J,U,Q 4,		UJ	ug/L	Ms
				1,3-DICHLOROBENZENE	0.5	0.5J,U,Q 4,		UJ	ug/L	Ms
				2-CHLOROTOLUENE	0.5	0.5J,U,Q 4,		UJ	ug/L	Ms
				BROMOBENZENE	0.5	0.5J,U,Q 4,		UJ	ug/L	Ms
				BROMODICHLOROMETHANE	0.5	0.5J,U,Q 4,		UJ	ug/L	Ms
				BROMOMETHANE	0.5	0.5J,U,C 3,		UJ	ug/L	IcRsd
				CHLOROBENZENE	0.5	0.5J,U,Q 4,		UJ	ug/L	Ms
				DIBROMOMETHANE	0.5	0.5J,U,Q 4,		UJ	ug/L	Ms
				NAPHTHALENE	0.5	0.5J,U,C 3,		UJ	ug/L	IcRsd
524.2	MW-402-2Q12	AQ	FB							
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
524.2	MW-4B-2Q12	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
524.2	MW-9B-2Q12	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12097D										
RSK-175	MW-17B-2Q12	AQ	N							
				METHANE	1.2	1.4		U	ug/L	Tb
RSK-175	MW-25B-2Q12	AQ	N							
				METHANE	1.2	0.9J,C1		U	ug/L	Tb
RSK-175	MW-28B-2Q12	AQ	N							
				METHANE	1.2	0.7J,C1		U	ug/L	Tb
RSK-175	MW-302-2Q12	AQ	TB							
				METHANE	1.2	0.7J,C1		J	ug/L	RI

N = Normal Sample *TB = Trip Blank*
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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12097E										
4500-S2	MW-5A-2Q12	AQ	N							
				SULFIDE	1.0	0.54J,C1		J	mg/L	RI
524.2	MW-10A-2Q12	AQ	N							
				1,1,2-TRICHLOROETHANE	0.5	1.7J,Q4		J-	ug/L	Ms
				2,2-DICHLOROPROPANE	0.5	0.5U		UJ	ug/L	IcRsd
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd, Ccv
				CIS-1,3-DICHLOROPROPENE	0.5	0.5U		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5U		UJ	ug/L	IcRsd, Ccv
524.2	MW-10B-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C3,		UJ	ug/L	IcRsd, Ccv
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C4		UJ	ug/L	Ccv
524.2	MW-10C-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C3,		UJ	ug/L	IcRsd, Ccv
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C4		UJ	ug/L	Ccv
524.2	MW-11A-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C3,		UJ	ug/L	IcRsd, Ccv
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C4		UJ	ug/L	Ccv

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12097E										
524.2	MW-12A-2Q12	AQ	N							
				BROMODICHLOROMETHANE	0.5	0.4J,C1		J	ug/L	RI
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				TRICHLOROFLUOROMETHANE	0.5	0.4J,C1		J	ug/L	RI
524.2	MW-13A-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C 3,		UJ	ug/L	IcRsd, Ccv
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C 4		UJ	ug/L	Ccv
524.2	MW-14A-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C 4,		UJ	ug/L	IcRsd, Ccv
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				CHLOROFORM	0.5	0.3J,C1		J	ug/L	RI
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C 4		UJ	ug/L	Ccv
524.2	MW-16A-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C 3,		UJ	ug/L	IcRsd, Ccv
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C 4		UJ	ug/L	Ccv
524.2	MW-16B-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C 3,		UJ	ug/L	IcRsd, Ccv
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C 4		UJ	ug/L	Ccv

N = Normal Sample *TB = Trip Blank*
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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12097E										
524.2	MW-16C-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C3,		UJ	ug/L	IcRsd, Ccv
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C4		UJ	ug/L	Ccv
524.2	MW-17A-2Q12	AQ	N							
				BROMOMETHANE	1.0	1.0J,U,C4,		UJ	ug/L	IcRsd
				TETRACHLOROETHENE	1.0	0.6J,C1		J	ug/L	RI
524.2	MW-27B-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,Q6		UJ	ug/L	Ccv
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				CIS-1,3-DICHLOROPROPENE	0.5	0.5J,U,Q4		UJ	ug/L	Ms
				METHYL TERT-BUTYL ETHER	2.0	2.0U		UJ	ug/L	Ccv
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,Q4,		UJ	ug/L	Ms
524.2	MW-2A-2Q12	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
524.2	MW-4A-2Q12	AQ	N							
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				CIS-1,2-DICHLOROETHENE	0.5	0.4J,C1		J	ug/L	RI
				TRICHLOROETHENE	0.5	0.4J,C1		J	ug/L	RI

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12097E										
524.2	MW-6A-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C 3,		UJ	ug/L	IcRsd, Ccv
				BROMODICHLOROMETHANE	0.5	0.3J,C1		J	ug/L	RI
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C 4		UJ	ug/L	Ccv
524.2	MW-75B-2Q12	AQ	FD							
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				TETRACHLOROETHENE	5.0	98J,Q7		J-	ug/L	Surr
524.2	MW-7A-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C 3,		UJ	ug/L	IcRsd, Ccv
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				METHYL TERT-BUTYL ETHER	2.0	2.0J,U,C 4		UJ	ug/L	Ccv
524.2	MW-80B-2Q12	AQ	FD							
				BROMOMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				ETHYLBENZENE	0.5	0.2J,C1		J	ug/L	RI
				M&P-XYLENE	1.0	0.6J,C1		J	ug/L	RI
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				O-XYLENE	0.5	0.2J,C1		J	ug/L	RI

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12101A										
524.2	MW-18A-2Q12	AQ	N							
				1,2,4-TRIMETHYLBENZENE	0.5	0.3J,C1		J	ug/L	RI
				ACETONE	4.0	2.1J,C1		J	ug/L	RI
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				ETHYLBENZENE	0.5	0.3J,C1		J	ug/L	RI
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				TOLUENE	0.5	0.2J,C1		J	ug/L	RI
524.2	MW-20C-2Q12	AQ	N							
				BENZENE	0.5	0.3J,C1		J	ug/L	RI
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				TETRACHLOROETHENE	0.5	0.3J,C1		J	ug/L	RI
524.2	MW-24B-2Q12	AQ	N							
				BENZENE	0.5	0.3J,C1		J	ug/L	RI
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
524.2	MW-29B-2Q12	AQ	N							
				BENZENE	0.5	0.2J,C1		J	ug/L	RI
				BROMOMETHANE	0.5	0.5J,U,C3,		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12101A										
524.2	MW-3A-2Q12	AQ	N							
				2,2-DICHLOROPROPANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				BROMOMETHANE	0.5	0.5J,U,C3,		UJ	ug/L	IcRsd, Icv,
				CHLOROFORM	0.5	1.0		J+	ug/L	Surr
				CIS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				TETRACHLOROETHENE	0.5	25		J+	ug/L	Surr
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd, Ccv
524.2	MW-4C-2Q12	AQ	N							
				BENZENE	0.5	0.4J,C1		J	ug/L	RI
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
524.2	MW-82A-2Q12	AQ	FD							
				1,2,4-TRIMETHYLBENZENE	0.5	0.3J,C1		J	ug/L	RI
				BROMOMETHANE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				ETHYLBENZENE	0.5	0.3J,C1		J	ug/L	RI
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				O-XYLENE	0.5	0.4J,C1		J	ug/L	RI
				TOLUENE	0.5	0.2J,C1,Q4		J	ug/L	Ms, RI

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12101B										
TO-15	DP-1B-2Q12	Air	N							
				TETRACHLOROETHENE	3.1	2.4J,C1		J	ppbv	RI
TO-15	DP-5A-2Q12	Air	N							
				1,2,4-TRIMETHYLBENZENE	2.1	1.8J,C1		J	ppbv	RI
				BENZENE	2.1	1.4J,C1		J	ppbv	RI
				M&P-XYLENE	4.1	3.4J,C1		J	ppbv	RI
				O-XYLENE	2.1	1.2J,C1		J	ppbv	RI
TO-15	DP-5B-2Q12	Air	N							
				METHYLENE CHLORIDE	2.2	1.3J,C1		J	ppbv	RI
				TOLUENE	2.2	1.5J,C1		J	ppbv	RI
TO-15	DP-6A-2Q12	Air	N							
				CHLOROFORM	2.2	1.9J,C1		J	ppbv	RI
TO-15	DP-6B-2Q12	Air	N							
				CHLOROFORM	2.2	1.8J,C1		J	ppbv	RI
TO-15	OSVE-11-2Q12	Air	N							
				CIS-1,2-DICHLOROETHENE	2.2	1.1J,C1		J	ppbv	RI
TO-15	SVE-2-2Q12	Air	N							
				1,4-DICHLOROBENZENE	2.0	1.4J,C1		J	ppbv	RI
				BENZENE	2.0	1.6J,C1		J	ppbv	RI
				CIS-1,2-DICHLOROETHENE	2.0	1.5J,C1		J	ppbv	RI
TO-15	SVE-4-2Q12	Air	N							
				1,4-DICHLOROBENZENE	2.0	1.1J,C1		J	ppbv	RI

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12129C										
524.2	EFF-0502	AQ	N							
				1,2-DIBROMO-3-CHLOROPROPANE	2.0	2.0J,U,C 3		UJ	ug/L	IcRsd
				ACETONE	4.0	4.0J,U,C 3		UJ	ug/L	IcRsd
				BROMOFORM	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				DICHLORODIFLUOROMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	Icv
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
524.2	EW-1-0502	AQ	N							
				1,2-DIBROMO-3-CHLOROPROPANE	2.0	2.0J,U,C 3		UJ	ug/L	IcRsd
				ACETONE	4.0	4.0J,U,C 3		UJ	ug/L	IcRsd
				BROMOFORM	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				CHLOROFORM	0.5	3.7		U	ug/L	Tb
				DICHLORODIFLUOROMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	Icv
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12129C										
524.2	MW-304-2Q12	AQ	TB							
				1,2-DIBROMO-3-CHLOROPROPANE	2.0	2.0J,U,C3		UJ	ug/L	IcRsd
				ACETONE	4.0	6.7J,C3		J	ug/L	IcRsd
				BROMOFORM	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				DICHLORODIFLUOROMETHANE	0.5	0.5J,U,C3		UJ	ug/L	Icv
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
SDG: 12130B										
TO-15	SVE Stack-0502	Air	N							
				DICHLORODIFLUOROMETHANE	2.4	1.2J,C1		J	ppbv	RI
				TETRACHLOROETHENE	2.4	1.5J,C1		J	ppbv	RI

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12160A										
524.2	EFF-0602	AQ	N							
				1,2,4-TRICHLOROBENZENE	0.5	0.5U		UJ	ug/L	IcRsd
				ACETONE	4.0	4.0J,U,C 3		UJ	ug/L	IcRsd
				BROMOFORM	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				DICHLORODIFLUOROMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	Icv
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
524.2	EW-1-0602	AQ	FD							
				1,2,4-TRICHLOROBENZENE	0.5	0.5U		UJ	ug/L	IcRsd
				ACETONE	4.0	4.0J,U,C 3		UJ	ug/L	IcRsd
				BROMOFORM	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				DICHLORODIFLUOROMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	Icv
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				TETRACHLOROETHENE	5.0	120		J+	ug/L	Surr
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
524.2	MW-101-0602	AQ	FD							
				1,2,4-TRICHLOROBENZENE	0.5	0.5U		UJ	ug/L	IcRsd
				ACETONE	4.0	4.0J,U,C 3		UJ	ug/L	IcRsd
				BROMOFORM	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				DICHLORODIFLUOROMETHANE	0.5	0.5J,U,C 3		UJ	ug/L	Icv
				NAPHTHALENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C 3		UJ	ug/L	IcRsd

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Table 4: Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 12160A										
524.2	MW-305-2Q12	AQ	TB							
				1,2,4-TRICHLOROBENZENE	0.5	0.5U		UJ	ug/L	IcRsd
				ACETONE	4.0	4.0J,U,C3		UJ	ug/L	IcRsd
				BROMOFORM	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				DICHLORODIFLUOROMETHANE	0.5	0.5J,U,C3		UJ	ug/L	Icv
				NAPHTHALENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5J,U,C3		UJ	ug/L	IcRsd
SDG: 12160B										
TO-15	GWTP Pr GAC-0602	Air	N							
				1,2,4-TRICHLOROBENZENE	2.4	2.4J,U,C3		UJ	ppbv	Icv
TO-15	GWTP Stack-0602	Air	N							
				1,2,4-TRICHLOROBENZENE	2.4	2.4J,U,C3		UJ	ppbv	Icv
TO-15	MW-112-0602	Air	FD							
				1,2,4-TRICHLOROBENZENE	2.5	2.5J,U,C3		UJ	ppbv	Icv
TO-15	SVE Pre GAC-0602	Air	N							
				1,2,4-TRICHLOROBENZENE	2.3	2.3J,U,C3		UJ	ppbv	Icv
TO-15	SVE Stack-0602	Air	N							
				1,2,4-TRICHLOROBENZENE	2.3	2.3J,U,C3		UJ	ppbv	Icv
				TETRACHLOROETHENE	2.3	1.5J,C1		J	ppbv	RI

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Table 5

Analytical Completeness

Analytical Completeness Report

Project No. / Name : *R12S64 / Modesto Groundwater Spring 2012 Qtrly Monitoring ; R12S70 / Modesto GW Treatment System Spring 2012 Sampling*

Analytical Method	Total Number of Analytes	Number of Qualified	Percent Completeness
2320B	44	0	100.0
2540C	3	0	100.0
2540D	3	0	100.0
300.0	33	0	100.0
415.3	11	6	45.5
4500-S2	11	5	54.5
5210B	3	0	100.0
524.2	3781	236	93.8
IMM Ferrous	11	0	100.0
RSK-175	48	5	89.6
TO-15	1012	26	97.4
Total	***4960***	***278***	***94.4***

Note:

$$\text{Percent Completeness} = \frac{\text{Number of Unqualified Results}}{\text{Number of Reported Results}} * 100\ \%$$

Table 6

Contract Compliance Completeness

Contract Compliance Completeness Report

Project No. / Name : *R12S64 / Modesto Groundwater Spring 2012 Qtrly Monitoring ; R12S70 / Modesto GW Treatment System Spring 2012 Sampling*

Analytical Method	Total Number of Analytes	Number of Qualified	Percent Completeness
2320B	44	0	100.0
2540C	3	0	100.0
2540D	3	0	100.0
300.0	33	0	100.0
415.3	11	6	45.5
4500-S2	11	5	54.5
5210B	3	0	100.0
524.2	3781	215	94.3
IMM Ferrous	11	0	100.0
RSK-175	48	4	91.7
TO-15	1012	25	97.5
Total	***4960***	***255***	***94.9***

Table 7

Technical Completeness

Technical Completeness Report

Project No. / Name : *R12S64 / Modesto Groundwater Spring 2012 Qtrly Monitoring ; R12S70 / Modesto GW Treatment System Spring 2012 Sampling*

Analytical Method	Total Number of Analytes	Number of Rejects	Percent Completeness
2320B	44	0	100.0
2540C	3	0	100.0
2540D	3	0	100.0
300.0	33	0	100.0
415.3	11	0	100.0
4500-S2	11	0	100.0
5210B	3	0	100.0
524.2	3781	0	100.0
IMM Ferrous	11	0	100.0
RSK-175	48	0	100.0
TO-15	1012	0	100.0
Total	***4960***	***0***	***100.0***

Note:

$$\text{Percent Completeness} = \frac{\text{Number of Useable Results}}{\text{Number of Reported Results}} * 100\ \%$$

[Useable results are qualified but not Rejected data]

Table 8

Reasons for Qualified Results

URS, Inc.

Reason for Qualified Results

SDG Nos. : 12095A,12097A,12097B,12097D,12097E,12101A,12101B,12129C,12130B,12160A,12160B

Sample Del Group (SDG)	Sample ID	Test Method	CAS No.	Detected Qualifier	Non Detected Qualifier	Analyte Name	Reason
12095A	MW-5A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12095A	MW-5A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12095A	MW-5A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12095A	MW-5A-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12095A	MW-8A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12095A	MW-8A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12095A	MW-8A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12095A	MW-8A-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12095A	MW-8A-2Q12	RSK-175	124-38-9	J-		Carbon Dioxide	Matrix spike recovery
12095A	MW-95A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12095A	MW-95A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12095A	MW-95A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12095A	MW-95A-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12097A	CRB EFF-0401	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097A	CRB EFF-0401	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097A	CRB INF-0401	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097A	CRB INF-0401	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097A	CRB Mid-0401	524.2	541-73-1		J	1,3-DICHLOROBENZENE	Matrix spike recovery
12097A	CRB Mid-0401	524.2	108-86-1		J	BROMOBENZENE	Matrix spike recovery
12097A	CRB Mid-0401	524.2	75-27-4		J	BROMODICHLOROMETHANE	Matrix spike recovery
12097A	CRB Mid-0401	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097A	CRB Mid-0401	524.2	74-95-3		J	DIBROMOMETHANE	Matrix spike recovery
12097A	CRB Mid-0401	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097A	EFF-0401	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097A	EFF-0401	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097A	EW-1-0401	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097A	EW-1-0401	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097A	MW-303-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097A	MW-303-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097A	MW-403-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097A	MW-403-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097B	GWTP Pr GAC-0401	TO-15	127-18-4	J		TETRACHLOROETHENE	Lab Duplicate RPD

URS, Inc.

Reason for Qualified Results

SDG Nos. : 12095A,12097A,12097B,12097D,12097E,12101A,12101B,12129C,12130B,12160A,12160B

Sample Del Group (SDG)	Sample ID	Test Method	CAS No.	Detected Qualifier	Non Detected Qualifier	Analyte Name	Reason
12097B	GWTP Pr GAC-0401DUP	TO-15	127-18-4	J		TETRACHLOROETHENE	Lab Duplicate RPD
12097D	MW-15A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-15A-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097D	MW-17B-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097D	MW-17B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-17B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration verification percent difference
12097D	MW-17B-2Q12	524.2	10061-01-5		J	CIS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097D	MW-17B-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097D	MW-17B-2Q12	RSK-175	74-82-8	U		METHANE	Present in trip blank
12097D	MW-17C-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-17C-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097D	MW-19A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-19A-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097D	MW-19B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-19B-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097D	MW-1A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097D	MW-1A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Continuing calibration percent difference
12097D	MW-1A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-1A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration verification percent difference
12097D	MW-1A-2Q12	524.2	10061-01-5		J	CIS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097D	MW-1A-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Continuing calibration percent difference
12097D	MW-1A-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097D	MW-20A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097D	MW-20A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Continuing calibration percent difference
12097D	MW-20A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-20A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration verification percent difference
12097D	MW-20A-2Q12	524.2	10061-01-5		J	CIS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097D	MW-20A-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Continuing calibration percent difference
12097D	MW-20A-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD

URS, Inc.

Reason for Qualified Results

SDG Nos. : 12095A,12097A,12097B,12097D,12097E,12101A,12101B,12129C,12130B,12160A,12160B

Sample Del Group (SDG)	Sample ID	Test Method	CAS No.	Detected Qualifier	Non Detected Qualifier	Analyte Name	Reason
12097D	MW-20B-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097D	MW-20B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-20B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration verification percent difference
12097D	MW-20B-2Q12	524.2	10061-01-5		J	CIS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097D	MW-20B-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Continuing calibration percent difference
12097D	MW-20B-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097D	MW-21A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-21A-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097D	MW-22A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-22A-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097D	MW-23A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-23A-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097D	MW-25B-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097D	MW-25B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Continuing calibration percent difference
12097D	MW-25B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-25B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration verification percent difference
12097D	MW-25B-2Q12	524.2	10061-01-5		J	CIS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097D	MW-25B-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Continuing calibration percent difference
12097D	MW-25B-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097D	MW-25B-2Q12	RSK-175	74-82-8	U		METHANE	Present in trip blank
12097D	MW-26B-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097D	MW-26B-2Q12	524.2	75-27-4		J	BROMODICHLOROMETHANE	Matrix spike recovery
12097D	MW-26B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-26B-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097D	MW-28B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-28B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration verification percent difference
12097D	MW-28B-2Q12	524.2	10061-01-5		J	CIS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097D	MW-28B-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097D	MW-28B-2Q12	RSK-175	74-82-8	U		METHANE	Present in trip blank
12097D	MW-302-2Q12	524.2	79-34-5		J	1,1,2,2-TETRACHLOROETHANE	Matrix spike recovery

URS, Inc.

Reason for Qualified Results

SDG Nos. : 12095A,12097A,12097B,12097D,12097E,12101A,12101B,12129C,12130B,12160A,12160B

Sample Del Group (SDG)	Sample ID	Test Method	CAS No.	Detected Qualifier	Non Detected Qualifier	Analyte Name	Reason
12097D	MW-302-2Q12	524.2	79-00-5		J	1,1,2-TRICHLOROETHANE	Matrix spike recovery
12097D	MW-302-2Q12	524.2	541-73-1		J	1,3-DICHLOROBENZENE	Matrix spike recovery
12097D	MW-302-2Q12	524.2	95-49-8		J	2-CHLOROTOLUENE	Matrix spike recovery
12097D	MW-302-2Q12	524.2	108-86-1		J	BROMOBENZENE	Matrix spike recovery
12097D	MW-302-2Q12	524.2	75-27-4		J	BROMODICHLOROMETHANE	Matrix spike recovery
12097D	MW-302-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-302-2Q12	524.2	108-90-7		J	CHLOROBENZENE	Matrix spike recovery
12097D	MW-302-2Q12	524.2	74-95-3		J	DIBROMOMETHANE	Matrix spike recovery
12097D	MW-302-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097D	MW-402-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-402-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097D	MW-4B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-4B-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097D	MW-9B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097D	MW-9B-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097E	MW-10A-2Q12	524.2	79-00-5	J-		1,1,2-TRICHLOROETHANE	Matrix spike recovery
12097E	MW-10A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097E	MW-10A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Continuing calibration percent difference
12097E	MW-10A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-10A-2Q12	524.2	10061-01-5		J	CIS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097E	MW-10A-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097E	MW-10A-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Continuing calibration percent difference
12097E	MW-10A-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12097E	MW-10B-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12097E	MW-10B-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097E	MW-10B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-10B-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12097E	MW-10C-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12097E	MW-10C-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097E	MW-10C-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-10C-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12097E	MW-11A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference

URS, Inc.

Reason for Qualified Results

SDG Nos. : 12095A,12097A,12097B,12097D,12097E,12101A,12101B,12129C,12130B,12160A,12160B

Sample Del Group (SDG)	Sample ID	Test Method	CAS No.	Detected Qualifier	Non Detected Qualifier	Analyte Name	Reason
12097E	MW-11A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097E	MW-11A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-11A-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12097E	MW-12A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-12A-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097E	MW-13A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12097E	MW-13A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097E	MW-13A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-13A-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12097E	MW-14A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12097E	MW-14A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097E	MW-14A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-14A-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12097E	MW-16A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12097E	MW-16A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097E	MW-16A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-16A-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12097E	MW-16B-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12097E	MW-16B-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097E	MW-16B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-16B-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12097E	MW-16C-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12097E	MW-16C-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097E	MW-16C-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-16C-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12097E	MW-17A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-27B-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12097E	MW-27B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-27B-2Q12	524.2	10061-01-5		J	CIS-1,3-DICHLOROPROPENE	Matrix spike recovery
12097E	MW-27B-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12097E	MW-27B-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097E	MW-27B-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Matrix spike recovery

URS, Inc.

Reason for Qualified Results

SDG Nos. : 12095A,12097A,12097B,12097D,12097E,12101A,12101B,12129C,12130B,12160A,12160B

Sample Del Group (SDG)	Sample ID	Test Method	CAS No.	Detected Qualifier	Non Detected Qualifier	Analyte Name	Reason
12097E	MW-2A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-2A-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097E	MW-4A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-6A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12097E	MW-6A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097E	MW-6A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-6A-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12097E	MW-75B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-75B-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12097E	MW-75B-2Q12	524.2	127-18-4	J-		TETRACHLOROETHENE	Surrogate recovery
12097E	MW-7A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Continuing calibration percent difference
12097E	MW-7A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12097E	MW-7A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-7A-2Q12	524.2	1634-04-4		J	METHYL TERT-BUTYL ETHER	Continuing calibration percent difference
12097E	MW-80B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12097E	MW-80B-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12101A	MW-18A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12101A	MW-18A-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12101A	MW-20C-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12101A	MW-20C-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12101A	MW-24B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12101A	MW-24B-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12101A	MW-29B-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12101A	MW-29B-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12101A	MW-3A-2Q12	524.2	594-20-7		J	2,2-DICHLOROPROPANE	Initial calibration %RSD
12101A	MW-3A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Continuing calibration percent difference
12101A	MW-3A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12101A	MW-3A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration verification percent difference
12101A	MW-3A-2Q12	524.2	67-66-3	J+		CHLOROFORM	Surrogate recovery
12101A	MW-3A-2Q12	524.2	10061-01-5		J	CIS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12101A	MW-3A-2Q12	524.2	127-18-4	J+		TETRACHLOROETHENE	Surrogate recovery

URS, Inc.

Reason for Qualified Results

SDG Nos. : 12095A,12097A,12097B,12097D,12097E,12101A,12101B,12129C,12130B,12160A,12160B

Sample Del Group (SDG)	Sample ID	Test Method	CAS No.	Detected Qualifier	Non Detected Qualifier	Analyte Name	Reason
12101A	MW-3A-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Continuing calibration percent difference
12101A	MW-3A-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12101A	MW-4C-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12101A	MW-4C-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12101A	MW-82A-2Q12	524.2	74-83-9		J	BROMOMETHANE	Initial calibration %RSD
12101A	MW-82A-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12101A	MW-82A-2Q12	524.2	108-88-3	J+		TOLUENE	Matrix spike recovery
12129C	EFF-0502	524.2	96-12-8		J	1,2-DIBROMO-3-CHLOROPROPANE	Initial calibration %RSD
12129C	EFF-0502	524.2	67-64-1		J	ACETONE	Initial calibration %RSD
12129C	EFF-0502	524.2	75-25-2		J	BROMOFORM	Initial calibration %RSD
12129C	EFF-0502	524.2	75-71-8		J	DICHLORODIFLUOROMETHANE	Initial calibration verification percent difference
12129C	EFF-0502	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12129C	EFF-0502	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12129C	EW-1-0502	524.2	96-12-8		J	1,2-DIBROMO-3-CHLOROPROPANE	Initial calibration %RSD
12129C	EW-1-0502	524.2	67-64-1		J	ACETONE	Initial calibration %RSD
12129C	EW-1-0502	524.2	75-25-2		J	BROMOFORM	Initial calibration %RSD
12129C	EW-1-0502	524.2	67-66-3	U		CHLOROFORM	Present in trip blank
12129C	EW-1-0502	524.2	75-71-8		J	DICHLORODIFLUOROMETHANE	Initial calibration verification percent difference
12129C	EW-1-0502	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12129C	EW-1-0502	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12129C	MW-304-2Q12	524.2	96-12-8		J	1,2-DIBROMO-3-CHLOROPROPANE	Initial calibration %RSD
12129C	MW-304-2Q12	524.2	67-64-1	J		ACETONE	Initial calibration %RSD
12129C	MW-304-2Q12	524.2	75-25-2		J	BROMOFORM	Initial calibration %RSD
12129C	MW-304-2Q12	524.2	75-71-8		J	DICHLORODIFLUOROMETHANE	Initial calibration verification percent difference
12129C	MW-304-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12129C	MW-304-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12160A	EFF-0602	524.2	120-82-1		J	1,2,4-TRICHLOROBENZENE	Initial calibration %RSD
12160A	EFF-0602	524.2	67-64-1		J	ACETONE	Initial calibration %RSD
12160A	EFF-0602	524.2	75-25-2		J	BROMOFORM	Initial calibration %RSD

URS, Inc.

Reason for Qualified Results

SDG Nos. : 12095A,12097A,12097B,12097D,12097E,12101A,12101B,12129C,12130B,12160A,12160B

Sample Del Group (SDG)	Sample ID	Test Method	CAS No.	Detected Qualifier	Non Detected Qualifier	Analyte Name	Reason
12160A	EFF-0602	524.2	75-71-8		J	DICHLORODIFLUOROMETHANE	Initial calibration verification percent difference
12160A	EFF-0602	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12160A	EFF-0602	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12160A	EW-1-0602	524.2	120-82-1		J	1,2,4-TRICHLOROBENZENE	Initial calibration %RSD
12160A	EW-1-0602	524.2	67-64-1		J	ACETONE	Initial calibration %RSD
12160A	EW-1-0602	524.2	75-25-2		J	BROMOFORM	Initial calibration %RSD
12160A	EW-1-0602	524.2	75-71-8		J	DICHLORODIFLUOROMETHANE	Initial calibration verification percent difference
12160A	EW-1-0602	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12160A	EW-1-0602	524.2	127-18-4	J+		TETRACHLOROETHENE	Surrogate recovery
12160A	EW-1-0602	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12160A	MW-101-0602	524.2	120-82-1		J	1,2,4-TRICHLOROBENZENE	Initial calibration %RSD
12160A	MW-101-0602	524.2	67-64-1		J	ACETONE	Initial calibration %RSD
12160A	MW-101-0602	524.2	75-25-2		J	BROMOFORM	Initial calibration %RSD
12160A	MW-101-0602	524.2	75-71-8		J	DICHLORODIFLUOROMETHANE	Initial calibration verification percent difference
12160A	MW-101-0602	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12160A	MW-101-0602	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12160A	MW-305-2Q12	524.2	120-82-1		J	1,2,4-TRICHLOROBENZENE	Initial calibration %RSD
12160A	MW-305-2Q12	524.2	67-64-1		J	ACETONE	Initial calibration %RSD
12160A	MW-305-2Q12	524.2	75-25-2		J	BROMOFORM	Initial calibration %RSD
12160A	MW-305-2Q12	524.2	75-71-8		J	DICHLORODIFLUOROMETHANE	Initial calibration verification percent difference
12160A	MW-305-2Q12	524.2	91-20-3		J	NAPHTHALENE	Initial calibration %RSD
12160A	MW-305-2Q12	524.2	10061-02-6		J	TRANS-1,3-DICHLOROPROPENE	Initial calibration %RSD
12160B	GWTP Pr GAC-0602	TO-15	120-82-1		J	1,2,4-TRICHLOROBENZENE	Initial calibration verification percent difference
12160B	GWTP Stack-0602	TO-15	120-82-1		J	1,2,4-TRICHLOROBENZENE	Initial calibration verification percent difference
12160B	MW-112-0602	TO-15	120-82-1		J	1,2,4-TRICHLOROBENZENE	Initial calibration verification percent difference
12160B	SVE Pre GAC-0602	TO-15	120-82-1		J	1,2,4-TRICHLOROBENZENE	Initial calibration verification percent difference

URS, Inc.

Reason for Qualified Results

SDG Nos. : 12095A,12097A,12097B,12097D,12097E,12101A,12101B,12129C,12130B,12160A,12160B

Sample Del Group (SDG)	Sample ID	Test Method	CAS No.	Detected Qualifier	Non Detected Qualifier	Analyte Name	Reason
12160B	SVE Stack-0602	TO-15	120-82-1		J	1,2,4-TRICHLOROBENZENE	Initial calibration verification percent difference

Appendix A

Data Qualification Summary Report

SDG 12095A

Data Qualifier Summary

Lab Reporting Batch ID: 12095A **Laboratory: R9LAB**

EDD Filename: 12095A_voc_rev **eQAPP Name: Modesto_Site_052412**

Method Category: **VOA**

Method: **524.2** ***Matrix:*** **Water**

Sample ID: **MW-5A-2Q12** ***Collected:*** **4/3/2012 9:54:00 AM** ***Analysis Type:*** **Reinjection-01** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3,C4, Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Ccv, IcRsd
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

Sample ID: **MW-8A-2Q12** ***Collected:*** **4/3/2012 11:10:00** ***Analysis Type:*** **Reinjection-01** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3,C4, Q3,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	Ccv, IcRsd
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

Sample ID: **MW-95A-2Q12** ***Collected:*** **4/3/2012 9:54:00 AM** ***Analysis Type:*** **Reinjection-01** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3,C4, Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Ccv, IcRsd
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12095A

Laboratory: R9LAB

EDD Filename: 12095A_voc_rev

eQAPP Name: Modesto_Site_052412

Reason Code Legend

Reason Code	*Description*
Ccv	Continuing Calibration Verification Percent Difference Lower Estimation
IcRsd	Initial Calibration Percent Relative Standard Deviation
Lcs	Laboratory Control Spike Upper Estimation
Ms	Matrix Spike Precision
Surr	Surrogate/Tracer Recovery Upper Estimation

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12095A

Laboratory: R9LAB

EDD Filename: 12095A_methane_rev

eQAPP Name: Modesto_Site_052412

No Data Review Qualifiers Applied.

Data Qualifier Summary

Lab Reporting Batch ID: 12095A **Laboratory: R9LAB**

EDD Filename: 12095A_Diss CO2_1204006_rev **eQAPP Name: Modesto_Site_052412**

Method Category: **VOA**

Method: **RSK-175** ***Matrix:*** **Water**

Sample ID: **MW-8A-2Q12** ***Collected:*** **4/3/2012 11:10:00** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Carbon Dioxide	40000	J,Q4	1500	MDL	3000	MRL	ug/L	J-	Ms

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12095A **Laboratory: R9LAB**

EDD Filename: 12095A_Diss CO2_1204006_rev **eQAPP Name: Modesto_Site_052412**

Reason Code Legend

Reason Code	*Description*
Ms	Matrix Spike Lower Estimation

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12095A **Laboratory: R9LAB**

EDD Filename: 12095A_inorganics_edit method_rev **eQAPP Name: Modesto_Site_052412**

Method Category: GENCHEM
Method: 415.3 **Matrix:** Water

Sample ID: MW-5A-2Q12 *Collected:* 4/3/2012 9:54:00 AM *Analysis Type:* Initial *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Total Organic Carbon	0.46	J,C1	0.25	MDL	0.50	MRL	mg/L	J	RI

Sample ID: MW-85A-2Q12 *Collected:* 4/3/2012 1:37:00 PM *Analysis Type:* Initial *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Total Organic Carbon	0.43	J,C1	0.25	MDL	0.50	MRL	mg/L	J	RI

Sample ID: MW-8A-2Q12 *Collected:* 4/3/2012 11:10:00 *Analysis Type:* Initial *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Total Organic Carbon	0.40	J,C1	0.25	MDL	0.50	MRL	mg/L	J	RI

Method Category: GENCHEM
Method: 4500-S2 **Matrix:** Water

Sample ID: MW-4A-2Q12 *Collected:* 4/3/2012 3:00:00 PM *Analysis Type:* Initial *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFIDE	0.62	J,C1	0.50	MDL	1.0	MRL	mg/L	J	RI

Sample ID: MW-8A-2Q12 *Collected:* 4/3/2012 11:10:00 *Analysis Type:* Initial *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFIDE	0.64	J,C1	0.50	MDL	1.0	MRL	mg/L	J	RI

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12095A **Laboratory: R9LAB**

EDD Filename: 12095A_inorganics_edit method_rev **eQAPP Name: Modesto_Site_052412**

Reason Code Legend

Reason Code	*Description*
RI	Reporting Limit Trace Value

* denotes a non-reportable result

SDG 12097A

Data Qualifier Summary

Lab Reporting Batch ID: 12097A | **Laboratory: R9LAB**

EDD Filename: 12097A_voc_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: VOA

Method: 524.2 **Matrix:** Water

Sample ID: CRB EFF-0401 **Collected:** 4/5/2012 11:05:00 **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: CRB INF-0401 **Collected:** 4/5/2012 10:55:00 **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TETRACHLOROETHENE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI

Sample ID: CRB Mid-0401 **Collected:** 4/5/2012 11:00:00 **Analysis Type:** Initial- **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DICHLOROBENZENE	0.5	J,U,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
BROMOBENZENE	0.5	J,U,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
BROMODICHLOROMETHANE	0.5	J,U,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
DIBROMOMETHANE	0.5	J,U,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: EFF-0401 **Collected:** 4/5/2012 10:40:00 **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: EW-1-0401 **Collected:** 4/5/2012 10:25:00 **Analysis Type:** Reinjection-01 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

* denotes a non-reportable result

Project Name and Number: R12S70 - Modesto GW Treatment System Spring 2012 Sampling

Data Qualifier Summary

Lab Reporting Batch ID: 12097A **Laboratory: R9LAB**

EDD Filename: 12097A_voc_rev **eQAPP Name: Modesto_Site_052412**

Method Category: **VOA**

Method: **524.2** ***Matrix:*** **Water**

Sample ID: **MW-303-2Q12** ***Collected:*** **4/5/2012 10:00:00** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-403-2Q12** ***Collected:*** **4/5/2012 10:05:00** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

* denotes a non-reportable result

Project Name and Number: R12S70 - Modesto GW Treatment System Spring 2012 Sampling

Data Qualifier Summary

Lab Reporting Batch ID: 12097A

Laboratory: R9LAB

EDD Filename: 12097A_voc_rev

eQAPP Name: Modesto_Site_052412

Reason Code Legend

Reason Code	*Description*
IcRsd	Initial Calibration Percent Relative Standard Deviation
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12097A

Laboratory: R9LAB

EDD Filename: 12097A_TDS TSS_FINAL_edited

eQAPP Name: Modesto_Site_062812

No Data Review Qualifiers Applied.

Data Qualifier Summary

Lab Reporting Batch ID: 12097A

Laboratory: R9LAB

EDD Filename: 12097A_BOD_FINAL_edited

eQAPP Name: Modesto_Site_062812

No Data Review Qualifiers Applied.

SDG 12097B

Data Qualifier Summary

Lab Reporting Batch ID: 12097B | **Laboratory: R9LAB**

EDD Filename: 12097B_TO15_ppbv_edit RPD_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: VOA

Method: TO-15 **Matrix:** Air

Sample ID: GWTP Pr GAC-0401 **Collected:** 4/5/2012 11:25:00 **Analysis Type:** Initial **Dilution:** 2.3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TETRACHLOROETHENE	310	J,Q5	12	MDL	23	MRL	ppbv	J	Ld

Sample ID: GWTP Pr GAC-0401 **Collected:** 4/5/2012 11:25:00 **Analysis Type:** Reinjection-01 **Dilution:** 2.3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHANE	1.9	J,C1	1.2	MDL	2.3	MRL	ppbv	J	RI

Sample ID: SVE Pre GAC-0401 **Collected:** 4/5/2012 12:00:00 **Analysis Type:** Initial **Dilution:** 2.26

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZENE	1.2	J,C1	1.1	MDL	2.3	MRL	ppbv	J	RI

Sample ID: SVE Stack-0401 **Collected:** 4/5/2012 12:05:00 **Analysis Type:** Initial **Dilution:** 2.23

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	1.6	J,C1	1.1	MDL	2.2	MRL	ppbv	J	RI

* denotes a non-reportable result

Project Name and Number: R12S70 - Modesto GW Treatment System Spring 2012 Sampling

Data Qualifier Summary

Lab Reporting Batch ID: 12097B **Laboratory: R9LAB**

EDD Filename: 12097B_TO15_ppbv_edit RPD_rev **eQAPP Name: Modesto_Site_052412**

Reason Code Legend

Reason Code	*Description*
Ld	Laboratory Duplicate Precision
RI	Reporting Limit Trace Value

* denotes a non-reportable result

SDG 12097D

Data Qualifier Summary

Lab Reporting Batch ID: 12097D | **Laboratory: R9LAB**

EDD Filename: 12097d_voc_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: VOA

Method: 524.2 **Matrix:** Water

Sample ID: MW-15A-2Q12 **Collected:** 4/3/2012 1:37:00 PM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
CHLOROFORM	0.4	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: MW-17B-2Q12 **Collected:** 4/5/2012 10:40:00 **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	0.4	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
2,2-DICHLOROPROPANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv, IcRsd
CARBON TETRACHLORIDE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
CIS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
O-XYLENE	0.4	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: MW-17C-2Q12 **Collected:** 4/4/2012 3:43:00 PM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
ETHYLBENZENE	0.2	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
M&P-XYLENE	0.5	J,C1	0.5	MDL	1.0	MRL	ug/L	J	RI
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TETRACHLOROETHENE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI

Sample ID: MW-19A-2Q12 **Collected:** 4/2/2012 11:55:00 **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: MW-19B-2Q12 **Collected:** 4/2/2012 12:38:00 **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12097D | **Laboratory: R9LAB**

EDD Filename: 12097d_voc_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: VOA

Method: 524.2 **Matrix:** Water

Sample ID: **MW-19B-2Q12** ***Collected:*** **4/2/2012 12:38:00** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TETRACHLOROETHENE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI

Sample ID: **MW-1A-2Q12** ***Collected:*** **4/4/2012 11:16:00** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
BROMOMETHANE	0.5	J,U,C3,C4,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv, Ccv, IcRsd
CIS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Ccv, IcRsd

Sample ID: **MW-20A-2Q12** ***Collected:*** **4/5/2012 3:50:00 PM** ***Analysis Type:*** **Reanalysis-011** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
BROMOMETHANE	0.5	J,U,C3,C4,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv, Ccv, IcRsd
CIS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Ccv, IcRsd

Sample ID: **MW-20B-2Q12** ***Collected:*** **4/5/2012 2:45:00 PM** ***Analysis Type:*** **Reanalysis-012** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,A-01	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
ACETONE	2.2	J,A-01,C1	2.0	MDL	4.0	MRL	ug/L	J	RI
BENZENE	0.3	J,A-01,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
BROMOMETHANE	0.5	J,U,A-01,C3,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv, IcRsd
CIS-1,3-DICHLOROPROPENE	0.5	J,U,A-01,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,A-01,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Ccv, IcRsd

Sample ID: **MW-21A-2Q12** ***Collected:*** **4/4/2012 5:18:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
ETHYLBENZENE	0.2	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12097D | **Laboratory: R9LAB**

EDD Filename: 12097d_voc_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: **VOA**

Method: **524.2** ***Matrix:*** **Water**

Sample ID: **MW-22A-2Q12** ***Collected:*** **4/4/2012 5:23:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-23A-2Q12** ***Collected:*** **4/4/2012 2:35:00 PM** ***Analysis Type:*** **Initial2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZENE	0.2	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-25B-2Q12** ***Collected:*** **4/5/2012 11:55:00** ***Analysis Type:*** **Reanalysis-012** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
BROMOMETHANE	0.5	J,U,C3,C4, Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv, Ccv, IcRsd
CIS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Ccv, IcRsd

Sample ID: **MW-26B-2Q12** ***Collected:*** **4/3/2012 10:35:00** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	U	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
BENZENE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
BROMODICHLOROMETHANE	0.5	J,U,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-28B-2Q12** ***Collected:*** **4/5/2012 9:30:00 AM** ***Analysis Type:*** **Reanalysis-011** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv, IcRsd
CIS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12097D **Laboratory: R9LAB**

EDD Filename: 12097d_voc_rev **eQAPP Name: Modesto_Site_052412**

Method Category: **VOA**

Method: **524.2** ***Matrix:*** **Water**

Sample ID: **MW-302-2Q12** ***Collected:*** **4/4/2012 8:00:00 AM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,2,2-TETRACHLOROETHANE	0.5	J,U,Q4,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
1,1,2-TRICHLOROETHANE	0.5	J,U,Q4,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
1,3-DICHLOROBENZENE	0.5	J,U,Q4,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
2-CHLOROTOLUENE	0.5	J,U,Q4,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
BROMOBENZENE	0.5	J,U,Q4,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
BROMODICHLOROMETHANE	0.5	J,U,Q4,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
BROMOMETHANE	0.5	J,U,C3,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
CHLOROBENZENE	0.5	J,U,Q4,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
DIBROMOMETHANE	0.5	J,U,Q4,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
NAPHTHALENE	0.5	J,U,C3,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-402-2Q12** ***Collected:*** **4/5/2012 1:40:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-4B-2Q12** ***Collected:*** **4/5/2012 5:00:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-9B-2Q12** ***Collected:*** **4/4/2012 8:56:00 AM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12097D

Laboratory: R9LAB

EDD Filename: 12097d_voc_rev

eQAPP Name: Modesto_Site_052412

Reason Code Legend

Reason Code	*Description*
Ccv	Continuing Calibration Verification Percent Difference Lower Estimation
IcRsd	Initial Calibration Percent Relative Standard Deviation
Icv	Initial Calibration Verification Percent Difference Lower Estimation
Lcs	Laboratory Control Spike Upper Estimation
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12097D | **Laboratory: R9LAB**

EDD Filename: 12097D_methane_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: VOA

Method: RSK-175 **Matrix:** Water

Sample ID: MW-17B-2Q12 *Collected:* 4/5/2012 10:40:00 *Analysis Type:* Initial *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHANE	1.4		0.6	MDL	1.2	MRL	ug/L	U	Tb

Sample ID: MW-25B-2Q12 *Collected:* 4/5/2012 11:55:00 *Analysis Type:* Initial *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHANE	0.9	J,C1	0.6	MDL	1.2	MRL	ug/L	U	Tb

Sample ID: MW-28B-2Q12 *Collected:* 4/5/2012 9:30:00 AM *Analysis Type:* Initial *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHANE	0.7	J,C1	0.6	MDL	1.2	MRL	ug/L	U	Tb

Sample ID: MW-302-2Q12 *Collected:* 4/3/2012 8:00:00 AM *Analysis Type:* Initial *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHANE	0.7	J,C1	0.6	MDL	1.2	MRL	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12097D

Laboratory: R9LAB

EDD Filename: 12097D_methane_rev

eQAPP Name: Modesto_Site_052412

Reason Code Legend

Reason Code	*Description*
RI	Reporting Limit Trace Value
Tb	Trip Blank Contamination

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12097D

EDD Filename: 12097D_co2_rev

Laboratory: R9LAB

eQAPP Name: Modesto_Site_052412

No Data Review Qualifiers Applied.

Data Qualifier Summary

Lab Reporting Batch ID: 12097D | **Laboratory: R9LAB**

EDD Filename: 12097D_inorganics_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: GENCHEM
Method: 415.3 **Matrix:** Water

Sample ID: MW-15A-2Q12 **Collected:** 4/3/2012 1:37:00 PM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Total Organic Carbon	0.44	J,C1	0.25	MDL	0.50	MRL	mg/L	J	RI

Sample ID: MW-25B-2Q12 **Collected:** 4/5/2012 11:55:00 **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Total Organic Carbon	0.44	J,C1	0.25	MDL	0.50	MRL	mg/L	J	RI

Sample ID: MW-28B-2Q12 **Collected:** 4/5/2012 9:30:00 AM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Total Organic Carbon	0.39	J,C1	0.25	MDL	0.50	MRL	mg/L	J	RI

Method Category: GENCHEM
Method: 4500-S2 **Matrix:** Water

Sample ID: MW-17B-2Q12 **Collected:** 4/5/2012 10:40:00 **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFIDE	0.55	J,C1	0.50	MDL	1.0	MRL	mg/L	J	RI

Sample ID: MW-20B-2Q12 **Collected:** 4/5/2012 2:45:00 PM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFIDE	0.55	J,C1	0.50	MDL	1.0	MRL	mg/L	J	RI

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12097D

Laboratory: R9LAB

EDD Filename: 12097D_inorganics_rev

eQAPP Name: Modesto_Site_052412

Reason Code Legend

Reason Code	*Description*
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

SDG 12097E

Data Qualifier Summary

Lab Reporting Batch ID: 12097E | **Laboratory: R9LAB**

EDD Filename: 12097E_voc_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: **VOA**

Method: **524.2** ***Matrix:*** **Water**

Sample ID: **MW-10A-2Q12** ***Collected:*** **4/4/2012 3:06:00 PM** ***Analysis Type:*** **Reinjection-01** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,2-TRICHLOROETHANE	1.7	J,Q4	0.2	MDL	0.5	MRL	ug/L	J-	Ms
2,2-DICHLOROPROPANE	0.5	U	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv
CIS-1,3-DICHLOROPROPENE	0.5	U	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	U	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv

Sample ID: **MW-10B-2Q12** ***Collected:*** **4/2/2012 2:50:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3,C4, Q3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

Sample ID: **MW-10C-2Q12** ***Collected:*** **4/2/2012 3:36:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3,C4, Q3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

Sample ID: **MW-11A-2Q12** ***Collected:*** **4/4/2012 10:40:00** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3,Q3 ,C4	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

Sample ID: **MW-12A-2Q12** ***Collected:*** **4/4/2012 2:30:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMODICHLOROMETHANE	0.4	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12097E | **Laboratory: R9LAB**

EDD Filename: 12097E_voc_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: VOA

Method: 524.2 **Matrix:** Water

Sample ID: MW-12A-2Q12 **Collected:** 4/4/2012 2:30:00 PM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROFLUOROMETHANE	0.4	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI

Sample ID: MW-13A-2Q12 **Collected:** 4/4/2012 12:30:00 **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3,C4,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

Sample ID: MW-14A-2Q12 **Collected:** 4/4/2012 12:00:00 **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C4,Q3,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
CHLOROFORM	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

Sample ID: MW-16A-2Q12 **Collected:** 4/3/2012 1:15:00 PM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3,Q3,C4	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

Sample ID: MW-16B-2Q12 **Collected:** 4/3/2012 3:40:00 PM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3,C4,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12097E | **Laboratory: R9LAB**

EDD Filename: 12097E_voc_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: VOA

Method: 524.2 **Matrix:** Water

Sample ID: MW-16C-2Q12 **Collected:** 4/3/2012 2:30:00 PM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3,C4,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

Sample ID: MW-17A-2Q12 **Collected:** 4/4/2012 4:20:00 PM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	1.0	J,U,C4,Q3,C3	0.5	MDL	1.0	MRL	ug/L	UJ	IcRsd
TETRACHLOROETHENE	0.6	J,C1	0.5	MDL	1.0	MRL	ug/L	J	RI

Sample ID: MW-27B-2Q12 **Collected:** 4/3/2012 9:20:00 AM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	Ccv
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
CIS-1,3-DICHLOROPROPENE	0.5	J,U,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
METHYL TERT-BUTYL ETHER	2.0	U	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,Q4,Q6	0.2	MDL	0.5	MRL	ug/L	UJ	Ms

Sample ID: MW-2A-2Q12 **Collected:** 4/4/2012 9:36:00 AM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: MW-4A-2Q12 **Collected:** 4/3/2012 3:00:00 PM **Analysis Type:** Initial2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
CIS-1,2-DICHLOROETHENE	0.4	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
TRICHLOROETHENE	0.4	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12097E | **Laboratory: R9LAB**

EDD Filename: 12097E_voc_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: VOA

Method: 524.2 **Matrix:** Water

Sample ID: **MW-6A-2Q12** ***Collected:*** **4/4/2012 3:40:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3,C4, Q3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv
BROMODICHLOROMETHANE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

Sample ID: **MW-75B-2Q12** ***Collected:*** **4/5/2012 11:55:00** ***Analysis Type:*** **Initial1** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-75B-2Q12** ***Collected:*** **4/5/2012 11:55:00** ***Analysis Type:*** **Reanalysis-012** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TETRACHLOROETHENE	98	J,Q7	2.5	MDL	5.0	MRL	ug/L	J-	Surr

Sample ID: **MW-7A-2Q12** ***Collected:*** **4/4/2012 2:00:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3,Q3 ,C4	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
METHYL TERT-BUTYL ETHER	2.0	J,U,C4	1.0	MDL	2.0	MRL	ug/L	UJ	Ccv

Sample ID: **MW-80B-2Q12** ***Collected:*** **4/5/2012 2:45:00 PM** ***Analysis Type:*** **Initial2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
ETHYLBENZENE	0.2	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
M&P-XYLENE	0.6	J,C1	0.5	MDL	1.0	MRL	ug/L	J	RI
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
O-XYLENE	0.2	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12097E **Laboratory: R9LAB**

EDD Filename: 12097E_voc_rev **eQAPP Name: Modesto_Site_052412**

Reason Code Legend

Reason Code	*Description*
Ccv	Continuing Calibration Verification Percent Difference Lower Estimation
IcRsd	Initial Calibration Percent Relative Standard Deviation
Lcs	Laboratory Control Spike Upper Estimation
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
RI	Reporting Limit Trace Value
Surr	Surrogate/Tracer Recovery Lower Estimation
Surr	Surrogate/Tracer Recovery Upper Estimation

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12097E

EDD Filename: 12097E_methane_rev

Laboratory: R9LAB

eQAPP Name: Modesto_Site_052412

No Data Review Qualifiers Applied.

Data Qualifier Summary

Lab Reporting Batch ID: 12097E

EDD Filename: 12097E_co2_rev

Laboratory: R9LAB

eQAPP Name: Modesto_Site_052412

No Data Review Qualifiers Applied.

Data Qualifier Summary

Lab Reporting Batch ID: 12097E

Laboratory: R9LAB

EDD Filename: 12097E_inorganics_rev

eQAPP Name: Modesto_Site_052412

Method Category: GENCHEM

Method: 4500-S2 *Matrix:* Water

Sample ID: MW-5A-2Q12 *Collected:* 4/3/2012 9:54:00 AM *Analysis Type:* Initial *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFIDE	0.54	J,C1	0.50	MDL	1.0	MRL	mg/L	J	RI

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12097E

Laboratory: R9LAB

EDD Filename: 12097E_inorganics_rev

eQAPP Name: Modesto_Site_052412

Reason Code Legend

Reason Code	*Description*
RI	Reporting Limit Trace Value

* denotes a non-reportable result

SDG 12101A

Data Qualifier Summary

Lab Reporting Batch ID: 12101A | **Laboratory: R9LAB**

EDD Filename: 12101A_voc_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: VOA

Method: 524.2 **Matrix:** Water

Sample ID: **MW-18A-2Q12** ***Collected:*** **4/6/2012 7:48:00 AM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
ACETONE	2.1	J,C1	2.0	MDL	4.0	MRL	ug/L	J	RI
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
ETHYLBENZENE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TOLUENE	0.2	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI

Sample ID: **MW-20C-2Q12** ***Collected:*** **4/6/2012 8:45:00 AM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZENE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TETRACHLOROETHENE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI

Sample ID: **MW-24B-2Q12** ***Collected:*** **4/6/2012 9:45:00 AM** ***Analysis Type:*** **Initial2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZENE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-29B-2Q12** ***Collected:*** **4/6/2012 10:15:00** ***Analysis Type:*** **Reanalysis-011** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZENE	0.2	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
BROMOMETHANE	0.5	J,U,C3,Q1	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-3A-2Q12** ***Collected:*** **4/5/2012 1:40:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,2-DICHLOROPROPANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
BROMOMETHANE	0.5	J,U,C3,C4, Q3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv, Icv
CHLOROFORM	1.0		0.2	MDL	0.5	MRL	ug/L	J+	Surr

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12101A | **Laboratory: R9LAB**

EDD Filename: 12101A_voc_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: VOA

Method: 524.2 **Matrix:** Water

Sample ID: **MW-3A-2Q12** ***Collected:*** **4/5/2012 1:40:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TETRACHLOROETHENE	25		0.2	MDL	0.5	MRL	ug/L	J+	Surr
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd, Ccv

Sample ID: **MW-4C-2Q12** ***Collected:*** **4/5/2012 5:55:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZENE	0.4	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-82A-2Q12** ***Collected:*** **4/6/2012 7:48:00 AM** ***Analysis Type:*** **Initial** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
BROMOMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
ETHYLBENZENE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
O-XYLENE	0.4	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
TOLUENE	0.2	J,C1,Q4	0.2	MDL	0.5	MRL	ug/L	J	RI, Ms

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12101A

Laboratory: R9LAB

EDD Filename: 12101A_voc_rev

eQAPP Name: Modesto_Site_052412

Reason Code Legend

Reason Code	*Description*
Ccv	Continuing Calibration Verification Percent Difference Lower Estimation
IcRsd	Initial Calibration Percent Relative Standard Deviation
Icv	Initial Calibration Verification Percent Difference Lower Estimation
Ms	Matrix Spike Upper Estimation
Rl	Reporting Limit Trace Value
Surr	Surrogate/Tracer Recovery Upper Estimation

* denotes a non-reportable result

SDG 12101B

Data Qualifier Summary

Lab Reporting Batch ID: 12101B **Laboratory: R9LAB**

EDD Filename: 12101B_voc **eQAPP Name: Modesto_Site_052412**

Method Category: VOA

Method: TO-15 **Matrix:** Air

Sample ID: DP-1B-2Q12 *Collected:* 4/5/2012 10:41:00 *Analysis Type:* Initial *Dilution:* 3.13

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TETRACHLOROETHENE	2.4	J,C1	1.6	MDL	3.1	MRL	ppbv	J	RI

Sample ID: DP-5A-2Q12 *Collected:* 4/6/2012 8:07:00 AM *Analysis Type:* Initial *Dilution:* 2.06

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	1.8	J,C1	1.0	MDL	2.1	MRL	ppbv	J	RI
BENZENE	1.4	J,C1	1.0	MDL	2.1	MRL	ppbv	J	RI
m&p-Xylene	3.4	J,C1	2.1	MDL	4.1	MRL	ppbv	J	RI
O-XYLENE	1.2	J,C1	1.0	MDL	2.1	MRL	ppbv	J	RI

Sample ID: DP-5B-2Q12 *Collected:* 4/6/2012 8:17:00 AM *Analysis Type:* Initial *Dilution:* 2.2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	1.3	J,C1	1.1	MDL	2.2	MRL	ppbv	J	RI
TOLUENE	1.5	J,C1	1.1	MDL	2.2	MRL	ppbv	J	RI

Sample ID: DP-6A-2Q12 *Collected:* 4/6/2012 8:32:00 AM *Analysis Type:* Initial *Dilution:* 2.17

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROFORM	1.9	J,C1	1.1	MDL	2.2	MRL	ppbv	J	RI

Sample ID: DP-6B-2Q12 *Collected:* 4/6/2012 8:42:00 AM *Analysis Type:* Initial *Dilution:* 2.22

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROFORM	1.8	J,C1	1.1	MDL	2.2	MRL	ppbv	J	RI

Sample ID: OSVE-11-2Q12 *Collected:* 4/6/2012 9:29:00 AM *Analysis Type:* Initial *Dilution:* 2.2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	1.1	J,C1	1.1	MDL	2.2	MRL	ppbv	J	RI

Sample ID: SVE-2-2Q12 *Collected:* 4/5/2012 11:24:00 *Analysis Type:* Reanalysis-012- *Dilution:* 2.05

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,4-DICHLOROBENZENE	1.4	J,C1	1.0	MDL	2.0	MRL	ppbv	J	RI
BENZENE	1.6	J,C1	1.0	MDL	2.0	MRL	ppbv	J	RI

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12101B **Laboratory: R9LAB**

EDD Filename: 12101B_voc **eQAPP Name: Modesto_Site_052412**

Method Category: **VOA**

Method: **TO-15** ***Matrix:*** **Air**

Sample ID: **SVE-2-2Q12** ***Collected:*** **4/5/2012 11:24:00** ***Analysis Type:*** **Reanalysis-012** ***Dilution:*** **2.05**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	1.5	J,C1	1.0	MDL	2.0	MRL	ppbv	J	RI

Sample ID: **SVE-4-2Q12** ***Collected:*** **4/5/2012 11:51:00** ***Analysis Type:*** **Initial1-** ***Dilution:*** **2.04**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,4-DICHLOROBENZENE	1.1	J,C1	1.0	MDL	2.0	MRL	ppbv	J	RI

* denotes a non-reportable result

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 12101B **Laboratory: R9LAB**

EDD Filename: 12101B_voc **eQAPP Name: Modesto_Site_052412**

Reason Code Legend

Reason Code	*Description*
Is	Internal Standard Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

SDG 12129C

Data Qualifier Summary

Lab Reporting Batch ID: 12129C | **Laboratory: R9LAB**

EDD Filename: 12129C_voc_rev | **eQAPP Name: Modesto_Site_052412**

Method Category: VOA

Method: 524.2 **Matrix:** Water

Sample ID: EFF-0502 **Collected:** 5/8/2012 10:15:00 **Analysis Type:** Initial- **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMO-3-CHLOROPROPANE	2.0	J,U,C3	1.0	MDL	2.0	MRL	ug/L	UJ	IcRsd
ACETONE	4.0	J,U,C3	2.0	MDL	4.0	MRL	ug/L	UJ	IcRsd
BROMOFORM	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
DICHLORODIFLUOROMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: EW-1-0502 **Collected:** 5/8/2012 9:55:00 AM **Analysis Type:** Initial- **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMO-3-CHLOROPROPANE	2.0	J,U,C3	1.0	MDL	2.0	MRL	ug/L	UJ	IcRsd
ACETONE	4.0	J,U,C3	2.0	MDL	4.0	MRL	ug/L	UJ	IcRsd
BROMOFORM	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
CHLOROFORM	3.7		0.2	MDL	0.5	MRL	ug/L	U	Tb
DICHLORODIFLUOROMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: MW-304-2Q12 **Collected:** 5/8/2012 9:40:00 AM **Analysis Type:** Initial- **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMO-3-CHLOROPROPANE	2.0	J,U,C3	1.0	MDL	2.0	MRL	ug/L	UJ	IcRsd
ACETONE	6.7	J,C3	2.0	MDL	4.0	MRL	ug/L	J	IcRsd
BROMOFORM	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
DICHLORODIFLUOROMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

* denotes a non-reportable result

Project Name and Number: R12S70 - Modesto GW Treatment System Spring 2012 Sampling

Data Qualifier Summary

Lab Reporting Batch ID: 12129C

Laboratory: R9LAB

EDD Filename: 12129C_voc_rev

eQAPP Name: Modesto_Site_052412

Reason Code Legend

Reason Code	*Description*
IcRsd	Initial Calibration Percent Relative Standard Deviation
Icv	Initial Calibration Verification Percent Difference Lower Estimation
Tb	Trip Blank Contamination

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12129C

Laboratory: R9LAB

EDD Filename: 12129C_TDSTSS_1205020 FINAL

eQAPP Name: Modesto_Site_062812

No Data Review Qualifiers Applied.

Data Qualifier Summary

Lab Reporting Batch ID: 12129C

Laboratory: R9LAB

EDD Filename: 12129C_BOD_1205020 FINAL

eQAPP Name: Modesto_Site_062812

No Data Review Qualifiers Applied.

SDG 12130B

Data Qualifier Summary

Lab Reporting Batch ID: 12130B **Laboratory: R9LAB**

EDD Filename: 12130B_voc_rev **eQAPP Name: Modesto_Site_052412**

Method Category: **VOA**

Method: **TO-15** ***Matrix:*** **Air**

Sample ID: **SVE Stack-0502** ***Collected:*** **5/8/2012 11:15:00** ***Analysis Type:*** **Initial** ***Dilution:*** **2.41**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
DICHLORODIFLUOROMETHANE	1.2	J,C1	1.2	MDL	2.4	MRL	ppbv	J	RI
TETRACHLOROETHENE	1.5	J,C1	1.2	MDL	2.4	MRL	ppbv	J	RI

* denotes a non-reportable result

Project Name and Number: R12S70 - Modesto GW Treatment System Spring 2012 Sampling

Data Qualifier Summary

Lab Reporting Batch ID: 12130B

Laboratory: R9LAB

EDD Filename: 12130B_voc_rev

eQAPP Name: Modesto_Site_052412

Reason Code Legend

Reason Code	*Description*
RI	Reporting Limit Trace Value

* denotes a non-reportable result

SDG 12160A

Data Qualifier Summary

Lab Reporting Batch ID: 12160A **Laboratory: R9LAB**

EDD Filename: 12160a_voc_1206014 FINAL **eQAPP Name: Modesto_Site_062812**

Method Category: **VOA**

Method: **524.2** ***Matrix:*** **Water**

Sample ID: **EFF-0602** ***Collected:*** **6/7/2012 10:55:00** ***Analysis Type:*** **Initial-** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRICHLOROBENZENE	0.5	U	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
ACETONE	4.0	J,U,C3	2.0	MDL	4.0	MRL	ug/L	UJ	IcRsd
BROMOFORM	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
DICHLORODIFLUOROMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **EW-1-0602** ***Collected:*** **6/7/2012 10:45:00** ***Analysis Type:*** **Initial1** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TETRACHLOROETHENE	120		2.5	MDL	5.0	MRL	ug/L	J+	Surr

Sample ID: **EW-1-0602** ***Collected:*** **6/7/2012 10:45:00** ***Analysis Type:*** **Reanalysis-012-** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRICHLOROBENZENE	0.5	U	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
ACETONE	4.0	J,U,C3	2.0	MDL	4.0	MRL	ug/L	UJ	IcRsd
BROMOFORM	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
DICHLORODIFLUOROMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-101-0602** ***Collected:*** **6/7/2012 10:46:00** ***Analysis Type:*** **Reinjection-01-** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRICHLOROBENZENE	0.5	U	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
ACETONE	4.0	J,U,C3	2.0	MDL	4.0	MRL	ug/L	UJ	IcRsd
BROMOFORM	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
DICHLORODIFLUOROMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

* denotes a non-reportable result

Project Name and Number: R12S70 - Modesto GW Treatment System Spring 2012 Sampling

Data Qualifier Summary

Lab Reporting Batch ID: 12160A **Laboratory: R9LAB**

EDD Filename: 12160a_voc_1206014 FINAL **eQAPP Name: Modesto_Site_062812**

Method Category: **VOA**

Method: **524.2** ***Matrix:*** **Water**

Sample ID: **MW-305-2Q12** ***Collected:*** **6/7/2012 10:00:00** ***Analysis Type:*** **Initial-** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRICHLOROBENZENE	0.5	U	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
ACETONE	4.0	J,U,C3	2.0	MDL	4.0	MRL	ug/L	UJ	IcRsd
BROMOFORM	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
DICHLORODIFLUOROMETHANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	Icv
NAPHTHALENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12160A **Laboratory: R9LAB**

EDD Filename: 12160a_voc_1206014 FINAL **eQAPP Name: Modesto_Site_062812**

Reason Code Legend

Reason Code	*Description*
IcRsd	Initial Calibration Percent Relative Standard Deviation
Icv	Initial Calibration Verification Percent Difference Lower Estimation
Surr	Surrogate/Tracer Recovery Upper Estimation

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12160A

Laboratory: R9LAB

EDD Filename: 12160A_TDSTSS_FINAL

eQAPP Name: Modesto_Site_062812

No Data Review Qualifiers Applied.

Data Qualifier Summary

Lab Reporting Batch ID: 12160A

Laboratory: R9LAB

EDD Filename: 12160A_BOD_FINAL

eQAPP Name: Modesto_Site_062812

No Data Review Qualifiers Applied.

SDG 12160B

Data Qualifier Summary

Lab Reporting Batch ID: 12160B **Laboratory: R9LAB**

EDD Filename: 12160b_voc_1206016 FINAL_rev **eQAPP Name: Modesto_Site_062812**

Method Category: VOA

Method: TO-15 **Matrix:** Air

Sample ID: GWTP Pr GAC-0602 *Collected:* 6/7/2012 11:20:00 *Analysis Type:* Reinjection-01- *Dilution:* 2.38

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRICHLOROBENZENE	2.4	J,U,C3	1.2	MDL	2.4	MRL	ppbv	UJ	Icv

Sample ID: GWTP Stack-0602 *Collected:* 6/7/2012 11:15:00 *Analysis Type:* Reinjection-01- *Dilution:* 2.35

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRICHLOROBENZENE	2.4	J,U,C3	1.2	MDL	2.4	MRL	ppbv	UJ	Icv

Sample ID: MW-112-0602 *Collected:* 6/7/2012 11:40:00 *Analysis Type:* Initial- *Dilution:* 2.54

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRICHLOROBENZENE	2.5	J,U,C3	1.3	MDL	2.5	MRL	ppbv	UJ	Icv

Sample ID: SVE Pre GAC-0602 *Collected:* 6/7/2012 11:30:00 *Analysis Type:* Initial- *Dilution:* 2.34

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRICHLOROBENZENE	2.3	J,U,C3	1.2	MDL	2.3	MRL	ppbv	UJ	Icv

Sample ID: SVE Stack-0602 *Collected:* 6/7/2012 11:35:00 *Analysis Type:* Initial- *Dilution:* 2.3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRICHLOROBENZENE	2.3	J,U,C3	1.2	MDL	2.3	MRL	ppbv	UJ	Icv
TETRACHLOROETHENE	1.5	J,C1	1.2	MDL	2.3	MRL	ppbv	J	RI

* denotes a non-reportable result

Project Name and Number: R12S70 - Modesto GW Treatment System Spring 2012 Sampling

Data Qualifier Summary

Lab Reporting Batch ID: 12160B **Laboratory: R9LAB**

EDD Filename: 12160b_voc_1206016 FINAL_rev **eQAPP Name: Modesto_Site_062812**

Reason Code Legend

Reason Code	*Description*
Icv	Initial Calibration Verification Percent Difference Lower Estimation
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: R12S70 - Modesto GW Treatment System Spring 2012 Sampling

Appendix B

Manual Validation Level III and IV Worksheets
and
ADR Reports

SDG 12095A

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12095A **Laboratory: R9LAB**

EDD Filename: 12095A_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**
Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
MW-8A-2Q12MS (MW-8A-2Q12)	2,2-DICHLOROPROPANE	-	-	25.00-150.00	22 (20.00)	2,2-DICHLOROPROPANE	J (all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12095A **Laboratory: R9LAB**

EDD Filename: 12095A_Diss CO2_1204006 **eQAPP Name: Modesto_Site_052412**

Method: **RSK-175**

Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
MW-8A-2Q12MS (MW-8A-2Q12)	Carbon Dioxide	-	60	70.00-130.00	-	Carbon Dioxide	J- (all detects) UJ (all non-detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12095A **Laboratory: R9LAB**

EDD Filename: 12095A_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**
Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
B2D0012-BS1 (MW-5A-2Q12 MW-8A-2Q12 MW-95A-2Q12)	1,1,2,2-TETRACHLOROETHANE 1,3-DICHLOROPROPANE	121 121	- -	80.00-120.00 78.00-120.00	- -	1,1,2,2-TETRACHLOROETHAN 1,3-DICHLOROPROPANE	J+ (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12095A **Laboratory: R9LAB**

EDD Filename: 12095A_inorganics_edit method **eQAPP Name: Modesto_Site_052412**

Method: **415.3**
Matrix: **Water**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
MW-5A-2Q12	Total Organic Carbon	J,C1	0.46	0.50	MRL	mg/L	J (all detects)
MW-85A-2Q12	Total Organic Carbon	J,C1	0.43	0.50	MRL	mg/L	J (all detects)
MW-8A-2Q12	Total Organic Carbon	J,C1	0.40	0.50	MRL	mg/L	J (all detects)

Method: **4500-S2**
Matrix: **Water**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
MW-4A-2Q12	SULFIDE	J,C1	0.62	1.0	MRL	mg/L	J (all detects)
MW-8A-2Q12	SULFIDE	J,C1	0.64	1.0	MRL	mg/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 12095A **Laboratory: R9LAB**

EDD Filename: 12095A_voc **eQAPP Name: Modesto_Site_052412**

Method: 524.2
Matrix: Water

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	MW-5A-2Q12	MW-95A-2Q12			
TETRACHLOROETHENE	92	78	16	1.00	No Qualifiers Applied

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

LDC #: 27780A1

SDG #: 12095A

Laboratory: Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/8/12

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC/MS Volatiles (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	RSD ≤ 20%
IV.	Continuing calibration/ICV	SW	ccv/icv ≤ 20%
V.	Blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	MW-5A-2Q12	11		21		31	
2	MW-8A-2Q12	12		22		32	
3	MW95A-2Q12	13		23		33	
4	MW-8A-2Q12MS	14		24		34	
5	MW-8A-2Q12MSD	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method 524.2)

A. Chloromethane	Q. 1,2-Dichloropropane	GG. Xylenes, total	WW. Bromobenzene	MMM. Naphthalene
B. Bromomethane	R. cis-1,3-Dichloropropene	HH. Vinyl acetate	XX. 1,2,3-Trichloropropane	NNN. 1,2,3-Trichlorobenzene
C. Vinyl choride	S. Trichloroethene	II. 2-Chloroethylvinyl ether	YY. n-Propylbenzene	OOO. 1,3,5-Trichlorobenzene
D. Chloroethane	T. Dibromochloromethane	JJ. Dichlorodifluoromethane	ZZ. 2-Chlorotoluene	PPP. trans-1,2-Dichloroethene
E. Methylene chloride	U. 1,1,2-Trichloroethane	KK. Trichlorofluoromethane	AAA. 1,3,5-Trimethylbenzene	QQQ. cis-1,2-Dichloroethene
F. Acetone	V. Benzene	LL. Methyl-tert-butyl ether	BBB. 4-Chlorotoluene	RRR. m,p-Xylenes
G. Carbon disulfide	W. trans-1,3-Dichloropropene	MM. 1,2-Dibromo-3-chloropropane	CCC. tert-Butylbenzene	SSS. o-Xylene
H. 1,1-Dichloroethene	X. Bromoform	NN. Diethyl ether	DDD. 1,2,4-Trimethylbenzene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane
I. 1,1-Dichloroethane	Y. 4-Methyl-2-pentanone	OO. 2,2-Dichloropropane	EEE. sec-Butylbenzene	VVV. 4-Ethyltoluene
J. 1,2-Dichloroethene, total	Z. 2-Hexanone	PP. Bromochloromethane	FFF. 1,3-Dichlorobenzene	WWW. Ethanol
K. Chloroform	AA. Tetrachloroethene	QQ. 1,1-Dichloropropene	GGG. p-Isopropyltoluene	MMMM. Ethyl ether
L. 1,2-Dichloroethane	BB. 1,1,2,2-Tetrachloroethane	RR. Dibromomethane	HHH. 1,4-Dichlorobenzene	NNNN. Benzyl chloride
M. 2-Butanone	CC. Toluene	SS. 1,3-Dichloropropane	III. n-Butylbenzene	
N. 1,1,1-Trichloroethane	DD. Chlorobenzene	TT. 1,2-Dibromoethane	JJJ. 1,2-Dichlorobenzene	
O. Carbon tetrachloride	EE. Ethylbenzene	UU. 1,1,1,2-Tetrachloroethane	KKK. 1,2,4-Trichlorobenzene	
P. Bromodichloromethane	FF. Styrene	VV. Isopropylbenzene	LLL. Hexachlorobutadiene	

LDC #: 27780A1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Reviewer:
2nd Reviewer:

METHOD: GC/MS VOA (EPA Method 524.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Y N N/A Were all percent relative standard deviations (%RSD) ≤ 20% ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: <20.0%)	Associated Samples	Qualifications
	3/7/12	ICAL	B	24.14	All	J/P
			00	21.68		

LDC #: 27780A1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method 524.2)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were all percent differences (%D) ≤ 30% ?

#	Date	Standard ID	Compound	Finding %D (Limit: <30.0%)	Associated Samples	Qualifications
	4/4/12	0404120402	LL	40.2	All	J/UJ/P
			00	40.3		

CONCAL.1S5

LDC #: 27780A6 **VALIDATION COMPLETENESS WORKSHEET** Date: 6/1/12

SDG #: 12095A ADR Page: 1 of 1

Laboratory: EPA Region 9 Laboratory Reviewer: CL

2nd Reviewer: L

METHOD: (Analyte) Alkalintiy (~~EPA Method 310.1~~ SM2320), Chloride, Sulfate Nitrate-N,(EPA Method 300.0), Sulfide (SM4500-S2), Total Organic Carbon (EPA Method 415.3), Ferrous Iron (Laboratory SOP 575)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	MS/D
VI.	Duplicates	N	DUP
VII.	Laboratory control samples	N	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	N	
X.	Field duplicates	~	(4,5)
XI.	Field blanks	~	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	MW-4A-2Q12	11		21		31	
2	MW-5A-2Q12	12		22		32	
3	MW-8A-2Q12	13		23		33	
4	MW-15A-2Q12	14		24		34	
5	MW-85A-2Q12	15		25		35	
6	MW-8A-2Q12MS	16		26		36	
7	MW-8A-2Q12MSD	17		27		37	
8	MW-8A-2Q12DUP	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 27780B6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: QR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1,3,5	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Fe^{II+} Sulfide
2,4	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Fe^{II+}
4	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Fe^{2+}
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
6,7	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
8	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Fe^{II+} Sa
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 27780A51a

SDG #: 12095A

Laboratory: EPA Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 6/13/12

Page: 1 of 1

Reviewer: JVC

2nd Reviewer: [illegible]

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates: 4/03/12
II	Initial calibration	A	% RSD ≤ 20 %
III.	Calibration verification/ICV	A	CCV/ICV ≤ 20 %
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery		Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VII.	Laboratory control samples		Not reviewed for ADR validation.
VIII.	Target compound identification		Not reviewed for ADR validation.
IX.	Compound quantitation/RL/LOQ/LODs		Not reviewed for ADR validation.
X.	System Performance		Not reviewed for ADR validation.
XI.	Overall assessment of data		Not reviewed for ADR validation.
XII.	Field duplicates		
XIII.	Field blanks	✓	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	MW-4A-2Q12**	11		21		31	
2	MW-5A-2Q12	12		22		32	
3	MW-8A-2Q12	13		23		33	
4	MW-8A-2Q12MS	14		24		34	
5	MW-8A-2Q12MSD	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 27780A51b

SDG #: 12095A

Laboratory: EPA Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 6/13/12

Page: 1 of 1

Reviewer: JC

2nd Reviewer: [illegible]

METHOD: GC Dissolved Carbon Dioxide (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates: 4/03/12
II	Initial calibration	A	% RSD ≤ 20 %
III.	Calibration verification/ICV	A	CW/IW ≤ 20 %
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery		Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VII.	Laboratory control samples		Not reviewed for ADR validation.
VIII.	Target compound identification		Not reviewed for ADR validation.
IX.	Compound quantitation/RL/LOQ/LODs		Not reviewed for ADR validation.
X.	System Performance		Not reviewed for ADR validation.
XI.	Overall assessment of data		Not reviewed for ADR validation.
XII.	Field duplicates		
XIII.	Field blanks		

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	MW-4A-2Q12**	11	B2 D0028-Blk1	21		31	
2	MW-5A-2Q12	12		22		32	
3	MW-8A-2Q12	13		23		33	
4	MW-8A-2Q12MS	14		24		34	
5	MW-8A-2Q12MSD	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Modesto GW 2Q12
Collection Date:	April 3, 2012
LDC Report Date:	June 14, 2012
Matrix:	Water
Parameters:	Methane, Ethane, & Ethene
Validation Level:	EPA Level IV
Laboratory:	EPA Region 9 Laboratory
Sample Delivery Group (SDG):	12095A

Sample Identification

MW-4A-2Q12

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method RSK-175 for Methane, Ethane, and Ethene.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No methane, ethane, or ethene was found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12095A	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Modesto GW 2Q12
Methane, Ethane, & Ethene - Data Qualification Summary - SDG 12095A

SDG	Sample	Compound	Flag	A or P	Reason
12095A	MW-4A-2Q12	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs

Modesto GW 2Q12
Methane, Ethane, & Ethene - Laboratory Blank Data Qualification Summary - SDG 12095A

No Sample Data Qualified in this SDG

Modesto GW 2Q12
Methane, Ethane, & Ethene - Field Blank Data Qualification Summary - SDG 12095A

No Sample Data Qualified in this SDG

LDC #: 27780A51a

VALIDATION COMPLETENESS WORKSHEET

ADR(IV)

SDG #: 12095A

Laboratory: EPA Reg. 9 Laboratory

Date: 6/13/12

Page: 1 of 1

Reviewer: JVG

2nd Reviewer: A

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/03/12
II	Initial calibration	A	% RSD ≤ 20 %
III.	Calibration verification/ICV	A	CCV/ICV ≤ 20 %
IV.	Blanks	A	~~Not reviewed for ADR validation.~~
V	Surrogate recovery	A	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	A	Not reviewed for ADR validation.
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound quantitation/RL/LOQ/LODs	A	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	A	~~Not reviewed for ADR validation.~~
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	MW4A-2Q12**	11	B2D0046-Blk1	21		31	
2	~~MW-5A-2Q12~~	12		22		32	
3	MW-8A-2Q12	13		23		33	
4	MW-8A-2Q12MS	14		24		34	
5	~~MW-8A-2Q12MSD~~	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 27780 A51 q

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer: [illegible]

Method: ✓ GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ✓ %D or ____ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓	NA		
Was a MS/MSD analyzed every 20 samples of each matrix?	✓	NA		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓		NA	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				

LDC #: 27780 A5re

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 27780 A&I 9

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: A

METHOD: GC ✓ HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (13.23 std)	Recalculated CF (13.23 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL AG6890N-6	1/26/2012	Methane	1.003E+06	1.003E+06	1.018E+06	1.018E+06	4.25	4.25

Conc	Methane	Area
1.23	1.100E+06	
4.10	1.004E+06	
13.23	1.003E+06	13268375
44.10	9.970E+05	
110.25	1.028E+06	
220.50	9.768E+05	
X =	1.018E+06	
S =	43320.511	

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 21780 A51a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC / HPLC

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV CF	Reported CF	Recalculated CF	Reported % D	Recalculated %D
1	0411126R001	4/11/2012	Methane	1.018E+06	9.862E+05	9.862E+05	3.1	3.1

	Compound	Area	CF
CCV1	Methane	13047841	13.23
CCV2			

LDC #: 27780 A51 9

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: DK
2nd reviewer: [illegible]

METHOD: ✓ **GC** __ **HPLC**

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Acetylene	Shin Carbon ST	66.33	75.124	113.26	113.26	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 27780 A51 K

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG

2nd Reviewer: A

METHOD: ✓ GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC/SA)
RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration
LCS = Laboratory Control Sample
SA = Spike added
LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: B2D0046-BS1

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)	44.1	NA	45.1	NA	102	102				
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 27780A51a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. # 1 Compound Name Methane

Concentration = (124 2213) / (1018/33) = 1.22 ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

LDC Report# 27780A51b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Modesto GW 2Q12
Collection Date:	April 3, 2012
LDC Report Date:	July 2, 2012
Matrix:	Water
Parameters:	Carbon Dioxide
Validation Level:	EPA Level IV
Laboratory:	EPA Region 9 Laboratory
Sample Delivery Group (SDG):	12095A

Sample Identification

MW-4A-2Q12

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method RSK-175 for Carbon Dioxide.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

III. Continuing Calibration

Continuing calibration was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% .

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No carbon dioxide was found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were not within QC limits. Since there were no associated samples, no data were qualified.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12095A	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Modesto GW 2Q12
Carbon Dioxide - Data Qualification Summary - SDG 12095A

SDG	Sample	Compound	Flag	A or P	Reason
12095A	MW-4A-2Q12	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs

Modesto GW 2Q12
Carbon Dioxide - Laboratory Blank Data Qualification Summary - SDG 12095A

No Sample Data Qualified in this SDG

Modesto GW 2Q12
Carbon Dioxide - Field Blank Data Qualification Summary - SDG 12095A

No Sample Data Qualified in this SDG

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: US00 **Laboratory: ARIS**

EDD Filename: US00 **eQAPP Name: Moses Lake WHF 2012**

Method: **524.3**
Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
NT5_050212LCSDW	1,1,1-TRICHLOROETHANE	40	40	70.00-130.00	-	1,1,1-TRICHLOROETHANE	J- (all detects) UJ (all non-detects)
NT5_050212LCSW	1,1-DICHLOROETHANE	40	42	70.00-130.00	-	1,1-DICHLOROETHANE	
(12MLW001WP000)	1,1-DICHLOROETHENE	40	40	70.00-130.00	-	1,1-DICHLOROETHENE	
	1,2-DICHLOROETHANE	38	40	70.00-130.00	-	1,2-DICHLOROETHANE	
	CIS-1,2-DICHLOROETHENE	40	40	70.00-130.00	-	CIS-1,2-DICHLOROETHENE	
	TETRACHLOROETHENE	40	40	70.00-130.00	-	TETRACHLOROETHENE	
	TRANS-1,2-DICHLOROETHENE	38	40	70.00-130.00	-	TRANS-1,2-DICHLOROETHEN	
	TRICHLOROETHENE	38	40	70.00-130.00	-	TRICHLOROETHENE	
	VINYL CHLORIDE	40	40	70.00-130.00	-	VINYL CHLORIDE	

LDC #: 27780A51b

SDG #: 12095A

Laboratory: EPA Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 6/13/12

Page: 1 of 1

Reviewer: SVG

2nd Reviewer: [illegible]

METHOD: GC Dissolved Carbon Dioxide (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/03/12
II	Initial calibration	A	% RSD ≤ 20 %
III.	Calibration verification/ICV	A	CCV/ICV ≤ 20 %
IV.	Blanks	A	~~Not reviewed for ADR validation.~~
V	Surrogate recovery	A	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	SW	Not reviewed for ADR validation. (No associated spk NQ)
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound quantitation/RL/LOQ/LODs	A	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	A	~~Not reviewed for ADR validation.~~
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	MW-4A-2Q12**	11	B2D0028-BLK1	21		31	
2	~~MW-5A-2Q12~~	12		22		32	
3	MW-8A-2Q12	13		23		33	
4	MW-8A-2Q12MS	14		24		34	
5	~~MW-8A-2Q12MSD~~	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 27780 A5b

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer: [illegible]

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ✓ %D or ____ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	M	✓		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				

LDC #: 27780 A51b

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 27780 A5b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC / HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (12176.1 std)	Recalculated CF (12176.1 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL AG6890N-6	3/26/2012	Carbon dioxide	8.089E+03	8.089E+03	8.242E+03	8241.80	2.53	2.53

Conc	CO2	Area
3044.00	8.180E+03	
6088.00	8.041E+03	
12176.10	8.089E+03	98489206
30440.30	8.549E+03	
60880.70	8.350E+03	
X =	8.242E+03	
S =	208.307	

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 27780 A51b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: JVG
2nd Reviewer: A

METHOD: GC ✓ HPLC ____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV CF	Reported CF	Recalculated CF	Reported % D	Recalculated %D
1	040612R01	4/6/2012	Carbon dioxide	8.242E+03	8.902E+03	8.902E+03	8.0	8.0

	Compound	Area	Conc
CCV1	Carbon dioxide	108388164	12176.10
CCV2			

LDC #: 27780 A5b

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: JVG
2nd reviewer: [illegible]

METHOD: ✓ **GC** __ **HPLC**

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Acetylene	Shin Carbon ST	66.33	79.14	119	119	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 27780 A5b

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG

2nd Reviewer: [illegible]

METHOD: ✓ GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC/SA)
RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; LCS = Laboratory Control Sample; SA = Spike added; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: B2D0028 - BS1

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
~~Methane~~ CO_2 (RSK-175)	12200	NA	13400	NA	110	110	—	—	—	—
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 27780 A S1b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. #1 Compound Name CO ✓

Concentration = (33914115) / (8241.80) = 4114.9

≈ 4100 ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

SDG 12097A

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12097A **Laboratory: R9LAB**

EDD Filename: 12097A_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**
Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
CRB Mid-0401MS (CRB Mid-0401)	1,1,2-TRICHLORO-1,2,2-TRIFLU	-	-	38.00-140.00	22 (20.00)	1,1,2-TRICHLORO-1,2,2-TRIFL	J (all detects)
	1,1-DICHLOROETHENE	-	-	33.00-160.00	28 (20.00)	1,1-DICHLOROETHENE	
CRB Mid-0401MS (CRB Mid-0401)	1,3-DICHLOROBENZENE	-	76	77.00-120.00	-	1,3-DICHLOROBENZENE	J-(all detects) UJ(all non-detects)
	BROMOBENZENE	-	76	77.00-120.00	-	BROMOBENZENE	
	BROMODICHLOROMETHANE	79	74	87.00-130.00	-	BROMODICHLOROMETHANE	
	DIBROMOMETHANE	-	74	77.00-120.00	-	DIBROMOMETHANE	

Reporting Limit Outliers

Lab Reporting Batch ID: 12097A **Laboratory: R9LAB**

EDD Filename: 12097A_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
CRB INF-0401	TETRACHLOROETHENE	J,C1	0.3	0.5	MRL	ug/L	J (all detects)

LDC #: 27780B1 **VALIDATION COMPLETENESS WORKSHEET** Date: 4/18/12
SDG #: 12097A ADR Page: 1 of 1
Laboratory: Region 9 Laboratory Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	RSD ≤ 30%
IV.	Continuing calibration/ICV A	~~SW~~	CCV/ICV ≤ 30%
V.	Blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	CRB EFF-0401	11		21		31	
2	CRB INF-0401	12		22		32	
3	CRB Mid-0401	13		23		33	
4	EFF-0401	14		24		34	
5	EW-1-0401	15		25		35	
6	MW-303-2Q12	16		26		36	
7	MW-403-2Q12	17		27		37	
8	CRB Mid-0401MS	18		28		38	
9	CRB Mid-0401MSD	19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method 524.2)

A. Chloromethane	Q. 1,2-Dichloropropane	GG. Xylenes, total	WW. Bromobenzene	MMM. Naphthalene
B. Bromomethane	R. cis-1,3-Dichloropropene	HH. Vinyl acetate	XX. 1,2,3-Trichloropropane	NNN. 1,2,3-Trichlorobenzene
C. Vinyl choride	S. Trichloroethene	II. 2-Chloroethylvinyl ether	YY. n-Propylbenzene	OOO. 1,3,5-Trichlorobenzene
D. Chloroethane	T. Dibromochloromethane	JJ. Dichlorodifluoromethane	ZZ. 2-Chlorotoluene	PPP. trans-1,2-Dichloroethene
E. Methylene chloride	U. 1,1,2-Trichloroethane	KK. Trichlorofluoromethane	AAA. 1,3,5-Trimethylbenzene	QQQ. cis-1,2-Dichloroethene
F. Acetone	V. Benzene	LL. Methyl-tert-butyl ether	BBB. 4-Chlorotoluene	RRR. m,p-Xylenes
G. Carbon disulfide	W. trans-1,3-Dichloropropene	MM. 1,2-Dibromo-3-chloropropane	CCC. tert-Butylbenzene	SSS. o-Xylene
H. 1,1-Dichloroethene	X. Bromoform	NN. Diethyl ether	DDD. 1,2,4-Trimethylbenzene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane
I. 1,1-Dichloroethane	Y. 4-Methyl-2-pentanone	OO. 2,2-Dichloropropane	EEE. sec-Butylbenzene	VVV. 4-Ethyltoluene
J. 1,2-Dichloroethene, total	Z. 2-Hexanone	PP. Bromochloromethane	FFF. 1,3-Dichlorobenzene	WWW. Ethanol
K. Chloroform	AA. Tetrachloroethene	QQ. 1,1-Dichloropropene	GGG. p-Isopropyltoluene	MMMM. Ethyl ether
L. 1,2-Dichloroethane	BB. 1,1,2,2-Tetrachloroethane	RR. Dibromomethane	HHH. 1,4-Dichlorobenzene	NNNN. Benzyl chloride
M. 2-Butanone	CC. Toluene	SS. 1,3-Dichloropropane	III. n-Butylbenzene	
N. 1,1,1-Trichloroethane	DD. Chlorobenzene	TT. 1,2-Dibromoethane	JJJ. 1,2-Dichlorobenzene	
O. Carbon tetrachloride	EE. Ethylbenzene	UU. 1,1,1,2-Tetrachloroethane	KKK. 1,2,4-Trichlorobenzene	
P. Bromodichloromethane	FF. Styrene	VV. Isopropylbenzene	LLL. Hexachlorobutadiene	

LDC #: 27782B1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method 524.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Y N N/A Were all percent relative standard deviations (%RSD) ≤ 20% ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤20.0%)	Associated Samples	Qualifications
	4/3/12	ICAL	B	21.07	All	J/UJ/P
			MMM	23.42		

INICAL.1S5

LDC #: 27881C6

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/29/12

SDG #: 12097A

Page: 1 of 1

Laboratory: EPA Region 9 Laboratory

Reviewer:

2nd Reviewer:

METHOD: (Analyte) Biochemical Oxygen Demand (SM5210B), Total Dissolved Solids (SM2540C), Total Suspended Solids (SM2540D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	N	
V	Matrix Spike/Matrix Spike Duplicates	N	
VI.	Duplicates	N	
VII.	Laboratory control samples	N	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A ~~N~~	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	EFF-0401	11		21		31	
2	EFF-0401DUP	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

SDG 12097B

Quality Control Outlier Reports

12097B

Lab Duplicate Outlier Report

Lab Reporting Batch ID: 12097B **Laboratory: R9LAB**

EDD Filename: 12097B_TO15_ppbv_edit RPD **eQAPP Name: Modesto_Site_052412**

Method: TO-15
Matrix: Air

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
GWTP Pr GAC -0401DUP (GWTP Pr GAC -0401)	TETRACHLOROETHENE	27	20.00	J (all detects) UJ (all non-detects)

Project Name and Number: R12S70 - Modesto GW Treatment System Spring 2012 Sampling

Reporting Limit Outliers

Lab Reporting Batch ID: 12097B **Laboratory: R9LAB**

EDD Filename: 12097B_TO15_ppbv_edit RPD **eQAPP Name: Modesto_Site_052412**

Method: **TO-15**

Matrix: **Air**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
GWTP Pr GAC-0401	1,1-DICHLOROETHANE	J,C1	1.9	2.3	MRL	ppbv	J (all detects)
SVE Pre GAC-0401	BENZENE	J,C1	1.2	2.3	MRL	ppbv	J (all detects)
SVE Stack-0401	CIS-1,2-DICHLOROETHENE	J,C1	1.6	2.2	MRL	ppbv	J (all detects)

LDC #: 27780C48

SDG #: 12097B

Laboratory: EPA Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/13/12

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II.	GC/MS Instrument performance check	A	24hr
III.	Initial calibration	A	RSD≤30%
IV.	Continuing calibration/ICV	A	CCV/ICV≤30%
V.	Blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	GWTP Pr GAC-0401	11		21		31	
2	GWTP Stack-0401	12		22		32	
3	SVE Pre GAC-001	13		23		33	
4	SVE Stack-0401	14		24		34	
5	GWTP Pr GAC-0401DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

SDG 12097D

Trip Blank Outlier Report

Lab Reporting Batch ID: 12097D **Laboratory: R9LAB**

EDD Filename: 12097D_methane **eQAPP Name: Modesto_Site_052412**

Method: **RSK-175**
Matrix: **Water**

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
MW-302-2Q12(Initial)	4/3/2012 8:00:00 AM	METHANE	0.7 ug/L	MW-15A-2Q12 MW-17B-2Q12 MW-20A-2Q12 MW-20B-2Q12 MW-25B-2Q12 MW-28B-2Q12 MW-4B-2Q12

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
MW-17B-2Q12(Initial)	METHANE	1.4 ug/L	1.4U ug/L
MW-25B-2Q12(Initial)	METHANE	0.9 ug/L	1.2U ug/L
MW-28B-2Q12(Initial)	METHANE	0.7 ug/L	1.2U ug/L

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12097D **Laboratory: R9LAB**

EDD Filename: 12097d_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**
Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
MW-302-2Q12MS (MW-302-2Q12)	1,1,1,2-TETRACHLOROETHANE	-	-	71.00-130.00	32 (20.00)	1,1,1,2-TETRACHLOROETHAN	J (all detects)
	1,1,1-TRICHLOROETHANE	-	-	36.00-150.00	30 (20.00)	1,1,1-TRICHLOROETHANE	
	1,1,2-TRICHLORO-1,2,2-TRIFLU	-	-	38.00-140.00	27 (20.00)	1,1,2-TRICHLORO-1,2,2-TRIFL	
	1,1-DICHLOROETHANE	-	-	47.00-160.00	33 (20.00)	1,1-DICHLOROETHANE	
	1,1-DICHLOROETHENE	-	-	33.00-160.00	34 (20.00)	1,1-DICHLOROETHENE	
	1,1-DICHLOROPROPENE	-	-	50.00-150.00	30 (20.00)	1,1-DICHLOROPROPENE	
	1,2,3-TRICHLOROBENZENE	-	-	64.00-130.00	29 (20.00)	1,2,3-TRICHLOROBENZENE	
	1,2,3-TRICHLOROPROPANE	-	-	63.00-140.00	25 (20.00)	1,2,3-TRICHLOROPROPANE	
	1,2,4-TRICHLOROBENZENE	-	-	66.00-130.00	27 (20.00)	1,2,4-TRICHLOROBENZENE	
	1,2,4-TRIMETHYLBENZENE	-	-	67.00-140.00	27 (20.00)	1,2,4-TRIMETHYLBENZENE	
	1,2-DIBROMO-3-CHLOROPROP	-	-	54.00-143.00	31 (20.00)	1,2-DIBROMO-3-CHLOROPRO	
	1,2-DICHLOROBENZENE	-	-	69.00-130.00	26 (20.00)	1,2-DICHLOROBENZENE	
	1,2-DICHLOROETHANE	-	-	69.00-140.00	26 (20.00)	1,2-DICHLOROETHANE	
	1,2-DICHLOROPROPANE	-	-	30.00-190.00	29 (20.00)	1,2-DICHLOROPROPANE	
	1,3,5-TRIMETHYLBENZENE	-	-	68.00-140.00	27 (20.00)	1,3,5-TRIMETHYLBENZENE	
	1,3-DICHLOROPROPANE	-	-	67.00-130.00	31 (20.00)	1,3-DICHLOROPROPANE	
	1,4-DICHLOROBENZENE	-	-	76.00-120.00	25 (20.00)	1,4-DICHLOROBENZENE	
	2,2-DICHLOROPROPANE	-	-	25.00-150.00	32 (20.00)	2,2-DICHLOROPROPANE	
	2-BUTANONE	-	-	43.00-150.00	33 (20.00)	2-BUTANONE	
	4-CHLOROTOLUENE	-	-	77.00-130.00	27 (20.00)	4-CHLOROTOLUENE	
	ACETONE	-	-	46.00-140.00	30 (20.00)	ACETONE	
	BENZENE	-	-	74.00-122.00	28 (20.00)	BENZENE	
	BROMOCHLOROMETHANE	-	-	56.00-140.00	28 (20.00)	BROMOCHLOROMETHANE	
	BROMOFORM	-	-	43.00-160.00	30 (20.00)	BROMOFORM	
	BROMOMETHANE	-	-	38.00-160.00	40 (20.00)	BROMOMETHANE	
	CARBON TETRACHLORIDE	-	-	31.00-160.00	28 (20.00)	CARBON TETRACHLORIDE	
	CHLOROETHANE	-	-	59.00-140.00	39 (20.00)	CHLOROETHANE	
	CHLOROFORM	-	-	30.00-170.00	32 (20.00)	CHLOROFORM	
	CHLOROMETHANE	-	-	47.00-140.00	36 (20.00)	CHLOROMETHANE	
	CIS-1,2-DICHLOROETHENE	-	-	55.00-140.00	31 (20.00)	CIS-1,2-DICHLOROETHENE	
	CIS-1,3-DICHLOROPROPENE	-	-	67.00-138.00	34 (20.00)	CIS-1,3-DICHLOROPROPENE	
	DIBROMOCHLOROMETHANE	-	-	62.00-140.00	30 (20.00)	DIBROMOCHLOROMETHANE	
	DICHLORODIFLUOROMETHAN	-	141	25.00-135.00	29 (20.00)	DICHLORODIFLUOROMETHA	
	ETHYLBENZENE	-	-	63.00-140.00	27 (20.00)	ETHYLBENZENE	
	HEXACHLOROBUTADIENE	-	-	46.00-140.00	23 (20.00)	HEXACHLOROBUTADIENE	
	ISOPROPYLBENZENE	-	-	61.00-150.00	28 (20.00)	ISOPROPYLBENZENE	
	m&p-Xylene	-	-	67.00-130.00	28 (20.00)	m&p-Xylene	
	METHYL TERT-BUTYL ETHER	-	-	50.00-140.00	35 (20.00)	METHYL TERT-BUTYL ETHER	
	METHYLENE CHLORIDE	-	-	56.00-120.00	31 (20.00)	METHYLENE CHLORIDE	
	NAPHTHALENE	-	-	52.00-160.00	36 (20.00)	NAPHTHALENE	
	N-BUTYLBENZENE	-	-	57.00-140.00	24 (20.00)	N-BUTYLBENZENE	
	N-PROPYLBENZENE	-	-	59.00-140.00	26 (20.00)	N-PROPYLBENZENE	
	O-XYLENE	-	-	71.00-140.00	30 (20.00)	O-XYLENE	
	P-ISOPROPYLTOLUENE	-	-	58.00-150.00	26 (20.00)	P-ISOPROPYLTOLUENE	
	SEC-BUTYLBENZENE	-	-	54.00-150.00	26 (20.00)	SEC-BUTYLBENZENE	
	STYRENE	-	-	20.00-170.00	27 (20.00)	STYRENE	
	TERT-BUTYLBENZENE	-	-	61.00-150.00	27 (20.00)	TERT-BUTYLBENZENE	
	TETRACHLOROETHENE	-	-	41.00-150.00	26 (20.00)	TETRACHLOROETHENE	
	TOLUENE	-	-	68.00-120.00	26 (20.00)	TOLUENE	
	TRANS-1,2-DICHLOROETHENE	-	-	59.00-130.00	29 (20.00)	TRANS-1,2-DICHLOROETHEN	
	TRANS-1,3-DICHLOROPROPEN	-	-	65.00-150.00	33 (20.00)	TRANS-1,3-DICHLOROPROPE	
	TRICHLOROETHENE	-	-	47.00-160.00	30 (20.00)	TRICHLOROETHENE	
	TRICHLOROFLUOROMETHANE	-	-	44.00-170.00	26 (20.00)	TRICHLOROFLUOROMETHAN	
	VINYL CHLORIDE	-	-	43.00-150.00	39 (20.00)	VINYL CHLORIDE	
MW-302-2Q12MS (MW-302-2Q12)	1,1,2,2-TETRACHLOROETHANE	69	-	70.00-130.00	31 (20.00)	1,1,2,2-TETRACHLOROETHAN	J(all detects) UJ(all non-detects)
	1,1,2-TRICHLOROETHANE	72	-	74.00-131.00	28 (20.00)	1,1,2-TRICHLOROETHANE	
	1,3-DICHLOROBENZENE	76	-	77.00-120.00	25 (20.00)	1,3-DICHLOROBENZENE	
	2-CHLOROTOLUENE	75	-	76.00-130.00	29 (20.00)	2-CHLOROTOLUENE	
	BROMOBENZENE	76	-	77.00-120.00	26 (20.00)	BROMOBENZENE	
	BROMODICHLOROMETHANE	73	-	87.00-130.00	27 (20.00)	BROMODICHLOROMETHANE	
	CHLOROBENZENE	74	-	75.00-120.00	28 (20.00)	CHLOROBENZENE	
	DIBROMOMETHANE	72	-	77.00-120.00	29 (20.00)	DIBROMOMETHANE	
MW-26B-2Q12MS (MW-26B-2Q12)	STYRENE	-	-	20.00-170.00	66 (20.00)	STYRENE	J(all detects)

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12097D **Laboratory: R9LAB**

EDD Filename: 12097d_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**
Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
MW-26B-2Q12MS (MW-26B-2Q12)	BROMODICHLOROMETHANE	82	84	87.00-130.00	-	BROMODICHLOROMETHANE	J-(all detects) UJ(all non-detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12097D **Laboratory: R9LAB**

EDD Filename: 12097d_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**
Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
B2D0074-BS1 (MW-20B-2Q12)	VINYL CHLORIDE	151	-	70.00-130.00	-	VINYL CHLORIDE	J+ (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12097D **Laboratory: R9LAB**

EDD Filename: 12097d_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
MW-15A-2Q12	CHLOROFORM	J,C1	0.4	0.5	MRL	ug/L	J (all detects)
MW-17B-2Q12	1,2,4-TRIMETHYLBENZENE CARBON TETRACHLORIDE O-XYLENE	J,C1 J,C1 J,C1	0.4 0.3 0.4	0.5 0.5 0.5	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
MW-17C-2Q12	ETHYLBENZENE m&p-Xylene TETRACHLOROETHENE	J,C1 J,C1 J,C1	0.2 0.5 0.3	0.5 1.0 0.5	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
MW-19B-2Q12	TETRACHLOROETHENE	J,C1	0.3	0.5	MRL	ug/L	J (all detects)
MW-20B-2Q12	ACETONE BENZENE	J,A-01,C1 J,A-01,C1	2.2 0.3	4.0 0.5	MRL MRL	ug/L ug/L	J (all detects)
MW-21A-2Q12	ETHYLBENZENE	J,C1	0.2	0.5	MRL	ug/L	J (all detects)
MW-23A-2Q12	BENZENE	J,C1	0.2	0.5	MRL	ug/L	J (all detects)
MW-26B-2Q12	BENZENE	J,C1	0.3	0.5	MRL	ug/L	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12097D **Laboratory: R9LAB**

EDD Filename: 12097D_methane **eQAPP Name: Modesto_Site_052412**

Method: **RSK-175**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
MW-25B-2Q12	METHANE	J,C1	0.9	1.2	MRL	ug/L	J (all detects)
MW-28B-2Q12	METHANE	J,C1	0.7	1.2	MRL	ug/L	J (all detects)
MW-302-2Q12	METHANE	J,C1	0.7	1.2	MRL	ug/L	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12097D **Laboratory: R9LAB**

EDD Filename: 12097D_inorganics **eQAPP Name: Modesto_Site_052412**

Method: 415.3
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
MW-15A-2Q12	Total Organic Carbon	J,C1	0.44	0.50	MRL	mg/L	J (all detects)
MW-25B-2Q12	Total Organic Carbon	J,C1	0.44	0.50	MRL	mg/L	J (all detects)
MW-28B-2Q12	Total Organic Carbon	J,C1	0.39	0.50	MRL	mg/L	J (all detects)

Method: 4500-S2
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
MW-17B-2Q12	SULFIDE	J,C1	0.55	1.0	MRL	mg/L	J (all detects)
MW-20B-2Q12	SULFIDE	J,C1	0.55	1.0	MRL	mg/L	J (all detects)

LDC #: 27780D1

SDG #: 12097D

Laboratory: Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/8/12

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC/MS Volatiles (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	RSD ≤ 20%
IV.	Continuing calibration/ICV	SW	Cal/ICV ≤ 30%
V.	Blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1 1	MW-302-2Q12	11 1	MW-17C-2Q12	21 4	MW-26B-2Q12MS	31	
2 1	MW-402-2Q12	12 1	MW-19A-2Q12	22 4	MW-26B-2Q12MSD	32	
3 1	MW-9B-2Q12	13 1	MW-19B-2Q12	23		33	
4 1	MW-4B-2Q12	14 3	MW-1A-2Q12	24		34	
5 2	MW-17B-2Q12	15 1	MW-21A-2Q12	25		35	
6 3	MW-20A-2Q12	16 1	MW-22A-2Q12	26		36	
7 5	MW-20B-2Q12	17 1	MW-23A-2Q12	27		37	
8 3	MW-25B-2Q12	18 4	MW-26B-2Q12	28		38	
9 2	MW-28B-2Q12	19 1	MW-302-2Q12MS	29		39	
10 1	MW-15A-2Q12	20 1	MW-302-2Q12MSD	30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method 524.2)

A. Chloromethane	Q. 1,2-Dichloropropane	GG. Xylenes, total	WW. Bromobenzene	MMM. Naphthalene
B. Bromomethane	R. cis-1,3-Dichloropropene	HH. Vinyl acetate	XX. 1,2,3-Trichloropropane	NNN. 1,2,3-Trichlorobenzene
C. Vinyl choride	S. Trichloroethene	II. 2-Chloroethylvinyl ether	YY. n-Propylbenzene	OOO. 1,3,5-Trichlorobenzene
D. Chloroethane	T. Dibromochloromethane	JJ. Dichlorodifluoromethane	ZZ. 2-Chlorotoluene	PPP. trans-1,2-Dichloroethene
E. Methylene chloride	U. 1,1,2-Trichloroethane	KK. Trichlorofluoromethane	AAA. 1,3,5-Trimethylbenzene	QQQ. cis-1,2-Dichloroethene
F. Acetone	V. Benzene	LL. Methyl-tert-butyl ether	BBB. 4-Chlorotoluene	RRR. m,p-Xylenes
G. Carbon disulfide	W. trans-1,3-Dichloropropene	MM. 1,2-Dibromo-3-chloropropane	CCC. tert-Butylbenzene	SSS. o-Xylene
H. 1,1-Dichloroethene	X. Bromoform	NN. Diethyl ether	DDD. 1,2,4-Trimethylbenzene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane
I. 1,1-Dichloroethane	Y. 4-Methyl-2-pentanone	OO. 2,2-Dichloropropane	EEE. sec-Butylbenzene	VVV. 4-Ethyltoluene
J. 1,2-Dichloroethene, total	Z. 2-Hexanone	PP. Bromochloromethane	FFF. 1,3-Dichlorobenzene	WWW. Ethanol
K. Chloroform	AA. Tetrachloroethene	QQ. 1,1-Dichloropropene	GGG. p-Isopropyltoluene	MMMM. Ethyl ether
L. 1,2-Dichloroethane	BB. 1,1,2,2-Tetrachloroethane	RR. Dibromomethane	HHH. 1,4-Dichlorobenzene	NNNN. Benzyl chloride
M. 2-Butanone	CC. Toluene	SS. 1,3-Dichloropropane	III. n-Butylbenzene	
N. 1,1,1-Trichloroethane	DD. Chlorobenzene	TT. 1,2-Dibromoethane	JJJ. 1,2-Dichlorobenzene	
O. Carbon tetrachloride	EE. Ethylbenzene	UU. 1,1,1,2-Tetrachloroethane	KKK. 1,2,4-Trichlorobenzene	
P. Bromodichloromethane	FF. Styrene	VV. Isopropylbenzene	LLL. Hexachlorobutadiene	

LDC #: 27801

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Reviewer:
2nd Reviewer:

METHOD: GC/MS VOA (EPA Method 524.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Y N N/A Were all percent relative standard deviations (%RSD) ≤ 20% ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤20.0%)	Associated Samples	Qualifications
	4/3/12	10AL	B	21.07	1-4, 10-13, 15-18	J/UJ/P
			MMM	23.42	21, 22	
	4/12/12	10AL	B	73.45	5-9, 14	
			00	35.00		
			R	24.38		
			W	32.68		

INICAL.1S5

LDC #: 27780D1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method 524.2)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were all percent differences (%D) ≤ 30% ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤30.0%)	Associated Samples	Qualifications
	4/12/12	041212 11 (1CV)	B	36	5-9, 14, ~~18, 21, 22~~	J/UJ/P
	4/16/12	041612003	B	32.2	6, 8, 14	
			W	30.8		
	4/17/12	041712H03	W	30.3	7	

CONCAL.1S5

LDC #: 27780D6

SDG #: 12097D

Laboratory: EPA Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 6-11-12

Page: 1 of 1

Reviewer: CR

2nd Reviewer: SZ

METHOD: (Analyte) Alkalintiy (~~EPA Method 310.1~~ SM2320), Chloride, Sulfate Nitrate-N, (EPA Method 300.0), Sulfide (SM4500), Total Organic Carbon (EPA Method 415.3), Ferrous Iron (Laboratory SOP 575)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/5/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation. MS/D
VI.	Duplicates	A	Not reviewed for ADR validation. Dup
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
VIII.	Sample result verification	A	Not reviewed for ADR validation.
IX.	Overall assessment of data	A	Not reviewed for ADR validation.
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	MW-4B-2Q12	11	MW-20A-2Q12MSD	21		31	
2	MW-17B-2Q12**	12	MW-20A-2Q12DUP	22		32	
3	MW-20A-2Q12	13		23		33	
4	MW-20B-2Q12	14		24		34	
5	MW-25B-2Q12	15		25		35	
6	MW-28B-2Q12	16		26		36	
7	MW-15A-2Q12	17		27		37	
8	MW-4B-2Q12MS	18		28		38	
9	MW-4B-2Q12MSD	19		29		39	
10	MW-20A-2Q12MS	20		30		40	

Notes:

LDC #: 27780D6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: CL
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See Cover

Conc. units: _____ **Associated Samples:** 1-6

Analyte	Blank ID	Blank ID	Blank Action Limit											
	PB	ICB/CCB (mg/L)		No Qualifiers										
NO3-N		0.019	0.095											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 27780D51a

VALIDATION COMPLETENESS WORKSHEET

Date: 6/18/12

SDG #: 12097D

ADR

Page: 1 of 1

Laboratory: EPA Region 9 Laboratory

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II	Initial calibration	A	RSD ≤20%
III.	Calibration verification/ICV	A	b ≤ 20%
IV.	Blanks	N	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	
VII.	Laboratory control samples	N	
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	N	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	MW-302-2Q12	11		21		31	
2	MW-4B-2Q12	12		22		32	
3	MW-17B-2Q12	13		23		33	
4	MW-20A-2Q12 **	14		24		34	
5	MW-20B-2Q12	15		25		35	
6	MW-25B-2Q12	16		26		36	
7	MW-28B-2Q12	17		27		37	
8	MW-15A-2Q12	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 27780D51b

VALIDATION COMPLETENESS WORKSHEET

Date: 6/18/12

SDG #: 12097D

ADR

Page: 1 of 1

Laboratory: EPA Region 9 Laboratory

Reviewer:

2nd Reviewer:

METHOD: GC Carbon Dioxide (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	D ≤ 20%
IV.	Blanks	N	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	
VII.	Laboratory control samples	N	
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	N	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	MW-302-2Q12	11		21		31	
2	MW-4B-2Q12	12		22		32	
3	MW-17B-2Q12	13		23		33	
4	MW-20A-2Q12**	14		24		34	
5	MW-20B-2Q12	15		25		35	
6	MW-25B-2Q12	16		26		36	
7	MW-28B-2Q12	17		27		37	
8	MW-15A-2Q12	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Modesto GW 2Q12
Collection Date:	April 5, 2012
LDC Report Date:	June 11, 2012
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level IV
Laboratory:	EPA Region 9 Laboratory
Sample Delivery Group (SDG):	12097D

Sample Identification

MW-17B-2Q12

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320 for Alkalinity, EPA Method 300.0 for Chloride, Sulfate, and Nitrate as Nitrogen, Standard Method 4500 for Sulfide, EPA Method 415.3 for Total Organic Carbon, and Laboratory SOP 575 for Ferrous Iron.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J+ Data are qualified as estimated, with a high bias likely to occur.

J- Data are qualified as estimated, with a low bias likely to occur.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration were met.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Nitrate as N	0.019 mg/L	All samples in SDG 12097D

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 12097D	All analytes reported below the RL and above the MDL.	J (all detects)	A

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Modesto GW 2Q12
Wet Chemistry - Data Qualification Summary - SDG 12097D

SDG	Sample	Analyte	Flag	A or P	Reason
12097D	MW-17B-2Q12	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification

Modesto GW 2Q12
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 12097D

No Sample Data Qualified in this SDG

Modesto GW 2Q12
Wet Chemistry - Field Blank Data Qualification Summary - SDG 12097D

No Sample Data Qualified in this SDG

LDC #: 27780D6

SDG #: 12097D

Laboratory: EPA Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

~~ADR~~/IV

Date: 6-11-12

Page: 1 of 1

Reviewer: CR

2nd Reviewer: SZ

METHOD: (Analyte) Alkalintiy (~~EPA Method 310.~~ SM2320 1), Chloride, Sulfate Nitrate-N, (EPA Method 300.0), Sulfide (SM4500), Total Organic Carbon (EPA Method 415.3), Ferrous Iron (Laboratory SOP 575)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/5/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation. MS/D
VI.	Duplicates	A	Not reviewed for ADR validation. Dup
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
VIII.	Sample result verification	A	Not reviewed for ADR validation.
IX.	Overall assessment of data	A	Not reviewed for ADR validation.
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	MW-4B-2Q12	11	MW-20A-2Q12MSD	21		31	
2	MW-17B-2Q12**	12	MW-20A-2Q12DUP	22		32	
3	MW-20A-2Q12	13		23		33	
4	MW-20B-2Q12	14		24		34	
5	MW-25B-2Q12	15		25		35	
6	MW-28B-2Q12	16		26		36	
7	MW-15A-2Q12	17		27		37	
8	MW-4B-2Q12MS	18		28		38	
9	MW-4B-2Q12MSD	19		29		39	
10	MW-20A-2Q12MS	20		30		40	

Notes:

LDC #: 2778006

VALIDATION FINDINGS CHECKLIST

Reviewer: QR
2nd Reviewer: [illegible]

Method: Inorganics (EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓	✓		
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)	✓			
Were balance checks performed as required? (Level IV only)			✓	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.	✓			
V. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 27780D6

VALIDATION FINDINGS CHECKLIST

Reviewer: 02
2nd Reviewer: VA

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
X. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 27780D6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: ✓

All circled methods are applicable to each sample.

Sample ID	Parameter
1-6	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Fe^{II+} S_2
7	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 S_2
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC: 8,9	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
10,11	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
12	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Fe^{II+}
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 27780D6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: OL
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See Cover

Conc. units: _____ **Associated Samples:** All

Analyte	Blank ID	Blank ID	Blank Action Limit										
	PB	ICB/CCB (mg/L)		No Qualifiers									
NO3-N		0.019	0.095										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 27780D6

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

Method: Inorganics, Method See cover

The correlation coefficient (r) for the calibration of Cl was recalculated.Calibration date: 3/14/12

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found} \times 100}{\text{True}}$$

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/l)	Area	Recalculated r or r^2	Reported r or r^2	Acceptable (Y/N)
Initial Calibration Verification	Cl	s1	0.5	0.073	*0.99996*	0.99993	Y
		s2	1	0.147			
		s3	5	0.763			
		s4	10	1.605			
		s5	25	4.455			
		s6	50	9.838			
Calibration verification	NO_3-N	CCV	10	9.71	97	–	
Calibration verification	SO_4	↓	25	25.006	100	–	
Calibration verification	TOC	↓	25	24.57	98	98	↓

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 27780D6

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: 9R
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
LCS	Laboratory control sample	SO4	9.74	10	97	97	Y
8	Matrix spike sample	Cl	(SSR-SR) 11.2	11	102	102	↓
10/11	Duplicate sample	TOC	5.38	5.38	0	0	↓

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.6

LDC #: 27806

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for Sulfide reported with a positive detect were recalculated and verified using the following equation:

Concentration =

$$\frac{(V_I(N_I) - V_{Na_2S_2O_3}(N_{Na_2S_2O_3}))16000}{Vol}$$

Recalculation:

$$\frac{(5mL(0.02488N) - 4.3mL(0.025N))16000}{495mL} = 0.55 mg/L$$

#	Sample ID	Analyte	Reported Concentration (mg/L)	Calculated Concentration (mg/L)	Acceptable (Y/N)
	2	Alk	210	210	
		Cl	50		
		NO_3-N	4.2		
		SO_4	19		
		TOC	7.3		
		Sulfide	0.55	0.55	

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Modesto GW 2Q12
Collection Date:	April 5, 2012
LDC Report Date:	July 2, 2012
Matrix:	Water
Parameters:	Carbon Dioxide
Validation Level:	EPA Level IV
Laboratory:	EPA Region 9 Laboratory
Sample Delivery Group (SDG):	12097D

Sample Identification

MW-20A-2Q12

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method RSK-175 for Carbon Dioxide.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

III. Continuing Calibration

Continuing calibration was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% .

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No carbon dioxide was found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were not within QC limits. Since there were no associated samples, no data were qualified.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12097D	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Modesto GW 2Q12
Carbon Dioxide - Data Qualification Summary - SDG 12097D

SDG	Sample	Compound	Flag	A or P	Reason
12097D	MW-20A-2Q12	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs

Modesto GW 2Q12
Carbon Dioxide - Laboratory Blank Data Qualification Summary - SDG 12097D

No Sample Data Qualified in this SDG

Modesto GW 2Q12
Carbon Dioxide - Field Blank Data Qualification Summary - SDG 12097D

No Sample Data Qualified in this SDG

LDC #: 27780D51b

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 7/02/12

SDG #: 12097D

Page: 1 of 1

Laboratory: EPA Region 9 Laboratory

Reviewer: DVL

2nd Reviewer: [illegible]

METHOD: GC Carbon Dioxide (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/05/12
II	Initial calibration	A	% RSD ≤ 20%
III.	Calibration verification/ICV	A	% D ≤ 20%
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	SW	1204006-03 (No associated sample, NQ)
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:
** Level IV samples Water

1	~~MW-302-2Q12~~	11	B2D0028-Blk1	21		31	
2	MW-4B-2Q12	12		22		32	
3	~~MW-17B-2Q12~~	13		23		33	
4	MW-20A-2Q12 **	14		24		34	
5	~~MW-20B-2Q12~~	15		25		35	
6	MW-25B-2Q12	16		26		36	
7	MW-28B-2Q12	17		27		37	
8	~~MW-15A-2Q12~~	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 27780 D5h

VALIDATION FINDINGS CHECKLIST

Reviewer: JVC
2nd Reviewer: [illegible]

Method: ✓ GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ✓ %D or ____ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				

LDC #: 27780 D 5b

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer: C

Validation Area	Yes	No	NA	Findings/Comments
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 27780 D51b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (12176.1 std)	Recalculated CF (12176.1 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL AG6890N-6	3/26/2012	Carbon dioxide	8.089E+03	8.089E+03	8.242E+03	8241.80	2.53	2.53

Conc	CO2	Area
3044.00	8.180E+03	
6088.00	8.041E+03	
12176.10	8.089E+03	98489206
30440.30	8.549E+03	
60880.70	8.350E+03	
X =	8.242E+03	
S =	208.307	

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 27880 D5b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC ____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV CF	Reported CF	Recalculated CF	Reported % D	Recalculated %D
1	040612R01	4/6/2012	Carbon dioxide	8.242E+03	8.902E+03	8.902E+03	8.0	8.0

	Compound	Area	Conc
CCV1	Carbon dioxide	108388164	12176.10
CCV2			

LDC #: 27780 D5h

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: JVG
2nd reviewer: C

METHOD: ✓ **GC** ___ **HPLC**

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 4

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Acetylene	Shin carbon ST	66.33	67.767	102	102	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 27780 D5b

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG

2nd Reviewer: [illegible]

METHOD: /GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: B2D0028-BS1

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
~~Methane~~ CO_2 (RSK-175)	12200	NA	13400	NA	110	110				
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 27780 D5b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: ✓ **GC** __ **HPLC**

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. # 4 Compound Name CO ✓

Concentration = (226786381) / (8242) = 27515.9

≈ 28000 ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

SDG 12097E

Surrogate Outlier Report

Lab Reporting Batch ID: 12097E **Laboratory: R9LAB**

EDD Filename: 12097E_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**
Matrix: **Water**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
MW-75B-2Q12 (Reanalysis-012)	4-Bromofluorobenzene	73	74.00-110.00	All Target Analytes	J- (all detects) UJ (all non-detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12097E **Laboratory: R9LAB**

EDD Filename: 12097E_voc_rev **eQAPP Name: Modesto_Site_052412**

Method: **524.2**
Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
MW-27B-2Q12MS (MW-27B-2Q12)	2,2-DICHLOROPROPANE	-	-	25.00-150.00	50 (20.00)	2,2-DICHLOROPROPANE	J (all detects)
MW-27B-2Q12MS (MW-27B-2Q12)	TRANS-1,3-DICHLOROPROPEN	42	33	65.00-150.00	24 (20.00)	TRANS-1,3-DICHLOROPROPE	J(all detects) UJ(all non-detects)
MW-27B-2Q12MS (MW-27B-2Q12)	CIS-1,3-DICHLOROPROPENE	47	40	67.00-138.00	-	CIS-1,3-DICHLOROPROPENE	J-(all detects) UJ(all non-detects)
MW-10A-2Q12MS (MW-10A-2Q12)	1,1,2-TRICHLOROETHANE	72	68	74.00-131.00	-	1,1,2-TRICHLOROETHANE	J-(all detects) UJ(all non-detects)
MW-10A-2Q12MS (MW-10A-2Q12)	DICHLORODIFLUOROMETHAN TETRACHLOROETHENE	147 578	140 577	25.00-135.00 41.00-150.00	- -	DICHLORODIFLUOROMETHA TETRACHLOROETHENE	J+(all detects) Tetrachloroethene, No Qaul, >4x

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Reporting Limit Outliers

Lab Reporting Batch ID: 12097E **Laboratory: R9LAB**

EDD Filename: 12097E_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
MW-12A-2Q12	BROMODICHLOROMETHANE TRICHLOROFLUOROMETHANE	J,C1 J,C1	0.4 0.4	0.5 0.5	MRL MRL	ug/L ug/L	J (all detects)
MW-14A-2Q12	CHLOROFORM	J,C1	0.3	0.5	MRL	ug/L	J (all detects)
MW-17A-2Q12	TETRACHLOROETHENE	J,C1	0.6	1.0	MRL	ug/L	J (all detects)
MW-4A-2Q12	CIS-1,2-DICHLOROETHENE TRICHLOROETHENE	J,C1 J,C1	0.4 0.4	0.5 0.5	MRL MRL	ug/L ug/L	J (all detects)
MW-6A-2Q12	BROMODICHLOROMETHANE	J,C1	0.3	0.5	MRL	ug/L	J (all detects)
MW-80B-2Q12	ETHYLBENZENE m&p-Xylene O-XYLENE	J,C1 J,C1 J,C1	0.2 0.6 0.2	0.5 1.0 0.5	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12097E **Laboratory: R9LAB**

EDD Filename: 12097E_inorganics **eQAPP Name: Modesto_Site_052412**

Method: **4500-S2**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
MW-5A-2Q12	SULFIDE	J,C1	0.54	1.0	MRL	mg/L	J (all detects)

LDC #: 27780E1

SDG #: 12097E

Laboratory: EPA Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 6/13/12

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates: 4/02-05/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	% RSD ≤ 20%
IV.	Continuing calibration/ICV	SW	CC/ICV ≤ 30%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes		Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VIII.	Laboratory control samples		Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards		Not reviewed for ADR validation.
XI.	Target compound identification		Not reviewed for ADR validation.
XII.	Compound quantitation/RL/LOQ/LODs		Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)		Not reviewed for ADR validation.
XIV.	System performance		Not reviewed for ADR validation.
XV.	Overall assessment of data		Not reviewed for ADR validation.
XVI.	Field duplicates		
XVII.	Field blanks		

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	MW-27B-2Q12	11	MW-13A-2Q12**	21	MW-10A-2Q12MS	31	B2D0030- Blk1	4/6g
2	MW-6A-2Q12**	12	MW-14A-2Q12**	22	MW-10A-2Q12MSD	32	B2D0040-	4/9
3	MW-75B-2Q12	13	MW-16A-2Q12	23		33	B2D0060-	4/13
4	MW-7A-2Q12	14	MW-16B-2Q12**	24		34	B2D0061-	4/13 (a
5	MW-80B-2Q12	15	MW-16C-2Q12	25		35	B2D0068	
6	MW-10A-2Q12	16	MW-17A-2Q12	26		36		
7	MW-10B-2Q12**	17	MW-2A-2Q12	27		37		
8	MW-10C-2Q12	18	MW-4A-2Q12	28		38		
9	MW-11A-2Q12	19	MW-27B-2Q12MS	29		39		
10	MW-12A-2Q12	20	MW-27B-2Q12MSD	30		40		

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method 524.2)

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 27780E1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: SVG
2nd Reviewer: C

METHOD: GC/MS VOA (EPA Method 524.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Y N N/A Were all percent relative standard deviations (%RSD) ≤ 20% ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤20.0%)	Associated Samples	Qualifications
	3/07/12	ICAL-H	B	24.14	3, 2, 4, 7-9, 11-15, 19, 20,	J/UJ/P
			OO	21.68	B2D0030-BLK1	
	4/03/12	ICAL-F	B	21.07	1, 3, 5, 6, 10, 17, 21, 22,	
			MMM	23.42	B2D0040-BLK1,	
					18, B2D0060-BLK1	
	4/12/12	ICAL-F	B	73.45	6, B2D0068-BLK1	
			OO	35.00		
			R	24.38		
			W	32.68		

INICAL.wpd

LDC #: 27780 E1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: C

METHOD: GC/MS VOA (EPA Method 524.2)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were all percent differences (%D) ≤ 30% ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤30.0%)	Associated Samples	Qualifications
	4/09/12	04 0912 H02	LL	36.3	1, 2, 4, 7-9, 11-15, 19, 20,	J/UJ/P
		(CCV)	OO	42.9	B2D0030-BLK1	
	4/16/12	0416 1203	B	32.2	6 B2D0068-BLK1	
		(CCV)	W	30.8		
	4/12/12	04 121211	B	36		
		(ICV)				

CONCAL.wpd

LDC #: 27780E6

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/1/12

SDG #: 12097E

Page: 1 of 1

Laboratory: EPA Region 9 Laboratory

Reviewer:

2nd Reviewer:

METHOD: (Analyte) Sulfide (SM4500S2

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates: 4/3/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	Not required
VI.	Duplicates	N	CS
VII.	Laboratory control samples	N	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	N	
X.	Field duplicates	—	
XI	Field blanks	—	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	MW-5A-2Q12	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 27780E51a

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/18/12

SDG #: 12097E

Page: 1 of 1

Laboratory: EPA Region 9 Laboratory

Reviewer: h

2nd Reviewer: A

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	D ≤ 20%
IV.	Blanks	N	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	
VII.	Laboratory control samples	N	
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	N	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	MW-85A-2Q12	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 27780E51b

SDG #: 12097E

Laboratory: EPA Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/18/12

Page: 1 of 1

Reviewer: N

2nd Reviewer: A

METHOD: GC Carbon Dioxide (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	D ≤ 20%
IV.	Blanks	N	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	
VII.	Laboratory control samples	N	
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	N	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	MW-85A-2Q12	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Modesto GW 2Q12
Collection Date:	April 2 through April 4, 2012
LDC Report Date:	June 14, 2012
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EPA Region 9 Laboratory
Sample Delivery Group (SDG):	12097E

Sample Identification

MW-6A-2Q12
MW-10B-2Q12
MW-13A-2Q12
MW-14A-2Q12
MW-16B-2Q12

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
3/7/12	Bromomethane 2,2-Dichloropropane	24.14 21.68	All samples in SDG 12097E	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 30.0% for all compounds.

Date	Compound	%D	Associated Samples	Flag	A or P
4/9/12	Methyl-tert-butyl ether 2,2-Dichloropropane	36.3 42.9	All samples in SDG 12097E	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were not within QC limits. Since there were no associated samples, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12097E	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Modesto GW 2Q12
Volatiles - Data Qualification Summary - SDG 12097E

SDG	Sample	Compound	Flag	A or P	Reason
12097E	MW-6A-2Q12 MW-10B-2Q12 MW-13A-2Q12 MW-14A-2Q12 MW-16B-2Q12	Bromomethane 2,2-Dichloropropane	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Initial calibration (%RSD)
12097E	MW-6A-2Q12 MW-10B-2Q12 MW-13A-2Q12 MW-14A-2Q12 MW-16B-2Q12	Methyl-tert-butyl ether 2,2-Dichloropropane	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
12097E	MW-6A-2Q12 MW-10B-2Q12 MW-13A-2Q12 MW-14A-2Q12 MW-16B-2Q12	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs

Modesto GW 2Q12
Volatiles - Laboratory Blank Data Qualification Summary - SDG 12097E

No Sample Data Qualified in this SDG

Modesto GW 2Q12
Volatiles - Field Blank Data Qualification Summary - SDG 12097E

No Sample Data Qualified in this SDG

LDC #: 27780E1

SDG #: 12097E

Laboratory: EPA Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 6/13/12

Page: 1 of 1

Reviewer: JVG

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA ~~SW 846~~ Method ~~8260B~~ 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/02 - 04/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	? RSD ≤ 20 ?
IV.	Continuing calibration/ICV	SW	CCV/ICV ≤ 30 ?
V.	Blanks	A	Not reviewed for ADR validation.
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	SW	Not reviewed for ADR validation. (No associated sample, NQ)
VIII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/RL/LOQ/LODs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	~~MW-27B-2Q12~~	11	MW-13A-2Q12**	21	~~MW-10A-2Q12MS~~	31	B2D0030-BK1
2	MW-6A-2Q12**	12	MW-14A-2Q12**	22	~~MW-10A-2Q12MSD~~	32	
3	~~MW-75B-2Q12~~	13	~~MW-16A-2Q12~~	23		33	
4	MW-7A-2Q12	14	MW-16B-2Q12**	24		34	
5	MW-80B-2Q12	15	~~MW-16C-2Q12~~	25		35	
6	~~MW-10A-2Q12~~	16	MW-17A-2Q12	26		36	
7	MW-10B-2Q12**	17	MW-2A-2Q12	27		37	
8	~~MW-10C-2Q12~~	18	MW-4A-2Q12	28		38	
9	MW-11A-2Q12	19	MW-27B-2Q12MS	29		39	
10	~~MW-12A-2Q12~~	20	~~MW-27B-2Q12MSD~~	30		40	

LDC #: 27780 E1

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer:

Method: Volatiles (EPA Method 524.2)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?		✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Was a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 27780 E1

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within +/-40% from the associated calibration standard?	✓			
Were retention times within - 30% of the last continuing calibration or +/- 50% of the initial calibration?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 25 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method 524.2)

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 27780 E1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: DVG
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method 524.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Y N N/A Were all percent relative standard deviations (%RSD) ≤ 20% ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤20.0%)	Associated Samples	Qualifications
	3/07/12	ICAL-H	B	24.14	All	J/UJ/P
			00	21.68	↓	↓

INICAL.wpd

LDC #: 27780 E1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS VOA (EPA Method 524.2)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were all percent differences (%D) ≤ 30% ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤30.0%)	Associated Samples	Qualifications
	4/09/12	040912H02	LL	36.3	All	J/UJ/p
			OO	42.9	↓	↓

CONCAL.1S5

LDC #: 27780 E1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer: A

METHOD: GC/MS VOA (EPA Method 524.2)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 5 std)	Recalculated RRF (RRF 5 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	3/7/2012	cis-1,2-DCE (IS1)	5.004	5.004	5.025	5.025	5.18	5.18
	HP5973H		Trichloroethene (IS2)	0.352	0.352	0.351	0.351	3.81	3.85
			Tetrachloroethene (IS3)	0.601	0.601	0.607	0.608	5.83	5.81

Cis/Cx	Ax	Ais
10/10	243766	48717
10/10	231432	658390
10/10	269155	447898

ICAL 1

Conc	cis-1,2-DCE	Trichloroethene	Tetrachloroethene
0.5	4.936	0.356	0.613
1	4.617	0.339	0.561
2	5.079	0.346	0.628
5	5.004	0.352	0.601
10	5.094	0.339	0.581
25	5.421	0.375	0.661
X =	5.025	0.351	0.608
S =	0.2605	0.0135	0.0353

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 27780 E1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: A

METHOD: GC/MS VOA (EPA Method 524.2)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	040912H02 HP5973H	4/9/2012	cis-1,2-DCE (IS1)	5.025	4.211	4.211	16.2	16.2
			Trichloroethene (IS2)	0.351	0.335	0.335	4.6	4.6
			Tetrachloroethene (IS3)	0.607	0.531	0.531	12.5	12.6

CCV1

Cis/Cx	Compound	Ax	Ais
5/5	cis-1,2-DCE (IS1)	211437	50209
5/5	Trichloroethene (IS2)	204571	610672
5/5	Tetrachloroethene (IS3)	207965	391902

LDC #: 27780 E 1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG
2nd reviewer: A

METHOD: GC/MS VOA (EPA Method 524.2)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #7

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	
Toluene-d8	5.00	5.193	104	104	0
Bromofluorobenzene		5.106	102	102	
1,2-Dichlorobenzene-d4		4.593	92	92	
~~Dibromofluoromethane~~ 1,2-DCE-d4		5.947	119	119	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	
Toluene-d8					
Bromofluorobenzene					
1,2-Dichlorobenzene-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	
Toluene-d8					
Bromofluorobenzene					
1,2-Dichlorobenzene-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	
Toluene-d8					
Bromofluorobenzene					
1,2-Dichlorobenzene-d4					
Dibromofluoromethane					

LDC #: 27786 E1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS VOA (EPA Method 524.2)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA

Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD)

LCS = Laboraotry control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS ID: B2D0030-BS1

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	5.00	NA	3.53	NA	71	71				
Trichloroethene			4.75		95	95				
Benzene			4.98		100	100				
Toluene			4.82		96	96				
Chlorobenzene			4.81		96	96				

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 27760 E1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

2nd reviewer: A

METHOD: GC/MS VOA (EPA Method 524.2)

Compound results for AA reported with a positive detect were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample purged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, AA:

$$\text{Conc.} = \frac{(46385)(5.00)(\quad)}{(366720)(0.607)(\quad)(\quad)}$$

= 10.48

≈ 10 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Acceptable (Y/N)

SDG 12101A

Surrogate Outlier Report

Lab Reporting Batch ID: 12101A **Laboratory: R9LAB**

EDD Filename: 12101A_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**
Matrix: **Water**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
MW-3A-2Q12 (Initial)	1,2-DICHLOROETHANE-D4	162	76.00-130.00	All Target Analytes	J+ (all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12101A **Laboratory: R9LAB**

EDD Filename: 12101A_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**

Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
MW-82A-2Q12MS (MW-82A-2Q12)	DICHLORODIFLUOROMETHAN TOLUENE	- -	144 121	25.00-135.00 68.00-120.00	- -	DICHLORODIFLUOROMETHA TOLUENE	J+ (all detects)

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

Reporting Limit Outliers

Lab Reporting Batch ID: 12101A **Laboratory: R9LAB**

EDD Filename: 12101A_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
MW-18A-2Q12	1,2,4-TRIMETHYLBENZENE	J,C1	0.3	0.5	MRL	ug/L	J (all detects)
	ACETONE	J,C1	2.1	4.0	MRL	ug/L	
	ETHYLBENZENE	J,C1	0.3	0.5	MRL	ug/L	
	TOLUENE	J,C1	0.2	0.5	MRL	ug/L	
MW-20C-2Q12	BENZENE	J,C1	0.3	0.5	MRL	ug/L	J (all detects)
	TETRACHLOROETHENE	J,C1	0.3	0.5	MRL	ug/L	
MW-24B-2Q12	BENZENE	J,C1	0.3	0.5	MRL	ug/L	J (all detects)
MW-29B-2Q12	BENZENE	J,C1	0.2	0.5	MRL	ug/L	J (all detects)
MW-4C-2Q12	BENZENE	J,C1	0.4	0.5	MRL	ug/L	J (all detects)
MW-82A-2Q12	1,2,4-TRIMETHYLBENZENE	J,C1	0.3	0.5	MRL	ug/L	J (all detects)
	ETHYLBENZENE	J,C1	0.3	0.5	MRL	ug/L	
	O-XYLENE	J,C1	0.4	0.5	MRL	ug/L	
	TOLUENE	J,C1,Q4	0.2	0.5	MRL	ug/L	

Field Duplicate RPD Report

Lab Reporting Batch ID: 12101A **Laboratory: R9LAB**

EDD Filename: 12101A_voc **eQAPP Name: Modesto_Site_052412**

Method: 524.2
Matrix: Water

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	MW-18A-2Q12	MW-82A-2Q12			
1,2,4-TRIMETHYLBENZENE	0.3	0.3	0	1.00	No Qualifiers Applied
ACETONE	2.1	4.0 U	200	1.00	
BENZENE	0.7	0.7	0	1.00	
CARBON TETRACHLORIDE	0.6	0.7	15	1.00	
CHLOROFORM	1.3	0.9	36	1.00	
ETHYLBENZENE	0.3	0.3	0	1.00	
m&p-Xylene	1.3	1.3	0	1.00	
O-XYLENE	0.5	0.4	22	1.00	
TETRACHLOROETHENE	2.3	2.0	14	1.00	
TOLUENE	0.2	0.2	0	1.00	

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

LDC #: 27780F1

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/18/12

SDG #: 12101A

Page: 1 of 1

Laboratory: EPA Region 9 Laboratory

Reviewer:

2nd Reviewer:

METHOD: GC/MS Volatiles (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	RSD ≤30%
IV.	Continuing calibration/ICV	SW	cal/ICV ≤30%
V.	Blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note:
A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1 1	MW-3A-2Q12	11		21		31	
2 2	MW-29B-2Q12	12		22		32	
3 3	MW-82A-2Q12	13		23		33	
4 3	MW-18A-2Q12	14		24		34	
5 3	MW-20C-2Q12	15		25		35	
6 2	MW-24B-2Q12	16		26		36	
7 3	MW-4C-2Q12	17		27		37	
8 3	MW-82A-2Q12MS	18		28		38	
9 3	MW-82A-2Q12MSD	19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method 524.2)

A. Chloromethane	Q. 1,2-Dichloropropane	GG. Xylenes, total	WW. Bromobenzene	MMM. Naphthalene
B. Bromomethane	R. cis-1,3-Dichloropropene	HH. Vinyl acetate	XX. 1,2,3-Trichloropropane	NNN. 1,2,3-Trichlorobenzene
C. Vinyl choride	S. Trichloroethene	II. 2-Chloroethylvinyl ether	YY. n-Propylbenzene	OOO. 1,3,5-Trichlorobenzene
D. Chloroethane	T. Dibromochloromethane	JJ. Dichlorodifluoromethane	ZZ. 2-Chlorotoluene	PPP. trans-1,2-Dichloroethene
E. Methylene chloride	U. 1,1,2-Trichloroethane	KK. Trichlorofluoromethane	AAA. 1,3,5-Trimethylbenzene	QQQ. cis-1,2-Dichloroethene
F. Acetone	V. Benzene	LL. Methyl-tert-butyl ether	BBB. 4-Chlorotoluene	RRR. m,p-Xylenes
G. Carbon disulfide	W. trans-1,3-Dichloropropene	MM. 1,2-Dibromo-3-chloropropane	CCC. tert-Butylbenzene	SSS. o-Xylene
H. 1,1-Dichloroethene	X. Bromoform	NN. Diethyl ether	DDD. 1,2,4-Trimethylbenzene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane
I. 1,1-Dichloroethane	Y. 4-Methyl-2-pentanone	OO. 2,2-Dichloropropane	EEE. sec-Butylbenzene	VVV. 4-Ethyltoluene
J. 1,2-Dichloroethene, total	Z. 2-Hexanone	PP. Bromochloromethane	FFF. 1,3-Dichlorobenzene	WWW. Ethanol
K. Chloroform	AA. Tetrachloroethene	QQ. 1,1-Dichloropropene	GGG. p-Isopropyltoluene	MMMM. Ethyl ether
L. 1,2-Dichloroethane	BB. 1,1,2,2-Tetrachloroethane	RR. Dibromomethane	HHH. 1,4-Dichlorobenzene	NNNN. Benzyl chloride
M. 2-Butanone	CC. Toluene	SS. 1,3-Dichloropropane	III. n-Butylbenzene	
N. 1,1,1-Trichloroethane	DD. Chlorobenzene	TT. 1,2-Dibromoethane	JJJ. 1,2-Dichlorobenzene	
O. Carbon tetrachloride	EE. Ethylbenzene	UU. 1,1,1,2-Tetrachloroethane	KKK. 1,2,4-Trichlorobenzene	
P. Bromodichloromethane	FF. Styrene	VV. Isopropylbenzene	LLL. Hexachlorobutadiene	

LDC #: 2788 F1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: A
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method 524.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Y N N/A Were all percent relative standard deviations (%RSD) ≤ 20% ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤20.0%)	Associated Samples	Qualifications
	4/3/12	10ug	B	21.07	2-9	J/UJ/P
			MUM	23.42		
	4/12/12	10ug	B	73.45	1	J/UJ/P
			DD	35.00		
			P	24.38		
			W	32.68		

INICAL.1S5

LDC #: 27980F1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: n
2nd Reviewer: d

METHOD: GC/MS VOA (EPA Method 524.2)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were all percent differences (%D) ≤ 30% ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤30.0%)	Associated Samples	Qualifications
	4/12/12	04121211 (ICV)	B	36	1	J/UJ/P
	4/16/12	04161203	B N	32.2 30.8	1	J/UJ/P

CONCAL.1S5

SDG 12101B

Reporting Limit Outliers

Lab Reporting Batch ID: 12101B **Laboratory: R9LAB**

EDD Filename: 12101B_voc **eQAPP Name: Modesto_Site_052412**

Method: **TO-15**

Matrix: **Air**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
DP-1B-2Q12	TETRACHLOROETHENE	J,C1	2.4	3.1	MRL	ppbv	J (all detects)
DP-5A-2Q12	1,2,4-TRIMETHYLBENZENE	J,C1	1.8	2.1	MRL	ppbv	J (all detects)
	BENZENE	J,C1	1.4	2.1	MRL	ppbv	
	m&p-Xylene	J,C1	3.4	4.1	MRL	ppbv	
	O-XYLENE	J,C1	1.2	2.1	MRL	ppbv	
DP-5B-2Q12	METHYLENE CHLORIDE	J,C1	1.3	2.2	MRL	ppbv	J (all detects)
	TOLUENE	J,C1	1.5	2.2	MRL	ppbv	
DP-6A-2Q12	CHLOROFORM	J,C1	1.9	2.2	MRL	ppbv	J (all detects)
DP-6B-2Q12	CHLOROFORM	J,C1	1.8	2.2	MRL	ppbv	J (all detects)
DP-99B-2Q12	TETRACHLOROETHENE	J,C1,Q1	2.1	2.3	MRL	ppbv	J (all detects)
OSVE-11-2Q12	CIS-1,2-DICHLOROETHENE	J,C1	1.1	2.2	MRL	ppbv	J (all detects)
SVE-2-2Q12	1,4-DICHLOROBENZENE	J,C1	1.4	2.0	MRL	ppbv	J (all detects)
	BENZENE	J,C1	1.6	2.0	MRL	ppbv	
	CIS-1,2-DICHLOROETHENE	J,C1	1.5	2.0	MRL	ppbv	
SVE-4-2Q12	1,4-DICHLOROBENZENE	J,C1	1.1	2.0	MRL	ppbv	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 12101B **Laboratory: R9LAB**

EDD Filename: 12101B_voc **eQAPP Name: Modesto_Site_052412**

Method: TO-15
Matrix: Air

Analyte	Concentration (ppbv)		Sample RPD	eQAPP RPD	Flag
	SVE-2-2Q12	SVE-98-2Q12			
1,2-DICHLOROBENZENE	3.1	2.0 U	200	1.00	No Qualifiers Applied
1,4-DICHLOROBENZENE	1.4	2.0 U	200	1.00	
BENZENE	1.6	2.0 U	200	1.00	
CIS-1,2-DICHLOROETHENE	1.5	2.0 U	200	1.00	
TETRACHLOROETHENE	270	170	45	1.00	
TRICHLOROETHENE	85	13	147	1.00	

Analyte	Concentration (ppbv)		Sample RPD	eQAPP RPD	Flag
	DP-1B-2Q12	DP-99B-2Q12			
TETRACHLOROETHENE	2.4	3.2	29	1.00	No Qualifiers Applied

Project Name and Number: R12S64 - Modesto Groundwater Spring 2012 Qtrly Monitoring

LDC #: 27780G48

SDG #: 12101B

Laboratory: EPA Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 6/13/12

Page: 1 of 1

Reviewer: JVG

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates: 4/05-06/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 30 %
IV.	Continuing calibration/ICV	A	CCV/ICV ≤ 30 %
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates /Lab Dup	N	
VIII.	Laboratory control samples	N	Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	SW	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Compound quantitation/RL/LOQ/LODs		Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)		Not reviewed for ADR validation.
XIV.	System performance	✓	Not reviewed for ADR validation.
XV.	Overall assessment of data	SW	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	✓	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1 1/2	DP-1A-2Q12	11 2/3	SVE-2-2Q12	21 1	B2D0043-BLK1	31	
2 2	DP-1B-2Q12	12 2/3	SVE-3-2Q12	22 2	B2D0058-	32	
3 1	DP-5A-2Q12	13 2/3	SVE-4-2Q12	23 3	B2D0063-	33	
4 1	DP-5B-2Q12**	14 2/3	SVE-98-2Q12	24		34	
5 1	DP-6A-2Q12	15	SVE-98-2Q12DUP	25		35	
6 1	DP-6B-2Q12**	16 2	TRE	26		36	
7 1	DP-99B-2Q12	17		27		37	
8 2	OSVE-10-2Q12	18		28		38	
9 1	OSVE-11-2Q12**	19		29		39	
10 3	SVE-1-2Q12	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method TO-15)

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

IS = CBZ

LDC #: 27780 G48

VALIDATION FINDINGS WORKSHEET
Internal Standards

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method TO-15)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
~~Y~~ N N/A Were all internal standard area counts within +/- 40% of the associated calibration standard?
Y N N/A Were the retention times of the internal standards within +/- 20 seconds of the retention times of the associated calibration standard?

#	Date	Lab ID/Reference	Internal Standard	Area (Limits)	RT (Limits)	Qualifications
		7	CBZ	3002862 (3016752 - 7039088)		J/UJ/A
						(see highlighted qls in the TCL)

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

LDC #: 27780 G48

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: JVG
2nd Reviewer: A

METHOD: GC/MS VOA (EPA Method TO-15)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated ~~Samples~~ Compounds	Qualifications
		7	IS outside limits	See highlighted compounds on the TCL	R/A
		16	Higher quantitation limits	All except highlighted cpds	

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Modesto GW 2Q12
Collection Date:	April 6, 2012
LDC Report Date:	June 13, 2012
Matrix:	Air
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EPA Region 9 Laboratory
Sample Delivery Group (SDG):	12101B

Sample Identification

DP-5B-2Q12
DP-6B-2Q12
OSVE-11-2Q12

Introduction

This data review covers 3 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method TO-15 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 24 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

V. Blanks

Method blank analyses were performed at the required frequency. No volatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

Duplicate (DUP) sample analyses were analyzed at the required frequency. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were analyzed at the required frequency. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12101B	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Modesto GW 2Q12
Volatiles - Data Qualification Summary - SDG 12101B

SDG	Sample	Compound	Flag	A or P	Reason
12101B	DP-5B-2Q12 DP-6B-2Q12 OSVE-11-2Q12	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs

Modesto GW 2Q12
Volatiles - Laboratory Blank Data Qualification Summary - SDG 12101B

No Sample Data Qualified in this SDG

Modesto GW 2Q12
Volatiles - Field Blank Data Qualification Summary - SDG 12101B

No Sample Data Qualified in this SDG

LDC #: 27780G48
SDG #: 12101B
Laboratory: EPA Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 6/13/12
Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/06/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 30 %
IV.	Continuing calibration/ICV	~~SW~~ A	CCV/ICV ≤ 30 %
V.	Blanks	A	Not reviewed for ADR validation.
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates / Lab Dup	N / A	
VIII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/RL/LOQ/LODs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Air

1	~~DP-1A-2Q12~~	11	~~SVE-2-2Q12~~	21	B2D0043-BLK1	31	
2	DP-1B-2Q12	12	SVE-3-2Q12	22		32	
3	~~DP-5A-2Q12~~	13	SVE-4-2Q12	23		33	
4	DP-5B-2Q12**	14	SVE-98-2Q12	24		34	
5	~~DP-6A-2Q12~~	15	~~SVE-98-2Q12DUP~~	25		35	
6	DP-6B-2Q12**	16		26		36	
7	~~DP-99B-2Q12~~	17		27		37	
8	~~OSVE-10-2Q12~~	18		28		38	
9	OSVE-11-2Q12**	19		29		39	
10	~~SVE-1-2Q12~~	20		30		40	

LDC #: 27780 G48

VALIDATION FINDINGS CHECKLIST

Reviewer: JVC
2nd Reviewer: C

Method: Volatiles (EPA Method TO-15)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Canister pressure criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 30% and relative response factors (RRF) > 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?		✓		
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Was a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

VALIDATION FINDINGS CHECKLIST

Reviewer: SVG
2nd Reviewer: C

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within +/-40% from the associated calibration standard?	✓			
Were retention times within +/- 20.0 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 27780 G48

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS VOA (EPA Method TO-15)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound, — C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs, — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 20 std)	Recalculated RRF (RRF 20 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL AG5973K	4/11/2012	Chloroform (IS1)	1.960	1.960	1.896	1.896	8.26	8.26
			Trichloroethene (IS2)	0.358	0.358	0.321	0.321	10.97	11.00
			Tetrachloroethene (IS3)	0.542	0.542	0.499	0.499	8.07	8.06

Cis/Cx	Ax	Ais
20/20	1928833	1023380
20/20	1452902	4341637
20/20	2260882	4500854

ICAL 1

Conc	Chloroform	Trichloroethene	Tetrachloroethene
1.02	2.068	0.317	0.500
2.04	1.916	0.295	0.479
5.1	1.600	0.266	0.430
10.2	1.907	0.340	0.516
15.3	1.922	0.349	0.527
20.4	1.960	0.358	0.542
X =	1.896	0.321	0.499
S =	0.1565	0.0353	0.0402

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 27780 G48

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS VOA (EPA Method TO-15)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	040912H02 AG5973K	4/9/2012	Chloroform (IS1)	1.896	2.011	2.011	6.1	6.1
			Trichloroethene (IS2)	0.321	0.353	0.353	10.0	10.0
			Tetrachloroethene (IS3)	0.499	0.500	0.500	12.5	0.2

CCV1

Cis/Cx	Compound	Ax	Ais
5/5	Chloroform (IS1)	1014282	1049038
5/5	Trichloroethene (IS2)	756404	4578597
5/5	Tetrachloroethene (IS3)	1165441	5027916

LDC #: 27780 G48

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG
2nd reviewer: A

METHOD: GC/MS VOA (EPA Method TO-15).

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 4, AA:

Conc. = $\frac{(133768)(22.0)(2.2)}{(3094742)(0.499)(\quad)(\quad)}$

= 4.19

≈ 4.2 ppbv ✓

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

(4.2)

SDG 12129C

Trip Blank Outlier Report

Lab Reporting Batch ID: 12129C **Laboratory: R9LAB**

EDD Filename: 12129C_voc **eQAPP Name: Modesto_Site_052412**

Method: **524.2**
Matrix: **Water**

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
MW-304-2Q12(Initial)	5/8/2012 9:40:00 AM	ACETONE BROMODICHLOROMETHANE	6.7 ug/L 5.8 ug/L	EFF-0502 EW-1-0502
MW-304-2Q12(Reinjection-01)	5/8/2012 9:40:00 AM	CHLOROFORM	53 ug/L	EFF-0502 EW-1-0502

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EW-1-0502(Initial)	CHLOROFORM	3.7 ug/L	3.7U ug/L

Project Name and Number: R12S70 - Modesto GW Treatment System Spring 2012 Sampling

LDC #: 27780H1

SDG #: 12129C

Laboratory: Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/18/12

Page: 1 of 1

Reviewer: M

2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	RSD ≤ 20%
IV.	Continuing calibration/ICV	SW	CCV/ICV ≤ 30%
V.	Blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note:
A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	EFF-0502	11		21		31	
2	EW-1-0502	12		22		32	
3	MW-304-2Q12	13		23		33	
4	EFF-0502MS	14		24		34	
5	EFF-0502MSD	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method 524.2)

A. Chloromethane	Q. 1,2-Dichloropropane	GG. Xylenes, total	WW. Bromobenzene	MMM. Naphthalene
B. Bromomethane	R. cis-1,3-Dichloropropene	HH. Vinyl acetate	XX. 1,2,3-Trichloropropane	NNN. 1,2,3-Trichlorobenzene
C. Vinyl choride	S. Trichloroethene	II. 2-Chloroethylvinyl ether	YY. n-Propylbenzene	OOO. 1,3,5-Trichlorobenzene
D. Chloroethane	T. Dibromochloromethane	JJ. Dichlorodifluoromethane	ZZ. 2-Chlorotoluene	PPP. trans-1,2-Dichloroethene
E. Methylene chloride	U. 1,1,2-Trichloroethane	KK. Trichlorofluoromethane	AAA. 1,3,5-Trimethylbenzene	QQQ. cis-1,2-Dichloroethene
F. Acetone	V. Benzene	LL. Methyl-tert-butyl ether	BBB. 4-Chlorotoluene	RRR. m,p-Xylenes
G. Carbon disulfide	W. trans-1,3-Dichloropropene	MM. 1,2-Dibromo-3-chloropropane	CCC. tert-Butylbenzene	SSS. o-Xylene
H. 1,1-Dichloroethene	X. Bromoform	NN. Diethyl ether	DDD. 1,2,4-Trimethylbenzene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane
I. 1,1-Dichloroethane	Y. 4-Methyl-2-pentanone	OO. 2,2-Dichloropropane	EEE. sec-Butylbenzene	VVV. 4-Ethyltoluene
J. 1,2-Dichloroethene, total	Z. 2-Hexanone	PP. Bromochloromethane	FFF. 1,3-Dichlorobenzene	WWW. Ethanol
K. Chloroform	AA. Tetrachloroethene	QQ. 1,1-Dichloropropene	GGG. p-Isopropyltoluene	MMMM. Ethyl ether
L. 1,2-Dichloroethane	BB. 1,1,2,2-Tetrachloroethane	RR. Dibromomethane	HHH. 1,4-Dichlorobenzene	NNNN. Benzyl chloride
M. 2-Butanone	CC. Toluene	SS. 1,3-Dichloropropane	III. n-Butylbenzene	
N. 1,1,1-Trichloroethane	DD. Chlorobenzene	TT. 1,2-Dibromoethane	JJJ. 1,2-Dichlorobenzene	
O. Carbon tetrachloride	EE. Ethylbenzene	UU. 1,1,1,2-Tetrachloroethane	KKK. 1,2,4-Trichlorobenzene	
P. Bromodichloromethane	FF. Styrene	VV. Isopropylbenzene	LLL. Hexachlorobutadiene	

LDC #: 29198H1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Reviewer:
2nd Reviewer:

METHOD: GC/MS VOA (EPA Method 524.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Y N N/A Were all percent relative standard deviations (%RSD) ≤ 20% ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤20.0%)	Associated Samples	Qualifications
	4/26/12	10ug	F	23.78	All	~~J/UJ~~ / A
			~~R~~ W	21.56		
			X	22.26		
			MM	24.56		
			MMM	23.92		

INICAL.1S5

LDC #: 27780A1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method 524.2)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were all percent differences (%D) ≤ 30% ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤30.0%)	Associated Samples	Qualifications
	4/26/12	042612F10 (ICV)	JJ	32	All	J/UJ/A

LDC #: 27881D6

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/29/12

SDG #: 12129C

Page: 1 of 1

Laboratory: EPA Region 9 Laboratory

Reviewer: A

2nd Reviewer: [illegible]

METHOD: (Analyte) Biochemical Oxygen Demand (SM5210B), Total Dissolved Solids (SM2540C), Total Suspended Solids (SM2540D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	N	
V	Matrix Spike/Matrix Spike Duplicates	N	
VI.	Duplicates	N	
VII.	Laboratory control samples	N	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks		

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	EFF-0502	11		21		31	
2	EFF-0502DUP	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

SDG 12130B

Reporting Limit Outliers

Lab Reporting Batch ID: 12130B **Laboratory: R9LAB**

EDD Filename: 12130B_voc **eQAPP Name: Modesto_Site_052412**

Method: **TO-15**

Matrix: **Air**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SVE Stack-0502	DICHLORODIFLUOROMETHANE	J,C1	1.2	2.4	MRL	ppbv	J (all detects)
	TETRACHLOROETHENE	J,C1	1.5	2.4	MRL	ppbv	

LDC #: 27780I48

SDG #: 12130B

Laboratory: EPA Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/18/12

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II.	GC/MS Instrument performance check	A	24-hr
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	CCV/ICV ≤ 30%
V.	Blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	GWTP Pr GAC-0502	11		21		31	
2	GWTP Stack-0502	12		22		32	
3	SVEPre GAC-0502	13		23		33	
4	SVEStack-0502	14		24		34	
5	GWTP Pr GAC-0502DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

SDG 12160A

Surrogate Outlier Report

Lab Reporting Batch ID: 12160A **Laboratory: R9LAB**

EDD Filename: 12160a_voc_1206014 FINAL **eQAPP Name: Modesto_Site_062812**

Method: **524.2**
Matrix: **Water**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
EW-1-0602 (Initial1)	1,2-DICHLOROETHANE-D4	131	76.00-130.00	All Target Analytes	J+ (all detects)
MW-305-2Q12 (Initial)	1,2-DICHLOROETHANE-D4	134	76.00-130.00	All Target Analytes	J+(all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 12160A **Laboratory: R9LAB**

EDD Filename: 12160a_voc_1206014 FINAL **eQAPP Name: Modesto_Site_062812**

Method: 524.2
Matrix: Water

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	MW-101-0602	EW-1-0602			
CHLOROFORM	3.1	3.2	3	1.00	No Qualifiers Applied
TETRACHLOROETHENE	130	120	8	1.00	

Project Name and Number: R12S70 - Modesto GW Treatment System Spring 2012 Sampling

LDC #: 27881B1

SDG #: 12160A

Laboratory: Region 9 Laboratory

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/29/12

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC/MS Volatiles (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates: 6/7/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	% RSD ≤ 20
IV.	Continuing calibration/ICV	SW	icv/ccv ≤ 30
V.	Blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A ~~N~~	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A ~~N~~	
XVI.	Field duplicates	N	D: 3 + 4
XVII.	Field blanks	↓	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

water

1	MW-305-2Q12	11		21		31	
2	EFF-0602	12		22		32	
3	EW-1-0602	13		23		33	
4	MW-101-0602	14		24		34	
5	EFF-0602MS	15		25		35	
6	EFF-0602MSD	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 27881B1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: A
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method 524.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Y N N/A Were all percent relative standard deviations (%RSD) ≤ 20% ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤20.0%)	Associated Samples	Qualifications
	4/26/12	ICAL	F	22.78	All	J/UJ/A
			W	21.56	↓	↓
			X	22.26		
			KKK	24.56		
			MMM	23.92		

INICAL.1S5

LDC #: 27881B1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: A
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method 524.2)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were all percent differences (%D) ≤ 30% ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤30.0%)	Associated Samples	Qualifications
	4/26/12	ICV	JJ	32	All	J/UJ/A

CONCAL.1S5

LDC #: 27881B6

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/19/12

SDG #: 12160A

Page: 1 of 1

Laboratory: EPA Region 9 Laboratory

Reviewer: A

2nd Reviewer: [illegible]

METHOD: (Analyte) Biochemical Oxygen Demand (SM5210B), Total Dissolved Solids (SM2540C), Total Suspended Solids (SM2540D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates:
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	N	
V	Matrix Spike/Matrix Spike Duplicates	N	
VI.	Duplicates	N	
VII.	Laboratory control samples	N	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A ~~N~~	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	EFF-0602	11		21		31	
2	EFF-0602DUP	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

SDG 12160B

Reporting Limit Outliers

Lab Reporting Batch ID: 12160B **Laboratory: R9LAB**

EDD Filename: 12160b_voc_1206016 FINAL **eQAPP Name: Modesto_Site_062812**

Method: **TO-15**

Matrix: **Air**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SVE Stack-0602	TETRACHLOROETHENE	J,C1	1.5	2.3	MRL	ppbv	J (all detects)

LDC #: 27881E48

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/29/12

SDG #: 12160B

Page: 1 of 1

Laboratory: USEPA Region 9 Laboatory

Reviewer: A

2nd Reviewer: V

METHOD: GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates: 6/7/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 30
IV.	Continuing calibration/ICV	SW	ICV/CCV ≤ 30
V.	Blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates / Dup	N/N	
VIII.	Laboratory control samples	N	
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A ~~N~~	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A ~~N~~	
XVI.	Field duplicates	N	D: 3-5
XVII.	Field blanks	↓	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

A

1	GWTP Pr GAC-0602	11		21		31	
2	GWTP Stack-0602	12		22		32	
3	MW-112-0602 D	13		23		33	
4	SVE Pre GAC-0602	14		24		34	
5	SVE Stack-0602 D	15		25		35	
6	GWTP Pr GAC-0602DUP	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method TO-15)

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO. 1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP. 2-Propanol
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 27381E48
SDG #: -

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC/MS VOA (EPA TO-15)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a continuing calibration standard analyzed at least once every 24 hours for each instrument?
Y N N/A Were all percent differences (%D) ≤ 30%

#	Date	Standard ID	Compound	Finding %D (Limit: ≤30.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	5/31/12	ICV	KKK	39		All	J/UJ/A

CONCAL.15A

URS Group, Inc.

ANALYTICAL DATA QUALITY SUMMARY

This section summarizes the quality assurance/quality control (QA/QC) results for samples collected and data generated in support of Modesto Superfund Site during the period of April through June 2012. Since, these samples were not analyzed by the EPA Region 9 Laboratory; they were not validated by Laboratory Data Consultants, Inc., but by URS Group, Inc. (URS).

Data were reviewed and qualified by URS using method and laboratory criteria. Precision and accuracy were evaluated from field and laboratory QC samples. The calculated relative percent difference from matrix spike/matrix spike duplicates (MS/MSD) and field and laboratory duplicate pairs provided information on the precision of chemical analyses and field sampling procedures. Evaluation of the percent recoveries of spiked analytes in laboratory control samples, MS/MSDs and surrogates were used to evaluate accuracy. External contamination was assessed through the evaluation of method blanks and trip blanks (TBs). Comparability of the data was ensured by having project personnel follow standardized field procedures described in the SAP (URS, 2010) and the Natural Attenuation Work Plan (URS, 2012) and having laboratories follow analytical methods and standard operating procedures. The completeness of the data is the measure of the amount of valid data for each method and matrix (expressed as a percentage). Completeness and integrity of data were evaluated by validating all the project data, ensuring that all the analytical requests were met, noting whether samples were received in proper condition, and verification that analyses were performed within the appropriated holding times.

URS staff collected groundwater samples from three monthly field efforts (04M12, 05M12 and 06M12) and Round 1 of the natural attenuation evaluation screening sampling (2Q12). Total uranium (Method ASTM D5174) samples were analyzed by GEL Laboratories, LLC in Charleston, South Carolina, acetylene (Method RSK-175) and fatty acids (Method 300.0 M) were analyzed by EMAX Laboratories in Torrance, California, and haloacetic acids (Method E552.2) were analyzed by Test America Laboratories, Inc. in Irvine, California. The data were evaluated at a minimum on the following parameters:

(*) Sample integrity

(*) Blank analysis

(*) Laboratory control samples

(*) MS recoveries and relative percent differences

(*) Surrogate spikes recoveries

(*) Reporting Limits

(*) Data completeness

* = All criteria were met for this parameter.

The following samples were collected:

- Total uranium by Method ASTM D5174 (15 normal samples [NS] , 1 field duplicate [FD], 5 matrix spikes [MS]/duplicates and 1 field blank (FB)
- Acetylene by RKS-175: 10 NS, 1FD and 1 MS/MSD
- Fatty acids by 300.0: 10 NS and 1FD
- Haloacetic acids by E552.2: 10 NS and 1 FD

Based on the validation performed, all data for this effort are acceptable and can be used for data interpretation. No data are qualified. Completeness by method is provided on Table C-1

TABLE C-1

COMPLETENESS SUMMARY
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

			Analytical Completeness		Technical Completeness	
Analytical Method	**Analyte**	**Possible Field Results**	**Qualified Results**	**Percent (%)**	**Rejected Results**	**Percent (%)**
Water						
D5174						
	Uranium, total	15	0	100.0%	0	100.0%
E552.2						
	Haloacetic acids	30	0	100.0%	0	100.0%
300.0M						
	Fatty acids	50	0	100.0%	0	100.0%
RSK-175						
	Acetylene	10	0	100.0%	0	100.0%
	Total:	105	0	100.0%	0	100.0%

Appendix D
System Uptime Logs

APPENDIX D
SYSTEM UPTIME LOGS

This section presents quantitative results on operational time for the groundwater treatment (GWT) and soil vapor extraction (SVE) systems. Operation time and percentage of uptime for this reporting period (01 April through 30 June 2012) are as follows:

Remedial System	Total Operation Hours	Percentage of Operation
Groundwater Treatment	1,686	77%
Soil Vapor Extraction	1,960	90%

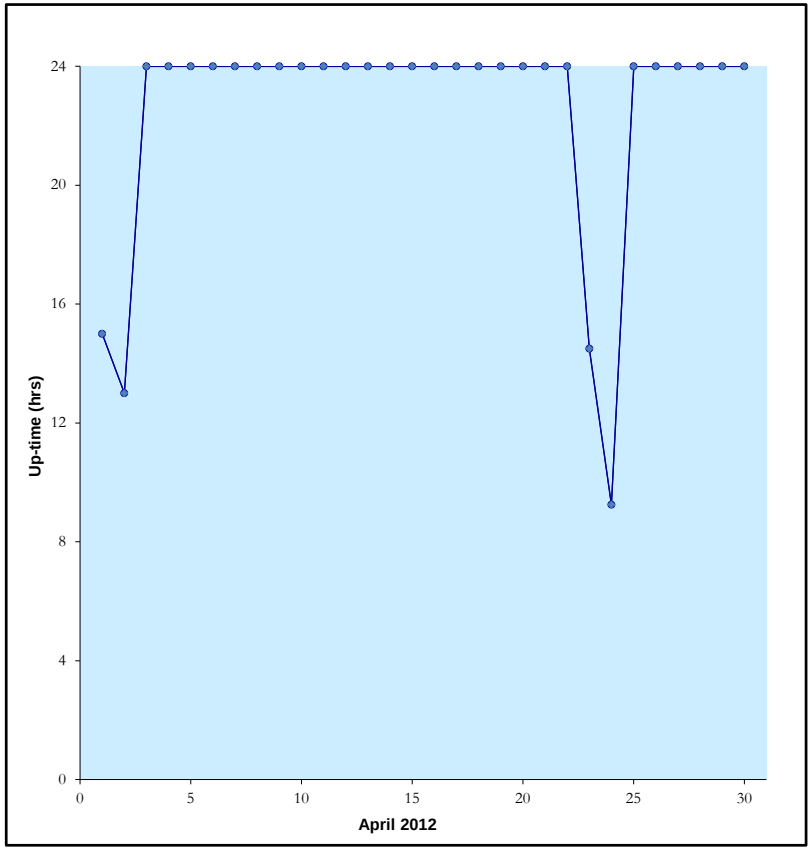
Monthly graphical representations of the GWT system operation time can be found in Figures D-1, D-2, and D-3 for April, May, and June 2012, respectively.

Monthly graphical representations of the SVE system operation time can be found in Figures D-4, D-5, and D-6 for April, May, and June 2012, respectively.

FIGURE D-1

UPTIME LOG
GROUNDWATER TREATMENT SYSTEM
MODESTO SUPERFUND SITE

Month	Day	Uptime (hrs)	Description of Activity Performed
April	1	**15**	Changed bag filter.
	2	**13**	Changed bag filter.
	3	**24**	
	4	**24**	
	5	**24**	
	6	**24**	
	7	**24**	
	8	**24**	
	9	**24**	
	10	**24**	
	11	**24**	
	12	**24**	
	13	**24**	
	14	**24**	
	15	**24**	
	16	**24**	
	17	**24**	
	18	**24**	
	19	**24**	
	20	**24**	
	21	**24**	
	22	**24**	
	23	**14.5**	Changed bag filter.
	24	**9.25**	Changed bag filter.
	25	**24**	
	26	**24**	
	27	**24**	
	28	**24**	
	29	**24**	
	30	**24**	



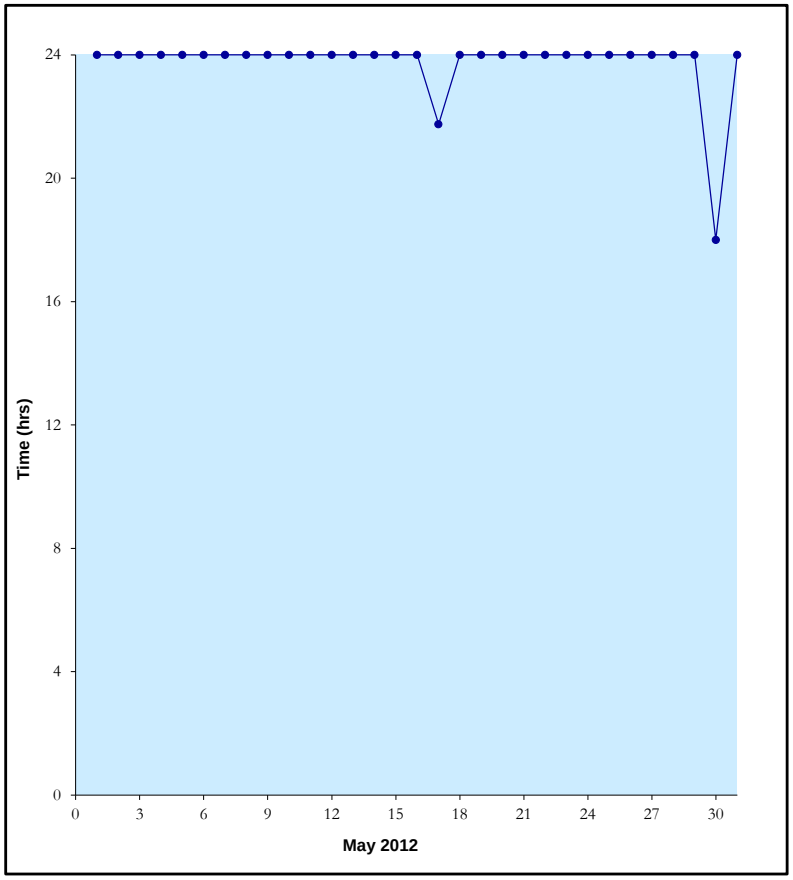
Uptime hours:	**675.75**
Uptime %:	**93.9%**

Notes:

FIGURE D-2

UPTIME LOG
GROUNDWATER TREATMENT SYSTEM
MODESTO SUPERFUND SITE

Month	Day	Uptime (hrs)	Description of Activity Performed
May	1	**24**	
	2	**24**	
	3	**24**	
	4	**24**	
	5	**24**	
	6	**24**	
	7	**24**	
	8	**24**	
	9	**24**	
	10	**24**	
	11	**24**	
	12	**24**	
	13	**24**	
	14	**24**	
	15	**24**	
	16	**24**	
	17	**21.75**	Shutdown system to perform IX resin change out on secondary IX vessel
	18	**24**	
	19	**24**	
	20	**24**	
	21	**24**	
	22	**24**	
	23	**24**	
	24	**24**	
	25	**24**	
	26	**24**	
	27	**24**	
	28	**24**	
	29	**24**	
	30	**18**	Replaced influent tank high float.
	31	**24**	



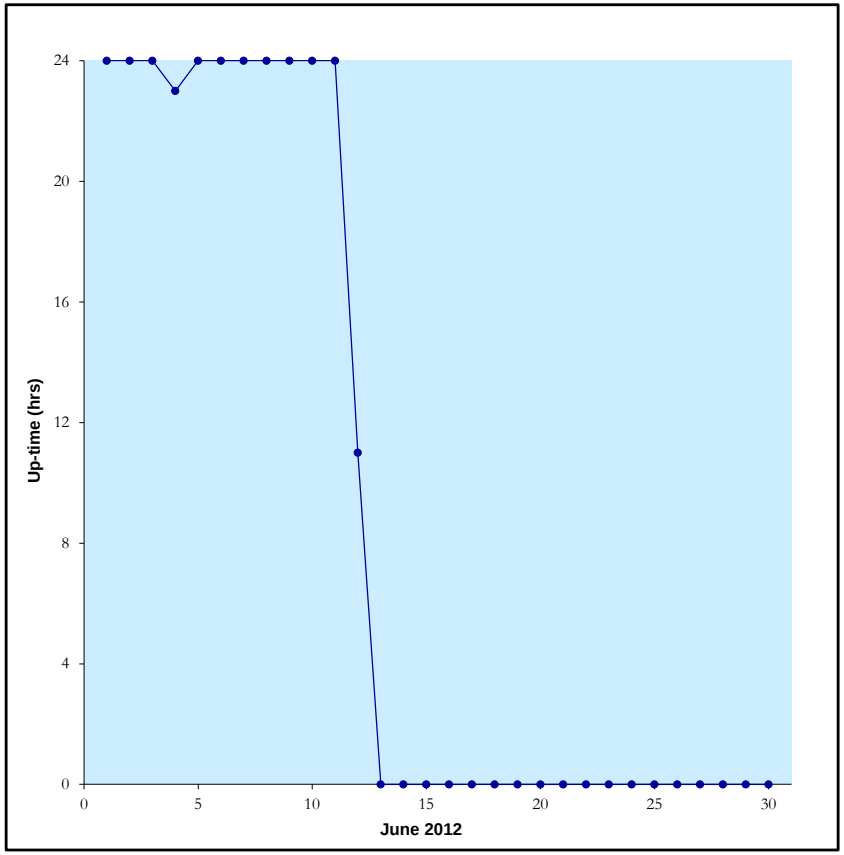
Uptime hours:	**735.75**
Uptime %:	**98.9%**

Notes:

FIGURE D-3

UPTIME LOG
GROUNDWATER TREATMENT SYSTEM
MODESTO SUPERFUND SITE

Month	Day	Uptime (hrs)	Description of Activity Performed
June	1	**24**	
	2	**24**	
	3	**24**	
	4	**23**	Shutdown system to repair hose
	5	**24**	
	6	**24**	
	7	**24**	
	8	**24**	
	9	**24**	
	10	**24**	
	11	**24**	
	12	**11**	Removed effluent pump for repair/replacement. Replaced on 7/3/2012
	13	**0**	
	14	**0**	
	15	**0**	
	16	**0**	
	17	**0**	
	18	**0**	
	19	**0**	
	20	**0**	
	21	**0**	
	22	**0**	
	23	**0**	
	24	**0**	
	25	**0**	
	26	**0**	
	27	**0**	
	28	**0**	
	29	**0**	
	30	**0**	



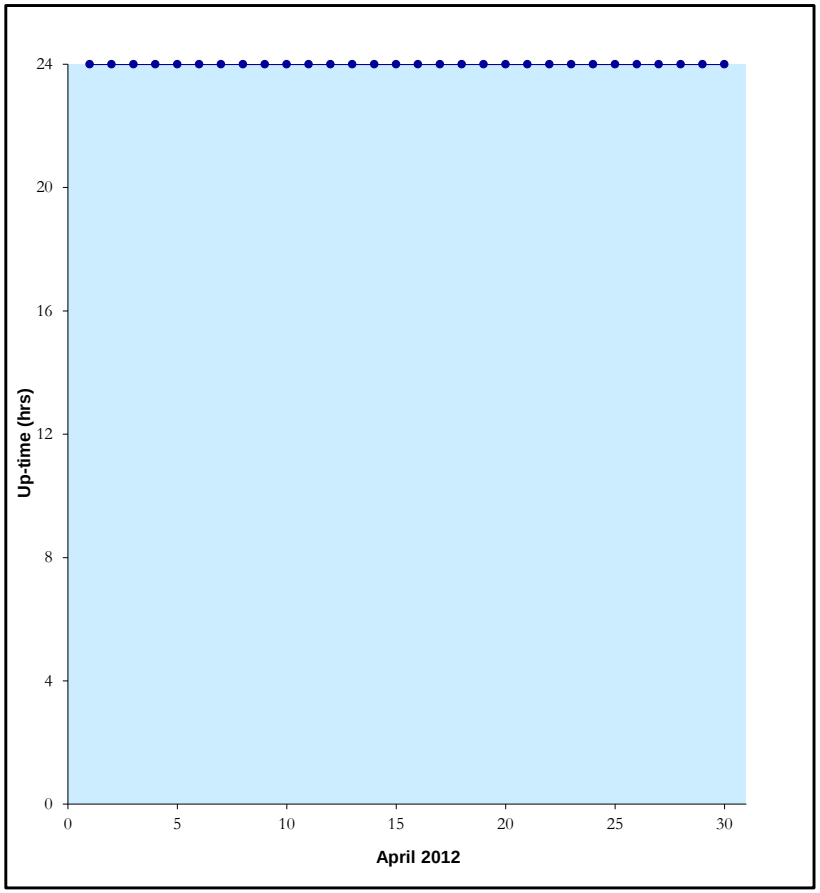
Uptime hours:	**274**
Uptime %:	**38.1%**

Notes:

FIGURE D-4

UPTIME LOG
SVE TREATMENT SYSTEM
MODESTO SUPERFUND SITE

Month	Day	Uptime (hrs)	Description of Activity Performed
April	1	**24**	
	2	**24**	
	3	**24**	
	4	**24**	
	5	**24**	
	6	**24**	
	7	**24**	
	8	**24**	
	9	**24**	
	10	**24**	
	11	**24**	
	12	**24**	
	13	**24**	
	14	**24**	
	15	**24**	
	16	**24**	
	17	**24**	
	18	**24**	
	19	**24**	
	20	**24**	
	21	**24**	
	22	**24**	
	23	**24**	
	24	**24**	
	25	**24**	
	26	**24**	
	27	**24**	
	28	**24**	
	29	**24**	
	30	**24**	



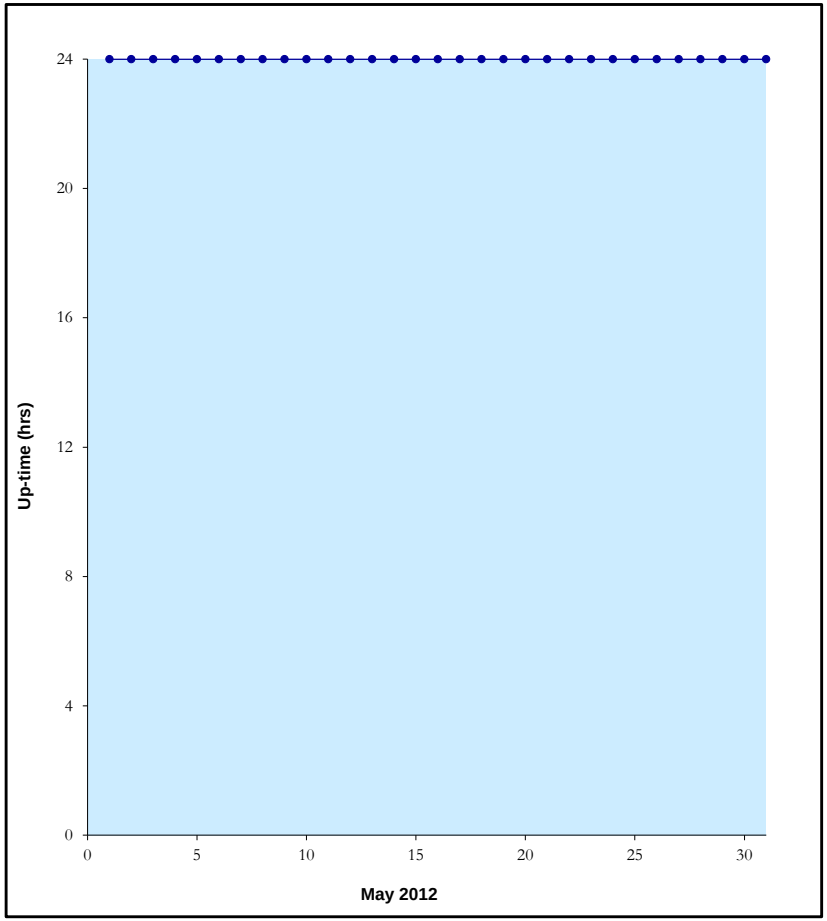
Uptime hours:	**720**
Uptime %:	**100.0%**

Notes:

FIGURE D-5

UPTIME LOG
SVE TREATMENT SYSTEM
MODESTO SUPERFUND SITE

Month	Day	Uptime (hrs)	Description of Activity Performed
May	1	**24**	
	2	**24**	
	3	**24**	
	4	**24**	
	5	**24**	
	6	**24**	
	7	**24**	
	8	**24**	
	9	**24**	
	10	**24**	
	11	**24**	
	12	**24**	
	13	**24**	
	14	**24**	
	15	**24**	
	16	**24**	
	17	**24**	
	18	**24**	
	19	**24**	
	20	**24**	
	21	**24**	
	22	**24**	
	23	**24**	
	24	**24**	
	25	**24**	
	26	**24**	
	27	**24**	
	28	**24**	
	29	**24**	
	30	**24**	
	31	**24**	



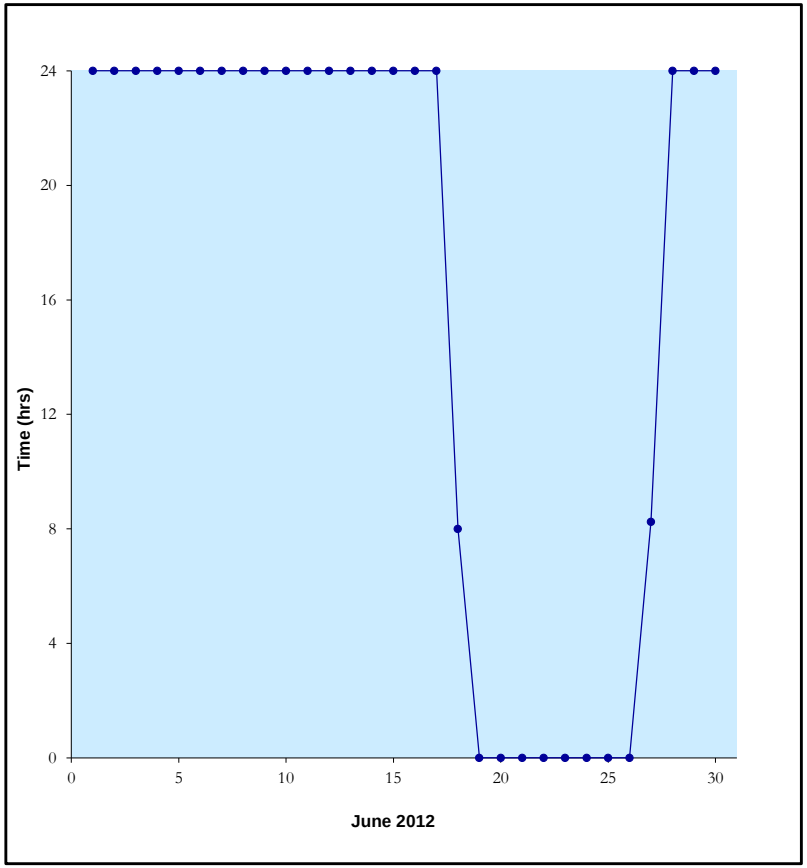
Uptime hours:	**744**
Uptime %:	**100.0%**

Notes:

FIGURE D-6

UPTIME LOG
SVE TREATMENT SYSTEM
MODESTO SUPERFUND SITE

Month	Day	Uptime (hrs)	Description of Activity Performed
June	1	**24**	
	2	**24**	
	3	**24**	
	4	**24**	
	5	**24**	
	6	**24**	
	7	**24**	
	8	**24**	
	9	**24**	
	10	**24**	
	11	**24**	
	12	**24**	
	13	**24**	
	14	**24**	
	15	**24**	
	16	**24**	
	17	**24**	
	18	**8**	Shutdown SVE for replacement of utility power meter.
	19	**0**	
	20	**0**	
	21	**0**	
	22	**0**	
	23	**0**	
	24	**0**	
	25	**0**	
	26	**0**	
	27	**8.25**	
	28	**24**	
	29	**24**	
	30	**24**	



Uptime hours:	**496.25**
Uptime %:	**68.9%**

Notes:

Appendix E
Operation and Maintenance Process Logs

APPENDIX E
PROCESS AND MONITORING LOGS

This section presents process and monitoring logs recorded during weekly routine and non-routine visits during this reporting period (01 April through 30 June 2012) for both soil vapor extraction (SVE) and groundwater treatment (GWT) systems. Process readings, (flow rates, pressures, and vapor concentrations) pertaining to individual treatment units (air stripper, liquid granular activated carbon (GAC), and ion exchange) are recorded to document trends in each treatment process and establish typical operating ranges. These process and monitoring logs are working documents that will be updated as necessary to accommodate changes and modifications to the treatment systems.

URS Corporation
Modesto, Superfund Site
Process Data Sheet

Groundwater Treatment System

Initials	Date	Time	Hour Meter Hrs.	Utility Power kW	Utility Power kWh	System Influent Flow GPM	System Influent Pressure PSI	System Influent Total Flow Gallons x100	System Influent pH pH	Anti-Scalent Sequestrant T-3 Gallons	Air Stripper Water Influent Pressure (Bag Filter F-1) PSI	Air Stripper Water Effluent Pressure (Bag Filter F-1) PSI	Air Stripper Water Flow (Bag Filter F-1) GPM	Air Stripper Water Pressure (Pump P-3) PSI	Air Stripper Water Influent Pressure (Bag Filter F-2) PSI	Air Stripper Water Effluent Pressure (Bag Filter F-2) PSI	Air Stripper Water Flow (Bag Filter F-2) GPM
JP	4-5-12	0735	50664.4	22.681	71593	44	37	57013	7.39	27	33	31	60	47	43	41	64
JP	4-9-12	1315	50764.1	22.686	73620	46	37	61708	7.66	24	35	32	60	46	43	43	65
JP	4-17-12	0905	50951.9	22.681	—	46	37	66781	7.30	34	34	32	60	45	42	42	64
JP	4-24	1445	51096.7	22.686	80677	46	37	70677	7.25	28	35	33	60	47	45	44	64
Design Range or Target Value				10.0-30	N/A	3.0-85	30-50	n/a	5.0-12.0	3.0-25	30-50	30-50	40-70	30-50	30-50	30-50	40-70

GroundWater Treatment System

Air Stripper Vapor Sump Pressure (Air Stripper Trays) in. H2O	Air Stripper Vapor Effluent Pressure (Air Stripper Trays) in. H2O	Air Stripper Vapor Influent P.I.D. (VGAC Vessel) ppm	Air Stripper Vapor Effluent P.I.D. (VGAC Vessel) ppm	Air Stripper Vapor Temp (Stack) °F	Air Stripper Vapor Flow (Stack) CFM	Liquid Carbon Influent Pressure PSI	Liquid Carbon Mid-Bed Pressure PSI	Liquid Carbon Effluent Pressure PSI	Ion Exchange Influent Pressure PSI	Ion Exchange Mid-Bed Pressure PSI	Ion Exchange Flow GPM	System Effluent Flow Gpm	System Effluent Pressure PSI	System Effluent pH pH	System Effluent Total Flow Gallons x100	Radiation Meter Outside GWTS mR/hr Peak	Radiation Meter Inside GWTS mR/hr Peak
—	—	Ø	Ø	69.1	695	29	34	33	15	10	41	53	N/A	8.26	49785	Ø	Ø
—	—	Ø	Ø	70.1	690	28	38	32	15	10	41	53	N/A	8.29	47439	Ø	Ø
—	—	Ø	Ø	69.7	665	38	32	28	15	10	41	52	N/A	8.20	52455	Ø	Ø
—	—	Ø	Ø	71.9	670	40	34	29	16	12	46	52	N/A	8.15	56348	Ø	Ø
5.0-25	5.0-25	0-100	0-10	65-75	550-650	25-70	25-60	25-50	1.0-10	1.0-10	3.0-60	3.0-50	1.0-5	5.0-12	N/A	0-1	0-1

Soil Vapor Extraction System

Date	Time	SVE Influent Pressure in. H2O	SVE Influent Temp °F	SVE Influent Flow CFM	SVE Influent Dilution Yes/No	Blower Hour Meter Hrs.	Blower Effluent Pressure in. H2O	Blower Temp °F	Blower Flow CFM	Filter Influent Pressure in. H2O	Filter Effluent Pressure in. H2O	Vapor Influent P.I.D. (VGAC Vessel) ppm	Vapor Effluent P.I.D. (VGAC Vessel) ppm	Vapor Temp (Stack) °F	Vapor Flow (Stack) CFM	Radiation Meter Outside SVE mR/hr Peak	Radiation Meter Inside SVE mR/hr Peak
4-5-12	1145	.60	65.7	163	NO	9694.5	-3	183.5	173	-69	-67	Ø	Ø	183.5	173	Ø	Ø
4-9-12	1330	.60	69.8	165	NO	9792.2	-3	183.5	169	-69	-67	Ø	Ø	183.5	169	Ø	Ø
4-17-12	0920	.60	68.0	150	NO	9980.1	-3	182.1	155	73	70	Ø	Ø	182.1	155		
		DOOR	BLOCKED	BY	VEHICLE	IN ALLY	, NO	ACCESS									
		25-70	65-75	100-200	NO	N/A	2.0-10	65-75	100-200	N/A	N/A	0-100	0-10	65-75	100-200	0-1	0-1

Note: For pressures measured relative to atmospheric (barometric) pressure, use (-) for vacuum.

Reviewed By: _____ Date: _____

URS Group
Preventative and Corrective Maintenance Log
Modesto Superfund Site

Site Name: MODESTO SUPERFUND (GWTP)
Period: 4-1-12 (month/day/year) to 4-30-12 (month/day/year)

Date	Initials	Hour Meter	Maintenance Performed	LOTO Required	LOTO Description (Where?Why?)	LOCK ON (Date/Time)	Zero Energy Check	LOCK OFF (Date/Time)	LOCK ID (Lock No.)
4-2	JP	50594	CHANGE BAGS	Y / N			Y / N		
4-9	JP	50764	CHANGE BAGS	Y / N			Y / N		
4-24	JP	51096	CHANGE BAGS	Y / N			Y / N		
				Y / N			Y / N		
				Y / N			Y / N		
				Y / N			Y / N		

URS Group
Preventative and Corrective Maintenance Log
Modesto Superfund Site

Site Name: MODESTO GWTP

Shutdown Date: 4-1-12 Startup Date: 4-2-12
Shutdown Time: 1500 Startup Time: 1100
Shutdown Purpose or Cause:
A/S HI LEVEL. BAG FILTER CLOGGED
Corrective Actions Taken (if shutdown was unplanned):
CHANGE BAG FILTER HR MTR 50594 Performed By: JP

Shutdown Date: 4-23-12 Startup Date: 4-24-12
Shutdown Time: 0930 Startup Time: 1415
Shutdown Purpose or Cause:
A/S HI LEVEL BAG FILTER CLOGGED
Corrective Actions Taken (if shutdown was unplanned):
CHANGE BAG FILTER HR MTR 51096 Performed By:

Shutdown Date: Startup Date:
Shutdown Time: Startup Time:
Shutdown Purpose or Cause:
Corrective Actions Taken (if shutdown was unplanned):
Performed By:

Shutdown Date: Startup Date:
Shutdown Time: Startup Time:
Shutdown Purpose or Cause:
Corrective Actions Taken (if shutdown was unplanned):
Performed By:

Reviewed by: Date:

URS Corporation
Modesto Superfund Site
Site Inspections

Task Description	4/5/2012	4/9/12	4/17/12	4/24/12	/ /
WEEKLY	Task Performed (Technician Initials or Value)				
Groundwater TreatmentSystem					
Record Process Logs	JP	JP	JP	JP	
Check Blowers and motors for heat, noise, and vibration	JP	JP	JP	JP	
Check Air Stripper Feed pump/motor (P-2) for heat, noise, and vibration.	JP	JP	JP	JP	
Inspect all process piping for leaks	JP	JP	JP	JP	
Inspect all process hoses/fittings for leaks	JP	JP	JP	JP	
Check Air Stripper Effluent pump/motor (P-3) for heat, noise, and vibration.	JP	JP	JP	JP	
Inspect Sump (Pump as Necessary).	JP	JP	JP	JP	
Check Air Stripper sump level site glass. Clean as necessary	JP	JP	JP	JP	
Inspect IX system influent vacuum break for leaks	JP	JP	JP	JP	
Clean up compound area	JP	JP	JP	JP	
Drain VGAC condensate	JP	JP	JP	JP	
Perform autodialer operational check	JP	JP	JP	JP	
Autodialer battery check	JP	JP	JP	JP	
Perform inspection of EW-1R pipeline	JP	JP	JP	JP	
Inspection of Spill Response Kit	JP	JP	JP	JP	
Inspection of Emergency Response Plan/MSDS Binder	JP	JP	JP	JP	
Soil Vapor Extraction System					
Record Process Logs	JP	JP	JP	NO ACCESS	
Check Blowers and motors for heat, noise, and vibration	JP	JP	JP	↓	
Inspect all process piping for leaks	JP	JP	JP	↓	
Clean up compound area	JP	JP	JP	↓	
Drain VGAC condensate	JP	JP	JP	↓	
Perform autodialer operational check	JP	JP	JP	↓	
Inspection of Spill Response Kit	JP	JP	JP	↓	
Inspection of Emergency Response Plan/MSDS Binder	JP	JP	JP	↓	

Task Description	Performed		
MONTHLY	Date	Initials	Reading
Check fire extinguisher	4-9-12	JP	
Inspect EW-1R vault	4-9-12	JP	
Inspect VI Mitigation operations - "Part House"	4-9-12	JP	
Replace Auto Dialer Batteries (if necessary)	4-9-12	GS	
Quarterly			
Interlock Checks Groundwater			
Interlock Checks SVE			
Collect Well Flow read at SVE-02			
Collect Well Flow read at SVE-03			
Collect Well Flow read at SVE-04			
ANNUAL			
Collect Amp radings			
Instrument Calibration			
System Effluent Flow Meter (Performed in June and December)			

Notes:

Reviewed by:_____ Date:_____

Date: 4/5/12
Weather:
Sampler: Josh Patrick

SAMPLE COLLECTION RECORD
MODESTO SUPERFUND SITE

Time	Description	Totalizer Reading (gallons)	Flow (gpm)
0935	GWTS Effluent	44785 00	53

Time	Sample Location - Test Method	Sample Description	LOCID	No. of Containers	Container Type	Preservative	pH	Cond	Temp
1040	EFF-0401 E524.2	Effluent-NS	SP-07	3	40 ml VOA	HCl	8.26	1030	19.8
1040	EFF-0401 SM2540C	Effluent-NS	SP-07	1	250 ml Poly	None	8.26	1030	19.8
1040	EFF-0401 SM5210B	Effluent-NS	SP-07	1	500 ml Poly	None			
1040	EFF-0401 SM2540D	Effluent-NS	SP-07	1	500 ml Poly	None			
1040	EFF-0401 D5174	Effluent-NS	SP-07	1	1 Liter Poly	HNO3			
1115	IEX Mid-0401 D5174	IEX Mid-0401	SP-06	1	1 Liter Poly	HNO3			
1110	Pre IEX-0401 D5174	Pre IEX-0401	SP-05	1	1 Liter Poly	HNO3			
1112	MW-105-NS D5174	Pre IEX-0401-DS	SP-05	1	1 Liter Poly	HNO3			
1105	CRB EFF-0401 E524.2	Carbon Effluent-NS	SP-05	3	40 ml VOA	HCl			
1100	CRB Mid-0401 E524.2	Carbon Mid-NS MS/MSD	SP-04	5	40 ml VOA	HCl			
1055	CRB INF-0401 E524.2	Carbon Influent- NS	SP-03	3	40 ml VOA	HCl			
1025	EW-1-0401 E524.2	Influent-NS	SP-01	3	40 ml VOA	HCl	7.39	1060	20.5
1025	EW-1-0401 D5174	Influent-NS	SP-01	1	1 Liter Poly	HNO3	7.39	1060	20.5
1005	MW-403-2Q12 E524.2	FB	System	3	40 ml VOA	HCl			
1000	MW-303-2Q12 E524.2	TB	TB	3	40 ml VOA	HCl			
1135	GWTP Stack-0401 TO-15	GWTP VGAC Effluent-NS	SP-09	1	400ml Summa	None			
1125	GWTP Pr GAC-0401 TO-15	GWTP VGAC Influent-NS	SP-08	1	400ml Summa	None			
1205	SVE Stack-0401 TO-15	SVE VGAC Effluent-NS	SP-12	1	400ml Summa	None			
1200	SVE Pre GAC-0401 TO-15	SVE VGAC Influent-NS	SP-11	1	400ml Summa	None			

Sampler Signature	Date

Notes: MISSING PARAMETERS

FD = Field Duplicate
FB = Field Blank (ambient)
NS = Normal Sample
TB = Trip Blank

Scan COCs to:
URS Attn: Debbie Casagrande (916) 679-2040

URS Corporation
Modesto, Superfund Site
Process Data Sheet

Groundwater Treatment System

Initials	Date	Time	Hour Meter	Utility Power		System Influent				Anti-Scalent Sequestrant	Air Stripper Water						
						Flow	Pressure	Total Flow	pH		Influent Pressure	Efffluent Pressure	Flow	Pressure	Influent Pressure	Effluent Pressure	Flow
										T-3	Bag Filter F-1			Pump P-3	Bag Filter F-2		
			Hrs.	kW	kWh	GPM	PSI	Gallons	pH	Gallons	PSI	PSI	GPM	PSI	PSI	PSI	GPM
JP	5-2-12	0815	51282.1	22.686	84477	46	37	75653	7.49	21	34	33	60	48	44	43	62
JP	5-8-12	0920	51426.2	22.686	87408	46	37	79524	7.56	24	35	33	60	47	47	44	64
JP	5-17-12	1040	51641.5	22.686	91821	46	37	85306	7.24	25	34	31	60	47	49	45	64
JP	5-24-12	1010	51809.0	22.686	95228	46	37	89793	7.55	19.5	34	31	60	47	48	45	64
GB	5/30/12	1013	51947	22.686	98086	46	34	93501	7.45	15(31)	34	36	58	48	54	52	64
Design Range or Target Value				10.0-30	N/A	3.0-85	30-50	n/a	5.0-12.0	3.0-25	30-50	30-50	40-70	30-50	30-50	30-50	40-70

GroundWater Treatment System

Air Stripper Vapor						Liquid Carbon			Ion Exchange			System Effluent				Radiation Meter	
Sump Pressure	Effluent Pressure	Influent P.I.D.	Effluent P.I.D.	Temp	Flow	Influent Pressure	Mid-Bed Pressure	Effluent Pressure	Influent Pressure	Mid-Bed Pressure	Flow	Flow	Pressure	pH	Effluent Total Flow	Outside GWTS	Inside GWTS
Air Stripper Trays		VGAC Vessel		Stack													
in. H2O	in. H2O	ppm	ppm	°F	CFM	PSI	PSI	PSI	PSI	PSI	GPM	Gpm	PSI	pH	Gallons	mR/hr Peak	mR/hr Peak
N/A	N/A	Ø	Ø	69.5	720	40	34	30	16	11	45	51	N/A	8.17	61326	Ø	Ø
N/A	N/A	Ø	Ø	70.3	720	39	33	28	16	11	46	51	N/A	8.02	65183	Ø	Ø
N/A	N/A	Ø	Ø	69.9	710	38	32	28	16	10	46	51	N/A	7.28	70956	Ø	Ø
N/A	N/A	Ø	Ø	70.0	640	38	32	28	16	10	46	52	N/A	8.25	75477	Ø	Ø
n/a	n/a	Ø	Ø	70.6	695	38	32	28	17	10	46	52	n/a	8.17	79201	Ø	Ø
5.0-25	5.0-25	0-100	0-10	65-75	550-650	25-70	25-60	25-50	1.0-10	1.0-10	3.0-60	3.0-50	1.0-5	5.0-12	N/A	0-1	0-1

Soil Vapor Extraction System

		SVE Influent				Blower				Filter		Vapor				Radiation Meter	
		Pressure	Temp	Flow	Dilution	Hour Meter	Effluent Pressure	Temp	Flow	Influent Pressure	Effluent Pressure	Influent P.I.D.	Effluent P.I.D.	Temp	Flow	Outside SVE	Inside SVE
Date	Time	In. H2O	°F	CFM	Yes/No	Hrs.	in. H2O	°F	CFM	in. H2O	in. H2O	VGAC Vessel ppm	VGAC Vessel ppm	Stack °F	Stack CFM	mR/hr Peak	mR/hr Peak
5-2-12	0830	61	72.1	158	NO	10338.7	3	183.1	170	72	68	Ø	Ø	183.1	170	Ø	Ø
5-8-12	1055	60	78.3	154	NO	10485.1	3	196.2	152	-74	-70	Ø	Ø	196.2	152	Ø	Ø
5-17-12	1050	60	73.2	155	NO	10701	3	189.9	160	-74	-70	Ø	Ø	189.9	160	Ø	Ø
5-24-12	1040	60	72	154	NO	10848.6	3	188.8	163	-73	-69	Ø	Ø	188.8	163	Ø	Ø
5/30/12	1049	-62	79.3	159	No	11013	3	164.0	199	-70	-67	Ø	Ø	199	164	Ø	Ø
		25-70	65-75	100-200	NO	N/A	2.0-10	65-75	100-200	N/A	N/A	0-100	0-10	65-75	100-200	0-1	0-1

Note: For pressures measured relative to atmospheric (barometric) pressure, use (-) for vacuum.

Reviewed By: _____ Date: _____

URS Group
Preventative and Corrective Maintenance Log
Modesto Superfund Site

Site Name: Modesto SF
Period: 5/1/12 (month/day/year) to 5/31/12 (month/day/year)

Date	Initials	Hour Meter	Maintenance Performed	LOTO Required	LOTO Description (Where?Why?)	LOCK ON (Date/Time)	Zero Energy Check	LOCK OFF (Date/Time)	LOCK ID (Lock No.)
5/17	JP	51642	IX Media Change	Y / N			Y / N		
5/30	GB	51947	Influent Tank Float Switch Repair	Y / N			Y / N		
				Y / N			Y / N		
				Y / N			Y / N		
				Y / N			Y / N		
				Y / N			Y / N		

URS Group
Preventative and Corrective Maintenance Log
Modesto Superfund Site

Site Name: Modesto SF

Shutdown Date: 5/17/12 Startup Date: 5/17/12
Shutdown Time: 08:10 Startup Time: 10:25
Shutdown Purpose or Cause: Shutdown system to perform IX resin change out on Secondary IX Vessel.
Corrective Actions Taken (if shutdown was unplanned):
Performed By:

Downt 2.25 hours

Shutdown Date: 5/30/12 Startup Date: 5/30/12
Shutdown Time: 3:15 AM Startup Time: 09:15
Shutdown Purpose or Cause: System Shutdown on Influent Tank High/High level.
Corrective Actions Taken (if shutdown was unplanned): Replaced Influent Tank High Float Switch
Performed By:

Downt 6 Hours..

Shutdown Date: Startup Date:
Shutdown Time: Startup Time:
Shutdown Purpose or Cause:
Corrective Actions Taken (if shutdown was unplanned):
Performed By:

Shutdown Date: Startup Date:
Shutdown Time: Startup Time:
Shutdown Purpose or Cause:
Corrective Actions Taken (if shutdown was unplanned):
Performed By:

Reviewed by:_____ Date: _____

URS Corporation
Modesto Superfund Site
Site Inspections

Task Description	5/2/12	5/8/12	5/17/12	5/24/12	5/30/12
WEEKLY	Task Performed (Technician Initials or Value)				
Groundwater TreatmentSystem					
Record Process Logs	✓	✓	✓	✓	✓
Check Blowers and motors for heat, noise, and vibration	✓	✓	✓	✓	✓
Check Air Stripper Feed pump/motor (P-2) for heat, noise, and vibration.	✓	✓	✓	✓	✓
Inspect all process piping for leaks	✓	✓	✓	✓	✓
Inspect all process hoses/fittings for leaks	✓	✓	✓	✓	✓
Check Air Stripper Effluent pump/motor (P-3) for heat, noise, and vibration.	✓	✓	✓	✓	✓
Inspect Sump (Pump as Necessary).	✓	✓	✓	✓	✓
Check Air Stripper sump level site glass. Clean as necessary	✓	✓	✓	✓	✓
Inspect IX system influent vacuum break for leaks	✓	✓	✓	✓	✓
Clean up compound area	✓	✓	✓	✓	✓
Drain VGAC condensate	✓	✓	✓	✓	✓
Perform autodialer operational check	✓	✓	✓	✓	✓
Autodialer battery check	✓	✓	✓	✓	✓
Perform inspection of EW-1R pipeline	✓	✓	✓	✓	✓
Inspection of Spill Response Kit	✓	✓	✓	✓	✓
Inspection of Emergency Response Plan/MSDS Binder	✓	✓	✓	✓	✓
Soil Vapor Extraction System					
Record Process Logs	✓	✓	✓	✓	✓
Check Blowers and motors for heat, noise, and vibration	✓	✓	✓	✓	✓
Inspect all process piping for leaks	✓	✓	✓	✓	✓
Clean up compound area	✓	✓	✓	✓	✓
Drain VGAC condensate	✓	✓	✓	✓	✓
Perform autodialer operational check	✓	✓	✓	✓	✓
Inspection of Spill Response Kit	✓	✓	✓	✓	✓
Inspection of Emergency Response Plan/MSDS Binder	✓	✓	✓	✓	✓

Task Description	Performed		
MONTHLY	Date	Initials	Reading
Check fire extinguisher	5/30/12	GD	
Inspect EW-1R vault	5/30/12	GB	
Inspect VI Mitigation operations - "Part House"	5/30/12	GLS	
Replace Auto Dialer Batteries (if necessary)	5/30/12	GLS	
Quarterly			
Interlock Checks Groundwater	5/24/12	JP	
Interlock Checks SVE	5/24/12	JP	
Collect Well Flow read at SVE-02	N/A		
Collect Well Flow read at SVE-03	N/A		
Collect Well Flow read at SVE-04	N/A		
ANNUAL			
Collect Amp radings			
Instrument Calibration			
System Effluent Flow Meter (Performed in June and December)			

Notes:

Reviewed by:_____ Date:_____

Date: 5-17-12
Weather: SUNNY 75
Sampler: JP

SAMPLE COLLECTION RECORD
MODESTO SUPERFUND SITE

Time	Description	Totalizer Reading (gallons)	Flow (gpm)
1040	GWTS Effluent	70956	51

Time	Sample Location - Test Method	Sample Description	LOCID	No. of Containers	Container Type	Preservative	pH	Cond (ms)	Temp
	EFF-____ E524.2	Effluent-NS	SP-07	3	40 ml VOA	HCl			
	EFF-____ SM2540C	Effluent-NS	SP-07	1	250 ml Poly	None			
	EFF-____ SM5210B	Effluent-NS	SP-07	1	500 ml Poly	None			
	EFF-____ SM2540D	Effluent-NS	SP-07	1	500 ml Poly	None			
1120	EFF-0503 D5174	Effluent-NS	SP-07	1	1 Liter Poly	HNO3	7.28	1.27	21.1
1115	IEXEFF-0503 D5174	IEX EFF-NS		1	1 Liter Poly	HNO3	7.50	1.29	21.1
1110	IEX Mid-0503 D5174	IEX Mid-NS	SP-06	1	1 Liter Poly	HNO3	8.23	1.02	21.3
1105	Pre IEX-0503 D5174	Pre IEX-NS	SP-05	1	1 Liter Poly	HNO3	8.35	1.02	21.4
	MW-105-NS D5174	Pre IEX-____-DS	SP-05	1	1 Liter Poly	HNO3			
	CRB EFF-____ E524.2	Carbon Effluent-NS	SP-05	3	40 ml VOA	HCl			
	CRB Mid-____ E524.2	Carbon Mid-NS MS/MSD	SP-04	5	40 ml VOA	HCl			
	CRB INF-____ E524.2	Carbon Influent- NS	SP-03	3	40 ml VOA	HCl			
	EW-1-____ E524.2	Influent-NS MS/MSD	SP-01	5	40 ml VOA	HCl			
	EW-1-____ D5174	Influent-NS	SP-01	1	1 Liter Poly	HNO3			
	MW-403-2Q12 E524.2	FB	System	3	40 ml VOA	HCl			
	MW-304-2Q12 E524.2	TB	TB	3	40 ml VOA	HCl			
	GWTP Stack-____ TO-15	GWTP VGAC Effluent-NS	SP-09	1	400ml Summa	None			
	GWTP Pr GAC-____ TO-15	GWTP VGAC Influent-NS	SP-08	1	400ml Summa	None			
	SVE Stack-____ TO-15	SVE VGAC Effluent-NS	SP-12	1	400ml Summa	None			
	SVE Pre GAC-____ TO-15	SVE VGAC Influent-NS	SP-11	1	400ml Summa	None			

Sampler Signature	Date

Notes:

FD = Field Duplicate
FB = Field Blank (ambient)
NS = Normal Sample
TB = Trip Blank

Scan COCs to:
URS Attn: Debbie Casagrande (916) 679-2040

Date: 5-8-12
Weather: SUNNY - 80
Sampler: JP

SAMPLE COLLECTION RECORD
MODESTO SUPERFUND SITE

Time	Description	Totalizer Reading (gallons)	Flow (gpm)
0920	GWTS Effluent	65183	

Time	Sample Location - Test Method		Sample Description	LOCID	No. of Containers	Container Type	Preservative	pH	Cond	Temp
1015	EFF-0502	E524.2	Effluent-NS	SP-07	3	40 ml VOA	HCl	8.02	1.010	21.1
	EFF-0502	SM2540C	Effluent-NS	SP-07	1	250 ml Poly	None			
	EFF-0502	SM5210B	Effluent-NS	SP-07	1	500 ml Poly	None			
	EFF-0502	SM2540D	Effluent-NS	SP-07	1	500 ml Poly	None			
	EFF-0502	D5174	Effluent-NS	SP-07	1	1 Liter Poly	HNO3			
	IEX Mid-0502	D5174	IEX Mid-0502	SP-06	1	1 Liter Poly	HNO3			
	Pre IEX-0502	D5174	Pre IEX-0502	SP-05	1	1 Liter Poly	HNO3			
	MW-105-NS	D5174	Pre IEX-0502-DS	SP-05	1	1 Liter Poly	HNO3			
	CRB EFF-0502	E524.2	Carbon Effluent-NS	SP-05	3	40 ml VOA	HCl			
	CRB Mid-0502	E524.2	Carbon Mid-NS MS/MSD	SP-04	5	40 ml VOA	HCl			
	CRB INF-0502	E524.2	Carbon Influent- NS	SP-03	3	40 ml VOA	HCl			
0955	EW-1-0502	E524.2	Influent-NS MS/MSD	SP-01	5	40 ml VOA	HCl	7.56	1.05ms	21.2
	EW-1-0502	D5174	Influent-NS	SP-01	1	1 Liter Poly	HNO3			
	MW-403-2Q12	E524.2	FB	System	3	40 ml VOA	HCl			
0940	MW-304-2Q12	E524.2	TB	TB	3	40 ml VOA	HCl			
1050	GWTP Stack-0502	TO-15	GWTP VGAC Effluent-NS	SP-09	1	400ml Summa	None	CAN#	1110	
1030	GWTP Pr GAC-0502	TO-15	GWTP VGAC Influent-NS	SP-08	1	400ml Summa	None	CAN#	1985	
1115	SVE Stack-0502	TO-15	SVE VGAC Effluent-NS	SP-12	1	400ml Summa	None	CAN#	~~1114~~	1111
1105	SVE Pre GAC-0502	TO-15	SVE VGAC Influent-NS	SP-11	1	400ml Summa	None	CAN#	1114	

Sampler's Signature	Date

Notes: CAN# 1966 - LEAK IN SAMPLE TRAIN -

FD = Field Duplicate
FB = Field Blank (ambient)
NS = Normal Sample
TB = Trip Blank

Scan COCs to:
URS Attn: Debbie Casagrande (916) 679-2040

URS Corporation
Modesto, Superfund Site
Process Data Sheet

Groundwater Treatment System

						System Influent					Air Stripper Water						
			Hour Meter	Utility Power		Flow	Pressure	Total Flow	pH	Anti-Scalent Sequestrant	Influent Pressure	Effluent Pressure	Flow	Pressure	Influent Pressure	Effluent Pressure	Flow
Initials	Date	Time	Hrs.	kW	kWh	GPM	PSI	Gallons	pH	T-3 Gallons	Bag Filter F-1 PSI	Bag Filter F-1 PSI	Bag Filter F-1 GPM	Pump P-3 PSI	Bag Filter F-2 PSI	Bag Filter F-2 PSI	Bag Filter F-2 GPM
JP	6-7-12	0945	52137.8	22.686	1002006	46	33	98759	7.56	26	35	33	59	47	49	45	64
JP	6-14-12	0925	52271.2	22.684	1050060	46	33	102445	7.71	21	36	33					
Design Range or Target Value				10.0-30	N/A	3.0-85	30-50	n/a	5.0-12.0	3.0-25	30-50	30-50	40-70	30-50	30-50	30-50	40-70

GroundWater Treatment System

Air Stripper Vapor						Liquid Carbon			Ion Exchange			System Effluent				Radiation Meter	
Sump Pressure	Effluent Pressure	Influent P.I.D.	Effluent P.I.D.	Temp	Flow	Influent Pressure	Mid-Bed Pressure	Effluent Pressure	Influent Pressure	Mid-Bed Pressure	Flow	Flow	Pressure	pH	Effluent Total Flow	Outside GWTS	Inside GWTS
Air Stripper Trays in. H2O	Air Stripper Trays in. H20	VGAC Vessel ppm	VGAC Vessel ppm	Stack °F	Stack CFM	PSI	PSI	PSI	PSI	PSI	GPM	Gpm	PSI	pH	Gallons	mR/hr Peak	mR/hr Peak
N/A	N/A	Ø	Ø	70.2	675	38	32	28	16	10	45	52	N/A	8.28	84512	Ø	Ø
															88255		
5.0-25	5.0-25	0-100	0-10	65-75	550-650	25-70	25-60	25-50	1.0-10	1.0-10	3.0-60	3.0-50	1.0-5	5.0-12	N/A	0-1	0-1

Soil Vapor Extraction System

		SVE Influent				Blower				Filter		Vapor				Radiation Meter	
		Pressure	Temp	Flow	Dilution	Hour Meter	Effluent Pressure	Temp	Flow	Influent Pressure	Effluent Pressure	Influent P.I.D.	Effluent P.I.D.	Temp	Flow	Outside SVE	Inside SVE
Date	Time	In. H2O	°F	CFM	Yes/No	Hrs.	in. H2O	°F	CFM	in. H2O	in. H2O	VGAC Vessel ppm	VGAC Vessel ppm	Stack °F	Stack CFM	mR/hr Peak	mR/hr Peak
6-7-12	1125	60	80.3	159	NO	11205	-3	198	155	74	71	Ø	Ø	198	155	Ø	Ø
6/29/12	0900	-60	81.9	147	No	11514	3	190	175	-64	-67	Ø	Ø	190	175	Ø	Ø
		25-70	65-75	100-200	NO	N/A	2.0-10	65-75	100-200	N/A	N/A	0-100	0-10	65-75	100-200	0-1	0-1

Note: For pressures measured relative to atmospheric (barometric) pressure, use (-) for vacuum.

Reviewed By: _____ Date: _____

URS Group
Preventative and Corrective Maintenance Log
Modesto Superfund Site

Site Name: Modesto SF
Period: 6/1/12 (month/day/year) to 6/30/12 (month/day/year)

Date	Initials	Hour Meter	Maintenance Performed	LOTO Required	LOTO Description (Where?Why?)	LOCK ON (Date/Time)	Zero Energy Check	LOCK OFF (Date/Time)	LOCK ID (Lock No.)
6/4	GB		Replaced Hose Connection	Y / N			Y / N		
6/18	GB		Replaced Y Strainer	Y / N			Y / N		
6/19	GB		Cleaned all Meters	Y / N			Y / N		
6/20	GB		Cleaned/Inspected Air Stripper	Y / N			Y / N		
6/21	GB		Added Filter to Air Inlet	Y / N			Y / N		
6/25	GB		Utility Power Meter Installed	Y / N			Y / N		

URS Group
Preventative and Corrective Maintenance Log
Modesto Superfund Site

Site Name: Modesto SF

Shutdown Date: 6/4/12 Startup Date: 6/4/12
Shutdown Time: 1630 Startup Time: 1730
Shutdown Purpose or Cause:
Leak discovered in LGAC transfer hose. 1 Hour
Corrective Actions Taken (if shutdown was unplanned):
Shutdown System To Repair Hose
Performed By: GB

Shutdown Date: 6/12/12 Startup Date: ~~7/3/12~~ 7/5/12
Shutdown Time: 10:59 Startup Time: ~~1500~~ 0800
Shutdown Purpose or Cause: System Shutdown - Failed Effluent Pump
Corrective Actions Taken (if shutdown was unplanned):
Removed Pump For Repair / Replacement
Replaced on 7/3/12.
Performed By:

Shutdown Date: 6/18/12 SVE Startup Date: 6/27/12
Shutdown Time: 0800 Startup Time: 0825
Shutdown Purpose or Cause:
Shutdown SVE for replacement of Utility Power Meter
Corrective Actions Taken (if shutdown was unplanned):
Restarted SVE upon completion of Power Meter
Performed By:

Shutdown Date: Startup Date:
Shutdown Time: Startup Time:
Shutdown Purpose or Cause:
Corrective Actions Taken (if shutdown was unplanned):
Performed By:

Reviewed by: Date:

URS Corporation
Modesto Superfund Site
Site Inspections

Task Description	6/7/12	6/14/12	/	/	6/29/12
WEEKLY	Task Performed (Technician Initials or Value)				
Groundwater TreatmentSystem					
Record Process Logs	✓				
Check Blowers and motors for heat, noise, and vibration	✓	S	→	→	→
Check Air Stripper Feed pump/motor (P-2) for heat, noise, and vibration.	✓	Y			
Inspect all process piping for leaks	✓	S			
Inspect all process hoses/fittings for leaks	✓	T			
Check Air Stripper Effluent pump/motor (P-3) for heat, noise, and vibration.	✓	E			
Inspect Sump (Pump as Necessary).	✓	M			
Check Air Stripper sump level site glass. Clean as necessary	✓				
Inspect IX system influent vacuum break for leaks	✓	D			
Clean up compound area	✓	O			
Drain VGAC condensate	✓	W			
Perform autodialer operational check	✓	M	→	→	→
Autodialer battery check	✓				
Perform inspection of EW-1R pipeline	✓				
Inspection of Spill Response Kit	✓				
Inspection of Emergency Response Plan/MSDS Binder	✓				
Soil Vapor Extraction System					
Record Process Logs	✓	✓			✓
Check Blowers and motors for heat, noise, and vibration	✓	✓			✓
Inspect all process piping for leaks	✓	✓			✓
Clean up compound area	✓	✓			✓
Drain VGAC condensate	✓	✓			✓
Perform autodialer operational check	✓	✓			✓
Inspection of Spill Response Kit	✓	✓			✓
Inspection of Emergency Response Plan/MSDS Binder	✓	✓			✓

Task Description	Performed		
MONTHLY	Date	Initials	Reading
Check fire extinguisher	6/7/12	TP	
Inspect EW-1R vault	6/18/12	GB	
Inspect VI Mitigation operations - "Part House"	6/14/12	GB	
Replace Auto Dialer Batteries (if necessary)			
Quarterly			
Interlock Checks Groundwater			
Interlock Checks SVE			
Collect Well Flow read at SVE-02			
Collect Well Flow read at SVE-03			
Collect Well Flow read at SVE-04			
ANNUAL			
Collect Amp radings			
Instrument Calibration			
System Effluent Flow Meter (Performed in June and December)			

Notes:

Reviewed by:_____ Date:_____

Date: 6-7-12
Weather: SUNNY 75
Sampler: JP

SAMPLE COLLECTION RECORD
MODESTO SUPERFUND SITE

Time	Description	Totalizer Reading (gallons)	Flow (gpm)
0945	GWTS Effluent	84512	52

Time	Sample Location - Test Method ->	Sample Description	LOCID	No. of Containers	Container Type	Preservative	pH	Cond	Temp
1055	EFF-0602 E524.2	Effluent-NS MS/MSD	SP-07	~~6~~ 5	40 ml VOA	HCl	8.25	1.03	21.0
1055	EFF-0602 SM2540C	Effluent-NS	SP-07	1	250 ml Poly	None			
1050	EFF-0602 SM5210B	Effluent-NS	SP-07	1	500 ml Poly	None			
1050	EFF-0602 SM2540D	Effluent-NS	SP-07	1	500 ml Poly	None			
GEL 1055	EFF-0602 D5174	Effluent-NS	SP-07	1	1 Liter Poly	HNO3			
	IEXEFF-___	IEX EFF-___		1	1 Liter Poly	HNO3			
	IEX Mid-___ D5174	IEX Mid-___	SP-06	1	1 Liter Poly	HNO3			
	Pre IEX-___ D5174	Pre IEX-___	SP-05	1	1 Liter Poly	HNO3			
	MW-105-NS D5174	Pre IEX-___-DS	SP-05	1	1 Liter Poly	HNO3			
	CRB EFF-___ E524.2	Carbon Effluent-NS	SP-05	3	40 ml VOA	HCl			
	CRB Mid-___ E524.2	Carbon Mid-NS MS/MSD	SP-04	5	40 ml VOA	HCl			
	CRB INF-___ E524.2	Carbon Influent- NS	SP-03	3	40 ml VOA	HCl			
1045	EW-1-0602 E524.2	Influent-NS ~~MS/MSD~~	SP-01	~~6~~ 3	40 ml VOA	HCl	7.56	1.05	20.9
1046	~~EW-1-___ D5174~~ MW101-0602	Influent-~~MS~~FD	SP-01	~~6~~ 3	~~1 Liter Poly~~ VOA	~~HNO3~~ HCl	7.56	1.05	20.9
	MW-403-2Q12 E524.2	FB	System	3	40 ml VOA	HCl			
	MW-304-2Q12 E524.2	TB	TB	3	40 ml VOA	HCl			
	GWTP Stack-___ TO-15	GWTP VGAC Effluent-NS	SP-09	1	400ml Summa	None			
	GWTP Pr GAC-___ TO-15	GWTP VGAC Influent-NS	SP-08	1	400ml Summa	None			
	SVE Stack-___ TO-15	SVE VGAC Effluent-NS	SP-12	1	400ml Summa	None			
	SVE Pre GAC-___ TO-15	SVE VGAC Influent-NS	SP-11	1	400ml Summa	None			
1000	MW-~~101~~ 305-0602	TRIP BLANKS		3	VOA				

Sampler Signature: | Date:

Notes:

FD = Field Duplicate
FB = Field Blank (ambient)
NS = Normal Sample
TB = Trip Blank

Scan COCs to:
URS Attn: Debbie Casagrande (916) 679-2040

Appendix F
Operational History

APPENDIX F
OPERATIONAL HISTORY

This section presents a summary of routine and non-routine operation and maintenance events performed on the remedial treatment systems 01 July 2001 through 30 June 2012. Tables F-1 (a) and F-1(b) lists the event, start and end dates and the type of maintenance (Routine, Nonroutine, Reimbursable, or Optimization) that was performed.

TABLE F-1(a)

OPERATIONAL HISTORY
GROUNDWATER TREATMENT AND SOIL VAPOR EXTRACTION SYSTEM
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

No.	Event	Start Date	End Date	Type of Maintenance
1	Start up of groundwater treatment and soil vapor extraction system	05-Jul-01		Routine
2	Replaced motor starter in 7.5 horsepower transfer pump	07-Jul-01	16-Jul-01	Reimbursable
3	Installed hour meter in SVE system	17-Jul-01	17-Jul-01	Reimbursable
4	Replaced equalization tank float assembly	26-Jul-01	31-Jul-01	Reimbursable
5	Moved vacuum breaker to location after ion exchange vessels	31-Jul-01	31-Jul-01	Reimbursable
6	Repaired faulty pipe joint in SVE system	08-Aug-01	09-Aug-01	Reimbursable
7	Installed duplex bag filters	11-Aug-01	27-Aug-01	Reimbursable
8	Switched 5.0 horsepower and 7.5 horsepower transfer pump	11-Aug-01	27-Aug-01	Reimbursable
9	Replaced ruptured 1/4 inch hose on the liquid GAC vessels	29-Aug-01	30-Aug-01	Reimbursable
10	Programmed duplex bag filters into PLC logic	06-Sep-01	06-Sep-01	Reimbursable
11	Backflushed lead ion exchange vessel	11-Sep-01	11-Sep-01	Routine
12	Carbon change out for SVE vapor GAC	18-Sep-01	27-Sep-01	Routine
13	Bypassed lead ion exchange vessel	20-Sep-01	20-Sep-01	Routine
14	Water chemistry data collected from GWT system	25-Sep-01	25-Sep-01	Reimbursable
15	Repair of PID meter in SVE system	09-Oct-01	26-Oct-01	Reimbursable
16	Cabon change out for GWT vapor GAC	23-Oct-01	23-Oct-01	Routine
17	Replaced anti-scalant with Redux-300	02-Nov-01	02-Nov-01	Routine
18	Installed pulsation damper after filter #2	07-Nov-01	07-Nov-01	Reimbursable
19	Carbon change out for SVE vapor GAC	05-Dec-01	19-Dec-01	Routine
20	Installed polishing ion exchange vessel using virgin resin. Sixty (60) percent of flow through ion exchange and 40 percent bypassed.	13-Dec-01	13-Dec-01	Routine
21	Cabon change out for GWT vapor GAC	19-Dec-01	19-Dec-01	Routine
22	SVE Vapor Carbon Changeout	06-Feb-02	06-Feb-02	Routine
23	Air Stripper Annual Inspection. No abnormal conditions were reported	28-Mar-02	28-Mar-02	Routine
24	Installed air conditioning unit inside SVE treatment system trailer.	04-Jun-02	04-Jun-02	Optimization
25	Optimization of GWT system 1) Switched location of vapor GAC and liquid GAC vessel. 2) Replace filter unit with 10-micron bag filter after air stripper. 3) Insulated vapor GAC vessel. 4) Added two additional phone lines. 5) Addition of floor drains. 6) Installed cooling/air conditioning unit in GWT and SVE control panel.	11-Jun-02	14-Jun-02	Optimization
26	Carbon change out for GWT vapor GAC	14-Jun-02	14-Jun-02	Routine
27	Removed and replaced leaking hoses in GWT system. Bag Filter 2 to GAC-2 manifold and GAC-3 to effluent manifold.	26-Jun-02	26-Jun-02	Reimbursable
29	SVE Vapor Carbon Changeout	17-Jul-02	17-Jul-02	Routine
30	GWT Liquid Carbon Changeouts (Lead and Lag Vessels)	12-Oct-02	12-Oct-02	Routine
31	SVE Vapor Carbon Changeout	13-Dec-02	13-Dec-02	Routine
32	Cabon Changeout for GWT Vapor GAC	23-Apr-03	23-Apr-03	Routine
33	GWT Ion Exchange Changeout	23-Apr-03	23-Apr-03	Routine
34	Replaced P-2 Motor Starter. Fixed EQ Tank Level Indicators	07-May-03	07-May-03	Non Routine
35	Calibrated pH meter and repaired MiniRAE PID	07-Jul-03	07-Jul-03	Non Routine
36	Emptied and cleaned chemical dry tank, and cleaned CMI pump.	17-Jul-03	17-Jul-03	Non Routine

TABLE F-1(a)

OPERATIONAL HISTORY
GROUNDWATER TREATMENT AND SOIL VAPOR EXTRACTION SYSTEM
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

No.	Event	Start Date	End Date	Type of Maintenance
37	SVE Vapor Carbon changeout.	13-Aug-03	13-Aug-03	Routine
38	Exhaust fan not working. Fan was removed and replaced.	04-Sep-03	25-Sep-03	Non Routine
39	Disassembled, inspected and cleaned P-2.	11-Sep-03	11-Sep-03	Non Routine
40	Redeveloped EW-1 and replaced the EW-1 submersible pump	17-Mar-04	06-Apr-04	Non Routine
41	Replaced influent and effluent totalizers.	07-Apr-04	07-Apr-04	Non Routine
42	Replaced broken lead GAC vessel camlock fitting	16-May-04	17-May-04	Non Routine
43	Removed lag GAC vessel from service due to leak in vessel	17-May-04	17-May-04	Non Routine
44	GWT Liquid Carbon Changeouts (Lead Vessel)	03-Jun-04	03-Jun-04	Routine
45	GWT Ion Exchange Changeout (Lead Vessel)	18-Jun-04	18-Jun-04	Routine
46	Installed refurbished lag GAC vessel with fresh carbon	08-Oct-04	08-Oct-04	Non Routine
47	GWT system shutdown because of a high current alarm. The system was left off line and not repaired as requested by USACE	04-Nov-04	04-Nov-04	Non Routine
48	Replaced GWT system effluent flow meter (new baseline - 870 gallons), calibrated digital display meter.	09-Jun-05	09-Jun-05	Non Routine
49	Repaired air conditioning unit in SVE trailer	02-Jun-05	28-Jun-05	Non Routine
50	Repaired vent fan unit in GWTS trailer.	21-Jul-05	28-Jul-05	Non Routine
51	SVE System GAC changeout.	03-Nov-05	03-Nov-05	Routine
52	Drill and developed extraction well EW-1R, located adjacent to MW-3. This well replaces failed extraction well EW-1	21-Jun-06	28-Jun-06	Non Routine
53	Start up of groundwater treatment system with replacement well EW-1R	24-Aug-06	24-Aug-06	Non Routine
54	Installed new digital display for effluent flow totalizer on GWTS.	22-Sep-06	22-Sep-06	Non Routine
55	Replaced effluent sample port on the GWTS.	20-Oct-06	20-Oct-06	Non Routine
56	Replaced Filters F1 and F2 on the GWTS.	24-Oct-06	24-Oct-06	Routine
57	Replaced bag filters on GWTS	13-Jan-07	13-Jan-07	Routine
58	Replaced hoses mid-GAC on GWTS	22-Jan-07	22-Jan-07	Non Routine
59	Replaced piping on SVE (post-stack)	12-Mar-07	16-Apr-07	Non Routine
60	Changed ion exchange resin filters on GWTS	25-Jun-07	02-Jul-07	Non Routine
61	Repaired SVE control system	19-Jul-07	31-Jul-07	Non Routine
62	Replaced hour meter	27-Aug-07	27-Aug-07	Non Routine
63	Replaced detective float switch	05-Sep-07	05-Sep-07	Non Routine
64	Replaced Influent bag filters for GWTS	22-Oct-07	22-Oct-07	Routine
65	Pressure sensors cleaned and replaced on GWTS	23-Oct-07	23-Oct-07	Non Routine
66	GWTS Carbon change out (water and vapor phase)	19-Nov-07	19-Nov-07	Routine
67	Replaced filter socks on 3 filter vessels	14-Mar-08	14-Mar-08	Routine
68	Replaced the broken effluent valve	05-Apr-08	07-Apr-08	Non Routine
69	Replaced gasket on GAC vessel #1	16-Aug-08	16-Aug-08	Routine
70	Replaced gasket on GAC vessel #1	21-Aug-08	21-Aug-08	Routine
71	SVE System Carbon change-out	05-Oct-08	5-Oct-08	Routine
72	Replaced filter bags in 3 canisters on the GWTS.	24-Feb-09	24-Feb-09	Routine
73	Replaced air stripper sump pump flow meter on GWTS.	13-Mar-09	13-Mar-09	Non-routine
74	Replace PVC pipe with iron pipe on SVE effluent/blower.	19-Mar-09	19-Mar-09	Non-routine
75	Changed out carbon in the GAC filter vessels (GWTS).	25-Jun-09	26-Jun-09	Routine
76	Replace 2" ball valve at groundwater treatment system (GWTS).	25-Sep-09	02-Oct-09	Non-routine

TABLE F-1(a)

OPERATIONAL HISTORY
GROUNDWATER TREATMENT AND SOIL VAPOR EXTRACTION SYSTEM
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

No.	Event	Start Date	End Date	Type of Maintenance
77	Replace broken 2" ball valve, re-piped effluent piping system, added piping reinforcement (GWTS).	15-Oct-09	16-Oct-09	Non-routine
78	Replace broken one-way ball check valve (GWTS).	17-Nov-09	19-Nov-09	Non-routine
79	Repaired a loose wire at the GWTS secondary containment alarm system.	20-Jan-10	20-Jan-10	Non-routine

Notes:

GAC - Granular Activate Carbon

GWTS - Groundwater Treatment System

PID - Photoionization Detector

PLC - Programmable Logic Controller

SVE - Soil Vapor Extraction

TABLE F-1(b)OPERATIONAL HISTORYGROUNDWATER TREATMENT AND SOIL VAPOR EXTRACTION SYSTEMMODESTO SUPERFUND SITEMODESTO, CALIFORNIA(Page 1 of 1)

No.	Event	Start Date	End Date	Type of Maintenance
1	URS Corporation Inc. begins operation and maintenance activities	01-Mar-10		
2	Reprogrammed Emergency call-out system with URS contact information	01-Mar-10	01-Mar-10	Routine
3	Installed a vacuum break anti-syphon valve at effluent of the LGAC vessels.	18-Mar-10	18-Mar-10	Routine
4	Performed a backwash of the primary LGAC vessel	01-Apr-10	01-Apr-10	Routine
5	Performed a backwash of the secondary LGAC vessel	29-Apr-10	29-Apr-10	Routine
6	Replaced a dry disconnect coupling at the effluent of the primary IX vessel.	27-May-10	27-May-10	Routine
7	Calibrated and certified the sewer outfall flow meter	09-Jun-10	09-Jun-10	Reimbursable
8	Installed a automatic composite sampler at GWTS effluent.	20-Jul-10	20-Jul-10	Reimbursable
9	Performed a change-out of the GWTS Air Stripper and SVE system VGAC.	19-Aug-10	19-Aug-10	Routine
10	Performed a backwash of the primary LGAC vessel	21-Oct-10	21-Oct-10	Routine
11	Tested GWTS interlock controls.	03-Nov-10	03-Nov-10	Routine
12	Tested SVE system interlock controls	03-Nov-10	03-Nov-10	Routine
13	Performed a change-out of the resin in the primary IX system vessel.	09-Dec-10	09-Dec-10	Routine
14	Calibrated and certified the sewer outfall flow meter	09-Dec-10	09-Dec-10	Reimbursable
15	Performed a change-out of the resin in the primary and secondary IX system vessel.	24-Feb-11	24-Feb-11	Routine
16	Calibrated the pressure sensors on the groundwater treatment system bag filters.	24-Feb-11	24-Feb-11	Routine
17	Performed a backwash of the primary LGAC vessel	26-May-11	26-May-11	Routine
18	Calibrated and certified the sewer outfall flow meter	04-Jun-11	04-Jun-11	Reimbursable
19	Replaced sequestrant relay and cleared chemical blockage in pump and tubing	06-Sep-11	06-Sep-11	Routine
20	Replaced all tubing on sequestrant delivery system. Disassembled chemical dosing pump. Cleaned out pump and tank and ressembled. Filtered existing sequestrant product for reuse.	08-Sep-11	08-Sep-11	Routine
21	Replaced gasket on primay LGAC.	28-Nov-11	28-Nov-11	Routine
22	Performed a change-out of the resin in the primary IX system vessel.	15-Dec-11	15-Dec-11	Routine
23	Calibrated and certified the sewer outfall flow meter	21-Dec-11	21-Dec-11	Routine
24	Inspected IX resin vessels and installed new lid gaskets.	16-Feb-12	16-Feb-12	Routine
25	New stainless steel float switches installed in influent equalization tank.	16-Mar-12	20-Mar-12	Routine
26	Performed a change-out of the resin in the secondary IX system vessel.	17-May-12	17-May-12	Reimbersable
27	Performed interlock alarm testing for proper functionality.	24-May-12	24-May-12	Routine
28	Replaced High Level Float Switch in Influent Equalization Tank	30-May-12	30-May-12	Routine
29	Replaced all IX vessel hose connections.	14-Jun-12	14-Jun-12	Routine
30	Replaced effluent Y-strainer.	18-Jun-12	18-Jun-12	Routine
31	Cleaned out all flow indicators and meters.	19-Jun-12	19-Jun-12	Routine
32	Disassembly and cleaning of air stripper.	20-Jun-12	20-Jun-12	Routine
33	Added air filter element to external air stripper inlet port.	21-Jun-12	21-Jun-12	Routine
34	Utility power meter replaced to separate usage billing for SVE unit.	25-Jun-12	25-Jun-12	Reimbursable

Notes:

LGAC - Liquid Phase Granular Activated Carbon

VGAC - Vapor Phase Granular Activated Carbon

SVE - Soil Vapor Extraction

GWTS - Groundwater Treatment System

IX - Ion Exchange

Appendix G
Historical Well Construction, Analytical, and Mass Removed Data

Table G-1. Well Construction Details

Well No.	Casing Diameter (inches)	Boring Depth (ft bgs)	Screen Interval (ft bgs)	Top of Casing Elevation (ft msl)[a]
Groundwater Monitoring Wells				
MW-01A	4	101	91-101	91.61
MW-02A	4	96	86-96	90.88[b]
MW-03A	4	94	84-94	91.49[b]
MW-04A	4	89	78-88	91.13
MW-04B	2	154	144-154	91.11
MW-04C	2	237	227-237	91.25
MW-05A	2	90	60-90	90.74
MW-06A	2	90	60-90	89.72[b]
MW-07A	2	90	60-90	91.24
MW-08A	2	90	60-90	91.44
MW-09A	2	155	144-154	91.20[b]
MW-09B		155	144-154	91.19
MW-10A	2	91	60-89	90.48
MW-10B	2	160	153-163	90.21
MW-10C	2	230	220-230	90.5
MW-11A	2	92	70-90	89.91
MW-12A	2	99	87-97	91.15[b]
MW-13A	2	99	77-97	89.27
MW-14A	2	92	70-90	89.79
MW-15A	2	102	80-100	91.76
MW-16A	2	86	76-86	91.89
MW-16B	2	139	129-139	91.82
MW-16C	2	236	226-236	91.64
MW-17A	2	88	77-87	89.64
MW-17B	2	140	129-139	89.69
MW-17C	2	232	222-232	89.76
MW-18A	2	66	56-66	90.14
MW-19A	2	101	91-101	91.22
MW-19B1	2	147	137-147	91.08
MW-20A	2	86	76-86	90.7
MW-20B		162	152-162	90.65
MW-20C		235	225-235	90.79
MW-21A	2	102	90-100	91.75[c]
MW-22A	2	62	50-60	91.69[c]
MW-23A	2	102	89-99	90.26[c]
MW-24B	2	157	145-155	92.93[c]
MW-25B	2	157	145-155	91.78[c]
MW-26B	2	157	145-155	89.71[c]
MW-27B	2	157	145-155	89.34[c]
MW-28B	2	157	145-155	89.21[c]
MW-29B	2	157	145-155	89.74[c]
EW-01	5	115	65-95	89.54
EW-01R	6	120	59-109	90.65[b]

Table G-1. (Continued)

Well No.	Casing Diameter (inches)	Boring Depth (ft bgs)	Screen Interval (ft bgs)	Top of Casing Elevation (ft msl)[a]
Soil Vapor Wells				
SVE-01	2	40	18-38	89.84
SVE-02	2	13	7-12	91.36
SVE-03	2	39	13-23	91.38
SVE-04	2	39	28-38	91.38
DP-1				91.44
DP-1A	1	40	28-29	--
DP-1B	1	40	38-39	--
DP-2			-	91.27
DP-2A	1	40	15-16	--
DP-2B	1	40	34-35	--
DP-3			-	91.86
DP-3A	1	40	19-20	--
DP-3B	1	40	29-30	--
DP-4			-	91.92
DP-4A	1	40	23-24	--
DP-4B	1	40	38.5-39.5	--
DP-5			-	91.27
DP-5A	2	37	15-16	--
DP-5B	2	37	34-35	--
DP-6			-	91.69
DP-6A	2	36	15-16	--
DP-6B	2	36	34-35	--

[a] Wells resurveyed in February 2003.

[b] Wells resurveyed in September 2006.

[c] Wells installed and surveyed in September 2011.

bgs = below ground surface

ft = feet

msl = mean sea level

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-1A	101	91 - 101	89.14	Apr-00[a]	NA	50.62
			89.14	Aug-00[a]	NA	50.34
			89.14	Nov-00[a]	NA	48.92
			89.14	Feb-01[a]	NA	50.28
			89.14	Aug-01	42.71	46.43
			89.14	Oct-01	44.55	44.59
			89.14	Nov-01	44.41	44.73
			89.14	Feb-02	43.17	45.97
			89.14	May-02	42.44	46.70
			89.14	Aug-02	45.60	43.54
			89.14	Nov-02	46.00	43.14
			89.14	Feb-03	44.95	44.19
			91.611	May-03	44.15	47.46
			91.61	Aug-03	45.55	46.06
			91.61	Nov-03	46.15	45.46
			91.61	Feb-04	44.70	46.91
			91.61	May-04	43.95	47.66
			91.61	Aug-04	46.20	45.41
			91.61	Nov-04	45.70	45.91
			91.61	Feb-05	44.30	47.31
			91.61	May-05	42.60	49.01
			91.61	Aug-05	43.40	48.21
			91.61	Nov-05	44.40	47.21
			91.61	Feb-06	43.04	48.57
			91.61	May-06	41.65	49.96
			91.61	Aug-06	42.53	49.08
			91.61	Aug-06[b]	43.07	48.54
			91.61	Nov-06	43.66	47.95
			91.61	Feb-07	42.34	49.27
			91.61	May-07	40.94	50.67
			91.61	Aug-07	43.25	48.36
			91.61	Nov-07	43.85	47.76
			91.61	Feb-08	42.73	48.88
			91.61	May-08	42.10	49.51
			91.61	Aug-08	43.45	48.16
			91.61	Dec-08	44.28	47.33
			91.61	Feb-09	43.71	47.90
			91.61	Jun-09	43.88	47.73
			91.61	Aug-09	49.45	42.16
			91.61	Nov-09	46.45	45.16
MW-2A	96	86 - 96	88.63	Apr-00[a]	NA	50.48
			88.63	Aug-00[a]	NA	50.19
			88.63	Nov-00[a]	NA	48.80
			88.63	Feb-01[a]	NA	50.32
			88.63	Aug-01	42.00	46.63
			88.63	Oct-01	44.30	44.33
			88.63	Nov-01	44.20	44.43
			88.63	Feb-02	42.77	45.86
			88.63	May-02	42.10	46.53
			88.63	Aug-02	45.50	43.13
			88.63	Nov-02	45.70	42.93
			88.63	Feb-03	44.60	44.03
			90.911	May-03	43.75	47.16
			90.91	Aug-03	45.10	45.81
			90.91	Nov-03	45.65	45.26
			90.91	Feb-04	44.13	46.78

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
			90.91	May-04	43.10	47.81
			90.91	Aug-04	45.81	45.10
			90.91	Nov-04	45.14	45.77
			90.91	Feb-05	43.43	47.48
			90.91	May-05	41.93	48.98
			90.91	Aug-05	42.90	48.01
			90.91	Nov-05	43.75	47.16
			90.91	Feb-06	42.25	48.66
			90.91	May-06	40.97	49.94
			90.882	Aug-06	41.52	49.36
			90.88	Aug-06[b]	44.20	46.68
			90.88	Nov-06	42.90	47.98
			90.88	Feb-07	41.61	49.27
			90.88	May-07	40.20	50.68
			90.88	Aug-07	42.52	48.36
			90.88	Nov-07	43.10	47.78
			90.88	Feb-08	42.01	48.87
			90.88	May-08	41.35	49.53
			90.88	Aug-08	42.65	48.23
			90.88	Dec-08	43.48	47.40
			90.88	Feb-09	42.94	47.94
			90.88	Jun-09	43.25	47.63
			90.88	Aug-09	44.63	46.25
			90.88	Nov-09	45.57	45.31
MW-3A	94	84 - 94	89.42	Apr-00[a]	NA	50.75
			88.42	Aug-00[a]	NA	50.12
			89.42	Nov-00[a]	NA	48.62
			88.42	Feb-01[a]	NA	50.22
			89.42	Aug-01	43.00	46.42
			88.42	Oct-01	45.35	44.07
			89.42	Nov-01	44.09	45.33
			88.42	Feb-02	43.98	45.44
			89.42	May-02	43.14	46.28
			88.42	Aug-02	46.55	42.87
			89.42	Nov-02	46.70	42.72
			88.42	Feb-03	45.80	43.62
			91.591	May-03	44.10	47.49
			91.59	Aug-03	46.25	45.34
			91.59	Nov-03	47.95	43.64
			91.59	Feb-04	45.25	46.34
			91.59	May-04	44.35	47.24
			91.59	Aug-04	47.05	44.54
			91.59	Nov-04	46.52	45.07
			91.59	Feb-05	44.85	46.74
			91.59	May-05	43.20	48.39
			91.59	Aug-05	44.27	47.32
			91.59	Nov-05	46.25	45.34
			91.59	Feb-06	44.65	46.94
			91.59	May-06	43.25	48.34
			91.492	Aug-06	43.82	47.67
			91.49	Aug-06[b]	45.64	45.85
			91.49	Nov-06	46.61	44.88
			91.49	Feb-07	45.91	45.58
			91.49	May-07	41.19	50.30
			91.49	Aug-07	46.53	44.96
			91.49	Nov-07	47.2	44.29
			91.49	Feb-08	46.1	45.39
			91.49	May-08	45.25	46.24
			91.49	Aug-08	46.6	44.89

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
			91.49	Dec-08	46.36	45.13
			91.49	Feb-09	46.18	45.31
			91.49	Jun-09	46.28	45.21
			91.49	Aug-09	47.73	43.76
			91.49	Nov-09	48.5	42.99
MW-4A	89	78 - 88	88.66	Apr-00[a]	NA	50.15
			88.66	Aug-00[a]	NA	50.01
			88.66	Nov-00[a]	NA	48.11
			88.66	Feb-01[a]	NA	49.74
			88.66	Aug-01	43.50	45.16
			88.66	Oct-01	44.11	44.55
			88.66	Nov-01	44.46	44.20
			88.66	Feb-02	43.21	45.45
			88.66	May-02	42.13	46.53
			88.66	Aug-02	44.80	43.86
			88.66	Nov-02	45.50	43.16
			88.66	Feb-03	44.35	44.31
			91.131	May-03	44.05	47.08
			91.13	Aug-03	45.10	46.03
			91.13	Nov-03	46.25	44.88
			91.13	Feb-04	44.85	46.28
			91.13	May-04	44.25	46.88
			91.13	Aug-04	45.90	45.23
			91.13	Nov-04	46.32	44.81
			91.13	Feb-05	44.68	46.45
			91.13	May-05	42.90	48.23
			91.13	Aug-05	43.75	47.38
			91.13	Nov-05	44.80	46.33
			91.13	Feb-06	43.36	47.77
			91.13	May-06	41.80	49.33
			91.13	Aug-06	42.34	48.79
			91.13	Aug-06[b]	43.17	47.96
			91.13	Nov-06	44.05	47.08
			91.13	Feb-07	43.03	48.10
			91.13	May-07	40.83	50.30
			91.13	Aug-07	43.53	47.60
			91.13	Nov-07	44.39	46.74
			91.13	Feb-08	43.30	47.83
			91.13	May-08	42.36	48.77
			91.13	Aug-08	43.64	47.49
			91.13	Dec-08	44.79	46.34
			91.13	Feb-09	44.21	46.92
			91.13	Jun-09	44.18	46.95
			91.13	Aug-09	45.62	45.51
			91.13	Nov-09	46.89	44.24
MW-4B	154	144-154	91.11	Dec-08	44.73	46.38
			91.11	Feb-09	43.78	47.33
			91.11	Jun-09	44.80	46.31
			91.11	Aug-09	46.72	44.39
			91.11	Nov-09	46.73	44.38
MW-4C	237	227-237	91.25	Dec-08	44.35	46.90
			91.25	Feb-09	42.76	48.49
			91.25	Jun-09	49.75	41.50
			91.25	Aug-09	53.94	37.31
			91.25	Nov-09	46.00	45.25

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-5A	90	60 - 90	90.61	Apr-00[a]	NA	50.39
			90.61	Aug-00[a]	NA	50.45
			90.61	Nov-00[a]	NA	48.41
			90.61	Feb-01[a]	NA	50.11
			90.61	Aug-01	42.44	48.17
			90.61	Oct-01	43.75	46.86
			90.61	Nov-01	43.86	46.75
			90.61	Feb-02	42.65	47.96
			90.61	May-02	41.62	48.99
			90.61	Aug-02	44.60	46.01
			90.61	Nov-02	45.60	45.01
			90.61	Feb-03	44.35	46.26
			90.741	May-03	43.30	47.44
			90.74	Aug-03	44.45	46.29
			90.74	Nov-03	45.55	45.19
			90.74	Feb-04	44.13	46.61
			90.74	May-04	43.10	47.64
			90.74	Aug-04	45.12	45.62
			90.74	Nov-04	45.25	45.49
			90.74	Feb-05	43.55	47.19
			90.74	May-05	41.93	48.81
			90.74	Aug-05	42.70	48.04
			90.74	Nov-05	43.75	46.99
			90.74	Feb-06	42.36	48.38
			90.74	May-06	40.90	49.84
			90.74	Aug-06	41.47	49.27
			90.74	Aug-06[b]	42.07	48.67
			90.74	Nov-06	43.15	47.59
			90.74	Feb-07	41.95	48.79
			90.74	May-07	40.21	50.53
			90.74	Aug-07	42.55	48.19
			90.74	Nov-07	43.35	47.39
			90.74	Feb-08	42.34	48.40
			90.74	May-08	41.50	49.24
			90.74	Aug-08	42.68	48.06
			90.74	Dec-08	43.81	46.93
			90.74	Feb-09	43.33	47.41
			90.74	Jun-09	43.19	47.55
			90.74	Aug-09	44.68	46.06
			90.74	Nov-09	45.97	44.77
MW-6A	90	60 - 90	89.98	Apr-00[a]	NA	50.23
			89.98	Aug-00[a]	NA	50.21
			89.98	Nov-00[a]	NA	47.96
			89.98	Feb-01[a]	NA	49.78
			89.98	Aug-01	41.30	48.68
			89.98	Oct-01	42.90	47.08
			89.98	Nov-01	43.48	46.50
			89.98	Feb-02	41.98	48.00
			89.98	May-02	40.87	49.11
			89.98	Aug-02	44.20	45.78
			89.98	Nov-02	44.50	45.48
			89.98	Feb-03	43.65	46.33
			89.481	May-03	42.60	46.88
			89.48	Aug-03	44.10	45.38
			89.48	Nov-03	45.22	44.26

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
			89.48	Feb-04	43.45	46.03
			89.48	May-04	42.85	46.63
			89.48	Aug-04	44.62	44.86
			89.48	Nov-04	45.25	44.23
			89.48	Feb-05	43.60	45.88
			89.48	May-05	41.81	47.67
			89.48	Aug-05	42.65	46.83
			89.48	Nov-05	43.78	45.70
			89.48	Feb-06	42.35	47.13
			89.48	May-06	40.71	48.77
			89.722	Aug-06	40.86	48.86
			89.72	Aug-06[b]	41.16	48.56
			89.72	Nov-06	42.20	47.52
			89.72	Feb-07	40.94	48.78
			89.72	May-07	39.52	50.20
			89.72	Aug-07	41.61	48.11
			89.72	Nov-07	42.56	47.16
			89.72	Feb-08	41.42	48.30
			89.72	May-08	40.44	49.28
			89.72	Aug-08	41.75	47.97
			89.72	Dec-08	42.98	46.74
			89.72	Feb-09	42.32	47.40
			89.72	Jun-09	42.23	47.49
			89.72	Aug-09	43.61	46.11
			89.72	Nov-09	44.89	44.83
MW-7A	90	60 - 90	91.23	Apr-00[a]	NA	50.86
			91.23	Aug-00[a]	NA	51.06
			91.23	Nov-00[a]	NA	49.24
			91.23	Feb-01[a]	NA	50.73
			91.23	Aug-01	41.33	49.90
			91.23	Oct-01	42.72	48.51
			91.23	Nov-01	43.07	48.16
			91.23	Feb-02	41.96	49.27
			91.23	May-02	40.67	50.56
			91.23	Aug-02	43.70	47.53
			91.23	Nov-02	44.60	46.63
			91.23	Feb-03	43.60	47.63
			91.241	May-03	42.65	48.59
			91.24	Aug-03	43.85	47.39
			91.24	Nov-03	45.05	46.19
			91.24	Feb-04	43.70	47.54
			91.24	May-04	42.80	48.44
			91.24	Aug-04	44.30	46.94
			91.24	Nov-04	44.98	46.26
			91.24	Feb-05	43.38	47.86
			91.24	May-05	41.82	49.42
			91.24	Aug-05	42.35	48.89
			91.24	Nov-05	43.40	47.84
			91.24	Feb-06	42.17	49.07
			91.24	May-06	40.82	50.42
			91.24	Aug-06	41.31	49.93
			91.24	Aug-06[b]	41.50	49.74
			91.24	Nov-06	42.53	48.71
			91.24	Feb-07	41.46	49.78
			91.24	May-07	40.21	51.03
			91.24	Aug-07	41.77	49.47

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
			91.24	Nov-07	42.63	48.61
			91.24	Feb-08	41.82	49.42
			91.24	May-08	40.96	50.28
			91.24	Aug-08	41.98	49.26
			91.24	Dec-08	43.15	48.09
			91.24	Feb-09	NA	NA
			91.24	Jun-09	42.65	48.59
			91.24	Aug-09	43.92	47.32
			91.24	Nov-09	45.29	45.95
MW-8A	90	60 - 90	91.53	Apr-00	NA	50.52
			91.53	Aug-00	NA	50.42
			91.53	Nov-00	NA	48.54
			91.53	Feb-01	NA	50.25
			91.53	Aug-01	42.41	49.12
			91.53	Oct-01	45.60	45.93
			91.53	Nov-01	45.68	45.85
			91.53	Feb-02	44.36	47.17
			91.53	May-02	43.31	48.22
			91.53	Aug-02	46.20	45.33
			91.53	Nov-02	47.50	44.03
			91.53	Feb-03	45.65	45.88
			91.441	May-03	44.40	47.04
			91.44	Aug-03	45.40	46.04
			91.44	Nov-03	46.57	44.87
			91.44	Feb-04	45.22	46.22
			91.44	May-04	43.85	47.59
			91.44	Aug-04	46.15	45.29
			91.44	Nov-04	45.97	45.47
			91.44	Feb-05	44.35	47.09
			91.44	May-05	42.75	48.69
			91.44	Aug-05	43.39	48.05
			91.44	Nov-05	44.47	46.97
			91.44	Feb-06	43.14	48.30
			91.44	May-06	41.61	49.83
			91.44	Aug-06	42.21	49.23
			91.44	Aug-06	42.94	48.50
			91.44	Nov-06	44.03	47.41
			91.44	Feb-07	42.88	48.56
			91.44	May-07	40.96	50.48
			91.44	Aug-07	43.43	48.01
			91.44	Nov-07	44.28	47.16
			91.44	Feb-08	43.32	48.12
			91.44	May-08	42.41	49.03
			91.44	Aug-08	43.53	47.91
			91.44	Dec-08	44.73	46.71
			91.44	Feb-09	44.28	47.16
			91.44	Jun-09	44.08	47.36
			91.44	Aug-09	45.55	45.89
			91.44	Nov-09	46.91	44.53
MW-9B	155	144 - 154	91.19	Apr-00[a]	NA	50.24
			91.19	Aug-00[a]	NA	48.38
			91.19	Nov-00[a]	NA	47.72
			91.19	Feb-01[a]	NA	50.05
			91.19	Aug-01	44.04	47.15
			91.19	Oct-01	45.17	46.02

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
			91.19	Nov-01	44.76	46.43
			91.19	Feb-02	42.64	48.55
			91.19	May-02	42.72	48.47
			91.19	Aug-02	47.05	44.14
			91.19	Nov-02	45.90	45.29
			91.19	Feb-03	44.45	46.74
			91.181	May-03	44.20	46.98
			91.18	Aug-03	47.00	44.18
			91.18	Nov-03	46.55	44.63
			91.18	Feb-04	44.37	46.81
			91.18	May-04	44.55	46.63
			91.18	Aug-04	47.25	43.93
			91.18	Nov-04	46.42	44.76
			91.18	Feb-05	44.45	46.73
			91.18	May-05	43.15	48.03
			91.18	Aug-05	45.25	45.93
			91.18	Nov-05	45.40	45.78
			91.18	Feb-06	43.31	47.87
			91.18	May-06	42.30	48.88
			91.202	Aug-06	43.51	47.69
			91.2	Aug-06[b]	43.98	47.22
			91.20	Nov-06	43.80	47.40
			91.20	Feb-07	42.14	49.06
			91.20	May-07	40.52	50.68
			91.20	Aug-07	44.37	46.83
			91.20	Nov-07	44.05	47.15
			91.20	Feb-08	42.45	48.75
			91.20	May-08	42.54	48.66
			91.20	Aug-08	44.50	46.70
			91.20	Dec-08	44.47	46.73
			91.20	Feb-09	43.62	47.58
			91.20	Jun-09	44.52	46.68
			91.20	Aug-09	46.54	44.66
			91.20	Nov-09	46.52	44.68
MW-10A	91	60 - 89	90.47	Apr-00[a]	NA	49.66
			90.47	Aug-00[a]	NA	50.67
			90.47	Nov-00[a]	NA	46.94
			90.47	Feb-01[a]	NA	49.03
			90.47	Aug-01	42.54	47.93
			90.47	Oct-01	44.19	46.28
			90.47	Nov-01	44.51	45.96
			90.47	Feb-02	42.93	47.54
			90.47	May-02	41.86	48.61
			90.47	Aug-02	45.20	45.27
			90.47	Nov-02	46.00	44.47
			90.47	Feb-03	44.70	45.77
			90.481	May-03	43.55	46.93
			90.48	Aug-03	45.20	45.28
			90.48	Nov-03	46.35	44.13
			90.48	Feb-04	44.70	45.78
			90.48	May-04	43.85	46.63
			90.48	Aug-04	45.81	44.67
			90.48	Nov-04	46.48	44.00
			90.48	Feb-05	44.74	45.74
			90.48	May-05	42.87	47.61
			90.48	Aug-05	43.90	46.58

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
			90.48	Nov-05	45.07	45.41
			90.48	Feb-06	43.45	47.03
			90.48	May-06	41.70	48.78
			90.48	Aug-06	42.33	48.15
			90.48	Aug-06[b]	42.59	47.89
			90.48	Nov-06	43.51	46.97
			90.48	Feb-07	42.21	48.27
			90.48	May-07	40.81	49.67
			90.48	Aug-07	43.03	47.45
			90.48	Nov-07	43.96	46.52
			90.48	Feb-08	42.70	47.78
			90.48	May-08	41.77	48.71
			90.48	Aug-08	43.24	47.24
			90.48	Dec-08	44.40	46.08
			90.48	Feb-09	43.69	46.79
			90.48	Jun-09	43.55	46.93
			90.48	Aug-09	45.02	45.46
			90.48	Nov-09	46.34	44.14
MW-10B	163	153-163	90.21	Dec-08	44.12	46.09
			90.21	Feb-09	43.18	47.03
			90.21	Jun-09	43.90	46.31
			90.21	Aug-09	45.81	44.40
			90.21	Nov-09	46.07	44.14
			90.21	Mar-10	44.01	46.20
MW-10C	230	220-230	90.5	Dec-08	44.13	46.37
			90.5	Feb-09	42.50	48.00
			90.5	Jun-09	48.50	42.00
			90.5	Aug-09	53.44	37.06
			90.5	Nov-09	45.75	44.75
MW-11A	92	70 - 90	89.91	Apr-00[a]	NA	50.83
			89.91	Aug-00[a]	NA	50.64
			89.91	Nov-00[a]	NA	49.38
			89.91	Feb-01[a]	NA	50.93
			89.91	Aug-01	40.32	49.59
			89.91	Oct-01	41.50	48.41
			89.91	Nov-01	43.12	46.79
			89.91	Feb-02	40.15	49.76
			89.91	May-02	39.56	50.35
			89.91	Aug-02	42.60	47.31
			89.91	Nov-02	43.90	46.01
			89.91	Feb-03	41.90	48.01
			89.911	May-03	41.15	48.76
			89.91	Aug-03	42.65	47.26
			89.91	Nov-03	43.52	46.39
			89.91	Feb-04	42.00	47.91
			89.91	May-04	41.35	48.56
			89.91	Aug-04	42.86	47.05
			89.91	Nov-04	43.35	46.56
			89.91	Feb-05	41.75	48.16
			89.91	May-05	40.22	49.69
			89.91	Aug-05	40.85	49.06
			89.91	Nov-05	41.80	48.11
			89.91	Feb-06	40.53	49.38
			89.91	May-06	39.27	50.64

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
			89.91	Aug-06	39.86	50.05
			89.91	Aug-06[b]	40.05	49.86
			89.91	Nov-06	40.90	49.01
			89.91	Feb-07	39.79	50.12
			89.91	May-07	38.74	51.17
			89.91	Aug-07	40.34	49.57
			89.91	Nov-07	41.07	48.84
			89.91	Feb-08	40.11	49.80
			89.91	May-08	39.38	50.53
			89.91	Aug-08	40.47	49.44
			89.91	Dec-08	41.47	48.44
			89.91	Feb-09	41.01	48.90
			89.91	Jun-09	41.12	48.79
			89.91	Aug-09	42.44	47.47
			89.91	Nov-09	43.52	46.39
MW-12A	99	87 - 97	91.17	Apr-00[a]	NA	50.01
			91.17	Aug-00[a]	NA	49.45
			91.17	Nov-00[a]	NA	47.28
			91.17	Feb-01[a]	NA	49.51
			91.17	Aug-01	43.18	47.99
			91.17	Oct-01	44.63	46.54
			91.17	Nov-01	44.86	46.31
			91.17	Feb-02	43.21	47.96
			91.17	May-02	42.04	49.13
			91.17	Aug-02	46.10	45.07
			91.17	Nov-02	46.30	44.87
			91.17	Feb-03	45.05	46.12
			91.151	May-03	44.50	46.65
			91.15	Aug-03	46.20	44.95
			91.15	Nov-03	46.88	44.27
			91.15	Feb-04	44.95	46.20
			91.15	May-04	44.50	46.65
			91.15	Aug-04	46.75	44.40
			91.15	Nov-04	47.02	44.13
			91.15	Feb-05	45.10	46.05
			91.15	May-05	43.52	47.63
			91.15	Aug-05	44.95	46.20
			91.15	Nov-05	45.80	45.35
			91.15	Feb-06	44.01	47.14
			91.15	May-06	42.41	48.74
			91.152	Aug-06	43.22	47.93
			91.15	Aug-06[b]	43.51	47.64
			91.15	Nov-06	44.05	47.10
			91.15	Feb-07	42.61	48.54
			91.15	May-07	41.44	49.71
			91.15	Aug-07	43.91	47.24
			91.15	Nov-07	44.43	46.72
			91.15	Feb-08	43.02	48.13
			91.15	May-08	42.45	48.70
			91.15	Aug-08	44.15	47.00
			91.15	Dec-08	44.90	46.25
			91.15	Feb-09	44.14	47.01
			91.15	Jun-09	44.27	46.88
			91.15	Aug-09	46.04	45.11
			91.15	Nov-09	47.02	44.13

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-13A	99	77 - 97	89.33	Apr-00[a]	NA	49.21
			89.33	Aug-00[a]	NA	49.30
			89.33	Nov-00[a]	NA	46.88
			89.33	Feb-01[a]	NA	48.67
			89.33	Aug-01	41.68	47.65
			89.33	Oct-01	43.23	46.10
			89.33	Nov-01	43.64	45.69
			89.33	Feb-02	41.99	47.34
			89.33	May-02	40.82	48.51
			89.33	Aug-02	44.10	45.23
			89.33	Nov-02	44.70	44.63
			89.33	Feb-03	43.60	45.73
			89.271	May-03	42.35	46.92
			89.27	Aug-03	43.80	45.47
			89.27	Nov-03	45.25	44.02
			89.27	Feb-04	43.72	45.55
			89.27	May-04	42.65	46.62
			89.27	Aug-04	42.65	46.62
			89.27	Nov-04	45.30	43.97
			89.27	Feb-05	43.63	45.64
			89.27	May-05	41.75	47.52
			89.27	Aug-05	42.45	46.82
			89.27	Nov-05	43.70	45.57
			89.27	Feb-06	42.31	46.96
			89.27	May-06	40.52	48.75
			89.27	Aug-06	40.92	48.35
			89.27	Aug-06[b]	41.08	48.19
			89.27	Nov-06	42.15	47.12
			89.27	Feb-07	40.99	48.28
			89.27	May-07	39.68	49.59
			89.27	Aug-07	41.80	47.47
			89.27	Nov-07	42.64	46.63
			89.27	Feb-08	41.48	47.79
			89.27	May-08	40.38	48.89
			89.27	Aug-08	41.66	47.61
			89.27	Dec-08	43.01	46.26
			89.27	Feb-09	42.40	46.87
			89.27	Jun-09	42.25	47.02
			89.27	Aug-09	43.40	45.87
			89.27	Nov-09	44.84	44.43
MW-14A	92	70 - 90	89.81	Apr-00[a]	NA	50.19
			89.81	Aug-00[a]	NA	49.93
			89.81	Nov-00[a]	NA	48.39
			89.81	Feb-01[a]	NA	49.95
			89.81	Aug-01	41.21	48.60
			89.81	Oct-01	42.57	47.24
			89.81	Nov-01	42.89	46.92
			89.81	Feb-02	41.35	48.46
			89.81	May-02	40.60	49.21
			89.81	Aug-02	43.80	46.01
			89.81	Nov-02	44.00	45.81
			89.81	Feb-03	43.10	46.71
			89.791	May-03	42.15	47.64
			89.79	Aug-03	43.30	46.49
			89.79	Nov-03	44.60	45.19
			89.79	Feb-04	43.03	46.76

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
			89.79	May-04	42.33	47.46
			89.79	Aug-04	43.85	45.94
			89.79	Nov-04	44.40	45.39
			89.79	Feb-05	42.87	46.92
			89.79	May-05	41.20	48.59
			89.79	Aug-05	41.85	47.94
			89.79	Nov-05	42.90	46.89
			89.79	Feb-06	41.60	48.19
			89.79	May-06	40.15	49.64
			89.79	Aug-06	40.49	49.30
			89.79	Aug-06[b]	40.72	49.07
			89.79	Nov-06	41.72	48.07
			89.79	Feb-07	40.60	49.19
			89.79	May-07	39.31	50.48
			89.79	Aug-07	41.18	48.61
			89.79	Nov-07	42.03	47.76
			89.79	Feb-08	41.05	48.74
			89.79	May-08	40.15	49.64
			89.79	Aug-08	41.35	48.44
			89.79	Dec-08	42.45	47.34
			89.79	Feb-09	41.92	47.87
			89.79	Jun-09	41.95	47.84
			89.79	Aug-09	43.18	46.61
			89.79	Nov-09	44.40	45.39
MW-15A	102	80 - 100	91.75	Apr-00[a]	NA	50.80
			91.75	Aug-00[a]	NA	50.40
			91.75	Nov-00[a]	NA	48.76
			91.75	Feb-01[a]	NA	50.55
			91.75	Aug-01	42.48	49.27
			91.75	Oct-01	43.88	47.87
			91.75	Nov-01	44.05	47.70
			91.75	Feb-02	42.73	49.02
			91.75	May-02	41.92	49.83
			91.75	Aug-02	45.10	46.65
			91.75	Nov-02	45.60	46.15
			91.75	Feb-03	44.45	47.30
			91.761	May-03	44.05	47.71
			91.76	Aug-03	45.25	46.51
			91.76	Nov-03	46.05	45.71
			91.76	Feb-04	44.46	47.30
			91.76	May-04	43.85	47.91
			91.76	Aug-04	45.82	45.94
			91.76	Nov-04	46.05	45.71
			91.76	Feb-05	44.30	47.46
			91.76	May-05	42.85	48.91
			91.76	Aug-05	43.95	47.81
			91.76	Nov-05	44.80	46.96
			91.76	Feb-06	43.26	48.50
			91.76	May-06	41.92	49.84
			91.76	Aug-06	42.66	49.10
			91.76	Aug-06[b]	42.90	48.86
			91.76	Nov-06	43.55	48.21
			91.76	Feb-07	42.30	49.46
			91.76	May-07	41.09	50.67
			91.76	Aug-07	43.20	48.56
			91.76	Nov-07	43.80	47.96
			91.76	Feb-08	42.65	49.11

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
			91.76	May-08	42.05	49.71
			91.76	Aug-08	43.40	48.36
			91.76	Dec-08	44.25	47.51
			91.76	Feb-09	43.68	48.08
			91.76	Jun-09	43.86	47.90
			91.76	Aug-09	45.47	46.29
			91.76	Nov-09	46.46	45.30
MW-16A	86	76-86	91.89	Dec-08	47.01	44.88
			91.89	Feb-09	45.81	46.08
			91.89	Jun-09	46.43	45.46
			91.89	Aug-09	48.65	43.24
			91.89	Nov-09	48.95	42.94
MW-16B	139	129-139	91.82	Dec-08	46.98	44.84
			91.82	Feb-09	45.75	46.07
			91.82	Jun-09	46.40	45.42
			91.82	Aug-09	48.67	43.15
			91.82	Nov-09	48.90	42.92
MW-16C	236	226-236	91.64	Dec-08	46.70	44.94
			91.64	Feb-09	45.01	46.63
			91.64	Jun-09	50.05	41.59
			91.64	Aug-09	54.46	37.18
			91.64	Nov-09	48.52	43.12
MW-17A	88	77-87	89.64	Dec-08	44.20	45.44
			89.64	Feb-09	43.45	46.19
			89.64	Jun-09	43.25	46.39
			89.64	Aug-09	44.43	45.21
			89.64	Nov-09	46.03	43.61
MW-17B	140	129-139	89.69	Dec-08	44.39	45.30
			89.69	Feb-09	43.41	46.28
			89.69	Jun-09	43.60	46.09
			89.69	Aug-09	45.29	44.40
			89.69	Nov-09	46.20	43.49
MW-17C	232	222-232	89.76	Dec-08	44.33	45.43
			89.76	Feb-09	42.55	47.21
			89.76	Jun-09	48.68	41.08
			89.76	Aug-09	52.98	36.78
			89.76	Nov-09	45.91	43.85
MW-18A	66	56-66	90.14	Dec-08	44.47	45.67
			90.14	Feb-09	43.70	46.44
			90.14	Jun-09	43.57	46.57
			90.14	Aug-09	45.03	45.11
			90.14	Nov-09	46.35	43.79
MW-19A	101	91-101	91.22	Dec-08	45.51	45.71
			91.22	Feb-09	44.55	46.67
			91.22	Jun-09	45.45	45.77
			91.22	Aug-09	47.14	44.08
			91.22	Nov-09	47.50	43.72
MW-19B	147	137-147	91.08	Dec-08	45.89	45.19
			91.08	Feb-09	44.76	46.32
			91.08	Jun-09	46.07	45.01
			91.08	Aug-09	48.26	42.82
			91.08	Nov-09	47.92	43.16

TABLE G-2(a)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Monitoring Well Number	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth to Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-20A	86	76-86	90.70	Dec-08	45.27	45.43
			90.70	Feb-09	44.31	46.39
			90.70	Jun-09	44.56	46.14
			90.70	Aug-09	47.12	43.58
			90.70	Nov-09	47.26	43.44
MW-20B	162	152-162	90.65	Dec-08	45.45	45.20
			90.65	Feb-09	44.36	46.29
			90.65	Jun-09	45.08	45.57
			90.65	Aug-09	48.22	42.43
			90.65	Nov-09	47.40	43.25
MW-20C	235	225-235	90.79	Dec-08	45.01	45.78
			90.79	Feb-09	43.53	47.26
			90.79	Jun-09	48.60	42.19
			90.79	Aug-09	53.44	37.35
			90.79	Nov-09	46.73	44.06
EW-1			89.54	Nov-06	43.40	46.14
			89.54	Feb-07	42.21	47.33
			89.54	May-07	40.28	49.26
			89.54	Aug-07	42.90	46.64
			89.54	Feb-08	42.48	47.06
			89.54	May-08	41.75	47.79
			89.54	Aug-08	42.99	47.66
			89.54	Feb-09	43.55	45.99
			89.54	Jun-09	43.34	46.20
			89.54	Aug-09	44.99	44.55
			89.54	Nov-09	46.16	43.38
EW-1R[3]	114	59-109	90.65	Aug-06	41.80	48.85
			90.65	Aug-06[b]	48.70	41.95
			90.65	Nov-06	49.40	41.25
			90.65	Feb-07	48.24	42.41
			90.65	May-07	40.33	50.32
			90.65	Aug-07	48.60	42.05
			90.65	Nov-07	49.50	41.15
			90.65	Feb-08	49.98	40.67
			90.65	May-08	49.50	41.15
			90.65	Aug-08	51.51	39.14
			90.65	Dec-08	52.16	38.49
			90.65	Feb-09	53.88	36.77
			90.65	Jun-09	52.04	38.61
			90.65	Aug-09	54.86	35.79
			90.65	Nov-09	55.82	34.83

Notes:
[1]Wells re-surveyed in May 2003.
[2]Wells re-surveyed in September 2006
[3]EW-1R is the replacement extraction well. It was installed in August 2006 and started on August 24,

[a]Historical data from Ecology and Environment
[b]Second round of Aug. 2006 water levels recorded after the start of EW-1R

ft bgs - feet below ground surface
MSL - Mean Sea Level
MW- Monitoring Well
NA - Not Applicable
TOC - Top of Casing

TABLE G-2(b)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth To Water (feet from TOC)	Water Table Elevation (feet above MSL)
EW-01R (SP-01)	120.00	59 - 109	92.03	Mar-10	54.23	37.80
				Nov-10	55.82	36.21
				Mar-11	54.27	37.76
				Jun-11	53.82	38.21
				Sep-11	54.52	37.51
				Nov-11	56.14	35.89
				Jan-12	55.58	36.45
				Apr-12	41.18	50.85
MW-01A	101.00	91 - 101	91.61	Mar-10	44.81	46.80
				May-10	43.78	47.83
				Aug-10	44.41	47.20
				Nov-10	44.98	46.63
				Mar-11	43.11	48.50
				Jun-11	42.20	49.41
				Sep-11	42.73	48.88
				Nov-11	42.97	48.64
				Jan-12	42.19	49.42
				Apr-12	41.51	50.10
MW-02A	96.00	86 - 96	90.88	Mar-10	44.02	46.86
				May-10	43.03	47.85
				Aug-10	43.52	47.36
				Nov-10	44.21	46.67
				Mar-11	42.38	48.50
				Jun-11	41.44	49.44
				Sep-11	41.90	48.98
				Nov-11	42.12	48.76
				Jan-12	41.52	49.36
				Apr-12	40.80	50.08
MW-03A	94.00	84 - 94	91.49	Mar-10	46.77	44.72
				May-10	45.76	45.73
				Aug-10	46.38	45.11
				Nov-10	46.89	44.60
				Mar-11	44.95	46.54
				Jun-11	44.00	47.49
				Sep-11	44.56	46.93
				Nov-11	44.89	46.60
				Jan-12	44.19	47.30
				Apr-12	41.84	49.65

TABLE G-2(b)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth To Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-04A	89.00	78 - 88	91.13	Mar-10	45.39	45.74
				May-10	44.23	46.90
				Aug-10	44.58	46.55
				Nov-10	45.47	45.66
				Mar-11	43.51	47.62
				Jun-11	42.47	48.66
				Sep-11	42.94	48.19
				Nov-11	43.33	47.80
				Jan-12	42.74	48.39
				Apr-12	41.90	49.23
MW-04B	154.00	144 - 154	91.11	Mar-10	44.70	46.41
				May-10	43.82	47.29
				Aug-10	45.31	45.80
				Nov-10	45.24	45.87
				Mar-11	43.08	48.03
				Jun-11	42.18	48.93
				Sep-11	43.48	47.63
				Nov-11	43.38	47.73
				Jan-12	42.44	48.67
				Apr-12	41.83	49.28
MW-04C	237.00	227 - 237	91.25	Mar-10	43.15	48.10
				May-10	44.64	46.61
				Aug-10	50.22	41.03
				Nov-10	45.22	46.03
				Mar-11	42.86	48.39
				Jun-11	42.75	48.50
				Sep-11	47.15	44.10
				Nov-11	43.69	47.56
				Jan-12	41.94	49.31
				Apr-12	41.49	49.76

TABLE G-2(b)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth To Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-05A	90.00	60 - 90	90.74	Mar-10	44.43	46.31
				May-10	43.39	47.35
				Aug-10	43.72	47.02
				Nov-10	44.60	46.14
				Mar-11	42.71	48.03
				Jun-11	41.75	48.99
				Sep-11	42.08	48.66
				Nov-11	42.48	48.26
				Jan-12	41.87	48.87
				Apr-12	41.09	49.65
MW-06A	90.00	60 - 90	89.72	Mar-10	43.49	46.23
				May-10	42.24	47.48
				Aug-10	42.53	47.19
				Nov-10	43.54	46.18
				Mar-11	41.66	48.06
				Jun-11	40.50	49.22
				Sep-11	40.96	48.76
				Nov-11	41.40	48.32
				Jan-12	40.81	48.91
				Apr-12	40.24	49.48
MW-07A	90.00	60 - 90	91.24	Mar-10	43.89	47.35
				May-10	42.89	48.35
				Aug-10	43.00	48.24
				Nov-10	43.97	47.27
				Mar-11	42.30	48.94
				Jun-11	41.36	49.88
				Sep-11	41.55	49.69
				Nov-11	41.85	49.39
				Jan-12	41.40	49.84
				Apr-12	40.92	50.32

TABLE G-2(b)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth To Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-08A	90.00	60 - 90	91.44	Mar-10	45.39	46.05
				May-10	44.33	47.11
				Aug-10	44.64	46.80
				Nov-10	45.53	45.91
				Mar-11	43.69	47.75
				Jun-11	42.66	48.78
				Sep-11	42.98	48.46
				Nov-11	43.38	48.06
				Jan-12	42.80	48.64
				Apr-12	41.91	49.53
MW-09B	155.00	144 - 154	91.2	Mar-10	44.47	46.73
				May-10	43.68	47.52
				Aug-10	45.13	46.07
				Nov-10	45.16	46.04
				Mar-11	42.91	48.29
				Jun-11	42.07	49.13
				Sep-11	43.33	47.87
				Nov-11	43.18	48.02
				Jan-12	42.31	48.89
				Apr-12	41.60	49.60
MW-10A	91.00	60 - 89	90.48	Mar-10	44.68	45.80
				May-10	43.52	46.96
				Aug-10	43.94	46.54
				Nov-10	44.93	45.55
				Mar-11	42.85	47.63
				Jun-11	41.77	48.71
				Sep-11	42.31	48.17
				Nov-11	42.82	47.66
				Jan-12	42.15	48.33
				Apr-12	41.55	48.93

TABLE G-2(b)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth To Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-10B	160.00	153 - 163	90.21	Mar-10	44.01	46.20
				May-10	43.08	47.13
				Aug-10	44.44	45.77
				Nov-10	44.55	45.66
				Mar-11	42.37	47.84
				Jun-11	41.37	48.84
				Sep-11	42.66	47.55
				Nov-11	42.66	47.55
				Jan-12	41.72	48.49
				Apr-12	41.11	49.10
MW-10C	230.00	220 - 230	90.5	Mar-10	42.87	47.63
				May-10	44.22	46.28
				Aug-10	49.92	40.58
				Nov-10	44.88	45.62
				Mar-11	42.47	48.03
				Jun-11	42.20	48.30
				Sep-11	46.99	43.51
				Nov-11	43.51	46.99
				Jan-12	41.65	48.85
				Apr-12	41.30	49.20
MW-11A	92.00	70 - 90	89.91	Mar-10	42.15	47.76
				May-10	41.12	48.79
				Aug-10	41.42	48.49
				Nov-10	42.19	47.72
				Mar-11	40.57	49.34
				Jun-11	39.65	50.26
				Sep-11	39.93	49.98
				Nov-11	40.08	49.83
				Jan-12	39.63	50.28
				Apr-12	39.18	50.73

TABLE G-2(b)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth To Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-12A	99.00	87 - 97	91.15	Mar-10	45.17	45.98
				May-10	44.07	47.08
				Aug-10	44.86	46.29
				Nov-10	45.56	45.59
				Mar-11	43.31	47.84
				Jun-11	42.40	48.75
				Sep-11	43.22	47.93
				Nov-11	43.54	47.61
				Jan-12	42.79	48.36
				Apr-12	42.12	49.03
MW-13A	99.00	77 - 97	89.27	Mar-10	43.44	45.83
				May-10	42.17	47.10
				Aug-10	42.35	46.92
				Nov-10	43.44	45.83
				Mar-11	41.67	47.60
				Jun-11	40.46	48.81
				Sep-11	40.76	48.51
				Nov-11	41.32	47.95
				Jan-12	40.77	48.50
				Apr-12	40.19	49.08
MW-14A	92.00	70 - 90	89.79	Mar-10	43.04	46.75
				May-10	41.93	47.86
				Aug-10	42.17	47.62
				Nov-10	43.00	46.79
				Mar-11	41.35	48.44
				Jun-11	40.34	49.45
				Sep-11	40.58	49.21
				Nov-11	40.91	48.88
				Jan-12	40.42	49.37
				Apr-12	39.89	49.90

TABLE G-2(b)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth To Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-15A	102.00	80 - 100	91.76	Mar-10	44.82	46.94
				May-10	43.80	47.96
				Aug-10	44.40	47.36
				Nov-10	45.03	46.73
				Mar-11	43.11	48.65
				Jun-11	42.23	49.53
				Sep-11	42.77	48.99
				Nov-11	43.02	48.74
				Jan-12	42.41	49.35
				Apr-12	41.80	49.96
MW-16A	86.00	76 - 86	91.89	Mar-10	46.55	45.34
				May-10	45.41	46.48
				Aug-10	47.34	44.55
				Nov-10	47.40	44.49
				Mar-11	44.62	47.27
				Jun-11	43.58	48.31
				Sep-11	45.51	46.38
				Nov-11	45.53	46.36
				Jan-12	44.29	47.60
				Apr-12	43.54	48.35
MW-16B	139.00	129 - 139	91.82	Mar-10	46.48	45.34
				May-10	45.33	46.49
				Aug-10	47.32	44.50
				Nov-10	47.34	44.48
				Mar-11	44.60	47.22
				Jun-11	43.53	48.29
				Sep-11	45.43	46.39
				Nov-11	45.46	46.36
				Jan-12	44.24	47.58
				Apr-12	43.51	48.31

TABLE G-2(b)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth To Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-16C	236.00	226 - 236	91.64	Mar-10	45.51	46.13
				May-10	46.22	45.42
				Aug-10	52.77	38.87
				Nov-10	47.40	44.24
				Mar-11	44.73	46.91
				Jun-11	44.07	47.57
				Sep-11	49.02	42.62
				Nov-11	45.99	45.65
				Jan-12	44.12	47.52
				Apr-12	43.39	48.25
MW-17A	88.00	77 - 87	89.64	Mar-10	44.36	45.28
				May-10	43.01	46.63
				Aug-10	43.42	46.22
				Nov-10	44.48	45.16
				Mar-11	42.51	47.13
				Jun-11	41.15	48.49
				Sep-11	41.81	47.83
				Nov-11	42.48	47.16
				Jan-12	41.75	47.89
				Apr-12	41.04	48.60
MW-17B	140.00	129 - 139	89.69	Mar-10	44.21	45.48
				May-10	43.02	46.67
				Aug-10	43.98	45.71
				Nov-10	44.60	45.09
				Mar-11	42.42	47.27
				Jun-11	41.17	48.52
				Sep-11	42.31	47.38
				Nov-11	42.68	47.01
				Jan-12	41.70	47.99
				Apr-12	41.06	48.63

TABLE G-2(b)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth To Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-17C	232.00	222 - 232	89.76	Mar-10	43.06	46.70
				May-10	44.10	45.66
				Aug-10	51.62	38.14
				Nov-10	45.08	44.68
				Mar-11	42.36	47.40
				Jun-11	41.85	47.91
				Sep-11	43.30	46.46
				Nov-11	44.07	45.69
				Jan-12	41.60	48.16
				Apr-12	40.97	48.79
MW-18A	66.00	56 - 66	90.14	Mar-10	44.58	45.56
				May-10	43.39	46.75
				Aug-10	43.89	46.25
				Nov-10	44.00	46.14
				Mar-11	42.77	47.37
				Jun-11	41.56	48.58
				Sep-11	42.28	47.86
				Nov-11	42.83	47.31
				Jan-12	42.11	48.03
				Apr-12	41.48	48.66
MW-19A	101.00	91 - 101	91.22	Mar-10	45.43	45.79
				May-10	44.37	46.85
				Aug-10	45.83	45.39
				Nov-10	46.02	45.20
				Mar-11	43.65	47.57
				Jun-11	42.63	48.59
				Sep-11	44.07	47.15
				Nov-11	44.14	47.08
				Jan-12	43.18	48.04
				Apr-12	42.58	48.64

TABLE G-2(b)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth To Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-19B1	147.00	137 - 147	91.08	Mar-10	45.55	45.53
				May-10	44.68	46.40
				Aug-10	46.78	44.30
				Nov-10	46.42	44.66
				Mar-11	43.84	47.24
				Jun-11	42.93	48.15
				Sep-11	44.85	46.23
				Nov-11	44.59	46.49
				Jan-12	43.45	47.63
				Apr-12	42.81	48.27
MW-20A	86.00	76 - 86	90.7	Mar-10	45.28	45.42
				May-10	44.08	46.62
				Aug-10	44.97	45.73
				Nov-10	45.79	44.91
				Mar-11	43.40	47.30
				Jun-11	42.28	48.42
				Sep-11	43.35	47.35
				Nov-11	43.74	46.96
				Jan-12	42.84	47.86
				Apr-12	42.15	48.55
MW-20B	162.00	152 - 162	90.65	Mar-10	45.19	45.46
				May-10	44.11	46.54
				Aug-10	45.74	44.91
				Nov-10	45.96	44.69
				Mar-11	43.38	47.27
				Jun-11	42.34	48.31
				Sep-11	43.94	46.71
				Nov-11	44.00	46.65
				Jan-12	42.69	47.96
				Apr-12	42.21	48.44

TABLE G-2(b)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth To Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-20C	235.00	225 - 235	90.79	Mar-10	43.84	46.95
				May-10	44.42	46.37
				Aug-10	50.67	40.12
				Nov-10	45.78	45.01
				Mar-11	43.14	47.65
				Jun-11	42.65	48.14
				Sep-11	47.52	43.27
				Nov-11	44.74	46.05
				Jan-12	42.48	48.31
				Apr-12	41.89	48.90
MW-21A	102.00	90 - 100	91.75	Nov-11	45.34	46.41
				Jan-12	44.62	47.13
				Apr-12	43.42	48.33
MW-22A	62.00	50 - 60	91.69	Nov-11	45.36	46.33
				Jan-12	44.20	47.49
				Apr-12	43.45	48.24
MW-23A	102.00	89 - 99	90.26	Nov-11	40.85	49.41
				Jan-12	40.71	49.55
				Apr-12	40.19	50.07
MW-24B	157.00	145 - 155	92.93	Nov-11	45.94	46.99
				Jan-12	44.89	48.04
				Apr-12	44.21	48.72
MW-25B	157.00	145 - 155	91.78	Nov-11	45.40	46.38
				Jan-12	44.27	47.51
				Apr-12	43.44	48.34
MW-26B	157.00	145 - 155	89.71	Nov-11	43.03	46.68
				Jan-12	41.95	47.76
				Apr-12	41.23	48.48
MW-27B	157.00	145 - 155	89.34	Nov-11	42.36	46.98
				Jan-12	41.40	47.94
				Apr-12	40.70	48.64
MW-28B	157.00	145 - 155	89.21	Nov-11	41.40	47.81
				Jan-12	40.62	48.59
				Apr-12	40.06	49.15

TABLE G-2(b)

GROUNDWATER MONITORING WELL WATER TABLE ELEVATION
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Well Depth (ft bgs)	Screened Interval (ft bgs)	Top of Casing Elevation (ft bgs)	Date	Depth To Water (feet from TOC)	Water Table Elevation (feet above MSL)
MW-29B	157.00	145 - 155	89.74	Nov-11	41.45	48.29
				Jan-12	40.72	49.02
				Apr-12	40.15	49.59

ft bgs - feet below ground surface
MSL - Mean Sea Level
MW - Monitoring Well
NA - Not Applicable
TOC - Top of Casing

TABLE G-3(a)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Date	pH	PCE (µg/L)	TCE (µg/L)	1,2 - Dichloroethene (µg/L)	Chloroform (µg/L)	Comments:
MW-1A	8/21/2001	7.60	**5.0**	< 5.0	< 5.0	< 5.0	
	11/15/2001	7.60	**9.0**	< 5.0	< 5.0	< 5.0	
	2/18/2002	7.20	**9.0**	< 5.0	< 5.0	< 5.0	
	5/23/2002	7.10	**8.0**	< 5.0	< 5.0	< 5.0	
	8/19/2002	7.60	**11.0**	< 5.0	< 5.0	< 5.0	
	11/19/2002	8.20	**25.0**	< 5.0	< 5.0	< 5.0	Napthalene (1 BJ)
	2/18/2003	8.20	**16.0**	< 5.0	< 5.0	< 5.0	
	5/28/2003	7.30	**10.0**	< 5.0	< 5.0	< 5.0	
	8/26/2003	7.50	**11.0**	< 5.0	< 5.0	< 5.0	
	11/19/2003	7.40	**8.0**	<5.0	<5.0	<5.0	
	2/5/2004	7.50	**9.4**	< 5.0	< 5.0	< 5.0	
	5/18/2004	7.40	**8.3**	<5.0	<5.0	<5.0	
	8/24/2004	7.00	**14.0**	< 5.0	< 5.0	< 5.0	
	11/16/2004	7.10	**13.0**	<5.0	<5.0	<5.0	
	3/1/2005	7.40	**12.0**	< 5.0	< 5.0	< 5.0	
	5/24/2005	7.40	**8.3**	< 5.0	< 5.0	< 5.0	
	8/23/2005	7.60	**6.7**	< 5.0	< 5.0	< 5.0	
	11/15/2005	7.50	**5.2**	< 5.0	< 5.0	< 5.0	
	2/21/2006	7.50	**7.0**	< 5.0	< 5.0	< 5.0	
	5/23/2006	7.40	**4.1 J**	< 5.0	< 5.0	< 5.0	
	8/22/2006	7.30	**3.8**	< 5.0	< 5.0	< 5.0	
	11/15/2006	7.30	**3.8 J+**	<0.5	< 0.5[a]	**0.4**	
	2/13/2007	7.20	**3.3**	<0.5	< 0.5[a]	**0.4 J**	
	5/22/2007	7.70	**3.1**	<0.5	< 0.5[a]	**0.4**	
	8/21/2007	7.40	**3.4**	<0.5	< 0.5[a]	**0.4 J**	
	11/27/2007	7.16	**2.5**	<0.5	< 0.5[a]	**0.4 J**	
	2/27/2008	7.30	**2.2**	<0.5	< 0.5[a]	**0.3 J**	
	5/20/2008	7.32	**2.1**	<0.5	< 0.5[a]	**0.3 UJ**	
	8/19/2008	7.40	**3.0**	<0.5	< 0.5[a]	**0.3 J**	
	12/10/2008	6.30	**2 J+**	<0.5	< 0.5[a]	<0.5	
	2/17/2009	7.20	**2.3**	<0.5	< 0.5[a]	<0.5	
	6/3/2009	7.39	**2.3**	< 0.5	< 0.5[a]	**0.5**	
	8/11/2009	7.15	**1.4**	< 0.5	< 0.5[a]	< 0.5	
	11/11/2009	7.57	**1.7**	< 0.5	< 0.5[a]	**0.2**	
MW-2A	8/21/2001	7.70	**12.0**	< 5.0	< 5.0	< 5.0	
	11/12/2010	7.50	**10.0**	< 5.0	< 5.0	< 5.0	
	2/18/2002	7.20	**13.0**	< 5.0	< 5.0	< 5.0	
	5/23/2002	7.00	**14.0**	< 5.0	< 5.0	< 5.0	
	8/19/2002	7.80	**2.0 J**	< 5.0	< 5.0	< 5.0	
	11/19/2002	7.80	**12.0**	< 5.0	< 5.0	< 5.0	
	2/18/2003	7.80	**12.0**	< 5.0	< 5.0	< 5.0	
	5/28/2003	7.60	**10.0**	< 5.0	< 5.0	< 5.0	
	8/26/2003	8.00	**11.0**	< 5.0	< 5.0	**1.0J**	
	11/19/2003	7.40	**10.0**	<5.0	<5.0	**2.0J**	
	2/5/2004	7.50	**9.2**	< 5.0	< 5.0	< 5.0	
	5/18/2004	7.40	**8.2**	<5.0	<5.0	<5.0	
	8/24/2004	7.10	**9.1**	< 5.0	< 5.0	< 5.0	
	11/16/2004	7.10	**6.9**	<5.0	<5.0	**2.7 J**	
	3/1/2005	7.50	**8.4**	< 5.0	< 5.0	**2.8 J**	
	5/24/2005	7.50	**8.6**	< 5.0	< 5.0	< 5.0	
	8/23/2005	7.60	**11.0**	< 5.0	< 5.0	< 5.0	
	11/15/2005	7.50	**9.8**	< 5.0	< 5.0	< 5.0	
	2/21/2006	7.60	**13.0**	< 5.0	< 5.0	< 5.0	
	5/23/2006	7.40	**10.0**	< 5.0	< 5.0	< 5.0	
	8/22/2006	7.40	**10.0**	< 5.0	< 5.0	**1.3**	
	11/15/2006	7.50	**8.1**	<0.5	< 0.5[a]	**2.6**	
	2/13/2007	7.40	**8.7**	<0.5	< 0.5[a]	**3.0**	

TABLE G-3(a)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Date	pH	PCE (µg/L)	TCE (µg/L)	1,2 - Dichloroethene (µg/L)	Chloroform (µg/L)	Comments:
	5/22/2007	7.70	**8.3**	<0.5	< 0.5[a]	**2.7**	
	8/21/2007	7.60	**9.0**	<0.5	< 0.5[a]	**3.2**	
	11/27/2007	7.31	**9.2**	<0.5	< 0.5[a]	**2.6**	
	2/27/2008	7.41	**6.1**	<0.5	< 0.5[a]	**3.0**	
	5/20/2008	7.45	**6.9**	<0.5	< 0.5[a]	**2.2**	
	8/19/2008	7.45	**7.4**	<0.5	< 0.5[a]	**3.0**	
	12/10/2008	7.80	**5.8**	<0.5	< 0.5[a]	**2.7**	
	2/18/2009	7.47	**5.3**	<0.5	< 0.5[a]	**3.0**	
	6/3/2009	7.42	**5.7**	< 0.5	< 0.5[a]	**3.1**	
	8/12/2009	7.30	**4.8**	< 0.5	< 0.5[a]	**2.5**	
	11/11/2009	7.47	**5.9**	< 0.5	< 0.5[a]	**2.7**	
MW-3A	8/22/2001	7.50	**3,100 D**	**9.0**	**2.0 J**	< 5.0	
	11/15/2001	7.40	**3,500 D**	**7.0**	**2.0 J**	< 5.0	
	2/19/2002	7.50	**4,300 D**	**8.0**	< 5.0	< 5.0	cis - 1,2 - Dichloroethane (3J)
	5/23/2002	7.30	**1,500 D**	< 5.0	< 5.0	< 5.0	
	8/19/2002	8.00	**1,700 D**	< 5.0	< 5.0	**2.0 J**	
	11/19/2002	7.70	**980 D**	< 5.0	< 5.0	**1.0 J**	
	2/18/2003	7.70	**580 D**	< 50.0	< 50.0	< 50.0	Methylene Chloride (7 J)
	5/29/2003	7.50	**690 D**	**2.0 J**	< 5.0	**1.0 J**	
	8/26/2003	7.80	**900D**	<5.0	<5.0	**2.0 J**	
	11/20/2003	7.40	**600D**	**2.0 J**	<5.0	**2.0J**	
	2/6/2004	7.40	**870 D**	**2.9 J**	<5.0	<5.0	
	5/19/2004	7.40	**520 D**	< 5.0	< 5.0	< 5.0	
	8/25/2004	7.20	**1,000 D**	**3.2 J**	<5.0	<5.0	
	11/16/2004	7.30	**780 D**	**3.2 J**	< 5.0	< 5.0	
	3/1/2005	7.60	**1,100 D**	**4.6 J**	<5.0	<5.0	
	5/24/2005	7.50	**810 J**	**4.4 J**	< 5.0	< 5.0	
	8/23/2005	8.60	**910 J**	**4.9 J**	<5.0	<5.0	
	11/15/2005	7.60	**880**	**5.0**	< 5.0	< 5.0	
	2/21/2006	7.50	**1,300 J**	**5.6**	<5.0	<5.0	
	5/23/2006	7.60	**1,100 E**	**5.3**	<5.0	<5.0	
	8/22/2006	7.48	**1,200**	**5.0**	**0.7**	**0.9**	
	11/15/2006	7.60	**690 J+**	**1.8**	< 0.5[a]	**0.8 J**	
	2/13/2007	7.30	**610**	**1.4**	< 0.5[a]	**0.8**	
	5/22/2007	7.60	**230**	**0.7**	< 0.5[a]	**0.6**	
	8/21/2007	7.60	**270**	**0.7**	< 0.5[a]	**1**	
	11/27/2007	7.22	**280**	**0.5**	< 0.5[a]	**0.7**	
	2/27/2008	7.42	**230**	**0.5**	< 0.5[a]	**0.6**	
	5/20/2008	7.56	**180**	**0.4 J**	< 0.5[a]	**0.8 U**	
	8/19/2008	7.60	**130**	**0.5**	< 0.5[a]	**1.6**	
	12/10/2008	7.70	**87**	< 0.5 U	< 0.5[a] U	**1.7**	
	2/19/2009	7.56	**57**	<0.5	< 0.5[a]	**1.3**	
	6/10/2009	7.34	**75**	< 0.5	< 0.5[a]	**1.3**	
	8/14/2009	7.72	**45**	< 0.5	< 0.5[a]	**1.1**	
	11/12/2009	7.31	**40**	< 0.5	< 0.5[a]	**1.4**	
MW-4A	8/22/2001	7.40	**1,200 D**	< 5.0	< 5.0	< 5.0	
	11/13/2001	7.40	**8**	< 5.0	< 5.0	< 5.0	
	12/13/01[a]	7.20	**900 D**	**3.0 DJ**	< 10.0	< 10.0	
	2/19/2002	7.30	**1,200 D**	**37 DJ**	< 5.0	< 5.0	
	5/23/2002	7.30	**700 D**	< 5.0	< 5.0	< 5.0	
	8/19/2002	7.60	**1,000 D**	< 5.0	< 5.0	< 5.0	

TABLE G-3(a)

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Well Identification	Date	pH	PCE (µg/L)	TCE (µg/L)	1,2 - Dichloroethene (µg/L)	Chloroform (µg/L)	Comments:
	11/19/2002	7.50	**880 D**	**2.0 J**	< 5.0	**2.0 J**	cis-1,2-Dichloroethene (1 J) Napthalene (1 BJ) 1,2,3-Trichlorobenzene (1 J)
	2/18/2003	7.50	**710**	< 50.0	< 50.0	< 50.0	Methylene Chloride (9 J)
	5/29/2003	7.50	**880 D**	**1.0 J**	< 5.0	**3.0 J**	
	8/26/2003	8.40	**1,300 D**	**1.0 J**	<5.0	**3.0 J**	
	11/20/2003	7.40	**770 D**	**0.7J**	<5.0	**4.0J**	
	2/6/2004	7.40	**560 D**	<5.0	<5.0	**3.5 J**	
	5/19/2004	7.30	**580 D**	< 5.0	< 5.0	**3.3 J**	
	8/25/2004	7.10	**690 D**	<5.0	<5.0	**4.1 J**	
	11/17/2004	7.10	**800 D**	< 5.0	< 5.0	**4.7 J**	
	3/2/2005	7.40	**830 D**	<5.0	<5.0	**4.5 J**	
	5/25/2005	7.40	**1,100 J**	< 5.0	< 5.0	**3.6 J**	
	8/24/2005	7.60	**1,900 J**	<5.0	<5.0	**3.3 J**	
	11/16/2005	7.40	**1,200 J**	< 5.0 UJ	< 5.0 UJ	**2.9 UJ**	
	2/22/2006	7.40	**2,100**	**3.0**	<5.0	**3.0 J**	
	5/24/2006	7.40	**2,000 E**	<5.0	<5.0	**2.5 J**	
	8/23/2006	7.30	**1,500**	**0.9**	<5.0	**1.2**	1,1,1,2-Tetrachloroethane (0.5)
	11/16/2006	7.40	**1,600**	**1.3**	< 0.5[a]	**1.6 U**	
	2/14/2007	7.20	**2,400**	**1.6**	< 0.5[a]	**2.9**	
	5/23/2007	7.70	**1,700**	**1.0**	**0.7**	**1.7**	1,1,1,2-Tetrachloroethane (0.6)
	8/22/2007	7.30	**2,400**	**1.7**	**1.0[a]**	**2.4**	1,1,1,2-Tetrachloroethane (0.8)
	11/28/2007	7.14	**2,300**	**1.5**	**0.9**	**2.1**	
	2/27/2008	7.32	**1,700**	<2.5	<2.5[s]	**1.9**	
	5/21/2008	7.37	**2,200**	**1.7**	< 0.5[a]	**2**	cis-1,2-Dichloroethene (1.4 J) 1,1,1,2-Tetrachloroethane (1) Dichloro- difluoromethane (0.6 J+)
	8/20/2008	7.37	**1,100**	**1.9**	<2.5[s]	**2.1**	
	12/9/2008	7.80	**2,200**	**1.6**	< 0.5[a]	**1.8 U**	
	2/18/2009	7.36	**1,100**	**1.5**	< 0.5[a]	**1.5**	cis-1,2-Dichloroethene (1.4 J) 1,1,1,2-Tetrachloroethane (0.7)
	6/3/2009	7.34	**3,000**	**1.8**	< 0.5[a]	**1.9**	cis-1,2-Dichloroethene (1.8) 1,1,1,2-Tetrachloroethane (1.0)
	8/12/2009	7.18	**1,300**	**1.5**	< 0.5[a]	**1.6**	cis-1,2-Dichloroethene (1.4) 1,1,1,2-Tetrachloroethane (0.8)
	11/10/2009	7.52	**1,900**	**1.7**	< 0.5[a]	**1.8**	cis-1,2-Dichloroethene (2) 1,1,1,2-Tetrachloroethane (0.9)
MW-4B	12/9/2008	7.56	**9.6 J-**	<0.5	< 0.5[a]	<0.5	
	2/20/2009	7.68	**4.4**	<0.5	< 0.5[a]	**0.3**	
	6/10/2009	7.64	**7.2 J-**	< 0.5	< 0.5[a]	**0.4 J**	
	8/13/2009	7.46	**19**	< 0.5	**0.5[a]**	< 0.5	
	11/12/2009	7.51	**24**	< 0.5	< 0.5[a]	< 0.5	
MW-4C	12/9/2008	7.96	**8.7**	<0.5	< 0.5[a]	**0.9**	
	2/20/2009	8.03	**1.4**	<0.5	< 0.5[a]	**0.4**	
	6/10/2009	7.96	**0.5**	< 0.5	< 0.5[a]	**0.3 J**	
	8/13/2009	7.82	< 0.5	< 0.5	< 0.5[a]	< 0.5	
	11/12/2009	7.89	**0.9**	< 0.5	< 0.5[a]	< 0.5	
MW-5A	8/22/2001	7.30	**960 D**	< 5.0	< 5.0	< 5.0	
	11/15/2001	7.40	**930**	< 5.0	< 5.0	< 5.0	
	2/19/2002	7.20	**740 D**	**5 DJ**	< 5.0	< 5.0	
	5/23/2002	7.10	**580 D**	< 5.0	< 5.0	< 5.0	
	8/19/2002	7.40	**580 D**	< 5.0	< 5.0	< 5.0	Naphthalene (4 BJ)
	11/19/2002	7.20	**390 D**	< 5.0	< 5.0	< 5.0	Napthalene (1 BJ)

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Well Identification	Date	pH	PCE (µg/L)	TCE (µg/L)	1,2 - Dichloroethene (µg/L)	Chloroform (µg/L)	Comments:
	2/18/2003	7.20	**220**	< 25.0	< 25.0	< 25.0	Methylene Chloride (6 J)
	5/29/2003	7.30	**170 D**	< 5.0	< 5.0	< 5.0	
	8/26/2003	7.60	**320D**	<5.0	<5.0	<5.0	
	11/20/2003	7.40	**250**	< 5.0	< 5.0	< 5.0	
	2/6/2004	7.40	**300 D**	<5.0	<5.0	<5.0	
	5/19/2004	7.40	**380 D**	< 5.0	< 5.0	< 5.0	
	8/25/2004	7.10	**170 D**	<5.0	<5.0	<5.0	
	11/17/2004	7.10	**780 D**	< 5.0	< 5.0	< 5.0	
	3/2/2005	7.60	**330 D**	<5.0	<5.0	<5.0	
	5/25/2005	7.60	**330 J**	< 5.0	< 5.0	< 5.0	
	8/24/2005	7.50	**310 J**	<5.0	<5.0	<5.0	
	11/16/2005	7.40	**220 J**	< 5.0	< 5.0	**2.1 UJ**	
	2/22/2006	7.60	**560**	<5.0	<5.0	<5.0	
	5/24/2006	7.30	**300 E**	< 5.0	< 5.0	< 5.0	
	8/23/2006	7.20	**440**	<5.0	<5.0	**1.5**	
	11/16/2006	7.20	**270**	**0.2**	< 0.5[a]	**1.6 U**	
	2/14/2007	7.20	**430**	**0.2**	< 0.5[a]	**0.6**	
	5/23/2007	7.60	**280**	<0.5	< 0.5[a]	**0.4 J**	
	8/21/2007	7.30	**310**	<5.0	< 0.5[a]	**0.5**	
	11/28/2007	6.86	**190**	<0.5	< 0.5[a]	**0.8**	
	2/27/2008	7.39	**400**	<2.5	<2.5	<2.5	
	5/20/2008	7.16	**210**	<0.5	< 0.5[a]	**0.5 U**	
	8/20/2008	7.30	**190**	<0.5	< 0.5[a]	**0.6**	
	12/2/2008	6.86	**97**	< 0.5 U	< 0.5[a] U	**2.5 U**	
	2/18/2009	7.35	**260**	<0.5	< 0.5[a]	**0.3**	
	6/2/2009	7.21	**120**	< 0.5	< 0.5[a]	**1**	
	8/12/2009	7.20	**79**	< 0.5	< 0.5[a]	**0.6**	
	11/10/2009	7.59	**300**	< 0.5	< 0.5[a]	< 0.5	
MW-6A	8/22/2001	7.70	**280 D**	**5.0 DJ**	< 5.0	< 5.0	
	11/13/2001	7.20	**300 D**	< 5.0	< 5.0	< 5.0	
	2/19/2002	7.30	**450 D**	< 5.0	< 5.0	< 5.0	
	5/23/2002	6.90	**180 D**	< 5.0	< 5.0	< 5.0	
	8/19/2002	7.40	**140**	< 5.0	< 5.0	< 5.0	
	11/19/2002	7.30	**290 D**	**1.0 J**	< 5.0	< 5.0	cis-1,2-Dichloroethene (1 J) Napthalene (1 BJ)
	2/18/2003	7.30	**190**	< 25.0	< 25.0	< 25.0	Methylene Chloride (5 J)
	5/29/2003	7.20	**170 D**	< 5.0	< 5.0	**1.0 J**	
	8/26/2003	7.50	**210 D**	< 5.0	< 5.0	**1.0 J**	
	11/20/2003	7.40	**150**	< 5.0	< 5.0	**3.0J**	
	2/6/2004	7.40	**110 D**	< 5.0	< 5.0	**3.2 J**	
	5/19/2004	7.40	**67**	< 5.0	< 5.0	**5.9**	
	8/24/2004	7.40	**70**	< 5.0	< 5.0	**6**	
	11/17/2004	7.10	**42**	< 5.0	< 5.0	**6.7**	
	3/1/2005	7.40	**92**	< 5.0	< 5.0	**5.5**	
	5/25/2005	7.80	**19**	< 5.0	< 5.0	**6.5**	
	8/23/2005	7.60	**25**	< 5.0	< 5.0	**7.5**	
	11/15/2005	7.50	**15**	< 5.0	< 5.0	**7.3**	
	2/21/2006	7.60	**40**	< 5.0	< 5.0	**8.3**	
	5/24/2006	7.60	**11**	< 5.0	< 5.0	**11**	
	8/23/2006	7.80	**12**	< 5.0	< 5.0	**9.7**	
	11/16/2006	7.80	**10**	<0.5	< 0.5[a]	**13**	
	2/14/2007	7.30	**42**	<0.5	< 0.5[a]	**9.5**	
	5/23/2007	7.90	**8.9**	<0.5	< 0.5[a]	**11**	Bromodichloromethane (0.5)
	8/22/2007	7.50	**14**	<0.5	< 0.5[a]	**13**	Bromodichloromethane (0.5 J)
	11/27/2007	7.36	**8.5**	<0.5	< 0.5[a]	**15**	Bromodichloromethane (0.6)
	2/27/2008	-	**28**	<0.5	< 0.5	**9.6**	
	5/20/2008	7.68	**5.7**	<0.5	< 0.5[a]	**11**	Bromodichloromethane (0.4 J)
	8/19/2008	7.56	**11**	<0.5	< 0.5[a]	**12**	
	12/10/2008	7.10	**5.4 J+**	< 0.5 U	< 0.5[a] U	**12**	
	2/17/2009	7.48	**5.3**	<0.5	< 0.5[a]	**11**	Bromodichloromethane (0.4 J)
	6/2/2009	7.61	**3.8**	< 0.5	< 0.5[a]	**12**	Bromodichloromethane (0.4 J)
	8/11/2009	7.40	**4.2**	< 0.5	< 0.5[a]	**9.5**	Bromodichloromethane (0.4 J)
	11/11/2009	7.59	**6.4**	< 0.5	< 0.5[a]	**11**	Bromodichloromethane (0.4 J)
MW-7A	8/20/2001	7.10	**1.0 J**	< 5.0	< 5.0	< 5.0	
	11/13/2001	7.10	< 5.0	< 5.0	< 5.0	< 5.0	

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Well Identification	Date	pH	PCE (µg/L)	TCE (µg/L)	1,2 - Dichloroethene (µg/L)	Chloroform (µg/L)	Comments:
	2/19/2002	7.10	< 5.0	< 5.0	< 5.0	< 5.0	
	5/23/2002	7.20	< 5.0	< 5.0	< 5.0	< 5.0	
	8/19/2002	7.10	**4.0 J**	< 5.0	< 5.0	**5.0 J**	
	11/19/2002	7.20	**2.0 J**	< 5.0	< 5.0	< 5.0	Napthalene (2 BJ)
	2/18/2003	7.20	< 5.0	< 5.0	< 5.0	< 5.0	Napthalene (1 BJ)
	5/28/2003	7.10	< 5.0	< 5.0	< 5.0	< 5.0	Napthalene (4 BJ)
	8/26/2003	7.80	< 5.0	< 5.0	< 5.0	< 5.0	
	11/19/2003	7.40	< 5.0	< 5.0	< 5.0	< 5.0	
	2/5/2004	7.40	< 5.0	< 5.0	< 5.0	< 5.0	
	5/18/2004	7.50	< 5.0	< 5.0	< 5.0	< 5.0	
	8/24/2004	6.90	< 5.0	< 5.0	< 5.0	< 5.0	
	11/16/2004	6.90	< 5.0	< 5.0	< 5.0	< 5.0	
	3/1/2005	7.20	< 5.0	< 5.0	< 5.0	< 5.0	
	5/24/2005	7.30	< 5.0	< 5.0	< 5.0	< 5.0	
	8/23/2005	7.40	< 5.0 UJ	< 5.0	< 5.0	< 5.0	
	11/15/2005	7.30	< 5.0	< 5.0	< 5.0	< 5.0	
	2/21/2006	7.20	< 5.0	< 5.0	< 5.0	< 5.0	
	5/23/2006	7.20	< 5.0	< 5.0	< 5.0	< 5.0	
	8/22/2006	7.10	**0.4 J**	< 5.0	< 5.0	< 5.0	
	11/15/2006	7.20	**0.4 J+**	<0.5	< 0.5[a]	**0.2**	
	2/13/2007	7.00	<0.5	<0.5	< 0.5[a]	**0.2**	
	5/22/2007	7.56	<0.5	<0.5	< 0.5[a]	< 0.5	
	8/21/2007	7.20	<0.5	<0.5	< 0.5[a]	**0.3 J**	
	11/27/2007	6.96	<0.5	<0.5	< 0.5[a]	**0.4**	
	2/27/2008	7.12	<0.5	<0.5	< 0.5[a]	**0.5**	
	5/20/2008	7.15	<0.5	<0.5	< 0.5[a]	**0.4 UJ**	
	8/19/2008	7.20	<0.5	<0.5	< 0.5[a]	**0.5**	
	12/2/2008	7.00	<0.5	<0.5	< 0.5[a]	**0.7 U**	
	2/18/2009	7.14	**0.4**	<0.5	< 0.5[a]	**0.7**	Dichloromethane (8.8)
	6/2/2009	7.29	< 0.5	< 0.5	< 0.5[a]	**0.7 J**	
	8/11/2009	7.11	< 0.5	< 0.5	< 0.5[a]	**0.5**	
	11/10/2009	7.43	< 0.5	< 0.5	< 0.5[a]	**0.7**	
MW-8A	8/22/2001	7.40	**2,300 D**	**4.0 J**	**2.0 J**	**1.0 J**	
	11/15/2001	7.40	**1,900**	< 5.0	< 5.0	< 5.0	
	2/19/2002	7.50	**1,500 D**	< 5.0	**2.0 J**	**1.0 J**	
	5/23/2002	7.10	**1,700 D**	< 5.0	< 5.0	< 5.0	
	8/19/2002	7.40	**2,100 D**	< 5.0	< 5.0	**3.0 J**	
	11/19/2002	7.40	**1,700 D**	**2.0 J**	< 5.0	**3.0 J**	cis-1,2-Dichloroethene (1 J) Napthalene (1 BJ)
	2/18/2003	7.40	**1,300 D**	< 50.0	< 50.0	< 50.0	Methylene Chloride (7 J)
	5/29/2003	7.20	**1,900 D**	**1.0 J**	< 5.0	**3.0 J**	cis-1,2-Dichloroethene (1 J)
	8/26/2003	8.30	**1,700 D**	<5.0	<5.0	**2**	
	11/20/2003	7.40	**400 D**	< 5.0	< 5.0	**1.0J**	
	2/6/2004	7.30	**320 D**	<5.0	<5.0	<5.0	
	5/18/2004	7.30	**230 D**	< 5.0	< 5.0	< 5.0	
	8/25/2004	7.10	**480 D**	<5.0	<5.0	**3.1 J**	
	11/17/2004	7.10	**280 D**	< 5.0	< 5.0	< 5.0	
	3/2/2005	7.40	**210 D**	<5.0	<5.0	< 5.0	
	5/25/2005	7.50	**200 J**	< 5.0	< 5.0	< 5.0	
	8/24/2005	7.50	**61**	<5.0	<5.0	< 5.0	
	11/16/2005	7.40	**81**	< 5.0	< 5.0	**9.5 U**	
	2/22/2006	7.50	**140**	<5.0	<5.0	**3.1 J**	
	5/24/2006	7.40	**74**	< 5.0	< 5.0	**7.1**	
	8/23/2006	7.20	**33**	<5.0	<5.0	**6.0**	
	11/16/2006	7.30	**25**	<0.5	< 0.5[a]	**7.2**	
	2/14/2007	7.20	**44**	<0.5	< 0.5[a]	**10**	
	5/23/2007	7.60	**38**	<0.5	< 0.5[a]	**8.5**	Bromodichloromethane (0.4)
	8/22/2007	7.40	**24**	<0.5	< 0.5[a]	**11**	Bromodichloromethane (0.6)
	11/28/2007	7.05	**23**	<0.5	< 0.5[a]	**11**	Bromodichloromethane (0.6J)

TABLE G-3(a)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Date	pH	PCE (µg/L)	TCE (µg/L)	1,2 - Dichloroethene (µg/L)	Chloroform (µg/L)	Comments:
	2/27/2008	7.20	**37**	<0.5	< 0.5	**7.8**	Bromodichloromethane (0.3J); 1,2,3-Trichlorobenzene(0.3J)
	5/21/2008	7.23	**23**	<0.5	< 0.5[a]	**9.4**	Bromodichloromethane (0.5)
	8/20/2008	7.28	**17**	<0.5	< 0.5[a]	**11**	Bromodichloromethane (0.6)
	12/2/2008	6.91	**14 J-**	<0.5	<0.5[a]J	**9.8 J-**	
	2/18/2009	7.20	**34**	<0.5	< 0.5[a]	**5.3**	
	6/3/2009	7.19	**14**	< 0.5	< 0.5[a]	**11**	Bromodichloromethane (0.6)
	8/12/2009	7.21	**9.8 J-**	< 0.5	< 0.5[a]	**10**	Bromodichloromethane (0.5)
	11/11/2009	7.25	**15**	< 0.5	< 0.5[a]	**8.1**	Bromodichloromethane (0.3J)
MW-9B	8/22/2001	7.50	**39.0**	< 5.0	< 5.0	< 5.0	
	11/15/2001	7.30	< 5.0	< 5.0	< 5.0	< 5.0	
	2/18/2002	7.50	**10.0**	< 5.0	< 5.0	< 5.0	
	5/23/2002	7.40	**5.0**	< 5.0	< 5.0	< 5.0	
	8/19/2002	7.60	**8.0**	< 5.0	< 5.0	< 5.0	
	11/19/2002	8.00	**12.0**	< 5.0	< 5.0	< 5.0	Napthalene (1BJ)
	2/18/2003	8.00	**6.0**	< 5.0	< 5.0	< 5.0	
	5/28/2003	8.20	**3.0 J**	< 5.0	< 5.0	< 5.0	
	8/26/2003	7.60	**55.0**	< 5.0	< 5.0	< 5.0	
	11/19/2003	7.90	**33.0**	< 5.0	< 5.0	< 5.0	
	2/5/2004	7.90	**4.0 J**	< 5.0	< 5.0	< 5.0	
	5/18/2004	7.80	**37**	< 5.0	< 5.0	< 5.0	
	8/24/2004	7.30	**68**	< 5.0	< 5.0	< 5.0	
	11/17/2004	7.50	**89**	< 5.0	< 5.0	< 5.0	
	3/1/2005	7.80	**51**	< 5.0	< 5.0	< 5.0	
	5/24/2005	7.80	**61**	< 5.0	< 5.0	< 5.0	
	8/24/2005	8.10	**44**	< 5.0	< 5.0	< 5.0	
	11/16/2005	7.90	**30**	< 5.0	< 5.0	< 5.0	
	2/22/2006	7.80	**18**	< 5.0	< 5.0	< 5.0	
	5/23/2006	7.80	**20**	< 5.0	< 5.0	< 5.0	
	8/22/2006	7.70	**24**	< 5.0	< 5.0	< 5.0	
	11/15/2006	7.90	**5.2**	<0.5	< 0.5[a]	<0.5	
	2/13/2007	7.70	**2.7**	<0.5	< 0.5[a]	<0.5	
	5/22/2007	NS	NS	NS	NS	NS	Broken Pump
	8/21/2007	7.70	**14**	<0.5	< 0.5[a]	<0.5	Chloromethane (4.0), Acetone (4.9)
	11/27/2007	7.65	**6.5**	<0.5	< 0.5[a]	<0.5	
	2/27/2008	7.80	**0.7**	<0.5	< 0.5	<0.5	
	5/21/2008	7.98	**16**	<0.5	< 0.5[a]	<0.5	
	8/20/2008	7.77	**26**	<0.5	< 0.5[a]	<0.5	
	12/2/2008	7.34	**5.2**	<0.5	< 0.5[a]	<0.5	
	2/18/2009	7.19	**8.5**	<0.5	< 0.5[a]	<0.5	
	6/3/2009	7.66	**19**	< 0.5	< 0.5[a]	< 0.5	
	8/12/2009	7.67	**17**	< 0.5	< 0.5[a]	< 0.5	
	11/11/2009	7.86	**3.7**	< 0.5	< 0.5[a]	< 0.5	
MW-10A	8/20/2001	7.40	**91.0**	< 5.0	< 5.0	**8.0**	
	11/12/2001	7.50	**45.0**	< 5.0	< 5.0	**10.0**	
	2/19/2002	7.70	**27.0**	< 5.0	< 5.0	**25.0**	
	5/23/2002	7.20	**260 D**	< 5.0	< 5.0	**8.0**	
	8/19/2002	7.40	**300 D**	< 5.0	< 5.0	**7.0**	
	11/20/2002	7.40	**200**	< 5.0	< 5.0	**16.0**	Methylene Chloride (2BJ) Naphthalene (3 BJ)
	2/18/2003	7.40	**200**	< 25.0	< 25.0	**17 J**	Methylene Chloride (4 J)
	5/29/2003	7.40	**340 D**	**1.0 J**	< 5.0	**5.0**	
	8/26/2003	7.70	**820 D**	<5.0	< 5.0	<5.0	
	11/20/2003	7.30	**500 D**	**0.9 J**	<5.0	**7.0**	
	2/6/2004	7.40	**510 D**	<5.0	< 5.0	**7.8**	
	5/19/2004	7.10	**390 D**	< 5.0	< 5.0	**3.8 J**	
	8/25/2004	7.10	**460 D**	<5.0	< 5.0	**2.7 J**	
	11/17/2004	7.10	**890 D**	< 5.0	< 5.0	**4.7 J**	
	3/2/2005	7.40	**910 D**	<5.0	< 5.0	**5.1**	
	5/25/2005	7.50	**820 J**	< 5.0	< 5.0	**3.9 J**	
	8/24/2005	7.40	**490 J**	<5.0	< 5.0		

TABLE G-3(a)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
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Well Identification	Date	pH	PCE (µg/L)	TCE (µg/L)	1,2 - Dichloroethene (µg/L)	Chloroform (µg/L)	Comments:
	11/16/2005	7.40	**940 J**	< 5.0	< 5.0	**3.2 UJ**	
	2/22/2006	7.40	**970**	<5.0	< 5.0	**3.8 J**	
	5/24/2006	7.20	**560 E**	< 5.0	< 5.0	**3.1 J**	
	8/23/2006	7.20	**410**	**0.5**	< 5.0	**1.8**	tert-Butyl methyl ether (MTBE) (1.5)
	11/16/2006	7.30	**320**	**0.5**	< 0.5[a]	**1.3 U**	
	2/14/2007	7.10	**550**	**0.7**	< 0.5[a]	**3.3**	
	5/23/2007	7.50	**350**	**0.5**	**0.3[a]**	**2.0**	
	8/22/2007	7.10	**480**	**0.7**	**0.3 J[a]**	**2.3**	
	11/28/2007	7.89	**330**	**0.4**	< 0.5[a]	**4.2**	
	2/27/2008	7.17	**430**	<2.5	<2.5[a]	**2.4**	
	5/21/2008	7.17	**280**	**0.4 J**	< 0.5[a]	**2.1**	
	8/20/2008	7.25	**220**	**0.4 J**	<0.5[a]	**2.9**	
	12/2/2008	6.84	**240**	<0.5	< 0.5[a]	**4.6**	
	2/17/2009	7.15	**210**	**0.3**	<0.5[a]	**3.8**	
	6/2/2009	7.30	**120**	< 0.5	< 0.5[a]	**5.1**	
	8/11/2009	6.90	**140**	< 0.5	<0.5[a]	**2.8**	
	11/10/2009	7.42	**110**	< 0.5	< 0.5[a]	**4.7**	
MW-10B	12/3/2008	7.54	**25 J-**	<0.5,J	<0.5[a]J	**0.4 U,J-**	
	2/23/2009	7.70	**13**	<0.5	< 0.5[a]	**4.6**	
	6/10/2009	7.72	**12**	< 0.5	<0.5[a]	**0.3**	
	8/13/2009	7.64	**13**	< 0.5	< 0.5[a]	< 0.5	
	11/10/2009	7.65	**21**	< 0.5	<0.5[a]	< 0.5	
MW-10C	12/3/2008	7.81	<0.5	<0.5	< 0.5[a]	**1 U**	
	2/17/2009	8.06	**0.4**	<0.5	< 0.5[a]	**0.3 J**	
	6/8/2009	7.89	< 0.5	< 0.5	< 0.5[a]	< 0.5	
	8/11/2009	7.72	< 0.5	< 0.5	< 0.5[a]	< 0.5	
	11/10/2009	7.94	**1.0**	< 0.5	< 0.5[a]	< 0.5	
MW-11A	8/20/2001	7.20	**3.0 J**	< 5.0	< 5.0	**4.0 J**	
	11/13/2001	7.10	< 5.0	< 5.0	< 5.0	**5.0 J**	
	2/19/2002	7.20	**2.0 J**	< 5.0	< 5.0	**5.0 J**	
	5/23/2002	7.00	< 5.0	< 5.0	< 5.0	**2.0 J**	
	8/19/2002	7.10	**3.0 J**	< 5.0	< 5.0	**7**	
	11/20/2002	7.30	< 5.0	< 5.0	< 5.0	**6.0**	Methylene Chloride (1 BJ) Napthalene (2 BJ)
	2/18/2003	7.30	**3.0 J**	< 5.0	< 5.0	**5**	Napthalene (2 BJ) 1,2,3-Trichlorobenzene (1 J)
	5/28/2003	7.30	**5.0**	< 5.0	< 5.0	**2.0 JB**	Napthalene (7 B)
	8/26/2003	7.60	**2.0 J**	< 5.0	< 5.0	<5.0	
	11/19/2003	7.40	**3.0J**	< 5.0	< 5.0	**3.0 J**	
	2/5/2004	7.20	<5.0	< 5.0	< 5.0	**3.7 J**	
	5/18/2004	7.40	**3.7 J**	< 5.0	< 5.0	<5.0	
	8/24/2004	7.00	**3.1 J**	< 5.0	< 5.0	**4.8 J**	
	11/16/2004	7.10	**3.5 J**	< 5.0	< 5.0	<5.0	
	3/1/2005	7.30	**3.8 J**	< 5.0	< 5.0	**3.1 J**	
	5/24/2005	7.40	**6.0**	< 5.0	< 5.0	<5.0	
	8/23/2005	7.40	<5.0	< 5.0	< 5.0	<5.0	
	11/15/2005	7.40	<5.0	< 5.0	< 5.0	<5.0	
	2/21/2006	7.40	**2.7 J**	< 5.0	< 5.0	<5.0	
	5/23/2006	7.20	<5.0	< 5.0	< 5.0	<5.0	
	8/22/2006	7.20	**1.6**	< 5.0	< 5.0	**1.5**	
	11/15/2006	7.20	**2.4 J+**	<0.5	< 0.5[a]	**2.4 J+**	
	2/13/2007	7.10	**1.7**	<0.5	< 0.5[a]	**2.0**	
	5/22/2007	7.50	**1.7**	<0.5	< 0.5[a]	**2.9**	
	8/21/2007	7.30	**1.5**	<0.5	< 0.5[a]	**3.0**	

TABLE G-3(a)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Date	pH	PCE (µg/L)	TCE (µg/L)	1,2 - Dichloroethene (µg/L)	Chloroform (µg/L)	Comments:
	11/27/2007	6.97	**2.2**	<0.5	< 0.5[a]	**2.3**	
	2/27/2008	7.17	**1.3**	<0.5	< 0.5[a]	**2.2**	
	5/20/2008	7.19	**1.6**	<0.5	< 0.5[a]	**2.1**	
	8/19/2008	7.17	**1.4**	<0.5	< 0.5[a]	**3.7**	
	12/2/2008	6.94	**1.8**	<0.5	< 0.5[a]	**2.6**	
	2/17/2009	7.18	**1.3**	<0.5	< 0.5[a]	**3.2**	
	6/2/2009	7.33	**1.4 J-**	< 0.5	< 0.5[a]	**3.3**	
	8/11/2009	7.10	**0.6**	< 0.5	< 0.5[a]	**5.3**	
	11/10/2009	7.46	**1.2**	< 0.5	< 0.5[a]	**4**	
MW-12A	8/21/2001	7.60	**26**	< 5.0	< 5.0	< 5.0	
	11/13/2001	7.30	**23**	< 5.0	< 5.0	< 5.0	
	2/18/2002	7.20	**17**	< 5.0	< 5.0	< 5.0	
	5/23/2002	7.10	**23**	< 5.0	< 5.0	< 5.0	
	8/19/2002	7.60	**22**	< 5.0	< 5.0	< 5.0	
	11/20/2002	7.50	**17**	< 5.0	< 5.0	< 5.0	Methylene Chloride (1 BJ) Napthalene (2 BJ)
	2/18/2003	7.50	**15**	< 5.0	< 5.0	< 5.0	
	5/28/2003	7.50	**17**	< 5.0	< 5.0	< 5.0	
	8/26/2003	7.60	**31**	< 5.0	< 5.0	< 5.0	
	11/19/2003	7.50	**28**	< 5.0	< 5.0	< 5.0	
	2/5/2004	7.40	**21**	< 5.0	< 5.0	< 5.0	
	5/18/2004	7.40	**21**	< 5.0	< 5.0	< 5.0	
	8/24/2004	7.10	**25**	< 5.0	< 5.0	< 5.0	
	11/16/2004	7.20	**26**	< 5.0	< 5.0	< 5.0	
	3/1/2005	7.50	**23**	< 5.0	< 5.0	< 5.0	
	5/24/2005	7.50	**17**	< 5.0	< 5.0	< 5.0	
	8/23/2005	7.50	**26**	< 5.0	< 5.0	< 5.0	
	11/15/2005	7.50	**23**	< 5.0	< 5.0	< 5.0	
	2/21/2006	7.60	**30**	< 5.0	< 5.0	< 5.0	
	5/23/2006	7.40	**28**	< 5.0	< 5.0	< 5.0	
	8/22/2006	7.60	**31**	< 5.0	< 5.0	< 5.0	
	11/15/2006	7.50	**28**	<0.5	< 0.5[a]	**0.4 J**	
	2/13/2007	7.40	**23**	<0.5	< 0.5[a]	**0.6**	
	5/23/2007	7.50	**24**	<0.5	< 0.5[a]	**0.4 J**	Trichlorofluoromethane (0.5)
	8/21/2007	7.50	**38**	<0.5	< 0.5[a]	**0.5**	Trichlorofluoromethane (0.6)
	11/28/2007	7.19	**33**	<0.5	< 0.5[a]	**1.0**	Trichlorofluoromethane (0.8)
	2/27/2008	7.43	**26**	<0.5	< 0.5[a]	**0.4**	Trichlorofluoromethane (0.4)
	5/21/2008	7.49	**30**	<0.5	< 0.5[a]	**0.9 U**	Trichlorofluoromethane (0.6) Acetone (3.6 UJ)
	8/19/2008	7.56	**32**	<0.5	< 0.5[a]	**1.2**	
	12/2/2008	7.10	**29**	<0.5	< 0.5[a]	**1.8 U**	
	2/17/2009	7.37	**24**	<0.5	< 0.5[a]	**1.9**	Trichlorofluoromethane (0.4)
	6/2/2009	7.52	**28**	< 0.5	< 0.5[a]	**2.1**	Trichlorofluoromethane (0.4)
	8/12/2009	7.02	**23**	< 0.5	< 0.5[a]	**2**	Trichlorofluoromethane (0.3)
	11/10/2009	7.68	**26**	< 0.5	< 0.5[a]	**2.8**	Trichlorofluoromethane (0.4)
MW-13A	8/21/2001	7.50	**6.0**	< 5.0	< 5.0	< 5.0	
	11/12/2001	7.40	< 5.0	< 5.0	< 5.0	< 5.0	
	2/18/2002	7.00	**12.0**	< 5.0	< 5.0	< 5.0	
	5/23/2002	7.10	**4.0 J**	< 5.0	< 5.0	< 5.0	
	8/19/2002	7.60	**6.0**	< 5.0	< 5.0	< 5.0	
	11/20/2002	7.30	**5.0**	< 5.0	< 5.0	< 5.0	Methylene Chloride (2 BJ) Napthalene (2 BJ)
	2/18/2003	7.30	**11.0**	< 5.0	< 5.0	< 5.0	
	5/28/2003	7.30	**4.0**	< 5.0	< 5.0	< 5.0	
	8/26/2003	7.70	**3.0 J**	< 5.0	< 5.0	< 5.0	
	11/19/2003	7.40	**3.0 J**	< 5.0	< 5.0	**3.0 J**	
	2/5/2004	7.40	**9.3**	< 5.0	< 5.0	< 5.0	
	5/18/2004	7.30	**3.7 J**	< 5.0	< 5.0	< 5.0	

TABLE G-3(a)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Date	pH	PCE (µg/L)	TCE (µg/L)	1,2 - Dichloroethene (µg/L)	Chloroform (µg/L)	Comments:
	8/24/2004	7.00	**3.8 J**	< 5.0	< 5.0	**3.1 J**	
	11/16/2004	7.10	**6.2**	< 5.0	< 5.0	**3.0 J**	
	3/1/2005	7.30	**20.0**	< 5.0	< 5.0	< 5.0	
	5/24/2005	7.20	**16.0**	< 5.0	< 5.0	< 5.0	
	8/23/2005	7.40	**7.3 J**	< 5.0	< 5.0	**3.8**	
	11/15/2005	7.30	**7.2 J**	< 5.0 UJ	< 5.0 UJ	**3.8 J**	
	2/21/2006	7.40	**28.0**	< 5.0	< 5.0	< 5.0	
	5/23/2006	7.20	**14.0**	< 5.0	< 5.0	**3.0 J**	
	8/22/2006	7.30	**8.4**	< 5.0	< 5.0	**3.5**	
	11/15/2006	7.30	**8.2**	<0.5	< 0.5[a]	**5.5**	
	2/13/2007	7.10	**19**	<0.5	< 0.5[a]	**2.0**	
	5/23/2007	7.60	**8.8**	<0.5	< 0.5[a]	**3.7**	
	8/22/2007	7.20	**7.9**	<0.5	< 0.5[a]	**5.7**	Bromodichloromethane (0.3 J)
	11/27/2007	7.09	**7.8**	<0.5	< 0.5[a]	**6.7**	Bromodichloromethane (0.3 J)
	2/27/2008	7.21	**17**	<0.5	< 0.5[a]	**1.7**	
	5/20/2008	7.27	**7.1**	<0.5	< 0.5[a]	**4.4**	
	8/19/2008	7.30	**5.5**	<0.5	< 0.5[a]	**5.2**	
	12/2/2008	6.92	**4.6**	<0.5	< 0.5[a]	**5.5**	
	2/17/2009	7.18	**12**	<0.5	< 0.5[a]	**2.3**	
	6/2/2009	7.37	**3.7**	< 0.5	< 0.5[a]	**4.5**	Bromodichloromethane (0.3 J)
	8/11/2009	7.10	**2.1**	< 0.5	< 0.5[a]	**3.2**	
	11/11/2009	7.29	**2.5**	< 0.5	< 0.5[a]	**3.3**	
MW-14A	8/20/2001	7.10	**2.0 J**	< 5.0	< 5.0	< 5.0	
	11/13/2001	7.00	< 5.0	< 5.0	< 5.0	< 5.0	
	2/18/2002	6.90	< 5.0	< 5.0	< 5.0	< 5.0	
	5/23/2002	7.00	< 5.0	< 5.0	< 5.0	< 5.0	
	8/19/2002	7.10	**1.0 J**	< 5.0	< 5.0	< 5.0	
	11/20/2002	7.30	< 5.0	< 5.0	< 5.0	< 5.0	Methylene Chloride (1BJ)
	2/18/2003	7.30	**8**	< 5.0	< 5.0	**1.0 J**	1,2,4-Trichlorobenzene (1 J) 1,2,3-Trichlorobenzene (2 J) Napthalene (3 BJ)
	5/28/2003	7.10	< 5.0	< 5.0	< 5.0	< 5.0	Napthalene (9 B)
	8/26/2003	7.90	< 5.0	< 5.0	< 5.0	< 5.0	
	11/19/2003	7.60	< 5.0	< 5.0	< 5.0	< 5.0	
	2/5/2004	7.30	< 5.0	< 5.0	< 5.0	< 5.0	
	5/18/2004	7.30	< 5.0	< 5.0	< 5.0	< 5.0	
	8/24/2004	6.80	< 5.0	< 5.0	< 5.0	< 5.0	
	11/16/2004	6.90	< 5.0	< 5.0	< 5.0	< 5.0	
	3/1/2005	7.30	**16**	< 5.0	< 5.0	< 5.0	
	5/24/2005	7.10	< 5.0	< 5.0	< 5.0	< 5.0	
	8/23/2005	7.30	< 5.0	< 5.0	< 5.0	< 5.0	
	11/15/2005	7.30	< 5.0 UJ	< 5.0 UJ	< 5.0 UJ	< 5.0 UJ	
	2/21/2006	7.20	< 5.0	< 5.0	< 5.0	< 5.0	
	5/23/2006	7.10	< 5.0	< 5.0	< 5.0	< 5.0	
	8/22/2006	7.10	**1.2**	< 5.0	< 5.0	**0.5**	
	11/15/2006	7.20	**1.6 J+**	<0.5	< 0.5[a]	**0.7 J+**	
	2/13/2007	7.10	**11**	<0.5	< 0.5[a]	**0.4**	
	5/22/2007	7.60	**1.8**	<0.5	< 0.5[a]	**0.6**	
	8/21/2007	7.30	**2.0**	<0.5	< 0.5[a]	**0.6**	
	11/27/2007	6.90	**1.7**	<0.5	< 0.5[a]	**0.4**	
	2/27/2008	7.26	**11**	<0.5	< 0.5	**0.4**	
	5/20/2008	7.11	**1.8**	<0.5	< 0.5[a]	**0.5 U**	
	8/19/2008	7.18	**2**	<0.5	< 0.5[a]	**0.7**	
	12/2/2008	6.80	**1.6**	<0.5	< 0.5[a]	**0.5 U**	
	2/17/2009	7.18	**12**	<0.5	< 0.5[a]	**0.3**	
	6/2/2009	7.25	**1.9**	< 0.5	< 0.5[a]	**1.3**	
	8/11/2009	7.00	**1.3**	< 0.5	< 0.5[a]	**1**	
	11/11/2009	7.23	**2.8**	< 0.5	< 0.5[a]	**0.4**	

TABLE G-3(a)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Date	pH	PCE (µg/L)	TCE (µg/L)	1,2 - Dichloroethene (µg/L)	Chloroform (µg/L)	Comments:
MW-15A	8/21/2001	7.60	< 5.0	< 5.0	< 5.0	< 5.0	
	11/15/2001	7.40	< 5.0	< 5.0	< 5.0	< 5.0	
	2/18/2002	7.20	< 5.0	< 5.0	< 5.0	< 5.0	
	5/23/2002	7.00	< 5.0	< 5.0	< 5.0	< 5.0	
	8/19/2002	7.60	< 5.0	< 5.0	< 5.0	< 5.0	
	11/20/2002	7.50	< 5.0	< 5.0	< 5.0	< 5.0	Methylene Chloride (2 BJ)
	2/18/2003	7.50	**0.9 J**	< 5.0	< 5.0	< 5.0	1,2,4-Trichlorobenzene (1 J) 1,2,3-Trichlorobenzene (1 J) Napthalene (3 BJ)
	5/28/2003	7.50	< 5.0	< 5.0	< 5.0	< 5.0	
	8/26/2003	7.60	< 5.0	< 5.0	< 5.0	< 5.0	
	11/19/2003	7.50	< 5.0	< 5.0	< 5.0	< 5.0	
	2/5/2004	7.40	< 5.0	< 5.0	< 5.0	< 5.0	
	5/18/2004	7.80	< 5.0	< 5.0	< 5.0	< 5.0	
	8/24/2004	7.10	< 5.0	< 5.0	< 5.0	< 5.0	
	11/16/2004	7.10	< 5.0	< 5.0	< 5.0	< 5.0	
	3/1/2005	7.40	< 5.0	< 5.0	< 5.0	< 5.0	
	5/24/2005	7.50	< 5.0	< 5.0	< 5.0	< 5.0	
	8/23/2005	7.50	< 5.0	< 5.0	< 5.0	< 5.0	
	11/15/2005	7.30	< 5.0	< 5.0	< 5.0	< 5.0	
	2/21/2006	7.40	< 5.0	< 5.0	< 5.0	< 5.0	
	5/23/2006	7.40	< 5.0	< 5.0	< 5.0	< 5.0	
	8/22/2006	7.19	**0.4 J**	< 5.0	< 5.0	**0.7**	
	11/15/2006	7.40	**0.4 J**	<0.5	< 0.5[a]	**1.3**	
	2/13/2007	7.20	**0.3 J**	<0.5	< 0.5[a]	**0.4**	
	5/22/2007	7.70	**0.3 J**	<0.5	< 0.5[a]	**1.5**	
	8/21/2007	7.30	**0.5 J**	<0.5	< 0.5[a]	**1.9**	1,2-Dichloroethane (0.4 J)
	11/27/2007	7.09	**0.5 J**	<0.5	< 0.5[a]	**2.2**	1,2-Dichloroethane (0.6 J)
	2/27/2008	7.28	**0.5**	< 0.5	< 0.5[a]	**0.5**	
	5/20/2008	7.30	**0.3 J**	<0.5	< 0.5[a]	**1.6**	1,2-Dichloroethane (0.5)
	8/19/2008	7.31	**0.3 J-**	< 0.5	< 0.5[a]	**2.3 J+**	
	12/2/2008	7.01	<0.5	<0.5	**1.0[a]**	**2.1 U**	
	2/17/2009	7.15	< 0.5	< 0.5	< 0.5[a]	**0.5**	
	6/2/2009	7.37	< 0.5	< 0.5	< 0.5[a]	**1.8**	1,2-Dichloroethane (0.7 J)
	8/11/2009	7.15	< 0.5	< 0.5	< 0.5[a]	**1.6**	1,2-Dichloroethane (0.9)
	11/10/2009	7.44	< 0.5	< 0.5	< 0.5[a]	**1.5**	1,2-Dichloroethane (0.6)
MW-16A	12/4/2008	7.12	<0.5	<0.5	< 0.5[a]	**0.6 U**	
	2/18/2009	7.13	**0.5**	<0.5	< 0.5[a]	**0.6**	
	6/9/2009	7.10	**0.2 J**	< 0.5	< 0.5[a]	**0.5**	
	8/12/2009	7.03	< 0.5	< 0.5	< 0.5[a]	**0.3**	
	11/11/2009	7.08	**1.6**	< 0.5	< 0.5[a]	**0.3 J**	
MW-16B	12/4/2008	7.15	**2.3**	<0.5	< 0.5[a]	**0.5 U**	
	2/18/2009	7.41	**3.8**	<0.5	< 0.5[a]	**0.6**	
	6/9/2009	7.13	**0.5**	< 0.5	< 0.5[a]	**1.3**	
	8/13/2009	7.25	**1.2**	< 0.5	< 0.5[a]	**0.4**	
	11/11/2009	7.32	**13**	< 0.5	< 0.5[a]	**0.8**	
MW-16C	12/4/2008	7.73	<0.5	<0.5	< 0.5[a]	<0.5	
	2/18/2009	7.93	**4.9**	<0.5	< 0.5[a]	**0.3**	
	6/9/2009	7.90	< 0.5	< 0.5	< 0.5[a]	**0.3 J**	
	8/12/2009	7.76	< 0.5	< 0.5	< 0.5[a]	< 0.5	
	11/11/2009	7.86	**0.8**	< 0.5	< 0.5[a]	< 0.5	
MW-17A	12/4/2008	6.99	**0.3 J**	<0.5	< 0.5[a]	**5.8**	
	2/19/2009	8.14	**2.9**	<0.5	< 0.5[a]	**11**	
	6/10/2009	7.05	**1.0**	< 0.5	< 0.5[a]	**8.4**	Bromodichloromethane (0.5 J)
	8/13/2009	7.02	**0.3**	< 0.5	< 0.5[a]	**3.6**	
	11/12/2009	6.96	**4.0**	< 0.5	< 0.5[a]	**4.4**	
MW-17B	12/4/2008	7.34	**40**	<0.5	< 0.5[a]	**0.6 U**	
	2/23/2009	7.45	**31**	<0.5	< 0.5[a]	**11**	
	6/10/2009	7.38	**41**	< 0.5	< 0.5[a]	**0.5**	

TABLE G-3(a)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Date	pH	PCE (µg/L)	TCE (µg/L)	1,2 - Dichloroethene (µg/L)	Chloroform (µg/L)	Comments:
	8/14/2009	7.35	**40**	< 0.5	< 0.5[a]	< 0.5	
	11/9/2009	7.32	**51**	< 0.5	< 0.5[a]	< 0.5	
MW-17C	12/4/2008	7.93	**0.3 J**	<0.5	< 0.5[a]	**1.7 U**	
	2/19/2009	8.14	**1.8**	<0.5	< 0.5[a]	**0.5**	
	6/10/2009	7.97	**0.5**	< 0.5	< 0.5[a]	**0.3 J**	
	8/13/2009	7.66	< 0.5	< 0.5	< 0.5[a]	< 0.5	
	11/12/2009	7.89	**1.6**	<0.5	< 0.5[a]	<0.5	
MW-18A	12/3/2008	6.91	**4.6**	<0.5	< 0.5[a]	**4.9**	
	2/18/2009	7.06	**3.6**	<0.5	< 0.5[a]	**4.1**	
	6/9/2009	7.02	**3.3**	< 0.5	< 0.5[a]	**4.1**	
	8/13/2009	7.20	**2.4**	< 0.5	< 0.5[a]	**3.2**	
	11/11/2009	7.36	**4.8**	< 0.5	< 0.5[a]	**3.3**	
MW-19A	12/8/2008	7.36	<0.5	<0.5	< 0.5[a]	**1.4**	
	2/17/2009	7.31	**0.4**	<0.5	< 0.5[a]	**1.2**	
	6/8/2009	7.24	< 0.5	< 0.5	< 0.5[a]	**0.9**	
	8/11/2009	7.17	< 0.5	< 0.5	< 0.5[a]	**0.7**	
	11/10/2009	7.27	**3.3**	< 0.5	< 0.5[a]	**1.2**	
MW-19B	12/8/2008	7.52	<0.5	<0.5	< 0.5[a]	**0.5**	
	2/17/2009	7.56	**0.5**	<0.5	< 0.5[a]	**1.2**	
	6/8/2009	7.57	**0.4 J**	< 0.5	< 0.5[a]	< 0.5	
	8/11/2009	7.43	< 0.5	< 0.5	< 0.5[a]	< 0.5	
	11/10/2009	7.47	**2.2**	< 0.5	< 0.5[a]	< 0.5	
MW-20A	12/8/2008	7.24	**120**	<0.5	< 0.5[a]	**11**	
	2/24/2009	7.34	**180**	<0.5	< 0.5[a]	**11**	Dichlorofluoromethane (17) Bromodichloromethane (0.6)
	6/11/2009	7.25	**170**	< 0.5	< 0.5[a]	**11**	Dichlorofluoromethane (11 J-) Bromodichloromethane (0.5)
	8/14/2009	7.21	**130**	< 0.5	< 0.5[a]	**7.5**	Dichlorofluoromethane (12 J-) Bromodichloromethane (0.4 J-)
	11/9/2009	7.21	**180**	< 0.5	< 0.5[a]	**8.6**	Dichlorofluoromethane (8.1 J) Bromodichloromethane (0.5)
MW-20B	12/9/2008	7.78	**160**	<0.5	< 0.5[a]	**0.4 J**	
	2/24/2009	7.78	**140**	<0.5	< 0.5[a]	<0.5	
	6/11/2009	7.70	**150**	< 0.5	< 0.5[a]	< 0.5	
	8/14/2009	7.69	**150**	< 0.5	< 0.5[a]	< 0.5	
	11/9/2009	7.69	**160**	< 0.5	< 0.5[a]	< 0.5	
MW-20C	12/8/2008	7.90	**<0.5**	<0.5	< 0.5[a]	**<0.5**	
	2/17/2009	8.00	**0.3**	<0.5	< 0.5[a]	**<0.5**	
	6/8/2009	7.86	< 0.5	< 0.5	< 0.5[a]	< 0.5	
	8/12/2009	7.28	< 0.5	< 0.5	< 0.5[a]	< 0.5	
	11/10/2009	7.96	**1.3**	< 0.5	< 0.5[a]	< 0.5	

Notes:
[a] 1,2-Dichloroethene was not analyzed for in the 524.2 analysis. The value shown is the additive of cis-1,2-Dichloroethene and trans-1,2-Dichloroethene.

µg/L - micrograms per liter
D - Diluted reanalysis
E - The reported value exceeds linear range
J - Estimated value
J+ - Estimated value, High Bias
J- - Estimated value, Low Bias
MW - Monitoring Well
PCE - Tetrachloroethene
TCE - Trichloroethene
UJ - The analyte was analyzed for, but not detected. The sample detection limit is an estimated value.
NA - Not analyzed

TABLE G-3(b)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Sample ID	Date	Sample Code	pH	PCE (µg/L)	TCE (µg/L)
EW-01R (SP-01)	EW-1-0302	03/11/2010	N	7.11	180	0.5 U
		03/11/2010	N	7.2	180	0.5 U
		03/11/2010	N	7.57	180	0.5 U
	EW-1-0401	04/07/2010	N	7.39	180	0.5 U
		04/07/2010	N	7.63	180	0.5 U
	EW-1-0501	05/12/2010	N	7.15	160	0.5 U
	EW-1-0603	06/17/2010	N	6.96	130	0.5 U
		06/17/2010	N	7.18	130	0.5 U
	MW-101-0603	06/17/2010	FD	6.96	120	0.5 U
	EW-1-0703	07/15/2010	N	6.98	140	0.5 U
		07/15/2010	N	7.35	140	0.5 U
	MW-101-0703	07/15/2010	FD	--	140	0.5 U
	EW-1-0802	08/12/2010	N	7.7	150	0.5 U
		08/12/2010	N	7.41	150	0.5 U
	EW-1-0902	09/09/2010	N	7.27	210	0.5 U
		09/09/2010	N	7.4	210	0.5 U
	EW-1-1003	10/14/2010	N	7.46	140	0.5 U
		10/14/2010	N	7.2	140	0.5 U
	MW-103-1003	10/14/2010	FD	7.2	140	0.5 U
	EW-1-1103	11/18/2010	N	6.85	130	0.5 U
	EW-1-1202	12/09/2010	N	7.38	88	0.5 U
		12/09/2010	N	7.32	88	0.5 U
	EW-1-0103	01/13/2011	N	7.28	110	0.5 U
	EW-1-0202	02/10/2011	N	7.11	120	0.5 U
		02/10/2011	N	7.26	120	0.5 U
	EW-1-0302	03/09/2011	N	7.57	120	0.5 U
		03/09/2011	N	7.2	120	0.5 U
		03/09/2011	N	7.11	120	0.5 U
	EW-1-0403	04/14/2011	N	7.25	120	0.5 U
	EW-1-0502	05/10/2011	N	--	140	0.5 U
		05/10/2011	N	7.56	140	0.5 U
	EW-1-0603	06/02/2011	N	6.96	120	0.5 U
		06/02/2011	N	7.18	120	0.5 U
	EW-1-0703	07/14/2011	N	6.98	140	0.5 U
		07/14/2011	N	7.35	140	0.5 U
	EW-1-0802	08/11/2011	N	7.41	160	0.5 U
		08/11/2011	N	7.7	160	0.5 U
	EW-1-0902	09/13/2011	N	7.27	130	0.5 U
		09/13/2011	N	7.4	130	0.5 U
	MW-103-1003	10/13/2011	FD	7.2	0.5 U	0.5 U
	EW-1-1003	10/13/2011	N	7.2	140	0.5 U
		10/13/2011	N	7.46	140	0.5 U
	EW-1-1102	11/09/2011	N	7.37	130 J-	0.5 U
	EW-1-1202	12/08/2011	N	7.38	150	0.5 U
		12/08/2011	N	7.32	150	0.5 U
	EW-1-0102	01/12/2012	N	7.49	140 J-	0.5 R
	EW-1-0202	02/09/2012	N	7.11	150 J+	0.5 U
		02/09/2012	N	7.26	150 J+	0.5 U

TABLE G-3(b)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Sample ID	Date	Sample Code	pH	PCE (µg/L)	TCE (µg/L)
	EW-1-0302	03/08/2012	N	7.11	120	0.5 U
		03/08/2012	N	7.2	120	0.5 U
		03/08/2012	N	7.57	120	0.5 U
	EW-1-0401	04/05/2012	N	7.39	130	0.5 U
		04/05/2012	N	7.63	130	0.5 U
	EW-1-0502	05/08/2012	N	--	130	0.5 U
		05/08/2012	N	7.56	130	0.5 U
	EW-1-0602	06/07/2012	N	7.56	120 J+	0.5 U
	MW-101-0602	06/07/2012	FD	7.56	130	0.5 U
MW-01A	MW-1A-1Q10	03/10/2010	N	7.53	1.9	0.5 U
	MW-1A-2Q10	05/18/2010	N	6.9	2.6	0.5 U
	MW-1A-3Q10	08/24/2010	N	6.92	2.2	0.5 U
	MW-1A-4Q10	11/09/2010	N	7.14	2.0	0.5 U
	MW-1A-1Q11	03/08/2011	N	7.01	2.0	0.5 U
	MW-1A-2Q11	06/07/2011	N	7.1	1.6	0.5 U
	MW-1A-3Q11	09/07/2011	N	7.03	1.7	0.5 U
	MW-1A-4Q11	11/15/2011	N	6.73	1.5	0.5 U
	MW-1A-1Q12	01/31/2012	N	6.76	1.2 J	0.5 U
	MW-1A-2Q12	04/04/2012	N	7.27	2.3	0.5 U
MW-02A	MW-2A-1Q10	03/09/2010	N	7.13	5.8	0.5 U
	MW-2A-2Q10	05/18/2010	N	7.05	4.6	0.5 U
	MW-2A-3Q10	08/24/2010	N	7.22	5.2	0.5 U
	MW-2A-4Q10	11/09/2010	N	7.24	4.6	0.5 U
	MW-98A-1Q11	03/08/2011	FD	--	4.9 J	0.5 U
	MW-2A-1Q11	03/08/2011	N	7.06	4.8	0.5 U
	MW-2A-2Q11	06/07/2011	N	7.1	5.4	0.5 U
	MW-98A-2Q11	06/07/2011	FD	--	5.3	0.5 U
	MW-2A-3Q11	09/07/2011	N	7.05	5.6	0.5 U
	MW-2A-4Q11	11/15/2011	N	6.76	5.5	0.5 U
	MW-2A-1Q12	01/31/2012	N	6.77	3.8	0.5 U
	MW-2A-2Q12	04/04/2012	N	7.18	5.3	0.5 U
MW-03A	MW-3A-1Q10	03/11/2010	N	7.06	42	0.5 U
	MW-3A-2Q10	05/19/2010	N	7	42	0.5 U
	MW-97A-3Q10	08/26/2010	FD	--	120	0.5 U
	MW-3A-3Q10	08/26/2010	N	6.58	150	0.5 U
	MW-3A-4Q10	11/11/2010	N	7.07	37	0.5 U
	MW-3A-1Q11	03/11/2011	N	6.83	39	0.5 U
	MW-3A-2Q11	06/09/2011	N	6.94	52	0.5 U
	MW-3A-3Q11	09/07/2011	N	6.84	79	0.5 U
	MW-3A-4Q11	11/17/2011	N	7.21	61 J+	0.5 U
	MW-3A-1Q12	02/03/2012	N	7.21	47	0.5 U
	MW-3A-2Q12	04/05/2012	N	6.86	25 J+	0.5 U
MW-04A	MW-4A-1Q10	03/10/2010	N	7.82	510	0.4 J
	MW-4A-2Q10	05/19/2010	N	6.85	1900	10 U
	MW-4A-3Q10	08/25/2010	N	6.96	2100	12 U
	MW-4A-4Q10	11/10/2010	N	7.2	1500	2.5 U
	MW-4A-1Q11	03/09/2011	N	7.11	860	5.0 U

TABLE G-3(b)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Sample ID	Date	Sample Code	pH	PCE (µg/L)	TCE (µg/L)
	MW-4A-2Q11	06/08/2011	N	7.24	300	1.0
	MW-4A-3Q11	09/06/2011	N	7.1	1800	1.7
	MW-4A-4Q11	11/15/2011	N	6.79	2200	1.3
	MW-4A-1Q12	02/01/2012	N	7.09	130	7.2
	MW-96A-1Q12	02/01/2012	FD	--	95	6.7
	MW-4A-2Q12	04/03/2012	N	7.37	71	0.4 J
MW-04B	MW-96B-1Q10	03/11/2010	FD	--	5.2	0.5 U
	MW-4B-1Q10	03/11/2010	N	7.41	5.2	0.5 U
	MW-4B-2Q10	05/19/2010	N	7.31	6.5	0.5 U
	MW-4B-3Q10	08/25/2010	N	7.65	4.5	0.5 U
	MW-4B-4Q10	11/09/2010	N	7.26	14	0.5 U
	MW-4B-1Q11	03/09/2011	N	6.96	2.0	0.5 U
	MW-4B-2Q11	06/07/2011	N	7.25	2.8	0.5 U
	MW-4B-3Q11	09/07/2011	N	7.19	16	0.5 U
	MW-96B-3Q11	09/07/2011	FD	--	14	0.5 U
	MW-4B-4Q11	11/16/2011	N	7.56	24	0.5 U
	MW-4B-1Q12	02/02/2012	N	7.58	7.7	0.5 U
	MW-4B-2Q12	04/05/2012	N	7.28	4.4	0.5 U
MW-04C	MW-4C-1Q10	03/11/2010	N	7.68	0.4 J	0.5 U
	MW-4C-2Q10	05/18/2010	N	7.66	0.5 U	0.5 U
	MW-4C-3Q10	08/24/2010	N	7.76	0.5 U	0.5 U
	MW-4C-4Q10	11/09/2010	N	7.3	0.5 U	0.5 U
	MW-4C-1Q11	03/09/2011	N	7.07	0.5 U	0.5 U
	MW-4C-2Q11	06/07/2011	N	7.5	0.5 U	0.5 U
	MW-4C-3Q11	09/07/2011	N	7.45	0.9	0.5 U
	MW-4C-4Q11	11/16/2011	N	7.998	0.5 U	0.5 U
	MW-4C-1Q12	02/02/2012	N	8.03	0.5 U	0.5 U
	MW-4C-2Q12	04/05/2012	N	7.51	0.7	0.5 U
MW-05A	MW-5A-1Q10	03/09/2010	N	7.6	210	0.5 U
	MW-5A-2Q10	05/18/2010	N	7.14	150	0.5 U
	MW-5A-3Q10	08/25/2010	N	6.68	110	0.5 U
	MW-5A-4Q10	11/10/2010	N	7.22	150	0.5 U
	MW-5A-1Q11	03/09/2011	N	7.07	110	0.5 U
	MW-5A-2Q11	06/08/2011	N	7.13	110	0.5 U
	MW-5A-3Q11	09/07/2011	N	6.95	56	0.5 U
	MW-5A-4Q11	11/14/2011	N	7.08	87	4.2 U
	MW-5A-4Q11-60	12/05/2011	N	--	100	6.3 U
	MW-5A-4Q11-65	12/05/2011	N	--	120	8.3 U
	MW-5A-4Q11-70	12/05/2011	N	--	160	0.50 U
	MW-5A-4Q11-75	12/05/2011	N	--	130	8.3 U
	MW-5A-4Q11-80	12/05/2011	N	--	120	8.3 U
	MW-5A-4Q11-85	12/05/2011	N	--	180	13 U
	MW-5A-1Q12	01/31/2012	N	6.87	120	0.5 U
	MW-5A-2Q12	04/03/2012	N	6.96	92	0.5 U
	MW-95A-2Q12	04/03/2012	FD	--	78	0.5 U
MW-06A	MW-6A-1Q10	03/09/2010	N	7.21	48	0.5 U
	MW-6A-2Q10	05/18/2010	N	7.31	7.9	0.5 U

TABLE G-3(b)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Sample ID	Date	Sample Code	pH	PCE (µg/L)	TCE (µg/L)
	MW-6A-3Q10	08/24/2010	N	7.35	6.0	0.5 U
	MW-6A-4Q10	11/10/2010	N	7.35	6.5	0.5 U
	MW-94A-4Q10	11/10/2010	FD	--	6.5	0.5 U
	MW-6A-1Q11	03/08/2011	N	7.17	42	0.5 U
	MW-6A-2Q11	06/08/2011	N	7.21	5.6	0.5 U
	MW-6A-3Q11	09/06/2011	N	7.19	6.7	0.5 U
	MW-6A-4Q11	11/15/2011	N	6.89	6.8	0.50 U
	MW-6A-4Q11-59	12/05/2011	N	--	8.5	0.50 U
	MW-6A-4Q11-64	12/05/2011	N	--	7.2	0.50 U
	MW-6A-4Q11-69	12/05/2011	N	--	7.3	0.50 U
	MW-94A-4Q11-69	12/05/2011	FD	--	6.8	0.50 U
	MW-6A-4Q11-74	12/05/2011	N	--	7.5	0.50 U
	MW-6A-1Q12	02/01/2012	N	7	5.8	0.5 U
	MW-6A-2Q12	04/04/2012	N	7.36	10	0.5 U
MW-07A	MW-7A-1Q10	03/08/2010	N	6.91	0.3 J	0.5 U
	MW-7A-2Q10	05/17/2010	N	6.95	0.5 U	0.5 U
	MW-7A-3Q10	08/24/2010	N	6.66	0.5 U	0.5 U
	MW-7A-4Q10	11/09/2010	N	7.01	0.5 U	0.5 U
	MW-7A-1Q11	03/08/2011	N	6.87	0.6	0.5 U
	MW-7A-2Q11	06/07/2011	N	6.99	0.5 U	0.5 U
	MW-7A-3Q11	09/06/2011	N	6.99	0.5 U	0.5 U
	MW-7A-4Q11	11/14/2011	N	7.01	0.14 J	0.50 U
	MW-7A-4Q11-60	12/05/2011	N	--	0.11 J	0.50 U
	MW-7A-4Q11-65	12/05/2011	N	--	0.095 J	0.50 U
	MW-7A-4Q11-70	12/05/2011	N	--	0.50 U	0.50 U
	MW-7A-4Q11-75	12/05/2011	N	--	0.50 U	0.50 U
	MW-7A-4Q11-80	12/05/2011	N	--	0.11 J	0.50 U
	MW-7A-4Q11-85	12/05/2011	N	--	0.14 J	0.50 U
	MW-7A-1Q12	02/01/2012	N	6.81	0.5 U	0.5 U
	MW-7A-2Q12	04/04/2012	N	7.17	0.5 U	0.5 U
MW-08A	MW-8A-1Q10	03/09/2010	N	6.72	46	0.5 U
	MW-8A-2Q10	05/18/2010	N	7.08	39	0.5 U
	MW-92A-2Q10	05/18/2010	FD	--	36	0.5 U
	MW-8A-3Q10	08/25/2010	N	6.7	20	0.5 U
	MW-8A-4Q10	11/10/2010	N	7.14	29	0.5 U
	MW-8A-1Q11	03/09/2011	N	7.06	40	0.5 U
	MW-8A-2Q11	06/07/2011	N	7.09	43	0.5 U
	MW-8A-3Q11	09/07/2011	N	7.02	18	0.5 U
	MW-92A-4Q11	11/14/2011	FD	--	20	0.50 U
	MW-8A-4Q11	11/14/2011	N	7.06	23	1.0 U
	MW-8A-4Q11-60	12/06/2011	N	--	26	1.3 U
	MW-8A-4Q11-65	12/06/2011	N	--	25	1.3 U
	MW-8A-4Q11-70	12/06/2011	N	--	30	1.6 U
	MW-8A-4Q11-75	12/06/2011	N	--	30	1.6 U
	MW-8A-4Q11-80	12/06/2011	N	--	27	0.50 U
	MW-92A-4Q11-80	12/06/2011	FD	--	28	0.50 U
	MW-8A-4Q11-85	12/06/2011	N	--	21	0.50 U
	MW-8A-1Q12	01/31/2012	N	6.75	25	0.5 U

TABLE G-3(b)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Sample ID	Date	Sample Code	pH	PCE (µg/L)	TCE (µg/L)
	MW-8A-2Q12	04/03/2012	N	7.20	29	0.5 U
MW-09B	MW-9B-1Q10	03/09/2010	N	6.96	1.0	0.5 U
	MW-9B-2Q10	05/17/2010	N	7.41	3.6	0.5 U
	MW-91B-3Q10	08/24/2010	FD	--	17	0.5 U
	MW-9B-3Q10	08/24/2010	N	7.42	17	0.5 U
	MW-9B-4Q10	11/10/2010	N	7.51	4.4	0.5 U
	MW-9B-1Q11	03/08/2011	N	7.52	1.7	0.5 U
	MW-9B-2Q11	06/07/2011	N	7.58	2.3	0.5 U
	MW-9B-3Q11	09/07/2011	N	7.21	12	0.5 U
	MW-9B-4Q11	11/15/2011	N	7.1	6.1	0.5 U
	MW-91B-4Q11	11/15/2011	FD	--	6.4	0.5 U
	MW-9B-1Q12	01/31/2012	N	7.15	4.1	0.5 U
	MW-9B-2Q12	04/04/2012	N	7.37	4.0	0.5 U
MW-10A	MW-10A-1Q10	03/09/2010	N	7.05	210	0.5 U
	MW-10A-2Q10	05/19/2010	N	6.54	110	0.5 U
	MW-10A-3Q10	08/25/2010	N	6.69	130	0.5 U
	MW-10A-4Q10	11/10/2010	N	7.1	44	0.5 U
	MW-10A-1Q11	03/09/2011	N	6.96	130	0.2 J
	MW-10A-2Q11	06/08/2011	N	7.05	63	0.5 U
	MW-10A-3Q11	09/06/2011	N	7.03	52	0.5 U
	MW-10A-4Q11	11/15/2011	N	6.71	36	0.50 U
	MW-10A-4Q11-59	12/05/2011	N	--	8.9	0.50 U
	MW-90A-4Q11-59	12/05/2011	FD	--	9.3	0.50 U
	MW-10A-4Q11-64	12/05/2011	N	--	9.9	0.50 U
	MW-10A-4Q11-69	12/05/2011	N	--	15	0.50 U
	MW-10A-4Q11-74	12/05/2011	N	--	25	0.50 U
	MW-10A-4Q11-79	12/05/2011	N	--	57	0.50 U
	MW-10A-4Q11-84	12/05/2011	N	--	99	6.3 U
	MW-10A-1Q12	02/01/2012	N	6.79	34	0.5 U
	MW-10A-2Q12	04/04/2012	N	7.15	65	0.5 U
MW-10B	MW-10B-1Q10	03/11/2010	N	7.48	18	0.5 U
	MW-10B-2Q10	05/19/2010	N	7.38	18	0.5 U
	MW-10B-3Q10	08/25/2010	N	7.63	9.4	0.5 U
	MW-10B-4Q10	11/11/2010	N	7.26	25	0.5 U
	MW-90B-1Q11	03/09/2011	FD	--	16	0.5 U
	MW-10B-1Q11	03/09/2011	N	7.02	16	0.5 U
	MW-10B-2Q11	06/08/2011	N	7.17	14	0.5 U
	MW-90B-2Q11	06/08/2011	FD	--	15	0.5 U
	MW-402-3Q11	09/08/2011	FB	--	0.5 U	0.5 U
	MW-10B-3Q11	09/08/2011	N	7.17	18	0.5 U
	MW-10B-4Q11	11/14/2011	N	7.6	17	0.5 U
	MW-10B-1Q12	01/30/2012	N	7.43	14	0.5 U
	MW-10B-2Q12	04/02/2012	N	2.17	16	0.5 U
MW-10C	MW-10C-1Q10	03/11/2010	N	7.72	0.3 J	0.5 U
	MW-90C-1Q10	03/11/2010	FD	--	0.4 J	0.5 U
	MW-10C-2Q10	05/18/2010	N	7.72	0.5 U	0.5 U
	MW-10C-3Q10	08/24/2010	N	7.79	0.5 U	0.5 U

TABLE G-3(b)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Sample ID	Date	Sample Code	pH	PCE (µg/L)	TCE (µg/L)
	MW-10C-4Q10	11/12/2010	N	7.56	0.5 U	0.5 U
	MW-90C-4Q10	11/12/2010	FD	--	0.5 U	0.5 U
	MW-10C-1Q11	03/09/2011	N	7.2	0.5 U	0.5 U
	MW-10C-2Q11	06/08/2011	N	7.47	0.5 U	0.5 U
	MW-10C-3Q11	09/08/2011	N	7.44	0.5 U	0.5 U
	MW-10C-4Q11	11/14/2011	N	7.92	0.5 U	0.5 U
	MW-10C-1Q12	01/31/2012	N	8.06	0.5 U	0.5 U
	MW-10C-2Q12	04/02/2012	N	7.45	0.5 U	0.5 U
MW-11A	MW-11A-1Q10	03/09/2010	N	7.33	1.3	0.5 U
	MW-11A-2Q10	05/18/2010	N	6.67	2.3	0.5 U
	MW-11A-3Q10	08/24/2010	N	6.85	1.2	0.5 U
	MW-11A-4Q10	11/09/2010	N	7.1	1.3	0.5 U
	MW-11A-1Q11	03/08/2011	N	6.94	2.7	0.5 U
	MW-11A-2Q11	06/07/2011	N	7.05	3.4	0.5 U
	MW-11A-3Q11	09/06/2011	N	7.06	1.1	0.5 U
	MW-11A-4Q11	11/14/2011	N	7.04	1.3	0.50 U
	MW-11A-4Q11-70	12/05/2011	N	--	2.5	0.50 U
	MW-11A-4Q11-75	12/05/2011	N	--	0.90	0.50 U
	MW-11A-4Q11-80	12/05/2011	N	--	0.89	0.50 U
	MW-11A-4Q11-85	12/05/2011	N	--	0.91	0.50 U
	MW-11A-1Q12	01/31/2012	N	6.75	1.8	0.5 U
	MW-11A-2Q12	04/04/2012	N	7.24	2.7	0.5 U
MW-12A	MW-12A-1Q10	03/10/2010	N	7.67	20	0.5 U
	MW-12A-2Q10	05/18/2010	N	7.24	18	0.5 U
	MW-12A-3Q10	08/25/2010	N	6.68	24	0.5 U
	MW-12A-4Q10	11/10/2010	N	7.32	23	0.5 U
	MW-12A-1Q11	03/09/2011	N	7.11	21	0.5 U
	MW-12A-2Q11	06/07/2011	N	7.19	17	0.5 U
	MW-12A-3Q11	09/07/2011	N	7.2	23	0.5 U
	MW-12A-4Q11	11/15/2011	N	6.89	23	0.5 U
	MW-88A-1Q12	01/31/2012	FD	--	15	0.5 U
	MW-12A-1Q12	01/31/2012	N	6.87	16	0.5 U
	MW-12A-2Q12	04/04/2012	N	7.36	15	0.5 U
MW-13A	MW-13A-1Q10	03/09/2010	N	7.02	16	0.5 U
	MW-13A-2Q10	05/18/2010	N	6.91	18	0.5 U
	MW-87A-2Q10	05/18/2010	FD	--	16	0.5 U
	MW-13A-3Q10	08/25/2010	N	6.75	2.9	0.5 U
	MW-13A-4Q10	11/09/2010	N	7.13	2.8	0.5 U
	MW-13A-1Q11	03/08/2011	N	6.97	16	0.5 U
	MW-13A-2Q11	06/07/2011	N	7.04	11	0.5 U
	MW-13A-3Q11	09/06/2011	N	7.08	2.6	0.5 U
	MW-13A-4Q11	11/15/2011	N	6.7	2.3	0.50 U
	MW-13A-4Q11-77	12/05/2011	N	--	1.3	0.50 U
	MW-13A-4Q11-82	12/05/2011	N	--	1.4	0.50 U
	MW-13A-4Q11-87	12/05/2011	N	--	2.1	0.50 U
	MW-13A-4Q11-92	12/05/2011	N	--	1.9	0.50 U
	MW-13A-1Q12	02/01/2012	N	6.75	4.5	0.5 U

TABLE G-3(b)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Sample ID	Date	Sample Code	pH	PCE (µg/L)	TCE (µg/L)
	MW-13A-2Q12	04/04/2012	N	7.15	15	0.5 U
MW-14A	MW-14A-1Q10	03/09/2010	N	7.11	17	0.5 U
	MW-14A-2Q10	05/18/2010	N	6.99	16	0.5 U
	MW-14A-3Q10	08/24/2010	N	6.84	2.0	0.5 U
	MW-14A-4Q10	11/09/2010	N	7.02	9.1	0.5 U
	MW-14A-1Q11	03/08/2011	N	7.01	24	0.5 U
	MW-14A-2Q11	06/08/2011	N	7.16	21	0.5 U
	MW-14A-3Q11	09/06/2011	N	7	2.4	0.5 U
	MW-86A-3Q11	09/06/2011	FD	--	2.3	0.5 U
	MW-14A-4Q11	11/14/2011	N	7.01	6.6	0.50 U
	MW-14A-4Q11-69	12/06/2011	N	--	17	0.84 U
	MW-14A-4Q11-74	12/06/2011	N	--	18	0.84 U
	MW-14A-4Q11-79	12/06/2011	N	--	19	0.50 U
	MW-86A-4Q11-79	12/06/2011	FD	--	20	0.50 U
	MW-14A-4Q11-84	12/06/2011	N	--	22	0.50 U
	MW-14A-1Q12	01/31/2012	N	6.75	23	0.5 U
	MW-14A-2Q12	04/04/2012	N	7.26	25	0.5 U
MW-15A	MW-15A-1Q10	03/08/2010	N	6.98	0.5 U	0.5 U
	MW-15A-2Q10	05/17/2010	N	6.92	0.5 U	0.5 U
	MW-15A-3Q10	08/24/2010	N	6.65	0.2 J	0.5 U
	MW-15A-4Q10	11/08/2010	N	6.96	0.5 U	0.5 U
	MW-15A-1Q11	03/07/2011	N	6.99	0.5 U	0.5 U
	MW-15A-2Q11	06/06/2011	N	7.06	0.25 J	0.5 U
	MW-15A-3Q11	09/06/2011	N	7.07	0.5 U	0.5 U
	MW-15A-4Q11	11/14/2011	N	7.02	0.23 J	0.50 U
	MW-15A-4Q11-80	12/05/2011	N	--	0.50 U	0.50 U
	MW-15A-4Q11-85	12/05/2011	N	--	0.50 U	0.50 U
	MW-15A-4Q11-90	12/05/2011	N	--	0.50 U	0.50 U
	MW-15A-4Q11-95	12/05/2011	N	--	0.50 U	0.50 U
	MW-15A-1Q12	02/01/2012	N	6.82	0.5 U	0.5 U
	MW-15A-2Q12	04/03/2012	N	7.17	0.5 U	0.5 U
MW-16A	MW-16A-1Q10	03/10/2010	N	6.99	0.5 U	0.5 U
	MW-16A-2Q10	05/17/2010	N	6.85	0.5 U	0.5 U
	MW-16A-3Q10	08/26/2010	N	6.6	0.5 U	0.5 U
	MW-16A-4Q10	11/10/2010	N	6.66	0.5 U	0.5 U
	MW-16A-1Q11	03/08/2011	N	6.95	0.5 U	0.5 U
	MW-16A-2Q11	06/08/2011	N	6.68	0.5 U	0.5 U
	MW-16A-3Q11	09/07/2011	N	6.78	0.5 U	0.5 U
	MW-16A-4Q11	11/15/2011	N	7.09	0.5 U	0.5 U
	MW-16A-1Q12	01/31/2012	N	7.15	0.5 U	0.5 U
	MW-16A-2Q12	04/03/2012	N	6.75	0.5 U	0.5 U
MW-16B	MW-16B-1Q10	03/10/2010	N	7.3	4.9	0.5 U
	MW-16B-2Q10	05/19/2010	N	6.94	1.4	0.5 U
	MW-16B-3Q10	08/26/2010	N	6.78	1.8	0.5 U
	MW-16B-4Q10	11/10/2010	N	6.85	4.7	0.5 U
	MW-16B-1Q11	03/08/2011	N	7.14	3.3	0.5 U
	MW-16B-2Q11	06/08/2011	N	6.91	3.5	0.5 U

TABLE G-3(b)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Sample ID	Date	Sample Code	pH	PCE (µg/L)	TCE (µg/L)
	MW-16B-3Q11	09/07/2011	N	6.96	7.6	0.5 U
	MW-16B-4Q11	11/15/2011	N	7.18	2.8	0.5 U
	MW-16B-1Q12	01/31/2012	N	730	1.9	0.5 U
	MW-16B-2Q12	04/03/2012	N	6.91	8.8	0.5 U
MW-16C	MW-16C-1Q10	03/10/2010	N	7.71	0.5 U	0.5 U
	MW-16C-2Q10	05/17/2010	N	7.62	0.5 U	0.5 U
	MW-16C-3Q10	08/26/2010	N	7.37	0.5 U	0.5 U
	MW-16C-4Q10	11/10/2010	N	7.18	0.5 U	0.5 U
	MW-16C-1Q11	03/08/2011	N	7.64	0.5 U	0.5 U
	MW-16C-2Q11	06/08/2011	N	7.33	0.6	0.5 U
	MW-16C-3Q11	09/07/2011	N	7.41	0.6	0.5 U
	MW-16C-4Q11	11/15/2011	N	7.79	0.9	0.5 U
	MW-16C-1Q12	01/31/2012	N	7.95	0.5 U	0.5 U
	MW-16C-2Q12	04/03/2012	N	7.4	0.5 U	0.5 U
MW-17A	MW-17A-1Q10	03/10/2010	N	7.5	0.3 J	0.5 U
	MW-17A-2Q10	05/18/2010	N	6.73	0.3 J	0.5 U
	MW-17A-3Q10	08/24/2010	N	6.81	0.5 U	0.5 U
	MW-17A-4Q10	11/10/2010	N	6.63	0.5 U	0.5 U
	MW-17A-1Q11	03/09/2011	N	6.73	0.6	0.5 U
	MW-17A-2Q11	06/09/2011	N	6.74	0.43 J	0.5 U
	MW-17A-3Q11	09/08/2011	N	6.75	0.4 J	0.5 U
	MW-17A-4Q11	11/15/2011	N	7.07	0.5	0.5 U
	MW-83A-4Q11	11/15/2011	FD	--	0.3 J	0.5 U
	MW-17A-1Q12	02/01/2012	N	7.14	0.8	0.5 U
	MW-17A-2Q12	04/04/2012	N	6.79	0.6 J	1.0 U
MW-17B	MW-17B-1Q10	03/10/2010	N	7.3	63	0.5 U
	MW-17B-2Q10	05/19/2010	N	7.21	72	0.5 UJ
	MW-17B-3Q10	08/24/2010	N	7.13	90	0.5 U
	MW-17B-4Q10	11/12/2010	N	6.79	32 J	0.5 UJ
	MW-17B-1Q11	03/10/2011	N	6.77	51	0.5 U
	MW-17B-2Q11	06/09/2011	N	6.95	43	0.5 U
	MW-17B-3Q11	09/08/2011	N	6.96	61	0.5 U
	MW-17B-4Q11	11/15/2011	N	7.34	84	0.5 U
	MW-17B-1Q12	02/01/2012	N	7.44	73	0.5 U
	MW-17B-2Q12	04/05/2012	N	7.03	20	0.5 U
MW-17C	MW-17C-1Q10	03/10/2010	N	7.66	0.5 U	0.5 U
	MW-17C-2Q10	05/18/2010	N	7.54	0.5 U	0.5 U
	MW-83C-3Q10	08/24/2010	FD	--	0.5 U	0.5 U
	MW-17C-3Q10	08/24/2010	N	7.59	0.5 U	0.5 U
	MW-17C-4Q10	11/10/2010	N	7.16	0.5 U	0.5 U
	MW-17C-1Q11	03/10/2011	N	7.01	0.5 U	0.5 U
	MW-17C-2Q11	06/09/2011	N	7.44	0.5 U	0.5 U
	MW-17C-3Q11	09/08/2011	N	7.47	0.5 U	0.5 U
	MW-17C-4Q11	11/15/2011	N	7.95	0.5 U	0.5 U
	MW-17C-1Q12	02/01/2012	N	8.06	0.5 U	0.5 U
	MW-17C-2Q12	04/04/2012	N	7.4	0.3 J	0.5 U
MW-18A	MW-18A-1Q10	03/10/2010	N	7.5	4.0	0.5 U

TABLE G-3(b)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Sample ID	Date	Sample Code	pH	PCE (µg/L)	TCE (µg/L)
	MW-18A-2Q10	05/19/2010	N	6.69	2.9	0.5 U
	MW-18A-3Q10	08/25/2010	N	7.27	3.4	0.5 U
	MW-18A-4Q10	11/10/2010	N	6.74	3.3	0.5 U
	MW-18A-1Q11	03/11/2011	N	6.57	3.4 J+	0.5 U
	MW-18A-2Q11	06/07/2011	N	6.72	2.9	0.5 U
	MW-18A-3Q11	09/07/2011	N	6.72	3.2	0.5 U
	MW-18A-4Q11	11/15/2011	N	7	3.5	0.5 U
	MW-18A-1Q12	02/02/2012	N	6.94	3.8	0.5 U
	MW-82A-2Q12	04/06/2012	FD	--	2.0	0.5 U
	MW-18A-2Q12	04/06/2012	N	6.72	2.3	0.5 U
MW-19A	MW-19A-1Q10	03/11/2010	N	7.56	0.8	0.5 U
	MW-19A-2Q10	05/18/2010	N	7	0.5 U	0.5 U
	MW-19A-3Q10	08/25/2010	N	7.03	21	0.5 U
	MW-19A-4Q10	11/11/2010	N	7.05	0.5	0.5 U
	MW-19A-1Q11	03/08/2011	N	7.05	0.2 J	0.5 U
	MW-19A-2Q11	06/07/2011	N	6.93	0.5 U	0.5 U
	MW-81A-3Q11	09/06/2011	FD	--	0.5 U	0.5 U
	MW-19A-3Q11	09/06/2011	N	6.91	0.5 U	0.5 U
	MW-19A-4Q11	11/14/2011	N	7.24	0.5 U	0.5 U
	MW-19A-1Q12	01/30/2012	N	7.07	0.5 U	0.5 U
	MW-19A-2Q12	04/02/2012	N	6.73	0.5 U	0.5 U
MW-19B1	MW-19B-1Q10	03/11/2010	N	7.62	0.3 J	0.5 U
	MW-19B-2Q10	05/18/2010	N	7.24	0.2 J	0.5 U
	MW-81B-2Q10	05/18/2010	FD	--	0.6	0.5 U
	MW-19B-3Q10	08/25/2010	N	7.29	0.4 J	0.5 U
	MW-81B-4Q10	11/09/2010	FD	--	0.5 U	0.5 U
	MW-19B-4Q10	11/09/2010	N	7.22	0.5 U	0.5 U
	MW-19B-1Q11	03/08/2011	N	7.23	0.3 J	0.5 U
	MW-19B-2Q11	06/07/2011	N	7.12	0.26 J	0.5 U
	MW-19B-3Q11	09/07/2011	N	7.1	0.3 J	0.5 U
	MW-19B-4Q11	11/14/2011	N	7.42	0.3 J	0.5 U
	MW-19B-1Q12	01/30/2012	N	7.18	0.2 J	0.5 U
	MW-19B-2Q12	04/02/2012	N	6.85	0.3 J	0.5 U
MW-20A	MW-80A-1Q10	03/11/2010	FD	--	130	0.5 U
	MW-20A-1Q10	03/11/2010	N	7.4	120	0.5 U
	MW-20A-2Q10	05/19/2010	N	7.09	310 J	0.5 U
	MW-20A-3Q10	08/26/2010	N	6.74	28	0.5 U
	MW-20A-4Q10	11/11/2010	N	7.13	180 J	0.5 UJ
	MW-20A-1Q11	03/10/2011	N	6.74	260	1.0 U
	MW-20A-2Q11	06/10/2011	N	6.89	330	0.24 J
	MW-20A-3Q11	09/13/2011	N	6.88	280	0.3 J
	MW-20A-4Q11	11/17/2011	N	734	290	0.2 J
	MW-20A-1Q12	02/03/2012	N	7.39	270 J	0.2 J
	MW-20A-2Q12	04/05/2012	N	7.06	160	0.5 U
MW-20B	MW-20B-1Q10	03/11/2010	N	7.8	73	0.5 U
	MW-20B-2Q10	05/19/2010	N	7.53	120 J+	0.5 U
	MW-20B-3Q10	08/26/2010	N	7.38	0.5 U	0.5 U

TABLE G-3(b)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Sample ID	Date	Sample Code	pH	PCE (µg/L)	TCE (µg/L)
	MW-20B-4Q10	11/11/2010	N	7.4	96	0.5 U
	MW-20B-1Q11	03/10/2011	N	7.1	100	1.0 U
	MW-20B-2Q11	06/09/2011	N	7.31	110	0.5 U
	MW-20B-3Q11	09/13/2011	N	7.27	97	0.5 U
	MW-20B-4Q11	11/16/2011	N	7.77	100	0.5 U
	MW-20B-1Q12	02/03/2012	N	7.8	68	0.5 U
	MW-80B-2Q12	04/05/2012	FD	--	65	0.5 U
	MW-20B-2Q12	04/05/2012	N	7.37	65	0.5 U
MW-20C	MW-20C-1Q10	03/11/2010	N	8.04	0.5 U	0.5 U
	MW-20C-2Q10	05/18/2010	N	7.56	0.5 U	0.5 U
	MW-20C-3Q10	08/25/2010	N	7.51	140	0.5 U
	MW-20C-4Q10	11/09/2010	N	7.38	0.5 UJ	0.5 R
	MW-20C-1Q11	03/10/2011	N	7.27	0.5 U	0.5 U
	MW-80C-1Q11	03/10/2011	FD	--	0.5 U	0.5 U
	MW-20C-2Q11	06/09/2011	N	7.5	0.5 U	0.5 U
	MW-80C-2Q11	06/09/2011	FD	--	0.5 U	0.5 U
	MW-20C-3Q11	09/13/2011	N	7.26	0.5 U	0.5 U
	MW-20C-4Q11	11/16/2011	N	8.02	0.5 U	0.5 U
	MW-20C-1Q12	02/03/2012	N	7.93	0.5 U	0.5 U
	MW-20C-2Q12	04/06/2012	N	7.46	0.3 J	0.5 U
MW-21A	MW-21A-4Q11	11/18/2011	N	7.49	0.8	0.5 U
	MW-21A-1Q12	02/01/2012	N	7.38	1.0	0.5 U
	MW-21A-2Q12	04/04/2012	N	6.96	0.6	0.5 U
MW-22A	MW-78A-4Q11	11/18/2011	FD	--	0.5 U	0.5 U
	MW-22A-4Q11	11/18/2011	N	7.45	0.5 U	0.5 U
	MW-22A-1Q12	02/01/2012	N	7.45	0.5 U	0.5 U
	MW-22A-2Q12	04/04/2012	N	7.56	0.5 U	0.5 U
MW-23A	MW-23A-4Q11	11/17/2011	N	7.43	36	0.5 U
	MW-23A-1Q12	02/01/2012	N	7.33	25	0.5 U
	MW-23A-2Q12	04/04/2012	N	6.93	36	0.5 U
MW-24B	MW-24B-4Q11	11/18/2011	N	7.71	73	0.5 UJ
	MW-24B-1Q12	02/02/2012	N	7.69	74	0.5 U
	MW-24B-2Q12	04/06/2012	N	7.31	33	0.5 U
MW-25B	MW-25B-4Q11	11/18/2011	N	7.71	110	0.5 U
	MW-25B-1Q12	02/01/2012	N	7.8	110	0.5 U
	MW-75B-2Q12	04/05/2012	FD	--	98 J-	0.5 U
	MW-25B-2Q12	04/05/2012	N	7.36	120	0.5 U
MW-26B	MW-26B-4Q11	11/17/2011	N	7.86	0.2 J	0.5 U
	MW-26B-1Q12	01/31/2012	N	7.87	0.5 U	0.5 U
	MW-26B-2Q12	04/03/2012	N	7.2	0.5 U	0.5 U
MW-27B	MW-27B-4Q11	11/17/2011	N	7.9	0.5 U	0.5 U
	MW-27B-1Q12	01/31/2012	N	7.84	0.5 U	0.5 U
	MW-27B-2Q12	04/03/2012	N	7.14	0.5 U	0.5 U
MW-28B	MW-28B-4Q11	11/17/2011	N	7.67	49	0.5 U
	MW-28B-1Q12	02/01/2012	N	7.66	41	0.5 U

TABLE G-3(b)

GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Well Identification	Sample ID	Date	Sample Code	pH	PCE (µg/L)	TCE (µg/L)
	MW-28B-2Q12	04/05/2012	N	7.16	43	0.5 U
MW-29B	MW-29B-4Q11	11/17/2011	N	7.71	150	0.5 U
	MW-29B-1Q12	02/02/2012	N	7.65	100	0.5 U
	MW-71B-1Q12	02/02/2012	FD	--	79	0.5 U
	MW-29B-2Q12	04/06/2012	N	7.29	70	0.5 U

FD - field duplicate
N - normal sample
J - Estimated value
J+ - Estimated value, high bias
PCE - Tetrachloroethlene
R - rejected value
TCE - Trichloroehtene
U - not detected above the method detection limit
UJ - estimated reporting limit
µg/L = micrograms per liter

FIGURE G-4(a)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

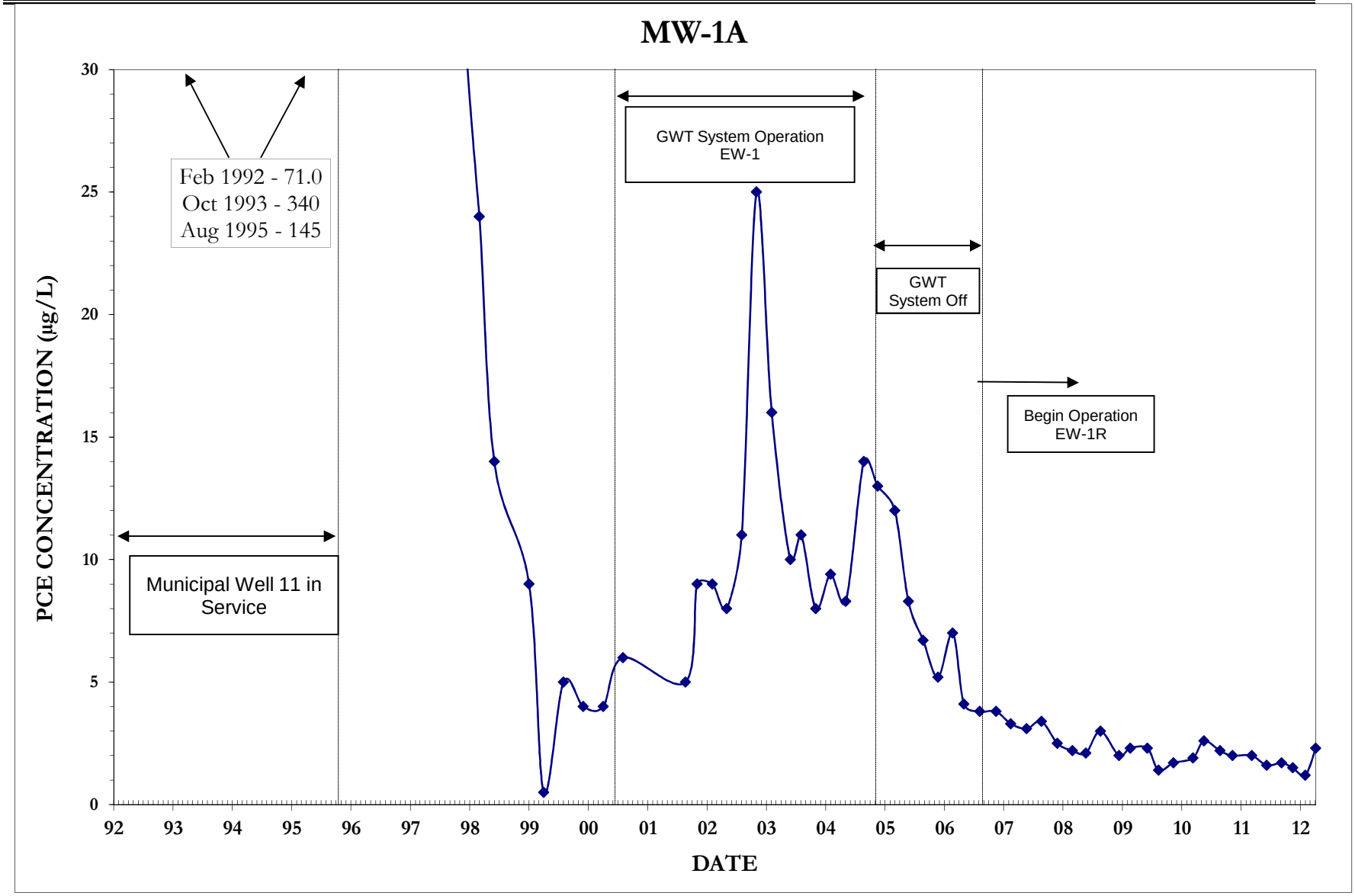

FIGURE G-4(b)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

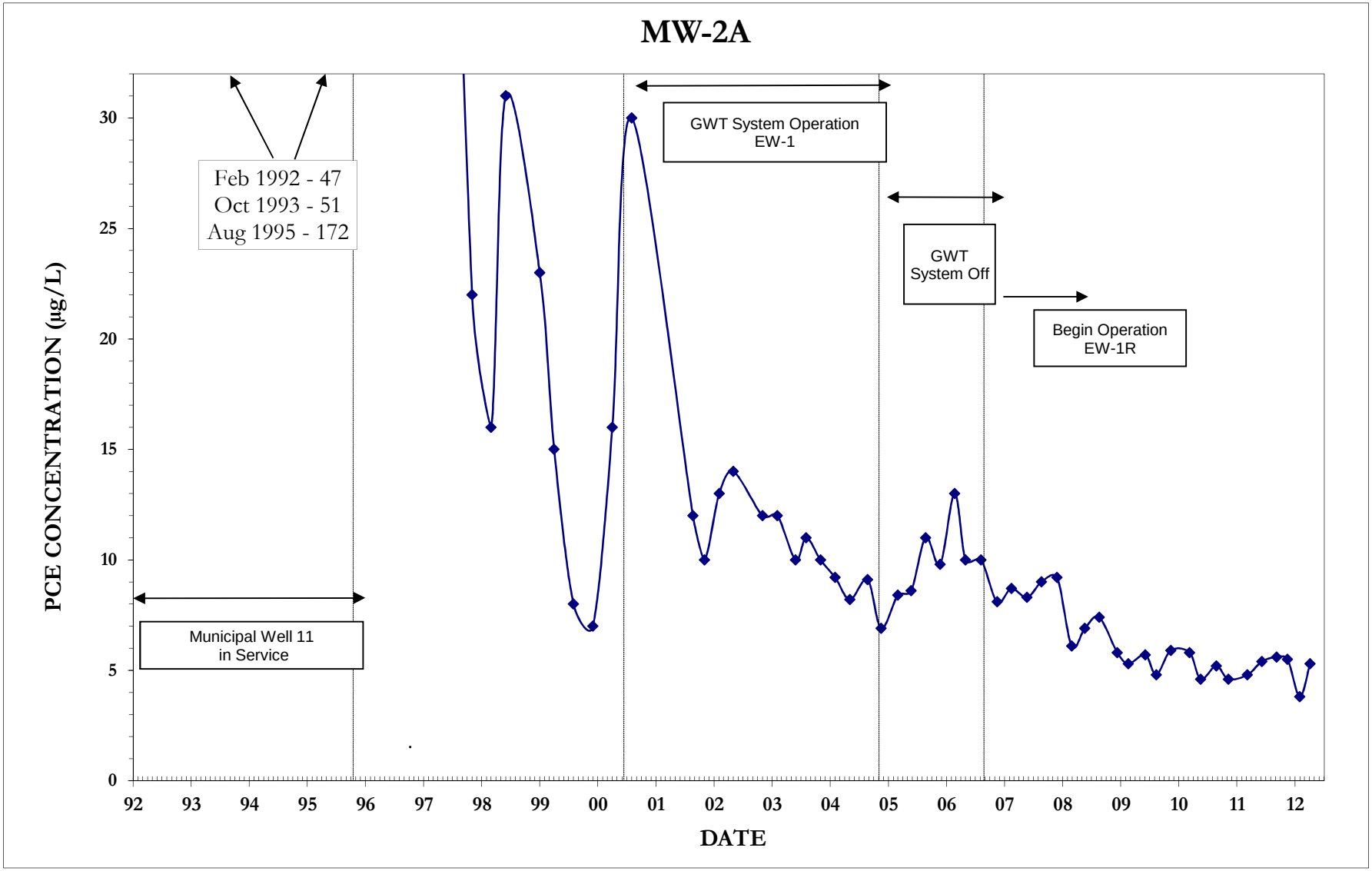

FIGURE G-4(c)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

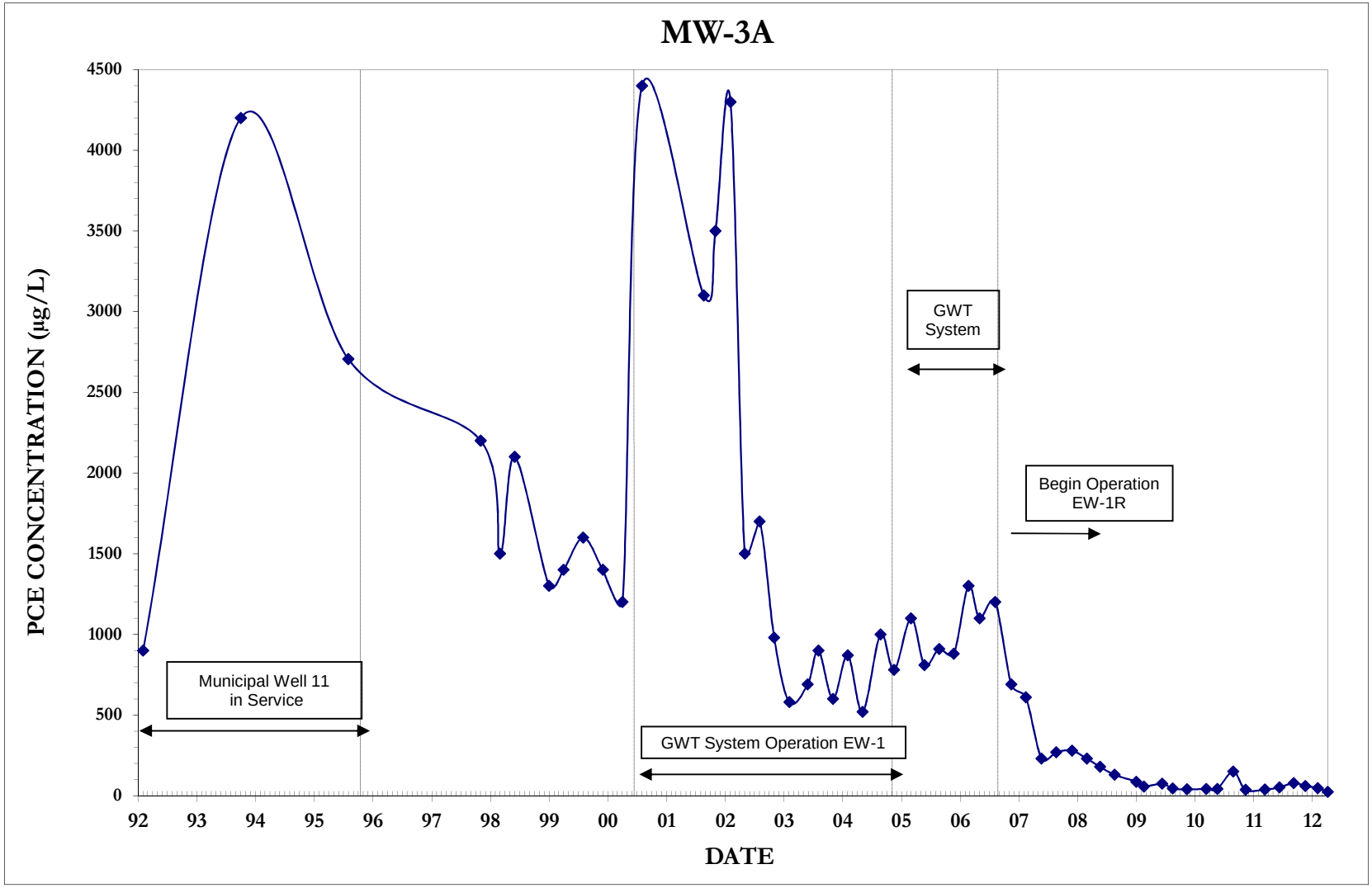

FIGURE G-4(d)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

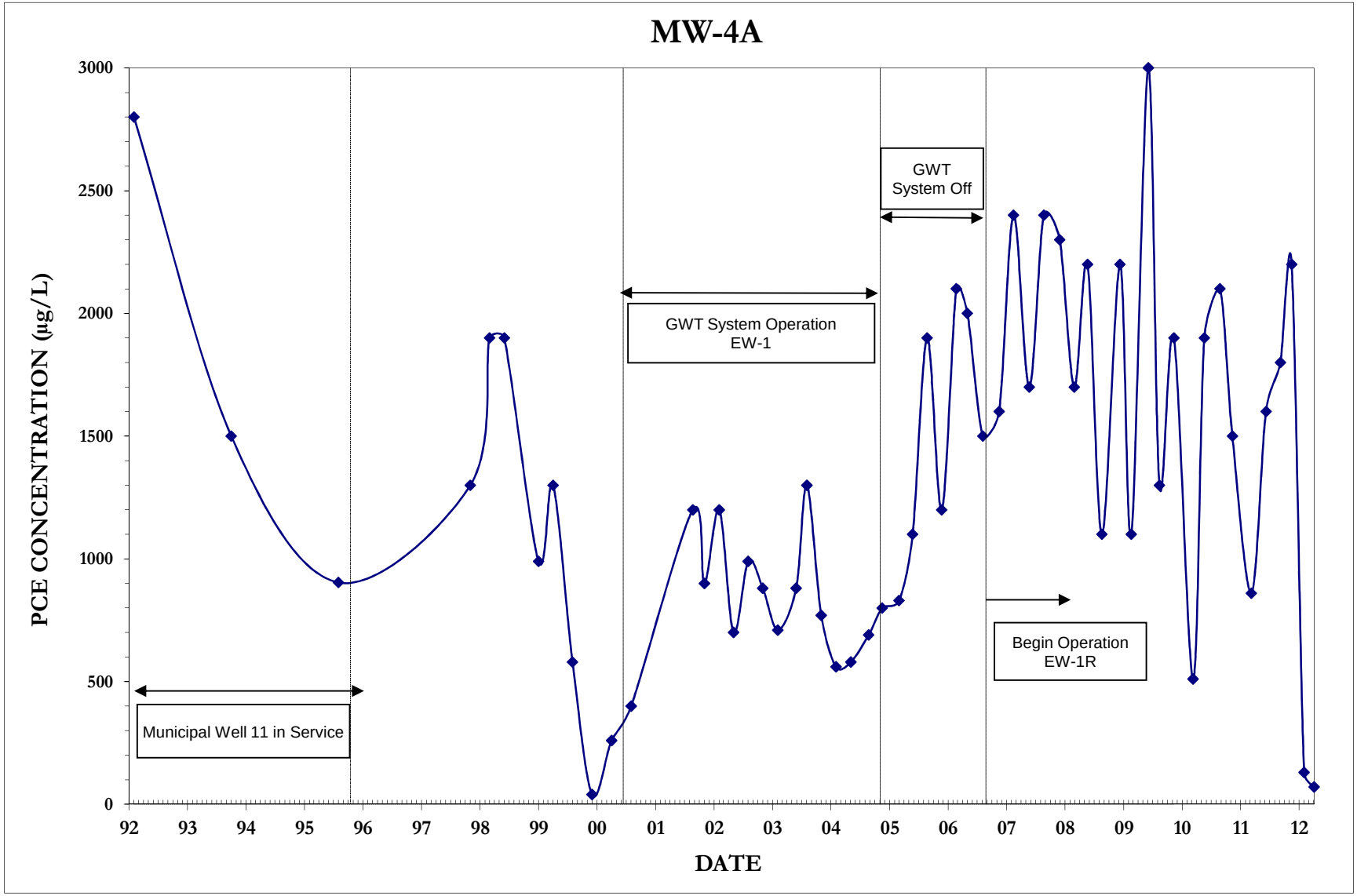

FIGURE G-4(e)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

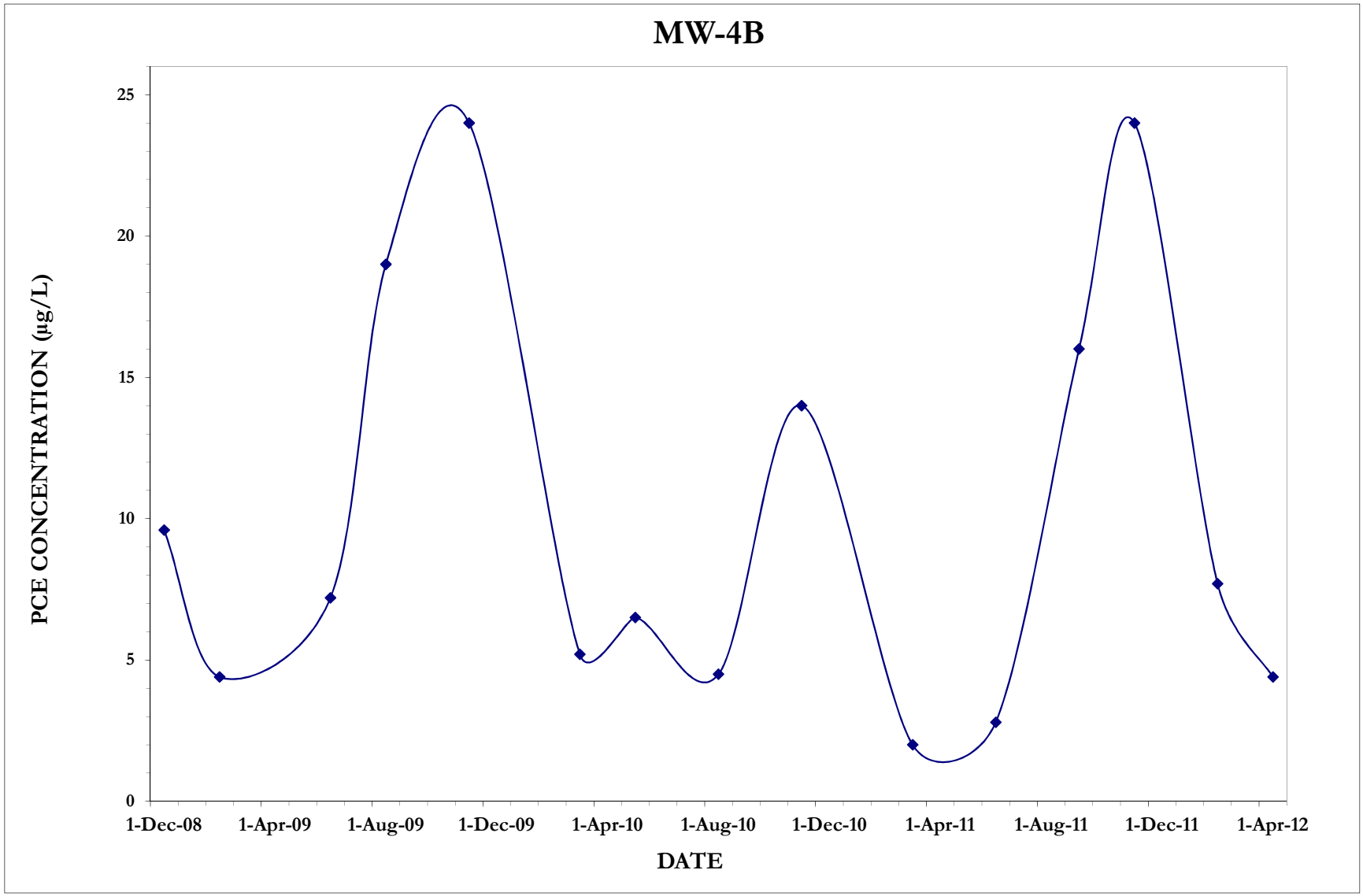

FIGURE G-4(f)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

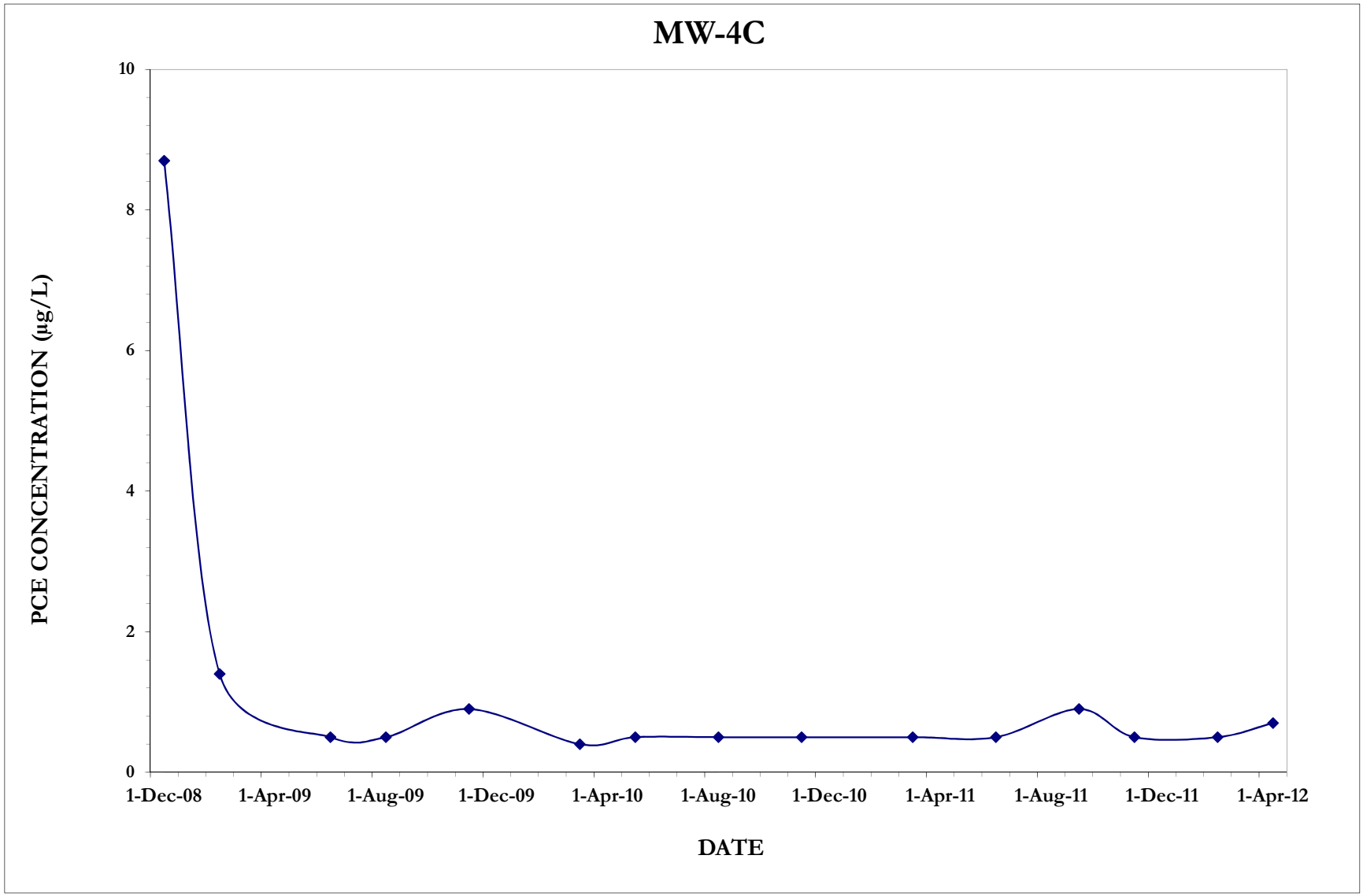

FIGURE G-4(g)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

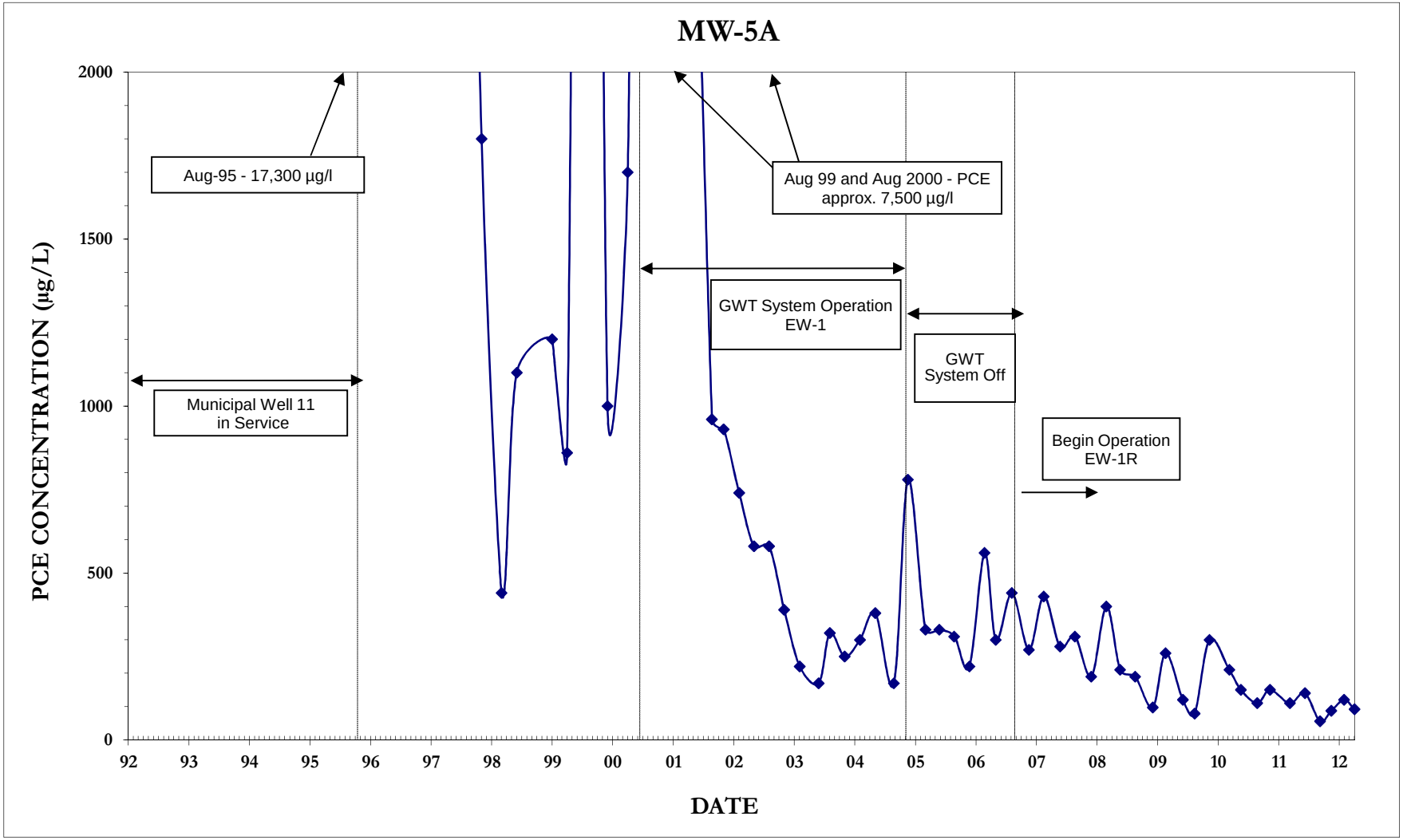

FIGURE G-4(h)

HISTORICAL PCE CONCENTRATION IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

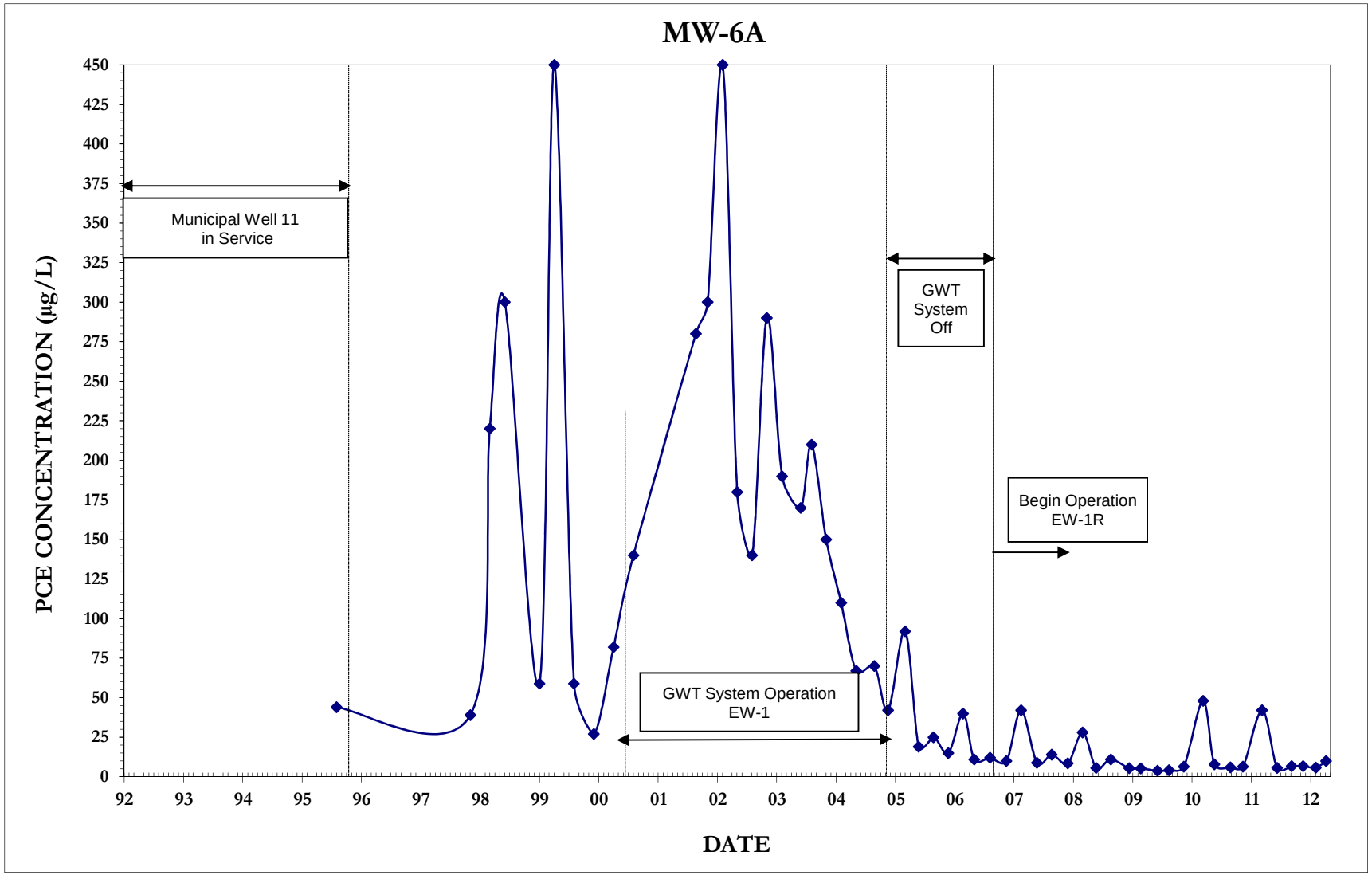

FIGURE G-4(i)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

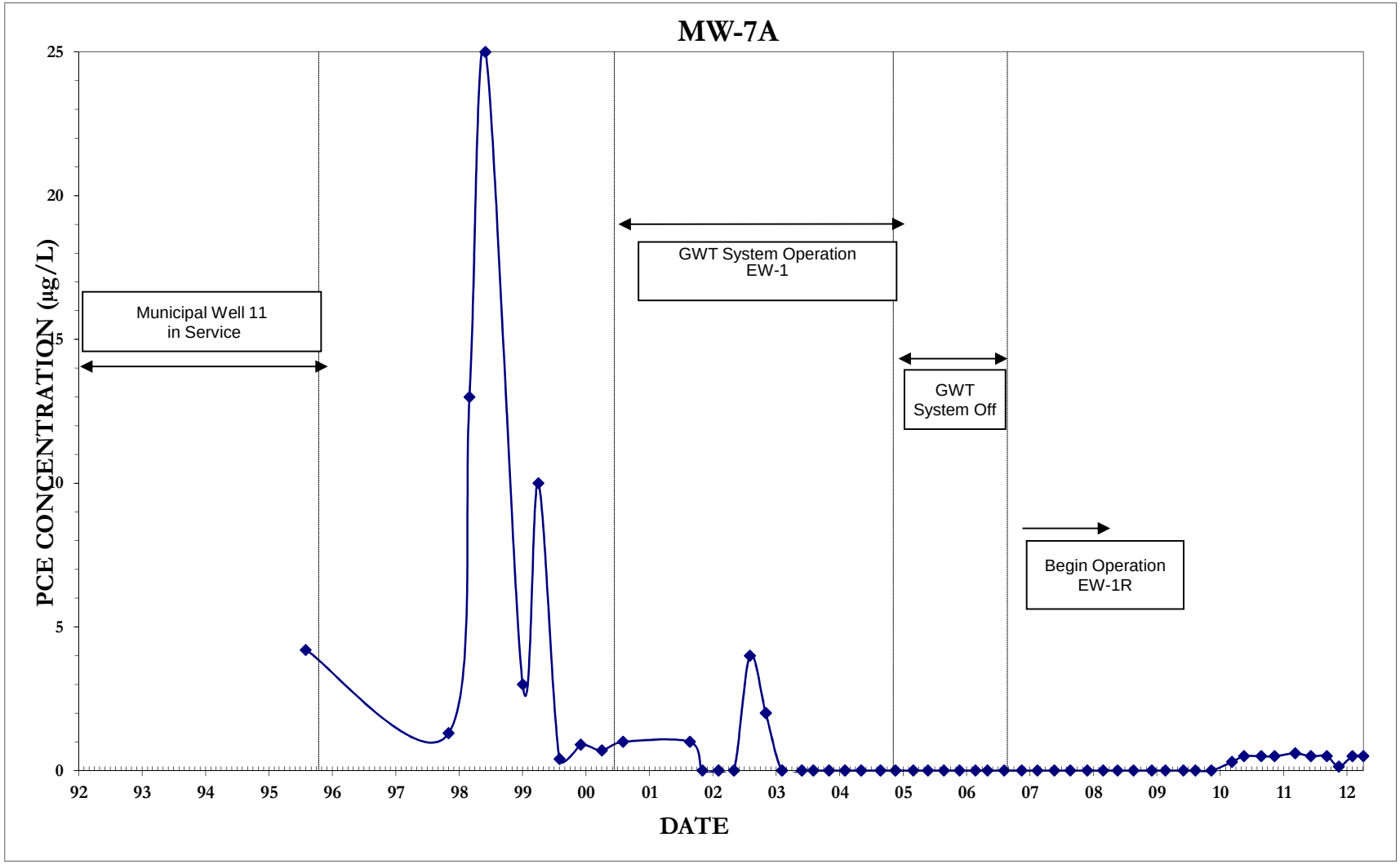

FIGURE G-4(j)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

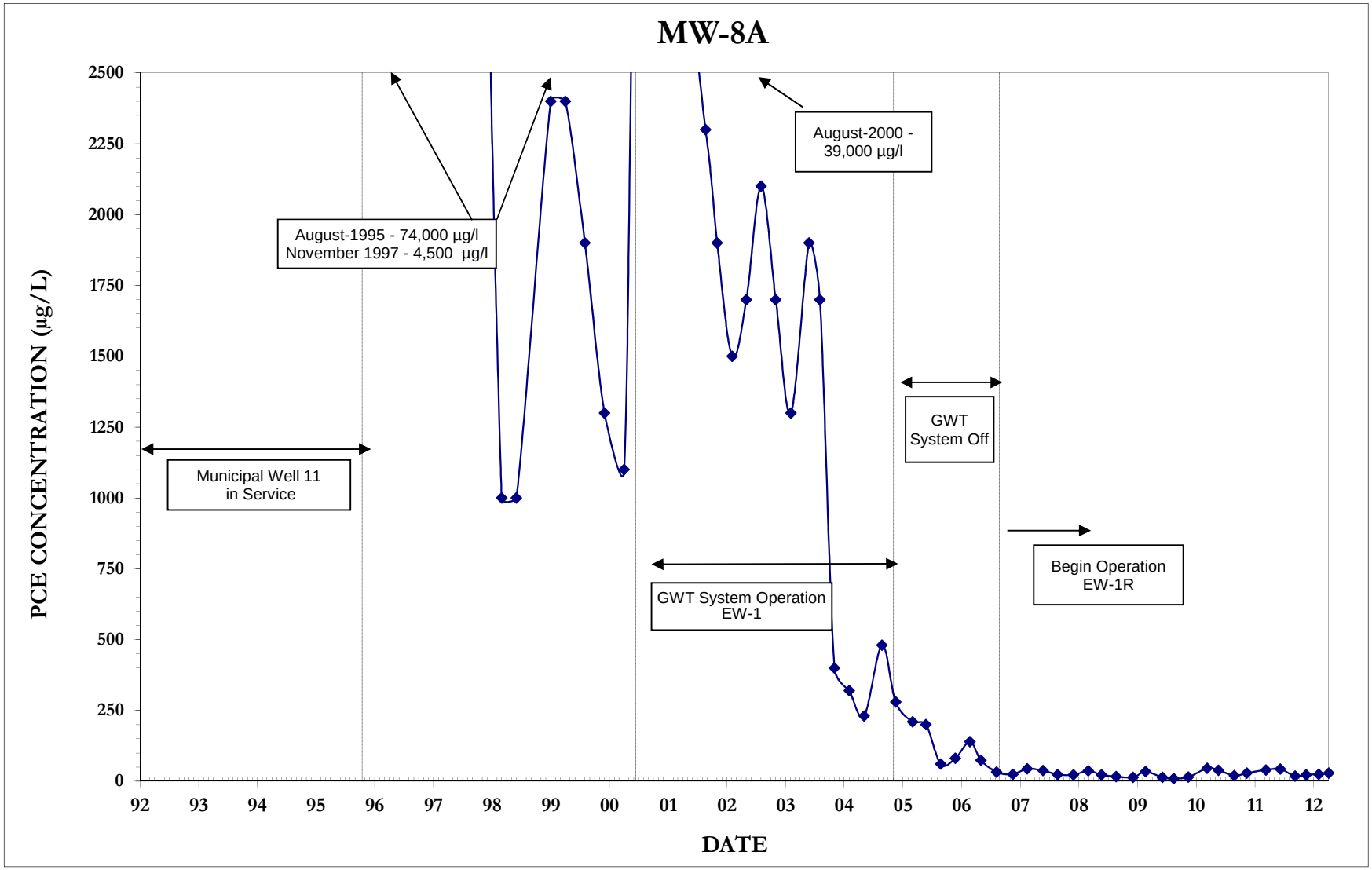

FIGURE G-4(k)

HISTORICAL PCE CONCENTRATIONS IN GROUDNWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

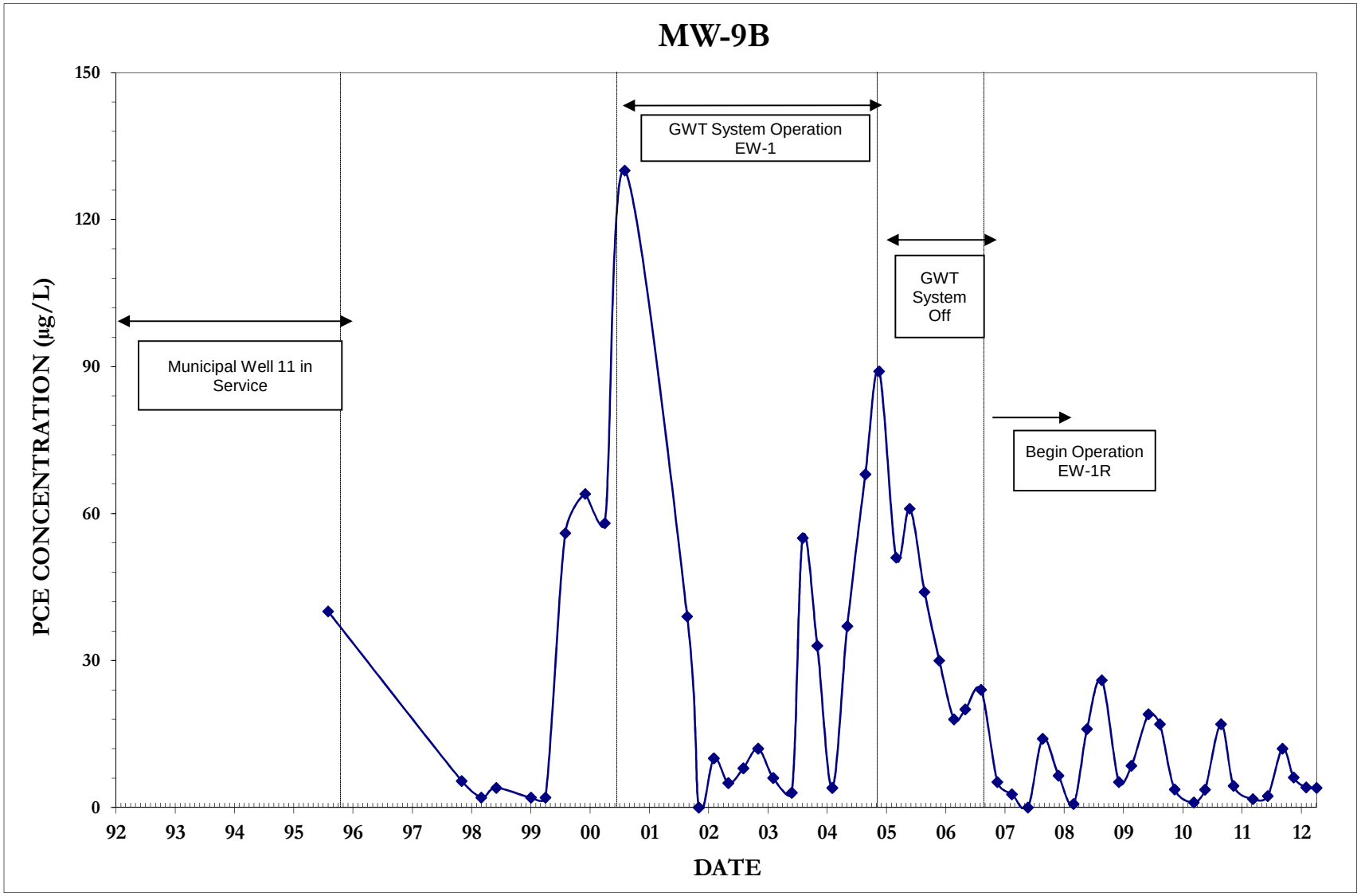

FIGURE G-4(I)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

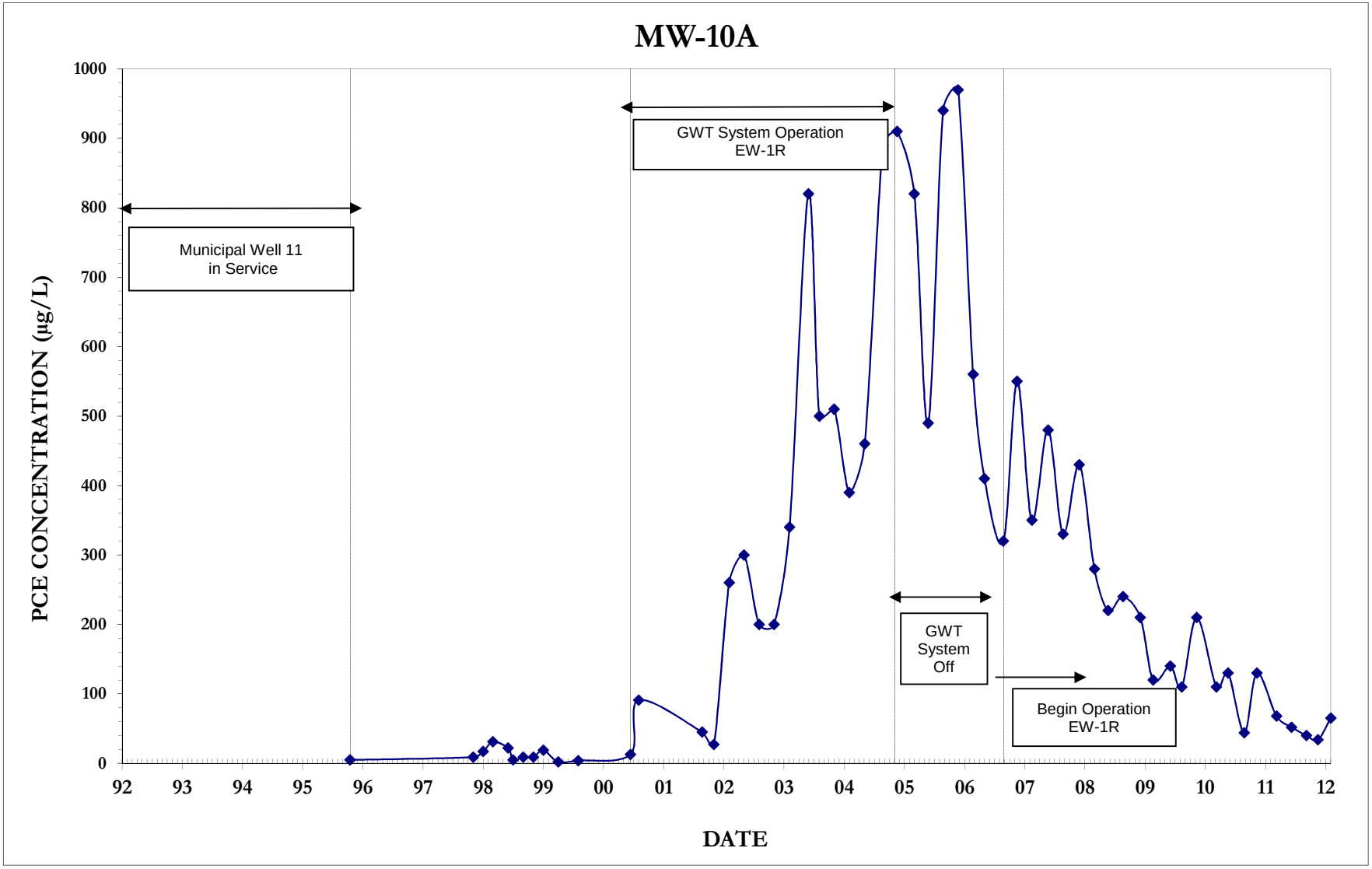

FIGURE G-4(m)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

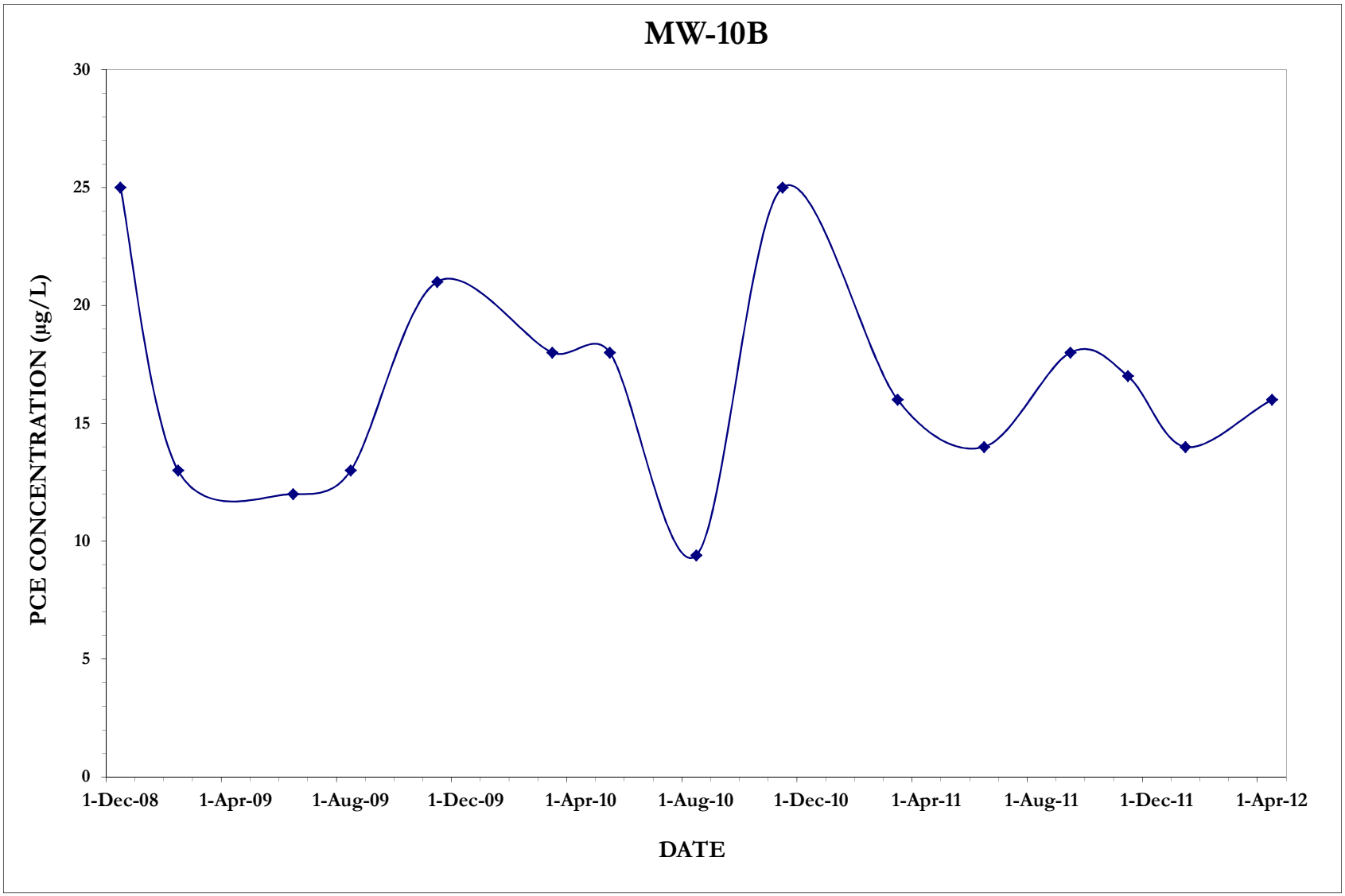

FIGURE G-4(n)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

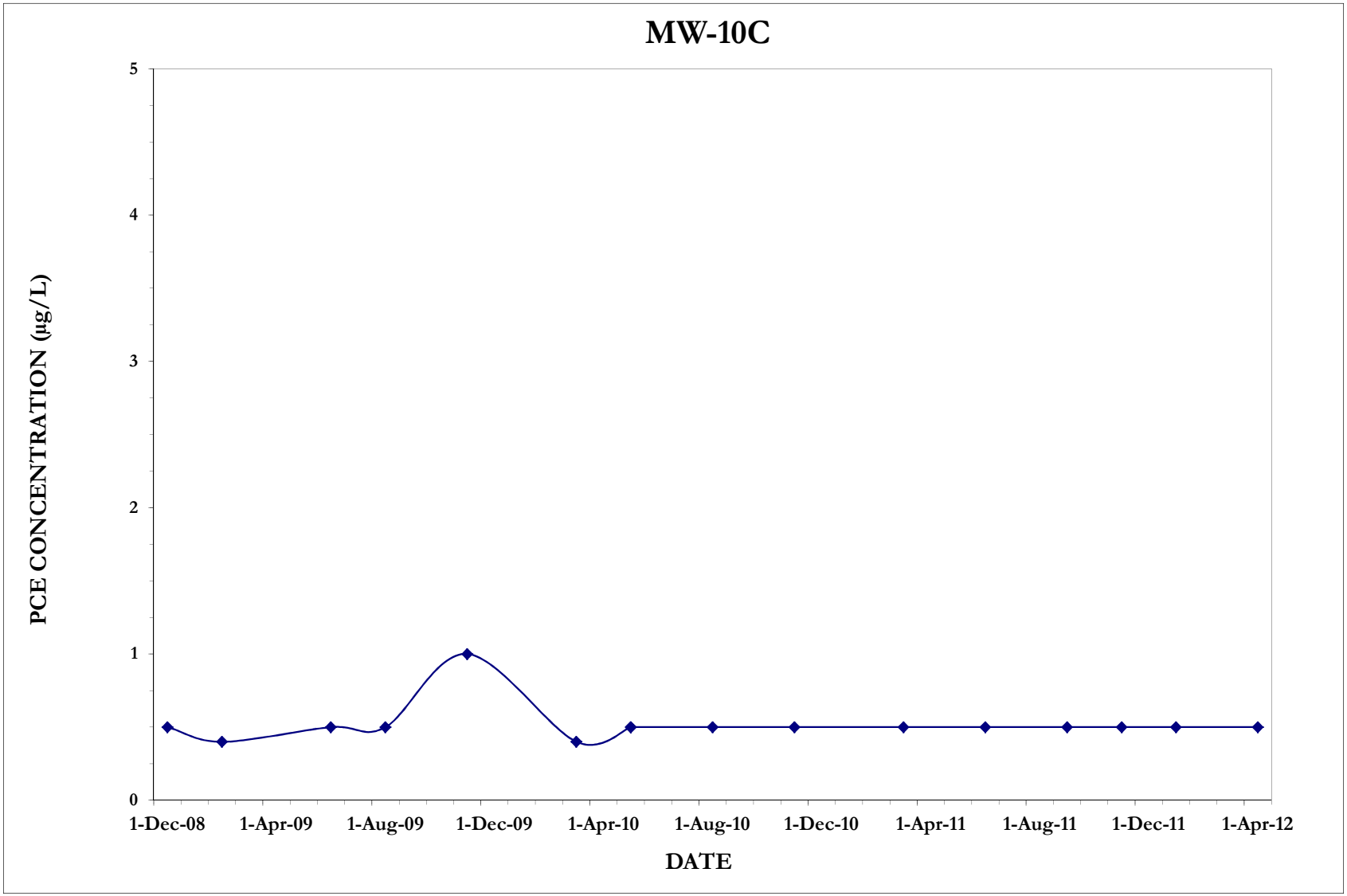

FIGURE G-4(o)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

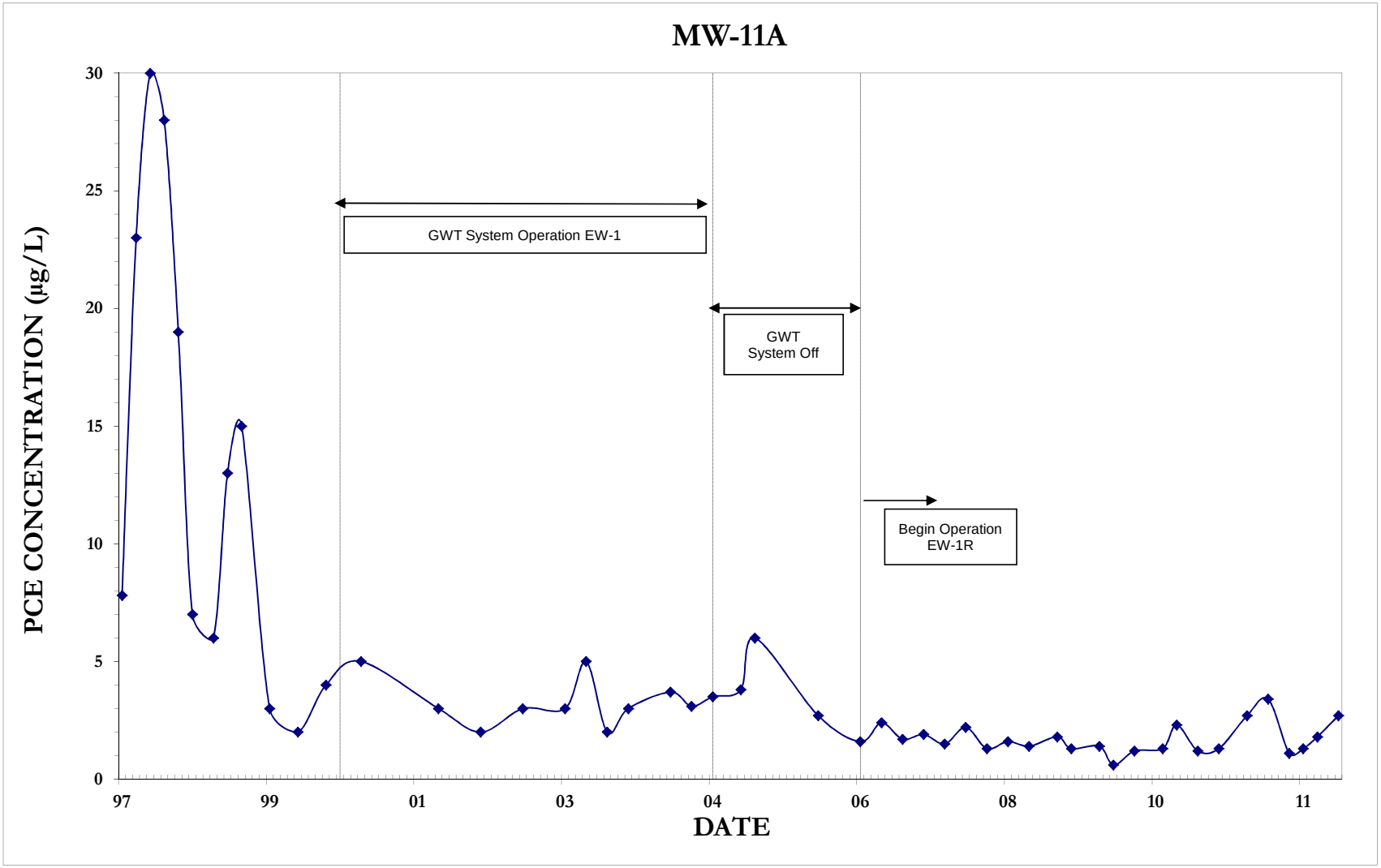

FIGURE G-4(p)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

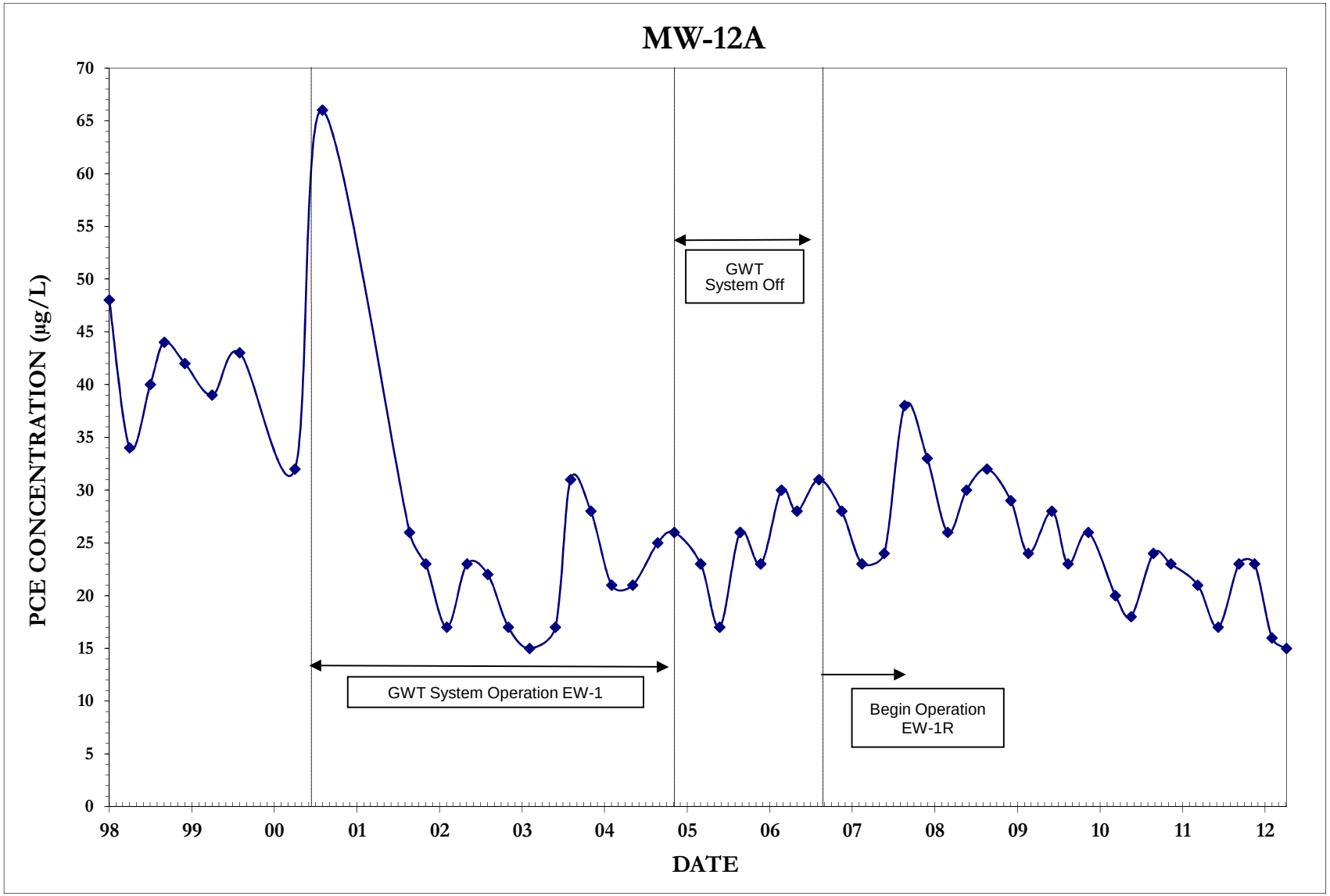

FIGURE G-4(q)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

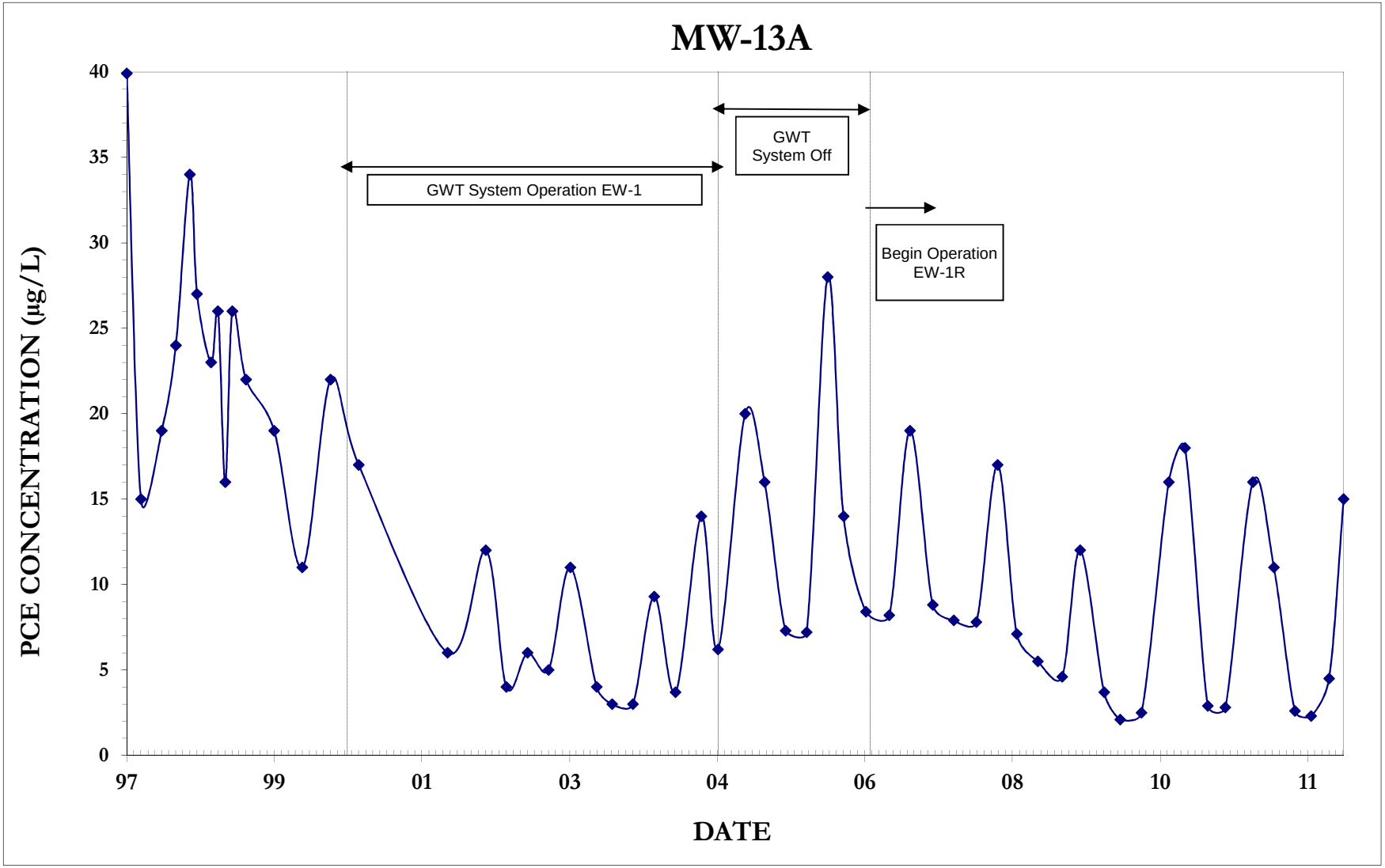

FIGURE G-4(r)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

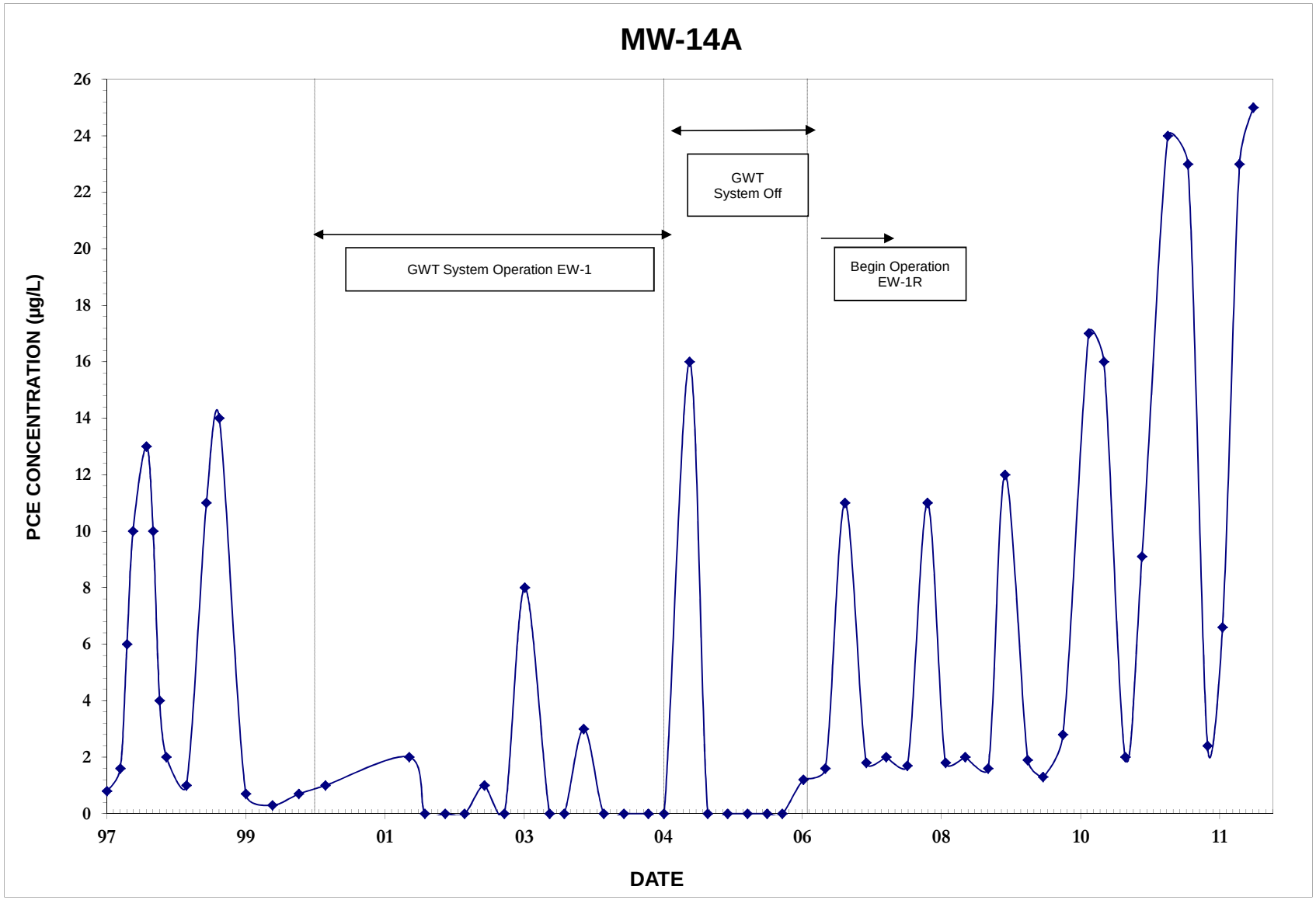

FIGURE G-4(s)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

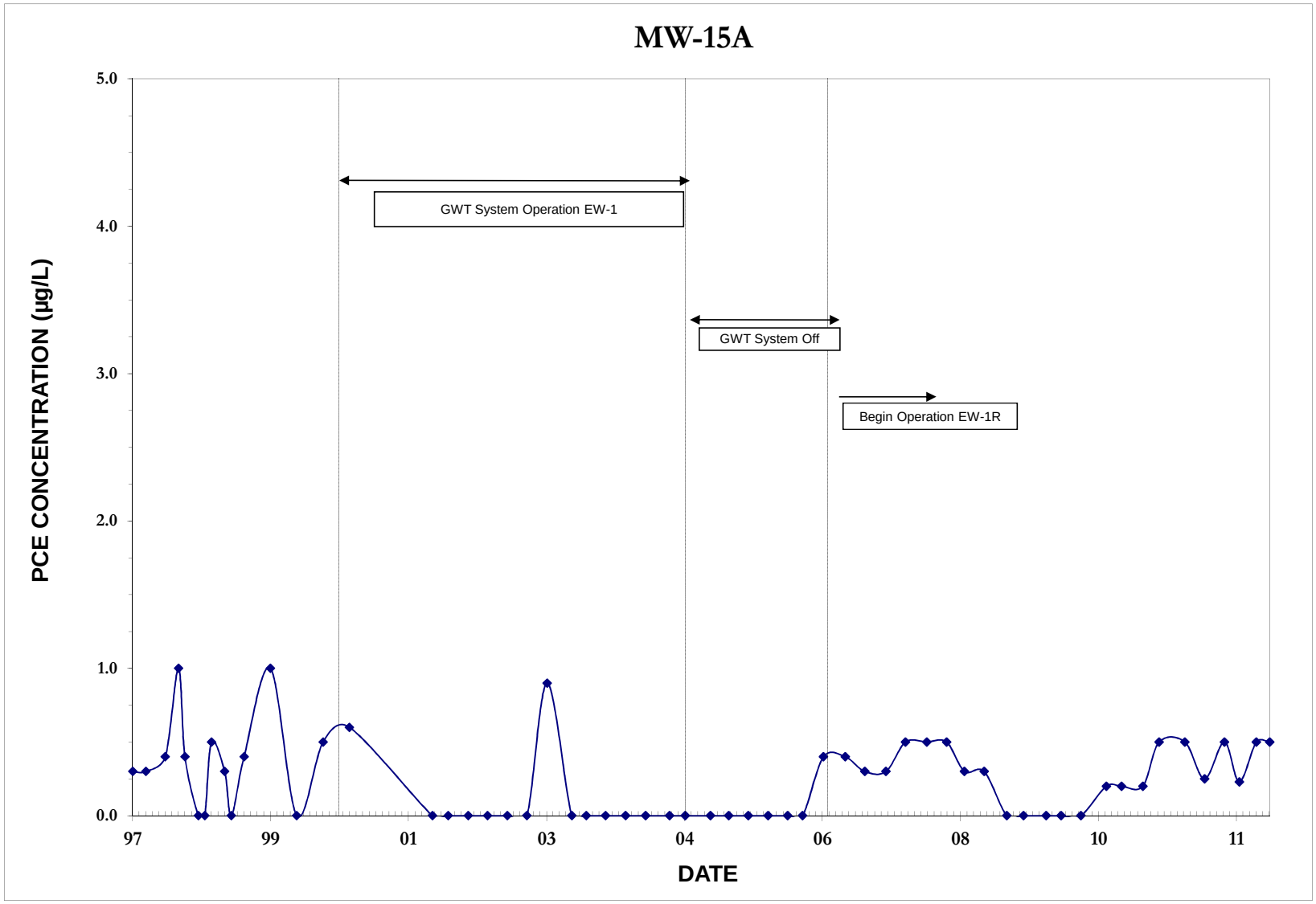

FIGURE G-4(t)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

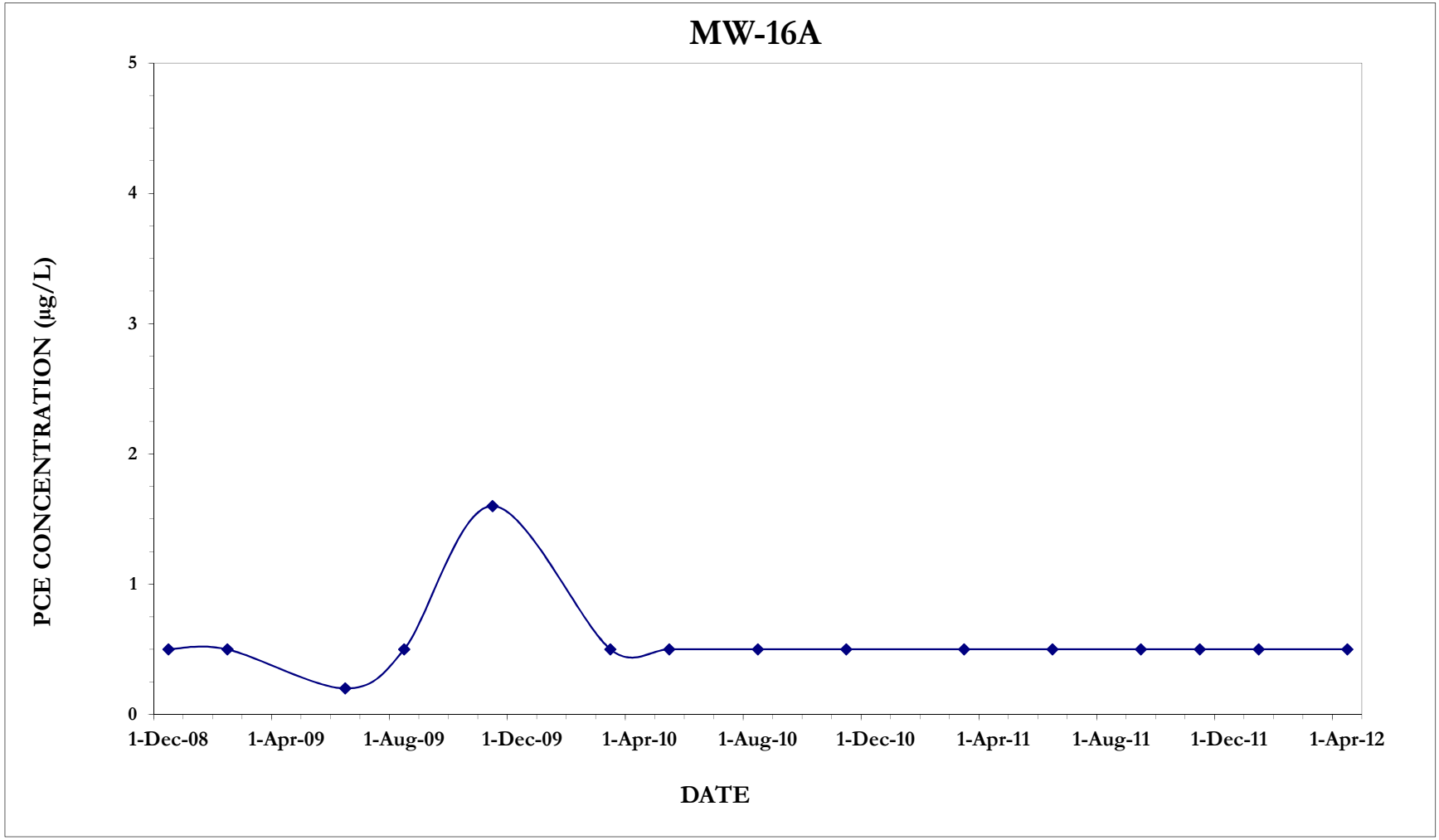

FIGURE G-4(u)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

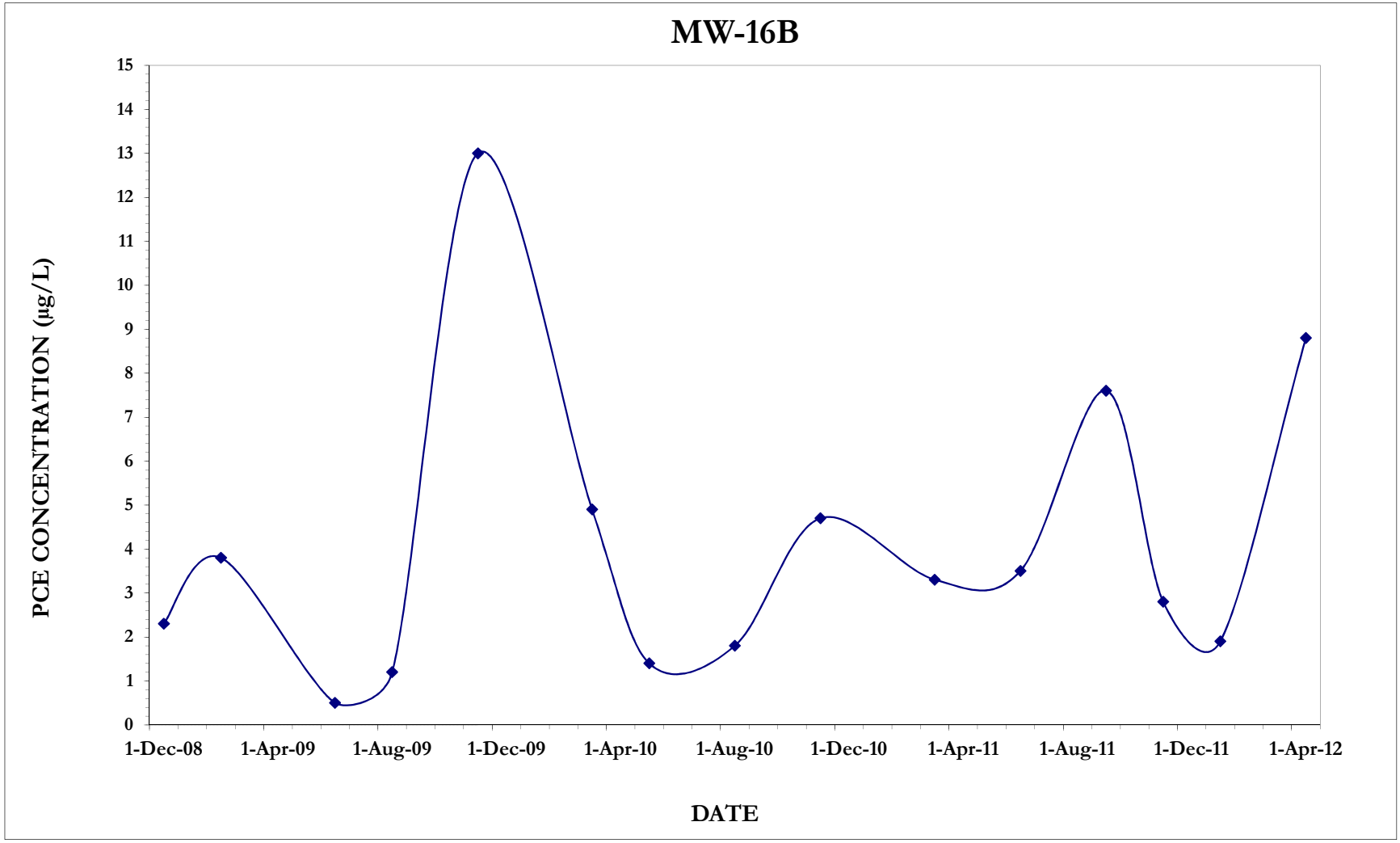

FIGURE G-4(v)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

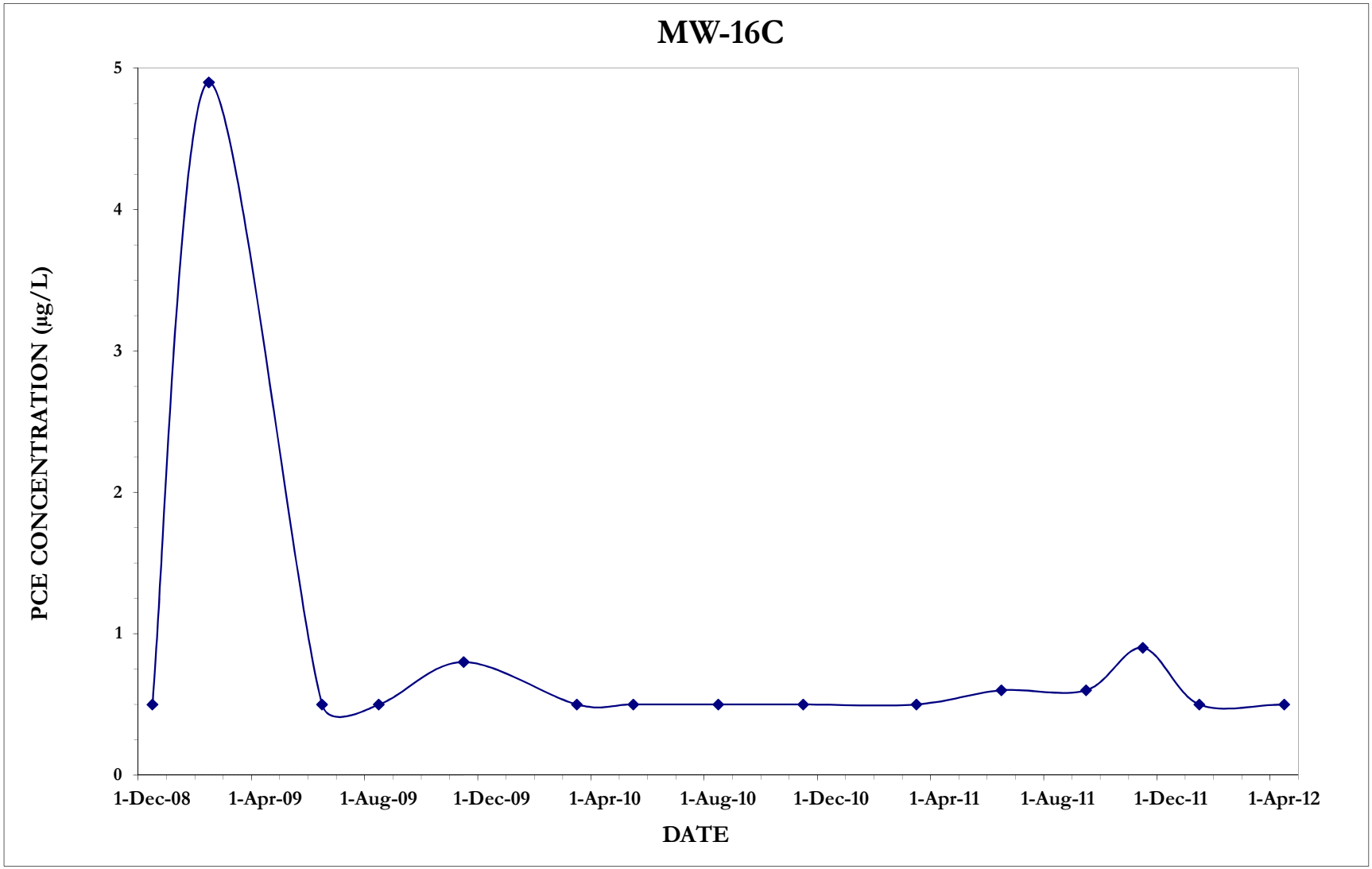

FIGURE G-4(w)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

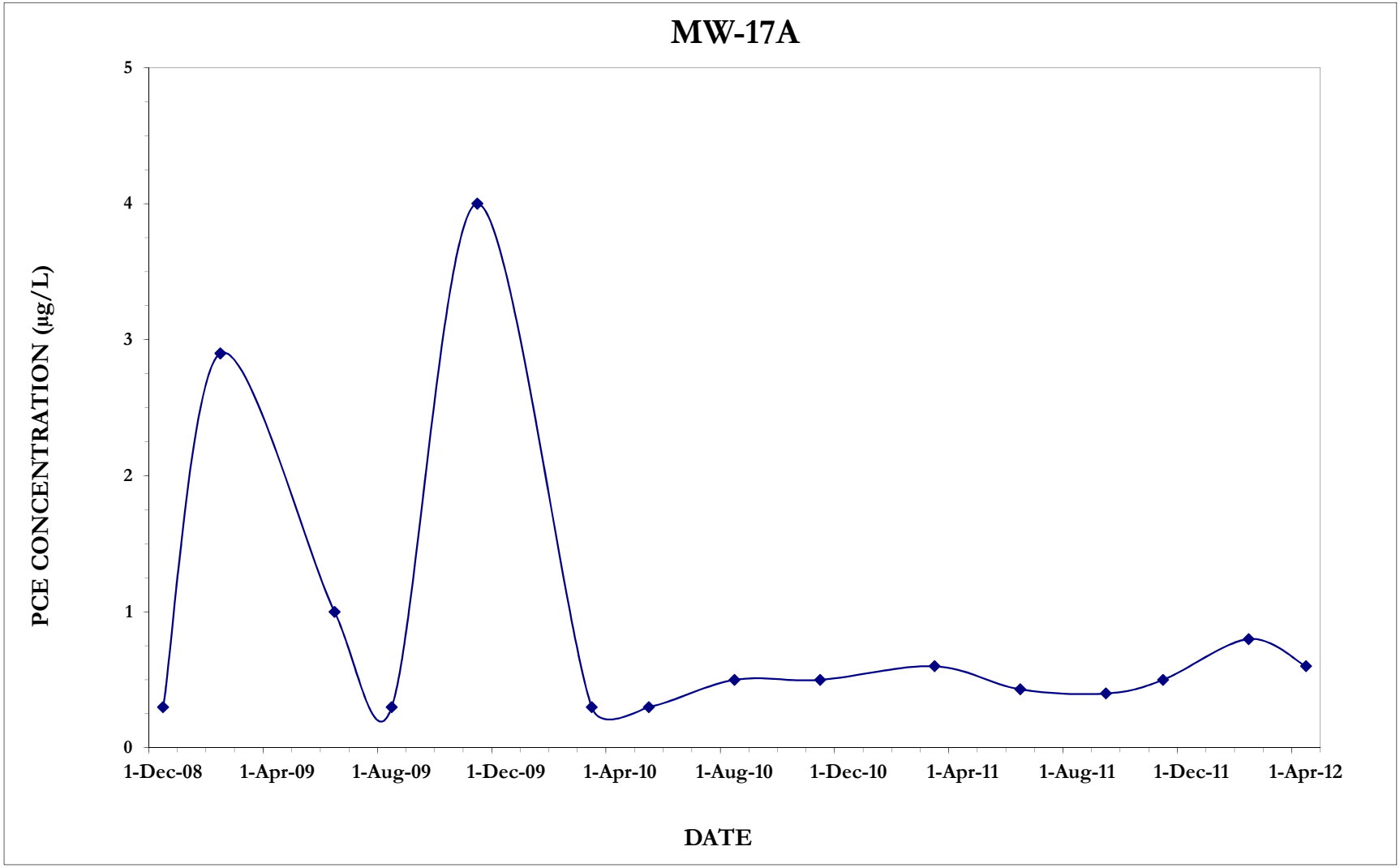

FIGURE G-4(x)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

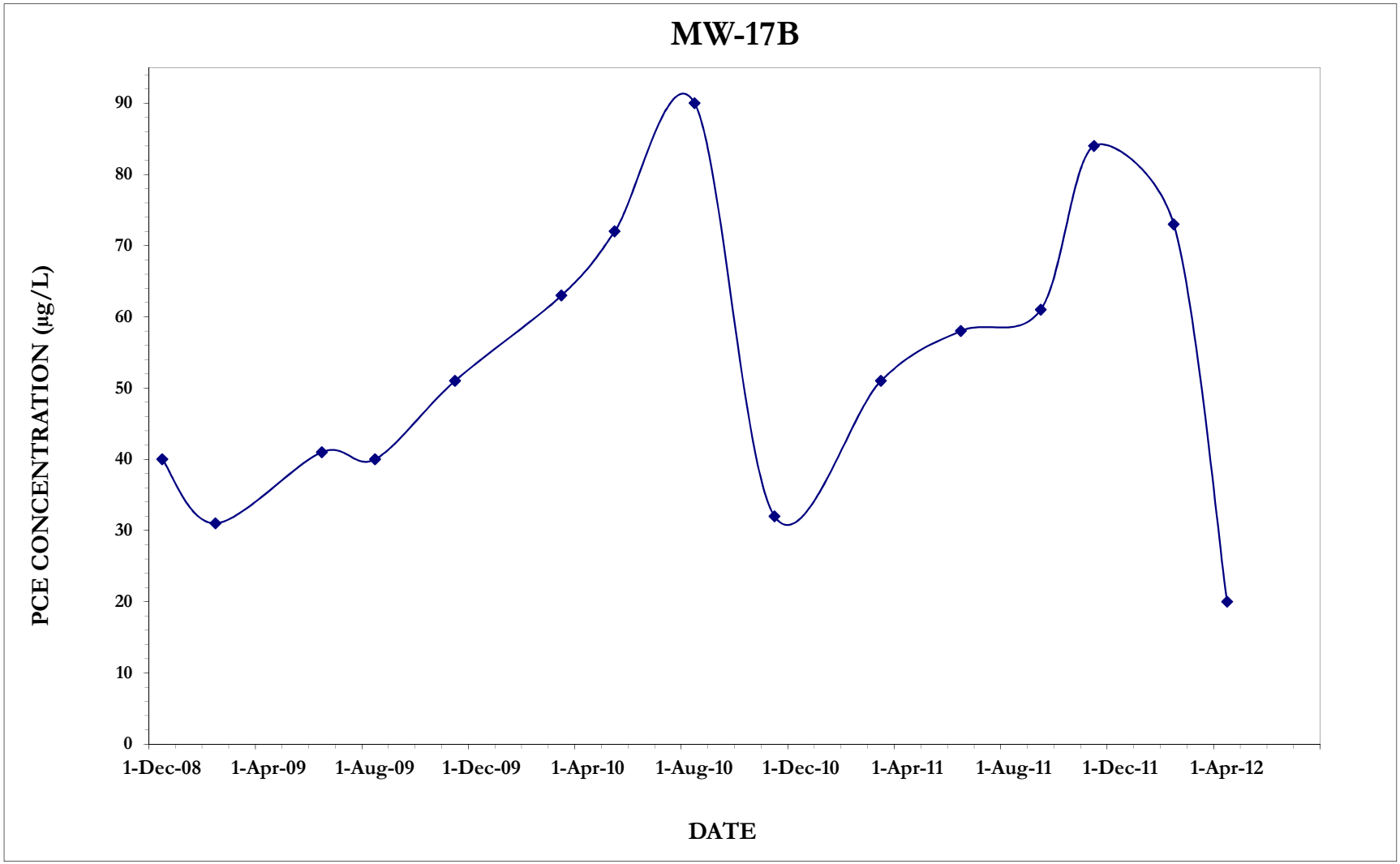

FIGURE G-4(y)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

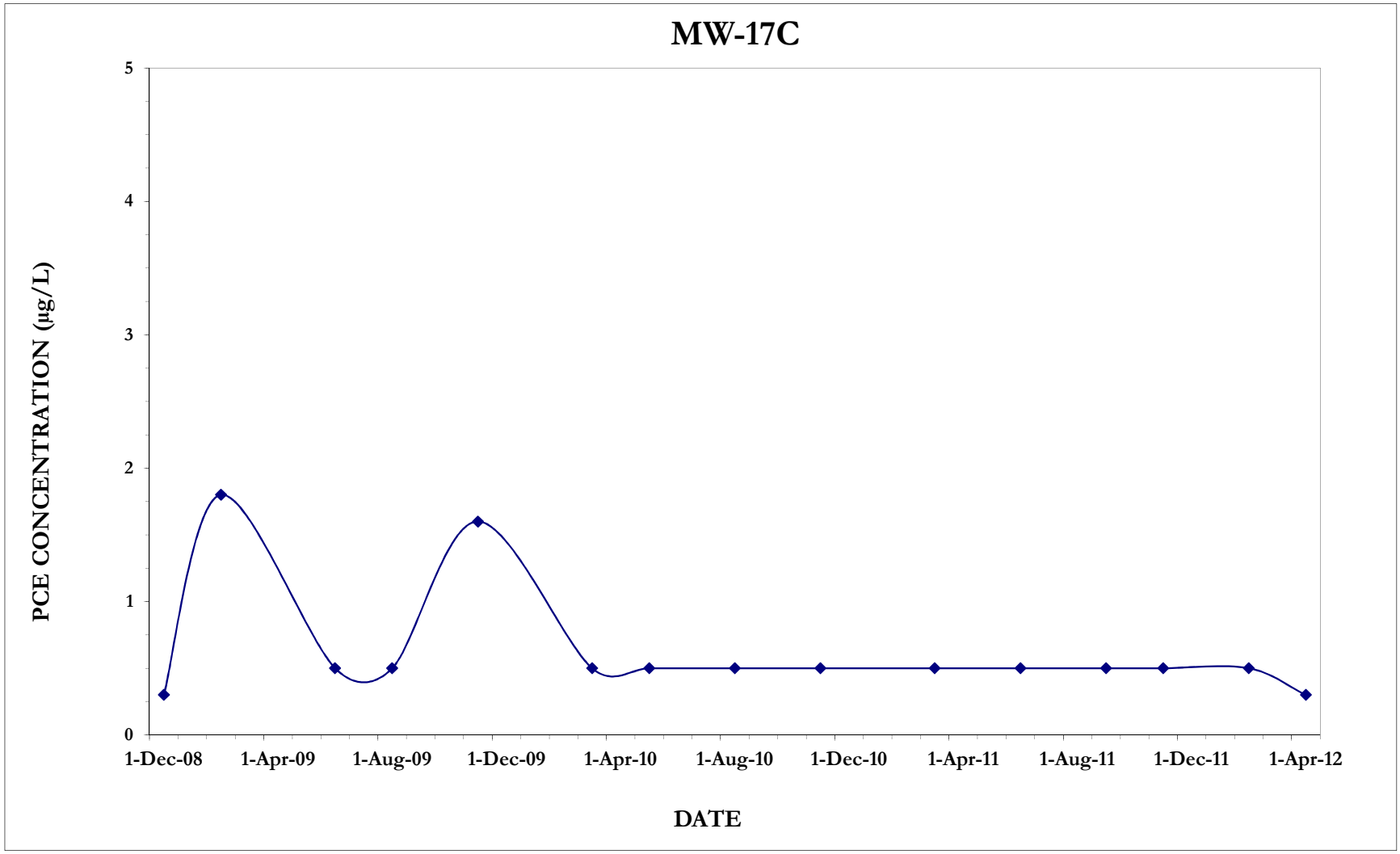

FIGURE G-4(z)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

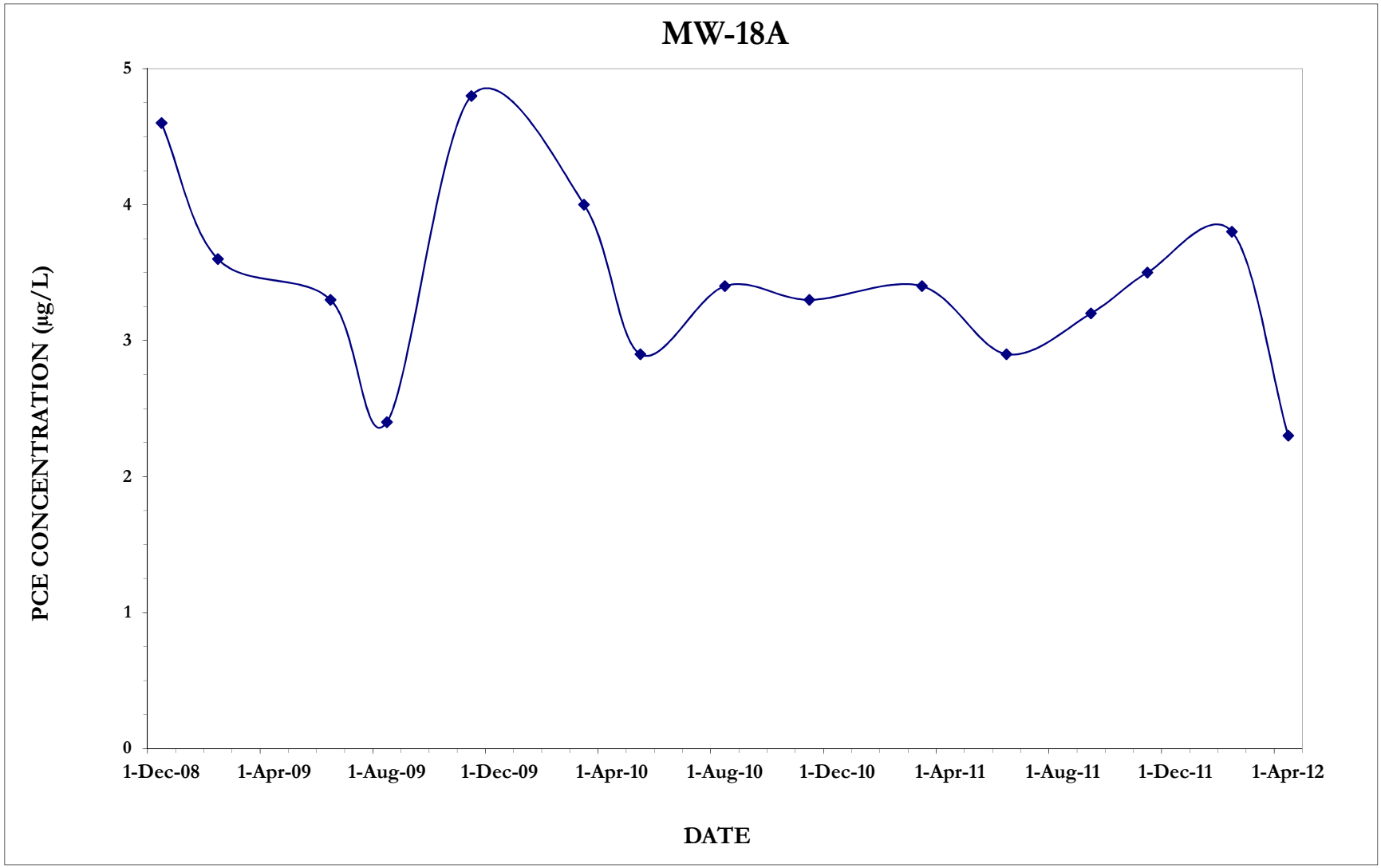

FIGURE G-4(aa)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

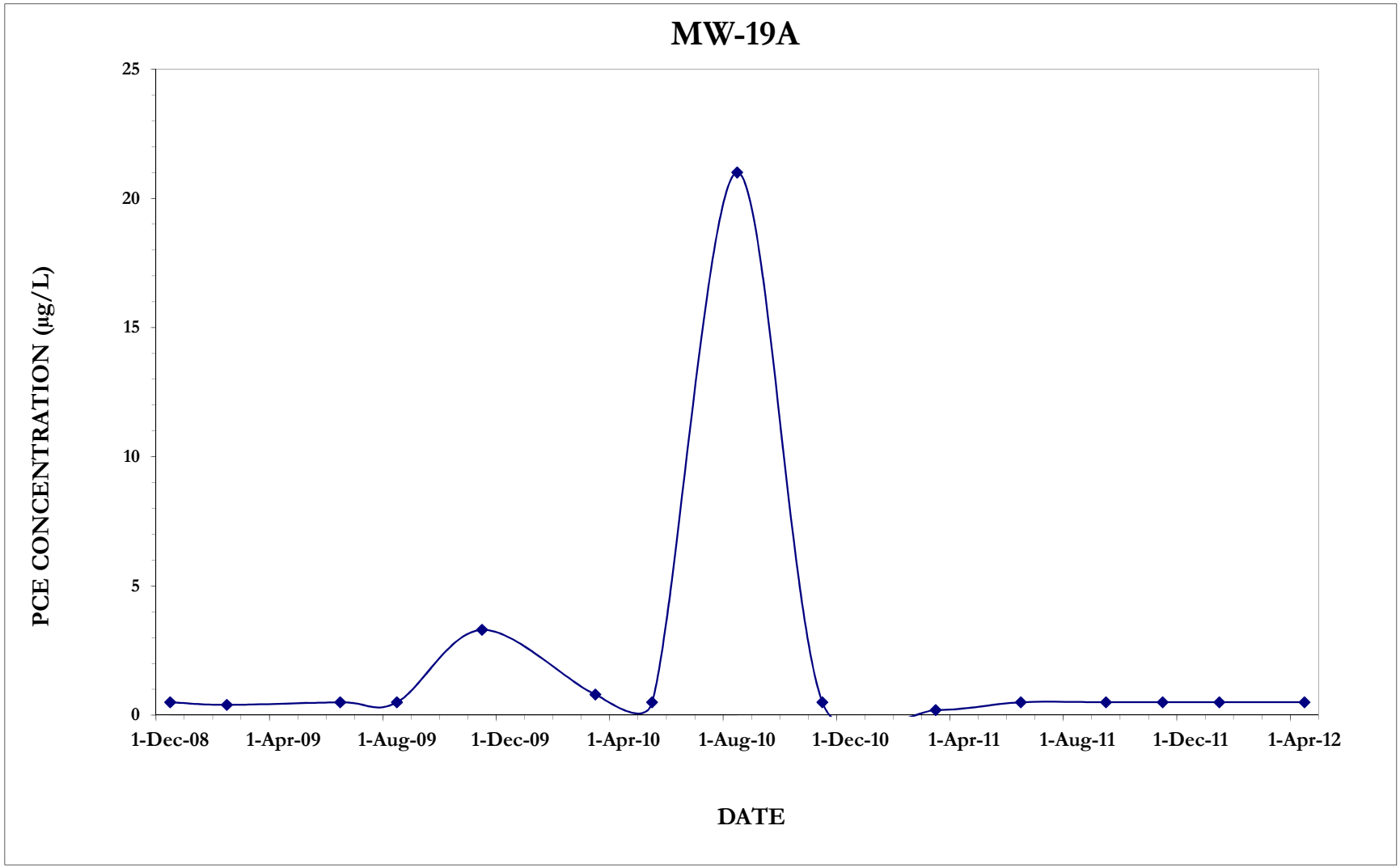

FIGURE G-4(ab)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

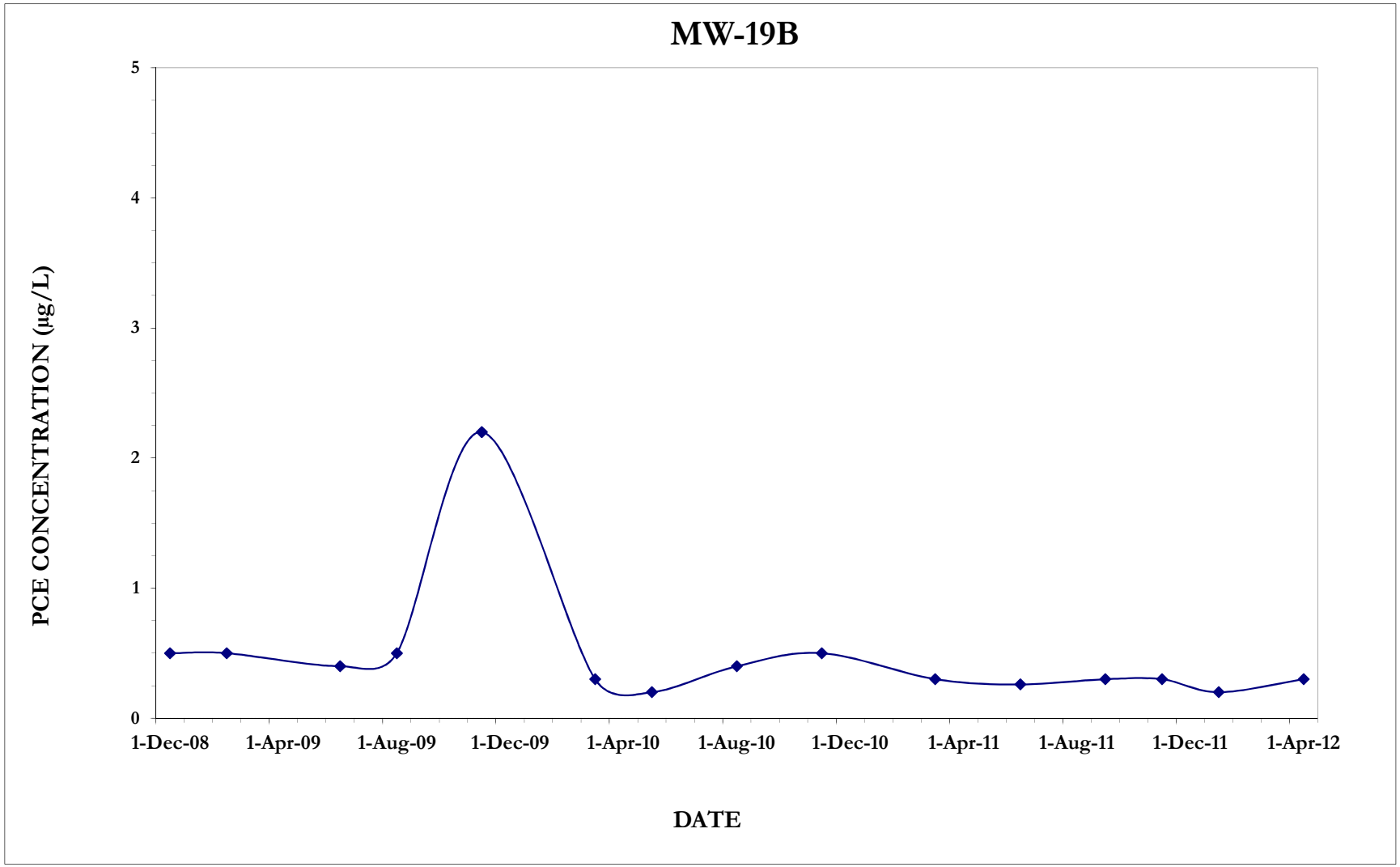

FIGURE G-4(ac)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

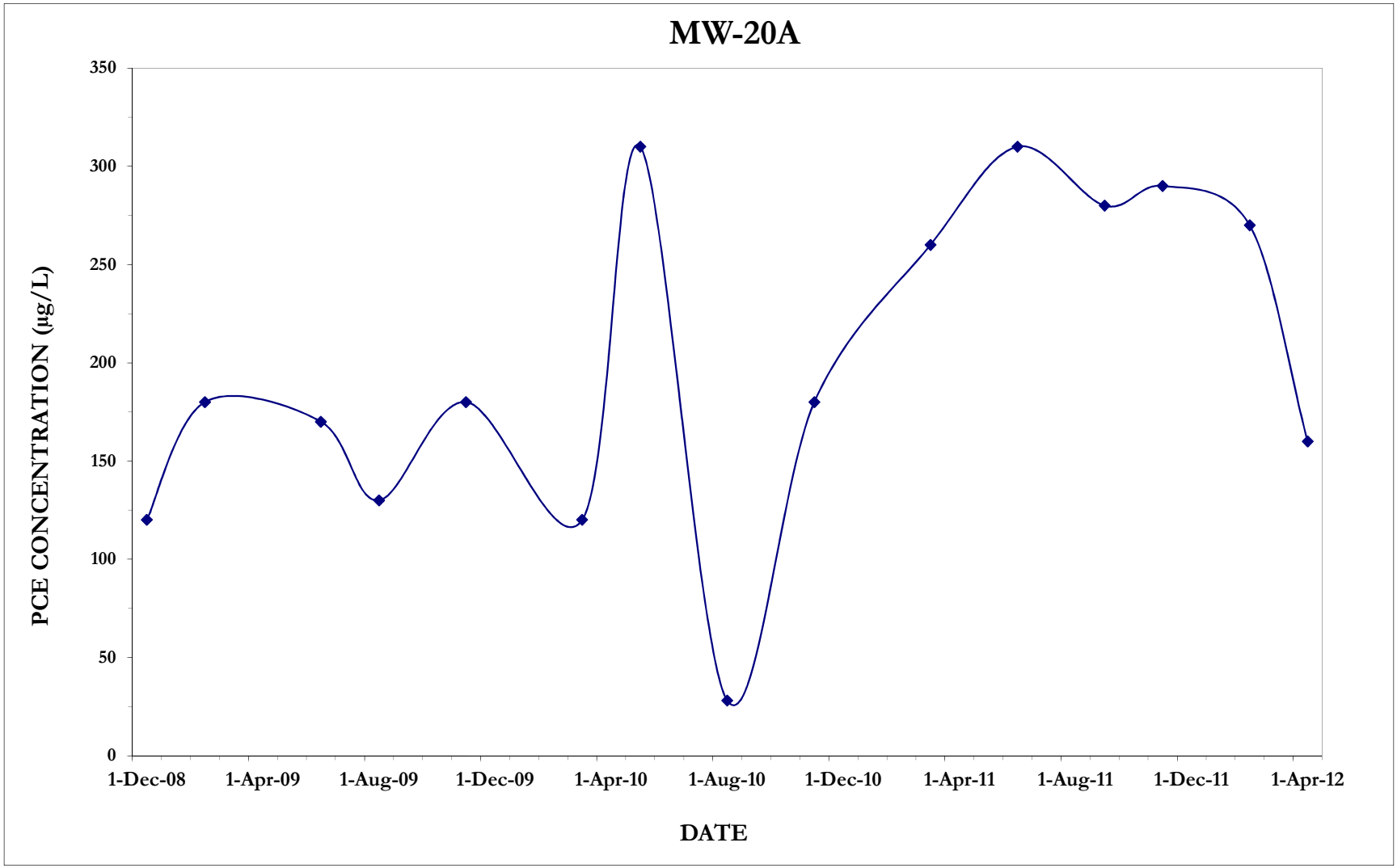

FIGURE G-4(ad)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

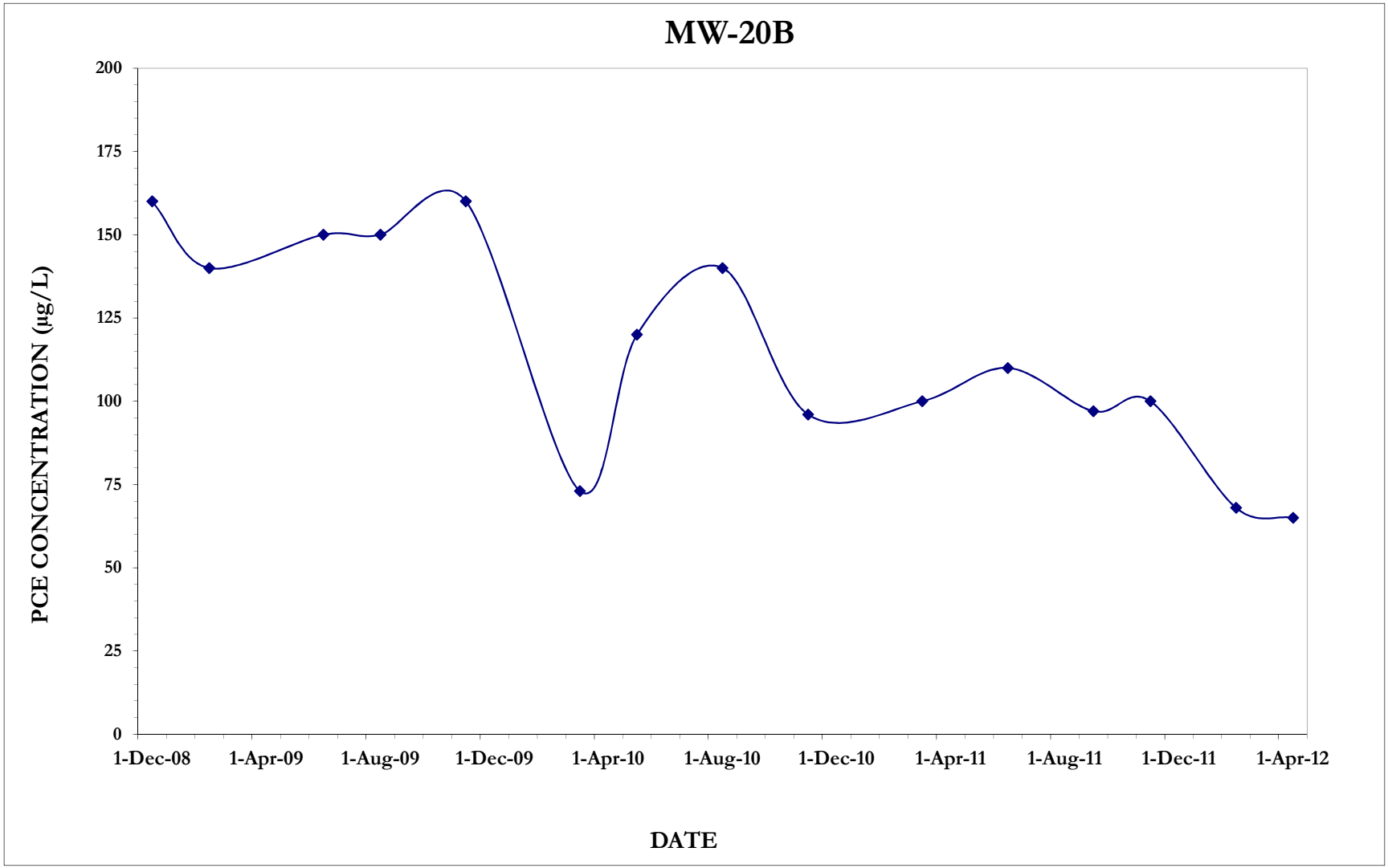

FIGURE G-4(ae)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

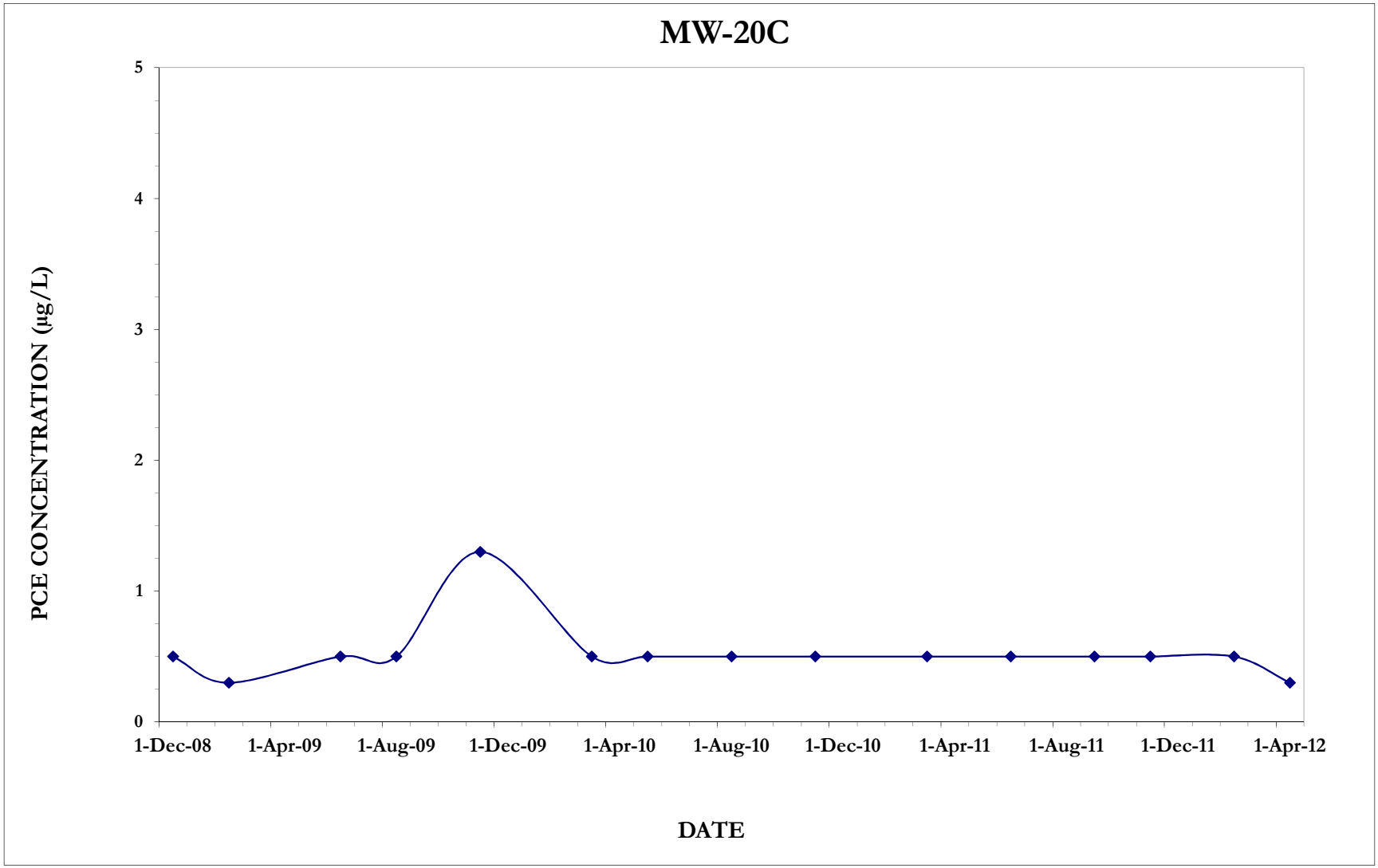

FIGURE G-4(af)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

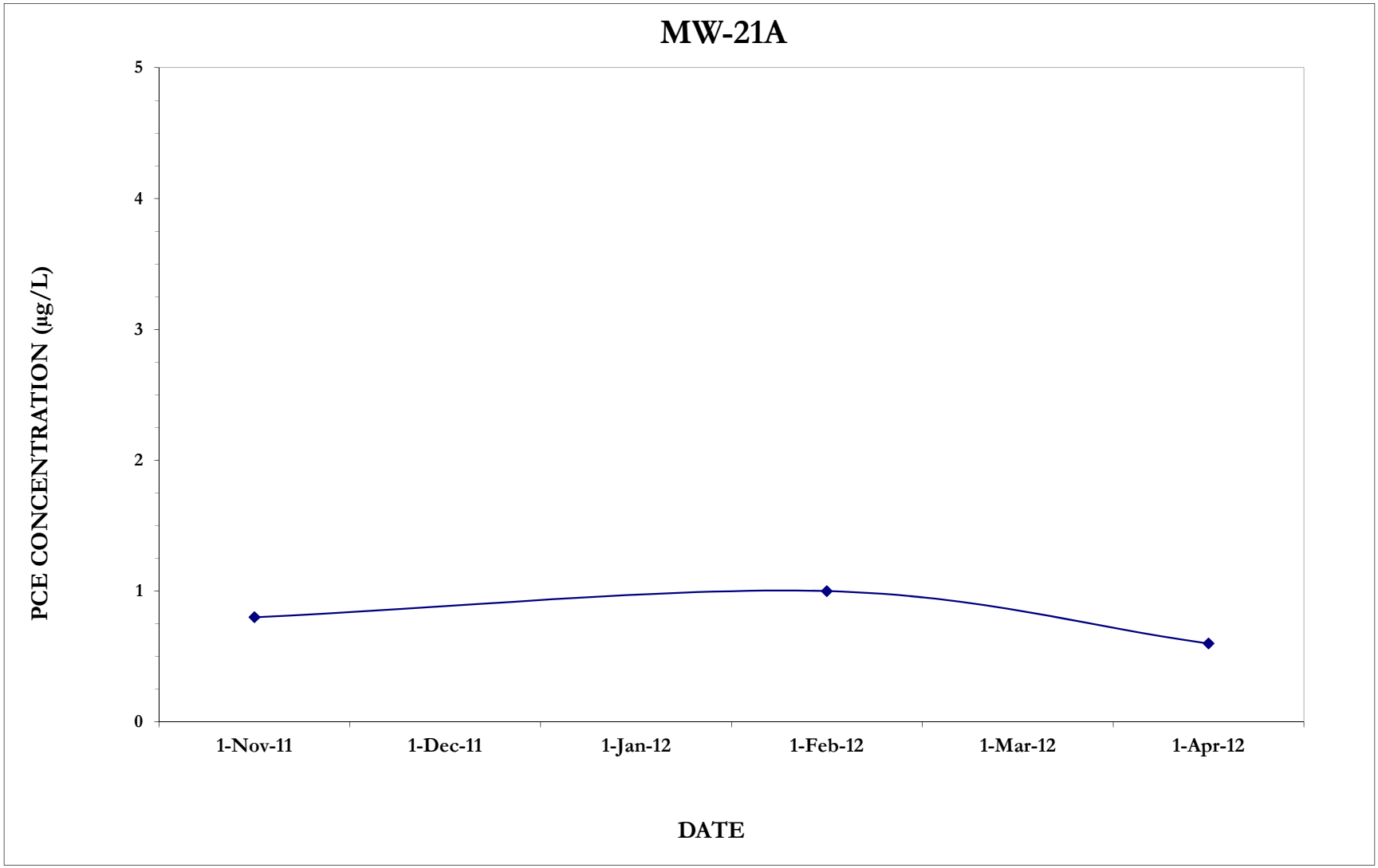

FIGURE G-4(ag)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

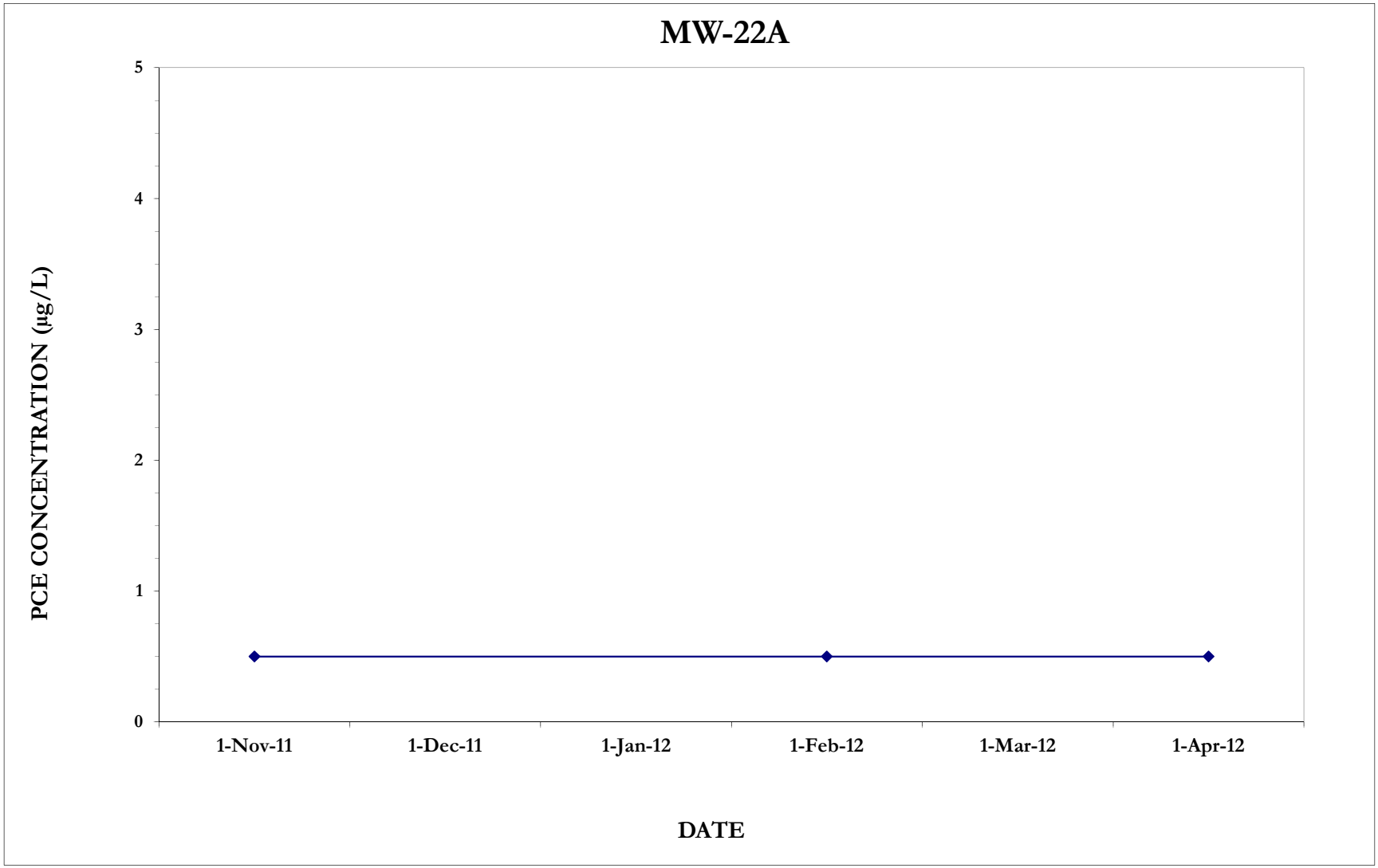

FIGURE G-4(ah)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

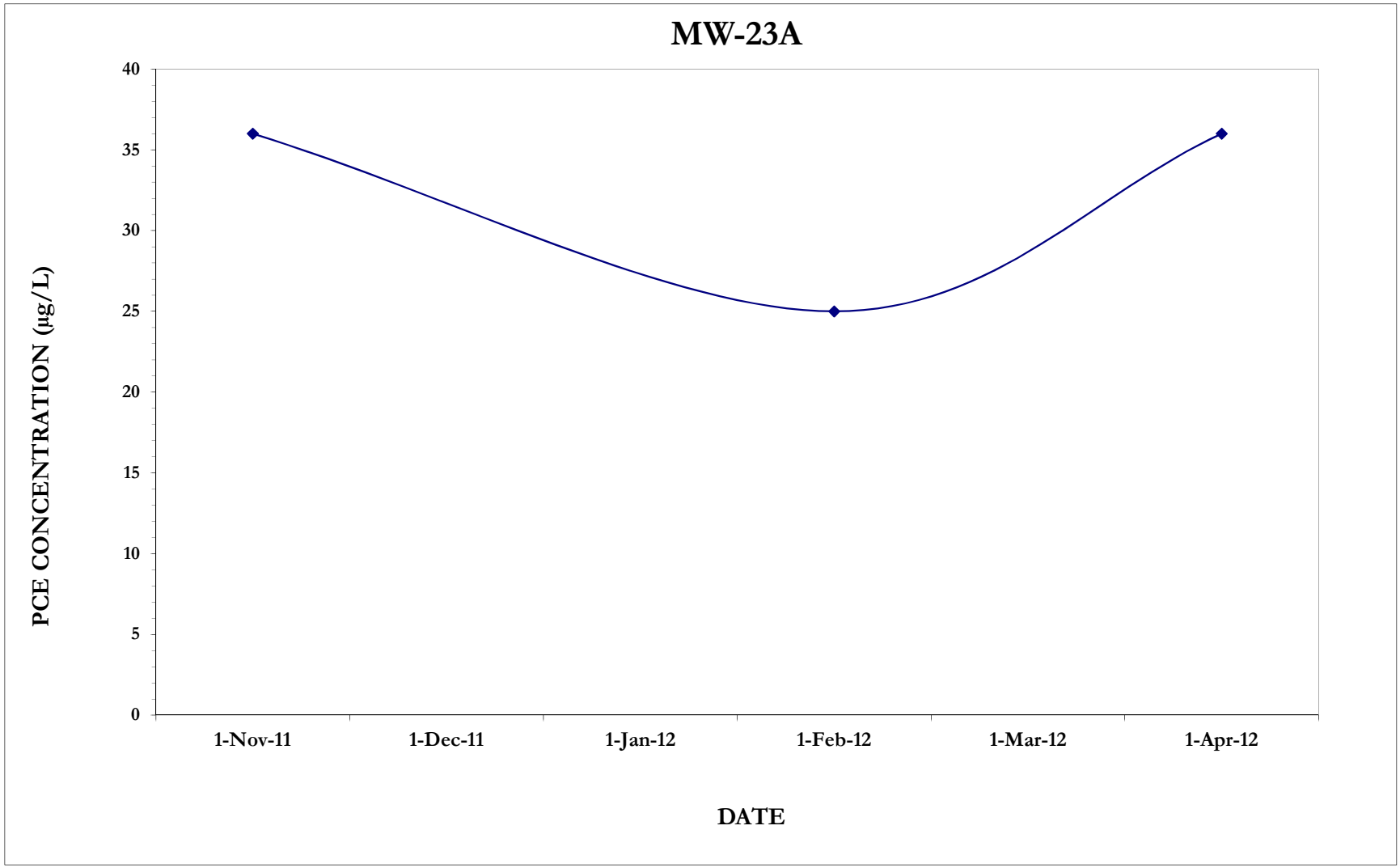

FIGURE G-4(ai)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

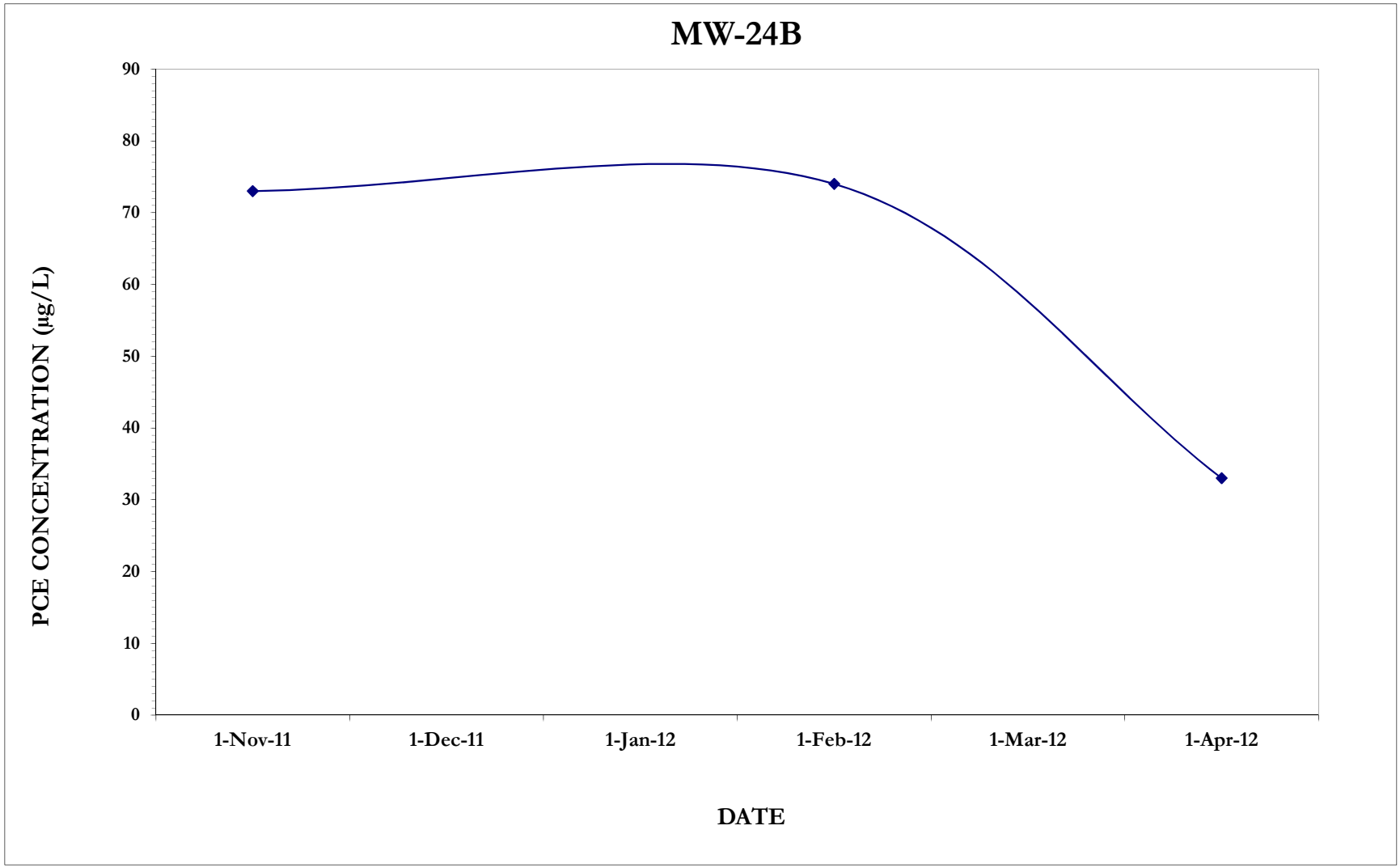

FIGURE G-4(aj)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

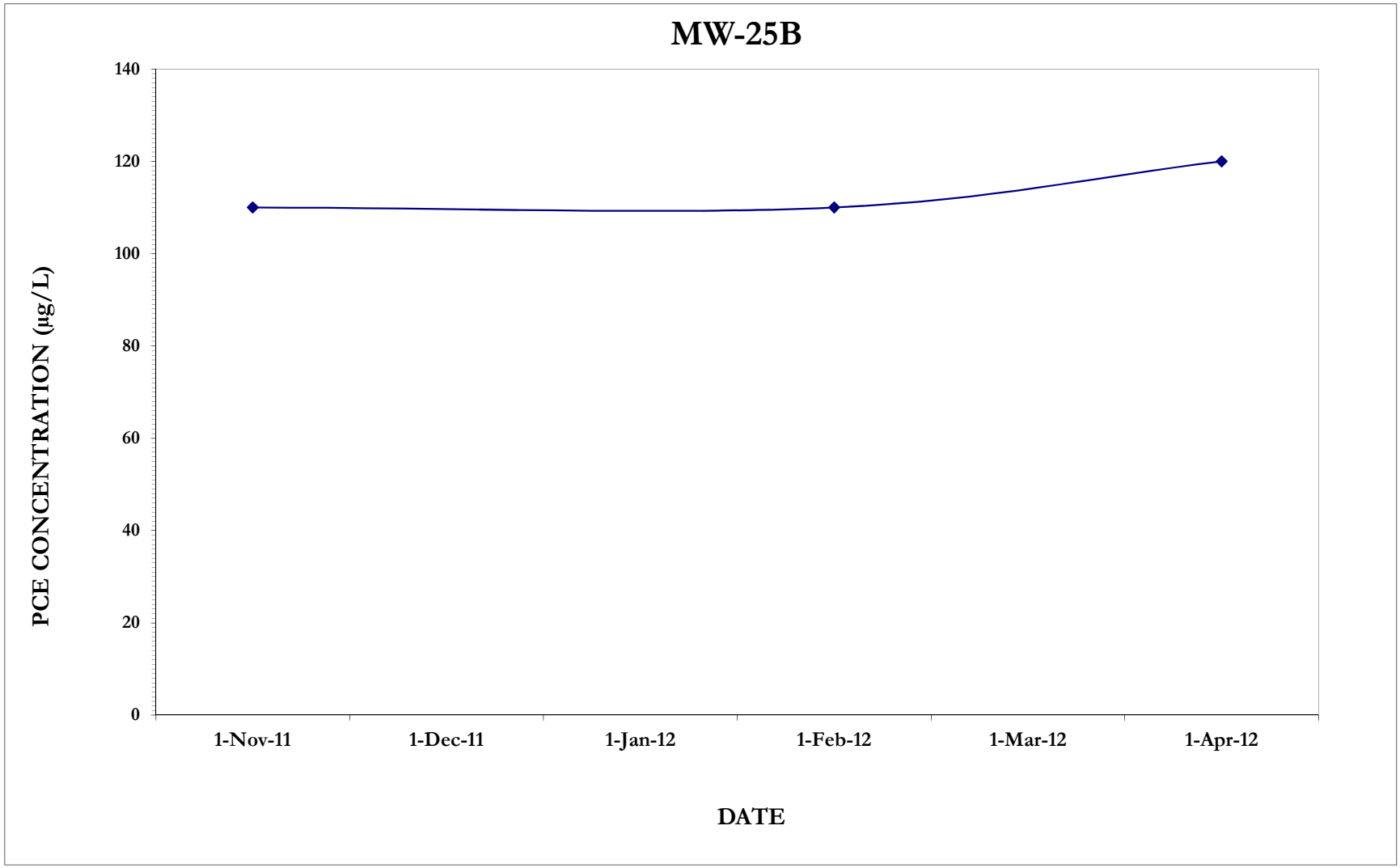

FIGURE G-4(ak)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

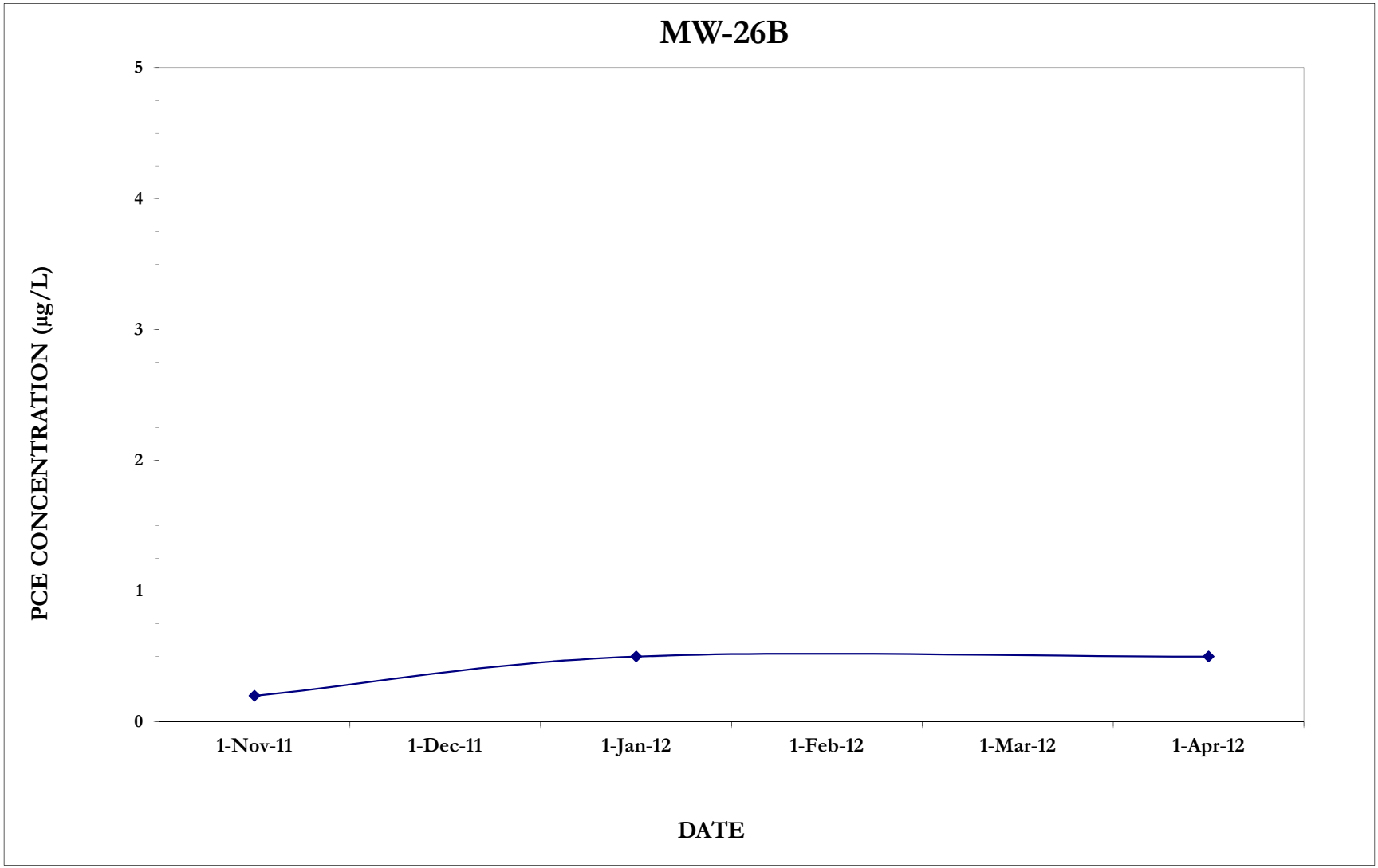

FIGURE G-4(al)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

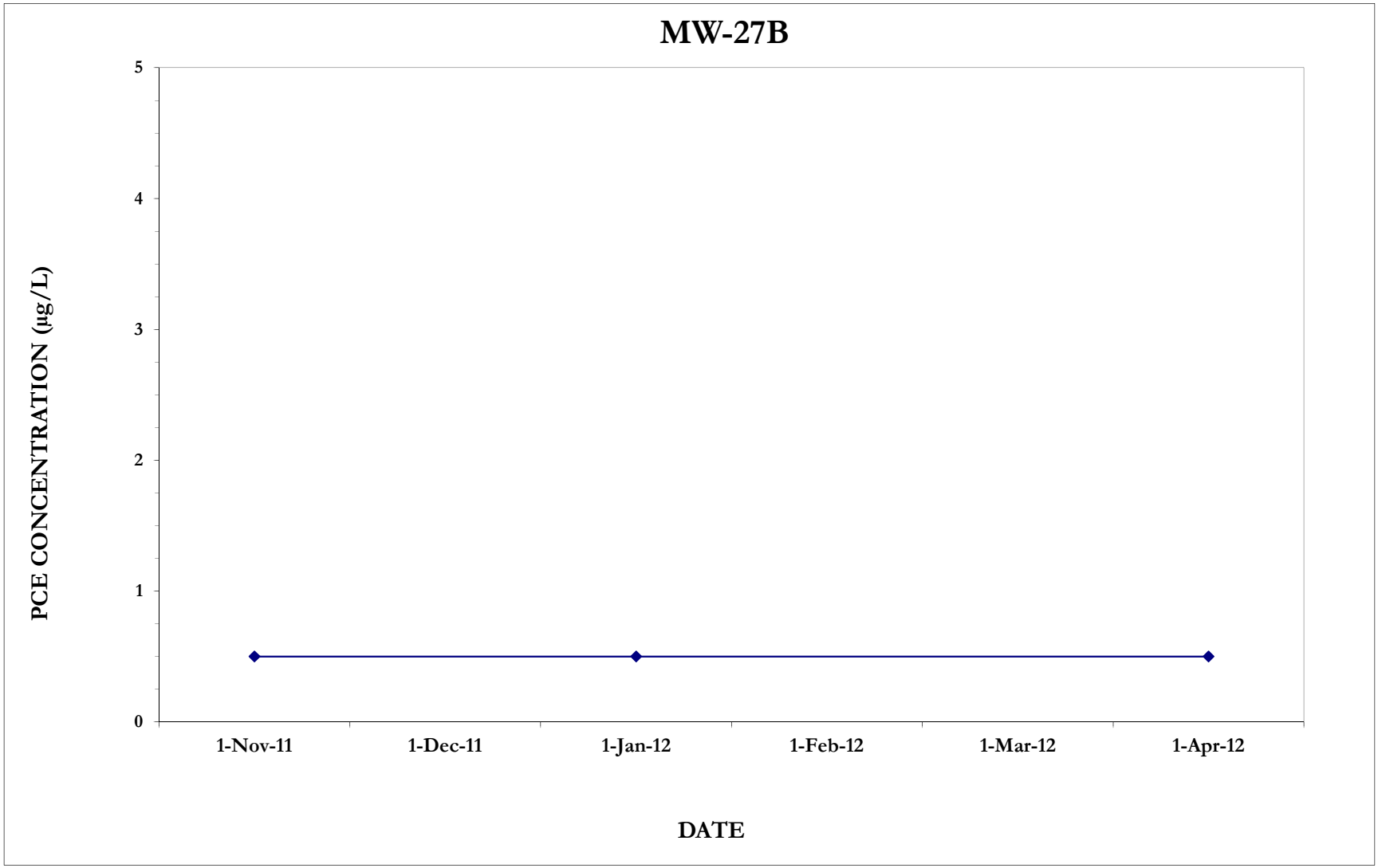

FIGURE G-4(am)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

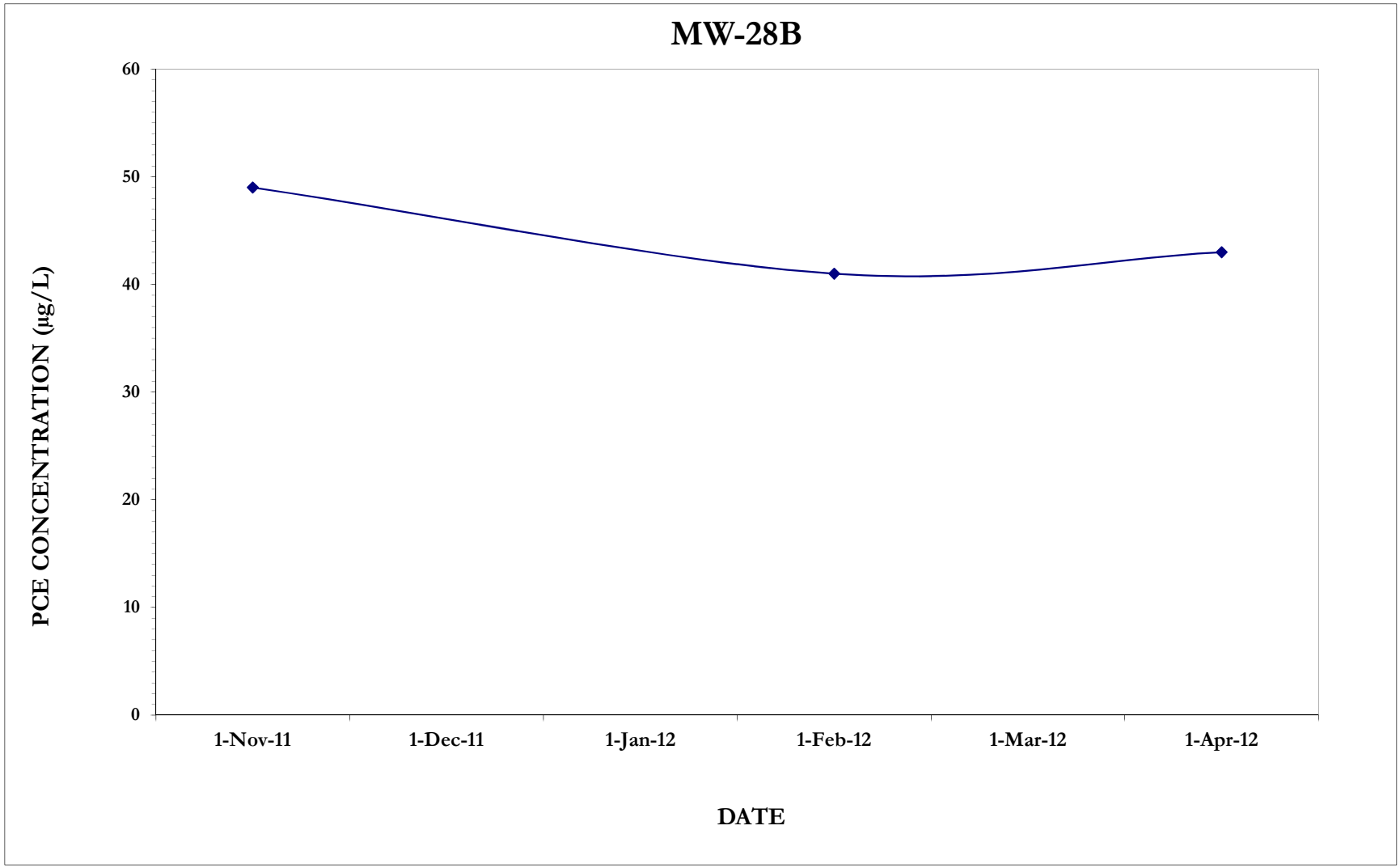

FIGURE G-4(an)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

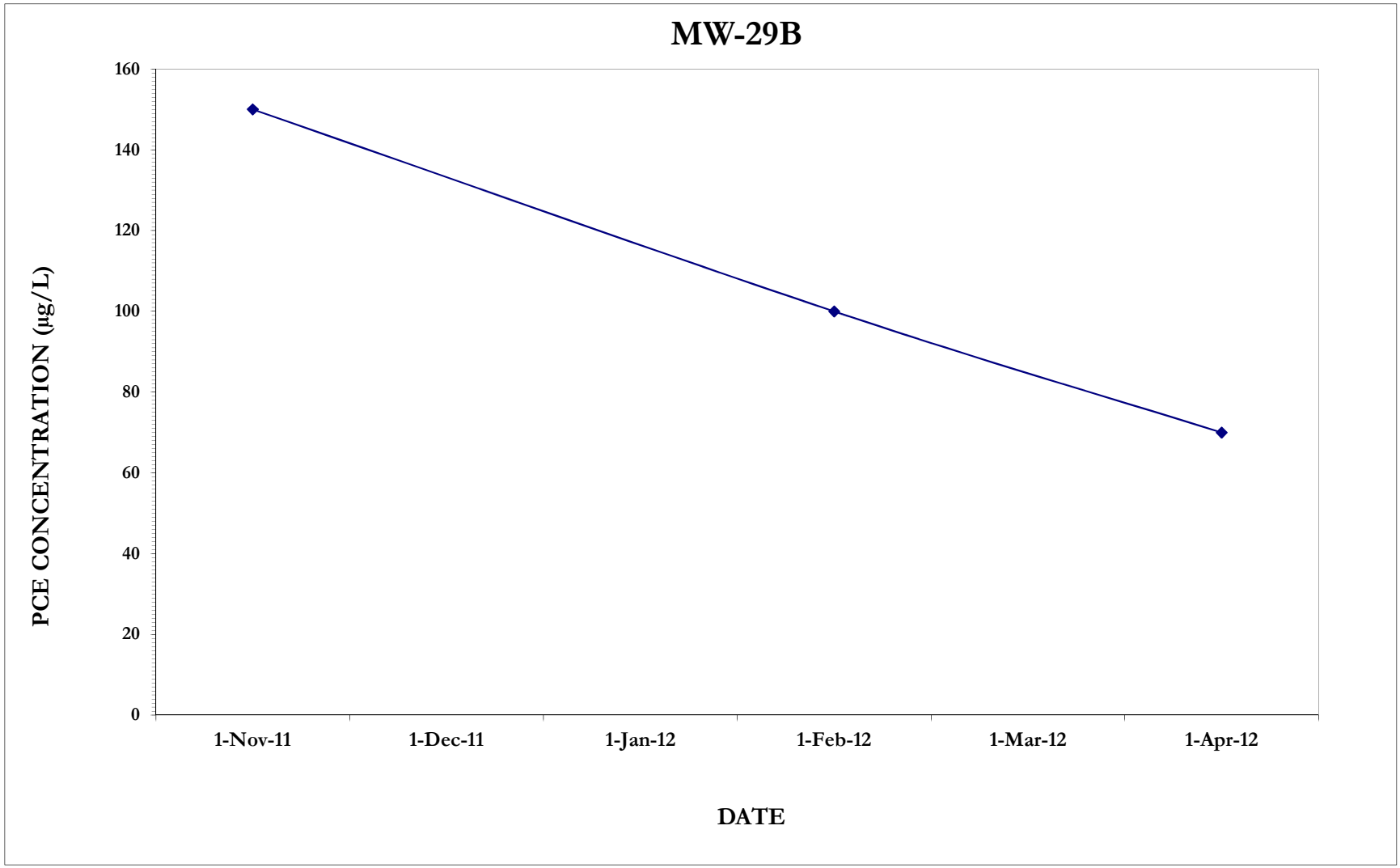

TABLE G-5(a)

SOIL VAPOR EXTRACTION AND SOIL VAPOR MONITORING WELL
ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample Identification	Date	PCE (ppbv) Laboratory	PCE (ppbv) GC Unit
SVE-1[A]	6/11/2001	**520,000**	**-**
	8/9/2001	**58,000**	**-**
	8/20/2001	**48,000**	**-**
	8/30/2001	**44,000**	**-**
	9/7/2001	**31,000**	**-**
	9/12/2001	**41,000**	**-**
	10/29/2001	**66,000**	**-**
	11/13/2001	**75,000**	**-**
	12/13/2001	**56,000**	**-**
	1/16/2002	**43,000**	**-**
	2/19/2002	**57,000**	**-**
	3/21/2002	**43,000**	**-**
	4/17/2002	**37,400**	**-**
	5/23/2002	**25,000**	**-**
	6/20/2002	**34,800**	**-**
	7/18/2002	**33,000**	**-**
	8/19/2002	**36,000**	**-**
	9/26/2002	**17,000**	**-**
	10/24/2002	**24,000**	**-**
	11/18/2002	**24,000**	**-**
	12/18/2002	**18,000**	**-**
	1/9/2003	**-**	**28,434**
	1/16/2003	**19,000**	**-**
	3/27/2003	**18,000**	**22,838**
	4/24/2003	**-**	**21,970**
	5/29/2003	**-**	**18,968**
	6/26/2003	**-**	**19,428**
	7/24/2003	**13,000**	**15,313**
	8/29/2003	-	**21,885**
	9/18/2003	-	**18,819**
	10/25/2003	-	**12,600**
	11/21/2003	-	**12,980**
	12/19/2003	-	**14,127**
	1/22/2004	-	**11,454**
	2/26/2004	**7,100**	-
	3/29/2004	-	**14,527**
	4/18/2004	-	**5,077**
	5/20/2004	-	**5,017**
	6/23/2004	-	**6,118**
	7/31/2004	-	**5,370**
	8/26/2004	**4,200**	**3,661**

TABLE G-5(a)

SOIL VAPOR EXTRACTION AND SOIL VAPOR MONITORING WELL
ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample Identification	Date	PCE (ppbv) Laboratory	PCE (ppbv) GC Unit
	9/30/2004	-	**4,091**
	10/21/2004	-	**4,784**
	11/18/2004	-	**3,062**
	12/16/2004	-	**2,954**
	1/19/2005	-	**2,260**
	2/24/2005	**1,900**	**2,319**
	3/22/2005	-	**1,956**
	4/24/2005	-	**1,810**
	5/22/2005	-	**812**
	6/24/2005	-	**1,553**
	7/26/2005	-	**1,449**
	8/24/2005	**860**	**940**
	9/21/2005	-	**1,246**
	10/18/2005	-	**1,691**
	11/16/2005	-	**1,099**
	1/6/2006*	**800**	**-**
	1/31/2006*	**760**	-
	2/22/2006*	**590**	**-**
	3/29/2006*	**100**	**-**
	4/20/2006*	**490**	**-**
	5/25/2006*	**310**	**-**
	6/29/2006*	**530**	-
	7/28/2006	**400**	-
	8/31/2006	**810**	-
	9/28/2006	**360**	-
	11/15/2006	**300**	-
	12/18/2006	NS	-
	1/22/2007	NS	-
	2/13/2007	NS	-
	3/20/2007	NS	-
	4/25/2007	-	**635**
	6/8/2007[1]	**7**	-
	6/26/2007	-	ND
	7/31/2007	ND	-
	8/24/2007	ND	-
	9/24/2007	**4**	-
	10/29/2007	**5**	-
	11/28/2007	**15**	-
	12/20/2007	**54**	-
	1/17/2008	<1.7	-

TABLE G-5(a)

SOIL VAPOR EXTRACTION AND SOIL VAPOR MONITORING WELL ANALYTICAL SUMMARY RESULTS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

Sample Identification	Date	PCE (ppbv) Laboratory	PCE (ppbv) GC Unit
	2/25/2008	NS	-
	3/31/2008	**51**	-
	4/25/2008	**94**	-
	6/24/2008	**900**	-
	7/24/2008	**630**	-
	8/20/2008	**430**	-
	9/25/2008	**270**	-
	11/11/2008	**-**	**101**
SVE-2	11/11/2008	**-**	**14,000**
	11/18/2008	**13,000**	-
	12/10/2008	**3,200**	-
	12/30/2008	**4,100**	-
	1/30/2009	**4,700**	-
	3/10/2009	**980**	-
	5/28/2009	**1,500**	-
	8/10/2009	**5,700**	-
	11/23/2009	**110**	-
SVE-3	11/11/2008	**-**	**981**
	11/18/2008	**-**	ND
	12/10/2008	**810**	-
	12/30/2008	**1,600**	-
	1/30/2009	**980**	-
	3/10/2009	**30**	-
	5/28/2009	**620**	-
	8/10/2009	**88**	-
	11/23/2009	**2.6**	-
SVE-4	11/11/2008	**-**	**429**
	11/18/2008	**890**	-
	12/10/2008	**350**	-
	12/30/2008	**390**	-
	1/30/2009	**330**	-
	3/10/2009	**290**	-
	5/28/2009	**180**	-
	8/10/2009	**140**	-
	11/23/2009	**90**	-
DP-1S	11/11/2008	**-**	**3570[b]**
	12/10/2008	**-**	-
	3/10/2009	**570**	-

TABLE G-5(a)

SOIL VAPOR EXTRACTION AND SOIL VAPOR MONITORING WELL ANALYTICAL SUMMARY RESULTS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

Sample Identification	Date	PCE (ppbv) Laboratory	PCE (ppbv) GC Unit
DP-1D	11/11/2008	**-**	**9113[b]**
	12/10/2008	**-**	-
	3/10/2009	**190**	-
DP-5S	11/11/2008	**-**	**661**
	12/10/2008	**-**	-
	3/10/2009	**3.7**	-
DP-5D	11/11/2008	**-**	**179**
	12/10/2008	**-**	-
	3/10/2009	**60**	-
DP-6S	11/11/2008	**870**	**712**
	12/10/2008	**-**	-
	3/10/2009	**160**	-
DP-6D	11/11/2008	**-**	**1,110**
	12/10/2008	**-**	-
	3/10/2009	**730**	-
OSVE-11	3/10/2009	**27,000**	-
OSVE-10	3/10/2009	**450**	-

Notes:

[A] = SVE-Pre GAC opperational from 6/11/01 has been renamed as SVE-1

[b] = Note: PCE value used in contouring at the location of DP-1 is the average value from upper and lower screens (6341 ppbv) as both screens are in the "deep" zone

NS - Not Sampled (system off for rebound test)

GAC - Granular activated carbon

GC Unit - Gas chromotagraph unit (the unit has been off-line since Nov. 2005, repair pending)

PCE - Tetrachloroethlene

ppbv - parts per billion volume

SVE - Soil vapor extraction

* The GC Unit was shut down due to malfunction starting in late November. Since then, samples have been analyzed by the laboratory only.

Repair of the unit is pending

[1] May sample re-collected on June 8, 2007 due to low vacuum readings in the Summa cannisters during the May sampling event.

TABLE G-5(b)

SOIL VAPOR EXTRACTION AND SOIL VAPOR MONITORING WELL ANALYTICAL SUMMARY RESULTS MODESTO GROUNDWATER SUPERFUND SITE MODESTO, CALIFORNIA

Location	Date	Sample Code	PCE (ppbv)	
DP-1A	03/10/2010	N	56	
	05/19/2010	N	24	
	05/19/2010	FD	23	
	08/26/2010	N	2.7	
	11/11/2010	N	1.9	J
	03/10/2011	N	2.6	
	06/06/2011	N	96	
	09/09/2011	N	110	
	11/16/2011	N	6.1	
	02/02/2012	N	4.6	
	04/05/2012	N	110	
DP-1B	03/10/2010	N	180	
	05/19/2010	N	74	
	08/26/2010	N	4.5	U
	11/11/2010	N	2.3	U
	11/11/2010	FD	2.3	U
	03/10/2011	N	9.8	
	06/06/2011	N	93	
	09/09/2011	N	19	
	11/16/2011	N	26	
	02/02/2012	N	2.4	
	04/05/2012	FD	3.2	
	04/05/2012	N	2.4	J
	04/05/2012	FD	2.1	R
DP-4A	03/10/2011	N	29	
	06/07/2011	N	41	
DP-4B	03/10/2011	N	3.7	
	06/07/2011	N	43	
	06/07/2011	FD	43	
DP-5A	03/10/2010	N	1.2	J
	05/19/2010	N	6.6	
	08/26/2010	N	2.4	U
	08/26/2010	FD	2.4	U
	11/11/2010	N	2.3	U
	09/08/2011	N	2.4	U
	11/16/2011	N	1.9	U
	11/16/2011	FD	1.9	U
	02/02/2012	N	2.0	U
	04/06/2012	N	2.1	U
DP-5B	03/10/2010	FD	21	
	03/10/2010	N	21	

TABLE G-5(b)

SOIL VAPOR EXTRACTION AND SOIL VAPOR MONITORING WELL ANALYTICAL SUMMARY RESULTS MODESTO GROUNDWATER SUPERFUND SITE MODESTO, CALIFORNIA

Location	Date	Sample Code	PCE (ppbv)	
	05/19/2010	N	6.6	
	08/26/2010	N	2.4	U
	11/11/2010	N	2.3	U
	09/08/2011	N	2.4	U
	11/16/2011	N	2.2	U
	02/02/2012	N	5.0	
	04/06/2012	N	4.2	
DP-6A	03/10/2010	N	59	
	05/19/2010	N	130	
	08/26/2010	N	130	
	11/11/2010	N	3.0	
	03/10/2011	N	1.6	J
	06/09/2011	N	2.0	J
	09/09/2011	N	4.6	
	11/16/2011	N	34	
	02/02/2012	FD	31	
	02/02/2012	N	29	
	04/06/2012	N	44	
DP-6B	03/10/2010	N	5.8	
	05/19/2010	N	87	
	05/19/2010	FD	90	
	08/26/2010	N	2.4	U
	11/11/2010	N	2.3	U
	03/10/2011	N	2.3	U
	06/09/2011	N	2.1	U
	09/09/2011	N	2.4	U
	11/16/2011	N	2.2	U
	02/02/2012	N	2.2	U
	04/06/2012	N	2.2	U
OSVE-10	03/10/2010	N	530	
	05/19/2010	N	320	
	08/26/2010	N	610	
	11/11/2010	N	20	
	11/11/2010	FD	20	
	03/10/2011	N	3.2	J
	06/07/2011	N	42	
	09/09/2011	N	680	
	11/16/2011	N	24	
	02/02/2012	N	89	
	04/06/2012	N	160	
OSVE-11	03/10/2010	N	130	
	05/19/2010	N	190	

TABLE G-5(b)

SOIL VAPOR EXTRACTION AND SOIL VAPOR MONITORING WELL ANALYTICAL SUMMARY RESULTS MODESTO GROUNDWATER SUPERFUND SITE MODESTO, CALIFORNIA

Location	Date	Sample Code	PCE (ppbv)	
	08/26/2010	N	80	
	11/11/2010	N	10	
	03/10/2011	N	3.3	
	06/07/2011	N	7.5	
	09/09/2011	FD	17	
	09/09/2011	N	25	
	11/16/2011	N	5.2	
	02/02/2012	N	5.6	
	04/06/2012	N	7.1	
SVE-01	03/10/2010	N	13	
	05/19/2010	N	22	
	08/26/2010	N	39	
	11/10/2010	N	8.4	
	03/10/2011	N	4.4	
	06/06/2011	N	15	
	09/09/2011	N	42	
	11/16/2011	N	13	
	02/02/2012	N	6.1	
	04/05/2012	N	10	
SVE-02	03/10/2010	N	290	
	05/19/2010	N	420	
	08/26/2010	N	130	
	11/10/2010	N	7.5	
	03/09/2011	N	210	
	06/06/2011	N	320	
	06/06/2011	FD	200	
	09/08/2011	N	580	
	11/16/2011	FD	290	J+
	11/16/2011	N	280	
	02/02/2012	N	180	
	04/05/2012	N	270	
SVE-03	03/10/2010	N	88	
	05/19/2010	N	53	
	08/26/2010	N	8.1	
	08/26/2010	FD	8.0	
	11/10/2010	N	22	
	03/09/2011	N	91	
	03/09/2011	FD	97	
	06/06/2011	N	82	
	09/08/2011	N	410	
	11/16/2011	N	120	
	02/02/2012	N	140	

TABLE G-5(b)

SOIL VAPOR EXTRACTION AND SOIL VAPOR MONITORING WELL ANALYTICAL SUMMARY RESULTS MODESTO GROUNDWATER SUPERFUND SITE MODESTO, CALIFORNIA

Location	Date	Sample Code	PCE (ppbv)
	02/02/2012	FD	130
	04/05/2012	N	220
	04/05/2012	FD	170
SVE-04	03/10/2010	N	57
	05/19/2010	N	40
	08/26/2010	N	2.4 U
	11/10/2010	N	2.3 U
	03/09/2011	N	26
	06/06/2011	N	23
	09/08/2011	N	32
	09/08/2011	FD	31
	11/16/2011	N	29
	02/02/2012	N	17
	04/05/2012	N	22

FD - field duplicate
J - estimated value
J+ - estimated value, potential high bias
N - normal sample
PCE - Tetrachloroethlene
ppbv - parts per billion volume
SVE - Soil vapor extraction
U - not detected above the method detection limit

TABLE G-6(a)

GROUNDWATER TREATMENT SYSTEM
ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

Sample Identification	Date	pH	TDS (mg/L)	U-234 (pCi/L)	U-235 (pCi/L)	U-238 (pCi/L)	Total U (pCi/L)	PCE (mg/L)	Toluene (mg/L)	TCE (mg/L)	Bioassay
Maximum Allowable Discharge Limit		**5 - 12**	**NA**	**20**	**20**	**20**	**20**	**0.0005**	**0.150**	**NA**	**NA**
COMPLIANCE MONITORING											
Extraction Well -1[(1)]	6/11/01[(a)]	NS	NS	**23.7**	**0.562**	**19.9**	NS	**3.0**	< 0.1	< 0.1	-
	8/28/2001	**7.4**	NS	**18.1**	**0.423**	**13.3**	NS	**0.330 J**	< 0.05	< 0.05	-
	9/21/2001	**7.3**	NS	NS	NS	NS	NS	**0.770**	< 0.05	< 0.05	-
	10/17/2001	**7.3**	NS	NS	NS	NS	NS	**0.890**	<0.05	<0.05	-
	11/13/2001	**7.4**	**528**	**21.1**	**0.519**	**15.2**	NS	**0.780**	< 0.005	< 0.005	-
	12/13/2001	**7.3**	NS	NS	NS	NS	NS	**0.710**	< 0.005	**0.031**	-
	1/16/2002	**7.3**	NS	NS	NS	NS	NS	**0.750**	< 0.005	**0.008**	-
	2/19/2002	**7.3**	NS	**20.4**	**0.615**	**14.9**	NS	**0.820**	< 0.005	< 0.005	-
	3/21/2002	**7.3**	NS	NS	NS	NS	NS	**0.003 J**	< 0.005	< 0.005	-
	3/21/02 [(b)]	**7.3**	NS	NS	NS	NS	NS	**0.321 R**	< 0.005	< 0.005	-
	4/17/2002	**7.4**	NS	NS	NS	NS	NS	**0.690**	< 0.005	< 0.005	-
	5/23/2002	**7.1**	NS	**22.8**	**0.715**	**18.1**	NS	**0.900 D**	< 0.005	< 0.005	-
	6/20/2002	**7.1**	NS	NS	NS	NS	NS	**0.730 D**	< 0.005	< 0.005	-
	7/18/2002	**6.8**	NS	NS	NS	NS	NS	**0.620 D**	< 0.005	< 0.005	-
	8/19/2002	**7.4**	NS	**23.0**	**0.880**	**16.9**	NS	**0.610**	< 0.005	< 0.005	-
	9/26/2002	**7.4**	NS	NS	NS	NS	NS	**0.620 D**	< 0.005	< 0.005	-
	10/24/2002	**7.4**	NS	NS	NS	NS	NS	**0.580 D**	< 0.005	< 0.005	-
	11/18/2002	**7.4**	NS	**25.6**	**0.829**	**18.7**	NS	**0.550 D**	< 0.005	< 0.005	-
	12/18/2002	**7.3**	NS	NS	NS	NS	NS	**0.310**	< 0.010	< 0.010	-
	1/16/2003	**7.2**	NS	NS	NS	NS	NS	**0.380**	< 0.025	< 0.025	-
	2/20/2003	**7.3**	NS	**21.2**	**1.82**	**13.9**	NS	**0.490**	< 0.005	< 0.005	-
	3/20/2003	**7.4**	NS	NS	NS	NS	NS	**0.490**	< 0.005	< 0.005	-
	4/30/2003	**7.4**	NS	NS	NS	NS	NS	**0.410**	< 0.005	< 0.005	-
	5/29/2003	**7.4**	NS	**26.5**	**1.60**	**15.6**	NS	**0.270**	< 0.005	< 0.005	-
	6/26/2003	**7.3**	NS	NS	NS	NS	NS	**0.490**	< 0.005	< 0.005	-
	7/24/2003	**7.6**	NS	NS	NS	NS	NS	**0.510**	<0.005	<0.005	-
	8/28/2003	**7.5**	NS	**24.3**	**1.81**	**16.3**	NS	**0.540**	< 0.005	< 0.005	-
	9/18/2003	**7.5**	NS	NS	NS	NS	NS	**0.550**	<0.005	<0.005	-
	10/23/2003	**7.4**	NS	NS	NS	NS	NS	**0.450**	< 0.005	< 0.005	-
	11/19/2003	**7.4**	NS	**31.6**	**0.975**	**21.8**	NS	**0.390**	<0.005	<0.005	-
	12/18/2003	**7.1**	NS	NS	NS	NS	NS	**0.420**	< 0.005	< 0.005	-
	1/22/2004	**7.2**	NS	NS	NS	NS	NS	**0.350**	<0.001	<0.005	-
	2/26/2004	**7.5**	NS	NS	NS	NS	**43.8**	**0.290**	< 0.005	< 0.005	-
	4/8/2004	**7.0**	NS	NS	NS	NS	NS	**0.230**	<0.005	<0.005	-
	4/22/2004	**7.4**	NS	NS	NS	NS	NS	**0.310 D**	< 0.005	< 0.005	-
	5/20/2004	**7.4**	NS	**25.1**	**1.2**	**19.5**	NS	**0.350**	< 0.005	< 0.005	-

TABLE G-6(a)

GROUNDWATER TREATMENT SYSTEM
ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

Sample Identification	Date	pH	TDS (mg/L)	U-234 (pCi/L)	U-235 (pCi/L)	U-238 (pCi/L)	Total U (pCi/L)	PCE (mg/L)	Toluene (mg/L)	TCE (mg/L)	Bioassay
Maximum Allowable Discharge Limit		**5 - 12**	**NA**	**20**	**20**	**20**	**20**	**0.0005**	**0.150**	**NA**	**NA**
	6/23/2004	**7.1**	NS	NS	NS	NS	NS	**0.250**	< 0.005	< 0.005	-
	7/29/2004	**7.4**	NS	NS	NS	NS	NS	**0.350**	< 0.005	< 0.005	-
	8/26/2004	**7.4**	NS	NS	NS	NS	**57.2**	**0.350**	< 0.005	< 0.005	-
	10/4/2004	**7.3**	NS	NS	NS	NS	NS	**0.330**	< 0.005	< 0.005	-
	10/21/2004	**7.2**	NS	NS	NS	NS	NS	**0.290**	< 0.005	< 0.005	-
	8/24/2006*	**7.3**	NS	NS	NS	NS	**76.2**	**0.620**	< 0.005	< 0.005	-
	8/31/2006*	NS	NS	NS	NS	NS	NS	NS	NS	NS	-
	9/7/2006*	NS	NS	NS	NS	NS	NS	NS	NS	NS	-
	9/14/2006*	**7.2**	NS	NS	NS	NS	NS	**0.530**	< 0.005	< 0.005	-
	10/24/2006	**7.2**	NS	NS	NS	NS	NS	**0.43 J**	< 0.005	**0.0004 J**	-
	11/15/2006	**7.4**	NS	NS	NS	NS	**63.9**	**0.500**	< 0.005	**0.0003 J**	-
	12/18/2006	**7.3**	NS	NS	NS	NS	NS	**0.450**	< 0.005	**0.0003 J**	-
	1/22/2007	**7.4**	NS	NS	NS	NS	NS	**0.420**	< 0.005	< 0.005	-
	2/13/2007	**7.2**	NS	NS	NS	NS	**63.4**	**0.360**	< 0.005	< 0.005	-
	3/20/2007	**7.3**	NS	NS	NS	NS	NS	**0.320 J-**	< 0.005	< 0.005	-
	4/16/07 [(c)]	NS	NS	NS	NS	NS	NS	NS	NS	NS	-
	7/2/2007**	**7.4**	NS	NS	NS	NS	NS	**0.076**	< 0.0005	< 0.0005	-
	7/23/2007**	**7.5**	NS	NS	NS	NS	NS	**0.290**	< 0.005	< 0.005	-
	8/23/2007**	**7.5**	NS	NS	NS	NS	NS	**0.290**	< 0.005	**0.0002 J**	-
	8/29/2007**	**7.4**	NS	NS	NS	NS	**58.1**	NS	NS	NS	-
	9/18/2007	**7.6**	NS	NS	NS	NS	NS	**0.360**	< 0.0005	< 0.0005	-
	10/29/2007	**7.6**	NS	NS	NS	NS	NS	**0.280**	<0.005	<0.005	-
Start-up VOC sample	11/29/2007	**7.5**	NS	NS	NS	NS	**54.7**	**0.310**	<0.0005	<0.0005	-
Start-up VOC sample	12/6/2007	**7.2**	NS	NS	NS	NS	NS	**0.260**	<0.0005	<0.0005	-
Start-up VOC sample	12/13/2007	**7.4**	NS	NS	NS	NS	NS	**0.290**	<0.0005	<0.0005	-
Start-up VOC sample	12/20/2007	**6.9**	NS	NS	NS	NS	NS	**0.260**	<0.0005	<0.0005	-
	1/17/2008	**7.2**	NS	NS	NS	NS	NS	**0.240**	<0.0005	<0.0005	-
	2/25/2008	**8.3**	NS	NS	NS	NS	**59.2**	**0.250**	<0.0005	<0.0005	-
	3/31/2008	**8.2**	NS	NS	NS	NS	NS	**0.280**	<0.0005	<0.0005	-
	4/25/2008	**7.3**	NS	NS	NS	NS	NS	**0.210**	<0.0005	<0.0005	-
	5/22/2008	**7.3**	NS	NS	NS	NS	**58.1**	**0.280**	<0.0005	<0.0005	-
	6/18/2008	**7.2**	NS	NS	NS	NS	NS	**0.240**	<0.0005	<0.0005	-
	7/16/2008	**7.7**	NS	NS	NS	NS	NS	**0.240**	<0.0005	<0.0005	-
	8/20/2008	**8.0**	NS	NS	NS	NS	**83.2**	**0.220**	<0.0005	<0.0005	-
	9/25/2008	**8.1**	NS	NS	NS	NS	NS	**0.150**	<0.0005	<0.0005	-
	10/30/2008	**8.0**	NS	NS	NS	NS	NS	**0.250**	<0.0005	<0.0005	-
	11/25/2008	**7.2**	NS	NS	NS	NS	**62.2**	**0.210**	<0.0005	<0.0005	-
	12/30/2008	**7.2**	NS	NS	NS	NS	NS	**0.190**	<0.0005	<0.0005	-
	1/30/2009	**7.2**	NS	NS	NS	NS	NS	**0.190**	<0.0005	<0.0005	-
	2/27/2009	**7.4**	NS	NS	NS	NS	**58.1**	**0.180**	<0.0005	<0.0005	-

TABLE G-6(a)

GROUNDWATER TREATMENT SYSTEM
ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

Sample Identification	Date	pH	TDS (mg/L)	U-234 (pCi/L)	U-235 (pCi/L)	U-238 (pCi/L)	Total U (pCi/L)	PCE (mg/L)	Toluene (mg/L)	TCE (mg/L)	Bioassay
Maximum Allowable Discharge Limit		**5 - 12**	**NA**	**20**	**20**	**20**	**20**	**0.0005**	**0.150**	**NA**	**NA**
	3/30/2009	**7.8**	NS	NS	NS	NS	NS	**0.170**	<0.0005	<0.0005	-
	4/23/2009	**8.0**	NS	NS	NS	NS	NS	**0.160**	<0.0005	<0.0005	-
	5/26/2009	**7.6**	NS	NS	NS	NS	**60.4**	**0.180**	<0.0005	<0.0005	-
	6/29/2009	**7.5**	NS	NS	NS	NS	NS	**0.150**	< 0.0005	< 0.0005	-
	7/29/2009	**7.7**	NS	NS	NS	NS	NS	**0.190**	<0.0005	<0.0005	-
	8/10/2009	**7.6**	NS	NS	NS	NS	NS	**0.250**	<0.0005	<0.0005	-
	9/22/2009	**7.5**	NS	NS	NS	NS	NS	**0.170**	<0.0005	<0.0005	-
	10/26/2009	**8.6**	NS	NS	NS	NS	NS	**0.250**	< 0.0005	< 0.0005	-
	11/23/2009	**8.1**	NS	NS	NS	NS	**56.0**	**0.160**	< 0.0005	< 0.0005	-
	12/16/2009	**7.8**	NS	NS	NS	NS	NS	**0.180**	< 0.0005	< 0.0005	-
GWT Effluent[2,3,4]	6/11/01[a]	NS	**531**	**0.01040**	< 0.0884	< 0.0884	NS	**0.003**	< 0.0005	< 0.0005	-
	6/25/01[a]	NS	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	7/12/2001	**8.1**	NS	**0.01180**	**0.00784**	**0.00784**	NS	< 0.0005	< 0.0005	< 0.0005	-
	7/19/2001	**7.9**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	**-**
	7/26/2001	**8.0**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/28/2001	**7.7**	**525**	**0.00825**	**0.00825**	**0.00825**	NS	< 0.0005	< 0.0005	< 0.0005	-
	9/6/2001	**7.8**	NS	< 0.190	< 0.157	**0.01960**	NS	< 0.0005	**0.0008**	< 0.0005	-
	9/21/2001	**8.4**	**520**	**0.09470**	< 0.227	**0.03150**	NS	< 0.0005	< 0.0005	< 0.0005	-
	10/3/2001	**7.7**	NS	**0.05250**	**0.00657**	< 0.0356	NS	< 0.0005	< 0.0005	< 0.0005	-
	10/17/2001	**8.1**	**514**	**0.05340**	**0.01670**	< 0.0800	NS	< 0.0005	< 0.0005	< 0.0005	**-**
	11/14/2001	**7.8**	**531**	**5.94**	**0.230**	**5.88**	NS	< 0.0005	< 0.0005	< 0.0005	-
	12/13/2001	**8.1**	**529**	**0.0270**	< 0.109	< 0.242	NS	< 0.0005	< 0.0005	< 0.0005	-
	1/16/2002	**8.2**	**537**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	2/19/2002	**8.1**	**536**	**2.30**	**0.043**	**1.82**	NS	< 0.0005	< 0.0005	< 0.0005	-
	3/21/2002	**8.3**	**541**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	4/17/2002	**8.2**	**563**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	5/23/2002	**8.0**	**605**	**9.47**	**0.348**	**6.58**	NS	< 0.0005	< 0.0005	< 0.0005	-
	6/20/2002	**8.0**	**571**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	7/18/2002	**7.6**	**563**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/19/2002	**8.3**	**592**	**10.8**	**0.381**	**7.4**	NS	< 0.0005	< 0.0005	< 0.0005	-
	9/16/2002	**8.4**	NS	NS	NS	NS	NS	NS	NS	NS	**-**
	9/26/2002	**8.3**	NS	NS	NS	NS	NS	**0.0003 J**	< 0.0005	< 0.0005	-
	10/3/2002	**8.4**	NS	NS	NS	NS	NS	**0.0003 J**	< 0.0005	< 0.0005	-
	10/24/2002	**8.3**	**595**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	11/18/2002	**8.2**	**576**	**5.96**	**0.197**	**5.02**	NS	< 0.0005	< 0.0005	< 0.0005	-
	12/18/2002	**8.2**	**576**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	1/16/2003	**8.0**	**581**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	2/20/2003	**8.3**	**589**	**13.10**	**0.464**	**11.10**	NS	< 0.0005	< 0.0005	< 0.0005	-

TABLE G-6(a)

GROUNDWATER TREATMENT SYSTEM
ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

Sample Identification	Date	pH	TDS (mg/L)	U-234 (pCi/L)	U-235 (pCi/L)	U-238 (pCi/L)	Total U (pCi/L)	PCE (mg/L)	Toluene (mg/L)	TCE (mg/L)	Bioassay
Maximum Allowable Discharge Limit		**5 - 12**	**NA**	**20**	**20**	**20**	**20**	**0.0005**	**0.150**	**NA**	**NA**
	3/20/2003	**8.3**	**592**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	4/30/2003	**8.2**	**600**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	5/29/2003	**8.5**	**595**	**9.92**	**0.495**	**7.41**	NS	< 0.0005	< 0.0005	< 0.0005	-
	6/26/2003	**8.4**	**602**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	7/24/2003	**8.5**	**593**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/28/2003	**8.4**	**622**	**8.69**	**0.423**	**7.00**	NS	< 0.0005	< 0.0005	< 0.0005	-
	9/18/2003	**8.3**	**602**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	10/23/2003	**8.3**	**645**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	11/19/2003	**8.2**	**602**	**12.0**	**0.481**	**8.60**	NS	< 0.0005	< 0.0005	< 0.0005	-
	12/18/2003	**8.1**	**597**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	1/22/2004	**8.0**	**594**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	2/26/2004	**8.4**	**582**	NS	NS	NS	**10.80**	< 0.0005	< 0.0005	< 0.0005	-
	4/8/2004	**8.0**	**631**	**8.29**	**0.203**	**6.18**	NS	< 0.0005	< 0.0005	< 0.0005	-
	4/15/2004	**8.4**	NS	**9.52**	**0.230**	**7.35**	NS	NS	NS	NS	-
	4/22/2004	**8.3**	**589**	**9.32**	**0.269**	**6.69**	NS	< 0.0005	< 0.0005	< 0.0005	-
	4/28/2004	**8.3**	**NS**	**9.32**	**0.300**	**6.37**	NS	NS	NS	NS	-
	5/20/2004	**8.4**	**609**	**9.80**	**0.289**	**6.83**	NS	**0.00042 J**	< 0.0005	< 0.0005	-
	6/23/2004	**8.3**	**602**	**7.88**	**0.238**	**5.91**	NS	< 0.0005	< 0.0005	< 0.0005	-
	7/29/2004	**8.2**	**602**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/26/2004	**8.4**	**620**	NS	NS	NS	**15.1**	< 0.0005	< 0.0005	< 0.0005	-
	10/4/2004	**8.4**	**622**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	10/21/2004	**8.2**	**624**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/24/2006*	**8.4**	**680**	NS	NS	NS	**12.2**	< 0.0005	< 0.0005	< 0.0005	**-**
	8/31/2006*	**8.4**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	9/7/2006*	**8.4**	NS	NS	NS	NS	**1.76**	< 0.0005	< 0.0005	< 0.0005	-
	9/14/2006*	**8.4**	NS	NS	NS	NS	**1.87**	< 0.0005	< 0.0005	< 0.0005	-
	10/24/2006	**8.2**	**660**	NS	NS	NS	**12.3**	< 0.0005	< 0.0005	< 0.0005	-
	11/15/2006	**8.1**	**660**	NS	NS	NS	**14.4**	< 0.0005	< 0.0005	< 0.0005	-
	12/18/2006	**8.3**	**670**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	1/22/2007	**8.2**	**670**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	2/13/2007	**8.0**	**660**	NS	NS	NS	**32.9**	< 0.0005	< 0.0005	< 0.0005	-
	3/20/2007	**8.0**	**660**	NS	NS	NS	**26.9**	< 0.0005	< 0.0005	< 0.0005	-
	4/16/07 [(c)]	NS	NS	NS	NS	NS	NS	NS	NS	NS	-
	7/2/2007**	**7.9**	**640**	NS	NS	NS	**0.070**	< 0.0005	< 0.0005	< 0.0005	**-**
	7/9/2007**	**7.7**	NS	NS	NS	NS	**0.036**	< 0.0005	< 0.0005	< 0.0005	-
	7/16/2007**	**7.9**	NS	NS	NS	NS	**0.007**	< 0.0005	< 0.0005	< 0.0005	-
	7/23/2007**	**8.0**	**690**	NS	NS	NS	**0.005**	< 0.0005	< 0.0005	< 0.0005	-
	8/23/2007**	**7.6**	**720**	NS	NS	NS	NS	**0.0003**	< 0.0005	< 0.0005	-
	8/29/2007	**7.8**	NS	NS	NS	NS	**15.4**	NS	NS	NS	-

TABLE G-6(a)

GROUNDWATER TREATMENT SYSTEM
ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

Sample Identification	Date	pH	TDS (mg/L)	U-234 (pCi/L)	U-235 (pCi/L)	U-238 (pCi/L)	Total U (pCi/L)	PCE (mg/L)	Toluene (mg/L)	TCE (mg/L)	Bioassay
Maximum Allowable Discharge Limit		**5 - 12**	**NA**	**20**	**20**	**20**	**20**	**0.0005**	**0.150**	**NA**	**NA**
	9/18/2007**	**7.6**	**680**	NS	NS	NS	NS	**0.0004**	< 0.0005	< 0.0005	-
	10/29/2007	**8.0**	**660**	NS	NS	NS	NS	**0.0006**	<0.005	<0.005	-
Start-up VOC sample	11/28/2007	**8.6**	**630**	NS	NS	NS	**14.8**	<0.0005	<0.0005	<0.0005	-
Start-up VOC sample	12/6/2007	**8.1**	NS	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
Start-up VOC sample	12/13/2007	**7.9**	NS	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
Start-up VOC sample	12/20/2007	**8.0**	NS	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	1/17/2008	**7.8**	**680**	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	2/25/2008	**8.4**	**660**	NS	NS	NS	**17.5**	<0.0005	<0.0005	<0.0005	-
	3/31/2008	**8.2**	**660**	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	4/25/2008	**8.3**	**660**	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	5/22/2008	NA	**650**	NS	NS	NS	**9.82**	<0.0005	<0.0005	<0.0005	-
	6/18/2008	**7.8**	**660**	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	7/16/2008	**7.7**	**660**	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	8/20/2008	NA	**680**	NS	NS	NS	**4.49**	<0.0005	<0.0005	<0.0005	-
	9/25/2008	**7.8**	**680**	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	10/30/2008	**8.4**	**680**	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	11/25/2008	**7.7**	**680**	NS	NS	NS	**13.2**	<0.0005	<0.0005	<0.0005	-
	12/30/2008	**7.8**	**660**	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	1/30/2009	**8.4**	**670**	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	2/27/2009	**7.5**	**660**	NS	NS	NS	**9.0**	<0.0005	<0.0005	<0.0005	-
	3/30/2009	**7.5**	**660**	NS	NS	NS	NS	0.0002	<0.0005	<0.0005	-
	4/23/2009	**8.0**	**660**	NS	NS	NS	NS	0.0003	<0.0005	<0.0005	-
	5/26/2009	**7.5**	**670**	NS	NS	NS	**22.3**	0.0003J	<0.0005	<0.0005	-
	6/29/2009	**8.0**	**660**	NS	NS	NS	**18.3**[d]	0.0003J-	< 0.0005	< 0.0005	-
	7/29/2009	**8.4**	**660**	NS	NS	NS	**17.9**	<0.0005	<0.0005	<0.0005	-
	8/10/2009	**8.3**	**650**	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	9/22/2009	**8.0**	**650**	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	10/26/2009	**8.9**	**590**	NS	NS	NS	NS	< 0.0005	0.0005	< 0.0005	-
	11/23/2009	**9.2**	**620**	NS	NS	NS	**35.8**	< 0.0005	< 0.0005	< 0.0005	-
	12/16/2009	**9.1**	**640**	NS	NS	NS	**15.2**	<0.0005	<0.0005	<0.0005	-
PERFORMANCE MONITORING											
Pre-Air Stripper[(2)]	6/25/01[(a)]	NS	NS	NS	NS	NS	NS	**2.9**	< 0.0005	**0.002 J**	-
Carbon Influent[(2)]	6/25/01[(a)]	NS	NS	NS	NS	NS	NS	**0.007**	< 0.0005	< 0.0005	-
	8/28/2001	NS	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	11/13/2001	**8.4**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	2/19/2002	**8.1**	NS	NS	NS	NS	NS	**0.006**	< 0.0005	< 0.0005	-
	5/23/2002	**7.1**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/19/2002	**8.3**	NS	NS	NS	NS	NS	**0.0005**	< 0.0005	< 0.0005	-
	11/18/2002	**8.3**	NS	NS	NS	NS	NS	**0.0010**	< 0.0005	< 0.0005	-

TABLE G-6(a)

GROUNDWATER TREATMENT SYSTEM
ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

Sample Identification	Date	pH	TDS (mg/L)	U-234 (pCi/L)	U-235 (pCi/L)	U-238 (pCi/L)	Total U (pCi/L)	PCE (mg/L)	Toluene (mg/L)	TCE (mg/L)	Bioassay
Maximum Allowable Discharge Limit		**5 - 12**	**NA**	**20**	**20**	**20**	**20**	**0.0005**	**0.150**	**NA**	**NA**
	2/20/2003	**8.4**	NS	NS	NS	NS	NS	**0.0008**	< 0.0005	< 0.0005	-
	5/29/2003	**8.3**	NS	NS	NS	NS	NS	**0.0009**	< 0.0005	< 0.0005	-
	8/28/2003	**8.5**	NS	NS	NS	NS	NS	**0.0088**	< 0.0005	< 0.0005	-
	11/19/2003	**8.3**	NS	NS	NS	NS	NS	**0.0077**	< 0.0005	< 0.0005	-
	2/26/2004	**8.5**	NS	NS	NS	NS	NS	**0.00045 J**	< 0.0005	< 0.0005	-
	5/20/2004	**8.5**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/26/2004	**8.3**	NS	NS	NS	NS	NS	**0.0018**	< 0.0005	< 0.0005	-
	11/15/2006	**8.3**	NS	NS	NS	NS	NS	**0.0017**	< 0.0005	< 0.0005	-
	2/13/2007	**8.4**	NS	NS	NS	NS	NS	**0.410**	< 0.0005	**0.0002**	-
	4/16/07 [c]	NS	NS	NS	NS	NS	NS	NS	NS	NS	-
	8/23/2007	**7.6**	NS	NS	NS	NS	NS	**0.0008**	< 0.0005	< 0.0005	-
	11/28/2007	**8.5**	NS	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	2/25/2008	NA	NS	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	5/22/2008	NA	NS	NS	NS	NS	NS	**0.0003J**	<0.0005	<0.0005	-
	8/20/2008	NA	NS	NS	NS	NS	NS	**0.001**	<0.0005	<0.0005	-
	11/25/2008	NA	NS	NS	NS	NS	NS	**0.0005**	<0.0005	<0.0005	-
	2/27/2009	NA	NS	NS	NS	NS	NS	**0.0007**	<0.0005	<0.0005	-
	5/26/2009	**7.5**	NS	NS	NS	NS	NS	**0.0004J-**	<0.0005	<0.0005	-
	8/10/2009	NA	NS	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	11/23/2009	**8.5**	NS	NS	NS	NS	NS	**0.0003 J**	< 0.0005	< 0.0005	-
Carbon Mid Bed[2]	6/25/01[a]	NS	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/28/2001	NS	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	9/21/2001	**8.3**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	10/17/2001	**8.4**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	11/13/2001	**8.2**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	12/13/2001	**8.0**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	10/3/2002	**8.1**	NS	NS	NS	NS	NS	**0.0005 J**	< 0.0005	< 0.0005	-
	11/18/2002	**8.2**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	2/20/2003	**8.3**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	5/29/2003	**8.3**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/28/2003	**8.5**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	11/19/2003	**8.4**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	2/26/2004	**8.4**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/26/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	-
	8/24/2006*	**8.4**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
	11/15/2006	**8.3**	NS	NS	NS	NS	NS	**0.0003 J**	< 0.0005	< 0.0005	-
	2/13/2007	**8.3**	NS	NS	NS	NS	NS	**0.0009**	< 0.0005	< 0.0005	-
	4/16/2007 [c]	NS	NS	NS	NS	NS	NS	NS	NS	NS	-

TABLE G-6(a)

GROUNDWATER TREATMENT SYSTEM
ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

Sample Identification	Date	pH	TDS (mg/L)	U-234 (pCi/L)	U-235 (pCi/L)	U-238 (pCi/L)	Total U (pCi/L)	PCE (mg/L)	Toluene (mg/L)	TCE (mg/L)	Bioassay
Maximum Allowable Discharge Limit		**5 - 12**	**NA**	**20**	**20**	**20**	**20**	**0.0005**	**0.150**	**NA**	**NA**
	8/23/2007	**7.6**	NS	NS	NS	NS	NS	**0.0009**	< 0.0005	< 0.0005	-
	11/28/2007	**8.5**	NS	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	2/25/2008	NA	NS	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	5/22/2008	NA	NS	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	8/20/2008	NA	NS	NS	NS	NS	NS	**0.0011**	<0.0005	<0.0005	-
	11/25/2008	NA	NS	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	2/27/2009	NA	NS	NS	NS	NS	NS	**0.0004**	<0.0005	<0.0005	-
	5/26/2009	**7.5**	NS	NS	NS	NS	NS	**0.0006J-**	<0.0005	<0.0005	-
	8/10/2009	NA	NS	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	11/23/2009	**8.51**	NS	NS	NS	NS	NS	< 0.0005	< 0.0005	< 0.0005	-
Pre Ion Exchange[2]	8/28/2001	NS	NS	**18.9**	**0.404**	**14.0**	NS	< 0.0005	< 0.0005	< 0.0005	-
	11/14/2001	**7.8**	NS	**19.1**	**0.515**	**12.6**	NS	< 0.0005	< 0.0005	< 0.0005	-
	2/19/2002	**8.1**	NS	**19.5**	**0.506**	**14.3**	NS	< 0.0005	< 0.0005	< 0.0005	-
	5/23/2002	**8.0**	NS	**20.0**	**0.412**	**15.6**	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/19/2002	**8.3**	NS	**25.7**	**0.621**	**17.7**	NS	< 0.0005	< 0.0005	< 0.0005	-
	11/18/2002	**8.2**	NS	**22.4**	**0.523**	**17.2**	NS	< 0.0005	< 0.0005	< 0.0005	-
	2/20/2003	**8.3**	NS	**27.3**	**1.550**	**21.2**	NS	< 0.0005	< 0.0005	< 0.0005	-
	5/29/2003	**8.3**	NS	**25.7**	**1.650**	**17.9**	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/28/2003	**8.4**	NS	**26.8**	**1.390**	**19.3**	NS	< 0.0005	< 0.0005	< 0.0005	-
	11/19/2003	**8.1**	NS	**26.9**	**0.725**	**23.4**	NS	< 0.0005	< 0.0005	< 0.0005	-
	2/26/2004	**8.4**	NS	NS	NS	NS	**411.0**	< 0.0005	< 0.0005	< 0.0005	-
	5/20/2004	**8.5**	NS	**23.8**	**0.621**	**18.3**	NS	< 0.0005	< 0.0005	< 0.0005	-
	8/26/2004*	**8.4**	NS	NS	NS	NS	**68.4**	< 0.0005	< 0.0005	< 0.0005	-
	11/15/2006	**8.2**	NS	NS	NS	NS	**46.8**	**0.0003 J**	< 0.0005	< 0.0005	-
	2/13/2007	**8.3**	NS	NS	NS	NS	**24.5 J-**	< 0.0005	< 0.0005	< 0.0005	-
	4/16/2007 [c]	NS	NS	NS	NS	NS	NS	NS	NS	NS	-
	8/23/2007	**7.6**	NS	NS	NS	NS	NS	**0.0002**	< 0.0005	< 0.0005	-
	8/29/2007	**7.6**	NS	NS	NS	NS	**54.2**	NS	NS	NS	-
	11/28/2007	**8.5**	NS	NS	NS	NS	**53.4**	<0.0005	<0.0005	<0.0005	-
	2/25/2008	NA	NS	NS	NS	NS	**56.5**	<0.0005	<0.0005	<0.0005	-
	5/22/2008	NA	NS	NS	NS	NS	**58.9**	<0.0005	<0.0005	<0.0005	-
	8/20/2008	NA	NS	NS	NS	NS	**79.9**	<0.0005	<0.0005	<0.0005	-
	11/25/2008	NA	NS	NS	NS	NS	**56.7**	<0.0005	<0.0005	<0.0005	-
	2/27/2009	NA	NS	NS	NS	NS	**62.3**	<0.0005	<0.0005	<0.0005	-
	5/26/2009	**7.50**	NS	NS	NS	NS	**54.0**	0.0004J-	<0.0005	<0.0005	-
	8/10/2009	NA	NS	NS	NS	NS	NS	<0.0005	<0.0005	<0.0005	-
	11/23/2009	**8.47**	NS	NS	NS	NS	**53.0**	< 0.0005	< 0.0005	< 0.0005	-

TABLE G-6(a)

GROUNDWATER TREATMENT SYSTEM
ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

Sample Identification	Date	pH	TDS (mg/L)	U-234 (pCi/L)	U-235 (pCi/L)	U-238 (pCi/L)	Total U (pCi/L)	PCE (mg/L)	Toluene (mg/L)	TCE (mg/L)	Bioassay
Maximum Allowable Discharge Limit		**5 - 12**	**NA**	**20**	**20**	**20**	**20**	**0.0005**	**0.150**	**NA**	**NA**
Ion Exchange Mid Bed[3]	8/28/2001	NS	NS	**0.00826**	**0.00826**	**0.02480**	NS	NS	NS	NS	-
	2/19/2002	**8.1**	NS	**0.232**	< 0.0434	**0.304**	NS	NS	NS	NS	-
	5/23/2002	**8.0**	NS	**3.31**	**0.142**	**2.15**	NS	NS	NS	NS	-
	8/19/2002	**8.3**	NS	**8.01**	**0.288**	**5.72**	NS	NS		NS	-
	11/18/2002	**8.2**	NS	**6.84**	**0.225**	**4.71**	NS	NS	NS	NS	-
	2/20/2003	**8.3**	NS	**13.60**	**0.498**	**9.24**	NS	NS	NS	NS	-
	5/29/2003	**8.2**	NS	**16.3**	**0.849**	**12.0**	NS	NS	NS	NS	-
	8/28/2003	**8.4**	NS	**8.7**	**0.423**	**7.0**	NS	NS	NS	NS	-
	11/19/2003	**8.1**	NS	**18.3**	**0.871**	**15.1**	NS	NS	NS	NS	-
	2/26/2004	**8.4**	NS	NS	NS	NS	**24.5**	NS	NS	NS	-
	5/20/2004	**8.5**	NS	**18.9**	**0.590**	**14.0**	NS	NS	NS	NS	-
	8/26/2004	**8.4**	NS	NS	NS	NS	**19.8**	NS	NS	NS	-
	8/26/2004*	**8.3**	NS	NS	NS	NS	**6.05**	NS	NS	NS	-
	11/15/2006	**8.2**	NS	NS	NS	NS	**35.5**	NS	NS	NS	-
	2/13/2007	**8.4**	NS	NS	NS	NS	**42.7 J-**	NS	NS	NS	-
	4/16/2007 [c]	NS	NS	NS	NS	NS	NS	NS	NS	NS	-
	8/29/2007	**7.9**	NS	NS	NS	NS	**3.29**	NS	NS	NS	-
	11/28/2007	**8.4**	NS	NS	NS	NS	**4.07**	NS	NS	NS	-
	2/25/2008	NA	NS	NS	NS	NS	**15.50**	NS	NS	NS	-
	8/20/2008	NA	NS	NS	NS	NS	**42.6**	NS	NS	NS	-
	11/25/2008	NA	NS	NS	NS	NS	**35.7**	NS	NS	NS	-
	2/27/2009	NA	NS	NS	NS	NS	**42.7**	NS	NS	NS	-
	5/26/2009	NA	NS	NS	NS	NS	**47.0**	NS	NS	NS	-
	8/10/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	-
	11/23/2009	NS	NS	NS	NS	NS	**53.0**	NS	NS	NS	-
	12/22/2009	NS	NS	NS	NS	NS	**0.893**	NS	NS	NS	-

Notes:
(1) Analyzed for VOCs using USEPA Method 8260
(2) Analyzed for VOCs using USEPA Method 524.2
(3) Analyzed for uranium using USEPA Method 908.0
(4) Analyzed for TDS using USEPA Method 160.1
(a) Was not discharged to City of Modesto Sanitary Sewer System
(b) Sample was analyzed out of holding time
(c) No sample collected 2Q07. System down for ion-exchange change-out.
(d) Total U sample collected on 6/17/2009.
* - System Start-up with new extraction well EW-1R
** - July 2007 System Start-up Samples/
GWT - Groundwater Treatment
PCE - Tetrachloroethene
TCE - Trichloroethene
TDS - Total Dissolved Solids
mg/L - milligrams per liter
B - Analyte Detected in trip blank or method blank
J - Estimated Value (J- = low bias)
NA - Not Applicable
NS - Not Sampled
NSM - Not Significant Mortalitites
R - Rejected
U - Uranium
VOCs - Volatile organic compounds
pCi/L - picoCuries per liter

TABLE G-6(b)

GROUNDWATER TREATMENT SYSTEM ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Sample Port	Date	Sample Code	pH	TDS (mg/L)	TSS (mg/L)	BOD (mg/L)	Total Uranium (PCI/L)	PCE (µg/L)	Toluene (µg/L)	TCE (µg/L)
SP-01 Extraction Well 1R	03/11/2010	N	7.2					180	0.5 U	0.5 U
	04/07/2010	N	7.63					180	0.5 U	0.5 U
	05/12/2010	N	7.15					160	0.5 U	0.5 U
	06/17/2010	N	6.96					130	0.5 U	0.5 U
	06/17/2010	FD	6.96					120	0.5 U	0.5 U
	07/15/2010	N					55.6			
	07/15/2010	N	6.98					140	0.5 U	0.5 U
	08/12/2010	N	7.7					150	0.5 U	0.5 U
	09/09/2010	N	7.27					210	0.5 U	0.5 U
	10/14/2010	N					54.4			
	10/14/2010	N	7.2					140	0.5 U	0.5 U
	10/14/2010	FD	7.2					140	0.5 U	0.5 U
	11/18/2010	N	6.85					130	0.5 U	0.5 U
	12/09/2010	N	7.32					88	0.5 U	0.5 U
	01/13/2011	N					49.0			
	01/13/2011	N	7.28					110	0.5 U	0.5 U
	02/10/2011	N	7.11					120	0.5 U	0.5 U
	03/09/2011	N	7.11					120	0.5 U	0.5 U
	04/14/2011	N					50.4			
	04/14/2011	N	7.25					120	0.5 U	0.5 U
	05/26/2011	N					55.3			
	06/02/2011	N	7.18					120	0.5 U	0.5 U
	07/14/2011	N					50.7			
	07/14/2011	N	7.35					140	0.5 U	0.5 U
	08/11/2011	N	7.41					160	0.5 U	0.5 U
	09/13/2011	N	7.4					130	0.5 U	0.5 U
	10/13/2011	N	7.46					140	0.5 U	0.5 U
	11/09/2011	N	7.37					130 J-	0.5 U	0.5 U

TABLE G-6(b)

GROUNDWATER TREATMENT SYSTEM ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Sample Port	Date	Sample Code	pH	TDS (mg/L)	TSS (mg/L)	BOD (mg/L)	Total Uranium (PCI/L)	PCE (µg/L)	Toluene (µg/L)	TCE (µg/L)
	12/08/2011	N	7.38					150	0.5 U	0.5 U
	01/12/2012	N	7.49					140 J-	0.5 R	0.5 R
	02/09/2012	N	7.26					150 J+	0.5 U	0.5 U
	03/08/2012	N	7.57					120	0.5 U	0.5 U
	04/05/2012	N	7.39					130	0.5 U	0.5 U
	05/08/2012	N	7.56					130	0.5 U	0.5 U
	06/07/2012	N	7.56					120 J+	0.5 U	0.5 U
	06/07/2012	FD	7.56					130	0.5 U	0.5 U
SP-03 Carbon Influent	03/11/2010	N	8.66					0.4 J	0.5 U	0.5 U
	05/12/2010	N	8.39					0.4 J	0.5 U	0.5 U
	07/15/2010	N	8.13					0.4 J	0.5 U	0.5 U
	10/14/2010	N	8.25					0.5 U	0.5 U	0.5 U
	01/13/2011	N	8.25					0.5 U	0.5 U	0.5 U
	04/14/2011	FD	8.21					0.5 U	0.5 U	0.5 U
	04/14/2011	N	966					0.5 U	0.5 U	0.5 U
	05/26/2011	N					53.2			
	07/14/2011	N	8.37					0.5 U	0.5 U	0.5 U
	10/13/2011	N	8.51					0.2 J	0.5 U	0.5 U
	10/13/2011	FD	8.51					0.5 U	0.5 U	0.5 U
	01/12/2012	N	8.53					0.4 J	0.5 U	0.5 U
	01/12/2012	FD	8.53					0.3 J	0.5 U	0.5 U
SP-04 Carbon Mid Bed	03/11/2010	N	8.36					0.5 U	0.5 U	0.5 U
	05/12/2010	N	8.3					0.5 U	0.5 U	0.5 U
	07/15/2010	N	8.11					0.3 J	0.5 U	0.5 U
	10/14/2010	N	8.19					0.2 J	0.5 U	0.5 U
	01/13/2011	N	8.2					0.2 J	0.5 U	0.5 U
	04/14/2011	N	8.17					0.5 J	0.5 U	0.5 U
	05/26/2011	N					50.6			

TABLE G-6(b)

GROUNDWATER TREATMENT SYSTEM ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Sample Port	Date	Sample Code	pH	TDS (mg/L)	TSS (mg/L)	BOD (mg/L)	Total Uranium (PCI/L)	PCE (µg/L)	Toluene (µg/L)	TCE (µg/L)
	07/14/2011	N	8.37					0.3 J	0.5 U	0.5 U
	07/14/2011	FD	8.37					0.3 J	0.5 U	0.5 U
	10/13/2011	N	8.46					0.3 J	0.5 U	0.5 U
	01/12/2012	N	8.41					0.5 U	0.5 U	0.5 U
SP-05 Post Carbon Pre Ion E	03/11/2010	N	8.29					0.5 U	0.5 U	0.5 U
	05/12/2010	N	8.38					0.5 U	0.5 U	0.5 U
	07/15/2010	FD					57.0			
	07/15/2010	N					58.1			
	07/15/2010	N	7.94					0.5 U	0.5 U	0.5 U
	10/14/2010	N					58.3			
	10/14/2010	N	8.15					0.2 J	0.5 U	0.5 U
	01/13/2011	N					69.9			
	01/13/2011	N	8.15					0.5 U	0.5 U	0.5 U
	04/14/2011	N					74.5			
	04/14/2011	N	8.13					0.5 J	0.5 U	0.5 U
	05/26/2011	N					57.9			
	07/14/2011	N					52.2			
	07/14/2011	N	8.32					0.3 J	0.5 U	0.5 U
	10/13/2011	N	8.41					0.4 J	0.5 U	0.5 U
	01/12/2012	N	8.45					0.5 U	0.5 U	0.5 U
SP-06 Ion Exchange Mid Bed	07/15/2010	N					8.04			
	10/14/2010	N					21.3			
	01/13/2011	N					40.0			
	04/14/2011	N					18.6			
	07/14/2011	N					36.7			
SP-07 GWT Effluent	03/11/2010	N	8.4	640				0.5 U	0.5 U	0.5 U
	04/07/2010	N	8.28	650				0.5 U	0.5 U	0.5 U

TABLE G-6(b)

GROUNDWATER TREATMENT SYSTEM ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Sample Port	Date	Sample Code	pH	TDS (mg/L)	TSS (mg/L)	BOD (mg/L)	Total Uranium (PCI/L)	PCE (µg/L)	Toluene (µg/L)	TCE (µg/L)
	05/12/2010	N	8.1	640				0.5 U	0.5 U	0.5 U
	06/17/2010	N	8.2	660	10 U	2.0 UJ		0.5 U	0.5 U	0.5 U
	06/17/2010	FD	8.2	670						
	07/15/2010	N					9.95			
	07/15/2010	N	7.89	650	10 U	2.0 UJ		0.5 U	0.5 U	0.5 U
	08/12/2010	N	8.21	640	10 U	2.0 UJ		0.5 U	0.5 U	0.5 U
	09/09/2010	N	8.5	660	10 U	2.0 UJ		0.5 U	0.5 U	0.5 U
	09/09/2010	FD	8.5	660						
	10/14/2010	N					9.86			
	10/14/2010	N	8.11	650	10 U	2.0 UJ		0.2 J	0.5 U	0.5 U
	11/18/2010	N	7.57	660	10 U	2.0		0.2 J	0.5 U	0.5 U
	12/09/2010	N	8.21	660	3 U	2.0 UJ		0.5 U	0.5 U	0.5 U
	01/13/2011	N					8.73			
	01/13/2011	N	8.16	650	10 U	2.0		0.5 U	0.5 U	0.5 U
	02/10/2011	N	8.28	650	10 U	2.0 UJ		0.3 J	0.5 U	0.5 U
	03/09/2011	N	7.95	640	10 U	2.0 UJ		0.2 J	0.5 U	0.5 U
	03/09/2011	FD	7.82					0.2 J	0.5 U	0.5 U
	04/14/2011	FD					24.6			
	04/14/2011	N					25.4			
	04/14/2011	TB	7.83	660	10 U	2.0		0.3 J	0.5 U	0.5 U
	05/10/2011	N					11.7			
	05/10/2011	N	8.11	640	10 U	2.0 UJ		0.3 J	0.5 U	0.5 U
	05/10/2011	FD	8.11	640	10 U					
	05/19/2011	N					10.3			
	05/26/2011	N					11.6			
	06/02/2011	N					13.0			
	06/02/2011	N	8.21	640	10 U	2.0 UJ		0.3 J	0.5 U	0.5 U
	06/02/2011	FD	8.21					0.4 J	0.5 U	0.5 U

TABLE G-6(b)

GROUNDWATER TREATMENT SYSTEM ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Sample Port	Date	Sample Code	pH	TDS (mg/L)	TSS (mg/L)	BOD (mg/L)	Total Uranium (PCI/L)	PCE (µg/L)	Toluene (µg/L)	TCE (µg/L)
	07/14/2011	FD					12.0			
	07/14/2011	N					12.1			
	07/14/2011	N	8.34	660	10 U	2.0		0.3 J	0.5 U	0.5 U
	08/11/2011	N					13.7			
	08/11/2011	N	8.26	650	10 U	2.0 UJ		0.4 J	0.5 U	0.5 U
	09/13/2011	N	8.42	660	10 U	2.0 UJ		0.4 J	0.5 U	0.5 U
	10/13/2011	N	8.41	660	10 U	2.0 U		0.4 J	0.5 U	0.5 U
	11/09/2011	N	8.22	650	10 U	2.0 U		0.4 J	0.5 U	0.5 U
	12/08/2011	N	8.21	670	10 U	2.0 U		0.3 J	0.5 U	0.5 U
	12/08/2011	FD	8.21	660	10 U	2.0 U				
	01/12/2012	N	8.46	646	10 U	2.0 U		0.5 U	0.5 U	0.5 U
	02/09/2012	N	8.34	660	10 U	2.0 U		0.5 U	0.5 U	0.5 U
	03/08/2012	N	8.27	640				0.5 U	0.5 U	0.5 U
	03/15/2012	N			10 U	2.4				
	03/15/2012	FD			10 U	2.4				
	04/05/2012	N	8.26	630	10 U	2.0 U		0.5 U	0.5 U	0.5 U
	05/08/2012	N	8.02	660	10 U	2.0 U		0.5 U	0.5 U	0.5 U
	06/07/2012	N	8.28	640	10 U	2.0 U		0.5 U	0.5 U	0.5 U

TABLE G-6(b)

GROUNDWATER TREATMENT SYSTEM ANALYTICAL SUMMARY RESULTS
MODESTO GROUNDWATER SUPERFUND SITE
MODESTO, CALIFORNIA

Sample Port	Date	Sample Code	pH	TDS (mg/L)	TSS (mg/L)	BOD (mg/L)	Total Uranium (PCI/L)	PCE (µg/L)	Toluene (µg/L)	TCE (µg/L)

BOD - biochemical oxygen demand
FD - field duplicate
J - Estimated value
J- - estimated value, potential low bias
mg/L - milligrams per liter
PCE - Tetrachloroethlene
PCI/L - pico curies per Liter
TCE - Trichloroethene
TDS - total dissolved solids
TSS - total suspended solids
U - not detected above the method detection limit
µg/L - micrograms per liter

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	SVE PRE GAC-060807	SVE Pre GAC-073107	SVE Pre GAC-082407	SVE Pre GAC-092407	SVE Pre GAC-102907	SVE Pre GAC-112807	SVE Pre GAC-122007	SVE Pre GAC-011708	SVE Pre GAC-033108	SVE Pre GAC-042508	SVE Pre GAC-052208	SVE Pre GAC-062408
Sample Date:	06/08/07	07/31/07	08/24/07	09/24/07	10/29/07	11/28/07	12/20/07	01/17/08	03/31/08	04/25/08	05/22/08	06/24/08
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	**7**	< 2.2000	< 2.3000	**4.4**	**4.8**	**15**	**54**	< 1.7000	**51**	**94**	**7700**	**900**
Trichloroethylene (TCE)	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	**27**	**11**
cis-1,2-Dichloroethylene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	**19**	**13**
Dichlorodifluoromethane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	**2**	< 20.0000
Chloroform	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	**16**	**34**
1,1,1-Trichloroethane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,1,2,2-Tetrachloroethane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,1,2-Trichloroethane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,1-Dichloroethane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,1-Dichloroethene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,2,4-Trichlorobenzene	**2.8**	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,2,4-Trimethylbenzene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,2-Dibromoethane (Ethylene dibromide)	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,2-Dichloro-1,1,2,2-trifluoroethane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,2-Dichlorobenzene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,2-Dichloroethane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,2-Dichloropropane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,3,5-Trimethylbenzene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,3-Dichlorobenzene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,4-Dichlorobenzene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
2-Butanone (MEK)		< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000				
4-Ethyltoluene		< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000				
Acetone	**5.6**	**1.1**	**10**	**11**	**10**	**7.3**	< 24.0000	**7.2**				
Benzene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
Bromomethane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
Carbon disulfide		< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000				
Carbon tetrachloride	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
Chlorobenzene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
Chloroethane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
Chloromethane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	**0.5**	< 2.5000	< 2.3000	< 20.0000
cis-1,3-Dichloropropene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
Ethylbenzene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
Hexachlorobutadiene	**3.7**	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
m,p-Xylene	< 4.4000	< 4.4000	< 4.6000	< 4.7000	< 4.7000	< 4.1000	< 47.0000	< 3.4000	**1.1**	< 4.9000	< 4.6000	< 40.0000
Methylene chloride	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
o-Xylene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
Styrene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
Toluene	< 2.2000	< 2.2000	< 2.3000	**10**	**2**	< 2.0000	< 24.0000	**1**	**8.6**	**1.4**	< 2.3000	< 20.0000
trans-1,2-Dichloroethene		< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000				
trans-1,3-Dichloropropene	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
Trichlorofluoromethane	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	**4.2**	< 2.3000	< 20.0000
Vinyl chloride	< 2.2000	< 2.2000	< 2.3000	< 2.3000	< 2.3000	< 2.0000	< 24.0000	< 1.7000	< 1.0000	< 2.5000	< 2.3000	< 20.0000
1,2-DICHLOROTETRAFLUOROETHANE												

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	SVE Pre GAC-072408	SVE Pre GAC-082002	SVE Pre Gac-092508	SVE Pre GAC-111808 (RE)	SVE Pre GAC-121008 (RE)	SVE Pre GAC-123008	SVE Pre GAC-013009	SVE Pre GAC-022709	SVE Pre GAC-031009	SVE Pre GAC-042309	SVE Pre GAC-052809	SVE Pre GAC-062909
Sample Date:	07/24/08	08/20/08	09/25/08	11/18/08	12/10/08	12/30/08	01/30/09	02/27/09	03/10/09	04/23/09	05/28/09	06/29/09
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	**630**	**430**	**270**	**4100**	**1100**	**1400**	**2.1**	**670**	**610**	**750**	**610**	**1200**
Trichloroethylene (TCE)	**8.7**	**9.4**	**6**	**19**	**6.1**		< 2.1000	**2.6**	**2.6 J**	**4.3**	**7.7**	**15**
cis-1,2-Dichloroethylene	**10**	**8.1**	**5.6**	**29**	**8**		< 2.1000	**2.7**	**2.7 J**	**5.4**	**10**	**12**
Dichlorodifluoromethane	**2.5**	**1.9**	**1.8**	< 22.0000	**2.9**		< 2.1000	**2.7**	**2.6 J**	**1.9**	**3 J**	**2.2 J**
Chloroform	**37**	**33**	**29**	**62**	**45**		< 2.1000	**45**	**40**	**30**	**30**	**32**
1,1,1-Trichloroethane	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,1,2,2-Tetrachloroethane	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,1,2-Trichloroethane	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,1-Dichloroethane	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,1-Dichloroethene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,2,4-Trichlorobenzene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000 UJ	< 1.9000	< 4.6000	< 2.7000
1,2,4-Trimethylbenzene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	**25**		**1.4 J**	< 2.2000	< 4.3000	< 1.9000	< 4.6000	**6.9**
1,2-Dibromoethane (Ethylene dibromide)	< 2.0000	< 2.1000	< 1.9000	< 22.0000	**3**		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,2-Dichloro-1,1,2,2-trifluoroethane	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,2-Dichlorobenzene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,2-Dichloroethane	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,2-Dichloropropane	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,3,5-Trimethylbenzene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	**13**		**1.1 J**	< 2.2000	< 4.3000	< 1.9000	< 4.6000	**4.4**
1,3-Dichlorobenzene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,4-Dichlorobenzene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
2-Butanone (MEK)												
4-Ethyltoluene												
Acetone												
Benzene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	**3.3**		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
Bromomethane	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
Carbon disulfide												
Carbon tetrachloride	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
Chlorobenzene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
Chloroethane	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
Chloromethane	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
cis-1,3-Dichloropropene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	**2.1**	< 4.6000	< 2.7000
Ethylbenzene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	**19**		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
Hexachlorobutadiene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000 UJ	< 1.9000	< 4.6000	< 2.7000 UJ
m,p-Xylene	< 4.0000	< 4.3000	**2.3**	< 45.0000	**210**		< 4.2000	< 4.3000	< 8.6000	< 3.7000	< 9.2000	**11**
Methylene chloride	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	**1.5**
o-Xylene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	**63**		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	**5.6**
Styrene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000 UJ	< 2.2000	< 4.3000	< 1.9000 UJ	< 4.6000 UJ	< 2.7000 UJ
Toluene	< 2.0000	< 2.1000	**2.4**	< 22.0000	**140**		**1.8 J**	< 2.2000	< 4.3000	< 1.9000	< 4.6000	**2 J**
trans-1,2-Dichloroethene												
trans-1,3-Dichloropropene	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
Trichlorofluoromethane	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
Vinyl chloride	< 2.0000	< 2.1000	< 1.9000	< 22.0000	< 3.9000		< 2.1000	< 2.2000	< 4.3000	< 1.9000	< 4.6000	< 2.7000
1,2-DICHLOROTETRAFLUOROETHA												

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	SVE Pre GAC-072909	SVE Pre GAC-081009	SVE Pre GAC-092209	SVE Pre GAC-102609	SVE Pre GAC-112309	SVE Pre GAC-121609	SVE Stack-060807	SVE Stack-073107	SVE Stack-082407	SVE Stack-092407	SVE Stack-102907	SVE Stack-112807
Sample Date:	07/29/09	08/10/09	09/22/09	10/26/09	11/23/09	12/16/09	06/08/07	07/31/07	08/24/07	09/24/07	10/29/07	11/28/07
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	**1200**	**1800**	**940**	**630**	**500**	**420**	< 2.4000	**4.5**	< 2.3000	**4.3**	< 2.3000	< 2.0000
Trichloroethylene (TCE)	**19**	**20**	**7.3**	**4.4**	**3**	**2.2**	< 2.4000	< 2.1000	< 2.3000	**4.6**	< 2.3000	< 2.0000
cis-1,2-Dichloroethylene	**10**	**11**	**3.3**	**1.8 J**	**1.4 J**	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**5**	< 2.3000	< 2.0000
Dichlorodifluoromethane	**2.1 J**	**2.2 J**	< 2.3000	**1.6 J**	**1.3 J**	**1.5 J**	< 2.4000	< 2.1000	< 2.3000	**5**	< 2.3000	< 2.0000
Chloroform	**10**	**44**	**34**	**39**	**26**	**29**	< 2.4000	< 2.1000	< 2.3000	**5.8**	< 2.3000	< 2.0000
1,1,1-Trichloroethane	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**6.7**	< 2.3000	< 2.0000
1,1,2,2-Tetrachloroethane	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**1.9**	< 2.3000	< 2.0000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**6.1**	< 2.3000	< 2.0000
1,1,2-Trichloroethane	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**4.1**	< 2.3000	< 2.0000
1,1-Dichloroethane	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**5.5**	< 2.3000	< 2.0000
1,1-Dichloroethene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**6.3**	< 2.3000	< 2.0000
1,2,4-Trichlorobenzene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**1.7**	< 2.3000	< 2.0000
1,2,4-Trimethylbenzene	**2.7**	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**1.9**	< 2.3000	< 2.0000
1,2-Dibromoethane (Ethylene dibromide)	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**2.6**	< 2.3000	< 2.0000
1,2-Dichloro-1,1,2,2-trifluoroethane	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**4.4**	< 2.3000	< 2.0000
1,2-Dichlorobenzene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**1.5**	< 2.3000	< 2.0000
1,2-Dichloroethane	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**6.6**	< 2.3000	< 2.0000
1,2-Dichloropropane	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**5.1**	< 2.3000	< 2.0000
1,3,5-Trimethylbenzene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**2**	< 2.3000	< 2.0000
1,3-Dichlorobenzene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**1.6**	< 2.3000	< 2.0000
1,4-Dichlorobenzene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**1.5**	< 2.3000	< 2.0000
2-Butanone (MEK)								< 2.1000	< 2.3000	**2**	< 2.3000	< 2.0000
4-Ethyltoluene								< 2.1000	< 2.3000	< 1.0000	< 2.3000	< 2.0000
Acetone							**1.3**	**10**	4.8	**5.6**	**14**	**2.2**
Benzene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	**2.3**	< 2.4000	< 2.1000	< 2.3000	**5.4**	< 2.3000	< 2.0000
Bromomethane	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**5.2**	< 2.3000	< 2.0000
Carbon disulfide								< 2.1000	< 2.3000	< 1.0000	< 2.3000	< 2.0000
Carbon tetrachloride	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**6.7**	< 2.3000	< 2.0000
Chlorobenzene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**2.7**	< 2.3000	< 2.0000
Chloroethane	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**6.4**	< 2.3000	< 2.0000
Chloromethane	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**7.7**	< 2.3000	< 2.0000
cis-1,3-Dichloropropene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**3.9**	< 2.3000	< 2.0000
Ethylbenzene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**3.7**	< 2.3000	< 2.0000
Hexachlorobutadiene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**2.6**	< 2.3000	< 2.0000
m,p-Xylene	**4.5 J**	< 5.7000	< 4.6000	< 4.5000	< 4.6000	< 4.1000	< 4.8000	< 4.1000	< 4.7000	**8**	< 4.5000	< 4.0000
Methylene chloride	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**6**	< 2.3000	< 2.0000
o-Xylene	**2.7**	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**3.1**	< 2.3000	< 2.0000
Styrene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**2**	< 2.3000	< 2.0000
Toluene	**5**	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**15**	< 2.3000	< 2.0000
trans-1,2-Dichloroethene								< 2.1000	< 2.3000	< 1.0000	< 2.3000	< 2.0000
trans-1,3-Dichloropropene	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**3.2**	< 2.3000	< 2.0000
Trichlorofluoromethane	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**7.8**	< 2.3000	< 2.0000
Vinyl chloride	< 2.4000	< 2.9000	< 2.3000	< 2.3000	< 2.3000	< 2.1000	< 2.4000	< 2.1000	< 2.3000	**6.2**	< 2.3000	< 2.0000
1,2-DICHLOROTETRAFLUOROETHA												

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	**SVE Stack-122007**	**SVE Stack-011708**	**SVE Stack-032008**	**SVE Stack-033108**	**SVE Stack-042508**	**SVE Stack-052208**	**SVE Stack-062408**	**SVE Stack-072408**	**SVE Stack-082002**	**SVE Stack-092508**	**SVE Stack-111808**	**SVE Stack-121008**
Sample Date:	12/20/07	01/17/08	03/20/08	03/31/08	04/25/08	05/22/08	06/24/08	07/24/08	08/20/08	09/25/08	11/18/08	12/10/08
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	**17**	< 1.7000	< 2.5000	**0.7**	< 2.2000	< 2.3000	**3**	< 1.9000	**6.9**	**2.6**	< 2.4000	< 1.9000
Trichloroethylene (TCE)	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
cis-1,2-Dichloroethylene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
Dichlorodifluoromethane	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	**1.6**	**1.5**	1.5	**1.3**	< 2.4000	**1.3**
Chloroform	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	**1.4**	< 2.4000	< 1.9000
1,1,1-Trichloroethane	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
1,1,2,2-Tetrachloroethane	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
1,1,2-Trichloroethane	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
1,1-Dichloroethane	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
1,1-Dichloroethene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
1,2,4-Trichlorobenzene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	**1.6**	< 2.4000	< 1.9000
1,2,4-Trimethylbenzene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	**38**
1,2-Dibromoethane (Ethylene dibromide)	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	**9**
1,2-Dichloro-1,1,2,2-trifluoroethane	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
1,2-Dichlorobenzene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
1,2-Dichloroethane	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
1,2-Dichloropropane	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
1,3,5-Trimethylbenzene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	**21**
1,3-Dichlorobenzene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
1,4-Dichlorobenzene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
2-Butanone (MEK)	< 2.3000	< 1.7000										
4-Ethyltoluene	< 2.3000	< 1.7000										
Acetone	< 2.3000	< 1.7000										
Benzene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	**9.4**
Bromomethane	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
Carbon disulfide	< 2.3000	< 1.7000										
Carbon tetrachloride	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
Chlorobenzene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
Chloroethane	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
Chloromethane	< 2.3000	< 1.7000	< 2.5000	**0.5**	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
cis-1,3-Dichloropropene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
Ethylbenzene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	**41**
Hexachlorobutadiene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
m,p-Xylene	< 4.6000	< 3.5000	< 4.9000	**1.2**	< 4.3000	< 4.6000	< 4.1000	< 3.8000	< 4.2000	< 4.0000	< 4.7000	**420**
Methylene chloride	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
o-Xylene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	**110**
Styrene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
Toluene	< 2.3000	< 1.7000	< 2.5000	**5.2**	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	**210**
trans-1,2-Dichloroethene	< 2.3000	< 1.7000										
trans-1,3-Dichloropropene	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
Trichlorofluoromethane	< 2.3000	< 1.7000	< 2.5000	< 1.0000	**4.5**	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
Vinyl chloride	< 2.3000	< 1.7000	< 2.5000	< 1.0000	< 2.2000	< 2.3000	< 2.0000	< 1.9000	< 2.1000	< 2.0000	< 2.4000	< 1.9000
1,2-DICHLOROTETRAFLUOROETHA												

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	SVE Stack-123008	SVE Stack-013009	SVE Stack-022709	SVE Stack-031009	SVE Stack-042309	SVE Stack-052809	SVE Stack-062909	SVE Stack-072909	SVE Stack-081009	SVE Stack-092209	SVE Stack-102609	SVE Stack-112309
Sample Date:	12/30/08	01/30/09	02/27/09	03/10/09	04/23/09	05/28/09	06/29/09	07/29/09	08/10/09	09/22/09	10/26/09	11/23/09
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	< 1.9000	**2.7**	**2.4**	**4.4**	**11**	< 2.4000	< 3.0000	**2.3**	**3**	< 2.1000	**6.2**	**4**
Trichloroethylene (TCE)	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
cis-1,2-Dichloroethylene	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	**3.3**
Dichlorodifluoromethane	< 1.9000	< 2.0000	**1.6 J**	**2.6**	**1.6 J**	**1.8 J**	< 3.0000	**2 J**	**2.2 J**	**1.8 J**	**1.5 J**	**1.4 J**
Chloroform	< 1.9000	< 2.0000	< 2.2000	**2.7**	< 1.8000	< 2.4000	< 3.0000	**1.5**	**3.9**	**5.5**	**31**	**83**
1,1,1-Trichloroethane	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,1,2,2-Tetrachloroethane	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,1,2-Trichloroethane	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,1-Dichloroethane	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,1-Dichloroethene	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,2,4-Trichlorobenzene	< 1.9000	< 2.0000 UJ	< 2.2000	< 2.2000 UJ	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,2,4-Trimethylbenzene	**2**	**2**	< 2.2000	< 2.2000	< 1.8000	**4.5**	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,2-Dibromoethane (Ethylene dibromide)	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,2-Dichloro-1,1,2,2-trifluoroethane	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,2-Dichlorobenzene	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,2-Dichloroethane	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,2-Dichloropropane	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,3,5-Trimethylbenzene	**2.6**	**1.8 J**	< 2.2000	< 2.2000	< 1.8000	**2.6**	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,3-Dichlorobenzene	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,4-Dichlorobenzene	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
2-Butanone (MEK)												
4-Ethyltoluene												
Acetone												
Benzene	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
Bromomethane	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
Carbon disulfide												
Carbon tetrachloride	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
Chlorobenzene	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
Chloroethane	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
Chloromethane	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
cis-1,3-Dichloropropene	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
Ethylbenzene	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000 UJ	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
Hexachlorobutadiene	< 1.9000	< 2.0000 UJ	< 2.2000	< 2.2000 UJ	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
m,p-Xylene	**6.6**	< 3.9000	< 4.3000	< 4.4000	< 3.5000	**8.3**	< 5.9000	< 4.5000	< 5.1000	< 4.3000	< 4.6000	< 4.6000
Methylene chloride	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	**3.1**	**1.3 J**	< 2.1000	< 2.3000	< 2.3000
o-Xylene	**3.3**	< 2.0000	< 2.2000	< 2.2000	< 1.8000	**3.8**	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
Styrene	< 1.9000	< 2.0000 UJ	< 2.2000	< 2.2000	< 1.8000 UJ	< 2.4000 UJ	< 3.0000 UJ	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
Toluene	< 1.9000	**3.1**	< 2.2000	< 2.2000	**2.7**	**1.8 J**	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
trans-1,2-Dichloroethene												
trans-1,3-Dichloropropene	< 3.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
Trichlorofluoromethane	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	**1.2 J**	< 2.3000	< 2.3000
Vinyl chloride	< 1.9000	< 2.0000	< 2.2000	< 2.2000	< 1.8000	< 2.4000	< 3.0000	< 2.2000	< 2.6000	< 2.1000	< 2.3000	< 2.3000
1,2-DICHLOROTETRAFLUOROETHA												

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	SVE Stack-121609	GWT Pre GAC-092407	GWT Pre GAC-102907	GWT Pre GAC-120607	GWT Pre GAC-122007	GWT Pre GAC-011708	GWT Pre GAC-022508	GWT Pre GAC-033108	GWT Pre GAC-042508	GWT Pre GAC-052208	GWT Pre GAC-062408	GWT Pre GAC-072408
Sample Date:	12/16/09	09/24/07	10/29/07	12/06/07	12/20/07	01/17/08	02/25/08	03/31/08	04/25/08	05/22/08	06/24/08	07/24/08
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	**17**	**550**	**450**	< 2.0000	**390**	**420**	**200**	**22**	**360**	**110**	**65**	**450**
Trichloroethylene (TCE)	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
cis-1,2-Dichloroethylene	**6.6**	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Dichlorodifluoromethane	**1.1 J**	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Chloroform	**62**	**8.8**	**13**	< 2.0000	< 21.0000	**9.5**	**4.7**	< 1.7000	**9.5**	**11**	**10**	**12**
1,1,1-Trichloroethane	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,1,2,2-Tetrachloroethane	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,1,2-Trichloroethane	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,1-Dichloroethane	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,1-Dichloroethene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,2,4-Trichlorobenzene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,2,4-Trimethylbenzene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	**2.2**	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,2-Dibromoethane (Ethylene dibromide)	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,2-Dichloro-1,1,2,2-trifluoroethane	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,2-Dichlorobenzene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,2-Dichloroethane	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,2-Dichloropropane	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,3,5-Trimethylbenzene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,3-Dichlorobenzene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,4-Dichlorobenzene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
2-Butanone (MEK)		**1.9**	< 2.2000	< 2.0000	< 21.0000	**13**						
4-Ethyltoluene		< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000						
Acetone		**5.9**	**1.9**	**4**	< 21.0000	< 16.0000						
Benzene	**1.4**	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	**6.2**	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Bromomethane	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Carbon disulfide		< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000						
Carbon tetrachloride	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Chlorobenzene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Chloroethane	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Chloromethane	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
cis-1,3-Dichloropropene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Ethylbenzene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	**2.8**	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Hexachlorobutadiene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
m,p-Xylene	< 4.1000	< 4.8000	< 4.4000	< 4.0000	< 42.0000	< 32.0000	**10**	< 3.5000	< 5.3000	< 4.7000	< 3.9000	< 3.8000
Methylene chloride	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
o-Xylene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	**3**	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Styrene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Toluene	< 2.1000	**8.2**	**1.2**	**6.2**	< 21.0000	< 16.0000	**21**	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
trans-1,2-Dichloroethene		< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000						
trans-1,3-Dichloropropene	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Trichlorofluoromethane	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
Vinyl chloride	< 2.1000	< 2.4000	< 2.2000	< 2.0000	< 21.0000	< 16.0000	< 1.9000	< 1.7000	< 2.6000	< 2.3000	< 2.0000	< 1.9000
1,2-DICHLOROTETRAFLUOROETHA												

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	GWT Pre GAC-082008	GWT Pre GAC-092508	GWT Pre GAC-103008	GWT Pre GAC-112508	GWT Pre GAC-013009	GWT Pre GAC-022709	GWT Pre GAC-031009	GWT Pre GAC-042309	GWT Pre GAC-052609	GWT Pre GAC-062909	GWT Pre GAC-072909	GWT Pre GAC-081009
Sample Date:	08/20/08	09/25/08	10/30/08	11/25/08	01/30/09	02/27/09	03/10/09	04/23/09	05/26/09	06/29/09	07/29/09	08/10/09
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	**370**	**160**	**450**	**390**	**380**	**300**	**460**	**560**	**35**	**390**	**490**	**480**
Trichloroethylene (TCE)	< 2.1000	< 2.0000	**1.6**	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
cis-1,2-Dichloroethylene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
Dichlorodifluoromethane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
Chloroform	**12**	**12**	**12**	**9.9**	**10**	**11**	**10**	**10**	< 2.4000	**7.2**	**9.7**	**11**
1,1,1-Trichloroethane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,1,2,2-Tetrachloroethane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,1,2-Trichloroethane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,1-Dichloroethane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,1-Dichloroethene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,2,4-Trichlorobenzene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000 UJ	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,2,4-Trimethylbenzene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	**3.1**	< 2.2000	< 2.1000	< 1.8000	**2.8**	< 2.6000	< 2.7000	< 2.4000
1,2-Dibromoethane (Ethylene dibromide)	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,2-Dichloro-1,1,2,2-trifluoroethane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,2-Dichlorobenzene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,2-Dichloroethane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,2-Dichloropropane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,3,5-Trimethylbenzene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	**3.1**	< 2.2000	< 2.1000	< 1.8000	**1.7 J**	< 2.6000	< 2.7000	< 2.4000
1,3-Dichlorobenzene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,4-Dichlorobenzene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
2-Butanone (MEK)												
4-Ethyltoluene												
Acetone												
Benzene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
Bromomethane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
Carbon disulfide												
Carbon tetrachloride	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
Chlorobenzene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
Chloroethane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
Chloromethane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
cis-1,3-Dichloropropene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
Ethylbenzene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
Hexachlorobutadiene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000 UJ	< 1.8000	< 2.4000	< 2.6000 UJ	< 2.7000	< 2.4000
m,p-Xylene	< 4.2000	< 3.9000	< 4.5000	< 3.6000	< 3.7000	< 4.3000	< 4.3000	< 3.5000	**4.2 J**	< 5.3000	< 5.3000	< 4.9000
Methylene chloride	< 2.1000	< 2.0000	< 2.2000	**1.3**	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
o-Xylene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	**1 J**	< 2.2000	< 2.1000	< 1.8000	**2.1 J**	< 2.6000	< 2.7000	< 2.4000
Styrene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000 UJ	< 2.2000	< 2.1000	< 1.8000 UJ	< 2.4000 UJ	< 2.6000 UJ	< 2.7000	< 2.4000
Toluene	< 2.1000	< 2.0000	**2.9**	**0.9**	**1.9**	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
trans-1,2-Dichloroethene												
trans-1,3-Dichloropropene	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
Trichlorofluoromethane	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
Vinyl chloride	< 2.1000	< 2.0000	< 2.2000	< 1.8000	< 1.8000	< 2.2000	< 2.1000	< 1.8000	< 2.4000	< 2.6000	< 2.7000	< 2.4000
1,2-DICHLOROTETRAFLUOROETHA												

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	GWT Pre GAC-092209	GWT Pre GAC-102609	GWT Pre GAC-112309	GWT Pre GAC-121609	GWT Stack-073107	GWT Stack-082407	GWT Stack-092407	GWT Stack-102907	GWT Stack-112807	GWT Stack-120607	GWT Stack-122007	GWT Stack-011708
Sample Date:	09/22/09	10/26/09	11/23/09	12/16/09	07/31/07	08/24/07	09/24/07	10/29/07	11/28/07	12/06/07	12/20/07	01/17/08
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	**280**	**300**	**180**	**350**	**400**	< 2.3000	**510**	**460**	**8**	< 2.1000	**3**	**1.7**
Trichloroethylene (TCE)	< 2.2000	< 2.3000	< 2.2000	**1.5 J**	< 4.8000	< 2.3000	< 2.4000	< 2.2000	**3.6**	< 2.1000	< 2.2000	< 1.6000
cis-1,2-Dichloroethylene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Dichlorodifluoromethane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Chloroform	**11**	**9.9**	**7.8**	**9.6**	**8.9**	< 2.3000	**12**	**12**	< 2.0000	< 2.1000	**3.6**	**9.3**
1,1,1-Trichloroethane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,1,2,2-Tetrachloroethane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,1,2-Trichloroethane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,1-Dichloroethane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,1-Dichloroethene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,2,4-Trichlorobenzene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	**2.4**	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,2,4-Trimethylbenzene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	**1.1**	< 1.6000
1,2-Dibromoethane (Ethylene dibromide)	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,2-Dichloro-1,1,2,2-trifluoroethane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,2-Dichlorobenzene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,2-Dichloroethane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,2-Dichloropropane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,3,5-Trimethylbenzene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,3-Dichlorobenzene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,4-Dichlorobenzene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
2-Butanone (MEK)					< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	**4.2**
4-Ethyltoluene					< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Acetone					**7.6**	**7.9**	**1.2**	**10**	**4.2**	**4.9**	**2.4**	**2.6**
Benzene	< 2.2000	< 2.3000	< 2.2000	**4.4**	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	**1.2**	< 1.6000
Bromomethane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Carbon disulfide					< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Carbon tetrachloride	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Chlorobenzene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Chloroethane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Chloromethane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
cis-1,3-Dichloropropene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Ethylbenzene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Hexachlorobutadiene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	**2.8**	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
m,p-Xylene	< 4.3000	< 4.6000	< 4.5000	< 4.1000	< 9.6000	< 4.7000	< 4.7000	< 4.3000	< 4.0000	< 4.2000	< 4.4000	< 3.1000
Methylene chloride	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
o-Xylene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Styrene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Toluene	< 2.2000	< 2.3000	**2.8**	< 2.1000	< 4.8000	< 2.3000	< 2.4000	**1.1**	< 2.0000	**6.6**	< 2.2000	**1.1**
trans-1,2-Dichloroethene					< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
trans-1,3-Dichloropropene	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Trichlorofluoromethane	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
Vinyl chloride	< 2.2000	< 2.3000	< 2.2000	< 2.1000	< 4.8000	< 2.3000	< 2.4000	< 2.2000	< 2.0000	< 2.1000	< 2.2000	< 1.6000
1,2-DICHLOROTETRAFLUOROETHA												

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	GWT Stack-022508	GWT Stack-033108	GWT Stack-042508	GWT Stack-052208	GWT Stack-062408	GWT Stack-072408	GWT Stack-082002	GWT Stack-092508	GWT Stack-103008	GWT Stack-112508	GWT Stack-013009	GWT Stack-022709
Sample Date:	02/25/08	03/31/08	04/25/08	05/22/08	06/24/08	07/24/08	08/20/08	09/25/08	10/30/08	11/25/08	01/30/09	02/27/09
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	**12**	**27**	**73**	**330**	**460**	**34**	**32**	**27**	**43**	**98**	**560**	**310**
Trichloroethylene (TCE)	**3.5**	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
cis-1,2-Dichloroethylene	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
Dichlorodifluoromethane	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
Chloroform	**9.6**	**9.7**	**10**	**8.8**	**11**	**13**	**14**	**13**	**7.2**	**9.5**	**11**	**11**
1,1,1-Trichloroethane	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,1,2,2-Tetrachloroethane	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,1,2-Trichloroethane	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,1-Dichloroethane	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,1-Dichloroethene	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,2,4-Trichlorobenzene	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000 UJ	< 2.1000
1,2,4-Trimethylbenzene	**1**	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	**1.6 J**	< 2.1000
1,2-Dibromoethane (Ethylene dibromide)	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,2-Dichloro-1,1,2,2-trifluoroethane	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,2-Dichlorobenzene	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,2-Dichloroethane	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,2-Dichloropropane	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,3,5-Trimethylbenzene	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	**1.8 J**	< 2.1000
1,3-Dichlorobenzene	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,4-Dichlorobenzene	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
2-Butanone (MEK)												
4-Ethyltoluene												
Acetone												
Benzene	**1.5**	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
Bromomethane	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
Carbon disulfide												
Carbon tetrachloride	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
Chlorobenzene	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
Chloroethane	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
Chloromethane	< 1.8000	**0.6**	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
cis-1,3-Dichloropropene	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
Ethylbenzene	**1.1**	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
Hexachlorobutadiene	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000 UJ	< 2.1000
m,p-Xylene	**4.5**	< 2.0000	< 4.2000	< 4.8000	< 40.0000	< 3.8000	< 4.2000	< 3.8000	< 3.9000	< 4.1000	< 4.4000	< 4.2000
Methylene chloride	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	**2.6**	< 2.2000	< 2.1000
o-Xylene	**1.1**	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
Styrene	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000 UJ	< 2.1000
Toluene	**8.1**	**1.3**	< 2.1000	< 2.4000	< 20.0000	< 1.9000	**1.9**	**2.3**	**1.2**	< 2.1000	< 2.2000	< 2.1000
trans-1,2-Dichloroethene												
trans-1,3-Dichloropropene	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
Trichlorofluoromethane	< 1.8000	< 1.0000	**25**	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
Vinyl chloride	< 1.8000	< 1.0000	< 2.1000	< 2.4000	< 20.0000	< 1.9000	< 2.1000	< 1.9000	< 2.0000	< 2.1000	< 2.2000	< 2.1000
1,2-DICHLOROTETRAFLUOROETHA												

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	GWT Stack-031009	GWT Stack-042309	GWT Stack-052609	GWT Stack-062909	GWT Stack-072909	GWT Stack-081009	GWT Stack-092209	GWT Stack-102609	GWT Stack-112309	GWT Stack-121609	DP-1D-031009	DP-1S-031009
Sample Date:	03/10/09	04/23/09	05/26/09	06/29/09	07/29/09	08/10/09	09/22/09	10/26/09	11/23/09	12/16/09	03/10/09	03/10/09
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	**430**	**410**	**480**	**280**	**310**	**370**	**210**	**450**	**230**	**390**	**190**	**570**
Trichloroethylene (TCE)	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	**1.1 J**	< 2.2000	**2.1 J**
cis-1,2-Dichloroethylene	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
Dichlorodifluoromethane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
Chloroform	**11**	**7.7**	**7.5**	**7.2**	**8.9**	**9**	**7.6**	**10**	**8.6**	**10**	< 2.2000	< 2.2000
1,1,1-Trichloroethane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,1,2,2-Tetrachloroethane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,1,2-Trichloroethane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,1-Dichloroethane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,1-Dichloroethene	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,2,4-Trichlorobenzene	< 2.2000 UJ	< 2.3000	**1.3 J**	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,2,4-Trimethylbenzene	< 2.2000	< 2.3000	**10**	**1.4 J**	< 2.9000	< 2.9000	**1.2 J**	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,2-Dibromoethane (Ethylene dibromide)	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,2-Dichloro-1,1,2,2-trifluoroethane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,2-Dichlorobenzene	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,2-Dichloroethane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,2-Dichloropropane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,3,5-Trimethylbenzene	< 2.2000	< 2.3000	**6.3**	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,3-Dichlorobenzene	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,4-Dichlorobenzene	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
2-Butanone (MEK)												
4-Ethyltoluene												
Acetone												
Benzene	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	**1.2 J**	**2.8**	< 2.2000	< 2.2000
Bromomethane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.2000	< 2.0000	< 2.2000	< 2.2000
Carbon disulfide												
Carbon tetrachloride	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
Chlorobenzene	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
Chloroethane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
Chloromethane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
cis-1,3-Dichloropropene	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
Ethylbenzene	< 2.2000	< 2.3000	**2.4 J**	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
Hexachlorobutadiene	< 2.2000 UJ	< 2.3000	**1.6 J**	< 2.8000 UJ	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
m,p-Xylene	< 4.3000	**2.4 J**	**19**	< 5.5000	< 5.8000	< 5.8000	< 4.3000	< 4.6000	**6.1**	< 4.1000	< 4.4000	< 4.4000
Methylene chloride	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
o-Xylene	< 2.2000	< 2.3000	**8.6**	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	**1.7 J**	< 2.0000	< 2.2000	< 2.2000
Styrene	< 2.2000	< 2.3000 UJ	< 2.5000 UJ	< 2.8000 UJ	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
Toluene	< 2.2000	**3.1**	**3.5**	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	**11**	< 2.0000	< 2.2000	< 2.2000
trans-1,2-Dichloroethene												
trans-1,3-Dichloropropene	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
Trichlorofluoromethane	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
Vinyl chloride	< 2.2000	< 2.3000	< 2.5000	< 2.8000	< 2.9000	< 2.9000	< 2.2000	< 2.3000	< 2.4000	< 2.0000	< 2.2000	< 2.2000
1,2-DICHLOROTETRAFLUOROETHA												

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	DP-5D-031009	DP-5S-031009	DP-6D-031009	DP-6S-111108	DP-6S-031009	SVE-2-111108	SVE-2-111808	SVE-2-121008	SVE-2-123008	SVE-2-013009	SVE-2-031009	SVE-2-052809
Sample Date:	03/10/09	03/10/09	03/10/09	11/11/08	03/10/09	11/11/08	11/18/08	12/10/08	12/30/08	01/30/09	03/10/09	05/28/09
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	**60**	**730**	**160**	**870**		**14000**	**13000**	**3200**	**4100**	**4700**	**980**	**1500**
Trichloroethylene (TCE)	< 2.4000	< 2.1000	**6.5**	**3.9**	< 2.1000	**210**	**55 J+**	**16**	**10**	**23**	**9.6**	**17**
cis-1,2-Dichloroethylene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	**270**	**110**	**31**	**38**	**24**	**15**	**30**
Dichlorodifluoromethane	< 2.4000	< 2.1000	**2.2**	**1.1 J+**	< 2.1000	**1.1 J+**	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
Chloroform	**53**	< 2.1000	**43**	**10**	< 2.1000	**3.7**	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,1,1-Trichloroethane	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,1,2,2-Tetrachloroethane	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,1,2-Trichloroethane	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,1-Dichloroethane	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,1-Dichloroethene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,2,4-Trichlorobenzene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,2,4-Trimethylbenzene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	**14**	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,2-Dibromoethane (Ethylene dibromide)	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,2-Dichloro-1,1,2,2-trifluoroethane	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,2-Dichlorobenzene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,2-Dichloroethane	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,2-Dichloropropane	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,3,5-Trimethylbenzene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	**6.6**	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,3-Dichlorobenzene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,4-Dichlorobenzene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
2-Butanone (MEK)												
4-Ethyltoluene												
Acetone												
Benzene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
Bromomethane	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
Carbon disulfide												
Carbon tetrachloride	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
Chlorobenzene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	**1.4 J**	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
Chloroethane	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
Chloromethane	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
cis-1,3-Dichloropropene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
Ethylbenzene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	5.1	< 7.2000	< 13.0000	< 2.1000	< 11.0000
Hexachlorobutadiene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
m,p-Xylene	< 4.8000	< 4.1000	< 4.2000	< 3.8000	< 4.2000	< 3.8000	< 43.0000	57	< 14.0000	< 27.0000	< 4.3000	< 23.0000
Methylene chloride	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
o-Xylene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	19	< 7.2000	< 13.0000	< 2.1000	< 11.0000
Styrene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000 UJ
Toluene	< 2.4000	< 2.1000	< 2.1000	**1.1 J**	< 2.1000	1	< 21.0000	20	< 7.2000	< 13.0000	< 2.1000	< 11.0000
trans-1,2-Dichloroethene												
trans-1,3-Dichloropropene	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 14.0000	< 13.0000	< 2.1000	< 11.0000
Trichlorofluoromethane	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
Vinyl chloride	< 2.4000	< 2.1000	< 2.1000	< 1.9000	< 2.1000	< 1.9000	< 21.0000	< 7.7000	< 7.2000	< 13.0000	< 2.1000	< 11.0000
1,2-DICHLOROTETRAFLUOROETHA												

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	**SVE-2-081009**	**SVE-2-112309**	**SVE-3-121008**	**SVE-3-123008**	**SVE-3-013009**	**SVE-3-031009**	**SVE-3-052809**	**SVE-3-081009**	**SVE-3-112309**	**SVE-4-111808**	**SVE-4-121008**	**SVE-4-123008**
Sample Date:	08/10/09	11/23/09	12/10/08	12/30/08	01/30/09	03/10/09	05/28/09	08/10/09	11/23/09	11/18/08	12/10/08	12/30/08
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	**5700**	**110**	**810**	**1600**	**980**	**30**	**620**	**88**	**2.6**	**890**	**350**	**390**
Trichloroethylene (TCE)	**62**	**1.3 J**	**6.5 J**	**4.3 J**	**3.5**	< 2.1000	**7.4**	< 2.5000	< 2.5000	< 8.6000	**1.1 J**	< 1.8000
cis-1,2-Dichloroethylene	**36**	<2.3000	< 7.7000	< 7.2000	**2**	< 2.1000	**2.7 J**	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
Dichlorodifluoromethane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	**2.9 J**	< 2.5000	< 2.5000	**6 J**	**4.4**	**4**
Chloroform	< 13.0000	<2.3000	**5.7 J**	**6.4 J**	**2.1**	< 2.1000	**2.8 J**	< 2.5000	< 2.5000	**140**	**130**	**110**
1,1,1-Trichloroethane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,1,2,2-Tetrachloroethane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,1,2-Trichloroethane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,1-Dichloroethane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,1-Dichloroethene	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,2,4-Trichlorobenzene	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,2,4-Trimethylbenzene	< 13.0000	<2.3000	**40**	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	**17**	< 1.8000
1,2-Dibromoethane (Ethylene dibromide)	< 13.0000	<2.3000	**4.2 J**	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	**1.2 J**	< 1.8000
1,2-Dichloro-1,1,2,2-trifluoroethane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,2-Dichlorobenzene	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,2-Dichloroethane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,2-Dichloropropane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,3,5-Trimethylbenzene	< 13.0000	<2.3000	**21**	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	**8.2**	< 1.8000
1,3-Dichlorobenzene	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,4-Dichlorobenzene	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
2-Butanone (MEK)												
4-Ethyltoluene												
Acetone												
Benzene	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
Bromomethane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
Carbon disulfide												
Carbon tetrachloride	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
Chlorobenzene	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
Chloroethane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
Chloromethane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
cis-1,3-Dichloropropene	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
Ethylbenzene	< 13.0000	<2.3000	31	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	**9.6**	< 1.8000
Hexachlorobutadiene	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
m,p-Xylene	< 25.0000	<4.5000	120	< 14.0000	< 4.0000	< 4.3000	< 9.2000	< 5.0000	< 5.0000	< 17.0000	**67**	< 3.6000
Methylene chloride	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
o-Xylene	< 13.0000	<2.3000	98	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	**31**	< 1.8000
Styrene	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000 UJ	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
Toluene	< 13.0000	<2.3000	93	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	**52**	< 1.8000
trans-1,2-Dichloroethene												
trans-1,3-Dichloropropene	< 13.0000	<2.3000	< 7.7000	< 14.0000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 3.6000
Trichlorofluoromethane	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
Vinyl chloride	< 13.0000	<2.3000	< 7.7000	< 7.2000	< 2.0000	< 2.1000	< 4.6000	< 2.5000	< 2.5000	< 8.6000	< 2.0000	< 1.8000
1,2-DICHLOROTETRAFLUOROETHA												

TABLE G-7(a)

SVE AND GROUNDWATER TREATMENT VAPOR ANALYTICAL SUMMARY RESULTS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

Sample ID:	SVE-4-013009	SVE-4-031009	SVE-4-052809	SVE-4-081009	SVE-4-112309	OSVE-10-031009	OSVE-11-031009
Sample Date:	01/30/09	03/10/09	05/28/09	08/10/09	11/23/09	03/10/09	03/10/09
Units:	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV	PPBV
Tetrachloroethylene (PCE)	**330**	**290**	**180**	**140**	**90**	**450**	**27,000**
Trichloroethylene (TCE)	**2.7**	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
cis-1,2-Dichloroethylene	**3.8**	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
Dichlorodifluoromethane	**3.4**	**4.8**	**4.9**	**2.7**	**2.1 J**	< 2.1000	< 21.0000
Chloroform	**87**	**95**	**80**	**67**	**51**	< 2.1000	< 21.0000
1,1,1-Trichloroethane	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,1,2,2-Tetrachloroethane	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,1,2-Trichloro-1,2,2-trifluoroethane	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,1,2-Trichloroethane	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,1-Dichloroethane	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,1-Dichloroethene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,2,4-Trichlorobenzene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,2,4-Trimethylbenzene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,2-Dibromoethane (Ethylene dibromide)	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,2-Dichloro-1,1,2,2-trifluoroethane	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,2-Dichlorobenzene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,2-Dichloroethane	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,2-Dichloropropane	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,3,5-Trimethylbenzene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,3-Dichlorobenzene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,4-Dichlorobenzene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
2-Butanone (MEK)							
4-Ethyltoluene							
Acetone							
Benzene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
Bromomethane	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
Carbon disulfide							
Carbon tetrachloride	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
Chlorobenzene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
Chloroethane	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
Chloromethane	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
cis-1,3-Dichloropropene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
Ethylbenzene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
Hexachlorobutadiene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
m,p-Xylene	< 4.0000	< 4.2000	< 4.6000	< 5.1000	< 4.6000	< 4.2000	< 42.0000
Methylene chloride	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
o-Xylene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
Styrene	< 2.0000	< 2.1000	< 2.3000 UJ	< 2.6000	< 2.3000	< 2.1000	< 21.0000
Toluene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	**1.3 J**	< 21.0000
trans-1,2-Dichloroethene							
trans-1,3-Dichloropropene	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
Trichlorofluoromethane	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
Vinyl chloride	< 2.0000	< 2.1000	< 2.3000	< 2.6000	< 2.3000	< 2.1000	< 21.0000
1,2-DICHLOROTETRAFLUOROETHA							

TABLE G-7(b)

SOIL VAPOR EXTRACTION AND SOIL VAPOR MONITORING WELL ANALYTICAL SUMMARY RESULTS MODESTO GROUNDWATER SUPERFUND SITE MODESTO, CALIFORNIA

Location		Date	Sample Code	PCE (ppbv)	
SP-08	GWTP Pre GAC	03/11/2010	N	280	
		04/07/2010	N	330	
		05/12/2010	N	320	
		06/17/2010	N	340	
		07/15/2010	N	300	
		08/12/2010	N	230	
		09/09/2010	N	240	
		10/14/2010	N	280	
		11/18/2010	N	220	
		12/09/2010	N	240	
		01/13/2011	N	250	
		02/10/2011	N	280	J
		03/09/2011	N	62	J
		04/14/2011	N	260	
		05/10/2011	N	260	J
		06/09/2011	N	300	
		06/09/2011	FD	300	
		07/14/2011	N	200	
		08/11/2011	N	250	
		09/13/2011	N	200	J
		09/13/2011	FD	150	
		01/12/2012	N	270	
		02/16/2012	N	290	
		03/08/2012	N	270	
		03/08/2012	FD	220	
		04/05/2012	N	310	J
		05/08/2012	N	330	
		06/07/2012	N	260	

TABLE G-7(b)

SOIL VAPOR EXTRACTION AND SOIL VAPOR MONITORING WELL ANALYTICAL SUMMARY RESULTS MODESTO GROUNDWATER SUPERFUND SITE MODESTO, CALIFORNIA

Location		Date	Sample Code	PCE (ppbv)	
SP-09	GWTP Stack	03/11/2010	N	340	
		04/07/2010	N	390	
		05/12/2010	N	340	
		06/17/2010	N	210	
		07/15/2010	N	270	
		08/12/2010	N	220	
		09/09/2010	N	23	
		10/14/2010	N	7.3	
		11/18/2010	N	2.1	U
		12/09/2010	N	1.2	J
		01/13/2011	N	8.7	
		02/10/2011	N	22	
		03/09/2011	N	60	
		04/14/2011	N	94	
		05/10/2011	N	85	
		06/09/2011	N	120	
		07/14/2011	N	55	
		08/11/2011	N	55	
		09/13/2011	N	53	J
		10/13/2011	N	96	
		11/09/2011	N	140	
		12/13/2011	N	160	
		01/12/2012	N	220	
		02/09/2012	N	260	
		03/08/2012	N	240	
		04/05/2012	N	200	
		05/08/2012	N	300	
		06/07/2012	N	230	

TABLE G-7(b)

SOIL VAPOR EXTRACTION AND SOIL VAPOR MONITORING WELL ANALYTICAL SUMMARY RESULTS MODESTO GROUNDWATER SUPERFUND SITE MODESTO, CALIFORNIA

Location		Date	Sample Code	PCE (ppbv)
SP-11	SVE Pre GAC	03/11/2010	N	12
		04/07/2010	N	130
		05/12/2010	N	120
		05/12/2010	FD	97
		06/17/2010	N	220
		07/15/2010	N	720
		08/12/2010	N	620
		09/09/2010	N	590
		10/14/2010	N	240
		11/18/2010	N	42
		12/09/2010	FD	1.6 J
		12/09/2010	N	66
		01/13/2011	N	73
		02/10/2011	N	92
		03/09/2011	N	140
		04/14/2011	N	2.7
		05/10/2011	N	1.6 J
		06/09/2011	N	80
		07/14/2011	N	160
		08/11/2011	N	150
		09/13/2011	N	140
		10/13/2011	N	130
		11/09/2011	N	2.5
		12/13/2011	N	11
		12/13/2011	FD	3.1
		01/12/2012	N	9.3
		02/09/2012	N	30
		03/08/2012	N	39
		04/05/2012	N	5.1
		05/08/2012	N	45
		06/07/2012	N	7.1

TABLE G-7(b)

SOIL VAPOR EXTRACTION AND SOIL VAPOR MONITORING WELL ANALYTICAL SUMMARY RESULTS MODESTO GROUNDWATER SUPERFUND SITE MODESTO, CALIFORNIA

Location		Date	Sample Code	PCE (ppbv)
SP-12	SVE Stack	03/11/2010	N	51
		04/07/2010	N	63
		05/12/2010	N	130
		06/17/2010	N	2.6
		07/15/2010	N	23
		08/12/2010	FD	7.2 J
		08/12/2010	N	2.2 J
		09/09/2010	N	2.4
		10/14/2010	N	2.6
		11/18/2010	N	2.2 J
		12/09/2010	N	2.2 U
		01/13/2011	N	2.1 J
		02/10/2011	N	4.9
		03/09/2011	N	2.2 U
		04/14/2011	N	5.6
		05/10/2011	N	2.3 U
		06/09/2011	N	3.0
		07/14/2011	N	2.9
		08/11/2011	N	2.1 J
		09/13/2011	N	1.5 J
		10/13/2011	N	5.3
		11/09/2011	N	7.4
		12/13/2011	N	3.9
		01/12/2012	N	6.1
		02/09/2012	N	2.9
		03/08/2012	N	2.4
		04/05/2012	N	4.4
		05/08/2012	N	1.5 J
		06/07/2012	FD	2.5 U

FD - field duplicate
J - Estimated value
PCE - Tetrachloroethlene
ppbv - parts per billion volume
U - not detected above the method detection limit

TABLE G-8 PCE MASS REMOVED BY GROUNDWATER TREATMENT SYSTEMMODESTO SUPERFUND SITEMODESTO, CALIFORNIA(Page 1 of 3)

Sampe Date	Volume of Water Treated Since Previuos sample (gallons)	Total Volume of Water Treated (gallons)	Influent PCE concentration (µg/L)	Mass of PCE Removed Since Previuos sample (lbs)	Cumulative Mass of PCE Removed (lbs)
28-Aug-01	701,200	701,200	330	1.93	1.93
21-Sep-01	673,100	1,374,300	770	4.33	6.26
17-Oct-01	1,842,900	3,217,200	890	13.69	19.95
13-Nov-01	1,208,800	4,426,000	780	7.87	27.81
13-Dec-01	2,126,600	6,552,600	710	12.60	40.42
16-Jan-02	1,992,550	8,545,150	750	12.47	52.89
19-Feb-02	2,435,550	10,980,700	820	16.67	69.56
21-Mar-02	2,144,100	13,124,800	321	5.74	75.30
17-Apr-02	1,908,400	15,033,200	690	10.99	86.29
23-May-02	2,543,200	17,576,400	900	19.10	105.39
20-Jun-02	1,699,600	19,276,000	730	10.35	115.75
18-Jul-02	1,989,500	21,265,500	620	10.29	126.04
19-Aug-02	2,289,500	23,555,000	610	11.66	137.70
26-Sep-02	2,659,200	26,214,200	620	13.76	151.46
24-Oct-02	1,769,600	27,983,800	580	8.57	160.02
18-Nov-02	1,764,700	29,748,500	550	8.10	168.12
18-Dec-02	2,086,100	31,834,600	310	5.40	173.52
16-Jan-03	1,503,500	33,338,100	380	4.77	178.29
20-Feb-03	2,377,800	35,715,900	490	9.72	188.01
20-Mar-03	1,877,700	37,593,600	490	7.68	195.69
30-Apr-03	2,701,900	40,295,500	410	9.25	204.94
29-May-03	1,794,800	42,090,300	270	4.04	208.98
26-Jun-03	1,679,200	43,769,500	490	6.87	215.85
24-Jul-03	1,470,800	45,240,300	510	6.26	222.11
28-Aug-03	1,402,800	46,643,100	540	6.32	228.43
18-Sep-03	902,600	47,545,700	550	4.14	232.58
23-Oct-03	1,420,900	48,966,600	450	5.34	237.91
19-Nov-03	962,500	49,929,100	390	3.13	241.05
18-Dec-03	870,100	50,799,200	420	3.05	244.10
22-Jan-04	1,210,000	52,009,200	350	3.53	247.63
26-Feb-04	1,191,800	53,201,000	290	2.88	250.51
8-Apr-04	431,700	53,632,700	230	0.83	251.34
22-Apr-04	1,369,164	55,001,864	310	3.54	254.89
20-May-04	1,844,450	56,846,313	350	5.39	260.27
23-Jun-04	1,502,110	58,348,423	250	3.13	263.41
29-Jul-04	2,355,600	60,704,023	350	6.88	270.29
26-Aug-04	1,767,150	62,471,173	350	5.16	275.45
4-Oct-04	1,931,540	64,402,713	330	5.32	280.77
21-Oct-04	1,168,970	65,571,683	290	2.83	283.60
24-Aug-06	0	0	620.00	0.00	285.42
28-Sep-06	1,460,060	67,784,613	530.00	6.46	291.88
24-Oct-06	2,861,570	70,646,183	580	13.85	305.73
15-Nov-06	2,370,250	73,016,433	500	9.89	315.62
27-Dec-06	2,139,250	75,155,683	450	8.03	323.66
29-Jan-07	2,365,450	77,521,133	420.0	8.29	331.95
28-Feb-07	1,240,000	78,761,133	360.0	3.73	335.67
26-Mar-07	1,847,900	80,609,033	320.0	4.94	340.61

TABLE G-8 PCE MASS REMOVED BY GROUNDWATER TREATMENT SYSTEMMODESTO SUPERFUND SITEMODESTO, CALIFORNIA(Page 2 of 3)

Sampe Date	Volume of Water Treated Since Previuos sample (gallons)	Total Volume of Water Treated (gallons)	Influent PCE concentration (µg/L)	Mass of PCE Removed Since Previuos sample (lbs)	Cumulative Mass of PCE Removed (lbs)
16-Apr-07	1,521,900	82,130,933	320.0	4.06	344.67
2-Jul-07	0	82,130,933	76.0	0.00	344.67
23-Jul-07	1,281,000	83,411,933	290.0	3.10	347.77
23-Aug-07	2,451,700	85,863,633	290.0	5.93	353.71
18-Sep-07	1,554,100	87,417,733	360.0	4.67	358.38
29-Oct-07	2,562,300	89,980,033	280.0	5.99	364.36
28-Nov-07	1,285,700	91,265,733	310.0	3.33	367.69
20-Dec-07	1,538,400	92,804,133	260.0	3.34	371.03
17-Jan-08	2,473,700	95,277,833	240.0	4.95	375.98
25-Feb-08	2,249,000	97,526,833	250.0	4.69	375.72
31-Mar-08	2,318,700	99,845,533	280.0	5.42	381.14
25-Apr-08	1,569,600	101,415,133	210.0	2.75	383.89
22-May-08	1,761,600	103,176,733	280.0	4.12	388.01
24-Jun-08	2,024,600	105,201,333	240.0	4.06	392.06
23-Jul-08	2,905,200	108,106,533	240.0	5.82	397.88
28-Aug-08	1,045,500	109,152,033	220.0	1.92	399.80
25-Sep-08	1,148,600	110,300,633	150.0	1.44	401.24
30-Oct-08	2,067,400	112,368,033	250.0	4.31	405.55
25-Nov-08	1,437,600	113,805,633	210.0	2.52	408.07
30-Dec-08	2,350,906	116,156,539	190.0	3.73	411.80
30-Jan-09	2,004,294	118,160,833	190.0	3.18	414.98
24-Feb-09	1,677,300	119,838,133	180.0	2.52	417.50
30-Mar-09	2,266,700	122,104,833	170.0	3.22	420.72
23-Apr-09	1,565,200	123,670,033	160.0	2.09	422.81
26-May-09	2,045,500	125,715,533	180.0	3.07	425.88
29-Jun-09	1,844,200	127,559,733	150.0	2.31	428.19
29-Jul-09	1,952,600	129,512,333	190.0	3.10	431.28
10-Aug-09	793,600	130,305,933	250.0	1.66	432.94
22-Sep-09	2,874,700	133,180,633	170.0	4.08	437.02
26-Oct-09	1,407,400	134,588,033	250.0	2.94	439.95
23-Nov-09	1,712,600	136,300,633	160.0	2.29	442.24
16-Dec-09	1,351,400	137,652,033	180.0	2.03	444.27
27-Jan-10	2,585,600	140,237,633	160.0	3.45	447.72
25-Feb-10	1,771,800	142,009,433	160.0	2.37	450.09
11-Mar-10	882,600	142,892,033	180.0	1.33	451.42
7-Apr-10	1,743,300	144,635,333	180.0	2.62	454.03
12-May-10	2,337,600	146,972,933	160.0	3.12	457.16
17-Jun-10	1,527,400	148,500,333	130.0	1.66	458.81
15-Jul-10	1,846,600	150,346,933	140.0	2.16	460.97
12-Aug-10	1,846,600	152,193,533	150.0	2.31	463.28
9-Sep-10	1,832,100	154,025,633	210.0	3.21	466.49
14-Oct-10	2,295,600	156,321,233	140.0	2.68	469.18
18-Nov-10	2,268,500	158,589,733	130.0	2.46	471.64
9-Dec-10	1,365,000	159,954,733	88.0	1.00	472.64
13-Jan-11	2,271,000	162,225,733	110.0	2.08	474.72
10-Feb-11	1,850,600	164,076,333	120.0	1.85	476.58
9-Mar-11	1,747,400	165,823,733	120.0	1.75	478.33
14-Apr-11	2,373,000	168,196,733	120.0	2.38	480.70
10-May-11	1,730,400	169,927,133	140.0	2.02	482.73
2-Jun-11	1,516,100	171,443,233	120.0	1.52	484.25
14-Jul-11	2,753,400	174,196,633	140.0	3.22	487.46
11-Aug-11	1,833,700	176,030,333	160.0	2.45	489.91
13-Sep-11	1,966,400	177,996,733	130.0	2.13	492.04
13-Oct-11	1,960,000	179,956,733	140.0	2.29	494.33

TABLE G-8 PCE MASS REMOVED BY GROUNDWATER TREATMENT SYSTEMMODESTO SUPERFUND SITEMODESTO, CALIFORNIA(Page 3 of 3)

Sampe Date	Volume of Water Treated Since Previuos sample (gallons)	Total Volume of Water Treated (gallons)	Influent PCE concentration (µg/L)	Mass of PCE Removed Since Previuos sample (lbs)	Cumulative Mass of PCE Removed (lbs)
9-Nov-11	1,761,100	181,717,833	130.0	1.91	496.25
8-Dec-11	1,745,200	183,463,033	150.0	2.18	498.43
12-Jan-12	2,269,900	185,732,933	140.0	2.65	501.08
9-Feb-12	1,811,900	187,544,833	150.0	2.27	503.35
8-Mar-12	1,794,700	189,339,533	120.0	1.80	505.15
5-Apr-12	1,448,800	190,788,333	130.0	1.57	506.72
8-May-12	2,039,800	192,828,133	130.0	2.21	508.93
7-Jun-12	1,932,900	194,761,033	150.0	2.42	511.35

Notes:
µg/L - micrograms per liter
lbs - pounds
PCE - Tetrachloroethene

TABLE G-9 PCE MASS REMOVED BY SOIL VAPOR EXTRACTION SYSTEMMODESTO SUPERFUND SITEMODESTO, CALIFORNIA(Page 1 of 5)

Date Sampled	Cumulative Hours of Operation	Cumulative Days of Operation	Mass Extraction Rate (lbs/day)	Cumulative Mass Extracted (a) (lbs)
6/11/2001	5.8	0.2	53.0	12.70
8/9/2001	590.8	24.6	7.0	744.00
8/20/2001	854.8	35.6	6.4	817.63
8/30/2001	1,094.8	45.6	6.2	880.30
9/7/2001	1,286.8	53.6	3.9	920.57
9/12/2001	1,406.8	58.6	4.9	942.62
10/29/2001	1,920.0	80.0	7.9	1,079.84
11/13/2001	2,272.0	94.7	8.1	1,197.56
12/13/2001	2,787.8	116.2	6.0	1,348.99
1/16/2002	3,469.3	144.6	4.6	1,498.66
2/19/2002	4,283.8	178.5	6.1	1,679.54
3/21/2002	5,003.8	208.5	4.6	1,839.44
4/17/2002	5,603.8	233.5	4.0	1,946.39
5/23/2002	6,467.8	269.5	2.7	2,066.49
6/20/2002	7,039.0	293.3	3.7	2,142.61
7/18/2002	7,526.0	313.6	4.3	2,223.90
8/19/2002	8,294.0	345.6	4.7	2,367.84
9/19/2002	9,037.0	376.5	2.0	2,471.06
10/24/2002	9,839.6	410.0	2.3	2,542.57
11/18/2002	10,441.0	435.0	2.0	2,596.51
12/18/2002	11,167.0	465.3	1.6	2,650.80
1/16/2003	11,519.0	480.0	1.8	2,675.27
3/27/2003	12,578.0	524.1	1.6	2,748.88
4/30/2003	13,390.1	557.9	1.8	2,806.77
5/29/2003	14,037.2	584.9	1.7	2,854.55
6/26/2003	14,067.7	586.2	1.7	2,856.70
7/24/2003	14,737.8	614.1	1.5	2,901.48
8/28/2003	15,502.0	645.9	2.0	2,958.25
9/18/2003	15,980.8	665.9	1.9	2,997.31
10/23/2003	16,797.6	699.9	1.3	3,050.65
11/19/2003	17,448.4	727.0	1.3	3,085.25

TABLE G-9 PCE MASS REMOVED BY SOIL VAPOR EXTRACTION SYSTEMMODESTO SUPERFUND SITEMODESTO, CALIFORNIA(Page 2 of 5)

Date Sampled	Cumulative Hours of Operation	Cumulative Days of Operation	Mass Extraction Rate (lbs/day)	Cumulative Mass Extracted (a) (lbs)
12/18/2003	18,092.9	753.9	1.4	3,121.56
1/22/2004	18,688.3	778.7	1.1	3,153.22
2/26/2004	19,529.0	813.7	0.7	3,185.64
3/29/2004	20,245.3	843.6	1.4	3,217.84
4/22/2004	20,872.0	869.7	0.5	3,242.93
5/20/2004	21,408.8	892.0	0.5	3,253.44
6/23/2004	22,174.7	923.9	0.6	3,269.99
7/29/2004	22,976.8	957.4	0.6	3,289.24
8/26/2004	23,644.1	985.2	0.5	3,303.77
9/30/2004	24,481.0	1020.0	0.4	3,319.59
10/21/2004	24,988.4	1041.2	0.5	3,329.59
11/18/2004	25,653.5	1068.9	0.3	3,341.19
12/16/2004	26,349.7	1097.9	0.3	3,350.62
1/19/2005	27,140.5	1130.9	0.2	3,359.30
2/24/2005	28,011.5	1167.1	0.2	3,366.49
3/22/2005	28,628.3	1192.8	0.2	3,371.23
4/26/2005	29,759.6	1240.0	0.2	3,379.36
5/25/2005	30,455.6	1269.0	0.07	3,382.64
6/22/2005	31,175.6	1299.0	0.13	3,385.63
7/20/2005	31,847.6	1327.0	0.13	3,389.39
8/24/2005	32,663.6	1361.0	0.07	3,392.81
9/21/2005	33,335.6	1389.0	0.09	3,394.98
10/18/2005	33,672.0	1403.0	0.13	3,396.49
11/16/2005	33,985.0	1416.0	0.08	3,397.84
1/6/2006	34,992.1	1458.0	0.06	3,399.62
1/31/2006	35,760.1	1490.0	0.06	3,401.52
2/22/2006	36,288.1	1512.0	0.04	3,402.03

TABLE G-9 PCE MASS REMOVED BY SOIL VAPOR EXTRACTION SYSTEMMODESTO SUPERFUND SITEMODESTO, CALIFORNIA(Page 3 of 5)

Date Sampled	Cumulative Hours of Operation	Cumulative Days of Operation	Mass Extraction Rate (lbs/day)	Cumulative Mass Extracted (a) (lbs)
3/29/2006	37,128.1	1547.0	0.01	3,402.92
4/20/2006	37,703.0	1571.0	0.04	3,403.50
5/25/2006	38,543.6	1606.0	0.02	3,404.62
6/29/2006	39,260.2	1635.8	0.05	3,405.63
7/28/2006	39,954.0	1664.8	0.03	3,406.78
8/31/2006	40,099.3	1670.8	0.06	3,407.06
9/28/2006	40,602.1	1691.8	0.03	3,407.94
10/30/2006	41,216.9	1717.4	0.02	3,408.57
11/27/2006	41,986.1	1749.4	0.04	3,409.58
12/1/2006	41,986.1	1749.4	0.00	3,409.58
1/1/2007	41,986.1	1749.4	0.00	3,409.58
2/1/2007	41,986.1	1749.4	0.00	3,409.58
3/1/2007	41,986.1	1749.4	0.00	3,409.58
4/25/2007	41,998.1	1749.9	0.05	3,409.60
6/8/2007	43,030.1	1792.9	0.003	3,410.65
6/26/2007	43,460.5	1810.9	0.00	3,410.68
7/18/2007	43,988.5	1832.9	0.00	3,410.68
8/24/2007	44,540.5	1855.9	0.00	3,410.68
9/24/2007	45,308.5	1887.9	0.00	3,410.69
10/29/2007	46,148.5	1922.9	0.001	3,410.71
11/28/2007	46,868.5	1952.9	0.000	3,410.73
12/20/2007	47,396.5	1974.9	0.001	3,410.75
1/17/2008	48,068.5	2002.9	0.000	3,410.76
2/25/2008	49,004.5	2041.9	0.000	3,410.76
3/31/2008	49,844.5	2076.9	0.001	3,410.77
4/25/2008	50,444.5	2101.9	0.001	3,410.80
5/22/2008	51,092.5	2128.9	0.001	3,410.82
6/24/2008	51,884.5	2161.9	0.012	3,411.03
7/16/2008	52,412.5	2183.9	0.047	3,411.67

TABLE G-9 PCE MASS REMOVED BY SOIL VAPOR EXTRACTION SYSTEMMODESTO SUPERFUND SITEMODESTO, CALIFORNIA(Page 4 of 5)

Date Sampled	Cumulative Hours of Operation	Cumulative Days of Operation	Mass Extraction Rate (lbs/day)	Cumulative Mass Extracted (a) (lbs)
8/20/2008	53,252.5	2218.9	0.032	3,413.06
9/25/2008	54,116.5	2254.9	0.019	3,413.98
11/18/2008	55,412.5	2308.9	0.038	3,415.50
12/10/2008	55,940.5	2330.9	0.012	3,416.04
12/30/2008	56,420.5	2350.9	0.001	3,416.16
1/30/2009	57,164.5	2381.9	0.000	3,416.18
2/27/2009	57,836.5	2409.9	0.050	3,416.89
3/10/2009	58,100.5	2420.9	0.057	3,417.48
4/23/2009	59,156.5	2464.9	0.088	3,420.68
5/28/2009	59,996.5	2499.9	0.067	3,423.39
6/29/2009	60,764.5	2531.9	0.122	3,426.40
7/29/2009	61,484.5	2561.9	0.122	3,430.06
8/10/2009	61,772.5	2573.9	0.184	3,431.90
9/22/2009	62,804.5	2616.9	0.097	3,437.94
10/26/2009	63,620.5	2650.9	0.071	3,440.79
11/23/2009	64,292.5	2678.9	0.063	3,442.66
12/16/2009	64,844.5	2701.9	0.051	3,443.97
1/27/2010	65,852.5	2743.9	0.077	3,446.66
2/25/2010	66,548.5	2772.9	0.060	3,448.65
3/11/2010	66,884.5	2786.9	0.001	3,449.08
4/7/2010	67,532.5	2813.9	0.012	3,449.27
5/12/2010	68,372.5	2848.9	0.012	3,449.70
6/17/2010	69,236.5	2884.9	0.024	3,450.35
7/15/2010	69,908.5	2912.9	0.076	3,451.76
8/12/2010	70,580.5	2940.9	0.059	3,453.65
9/9/2010	71,252.5	2968.9	0.063	3,455.36
10/19/2010	72,212.5	3008.9	0.024	3,457.11
11/18/2010	72,932.5	3038.9	0.004	3,457.54
12/9/2010	73,436.5	3059.9	0.007	3,457.66

TABLE G-9 PCE MASS REMOVED BY SOIL VAPOR EXTRACTION SYSTEMMODESTO SUPERFUND SITEMODESTO, CALIFORNIA(Page 5 of 5)

Date Sampled	Cumulative Hours of Operation	Cumulative Days of Operation	Mass Extraction Rate (lbs/day)	Cumulative Mass Extracted (a) (lbs)
1/13/2011	74,276.5	3094.9	0.008	3,457.93
2/10/2011	74,948.5	3122.9	0.010	3,458.17
3/9/2011	75,596.5	3149.9	0.016	3,458.51
4/14/2011	76,460.5	3185.9	0.0003	3,458.79
5/10/2011	77,084.5	3211.9	0.0002	3,458.80
6/2/2011	77,636.5	3234.9	0.009	3,458.90
7/14/2011	78,644.5	3276.9	0.017	3,459.44
8/11/2011	79,316.5	3304.9	0.016	3,459.90
9/13/2011	80,108.5	3337.9	0.015	3,460.41
10/13/2011	80,828.5	3367.9	0.014	3,460.84
11/9/2011	81,476.5	3394.9	0.0003	3,461.04
2/9/2012	83,640.7	3485.0	0.003	3,461.20
3/8/2012	84,312.7	3513.0	0.004	3,461.29
4/5/2012	84,984.7	3541.0	0.004	3,461.40
5/8/2012	85,776.7	3574.0	0.005	3,461.55
6/7/2012	86,496.7	3604.0	0.001	3,461.63
TOTAL	**82,128.7**	**3,422.0**		**3,461.63**

Notes:

(a) Cumulative mass extracted was determined by multiplying the average mass extraction rate times the days of operation.

lbs - pounds

lbs/day - pounds per day