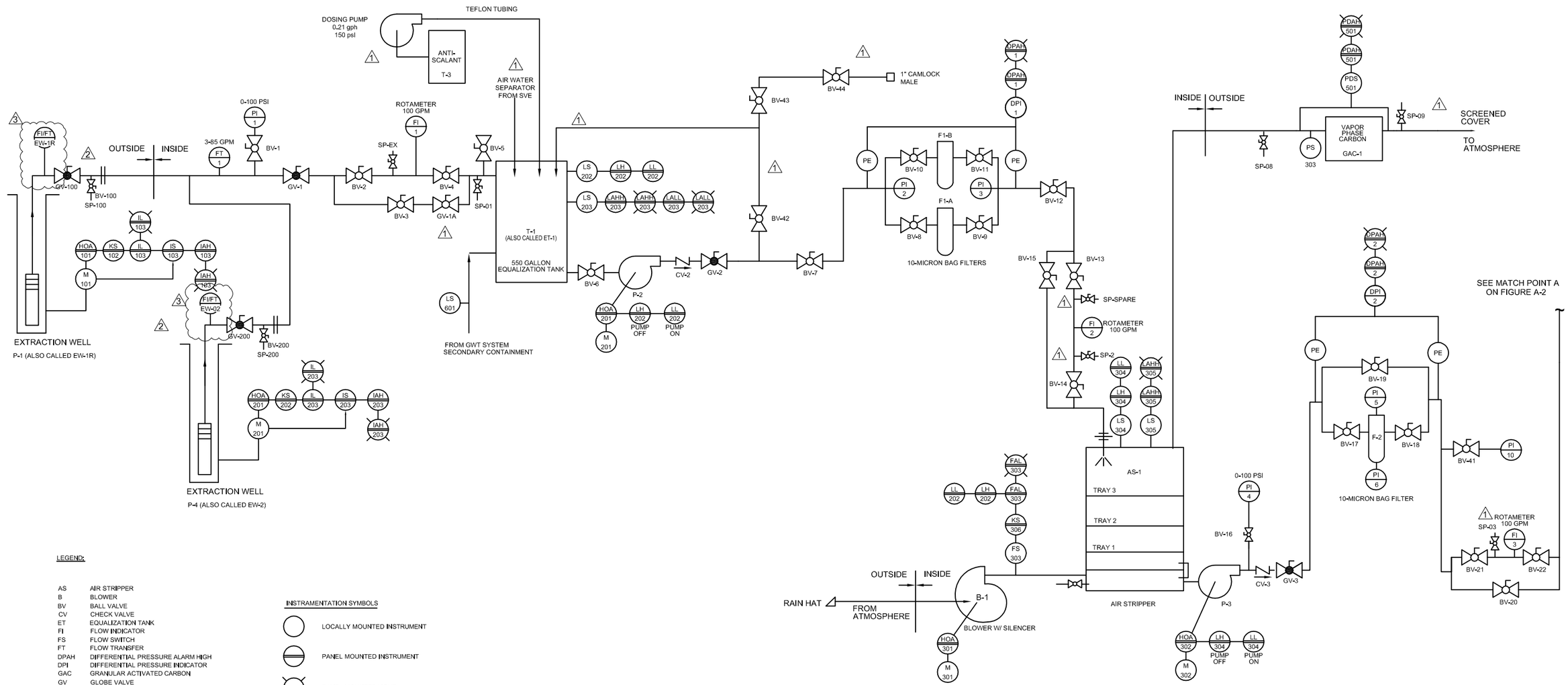
Appendix A

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
LALL	LEVEL ALARM LOW LOW
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
- BALL VALVE
- SAMPLE PORT
- CHECK VALVE
- UNION
- FLANGE

REFERENCES
TITLE

NOTE: REFERENCE
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AS-BUILTS

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3	TM	9/2012	AS-BUILTS

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MODESTO SUPERFUND SITE
EW-02 INSTALLATION
MODESTO, CALIFORNIA

GROUNDWATER TREATMENT P&ID

JOB NO. 17326524
CONTRACT/TASK ORDER NO. 03AA14C1
SHEET NO. **1-1**

PLOT BY: DAVID_LARSON – Oct 12, 2012 – 9:03:29am
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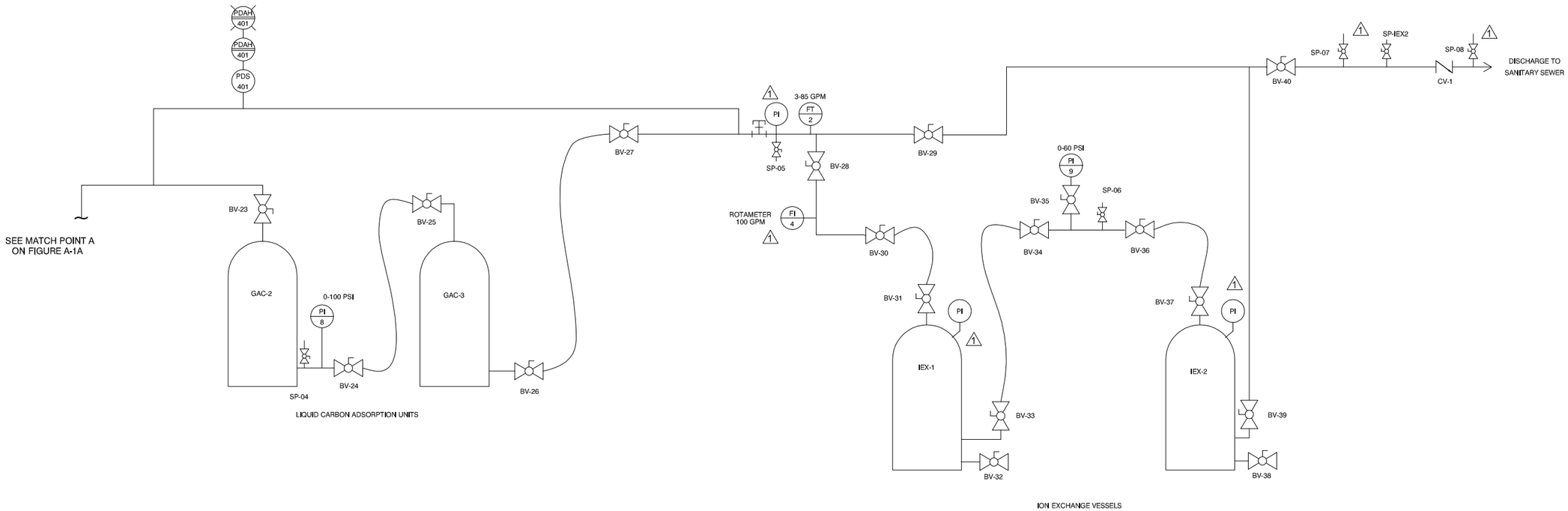

LEGEND:

AS	AIR STRIPPER
B	BLOWER
BV	BALL VALVE
CV	CHECK VALVE
ET	EQUALIZATION TANK
FI	FLOW INDICATOR
FS	FLOW SWITCH
FT	FLOW TRANSFER
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DPI	DIFFERENTIAL PRESSURE INDICATOR
GAC	GRANULAR ACTIVATED CARBON
GV	GLOBE VALVE
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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

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MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

GROUNDWATER TREATMENT P&ID

JOB NO.
PROJECT
SHEET NO. 1-2

PLOT BY: ROBERT_P_TAYLOR – Mar 19, 2010 – 11:38:02am
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DRAWING: 031910–Modesto_1–2.dwg

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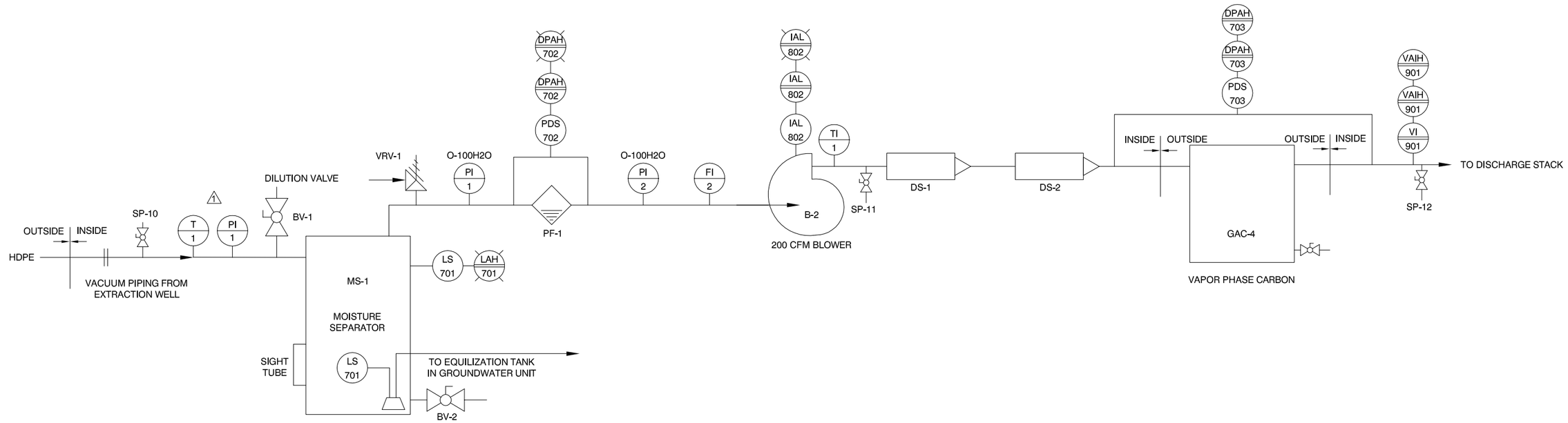

KEY

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

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MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

SOIL VAPOR EXTRACTION P&ID

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

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DRAWING: 031910–Modesto_1–3.dwg

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Appendix B

Laboratory Analytical Data Tables

Table B1	**Site Contaminants of Concern**
Table B2	**Results Summary for Long-Term Monitoring, Third Quarter 2014, Modesto Groundwater Superfund Site**
Table B3	**Results Summary for the Groundwater Treatment System, Third Quarter 2014, Modesto Groundwater Superfund Site**

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

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TABLE B2. RESULTS SUMMARY FOR LONG-TERM MONITORING
THIRD QUARTER 2014, MODESTO GROUNDWATER SUPERFUND SITE

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
0000BLANK	MW-304-3Q14	WQ	E524.2	TB	9/22/2014	No Analytes Detected				
	MW-305-3Q14				9/23/2014	No Analytes Detected				
	MW-306-3Q14				9/24/2014	No Analytes Detected				
	MW-307-3Q14					No Analytes Detected				
	MW-401-3Q14	WQ	E524.2	FB	9/24/2014	2-Butanone (Mek)	2.60	4	µg/L	J
						Acetone	11	4	µg/L	J
EW-01R	EW-01R-3Q14	WG	E524.2	NS	7/24/2014	Acetone	2.70	4	µg/L	J
						Chloroform	4.60	0.500	µg/L	
						Tetrachloroethene	8.70	0.500	µg/L	
					9/22/2014	Chloroform	3.70	0.500	µg/L	
						Tetrachloroethene	17	0.500	µg/L	
EW-02	EW-02-3Q14	WG	E524.2	NS	9/22/2014	Chloroform	3.80	0.500	µg/L	
						Tetrachloroethene	120	5	µg/L	
MW-01A	MW-1A-3Q14	WG	E524.2	NS	9/22/2014	Chloroform	0.200	0.500	µg/L	J
						Tetrachloroethene	0.600	0.500	µg/L	
	MW-98A-3Q14	WG	E524.2	FD	9/22/2014	Chloroform	2.90	0.500	µg/L	
						Tetrachloroethene	5.40	0.500	µg/L	
MW-02A	MW-2A-3Q14	WG	E524.2	NS	9/22/2014	Chloroform	3.20	0.500	µg/L	
						Tetrachloroethene	6.10	0.500	µg/L	
MW-03A	MW-3A-3Q14	WG	E524.2	NS	9/22/2014	Chloroform	0.900	0.500	µg/L	
						Tetrachloroethene	150	10	µg/L	
MW-04A	MW-4A-3Q14	WG	E524.2	NS	9/22/2014	Chloroform	3.50	0.500	µg/L	
						Tetrachloroethene	140	10	µg/L	
MW-04B	MW-4B-3Q14	WG	E524.2	NS	9/22/2014	Tetrachloroethene	6.20	0.500	µg/L	
MW-04C	MW-4C-3Q14	WG	E524.2	NS	9/22/2014	Tetrachloroethene	9.30	0.500	µg/L	
MW-05A	MW-5A-3Q14	WG	E524.2	NS	9/22/2014	Chloroform	3.30	0.500	µg/L	
						Tetrachloroethene	30	2.50	µg/L	
MW-06A	MW-6A-3Q14	WG	E524.2	NS	9/23/2014	Chloroform	6.90	0.500	µg/L	
						Tetrachloroethene	2.50	0.500	µg/L	

TABLE B2 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
MW-07A	MW-7A-3Q14	WG	E524.2	NS	9/22/2014	Chloroform	2	0.500	µg/L	
MW-08A	MW-8A-3Q14	WG	E524.2	NS	9/22/2014	Bromodichloromethane	0.500	0.500	µg/L	
						Chloroform	9.60	0.500	µg/L	J+
						Tetrachloroethene	0.300	0.500	µg/L	J
MW-09B	MW-9B-3Q14	WG	E524.2	NS	9/22/2014	Tetrachloroethene	6.90	0.500	µg/L	
MW-10A	MW-10A-3Q14	WG	E524.2	NS	9/23/2014	Chloroform	6.50	0.500	µg/L	
						Tetrachloroethene	28	2.50	µg/L	
MW-10B	MW-10B-3Q14	WG	E524.2	NS	9/23/2014	Chloroform	0.300	0.500	µg/L	J
						Tetrachloroethene	10	0.500	µg/L	
MW-10C	MW-10C-3Q14	WG	E524.2	NS	9/23/2014	No Analytes Detected				
MW-11A	MW-11A-3Q14	WG	E524.2	NS	9/23/2014	Chloroform	5	0.500	µg/L	
						Tetrachloroethene	0.300	0.500	µg/L	J
MW-12A	MW-12A-3Q14	WG	E524.2	NS	9/23/2014	Bromodichloromethane	0.600	0.500	µg/L	
						Chloroform	17	0.500	µg/L	
						Tetrachloroethene	8.90	0.500	µg/L	
						Trichlorofluoromethane	0.300	0.500	µg/L	J
MW-13A	MW-13A-3Q14	WG	E524.2	NS	9/23/2014	Chloroform	6.20	0.500	µg/L	
						Tetrachloroethene	1.60	0.500	µg/L	
MW-14A	MW-14A-3Q14	WG	E524.2	NS	9/23/2014	Chloroform	3.50	0.500	µg/L	
						Tetrachloroethene	0.800	0.500	µg/L	
MW-15A	MW-15A-3Q14	WG	E524.2	NS	9/23/2014	Chloroform	1	0.500	µg/L	
MW-16A	MW-16A-3Q14	WG	E524.2	NS	9/24/2014	Chloroform	1.60	0.500	µg/L	
MW-16B	MW-16B-3Q14	WG	E524.2	NS	9/24/2014	Chloroform	1.40	0.500	µg/L	
						Tetrachloroethene	6.90	0.500	µg/L	
	MW-84B-3Q14	WG	E524.2	FD	9/24/2014	Chloroform	1.40	0.500	µg/L	
						Tetrachloroethene	7	0.500	µg/L	
MW-16C	MW-16C-3Q14	WG	E524.2	NS	9/24/2014	Chloroform	3.30	0.500	µg/L	
						Tetrachloroethene	21	2.50	µg/L	
MW-17A	MW-17A-3Q14	WG	E524.2	NS	9/24/2014	Bromodichloromethane	0.700	0.500	µg/L	

TABLE B2 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
MW-17A continued . . .										
						Chloroform	14	0.500	µg/L	
						Tetrachloroethene	1.10	0.500	µg/L	
						Tetrachloroethene	1.20	0.500	µg/L	
MW-17B	MW-17B-3Q14	WG	E524.2	NS	9/24/2014	Chloroform	0.400	0.500	µg/L	J
						Tetrachloroethene	77	5	µg/L	
MW-17C	MW-17C-3Q14	WG	E524.2	NS	9/24/2014	No Analytes Detected				
MW-18A	MW-18A-3Q14	WG	E524.2	NS	9/23/2014	Chloroform	5.20	0.500	µg/L	
						Tetrachloroethene	2.40	0.500	µg/L	
MW-19A	MW-19A-3Q14	WG	E524.2	NS	9/23/2014	Chloroform	2.90	0.500	µg/L	
MW-19B1	MW-19B-3Q14	WG	E524.2	NS	9/23/2014	Tetrachloroethene	0.300	0.500	µg/L	J
MW-20A	MW-20A-3Q14	WG	E524.2	NS	9/23/2014	Bromodichloromethane	0.200	0.500	µg/L	J
						Chloroform	8.90	0.500	µg/L	
						Dichlorodifluoromethane	3.10	0.500	µg/L	
						Tetrachloroethene	140	5	µg/L	
MW-20B	MW-20B-3Q14	WG	E524.2	NS	9/23/2014	Tetrachloroethene	61	2.50	µg/L	
MW-20C	MW-20C-3Q14	WG	E524.2	NS	9/23/2014	No Analytes Detected				
MW-21A	MW-21A-3Q14	WG	E524.2	NS	9/24/2014	Acetone	7	4	µg/L	
						Chloroform	4.10	0.500	µg/L	
						Tetrachloroethene	0.800	0.500	µg/L	
MW-22A	MW-22A-3Q14	WG	E524.2	NS	9/24/2014	Bromodichloromethane	0.500	0.500	µg/L	
						Chloroform	12	0.500	µg/L	
						Tetrachloroethene	0.200	0.500	µg/L	J
MW-23A	MW-23A-3Q14	WG	E524.2	NS	9/23/2014	Chloroform	1.80	0.500	µg/L	
						Tetrachloroethene	36	2.50	µg/L	
MW-24B	MW-24B-3Q14	WG	E524.2	NS	9/23/2014	Tetrachloroethene	76	2.50	µg/L	
MW-25B	MW-25B-3Q14	WG	E524.2	NS	9/24/2014	Tetrachloroethene	84	5	µg/L	
MW-26B	MW-26B-3Q14	WG	E524.2	NS	9/24/2014	Tetrachloroethene	3.50	0.500	µg/L	
	MW-74B-3Q14	WG	E524.2	FD	9/24/2014	Tetrachloroethene	3.20	0.500	µg/L	
MW-27B	MW-27B-3Q14	WG	E524.2	NS	9/22/2014	No Analytes Detected				

TABLE B2 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
MW-28B	MW-28B-3Q14	WG	E524.2	NS	9/24/2014	Tetrachloroethene	66	5	µg/L	
MW-29B	MW-29B-3Q14	WG	E524.2	NS	9/23/2014	Tetrachloroethene	27	2.50	µg/L	
MW-30A	MW-30A-3Q14	WG	E524.2	NS	9/24/2014	Acetone	4.30	4	µg/L	J
						Chloroform	1.10	0.500	µg/L	
MW-30B	MW-30B-3Q14	WG	E524.2	NS	9/24/2014	Chloroform	0.300	0.500	µg/L	J
						Tetrachloroethene	0.900	0.500	µg/L	
MW-31A	MW-31A-3Q14	WG	E524.2	NS	9/24/2014	Chlorobenzene	0.200	0.500	µg/L	J
						Tetrachloroethene	7.80	0.500	µg/L	J+
MW-32B	MW-32B-3Q14	WG	E524.2	NS	9/24/2014	Chloroform	0.200	0.500	µg/L	J
MW-32C	MW-32C-3Q14	WG	E524.2	NS	9/24/2014	P-Isopropyltoluene	0.200	0.500	µg/L	J
						Toluene	0.200	0.500	µg/L	J
MW-33B	MW-33B-3Q14	WG	E524.2	NS	9/24/2014	Chloroform	0.800	0.500	µg/L	
						Tetrachloroethene	2.30	0.500	µg/L	
MW-34B	MW-34B-3Q14	WG	E524.2	NS	9/24/2014	Tetrachloroethene	4.40	0.500	µg/L	
MW-35B	MW-35B-3Q14	WG	E524.2	NS	9/24/2014	Tetrachloroethene	9.10	0.500	µg/L	
						Trichloroethylene	0.200	0.500	µg/L	J
	MW-65B-3Q14	WG	E524.2	FD	9/24/2014	Tetrachloroethene	9.20	0.500	µg/L	
						Trichloroethylene	0.300	0.500	µg/L	J

Matrix
WG = groundwater
WQ = water quality

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

Units
ug/L = micrograms/Liter

TABLE B2 (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, potental high bias.

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TABLE B3. RESULTS SUMMARY FOR THE GROUNDWATER TREATMENT SYSTEM THIRD QUARTER 2014, MODESTO GROUNDWATER SUPERFUND SITE

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
0000BLANK	MW-301-3Q14	WQ	E524.2	TB1	7/10/2014	Toluene	0.0500	0.500	µg/L	J
	MW-302-3Q14				8/7/2014	Chloroform	0.0800	0.500	µg/L	J
						Hexachlorobutadiene	0.0300	0.500	µg/L	U
						N-Butyl Benzene	0.0200	0.500	µg/L	U
						Toluene	0.300	0.500	µg/L	J
	MW-303-3Q14				9/4/2014	Chloromethane	0.160	0.500	µg/L	U
						Methylene Chloride	0.240	0.500	µg/L	J
	MW-401-3Q14	WQ	E524.2	FB1	7/10/2014	Chloroform	0.280	0.500	µg/L	R
						M,P-Xylenes	0.0800	0.500	µg/L	R
						Methylene Chloride	0.470	0.500	µg/L	R
						O-Xylene	0.0600	0.500	µg/L	R
						Tetrachloroethene	0.0400	0.500	µg/L	R
						Toluene	0.260	0.500	µg/L	R
						Trichloroethylene	0.0300	0.500	µg/L	R
SP-01	GWTS-INF-0702	WG	D5174	NS1	7/10/2014	Uranium	53.9	1	pCi/L	
	GWTS-INF-0702	WG	E524.2	NS1	7/10/2014	Bromodichloromethane	0.160	0.500	µg/L	J
						Chloroform	4.30	0.500	µg/L	
						Chloromethane	0.0600	0.500	µg/L	J
						Cis-1,2-Dichloroethene	0.0700	0.500	µg/L	J
						Dichlorodifluoromethane	0.0500	0.500	µg/L	J
						Tetrachloroethene	170	13	µg/L	
						Trichloroethylene	0.150	0.500	µg/L	J
	GWTS-INF-0801				8/7/2014	Bromodichloromethane	0.170	0.500	µg/L	J
						Chloroform	4.30	0.500	µg/L	
						Tetrachloroethene	110	5	µg/L	
						Toluene	0.0700	0.500	µg/L	U
						Trichloroethylene	0.100	0.500	µg/L	J
	GWTS-INF-0901				9/4/2014	Bromodichloromethane	0.160	0.500	µg/L	J
						Chloroform	3.90	0.500	µg/L	

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
SP-01 continued . . .										
						Chloromethane	0.230	0.500	µg/L	U
						Tetrachloroethene	110	5	µg/L	
						Trichloroethylene	0.0700	0.500	µg/L	J
SP-03	CRB INF-0702	WG	E524.2	NS1	7/10/2014	Chloroform	0.320	0.500	µg/L	J
						Chloromethane	0.140	0.500	µg/L	J
						Tetrachloroethene	4.60	0.500	µg/L	
	CRB INF-0801				8/7/2014	Chloroform	0.270	0.500	µg/L	U
						N-Butyl Benzene	0.0200	0.500	µg/L	U
						Tetrachloroethene	2.10	0.500	µg/L	J-
						Toluene	0.0800	0.500	µg/L	U
	CRB INF-0901				9/4/2014	Chloroform	0.270	0.500	µg/L	J
						Chloromethane	0.170	0.500	µg/L	U
						Tetrachloroethene	2.50	0.500	µg/L	
	MW-103-0702	WG	E524.2	FD1	7/10/2014	Chloroform	0.320	0.500	µg/L	J
						Chloromethane	0.0300	0.500	µg/L	J
						Tetrachloroethene	4.60	0.500	µg/L	
SP-04	CRB Mid-0702	WG	E524.2	NS1	7/10/2014	Chloroform	0.380	0.500	µg/L	J
						Chloromethane	0.140	0.500	µg/L	J
						Tetrachloroethene	0.890	0.500	µg/L	
	CRB Mid-0801				8/7/2014	Chloroform	0.350	0.500	µg/L	U
						Hexachlorobutadiene	0.0300	0.500	µg/L	U
						Tetrachloroethene	1.20	0.500	µg/L	
						Toluene	0.0600	0.500	µg/L	U
	CRB Mid-0901				9/4/2014	Chloroform	0.310	0.500	µg/L	J
						Chloromethane	0.140	0.500	µg/L	UJ
						Tetrachloroethene	1.70	0.500	µg/L	
	MW-104-0801	WG	E524.2	FD1	8/7/2014	Chloroform	0.330	0.500	µg/L	U
						Tetrachloroethene	1.20	0.500	µg/L	
						Toluene	0.110	0.500	µg/L	U

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
SP-05	CRB EFF-0702	WG	E524.2	NS1	7/10/2014	Chloroform	0.180	0.500	µg/L	J
						Chloromethane	0.0300	0.500	µg/L	J
						Toluene	0.0600	0.500	µg/L	U
	Pre IEX-0801	WG	D5174	NS1	8/7/2014	Uranium	10.7	1	pCi/L	
	Pre IEX-0901				9/4/2014	Uranium	64.2	1	pCi/L	
SP-06	IEX Mid-0702	WG	D5174	NS1	7/10/2014	Uranium	8.05	1	pCi/L	
	IEX Mid-0801				8/7/2014	Uranium	52.9	1	pCi/L	
	IEX Mid-0901				9/4/2014	Uranium	13.3	1	pCi/L	
SP-07	EFF-0702	WG	D5174	NS1	7/10/2014	Uranium	13.2	1	pCi/L	
	EFF-0702	WG	E524.2	NS1	7/10/2014	Chloroform	0.150	0.500	µg/L	J
	EFF-0702	WG	SM2540C	NS1	7/10/2014	Total Dissolved Solids	654	20	mg/L	
	EFF-0702	WG	SM2540D	NS1	7/10/2014	No Analytes Detected				
	EFF-0702	WG	SM5210B	NS1	7/10/2014	No Analytes Detected				
	EFF-0801	WG	E524.2	NS1	8/7/2014	Chloroform	0.320	0.500	µg/L	U
						Toluene	0.0700	0.500	µg/L	U
	EFF-0801	WG	SM2540C	NS1	8/7/2014	Total Dissolved Solids	634	10	mg/L	
	EFF-0801	WG	SM2540D	NS1	8/7/2014	No Analytes Detected				
	EFF-0801	WG	SM5210B	NS1	8/7/2014	No Analytes Detected				
	EFF-0901	WG	E524.2	NS1	9/4/2014	Chloroform	0.350	0.500	µg/L	J
						Chloromethane	0.0700	0.500	µg/L	U
						Tetrachloroethene	0.0500	0.500	µg/L	J
	EFF-0901	WG	SM2540C	NS1	9/4/2014	Total Dissolved Solids	657	10	mg/L	
	EFF-0901	WG	SM2540D	NS1	9/4/2014	Total Suspended Solids	6.50	5	mg/L	
	EFF-0901	WG	SM5210B	NS1	9/4/2014	No Analytes Detected				
SP-08	GWTS Pr GAC-0702	GS	TO15	NS1	7/10/2014	1,2,4-Trimethylbenzene	0.200	1.20	PPBV	U
						Chloroform	15	1.20	PPBV	
						Dichlorodifluoromethane	0.650	1.20	PPBV	J
						M,P-Xylenes	0.550	1.20	PPBV	J
						O-Xylene	0.250	1.20	PPBV	J

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
SP-08 continued . . .										
						Tetrachloroethene	460	1.20	PPBV	
						Toluene	0.620	1.20	PPBV	J
						Trichloroethylene	0.550	1.20	PPBV	J
						Trichlorofluoromethane	0.390	1.20	PPBV	U
	GWTS Pr GAC-0801				8/7/2014	1,2-Dichlorobenzene	0.250	1.20	PPBV	J
						Benzene	0.410	1.20	PPBV	J
						Chloroform	9.40	1.20	PPBV	
						Dichlorodifluoromethane	0.480	1.20	PPBV	J
						M,P-Xylenes	0.170	1.20	PPBV	J
						Tetrachloroethene	230	1.20	PPBV	
						Toluene	0.310	1.20	PPBV	J
						Trichloroethylene	0.720	1.20	PPBV	J
						Trichlorofluoromethane	0.340	1.20	PPBV	J
	GWTS Pr GAC-0901				9/4/2014	Benzene	0.300	1.20	PPBV	J
						Chloroform	13	1.20	PPBV	
						Dichlorodifluoromethane	0.600	1.20	PPBV	J
						Tetrachloroethene	210	1.20	PPBV	
						Toluene	0.240	1.20	PPBV	J
						Trichlorofluoromethane	0.340	1.20	PPBV	J
SP-09	GWTS Stack-0702	GS	TO15	NS1	7/10/2014	1,2-Dichlorobenzene	0.200	1.20	PPBV	J
						Chloroform	12	1.20	PPBV	
						Dichlorodifluoromethane	0.750	1.20	PPBV	J
						Tetrachloroethene	21	1.20	PPBV	
						Trichloroethylene	0.610	1.20	PPBV	J
						Trichlorofluoromethane	0.440	1.20	PPBV	U
	GWTS Stack-0801				8/7/2014	1,2-Dichlorobenzene	0.360	1.20	PPBV	J
						Chloroform	11	1.20	PPBV	
						Dichlorodifluoromethane	0.510	1.20	PPBV	J
						Tetrachloroethene	20	1.20	PPBV	

TABLE B3 (Continued)

Location	Field Sample Identification	Matrix	Method	Sample Type	Date Sampled	Analyte	Result	Reporting Limit	Units	Qualified Result
SP-09 continued . . .										
						Trichloroethylene	1.60	1.20	PPBV	
	GWTS Stack-0901				9/4/2014	Chloroform	13	1.20	PPBV	
						Cis-1,2-Dichloroethene	0.240	1.20	PPBV	J
						Dichlorodifluoromethane	0.560	1.20	PPBV	J
						Tetrachloroethene	23	1.20	PPBV	
						Trichloroethylene	0.560	1.20	PPBV	J
SP-10	IEXEFF-0702	WG	D5174	NS1	7/10/2014	No Analytes Detected				
	IEXEFF-0801				8/7/2014	No Analytes Detected				
	IEXEFF-0901				9/4/2014	No Analytes Detected				

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

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

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

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 low bias.
R = Rejected
U = Analyte considered not detected due to external contamination.
UJ = Estimated reporting limit.

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Appendix C (Provided on CD only)

Laboratory Data Validation Reports

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

RORE, Inc.
5151 Shoreham Place, Suite 260
San Diego, CA 92122
ATTN: Mr. John McGuire

April 13, 2015

SUBJECT: Modesto 3rd Qtr 2014, Data Validation

Dear Mr. McGuire,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on March 23, 2015. Attachment 1 is a summary of the sample that was reviewed for each analysis.

LDC Project #33948:

SDG #	Fraction
14267A, 14267C, 14268B, 14268C	Volatiles

The data validation was performed under EPA Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008

Please feel free to contact us if you have any questions.

Sincerely,

Andrea Leasure
Project Manager/Chemist

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1703 pages-SF

Attachment 1

ADR/IV 10%

LDC #33948 (Rore Inc. / Modesto 3rd Qtr 2014)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (524.2)																													
Matrix:	Water/Soil/Air			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	14267A	03/23/15	04/13/15	19	0																												
B	14267C	03/23/15	04/13/15	9	0																												
B	14267C	03/23/15	04/13/15	6	0																												
C	14268B	03/23/15	04/13/15	13	0																												
D	14268C	03/23/15	04/13/15	12	0																												
Total	A/AL			59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59

Shaded cells indicate Level IV validation (all other cells are ADR validation). These sample counts do not include MS/MSD, and DUPs

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Data Validation Report
Modesto

SDGs: 14267A, 14267C, 14268B, 14268C

Prepared for

Rore, Inc.
5151 Shoreham Place, Suite 260
San Diego, CA 92122

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

April 13, 2015

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INTRODUCTION

This Data Validation Report (DVR) presents EPA Level III and EPA Level IV data validation results for samples collected during the September 2014 sampling period. Data validation was performed in accordance with the US EPA *Contract Laboratory Program National Functional Guidelines* (CLPNFGs) *for Superfund Organic Methods Data Review* (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) Method 524.2

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. EPA Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which EPA Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to EPA Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, surrogates, internal standards, matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), laboratory blanks, trip blanks, field blanks and field duplicate samples. Approximately 10 percent of samples were subjected to EPA Level IV evaluation as indicated in Attachment 1, which comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations and internal standards, which were validated manually. Quality assurance (QA)/QC criteria specified in the CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

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.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A tune was performed at 12 hour intervals as required by the method.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of each method were met with the following exceptions:

SDG/ Method	Date	Compound	%RSD (Limits)	Associated Samples	Flag	A or P
14267A/ 524.2	09/23/14	Acetone 2,2-Dichloropropane Cis-1,3-Dichloropropene Trans-1,3-Dichloropropene Isopropylbenzene Tert-Butylbenzene Naphthalene	42.16 (≤20) 20.90 (≤20) 23.31 (≤20) 21.41 (≤20) 20.14 (≤20) 20.96 (≤20) 32.95 (≤20)	MW-19B-3Q14 MW-20C-3Q14 MW-305-3Q14	UJ (all non-detects)	P
14267C/ 524.2	09/25/14	Methylene chloride	31.47 (≤20)	All samples in SDG 14267C	UJ (all non-detects)	P
14268B/ 524.2	09/29/14	Methylene chloride	31.47 (≤20)	All samples in SDG 14268B	UJ (all non-detects)	P
14268C/ 524.2	09/30/14	Methylene chloride	31.47 (≤20)	MW-26B-3Q14 MW-74B-3Q14 MW-35B-3Q14 MW-65B-3Q14 MW-34B-3Q14 MW-31A-3Q14	UJ (all non-detects)	P
14268C/ 524.2	09/30/14	Acetone	34.57 (≤20)	MW-28B-3Q14 MW-30A-3Q14 MW-30B-3Q14 MW-401-3Q14 MW-306-3Q14 MW-307-3Q14	J (all detects) UJ (all non-detects)	P

IV. Continuing Calibration

All criteria for the continuing calibration verifications of each method were met with the following exceptions:

SDG/ Method	Date	Compound	%D (Limits)	Associated Samples	Flag	A or P
14267A/ 524.2	09/25/14	Bromomethane Acetone 2-Butanone	63.0 (≤30) 45.1 (≤30) 32.4 (≤30)	MW-19B-3Q14 MW-20C-3Q14 MW-305-3Q14	UJ (all non-detects)	P
14267A/ 524.2	09/24/14	2,2-Dichloropropane	33.4 (≤30)	MW-11A-3Q14 MW-14A-3Q14 MW-23A-3Q14 MW-29B-3Q14 MW-13A-3Q14 MW-6A-3Q14 MW-18A-3Q14 MW-10A-3Q14 MW-10B-3Q14 MW-10C-3Q14 MW-15A-3Q14 MW-12A-3Q14 MW-19A-3Q14 MW-20A-3Q14 MW-20B-3Q14 MW-24B-3Q14	NA	P

V. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the laboratory blanks with the exception of one blank for methylene chloride. The associated sample results were not detected or were significantly greater than the concentrations found in the blanks, therefore no data were qualified. The details are presented in Enclosure I.

VI. Field Blank Samples

Four trip blanks were collected and analyzed for VOCs. No volatile contaminants were found in the trip blanks.

One field blank was collected and analyzed for VOCs. The field blank had detections for 2-butanone and acetone. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

VII. Surrogate Spikes

All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on associated project samples. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several MS/MSD pairs for several VOCs. The associated sample results were qualified as detected estimated (J+) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosures I and II.

IX. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several LCS/LCSD pairs for VOCs. The associated sample results were qualified as non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

XI. Field Duplicate Samples

Four field duplicate pairs were collected and analyzed for VOCs. No data was qualified on the basis of field duplicate RPDs outside the QC limits. The field duplicate result comparisons are provided in Enclosures I and II.

XII. Internal Standards

All internal standard areas and retention times were within QC limits.

XIII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected were qualified as follows:

Sample	Finding	Flag
All samples in SDGs 14267A, 14267C, 14268B and 14268C	All compounds reported as detected below the LOQ.	J (all detects)

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in these SDGs.

Due to initial calibration %RSD, data were qualified as estimated in forty three samples.

Due to calibration %D were qualified as estimated in three samples.

Due to matrix spike/matrix spike duplicate %R data were qualified as estimated in four samples.

Due to laboratory control sample %R data were qualified as estimated in nineteen samples.

Due to compound quantitation, data were qualified as estimated in sixteen samples.

Due to field blank contamination, data were qualified as non-detect in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2

Attachment 1

Sample Cross Reference

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-Sep-2014	MW-9B-3Q14	1409058-13	N	5030B	524.2	III
22-Sep-2014	MW-8A-3Q14	1409058-12	N	5030B	524.2	IV
22-Sep-2014	MW-8A-3Q14MS	B14I136-MS2	MS	5030B	524.2	IV
22-Sep-2014	MW-8A-3Q14MSD	B14I136-MSD2	MSD	5030B	524.2	IV
22-Sep-2014	MW-5A-3Q14	1409058-10	N	5030B	524.2	III
22-Sep-2014	EW-01R-3Q14	1409058-02	N	5030B	524.2	III
22-Sep-2014	MW-3A-3Q14	1409058-06	N	5030B	524.2	III
22-Sep-2014	MW-2A-3Q14	1409058-04	N	5030B	524.2	IV
22-Sep-2014	MW-1A-3Q14	1409058-03	N	5030B	524.2	IV
22-Sep-2014	MW-98A-3Q14	1409058-05	FD	5030B	524.2	III
22-Sep-2014	MW-7A-3Q14	1409058-11	N	5030B	524.2	III
22-Sep-2014	MW-4A-3Q14	1409058-07	N	5030B	524.2	IV
22-Sep-2014	MW-4B-3Q14	1409058-08	N	5030B	524.2	IV
22-Sep-2014	MW-4C-3Q14	1409058-09	N	5030B	524.2	IV
22-Sep-2014	EW-02-3Q14	1409058-01	N	5030B	524.2	III
22-Sep-2014	MW-27B-3Q14	1409058-14	N	5030B	524.2	III
22-Sep-2014	MW-304-3Q14	1409058-15	TB	5030B	524.2	III
23-Sep-2014	MW-11A-3Q14	1409054-01	N	5030B	524.2	III
23-Sep-2014	MW-14A-3Q14	1409054-02	N	5030B	524.2	III
23-Sep-2014	MW-23A-3Q14	1409054-03	N	5030B	524.2	III
23-Sep-2014	MW-29B-3Q14	1409054-04	N	5030B	524.2	III
23-Sep-2014	MW-13A-3Q14	1409054-05	N	5030B	524.2	III
23-Sep-2014	MW-6A-3Q14	1409054-06	N	5030B	524.2	III
23-Sep-2014	MW-18A-3Q14	1409054-07	N	5030B	524.2	III
23-Sep-2014	MW-10B-3Q14	1409054-09	N	5030B	524.2	III
23-Sep-2014	MW-10C-3Q14	1409054-10	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*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
23-Sep-2014	MW-10A-3Q14	1409054-08	N	5030B	524.2	III
23-Sep-2014	MW-15A-3Q14	1409054-11	N	5030B	524.2	III
23-Sep-2014	MW-12A-3Q14	1409054-12	N	5030B	524.2	III
23-Sep-2014	MW-19A-3Q14	1409054-13	N	5030B	524.2	III
23-Sep-2014	MW-19B-3Q14	1409054-14	N	5030B	524.2	III
23-Sep-2014	MW-19B-3Q14MS	B14I134-MS1	MS	5030B	524.2	III
23-Sep-2014	MW-19B-3Q14MSD	B14I134-MSD1	MSD	5030B	524.2	III
23-Sep-2014	MW-20A-3Q14	1409054-15	N	5030B	524.2	III
23-Sep-2014	MW-20B-3Q14	1409054-16	N	5030B	524.2	III
23-Sep-2014	MW-20C-3Q14	1409054-17	N	5030B	524.2	III
23-Sep-2014	MW-24B-3Q14	1409054-18	N	5030B	524.2	III
23-Sep-2014	MW-305-3Q14	1409054-19	TB	5030B	524.2	III
24-Sep-2014	MW-33B-3Q14	1409063-01	N	5030B	524.2	III
24-Sep-2014	MW-32C-3Q14	1409063-03	N	5030B	524.2	III
24-Sep-2014	MW-32B-3Q14	1409063-02	N	5030B	524.2	III
24-Sep-2014	MW-16C-3Q14	1409063-10	N	5030B	524.2	III
24-Sep-2014	MW-16B-3Q14	1409063-08	N	5030B	524.2	III
24-Sep-2014	MW-84B-3Q14	1409063-09	FD	5030B	524.2	III
24-Sep-2014	MW-16A-3Q14	1409063-07	N	5030B	524.2	III
24-Sep-2014	MW-21A-3Q14	1409063-04	N	5030B	524.2	III
24-Sep-2014	MW-22A-3Q14	1409063-05	N	5030B	524.2	III
24-Sep-2014	MW-25B-3Q14	1409063-06	N	5030B	524.2	III
24-Sep-2014	MW-17A-3Q14	1409063-11	N	5030B	524.2	III
24-Sep-2014	MW-17B-3Q14	1409063-12	N	5030B	524.2	III
24-Sep-2014	MW-17C-3Q14	1409063-13	N	5030B	524.2	III
24-Sep-2014	MW-17C-3Q14MS	B14I140-MS1	MS	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*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
24-Sep-2014	MW-17C-3Q14MSD	B14I140-MSD1	MSD	5030B	524.2	III
24-Sep-2014	MW-26B-3Q14	1409064-01	N	5030B	524.2	III
24-Sep-2014	MW-74B-3Q14	1409064-02	FD	5030B	524.2	III
24-Sep-2014	MW-35B-3Q14	1409064-03	N	5030B	524.2	III
24-Sep-2014	MW-65B-3Q14	1409064-04	FD	5030B	524.2	III
24-Sep-2014	MW-28B-3Q14	1409064-05	N	5030B	524.2	III
24-Sep-2014	MW-34B-3Q14	1409064-06	N	5030B	524.2	III
24-Sep-2014	MW-31A-3Q14	1409064-07	N	5030B	524.2	III
24-Sep-2014	MW-31A-3Q14MS	B14I144-MS1	MS	5030B	524.2	III
24-Sep-2014	MW-31A-3Q14MSD	B14I144-MSD1	MSD	5030B	524.2	III
24-Sep-2014	MW-30A-3Q14	1409064-08	N	5030B	524.2	III
24-Sep-2014	MW-30B-3Q14	1409064-09	N	5030B	524.2	III
24-Sep-2014	MW-401-3Q14	1409064-10	FB	5030B	524.2	III
24-Sep-2014	MW-306-3Q14	1409064-11	TB	5030B	524.2	III
24-Sep-2014	MW-307-3Q14	1409064-12	TB	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*

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Attachment 2
Overall Data Qualification Summary

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Data Qualifier Summary

Lab Reporting Batch ID: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14267A

Method Category: **VOA**

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

Sample ID: **MW-10A-3Q14** ***Collected:*** **9/23/2014 11:10:00 AM** ***Analysis Type:*** **Initial/TOT** ***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,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,2-DIBROMOETHANE	0.5	J,U,Q3,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

Sample ID: **MW-10B-3Q14** ***Collected:*** **9/23/2014 10:50:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q3,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
CHLOROFORM	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

Sample ID: **MW-10C-3Q14** ***Collected:*** **9/23/2014 11:00:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

Sample ID: **MW-11A-3Q14** ***Collected:*** **9/23/2014 9:05:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: R14S84 - Modesto Groundwater Jul-Sep 2014 Qtr Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14267A

Method Category: **VOA**

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

Sample ID: **MW-11A-3Q14** ***Collected:*** **9/23/2014 9:05:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
TETRACHLOROETHENE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI

Sample ID: **MW-12A-3Q14** ***Collected:*** **9/23/2014 12:25:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
TRICHLOROFLUOROMETHANE	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI

Sample ID: **MW-13A-3Q14** ***Collected:*** **9/23/2014 10:05:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

Sample ID: **MW-14A-3Q14** ***Collected:*** **9/23/2014 9:20:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14267A

Method Category: **VOA**

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

Sample ID: **MW-15A-3Q14** ***Collected:*** **9/23/2014 12:10:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

Sample ID: **MW-18A-3Q14** ***Collected:*** **9/23/2014 10:40:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

Sample ID: **MW-19A-3Q14** ***Collected:*** **9/23/2014 12:45:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

Sample ID: **MW-19B-3Q14** ***Collected:*** **9/23/2014 12:50:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
1,2-DICHLOROBENZENE	0.5	J,U,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
2,2-DICHLOROPROPANE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
2-BUTANONE	4.0	J,U,C4,Q4	2.0	MDL	4.0	MRL	ug/L	UJ	Ms, Ccv

* denotes a non-reportable result

Project Name and Number: R14S84 - Modesto Groundwater Jul-Sep 2014 Qtr Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14267A

Method Category: **VOA**

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

Sample ID: **MW-19B-3Q14** ***Collected:*** **9/23/2014 12:50:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	4.0	J,U,Q4,C3, C4,Q2	2.0	MDL	4.0	MRL	ug/L	UJ	Ms, Lcs, IcRsd, Ccv
BROMOBENZENE	0.5	J,U,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
BROMOCHLOROMETHANE	0.5	J,U,Q2,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms, Lcs
BROMODICHLOROMETHANE	0.5	J,U,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
BROMOMETHANE	0.5	J,U,C4,Q2, Q3,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms, Lcs, Ccv
CIS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
DIBROMOCHLOROMETHANE	0.5	J,U,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
DIBROMOMETHANE	0.5	J,U,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms
ISOPROPYLBENZENE	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
TERT-BUTYLBENZENE	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
TRANS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-20A-3Q14** ***Collected:*** **9/23/2014 1:20:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMODICHLOROMETHANE	0.2	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

Sample ID: **MW-20B-3Q14** ***Collected:*** **9/23/2014 1:30:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: R14S84 - Modesto Groundwater Jul-Sep 2014 Qtr Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14267A

Method Category: **VOA**

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

Sample ID: **MW-20B-3Q14** ***Collected:*** **9/23/2014 1:30:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

Sample ID: **MW-20C-3Q14** ***Collected:*** **9/23/2014 1:40:00 PM** ***Analysis Type:*** **Initial/TOT** ***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
2-BUTANONE	4.0	J,U,C4	2.0	MDL	4.0	MRL	ug/L	UJ	Ccv
ACETONE	4.0	J,U,C3,C4, Q2	2.0	MDL	4.0	MRL	ug/L	UJ	Lcs, IcRsd, Ccv
BROMOCHLOROMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOMETHANE	0.5	J,U,C4,Q2, Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs, Ccv
CIS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
ISOPROPYLBENZENE	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
TERT-BUTYLBENZENE	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-23A-3Q14** ***Collected:*** **9/23/2014 9:30:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

Sample ID: **MW-24B-3Q14** ***Collected:*** **9/23/2014 2:10:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: R14S84 - Modesto Groundwater Jul-Sep 2014 Qtr Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14267A

Method Category: **VOA**

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

Sample ID: **MW-24B-3Q14** ***Collected:*** **9/23/2014 2:10:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

Sample ID: **MW-29B-3Q14** ***Collected:*** **9/23/2014 9:50:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

Sample ID: **MW-305-3Q14** ***Collected:*** **9/23/2014 4:00:00 PM** ***Analysis Type:*** **Initial/TOT** ***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
2-BUTANONE	4.0	J,U,C4	2.0	MDL	4.0	MRL	ug/L	UJ	Ccv
ACETONE	4.0	J,U,C3,C4, Q2	2.0	MDL	4.0	MRL	ug/L	UJ	Lcs, IcRsd, Ccv
BROMOCHLOROMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOMETHANE	0.5	J,U,C4,Q2, Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs, Ccv
CIS-1,3-DICHLOROPROPENE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
ISOPROPYLBENZENE	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
TERT-BUTYLBENZENE	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-6A-3Q14** ***Collected:*** **9/23/2014 10:20:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DIBROMOETHANE	0.5	J,U,Q2,Q3	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
1,3-DICHLOROBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14267A

Method Category: **VOA**

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

Sample ID: **MW-6A-3Q14** ***Collected:*** **9/23/2014 10:20:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DICHLOROPROPANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
BROMOBENZENE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs
DIBROMOMETHANE	0.5	J,U,Q2	0.2	MDL	0.5	MRL	ug/L	UJ	Lcs

SDG: 14267C

Method Category: **VOA**

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

Sample ID: **EW-01R-3Q14** ***Collected:*** **9/22/2014 10:37:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **EW-02-3Q14** ***Collected:*** **9/22/2014 2:05:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-1A-3Q14** ***Collected:*** **9/22/2014 11:50:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-27B-3Q14** ***Collected:*** **9/22/2014 2:40:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	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: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14267C

Method Category: **VOA**

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

Sample ID: **MW-2A-3Q14** ***Collected:*** **9/22/2014 11:15:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-304-3Q14** ***Collected:*** **9/22/2014 4:00:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-3A-3Q14** ***Collected:*** **9/22/2014 10:50:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-4A-3Q14** ***Collected:*** **9/22/2014 1:10:00 PM** ***Analysis Type:*** **Reanalysis-01/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-4B-3Q14** ***Collected:*** **9/22/2014 1:26:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-4C-3Q14** ***Collected:*** **9/22/2014 1:45:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-5A-3Q14** ***Collected:*** **9/22/2014 10:07:00 AM** ***Analysis Type:*** **Reanalysis-01/TOT/TOT** ***Dilution:*** **1**

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

* denotes a non-reportable result

Project Name and Number: R14S84 - Modesto Groundwater Jul-Sep 2014 Qtr Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14267C

Method Category: **VOA**

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

Sample ID: **MW-7A-3Q14** ***Collected:*** **9/22/2014 12:45:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-8A-3Q14** ***Collected:*** **9/22/2014 9:50:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROFORM	9.6	J,Q4	0.2	MDL	0.5	MRL	ug/L	J+	Ms
METHYLENE CHLORIDE	0.5	J,U,C3,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms, IcRsd
TETRACHLOROETHENE	0.3	J,C1,Q4	0.2	MDL	0.5	MRL	ug/L	J	RI, Ms

Sample ID: **MW-98A-3Q14** ***Collected:*** **9/22/2014 12:00:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-9B-3Q14** ***Collected:*** **9/22/2014 9:20:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

SDG: 14268B

Method Category: **VOA**

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

Sample ID: **MW-16A-3Q14** ***Collected:*** **9/24/2014 11:00:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	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: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14268B

Method Category: **VOA**

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

Sample ID: **MW-16B-3Q14** ***Collected:*** **9/24/2014 10:30:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-16C-3Q14** ***Collected:*** **9/24/2014 10:20:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-17A-3Q14** ***Collected:*** **9/24/2014 12:00:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-17B-3Q14** ***Collected:*** **9/24/2014 12:15:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-17C-3Q14** ***Collected:*** **9/24/2014 12:45:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	0.5	J,U,C3,Q4	0.2	MDL	0.5	MRL	ug/L	UJ	Ms, IcRsd

Sample ID: **MW-21A-3Q14** ***Collected:*** **9/24/2014 11:30:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-22A-3Q14** ***Collected:*** **9/24/2014 11:40:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	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: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14268B

Method Category: **VOA**

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

Sample ID: **MW-22A-3Q14** ***Collected:*** **9/24/2014 11:40:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-25B-3Q14** ***Collected:*** **9/24/2014 11:50:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-32B-3Q14** ***Collected:*** **9/24/2014 9:35:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-32C-3Q14** ***Collected:*** **9/24/2014 9:25:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
P-ISOPROPYLTOLUENE	0.2	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI
TOLUENE	0.2	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI

Sample ID: **MW-33B-3Q14** ***Collected:*** **9/24/2014 9:15:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-84B-3Q14** ***Collected:*** **9/24/2014 10:40:00 AM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

SDG: 14268C

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14268C

Method Category: **VOA**

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

Sample ID: **MW-26B-3Q14** ***Collected:*** **9/24/2014 1:20:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-28B-3Q14** ***Collected:*** **9/24/2014 1:55:00 PM** ***Analysis Type:*** **Reinjection-01/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	9.7	J,C3,Q3	2.0	MDL	4.0	MRL	ug/L	UJ	IcRsd, Fb

Sample ID: **MW-306-3Q14** ***Collected:*** **9/24/2014 4:00:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	4.0	J,U,C3	2.0	MDL	4.0	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-307-3Q14** ***Collected:*** **9/24/2014 4:10:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	4.0	J,U,C3	2.0	MDL	4.0	MRL	ug/L	UJ	IcRsd

Sample ID: **MW-30A-3Q14** ***Collected:*** **9/24/2014 2:45:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	4.3	J,C3,Q3	2.0	MDL	4.0	MRL	ug/L	J	IcRsd

Sample ID: **MW-30B-3Q14** ***Collected:*** **9/24/2014 3:00:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	4.5	J,C3,Q3	2.0	MDL	4.0	MRL	ug/L	UJ	IcRsd, Fb
CHLOROFORM	0.3	J,C1	0.2	MDL	0.5	MRL	ug/L	J	RI

Sample ID: **MW-31A-3Q14** ***Collected:*** **9/24/2014 2:30:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

* denotes a non-reportable result

Project Name and Number: R14S84 - Modesto Groundwater Jul-Sep 2014 Qtr Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: 14267A, 14267C, 14268B, 14268C **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

SDG: 14268C

Method Category: **VOA**

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

Sample ID: **MW-31A-3Q14** ***Collected:*** **9/24/2014 2:30:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	0.5	J,U,C3	0.2	MDL	0.5	MRL	ug/L	UJ	IcRsd
TETRACHLOROETHENE	7.8		0.2	MDL	0.5	MRL	ug/L	J+	Ms

Sample ID: **MW-34B-3Q14** ***Collected:*** **9/24/2014 2:10:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-35B-3Q14** ***Collected:*** **9/24/2014 1:40:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-401-3Q14** ***Collected:*** **9/24/2014 3:15:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	2.6	J	2.0	MDL	4.0	MRL	ug/L	J	RI
ACETONE	11	J,Q3	2.0	MDL	4.0	MRL	ug/L	J	IcRsd

Sample ID: **MW-65B-3Q14** ***Collected:*** **9/24/2014 1:45:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

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

Sample ID: **MW-74B-3Q14** ***Collected:*** **9/24/2014 1:35:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	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: 14267A, 14267C, 14268B, 14268C

Laboratory: FALSE

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev

eQAPP Name: Rore_Modesto_GW_022315

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 14267A, 14267C, 14268B, 14268C

Laboratory: FALSE

EDD Filename: 1409054 RECREATE_rev, 1409058 RECREATE_rev, 1409063 RECREATE_rev, 1409064 RECREATE_rev

eQAPP Name: Rore_Modesto_GW_022315

Reason Code Legend

Reason Code	*Description*
Ccv	Continuing Calibration Verification Percent Difference Lower Estimation
Fb	Field Blank Contamination
IcRsd	Initial Calibration Percent Relative Standard Deviation
Lcs	Laboratory Control Spike Lower Estimation
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Upper Estimation
RI	Reporting Limit Trace Value

* denotes a non-reportable result

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Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

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Quality Control Outlier Reports

14267A

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Method Blank Outlier Report

Lab Reporting Batch ID: 14267A **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
B14I126-BLK1	9/24/2014 2:09:00 PM	METHYLENE CHLORIDE	0.4 ug/L	MW-10A-3Q14 MW-10B-3Q14 MW-10C-3Q14 MW-11A-3Q14 MW-12A-3Q14 MW-13A-3Q14 MW-14A-3Q14 MW-15A-3Q14 MW-18A-3Q14 MW-19A-3Q14 MW-20A-3Q14 MW-20B-3Q14 MW-23A-3Q14 MW-24B-3Q14 MW-29B-3Q14 MW-6A-3Q14

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 14267A **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

Method: **524.2**

Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
MW-19B-3Q14MS	1,2-DICHLOROBENZENE	83	84	86.00-111.00	-	1,2-DICHLOROBENZENE	
MW-19B-3Q14MSD	2-BUTANONE	55	57	67.00-123.00	-	2-BUTANONE	
(MW-19B-3Q14)	ACETONE	32	32	60.00-125.00	-	ACETONE	
	BROMOBENZENE	89	-	90.00-110.00	-	BROMOBENZENE	
	BROMOCHLOROMETHANE	78	81	84.00-114.00	-	BROMOCHLOROMETHANE	J- (all detects)
	BROMODICHLOROMETHANE	80	-	82.00-120.00	-	BROMODICHLOROMETHANE	UJ (all non-detects)
	BROMOMETHANE	35	42	58.00-172.00	-	BROMOMETHANE	
	DIBROMOCHLOROMETHANE	78	-	80.00-125.00	-	DIBROMOCHLOROMETHANE	
	DIBROMOMETHANE	76	78	79.00-118.00	-	DIBROMOMETHANE	
	ETHYLENE DIBROMIDE (EDB)	83	84	85.00-114.00	-	ETHYLENE DIBROMIDE (EDB)	

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 14267A **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

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

QC Sample ID (Associated Samples)	Compound	LCS %R	LCS %R	%R Limits	RP (Limits)	Affected Compounds	Flag
B14I126-BS1	1,3-DICHLOROBENZENE	87	-	88.00-111.00	-	1,3-DICHLOROBENZENE	
(MW-10A-3Q14	1,3-DICHLOROPROPANE	78	-	82.00-116.00	-	1,3-DICHLOROPROPANE	
MW-10B-3Q14	BROMOBENZENE	86	-	90.00-110.00	-	BROMOBENZENE	
MW-10C-3Q14	DIBROMOMETHANE	78	-	79.00-118.00	-	DIBROMOMETHANE	
MW-11A-3Q14	ETHYLENE DIBROMIDE (EDB)	78	-	85.00-114.00	-	ETHYLENE DIBROMIDE (EDB)	
MW-12A-3Q14							
MW-13A-3Q14							
MW-14A-3Q14							
MW-15A-3Q14							J- (all detects)
MW-18A-3Q14							UJ (all non-detects)
MW-19A-3Q14							
MW-20A-3Q14							
MW-20B-3Q14							
MW-23A-3Q14							
MW-24B-3Q14							
MW-29B-3Q14							
MW-6A-3Q14)							

Reporting Limit Outliers

Lab Reporting Batch ID: 14267A **Laboratory: FALSE**

EDD Filename: 1409054 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

Method: **524.2**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
MW-10B-3Q14	CHLOROFORM	J,C1	0.3	0.5	MRL	ug/L	J (all detects)
MW-11A-3Q14	TETRACHLOROETHENE	J,C1	0.3	0.5	MRL	ug/L	J (all detects)
MW-12A-3Q14	TRICHLOROFLUOROMETHANE	J,C1	0.3	0.5	MRL	ug/L	J (all detects)
MW-19B-3Q14	TETRACHLOROETHENE	J,C1	0.3	0.5	MRL	ug/L	J (all detects)
MW-20A-3Q14	BROMODICHLOROMETHANE	J,C1	0.2	0.5	MRL	ug/L	J (all detects)

LDC #: 33948A1 **VALIDATION COMPLETENESS WORKSHEET** Date: 4-2-15

SDG #: 14267A ADR Page: 1 of 2

Laboratory: USEPA Region 9 Laboratory Reviewer: AR

2nd Reviewer: SM

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.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	SW / A	& RSD ≤20 ICV ≤30
IV.	Continuing calibration	SW	CCV ≤30 &
V.	Laboratory Blanks	N	
VI.	Field blanks	N	TB=19
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A ~~N~~	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A ~~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; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
+1 1	MW-11A-3Q14	1409054-01	Water	09/23/14
+1 2	MW-14A-3Q14	1409054-02	Water	09/23/14
+1 3	2=PCE MW-23A-3Q14	1409054-03	Water	09/23/14
+1 4	2=PCE MW-29B-3Q14	1409054-04	Water	09/23/14
+1 5	MW-13A-3Q14	1409054-05	Water	09/23/14
+1 6	MW-6A-3Q14	1409054-06	Water	09/23/14
+1 7	MW-18A-3Q14	1409054-07	Water	09/23/14
+1 8	2=PCE MW-10A-3Q14	1409054-08	Water	09/23/14
+1 9	MW-10B-3Q14	1409054-09	Water	09/23/14
+1 10	MW-10C-3Q14	1409054-10	Water	09/23/14
+1 11	MW-15A-3Q14	1409054-11	Water	09/23/14
+1 12	MW-12A-3Q14	1409054-12	Water	09/23/14
+1 13	MW-19A-3Q14	1409054-13	Water	09/23/14

LDC #: 33948A1 **VALIDATION COMPLETENESS WORKSHEET** Date: 4-2-15

SDG #: 14267A ADR Page: 2 of 2

Laboratory: USEPA Region 9 Laboratory Reviewer: AR

2nd Reviewer: SM

METHOD: GC/MS Volatiles (EPA Method 524.2)

	Client ID	Lab ID	Matrix	Date
+2 14	MW-19B-3Q14	1409054-14	Water	09/23/14
+1 15	2 = PCE MW-20A-3Q14	1409054-15	Water	09/23/14
+1 16	2 = PCE MW-20B-3Q14	1409054-16	Water	09/23/14
-2 17	MW-20C-3Q14	1409054-17	Water	09/23/14
+1 18	2 = PCE MW-24B-3Q14	1409054-18	Water	09/23/14
-2 19	MW-305-3Q14	1409054-19	Water	09/23/14
2 20	MW-19B-3Q14MS	1409054-14MS	Water	09/23/14
2 21	MW-19B-3Q14MSD	1409054-14MSD	Water	09/23/14
22				
23	① B14J126-BLK1			
24	② B14J134-BLK1			
25				

Notes:

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 #: 33948A1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: APL
2nd Reviewer: SM

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
	09-23-14	092514HVW.M	F	42.16	14,17,19	J/UJ/P
			OO	20.90	↓	↓
			R	23.31		
			W	21.41		
			VV	20.14		
			CCC	20.96		
			MMM	32.95		

INICAL.1S5

LDC #: 33948A1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: APL
2nd Reviewer: SM

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
–	9-25-14	S14I114-CCV1	B	63.0	14,17,19	J-/UJ/P
–		(CCV)	F	45.1		↓
–			M	32.4		↓
+	9-24-14	S14I103-CCV1	OO	33.4	1-13,15,16,18	J+/P
		(CCV)				

CONCAL.1S5

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Quality Control Outlier Reports

14267C

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Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 14267C **Laboratory: FALSE**

EDD Filename: 1409058 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

Method: **524.2**

Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
MW-8A-3Q14MS (MW-8A-3Q14)	METHYLENE CHLORIDE	72	-	73.00-114.00	-	METHYLENE CHLORIDE	J- (all detects) UJ (all non-detects)
MW-8A-3Q14MS MW-8A-3Q14MSD (MW-8A-3Q14)	1,1,2-TRICHLORO-1,2,2-TRIFLUOF	143	151	73.00-139.00	-	1,1,2-TRICHLORO-1,2,2-TRIFLUC	J+(all detects)
	1,1-DICHLOROETHENE	-	128	80.00-126.00	-	1,1-DICHLOROETHENE	
	1,1-DICHLOROPROPENE	-	122	88.00-120.00	-	1,1-DICHLOROPROPENE	
	CHLOROFORM	-	131	85.00-117.00	-	CHLOROFORM	
	TERT-BUTYLBENZENE	-	122	89.00-118.00	-	TERT-BUTYLBENZENE	
	TETRACHLOROETHENE	-	121	87.00-118.00	-	TETRACHLOROETHENE	
	TRICHLOROETHENE	-	113	90.00-112.00	-	TRICHLOROETHENE	

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 14267C **Laboratory: FALSE**

EDD Filename: 1409058 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

Method: **524.2**

Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
B14I134-BS1	ACETONE	55	-	60.00-125.00	-	ACETONE	J- (all detects)
(MW-4A-3Q14	BROMOCHLOROMETHANE	82	-	84.00-114.00	-	BROMOCHLOROMETHANE	UJ (all non-detects)
MW-5A-3Q14)	BROMOMETHANE	37	-	58.00-172.00	-	BROMOMETHANE	

Field Duplicate RPD Report

Lab Reporting Batch ID: 14267C **Laboratory: FALSE**

EDD Filename: 1409058 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

Method: 524.2

Matrix: Water

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	MW-2A-3Q14	MW-98A-3Q14			
CHLOROFORM	3.2	2.9	10	1.00	No Qualifiers Applied
TETRACHLOROETHENE	6.1	5.4	12	1.00	

Project Name and Number: R14S84 - Modesto Groundwater Jul-Sep 2014 Qtr Monitoring

Reporting Limit Outliers

Lab Reporting Batch ID: 14267C **Laboratory: FALSE**

EDD Filename: 1409058 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

Method: **524.2**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
MW-1A-3Q14	CHLOROFORM	J,C1	0.2	0.5	MRL	ug/L	J (all detects)
MW-8A-3Q14	TETRACHLOROETHENE	J,C1, Q4	0.3	0.5	MRL	ug/L	J (all detects)

LDC #: 33948B1

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 3-25-15

SDG #: 14267C

Page: 1 of 2

Laboratory: USEPA Region 9 Laboratory

Reviewer: [illegible]

2nd Reviewer: AYL

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.	Sample receipt/Technical holding times	N / N	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	SW / A	≤20 / ≤30
IV.	Continuing calibration	A	≤30
V.	Laboratory Blanks	N	Not reviewed for ADR validation.
VI.	Field blanks	N	TB=15
VII.	Surrogate spikes	N	Not reviewed for ADR validation.
VIII.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation.
IX.	Laboratory control samples	N	Not reviewed for ADR validation.
X.	Field duplicates	N	FD=(4,5)
XI.	Internal standards	A	Not reviewed for ADR validation.
XII.	Compound quantitation RL/LOQ/LODs	N	Not reviewed for ADR validation.
XIII.	Target compound identification	N	Not reviewed for ADR validation.
XIV.	System performance	N	Not reviewed for ADR validation.
XV.	Overall assessment of data	N	Not reviewed for ADR validation.

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; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	EW-02-3Q14	1409058-01	Water	09/22/14
2	EW-01R-3Q14	1409058-02	Water	09/22/14
3	MW-1A-3Q14**	1409058-03**	Water	09/22/14
4	MW-2A-3Q14**	1409058-04**	Water	09/22/14
5	MW-98A-3Q14	1409058-05	Water	09/22/14
6	MW-3A-3Q14	1409058-06	Water	09/22/14
7	MW-4A-3Q14**	1409058-07**	Water	09/22/14
8	MW-4B-3Q14**	1409058-08**	Water	09/22/14
9	MW-4C-3Q14**	1409058-09**	Water	09/22/14
10	MW-5A-3Q14	1409058-10	Water	09/22/14
11	MW-7A-3Q14	1409058-11	Water	09/22/14
12	MW-8A-3Q14**	1409058-12**	Water	09/22/14
13	MW-9B-3Q14	1409058-13	Water	09/22/14

LDC #: 33948B1

VALIDATION COMPLETENESS WORKSHEET

ADR/IX

Date: 3-25-15

SDG #: 14267C

Page: 2 of 2

Laboratory: USEPA Region 9 Laboratory

Reviewer: TM

2nd Reviewer: APL

METHOD: GC/MS Volatiles (EPA Method 524.2)

	Client ID	Lab ID	Matrix	Date
14	MW-27B-3Q14	1409058-14	Water	09/22/14
15	MW-304-3Q14	1409058-15	Water	09/22/14
16	MW-8A-3Q14MS	1409058-12MS	Water	09/22/14
17	MW-8A-3Q14MSD	1409058-12MSD	Water	09/22/14
18				
19				
20				
21				
22				
23				
24				
25				

Notes:

LDC #: 33948B1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

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

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
	9/25/14	092514W.M	~~PPPP~~ E	31.47	all + B14I132-BLK1, B14I136-BLK1	J/UJ/P (all ND, xcpt MS/MSD)

INICAL.1S5

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Quality Control Outlier Reports

14268B

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Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 14268B **Laboratory: FALSE**

EDD Filename: 1409063 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

Method: **524.2**

Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
MW-17C-3Q14MSD (MW-17C-3Q14)	METHYLENE CHLORIDE	-	72	73.00-114.00	-	METHYLENE CHLORIDE	J- (all detects) UJ (all non-detects)
MW-17C-3Q14MS MW-17C-3Q14MSD (MW-17C-3Q14)	1,1,2-TRICHLORO-1,2,2-TRIFLUOF	160	143	73.00-139.00	-	1,1,2-TRICHLORO-1,2,2-TRIFLU(	J+(all detects)
	1,1-DICHLOROETHENE	135	-	80.00-126.00	-	1,1-DICHLOROETHENE	
	1,1-DICHLOROPROPENE	124	-	88.00-120.00	-	1,1-DICHLOROPROPENE	
	DICHLORODIFLUOROMETHANE	157	-	53.00-153.00	-	DICHLORODIFLUOROMETHANE	
	SEC-BUTYLBENZENE	123	-	87.00-122.00	-	SEC-BUTYLBENZENE	
	TERT-BUTYLBENZENE	121	-	89.00-118.00	-	TERT-BUTYLBENZENE	
	TETRACHLOROETHENE	119	-	87.00-118.00	-	TETRACHLOROETHENE	
	TRANS-1,2-DICHLOROETHENE	120	-	86.00-119.00	-	TRANS-1,2-DICHLOROETHENE	
	TRICHLOROFLUOROMETHANE	148	-	74.00-141.00	-	TRICHLOROFLUOROMETHANE	
	VINYL CHLORIDE	135	-	77.00-127.00	-	VINYL CHLORIDE	

Project Name and Number: R14S84 - Modesto Groundwater Jul-Sep 2014 Qtr Monitoring

Reporting Limit Outliers

Lab Reporting Batch ID: 14268B **Laboratory: FALSE**

EDD Filename: 1409063 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

Method: **524.2**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
MW-17B-3Q14	CHLOROFORM	J,C1	0.4	0.5	MRL	ug/L	J (all detects)
MW-22A-3Q14	TETRACHLOROETHENE	J,C1	0.2	0.5	MRL	ug/L	J (all detects)
MW-32B-3Q14	CHLOROFORM	J,C1	0.2	0.5	MRL	ug/L	J (all detects)
MW-32C-3Q14	P-ISOPROPYLTOLUENE TOLUENE	J,C1 J,C1	0.2 0.2	0.5 0.5	MRL MRL	ug/L ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 14268B **Laboratory: FALSE**

EDD Filename: 1409063 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

Method: 524.2
Matrix: Water

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	MW-16B-3Q14	MW-84B-3Q14			
CHLOROFORM	1.4	1.4	0	1.00	No Qualifiers Applied
TETRACHLOROETHENE	6.9	7.0	1	1.00	

Project Name and Number: R14S84 - Modesto Groundwater Jul-Sep 2014 Qtr Monitoring

LDC #: 33948C1 **VALIDATION COMPLETENESS WORKSHEET** Date: 4-2-15
SDG #: 14268B ADR Page: 1 of 2
Laboratory: USEPA Region 9 Laboratory Reviewer: AM
2nd Reviewer: SM

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.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	SW / A	%RSD ≤20 ICV ≤30%
IV.	Continuing calibration	~~SW~~ A	CCV ≤30%
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	FD=(8,9)
XI.	Internal standards	A ~~N~~	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A ~~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; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
+3 1	MW-33B-3Q14	1409063-01	Water	09/24/14
+3 2	MW-32B-3Q14	1409063-02	Water	09/24/14
+3 3	MW-32C-3Q14	1409063-03	Water	09/24/14
+3 4	MW-21A-3Q14	1409063-04	Water	09/24/14
+3 5	MW-22A-3Q14	1409063-05	Water	09/24/14
+1 6	2=PCE MW-25B-3Q14	1409063-06	Water	09/24/14
+3 7	MW-16A-3Q14	1409063-07	Water	09/24/14
+3 8	MW-16B-3Q14	1409063-08	Water	09/24/14
+3 9	MW-84B-3Q14	1409063-09	Water	09/24/14
+3 10	1=PCE MW-16C-3Q14	1409063-10	Water	09/24/14
3 11	MW-17A-3Q14	1409063-11	Water	09/24/14
+1 12	2=PCE MW-17B-3Q14	1409063-12	Water	09/24/14
-3 13	MW-17C-3Q14	1409063-13	Water	09/24/14

LDC #: 33948C1 **VALIDATION COMPLETENESS WORKSHEET** Date: 4-2-15

SDG #: 14268B ADR Page: 2 of 2

Laboratory: USEPA Region 9 Laboratory Reviewer: APL

2nd Reviewer: SM

METHOD: GC/MS Volatiles (EPA Method 524.2)

	Client ID	Lab ID	Matrix	Date
14	MW-17C-3Q14MS	1409063-13MS	Water	09/24/14
15	MW-17C-3Q14MSD	1409063-13MSD	Water	09/24/14
16				
17	(1) B14I144-BLK1			
18	(2) B14I149-BLK1			
19	(3) B14I140-BLK1			
20				
21				
22				
23				
24				
25				

Notes:

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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 #: 33948C1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Reviewer: APL
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 Yes 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
	9-29-14	092914W.M	E	31.47	All	J/UJ/P

Quality Control Outlier Reports

14268C

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Field Blank Outlier Report

Lab Reporting Batch ID: 14268C **Laboratory: FALSE**

EDD Filename: 1409064 RECREATE_rev **eQAPP Name: Rore_Modesto_GW_022315**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
MW-401-3Q14(Initial/TOT)	9/24/2014 3:15:00 PM	2-BUTANONE ACETONE	2.6 ug/L 11 ug/L	MW-26B-3Q14 MW-28B-3Q14 MW-306-3Q14 MW-30B-3Q14 MW-31A-3Q14 MW-34B-3Q14 MW-35B-3Q14 MW-65B-3Q14 MW-74B-3Q14

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-28B-3Q14(Reinjection-01/TOT)	ACETONE	9.7 ug/L	9.7U ug/L
MW-30B-3Q14(Initial/TOT)	ACETONE	4.5 ug/L	4.5U ug/L

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 14268C **Laboratory: FALSE**

EDD Filename: 1409064 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

Method: **524.2**

Matrix: **Water**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
MW-31A-3Q14MS	1,1,2-TRICHLORO-1,2,2-TRIFLUOF	153	158	73.00-139.00	-	1,1,2-TRICHLORO-1,2,2-TRIFLU(	
MW-31A-3Q14MSD	1,1-DICHLOROETHENE	130	131	80.00-126.00	-	1,1-DICHLOROETHENE	
(MW-31A-3Q14)	1,1-DICHLOROPROPENE	-	121	88.00-120.00	-	1,1-DICHLOROPROPENE	
	DICHLORODIFLUOROMETHANE	-	154	53.00-153.00	-	DICHLORODIFLUOROMETHANE	
	TERT-BUTYLBENZENE	-	119	89.00-118.00	-	TERT-BUTYLBENZENE	J+ (all detects)
	TETRACHLOROETHENE	-	124	87.00-118.00	-	TETRACHLOROETHENE	
	TRANS-1,2-DICHLOROETHENE	-	120	86.00-119.00	-	TRANS-1,2-DICHLOROETHENE	
	TRICHLOROETHENE	113	116	90.00-112.00	-	TRICHLOROETHENE	
	TRICHLOROFLUOROMETHANE	143	145	74.00-141.00	-	TRICHLOROFLUOROMETHANE	
	VINYL CHLORIDE	134	133	77.00-127.00	-	VINYL CHLORIDE	

Reporting Limit Outliers

Lab Reporting Batch ID: 14268C **Laboratory: FALSE**

EDD Filename: 1409064 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

Method: **524.2**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
MW-30B-3Q14	CHLOROFORM	J,C1	0.3	0.5	MRL	ug/L	J (all detects)
MW-31A-3Q14	CHLOROBENZENE	J,C1	0.2	0.5	MRL	ug/L	J (all detects)
MW-35B-3Q14	TRICHLOROETHENE	J,C1	0.2	0.5	MRL	ug/L	J (all detects)
MW-401-3Q14	2-BUTANONE	J	2.6	4.0	MRL	ug/L	J (all detects)
MW-65B-3Q14	TRICHLOROETHENE	J,C1	0.3	0.5	MRL	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 14268C **Laboratory: FALSE**

EDD Filename: 1409064 RECREATE **eQAPP Name: Rore_Modesto_GW_022315**

Method: 524.2
Matrix: Water

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	MW-34B-3Q14	MW-65B-3Q14			
TETRACHLOROETHENE	4.4	9.2	71	1.00	No Qualifiers Applied
TRICHLOROETHENE	0.5 U	0.3	200	1.00	

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	MW-26B-3Q14	MW-74B-3Q14			
TETRACHLOROETHENE	3.5	3.2	9	1.00	No Qualifiers Applied

Project Name and Number: R14S84 - Modesto Groundwater Jul-Sep 2014 Qtr Monitoring

LDC #: 33948D1 **VALIDATION COMPLETENESS WORKSHEET** Date: 4-3-15

SDG #: 14268C ADR Page: 1 of 2

Laboratory: USEPA Region 9 Laboratory Reviewer: AAL

2nd Reviewer: SM

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.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	SW/ A	& RSD ≤20 ICV ≤30 &
IV.	Continuing calibration	A	CCV ≤30 &
V.	Laboratory Blanks	N	
VI.	Field blanks	N	FB=10
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	FD=(1,2) (3,4)
XI.	Internal standards	A ~~N~~	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A ~~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; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
+1 1	MW-26B-3Q14	1409064-01	Water	09/24/14
+1 2	MW-74B-3Q14	1409064-02	Water	09/24/14
+1 3	MW-35B-3Q14	1409064-03	Water	09/24/14
+1 4	MW-65B-3Q14	1409064-04	Water	09/24/14
2 5	MW-28B-3Q14	1409064-05	Water	09/24/14
1 6	MW-34B-3Q14	1409064-06	Water	09/24/14
1 7	MW-31A-3Q14	1409064-07	Water	09/24/14
2 8	MW-30A-3Q14	1409064-08	Water	09/24/14
2 9	MW-30B-3Q14	1409064-09	Water	09/24/14
2 10	MW-401-3Q14	1409064-10	Water	09/24/14
1 11	MW-306-3Q14	1409064-11	Water	09/24/14
2 12	MW-307-3Q14	1409064-12	Water	09/24/14
13	MW-31A-3Q14MS	1409064-07MS	Water	09/24/14

LDC #: 33948D1 **VALIDATION COMPLETENESS WORKSHEET** Date: 4-3-15

SDG #: 14268C ADR Page: 2 of 2

Laboratory: USEPA Region 9 Laboratory Reviewer: AR

2nd Reviewer: SM

METHOD: GC/MS Volatiles (EPA Method 524.2)

	Client ID	Lab ID	Matrix	Date
14	MW-31A-3Q14MSD	1409064-07MSD	Water	09/24/14
15				
16	① B14I144			
17	② B14I149			
18				
19				
20				
21				
22				
23				
24				
25				

Notes:

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 #: 33948D1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Reviewer: AK
2nd Reviewer: SM

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
	9-30-14	093014W.M	E	31.47	1-4,6,7	J/UJ/~~A~~ P
	9-30-14	093014HV~~A~~W.M	F	34.57	5,8-12	↓

Enclosure II

EPA Level IV Data Validation Reports

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Modesto 3rd Qtr 2014

LDC Report Date: April 8, 2015

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: USEPA Region 9 Laboratory

Sample Delivery Group (SDG): 14267C

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW-1A-3Q14	1409058-03	Water	09/22/14
MW-2A-3Q14	1409058-04	Water	09/22/14
MW-4A-3Q14	1409058-07	Water	09/22/14
MW-4B-3Q14	1409058-08	Water	09/22/14
MW-4C-3Q14	1409058-09	Water	09/22/14
MW-8A-3Q14	1409058-12	Water	09/22/14

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) Method 524.2

All sample results were subjected to Level IV evaluation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

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.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, 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
09/25/14	Methylene chloride	31.47	MW-1A-3Q14 MW-2A-3Q14 MW-4A-3Q14 MW-4B-3Q14 MW-4C-3Q14 MW-8A-3Q14	UJ (all non-detects)	P

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample MW-304-3Q14 was identified as a trip blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
MW-8A-3Q14MS/MSD (MW-8A-3Q14)	Methylene chloride	72 (73-114)	-	UJ (all non-detects)	A
MW-8A-3Q14MS/MSD (MW-8A-3Q14)	1,1,2-Trichloro-1,2,2-trifluoroethane 1,1-Dichloroethene 1,1-Dichloropropene Trichloroethene tert-Butylbenzene	143 (73-139) - - - -	151 (73-139) 128 (80-126) 122 (88-120) 113 (90-112) 122 (89-118)	NA	-
MW-8A-3Q14MS/MSD (MW-8A-3Q14)	Chloroform Tetrachloroethene	- -	131 (85-117) 121 (87-118)	J+ (all detects) J+ (all detects)	A

Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples MW-2A-3Q14 and MW-98A-3Q14 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-2A-3Q14	MW-98A-3Q14	
Chloroform	3.2	2.9	10
Tetrachloroethene	6.1	5.4	12

XIII. Target Compound Identifications

All target compound identifications met validation criteria.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to initial calibration %RSD and MS/MSD %R, data were qualified as estimated in six samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Modesto 3rd Qtr 2014
Volatiles - Data Qualification Summary - SDG 14267C

Sample	Compound	Flag	A or P	Reason
MW-1A-3Q14 MW-2A-3Q14 MW-4A-3Q14 MW-4B-3Q14 MW-4C-3Q14 MW-8A-3Q14	Methylene chloride	UJ (all non-detects)	P	Initial calibration (%RSD)
MW-8A-3Q14	Methylene chloride	UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
MW-8A-3Q14	Chloroform Tetrachloroethene	J+ (all detects) J+ (all detects)	A	Matrix spike/Matrix spike duplicate (%R)

Modesto 3rd Qtr 2014
Volatiles - Laboratory Blank Data Qualification Summary - SDG 14267C

No Sample Data Qualified in this SDG

Modesto 3rd Qtr 2014
Volatiles - Field Blank Data Qualification Summary - SDG 14267C

No Sample Data Qualified in this SDG

LDC #: 33948B1

VALIDATION COMPLETENESS WORKSHEET

Date: 3-25-15

SDG #: 14267C

ADR IV

Page: 1 of 2

Laboratory: USEPA Region 9 Laboratory

Reviewer: Thr

2nd Reviewer: APL

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.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	SW / A	≤ 20 / ≤ 30
IV.	Continuing calibration	A	≤ 30
V.	Laboratory Blanks	A	~~Not reviewed for ADR validation.~~
VI.	Field blanks	ND	TB = 15
VII.	Surrogate spikes	A	~~Not reviewed for ADR validation.~~
VIII.	Matrix spike/Matrix spike duplicates	SW	Not reviewed for ADR validation.
IX.	Laboratory control samples	A	~~Not reviewed for ADR validation.~~ LCS
X.	Field duplicates	SW	FD = (4,5)
XI.	Internal standards	A	~~Not reviewed for ADR validation.~~
XII.	Compound quantitation RL/LOQ/LODs	A	Not reviewed for ADR validation.
XIII.	Target compound identification	A	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.~~

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; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
~~1~~	~~EW-02-3Q14~~	~~1409058-01~~	Water	09/22/14
~~2~~	~~EW-01R-3Q14~~	~~1409058-02~~	Water	09/22/14
3 3	MW-1A-3Q14**	1409058-03**	Water	09/22/14
4 3	MW-2A-3Q14**	1409058-04**	Water	09/22/14
5	~~MW-98A-3Q14~~	~~1409058-05~~	Water	09/22/14
6	~~MW-3A-3Q14~~	~~1409058-06~~	Water	09/22/14
7 2/3	MW-4A-3Q14**	1409058-07**	Water	09/22/14
8 1	MW-4B-3Q14**	1409058-08**	Water	09/22/14
9 1	MW-4C-3Q14**	1409058-09**	Water	09/22/14
~~10~~	~~MW-5A-3Q14~~	~~1409058-10~~	Water	09/22/14
~~11~~	~~MW-7A-3Q14~~	~~1409058-11~~	Water	09/22/14
12 3	MW-8A-3Q14**	1409058-12**	Water	09/22/14
~~13~~	~~MW-9B-3Q14~~	~~1409058-13~~	Water	09/22/14

LDC #: 33948B1

VALIDATION COMPLETENESS WORKSHEET

SDG #: 14267C

~~ADR~~/IV

Laboratory: USEPA Region 9 Laboratory

Date: 3-25-15

Page: 2 of 2

Reviewer: Th

2nd Reviewer: AYL

METHOD: GC/MS Volatiles (EPA Method 524.2)

	Client ID	Lab ID	Matrix	Date
14	MW-27B-3Q14	1409058-14	Water	09/22/14
15	MW-304-3Q14	1409058-15	Water	09/22/14
16	MW-8A-3Q14MS	1409058-12MS	Water	09/22/14
17	MW-8A-3Q14MSD	1409058-12MSD	Water	09/22/14
18				
19				
20				
21				
22				
23				
24				
25				

Notes:

1	B14I132-BLK1						
2	B14I134-BLK1						
3	B14I136-BLK1						

LDC #: 33948B1

VALIDATION FINDINGS CHECKLIST

Reviewer: JM
2nd Reviewer: MPL

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 #: 33948B1

VALIDATION FINDINGS CHECKLIST

Reviewer: 9m
2nd Reviewer: MC

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/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs 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.		✓		

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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. ~~Dichloromethane~~
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 #: 33948B1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Reviewer: [illegible]
2nd Reviewer: AZL

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
	9/25/14	092514W.M	~~PPPP~~ E	31.47	all + B14I132-BLK1, B14I136-BLK1	J/UJ/P (all ND, xcpt MS/MSD)

INICAL.1S5

LDC #: 33948B1

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

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 Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?
Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		16/17 E	~~PPP~~	72 (73-114)	( )	( )	12	J-/UJ/A (ND)
			TTT	143 (73-139)	151 (73-139)	( )		J+dets/A (ND)
			H	( )	128 (80-126)	( )		(ND)
			K	( )	131 (85-117)	( )		(det)
			QQ	( )	122 (88-120)	( )		(ND)
			S	( )	113 (90-112)	( )		(ND)
			AA	( )	121 (87-118)	( )		(det)
			CCC	( )	122 (89-118)	( )		(ND)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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LDC #: 33948B1

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: APL
2nd reviewer: SM

METHOD: GC/MS VOA (EPA Method 524.2)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L) 4	5	RPD
K	3.2	2.9	10
AA	6.1	5.4	12
~~E~~			

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

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LDC #: 33948B1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: [illegible]
2nd Reviewer: MPL

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
X = Mean of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (5.0 std)	Recalculated RRF (5.0 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	091914 HVM	9-19-14	(1st Internal Standard)						
			(2nd Internal Standard)						
	(HP5973H)		Tetrachloroethene (3rd Internal Standard)	0.451	0.451	0.425	0.425	10.58	10.62
2	092514W	9-25-14	Acetone (1st Internal Standard)	0.213	0.213	0.203	0.203	6.90	6.93
			Benzene (2nd Internal Standard)	1.012	1.012	0.982	0.982	1.96	1.79
	(AG5975D)		Toluene (3rd Internal Standard)	0.916	0.916	0.914	0.914	2.49	2.48
3			(1st Internal Standard)						
			(2nd Internal Standard)						
			(3rd Internal Standard)						
4			(1st Internal Standard)						
			(2nd Internal Standard)						
			(3rd Internal Standard)						

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 #: 33948B1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: JM
2nd Reviewer: MR

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 = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Initial Conc. (µg/L)	Reported Conc. (µg/L)	Recalculated Conc. (µg/L)	Reported %R	Recalculated %R
1	092514D17.D	9-25-14	Acetone (1st Internal Standard)	40.00	39.46	39.42	99	99
			Benzene (2nd Internal Standard)	5.00	4.74	4.74	95	95
	(AG5975D)		Toluene (3rd Internal Standard)	5.00	4.74	4.74	95	95
2	092514h02.d	9-25-14	(1st Internal Standard)					
			(2nd Internal Standard)					
	(HP5973H)		Tetrachloroethene (3rd Internal Standard)	5.000	5.299	5.299	106	106
3	092614D02.D	9-26-14	Acetone (1st Internal Standard)	40.00	37.90	37.86	95	95
			Benzene (2nd Internal Standard)	5.00	4.81	4.81	96	96
	(AG5975D)		Toluene (3rd Internal Standard)	5.00	4.83	4.83	97	97
4			(1st Internal Standard)					
			(2nd Internal Standard)					
			(3rd Internal Standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33948B1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: [illegible]
2nd reviewer: APL

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: 8

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	
1,2-Dichloroethane-d4	5.000	5.04	101	101	Ø
Toluene-d8	↓	4.85	97	97	Ø
Bromofluorobenzene	↓	4.71	94	94	Ø
1,2-Dichlorobenzene-d4	↓	4.81	96	96	Ø

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	

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LDC #: 33948B1

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: Gm
2nd Reviewer: MK

METHOD: GC/MS VOA (EPA Method 524.2)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration, SA = Spike added, SC = Sample concentration

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD sample: 16|17

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene	5.00	5.00	ND	6.17	6.41	123	123	128	128	4	4
Trichloroethene	↓		ND	5.46	5.65	109	109	113	113	3	3
Benzene			ND	5.15	5.36	103	103	107	107	4	4
Toluene			ND	5.16	5.47	103	103	109	109	6	6
Chlorobenzene			ND	5.07	5.34	101	101	107	107	5	5

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33948B1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: [illegible]
2nd Reviewer: MYL

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 LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboraotry control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: B14I136-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	4.95	NA	99	99				
Trichloroethene	↓		4.66		93	93				
Benzene	↓		4.81		96	96				
Toluene	↓		4.83		97	97				
Chlorobenzene	↓		4.86		97	97				

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 #: 33948B1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method 524.2)

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. 9, Tetrachloroethene

Conc. = $\frac{(116982)(5.00)(1)}{(133486)(0.470)(1)(\quad)}$

= 9.322995 ≃ 9.3µg/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

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Appendix E

Operation and Maintenance Process Logs

Appendix D

System Uptime and Shutdown Tables

Appendix D

System Uptime and Shutdown Tables

This section presents quantitative results on operational time for the groundwater treatment system (GWTS) system. The soil vapor extraction system was shutdown 13 January 2014 for a rebound evaluation. Operation time and percentage of uptime for this reporting period (July 1 through September 31, 2014) are as follows:

Remedial System	Total Operation Hours	Percentage of Operation
Groundwater Treatment	2,184	99%

Tables D-1 through D-3 presents the GWTS shutdown summaries for July, August, and September 2014, respectively.

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Table D-1. GWTS Shutdown Summary, July 2014			
7/8/14-7/9/14	13.12	High pressure across bag filters pre-stripper.	
7/17/14-7/17/14	1.08	Installed a Y-strainer at effluent.	
Total	14.2	Hours in month: 744	Percent operational: 98

GWTS = groundwater treatment system

Table D-2. GWTS Shutdown Summary, August 2014			
Date	**Duration, hours**	**Reason**	
8/15/14-8/15/14	1.5	High stripper level.	
8/17/14-8/18/14	5.6	High LGAC pressure.	
Total	7.1	Hours in month: 744	Percent operational: 96

GWTS = groundwater treatment system
LGAC = liquid-phase granular-activated carbon

Table D-3 GWTS Shutdown Summary, September 2014			
Date	**Duration, hours**	**Reason**	
9/8/14-9/8/14	1.5	Removed defective isolation valve to LGAC influent.	
9/18/14-9/18/14	1.33	Installed new high pressure switch at LGAC influent.	
Total	2.83	Hours in month: 720	Percent operational: > 99

GWTS = groundwater treatment system
LGAC = liquid-phase granular-activated carbon
> = greater than

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Date: Thursday, July 10, 2014
Weather: Sunny
Sampler: Tamrah Headrick

SAMPLE COLLECTION RECORD
MODESTO SUPERFUND SITE

Time	Description	Totalizer Reading (gallons)	Flow (gpm)
1110	GWTS Effluent	32734	54

Time	Sample Location - Test Method	Sample Description	LOCID	No. of Containers	Container Type	Preservative	pH	Cond	Temp
940	EFF E524.2	Effluent	SP-07	3	40 ml VOA	HCL	8.05	1070	21.5
940	EFF D5174	Effluent	SP-07	1	250 ml Poly	HNO3	8.05	1070	21.5
940	EFF SM2540C	Effluent	SP-07	1	1 Liter Poly	None	8.05	1070	21.5
940	EFF SM2540D, SM5210B	Effluent	SP-07	1	1 Liter Poly	None	8.05	1070	21.5
959	IEXEFF D5174	IEX Eff	SP-10	1	250 ml Poly	HNO3	8.18	1070	21.3
1002	IEX Mid D5174	IEX Mid	SP-06	1	250 ml Poly	HNO3	8.23	1070	21.2
1007	CRB EFF E524.2	CRB Eff		1	40 ml VOA	HCL	8.27	1060	21.2
1012	CRB Mid E524.2	CRB Mid	SP-04	5	40 ml VOA	HCL	8.33	1060	21.2
1019\1200FD	CRB INF E524.2	CRB INF	SP-03	3	40 ml VOA	HCL	8.45	1060	21.1
1028	GWTS-INF E524.2	Influent	SP-01	3	40 ml VOA	HCL	7.41	1090	21
1028	GWTS-INF D5174	Influent	SP-01	1	250 ml Poly	HNO3	7.41	1090	21
900	MW-301 E524.2	TB	TB	2	40 ml VOA	HCL	--	--	--
1133	GWTS Stack TO-15	GWTP VGAC Effluent	SP-09	1	1 Liter Summa	None	-30 in. Hg	can # 42413	
1136	GWTS Pr GAC TO-15	GWTP VGAC Influent	SP-08	1	1 Liter Summa	None	-30 in. Hg	can # 8008	

Sampler Signature	Date

Notes: FB MW-401-3Q14 taken near EFF at 0954.

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

			Hour Meter	Utility Power (Groundwater)		System Influent				Anti-Scalent Sequestrant	Air Stripper Water						
						Flow	Pressure	Total Flow	pH		Influent Pressure	Effflient 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	PSI	GPM	Pump P-3 PSI	Bag Filter F-2 PSI	PSI	GPM
TH	7/3/14	0853	68751	15.98	62139	47	8	—	6.96	20	7.4	5.9	52	45	44.6	42.4	63
TH	7/10/14	1110	68913	15.98	63740	47	8	—	7.41	25	7.5	6.2	52	45	44.8	42.7	63
TH	7/17/14	1030	69079	15.98	65382	47	8	—	6.86	28	7.6	5.6	52	48	46.8	44.5	62
TH	7/24/14	1206	69248	15.98	67202	48	5	—	7.14	24	8.7	6.7	54	49	48.1	45.9	62
TH	7/31/14	0913	69413	15.98	69332	50	5	—	6.97	20	7.8	6.8	56	48.5	47.5	45.5	62
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 DP	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	in H2O	pH	Gallons	mR/hr Peak	mR/hr Peak
6.5	4	0	0	69.7	570	38	34.5	28	20.5	10	43	54	N\A	7.99	28376	0	0
7	4.5	0	0	70.4	545	40	35	27.5	20.5	10	43	54	N\A	8.05	32734	0	0
7	5	0	0	70.1	570	43	38	31	24	14	43	54	N\A	8.00	37241	0	0
7	4.5	0	0	72.2	565	43	38	31	24.5	14	43	54	N\A	8.20	41877	0	0
7	5	0	0	70.8	575	43.5	39	31	24.5	13	43	53	N\A	7.98	46636	0	0
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	ppm	Stack °F	CFM	mR/hr Peak	mR/hr Peak
—	—	R	—	E	—	S	—	O	—	U	—	N	—	D	—	—	—
		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: _____

Utility Power (SVE)	Date	kW	kWh
	7/3/14	8.00	1506
	7/10/14	8.00	1623

Date	kW	kWh
7/17/14	8.00	1730
7/24/14	8.00	1829
7/31/14	8.00	1953

URS Corporation
Modesto Superfund Site
Site Inspections

Task Description	7/3/14 TH	7/10/14 TH	7/17/14 TH	7/24/14 TH	7/31/14 TH
WEEKLY	Task Performed (Technician Initials or Value)				
Groundwater Treatment System					
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	Rebound	"	"	"	"
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	7/3/14	TH	
Inspect EW-1R vault & ECJ-02	7/17/14	GB	
Inspect VI Mitigation operations - "Part House"	7/24/14	TH	
Replace Auto Dialer Batteries (if necessary)	—	—	
SEMI-ANNUAL			
Interlock Checks Groundwater	4/24/14	TH	
Interlock Checks SVE	10/17/13	TH	
ANNUAL			
Collect Amp Reads	—	—	—
Instrument Calibration			
System Effluent Flow Meter (Performed in June and December)	6/19/14	TH	

Notes:

Reviewed by:_____ Date:_____

URS Group
Preventative and Corrective Maintenance Log
Modesto Superfund Site

Site Name:_____
Period:_____ to_____
(month/day/year) (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.)
				Y / N			Y / N		
				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:_____

Shutdown Date: 7/8/14 Startup Date: 7/9/14
Shutdown Time: 1909 Startup Time: 0816 13 hr. 7m.
Shutdown Purpose or Cause: High pressure accross bag filters pre Stripper
Corrective Actions Taken (if shutdown was unplanned): Changed out bag filters and scheduled changeout for twice weekly. Too much sediment in EW-02.
Performed By: TA

Shutdown Date: 7/17/14 Startup Date: 7/17/14
Shutdown Time: 0740 Startup Time: 0930 1 hr. 50m.
Shutdown Purpose or Cause: planned shutdown to install y-strainer @ system effluent.
Corrective Actions Taken (if shutdown was unplanned): Planned.
Performed By: GB

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: _____

Date: Thursday, August 07, 2014
Weather: Sunny
Sampler: Tamrah Headrick

SAMPLE COLLECTION RECORD
MODESTO SUPERFUND SITE

Time	Description	Totalizer Reading (gallons)	Flow (gpm)
846	GWTS Effluent	51425	53

Time	Sample Location-Test Method	Sample Description	LOCID	No. of Containers	Container Type	Preservative	pH	Cond	Temp
944	EFF E524.2	Effluent-NS	SP-07	3	40 ml VOA	HCL	8.05	1060	21.7
944	EFF SM2540C	Effluent-NS	SP-07	1	1 Liter Poly	None	8.05	1060	21.7
944	EFF SM2540D, SM5210B	Effluent-NS	SP-07	1	1 Liter Poly	None	8.05	1060	21.7
950	IEXEFF D5174	IEX Eff	SP-10	1	250 ml Poly	HNO3	8.08	1060	21.7
953	IEX Mid D5174	IEX Mid	SP-06	1	250 ml Poly	HNO3	8.11	1070	21.7
956	Pr IEX D5174	IEX Inf		1	250 ml Poly	HNO3	8.15	1060	21.7
1002/1200FD	CRB Mid E524.2	CRB Mid	SP-04	3	40 ml VOA	HCL	8:25	1060	21.7
1007	CRB INF E524.2	CRB INF	SP-03	3	40 ml VOA	HCL	8.42	1050	21.7
1013	GWTS-INF E524.2	Influent-NS	SP-01	3	40 ml VOA	HCL	7.34	1080	21.3
915	MW-302 E524.2	TB	TB	2	40 ml VOA	HCL	--	--	--
1109	GWTS Stack TO-15	GWTP VGAC Effluent-NS	SP-09	1	1 Liter Summa	None	-30 in. Hg	can # 35621	
1111	GWTS Pr GAC TO-15	GWTP VGAC Influent-NS	SP-08	1	1 Liter Summa	None	-30 in. Hg	can # 37662	

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

URS Corporation
Modesto, Superfund Site
Process Data Sheet

Groundwater Treatment System

						System Influent				Anti-Scalent Sequestrant	Air Stripper Water						
			Hour Meter	Utility Power (Groundwater)		Flow	Pressure	Total Flow	pH		Influent Pressure	Effflluent Pressure	Flow	Pressure	Influent Pressure	Effluent Pressure	Flow
										T-3	Bag Filter F-1			Pump P-3	Bag Filter F-2		
Initials	Date	Time	Hrs.	kW	kWh	GPM	PSI	Gallons	pH	Gallons	PSI	PSI	GPM	PSI	PSI	PSI	GPM
TH	8/7/14	0846	69581	15.98	71499	50	8	—		16.5	8.2	6.0	56	50	47.8	45.4	63
GB	8/14/14	0833	69749	—	—	48	8	—	—	20	8.5	7.3	64	50	56	53	64
GB	8/21/14	0841	69887	15.98	75437	48	11	—	7.67	17	7	6	54	52	58	54	64
GB	8/28/14	0851	70054	—	—	49	11	—	7.08	23.5	7	6	56	53	58	55	65
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 DP	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	in H2O	pH	Gallons x 100	mR/hr Peak	mR/hr Peak
7	5	0	0	70.4	570	44	40	31.5	25	14	43	53	N\A	—	51425	0	0
7	5	—	—	70.4	565	44	40	32	25	14	44	54	N\A	—	56275	—	—
7	5.5	—	—	69.9	545	46	42	33	25.5	14	45	55	N\A	8.31	60727	—	—
7	5	—	—	70.2	565	43.5	40	33.5	25.5	14	45	55.5	N\A	8.18	65035	—	—
													N\A				
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	1.0-3	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
												VGAC Vessel		Stack			
Date	Time	In. H2O	°F	CFM	Yes/No	Hrs.	in. H2O	°F	CFM	In. H2O	in. H2O	ppm	ppm	°F	CFM	mR/hr Peak	mR/hr Peak
—	—	R	—	E	—	B	—	O	—	U	—	N	—	D	—	—	—
		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:_____

Utility Power (SVE)	Date	kW	kWh
	8/7/14	8.00	2059

Date	kW	kWh

URS Group
Preventative and Corrective Maintenance Log
Modesto Superfund Site

Site Name: Modesto GWTP
Period: 8/1/14 (month/day/year) to 8/31/14 (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.)
8/7	TH	69581	Bag Filter Change	Y (N)			Y / N		
8/14	GB	69749	Bag Filter Change	Y (N)			Y / N		
8/21	GB	69887	Bag Filter Change	Y (N)			Y / N		
8/21	GB	69887	Removed and Patched IX INF. Valve	Y (N)			Y / N		
8/28	GB	70054	Bag Filter Change	Y (N)			Y / N		
8/14	GB	69749	Replaced LGAC Pressure Gauges	Y (N)			Y / N		

URS Group
Preventative and Corrective Maintenance Log
Modesto Superfund Site

Site Name: Modesto GWTP

Shutdown Date: 8/15/14 Startup Date: 8/15/14
Shutdown Time: 1007 Startup Time: 1138
Shutdown Purpose or Cause:
High Stripper Level
Corrective Actions Taken (if shutdown was unplanned):
Adjusted Flows in System
Performed By:

Shutdown Date: 8/18/14 Startup Date: 8/18/14
Shutdown Time: 7:54 Startup Time: 13:30
Shutdown Purpose or Cause:
High LGAC Pressure
Corrective Actions Taken (if shutdown was unplanned):
Adjusted Flows in System
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	8/7/14	8/14/14	8/21/14	8/28/14	/ /
WEEKLY	Task Performed (Technician Initials or Value)				
Groundwater Treatment System					
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	8/21/14	GD	
Inspect EW-1R vault	8/14/14	GD	
Inspect VI Mitigation operations - "Part House"	8/14/14	GD	
Replace Auto Dialer Batteries (if necessary)	—	—	
SEMI-ANNUAL			
Interlock Checks Groundwater	4/24/14	TH	
Interlock Checks SVE	6/15/13	TH	
ANNUAL			
Collect Amp Reads	—	—	—
Instrument Calibration			
System Effluent Flow Meter (Performed in June and December)	6/19/14	TH	

Notes:

Reviewed by:_____ Date:_____

Date: Thursday, September 04, 2014
Weather: Sunny
Sampler: George Bradshaw

SAMPLE COLLECTION RECORD
MODESTO SUPERFUND SITE

Time	Description	Totalizer Reading (gallons)	Flow (gpm)
903	GWTS Effluent	7,002,400	55

Time	Sample Location - Test Method	Sample Description	LOCID	No. of Containers	Container Type	Preservative	pH	Cond	Temp
945	EFF E524.2	Effluent-NS	SP-07	3	40 ml VOA	HCl	8.19	1110	21.3
945	EFF SM2540C	Effluent-NS	SP-07	1	1 Liter Poly	None	8.19	1110	21.3
945	EFF SM2540D, SM5210B	Effluent-NS	SP-07	1	1 Liter Poly	None	8.19	1110	21.3
1000	IEXEFF D5174	IEX Eff	SP-10	1	1 Liter Poly	HNO3	8.22	1060	21.3
1005	IEX Mid D5174	IEX Mid	SP-06	1	1 Liter Poly	HNO3	8.26	1070	20.8
1010	Pre IEX D5174	Pre IEX	SP-05	1	1 Liter Poly	HNO3	8.3	1090	21.4
1015	CRB Mid E524.2	CRB Mid	SP-04	3	40 ml VOA	HCl	8.42	1070	21.2
1025	CRB INF E524.2	CRB INF	SP-03	3	40 ml VOA	HCl	8.54	1090	21.3
935	GWTS-INF E524.2	Influent-NS	SP-01	3	40 ml VOA	HCl	7.19	1080	21.1
900	MW-303-3Q14 E524.2	TB	TB	2	40 ml VOA	HCl	na	na	na
1050	GWTS Stack TO-15	GWTP VGAC Effluent-NS	SP-09	1	1 Liter Summa	None	#35562	start -29	end -5
1100	GWTS Pr GAC TO-15	GWTP VGAC Influent-NS	SP-08	1	1 Liter Summa	None	#11833	start -29	end -5

Sampler Signature	Date
George Bradshaw	9/4/2014

Notes:

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

clean

clean

Clean Retenet

Groundwater Treatment System

						System Influent				Anti-Scalent Sequestrant	Air Stripper Water						
			Hour Meter	Utility Power (Groundwater)		Flow	Pressure	Total Flow	pH		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
GB	9/4/14	0905	70223	15.98	79791	49	11	—	7.23	19	7	6	54	53	58	55	65
GB	9/8/14	0956	70319	—	—	50	11.5	—	—	29	7	6	56	52.5	58	55	64
GB	9/18/14	0900	70558	15.98	84164	49	13.0	—	7.19	24	7	6	56	52	63	55	64
GB	9/25/14	0935	70727	15.98	86300	49	13.0	—	6.88	20	7.0	6	56	53	63	55	65
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 DP	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	in H2O	pH	Gallons ×100	mR/hr Peak	mR/hr Peak
7	5	0.2	0	70.1	520	44	40	33	26	14	45	55	N\A	8.36	70024	—	—
7	5	—	—	—	—	43.5	40	33.5	26	17	45	55	N\A	—	72899	—	—
7	4.5	—	—	70.3	565	43	39	33	25.5	13	44	55	N\A	8.04	79973	—	—
7	5	—	—	69.6	535	43.5	40	33.5	25.5	13	44	55	N\A	8.22	84961	—	—
													N\A				
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	30-50	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
R	E	B	O	U	N	D											
		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: _____

Utility Power (SVE)	Date	kW	kWh

Date	kW	kWh

URS Group
Preventative and Corrective Maintenance Log
Modesto Superfund Site

Site Name: Modesto GW
Period: 9/1/14 to 9/30/14
(month/day/year) (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.)
9/8/14	GB	70319	Removed Bad IX Isolation Valve	Y (N)			Y / N		
9/8/14	GB	7039	Changed Bag Filters	Y (N)			Y / N		
9/18/14	GB	84164	Installed High Pressure Switch LGAC	Y (N)			Y / N		
9/18/14	GB	84164	Changed Bag Filters	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 GW

Shutdown Date: 9/8/14 Startup Date: 9/8/14
Shutdown Time: 11:15 Startup Time: 12:45
Shutdown Purpose or Cause:
Maintenance Shutdown to remove defective isolation valve to IX Vessels.
Corrective Actions Taken (if shutdown was unplanned):
Performed By:

Shutdown Date: 9/18/14 Startup Date: 9/18/14
Shutdown Time: 11:10 Startup Time: 12:30
Shutdown Purpose or Cause:
Maintenance shutdown to install new High Pressure Switch at LGAC Influent.
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:

Shutdown Date: Startup Date:
Shutdown Time: Startup Time:
Shutdown Purpose or Cause:
Corrective Actions Taken (if shutdown was unplanned):
Performed By:

Reviewed by:_____ Date: _____

9/4/14

0900 - GB Arrived at Site. System operating normally.
0910 - EW-2: 40805240 gal Pressure: 24 psi Flow: 23.5 gpm
0930 - EW-1: 05317470 gal, Pressure: 27, Flow: 21, (inc. to 24 gpm)
0930 - Influent Flow Rotometer = 49.5 gpm vs. 27.5 total of wells (off by 2 gpm)

9/4/14

0900 - Arrived at Site. System operating normal.

Samples	Time	Parameters
GWTS - INF	0935	7.19, 21.1°, 1080 µS
CRB - IN	1025 ~~0945~~	~~8.19, 21.3, 1110 µS~~ 8.54, 21.3, 1090
CRB - MID	1015	8.42, 21.2, 1070 µS
PTC - IEX	1010	8.30, 21.4, 1090 µS.
IEX - MID	1005	8.26, 20.8, 1070
IEX - EFF	1000	8.22, 21.3, ~~1000~~ 1060 µS
EFF	0945	8.19, 21.3, 1110 µS
TB	0900	n/a

Vapor	Time	#	Vac Start	Vac End
EFF	1050	35562	-29	-5
IN	1100	11833	-29	-5

9/8/14

09:10 EW-2 41170800 gal, 25 psi, 24.0 gpm
09:30 EW-1 05693000 gal, 57 psi 24.0 gpm

9/18/14

0812 - Arrived at EW-2 41501900 gal. 28 psi.
Flow Rate = 23 gpm
0825 - Arrived at EW-1 06029300 gal. 59 psi
Flow Rate = 23.5 gpm

9/25

0930 - Arrived at GWTP. System Running Ok.
Run Time = 70727
System Shutdown 11:10 to 12:30
Due to High Pressure Alarm Installation

URS Corporation
Modesto Superfund Site
Site Inspections

Task Description	9/4/ 2014	9/8/ 2014	9/18/ 2014	9/25/ 2014	/ /
WEEKLY	Task Performed (Technician Initials or Value)				
Groundwater Treatment System					
Record Process Logs	GB	GB	GB	GB	
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	Rebound				
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	9/8/14	GB	
Inspect EW-1R vault	9/8/14	GB	
Inspect VI Mitigation operations - "Part House"	9/18/14	GB	
Replace Auto Dialer Batteries (if necessary)	OK	GB	
SEMI-ANNUAL			
Interlock Checks Groundwater	4/24/14	TH	
Interlock Checks SVE	6/12/13	TH	
ANNUAL			
Collect Amp Reads			
Instrument Calibration			
System Effluent Flow Meter (Performed in June and December)	6/19/14	TH	

Notes:

Reviewed by:_____ Date:_____

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Appendix F

Operational History

Appendix F

Operational History

This section presents a summary of operation and maintenance events performed on the remedial treatment systems. Table F-1(a) (1 July 1 2001 through 31 January 2010) lists the event, start and end dates, and the type of maintenance (Routine, Non-routine, Reimbursable, or Optimization) that was performed. Table F-1(b) (1 March 2010 through 30 September 2014) lists the event and start and end dates.

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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

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TABLE F-1(b)

OPERATIONAL HISTORY
GROUNDWATER TREATMENT AND SOIL VAPOR EXTRACTION SYSTEM
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

No.	Event	Start Date	End Date
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
3	Installed a vacuum break anti-syphon valve at effluent of the LGAC vessels.	18-Mar-10	18-Mar-10
4	Performed a backwash of the primary LGAC vessel.	01-Apr-10	01-Apr-10
5	Performed a backwash of the secondary LGAC vessel.	29-Apr-10	29-Apr-10
6	Replaced a dry disconnect coupling at the effluent of the primary IX vessel.	27-May-10	27-May-10
7	Calibrated and certified the sewer outfall flow meter.	09-Jun-10	09-Jun-10
8	Installed an automatic composite sampler at GWTS effluent.	20-Jul-10	20-Jul-10
9	Performed a changeout of the GWTS airstripper and SVE system VGAC.	19-Aug-10	19-Aug-10
10	Performed a backwash of the primary LGAC vessel.	21-Oct-10	21-Oct-10
11	Tested GWTS interlock controls.	03-Nov-10	03-Nov-10
12	Tested SVE system interlock controls.	03-Nov-10	03-Nov-10
13	Performed a changeout of the resin in the primary IX system vessel.	09-Dec-10	09-Dec-10
14	Calibrated and certified the sewer outfall flow meter.	09-Dec-10	09-Dec-10
15	Lubricated all pumps and motors.	21-Jan-11	21-Jan-11
16	Performed a changeout of the resin in the primary and secondary IX system vessel.	24-Feb-11	24-Feb-11
17	Calibrated the pressure sensors on the GWTS bag filters.	24-Feb-11	24-Feb-11
18	Performed a backwash of the primary LGAC vessel.	26-May-11	26-May-11
19	Calibrated and certified the sewer outfall flow meter.	04-Jun-11	04-Jun-11
20	Replaced sequestrant relay and cleared chemical blockage in pump and tubing.	06-Sep-11	06-Sep-11
21	Replaced all tubing on sequestrant delivery system. Disassembled chemical dosing pump. Cleaned out pump and tank and reassembled. Filtered existing sequestrant product for reuse.	08-Sep-11	08-Sep-11
22	Replaced gasket on primary LGAC.	28-Nov-11	28-Nov-11
23	Performed a changeout of the resin in the primary IX system vessel.	15-Dec-11	15-Dec-11
24	Calibrated and certified the sewer outfall flow meter.	21-Dec-11	21-Dec-11
25	Inspected IX resin vessels and installed new lid gaskets.	16-Feb-12	16-Feb-12
26	Changed bag filters.	08-Mar-12	08-Mar-12
27	Changed bag filters.	15-Mar-12	15-Mar-12
28	Replaced high level float switch in influent equalization tank.	20-Mar-12	20-Mar-12
29	New stainless steel float switches installed in influent equalization tank.	16-Mar-12	20-Mar-12
30	Changed bag filters.	02-Apr-12	02-Apr-12
31	Changed bag filters.	09-Apr-12	09-Apr-12
32	Changed bag filters.	24-Apr-12	24-Apr-12
33	Performed a changeout of the resin in the secondary IX system vessel.	17-May-12	17-May-12
34	Performed interlock alarm testing for proper functionality.	24-May-12	24-May-12
35	Replaced high level float switch in influent equalization tank.	30-May-12	30-May-12
36	Replaced all IX vessel hose connections.	14-Jun-12	14-Jun-12
37	Replaced effluent Y-strainer.	18-Jun-12	18-Jun-12
38	Cleaned out all flow indicators and meters.	19-Jun-12	19-Jun-12
39	Disassembled and cleaned airstripper.	20-Jun-12	20-Jun-12
40	Added air filter element to external air stripper inlet port.	21-Jun-12	21-Jun-12
41	Utility power meter replaced to separate usage billing for SVE unit.	25-Jun-12	25-Jun-12

TABLE F-1(b)

OPERATIONAL HISTORY
GROUNDWATER TREATMENT AND SOIL VAPOR EXTRACTION SYSTEM
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

No.	Event	Start Date	End Date
42	Installed new effluent pump in GWTS.	03-Jul-12	03-Jul-12
43	Installed external filtering system to process quarterly monitoring purge water.	25-Jul-12	25-Jul-12
44	Installation of EW-02 included new well, electrical, vault, and conveyance line. Work will continue in August.	01-Jul-12	31-Jul-12
45	Completed electrical, vault, and conveyance line for EW-02.	01-Aug-12	31-Aug-12
46	Shut off EW-01R to discharge from EW-02 frac tank.	01-Aug-12	01-Aug-12
47	Shut down system due to leak in hose between LGACs. Repaired hose and restarted.	09-Aug-12	09-Aug-12
48	Changed bag filters.	06-Sep-12	06-Sep-12
49	Shut down system for electrical modification to EW-02.	13-Sep-12	13-Sep-12
50	Changed bag filters and replaced sight glass tubing for stripper.	13-Sep-12	13-Sep-12
51	Changed bag filters.	20-Sep-12	20-Sep-12
52	Changed bag filters.	21-Sep-12	21-Sep-12
53	Replaced three floats in the stripper sump and changed bag filters.	25-Sep-12	25-Sep-12
54	Shut down for influent tank cleanout.	04-Oct-12	04-Oct-12
55	Shut down system to install Timemark at EW-02.	18-Oct-12	18-Oct-12
56	Shut down system to clean out stripper sump.	25-Oct-12	25-Oct-12
57	Changed bag filters.	01-Nov-12	01-Nov-12
58	Changed bag filters.	14-Nov-12	14-Nov-12
59	Replaced four hoses: two at the influent and effluent of the post airstripper bag filter housing, one at the GAC-2 (lead LGAC vessel) influent, and one at the GAC-3 (lag LGAC vessel) effluent.	27-Nov-12	27-Nov-12
60	Changed bag filters.	29-Nov-12	29-Nov-12
61	Calibrated the sewer outfall flow meter. Changed bag filters.	11-Dec-12	11-Dec-12
62	Changed bag filters due to processing purge water from sampling event.	14-Dec-12	14-Dec-12
63	Installed new exhaust fan/motor assembly in GWTS trailer. Changed bag filters due to processing water from sampling event.	20-Dec-12	20-Dec-12
64	Changed bag filters.	03-Jan-13	03-Jan-13
65	GWTS media exchange of LGAC, VGAC, and IX vessels. Spent media removed from site by Baker Filtration. SVE system knockout pot emptied.	09-Jan-13	09-Jan-13
66	Changed bag filters.	16-Jan-13	16-Jan-13
67	Primed and painted connex.	17-Jan-13	18-Jan-13
68	Changed bag filters.	30-Jan-13	30-Jan-13
69	LGAC manway gasket replaced and bag filters changed.	14-Feb-13	14-Feb-13
70	Air stripper tray gaskets replaced and the trays and sump were cleaned.	19-Feb-13	19-Feb-13
71	Changed bag filters.	28-Feb-13	28-Feb-13
72	VGAC inlet flange gasket replaced and bag filters changed.	14-Mar-13	14-Mar-13
73	Replaced SVE system blower motor fan.	21-Mar-13	21-Mar-13
74	Changed bag filters.	04-Apr-13	04-Apr-13
75	Changed the two bag filters prior to the stripper.	15-Apr-13	15-Apr-13
76	Changed the bag filter at the stripper effluent.	25-Apr-13	25-Apr-13
77	Changed bag filters.	09-May-13	09-May-13
78	Installed motion detector flood lights.	23-May-13	23-May-13
79	Changed bag filters. Calibrated the sewer outfall flow meter.	30-May-13	30-May-13
80	Primary IX media exchange. Changed bag filters.	13-Jun-13	13-Jun-13
81	Cleaned out influent tank.	20-Jun-13	20-Jun-13
82	Changed bag filters.	27-Jun-13	27-Jun-13

TABLE F-1(b)

OPERATIONAL HISTORY
GROUNDWATER TREATMENT AND SOIL VAPOR EXTRACTION SYSTEM
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

No.	Event	Start Date	End Date
83	Replaced timing relay on blower.	03-Jul-13	03-Jul-13
84	Changed bag filters.	11-Jul-13	11-Jul-13
85	Changed bag filters.	15-Jul-13	15-Jul-13
86	Changed bag filters.	19-Jul-13	19-Jul-13
87	Changed bag filters.	26-Jul-13	26-Jul-13
88	Changed bag filters. Replaced auto-sampler refrigerator.	02-Aug-13	02-Aug-13
89	Changed bag filters.	05-Aug-13	05-Aug-13
90	Changed bag filters.	08-Aug-13	08-Aug-13
91	Changed bag filters.	19-Aug-13	19-Aug-13
92	Changed bag filters.	22-Aug-13	22-Aug-13
93	Changed bag filters.	05-Sep-13	05-Sep-13
94	Changed bag filters.	17-Sept-13	17-Sept-13
95	Changed bag filters. Vacuumed out influent tank and stripper sump. Air relief fittings tightened at pipeline after carbon and before IX vessel.	19-Sep-13	19-Sep-13
96	Changed bag filters. New clamps, gaskets, handles, and bolts installed at all three filter assembly locations.	27-Sep-13	27-Sep-13
100	Changed bag filters.	03-Oct-13	03-Oct-13
101	Drained primary LGAC for media exchange.	09-Oct-13	09-Oct-13
102	GWTS media exchange of primary LGAC. Spent media removed from site by Baker Filtration.	10-Oct-13	10-Oct-13
103	Changed bag filters.	17-Oct-13	17-Oct-13
104	Changed bag filters.	28-Oct-13	28-Oct-13
105	Changed bag filters.	07-Nov-13	07-Nov-13
106	Changed bag filters.	14-Nov-13	14-Nov-13
107	Changed bag filters.	21-Nov-13	21-Nov-13
108	Changed bag filters.	26-Nov-13	26-Nov-13
109	Changed bag filters.	05-Dec-13	05-Dec-13
110	Changed bag filters.	12-Dec-13	12-Dec-13
111	Calibrated the sewer outfall meter.	19-Dec-13	19-Dec-13
112	GWTS media exchange of LGAC, VGAC, and IX vessels. Spent media removed by Baker Filtration. Changed bag filters.	20-Dec-13	20-Dec-13
113	Changed bag filters.	26-Dec-13	26-Dec-13
114	Changed bag filters.	30-Dec-13	30-Dec-13
115	Changed bag filters.	01-Jan-14	01-Jan-14
116	Changed bag filters.	16-Jan-14	16-Jan-14
117	Changed bag filters.	23-Jan-14	23-Jan-14
118	Changed bag filters.	30-Jan-14	30-Jan-14
119	Changed bag filters.	06-Feb-14	06-Feb-14
120	Changed pre-stripper bag filters only.	11-Feb-14	11-Feb-14
121	Changed bag filters.	13-Feb-14	13-Feb-14
122	Changed bag filters twice due to cloudy influent tank after shutting down to recalibrate pressure sensors.	20-Feb-14	20-Feb-14
123	Changed pre-stripper bag filters twice.	24-Feb-14	24-Feb-14
124	Changed bag filters.	26-Feb-14	26-Feb-14
125	Changed bag filters. Replaced GWTS VGAC flange, cleaned a rotometer, and calibrated pressure transmitters.	03-Mar-14	03-Mar-14
126	Changed bag filters.	05-Mar-14	05-Mar-14
127	Changed only 3 bag filters.	06-Mar-14	06-Mar-14
128	Changed only 3 bag filters.	10-Mar-14	10-Mar-14

TABLE F-1(b)

OPERATIONAL HISTORY
GROUNDWATER TREATMENT AND SOIL VAPOR EXTRACTION SYSTEM
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

No.	Event	Start Date	End Date
129	Changed only 3 bag filters.	13-Mar-14	13-Mar-14
130	Changed bag filters.	20-Mar-14	20-Mar-14
131	Changed pre-stripper bag filters.	24-Mar-14	24-Mar-14
132	Changed only 3 bag filters.	28-Mar-14	28-Mar-14
133	Changed bag filters.	2-Apr-14	2-Apr-14
134	Changed pre-stripper bag filters.	7-Apr-14	7-Apr-14
135	Changed bag filters.	10-Apr-14	10-Apr-14
136	Changed bag filters.	17-Apr-14	17-Apr-14
137	Changed bag filters.	24-Apr-14	24-Apr-14
138	Changed bag filters.	1-May-14	1-May-14
139	Changed bag filters.	8-May-14	8-May-14
140	Changed bag filters.	15-May-14	15-May-14
141	GWTS media exchange of the primary LGAC and IX vessels. Spent media removed by Baker Filtration. Repaired outlet screen in vessel IX-2. Changed bag filters.	21-May-14	22-May-14
142	Changed bag filters.	27-May-14	27-May-14
143	Changed pre-stripper bag filters.	29-May-14	29-May-14
144	Changed bag filters.	5-Jun-14	5-Jun-14
145	Changed bag filters.	12-Jun-14	12-Jun-14
146	Changed bag filters. Effluent meter calibration performed by Cooper Controls.	19-Jun-14	19-Jun-14
147	Changed bag filters.	29-Jun-14	29-Jun-14
148	Changed bag filters.	03-Jul-14	03-Jul-14
149	Changed pre-stripper bag filters.	09-Jul-14	09-Jul-14
150	Changed after-stripper bag filter.	10-Jul-14	10-Jul-14
151	Changed pre-stripper bag filters.	14-Jul-14	14-Jul-14
152	Changed bag filters. Installed a Y-strainer at effluent.	17-Jul-14	17-Jul-14
153	Changed pre-stripper bag filters.	21-Jul-14	21-Jul-14
154	Restarted EW-01R.	22 Jul-14	22-Jul-14
155	Changed bag filters.	24-Jul-14	24-Jul-14
156	Changed bag filters.	31-Jul-14	31-Jul-14
157	Changed bag filters.	07-Aug-14	07-Aug-14
158	Changed bag filters.	14-Aug-14	14-Aug-14
159	Changed bag filters.	21-Aug-14	21-Aug-14
160	Changed bag filters.	28-Aug-14	28-Aug-14
161	Changed bag filters. Removed defective isolation valve to IX vessels.	08-Sep-14	08-Sept-14
162	Changed bag filters. Installed new high pressure switch at LGAC influent.	18-Sep-14	18-Sep-14

Notes:

EW = extraction well
GAC = granular activated carbon
GWTS = groundwater treatment system
IX = ion exchange
LGAC = liquid-phase granular activated carbon
VGAC = vapor-phase granular activated carbon
SVE = soil vapor extraction
URS = URS Corporation

Appendix G

Well Construction Details, Groundwater Elevations, Analytical Data, Historical PCE Information, and Mass Removed Data

G-1 – Well Construction Details
G-2(a) or (b) – Groundwater Monitoring Well Table Elevations
G-3 – Searchable Historical and Current Analytical Table (CD Only)
G-4 – Historical PCE Concentration Trends in Groundwater Monitoring Wells
G-5 – PCE Mass Removed by Groundwater Treatment System

Table G-1. Well Construction Details				
Well No.	Casing Diameter (inches)	Boring Depth (feet bgs)	Screen Interval (feet bgs)	Top of Casing Elevation (feet 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	2	162	152-162	90.65
MW-20C	2	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]
MW-30A	2	155	89-99	89.58[d]
MW-30B	2	156	145-155	89.57[d]
MW-31A	2	108	90-100	89.57[d]
MW-32B	2	240	145-155	91.75[d]
MW-32C	2	240	226-236	91.86[d]
MW-33B	2	160	150-160	91.34[d]
MW-34B	2	156	145-155	88.06[d]
MW-35B	2	175	159-169	89.33[d]
EW-01	5	115	65-95	89.54[d]
EW-01R	6	120	59-109	90.65[b]
EW-02	6	116	60.5-110.5	91.64[e]

Table G-1. (Continued)				
Well No.	Casing Diameter (inches)	Boring Depth (feet bgs)	Screen Interval (feet bgs)	Top of Casing Elevation (feet 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.
[d] Well installed between June and August 2013 and surveyed in September 2013.
[e] Well installed June 2012 and surveyed August 2012

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

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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)
CPT23		-		Jun-13	47.00	
EW-01R (SP-01)		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
				Aug-12	54.89	37.14
				Dec-12	42.82	47.83
				Mar-13	41.90	48.75
				May-13	41.70	48.95
				Sep-13	43.05	47.60
				Dec-13	43.43	47.22
				Feb-14	43.25	47.40
				Apr-14	42.91	47.74
EW-02		-	91.64	Dec-12	53.07	38.57
				Mar-13		
				May-13	54.45	37.19
				Sep-13	58.70	32.94
				Dec-13	62.30	29.34
				Feb-14	65.48	26.16
				Apr-14	65.29	26.35

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-01A		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
				Aug-12	42.00	49.61
				Dec-12	42.94	48.67
				Mar-13	41.89	49.72
				May-13	41.73	49.88
				Sep-13	43.06	48.55
				Dec-13	43.39	48.22
				Feb-14	43.16	48.45
				Apr-14	42.82	48.79
				Sep-14	46.00	45.61
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
				Aug-12	41.15	49.73
				Dec-12	42.13	48.75
				Mar-13	41.11	49.77
				May-13	40.95	49.93
				Sep-13	42.28	48.60
				Dec-13	42.59	48.29
				Feb-14	42.40	48.48
				Apr-14	42.08	48.80
				Sep-14	45.09	45.79

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-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
				Aug-12	43.82	47.67
				Dec-12	43.76	47.73
				Mar-13	42.70	48.79
				May-13	42.53	48.96
				Sep-13	43.94	47.55
				Dec-13	44.25	47.24
				Feb-14	44.03	47.46
				Apr-14	43.68	47.81
				Sep-14	47.38	44.11
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
				Aug-12	42.10	49.03
				Dec-12	44.50	46.63
				Mar-13	43.43	47.70
				May-13	43.20	47.93
				Sep-13	44.45	46.68
				Dec-13	44.89	46.24
				Feb-14	44.71	46.42
				Apr-14	44.20	46.93
				Sep-14	47.03	44.10

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-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
				Aug-12	42.80	48.31
				Dec-12	43.57	47.54
				Mar-13	42.35	48.76
				May-13	42.35	48.76
				Sep-13	44.31	46.80
				Dec-13	44.16	46.95
				Feb-14	43.77	47.34
				Apr-14	43.40	47.71
				Sep-14	47.56	43.55
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
				Aug-12	47.47	43.78
				Dec-12	43.31	47.94
				Mar-13	42.33	48.92
				May-13	43.88	47.37
				Sep-13	48.05	43.20
				Dec-13	43.99	47.26
				Feb-14	43.86	47.39
				Apr-14	44.57	46.68
				Sep-14	57.40	33.85

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
				Aug-12	41.34	49.40
				Dec-12	42.38	48.36
				Mar-13	41.39	49.35
				May-13	41.17	49.57
				Sep-13	42.45	48.29
				Dec-13	42.91	47.83
				Feb-14	42.71	48.03
				Apr-14	42.32	48.42
				Sep-14	45.38	45.36
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
				Aug-12	40.27	49.45
				Dec-12	41.90	47.82
				Mar-13	40.89	48.83
				May-13	40.65	49.07
				Sep-13	41.94	47.78
				Dec-13	42.54	47.18
				Feb-14	42.36	47.36
				Apr-14	41.83	47.89
				Sep-14	44.60	45.12

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-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
				Aug-12	40.82	50.42
				Dec-12	41.99	49.25
				Mar-13	41.11	50.13
				May-13	40.81	50.43
				Sep-13	41.86	49.38
				Dec-13	42.35	48.89
				Feb-14	42.21	49.03
				Apr-14	41.90	49.34
				Sep-14	44.48	46.76
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
				Aug-12	42.28	49.16
				Dec-12	43.27	48.17
				Mar-13	42.28	49.16
				May-13	42.10	49.34
				Sep-13	43.36	48.08
				Dec-13	43.80	47.64
				Feb-14	44.21	47.23
				Apr-14	43.25	48.19
				Sep-14	46.27	45.17

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-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
				Aug-12	42.61	48.59
				Dec-12	43.30	47.89
				Mar-13	42.10	49.09
				May-13	42.15	49.04
				Sep-13	44.09	47.10
				Dec-13	43.80	47.39
				Feb-14	43.49	47.70
				Apr-14	43.23	47.96
				Sep-14	47.30	43.89
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
				Aug-12	41.62	48.86
				Dec-12	43.37	47.11
				Mar-13	42.27	48.21
				May-13	42.04	48.44
				Sep-13	43.45	47.03
				Dec-13	44.08	46.40
				Feb-14	43.75	46.73
				Apr-14	43.22	47.26
				Sep-14	46.32	44.16

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
				Aug-12	41.90	48.31
				Dec-12	42.95	47.26
				Mar-13	41.68	48.53
				May-13	41.65	48.56
				Sep-13	43.33	46.88
				Dec-13	43.63	46.58
				Feb-14	43.20	47.01
				Apr-14	42.77	47.44
				Sep-14	46.75	43.46
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
				Aug-12	47.14	43.36
				Dec-12	43.50	47.00
				Mar-13	41.96	48.54
				May-13	43.60	46.90
				Sep-13	47.94	42.56
				Dec-13	43.83	46.67
				Feb-14	43.71	46.79
				Apr-14	44.26	46.24
				Sep-14	54.02	36.48

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-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
				Aug-12	39.18	50.73
				Dec-12	40.24	49.67
				Mar-13	39.29	50.62
				May-13	39.10	50.81
				Sep-13	40.17	49.74
				Dec-13	40.59	49.32
				Feb-14	40.50	49.41
				Apr-14	40.22	49.69
				Sep-14	42.76	47.15
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
				Aug-12	46.93	44.22
				Dec-12	43.49	47.66
				Mar-13	42.72	48.43
				May-13	42.45	48.70
				Sep-13	44.17	46.98
				Dec-13	44.43	46.72
				Feb-14	44.05	47.10
				Apr-14	43.60	47.55
				Sep-14	47.20	43.95

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-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
				Aug-12	40.17	49.10
				Dec-12	41.87	47.40
				Mar-13	40.88	48.39
				May-13	40.57	48.70
				Sep-13	41.85	47.42
				Dec-13	42.55	46.72
				Feb-14	42.39	46.88
				Apr-14	41.85	47.42
				Sep-14	44.53	44.74
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
				Aug-12	39.89	49.90
				Dec-12	41.25	48.54
				Mar-13	40.30	49.49
				May-13	40.06	49.73
				Sep-13	41.22	48.57
				Dec-13	41.77	48.02
				Feb-14	41.65	48.14
				Apr-14	41.23	48.56
				Sep-14	43.86	45.93

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-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
				Aug-12	42.10	49.66
				Dec-12	43.10	48.66
				Mar-13	42.14	49.62
				May-13	41.93	49.83
				Sep-13	43.27	48.49
				Dec-13	43.58	48.18
				Feb-14	43.34	48.42
				Apr-14	43.00	48.76
				Sep-14	46.27	45.49
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
				Aug-12	44.46	47.43
				Dec-12	45.71	46.18
				Mar-13	44.37	47.52
				May-13	44.22	47.67
				Sep-13	46.69	45.20
				Dec-13	46.59	45.30
				Feb-14	45.89	46.00
				Apr-14	45.36	46.53
				Sep-14	49.97	41.92

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-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
				Aug-12	44.43	47.39
				Dec-12	45.64	46.18
				Mar-13	44.32	47.50
				May-13	44.18	47.64
				Sep-13	46.66	45.16
				Dec-13	46.54	45.28
				Feb-14	45.84	45.98
				Apr-14	45.31	46.51
				Sep-14	49.94	41.88
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
				Aug-12	48.55	43.09
				Dec-12	45.85	45.79
				Mar-13	44.67	46.97
				May-13	45.65	45.99
				Sep-13	50.20	41.44
				Dec-13	46.79	44.85
				Feb-14	45.87	45.77
				Apr-14	46.40	45.24
				Sep-14	55.89	35.75

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-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
				Aug-12	41.10	48.54
				Dec-12	43.07	46.57
				Mar-13	41.92	47.72
				May-13	41.58	48.06
				Sep-13	43.17	46.47
				Dec-13	43.90	45.74
				Feb-14	43.53	46.11
				Apr-14	42.90	46.74
				Sep-14	45.95	43.69
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
				Aug-12	41.54	48.15
				Dec-12	43.09	46.60
				Mar-13	41.88	47.81
				May-13	41.67	48.02
				Sep-13	43.68	46.01
				Dec-13	43.96	45.73
				Feb-14	43.49	46.20
				Apr-14	42.97	46.72
				Sep-14	46.57	43.12

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
				Aug-12	47.40	42.36
				Dec-12	43.56	46.20
				Mar-13	42.26	47.50
				May-13	43.60	46.16
				Sep-13	48.60	41.16
				Dec-13	44.23	45.53
				Feb-14	44.06	45.70
				Apr-14	44.55	45.21
				Sep-14	52.17	37.59
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
				Aug-12	41.57	48.57
				Dec-12	43.30	46.84
				Mar-13	42.14	48.00
				May-13	41.90	48.24
				Sep-13	43.43	46.71
				Dec-13	44.10	46.04
				Feb-14	43.62	46.52
				Apr-14	43.11	47.03
				Sep-14	46.36	43.78

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-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
				Aug-12	44.18	47.04
				Dec-12	44.25	46.97
				Mar-13	43.13	48.09
				May-13	42.96	48.26
				Sep-13	45.04	46.18
				Dec-13	45.08	46.14
				Feb-14	44.56	46.66
				Apr-14	44.14	47.08
				Sep-14	48.35	42.87
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
				Aug-12	44.03	47.05
				Dec-12	44.61	46.47
				Mar-13	43.44	47.64
				May-13	43.45	47.63
				Sep-13	45.90	45.18
				Dec-13	45.50	45.58
				Feb-14	44.88	46.20
				Apr-14	44.52	46.56
				Sep-14	49.31	41.77

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-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
				Aug-12	41.12	49.58
				Dec-12	44.08	46.62
				Mar-13	42.93	47.77
				May-13	42.70	48.00
				Sep-13	44.47	46.23
				Dec-13	44.90	45.80
				Feb-14	44.39	46.31
				Apr-14	43.88	46.82
				Sep-14	47.57	43.13
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
				Aug-12	43.06	47.59
				Dec-12	44.21	46.44
				Mar-13	42.94	47.71
				May-13	42.85	47.80
				Sep-13	45.05	45.60
				Dec-13	45.01	45.64
				Feb-14	44.43	46.22
				Apr-14	43.94	46.71
				Sep-14	48.28	42.37

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
				Aug-12	47.39	43.40
				Dec-12	45.05	45.74
				Mar-13	43.10	47.69
				May-13	44.24	46.55
				Sep-13	48.59	42.20
				Dec-13	45.08	45.71
				Feb-14	44.35	46.44
				Apr-14	45.14	45.65
				Sep-14	55.00	35.79
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
				Aug-12	44.83	46.92
				Dec-12	45.68	46.07
				Mar-13	44.31	47.44
				May-13	44.17	47.58
				Sep-13	46.47	45.28
				Dec-13	46.28	45.47
				Feb-14	45.81	45.94
				Apr-14	45.60	46.15
				Sep-14	49.65	42.10

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-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
				Aug-12	44.02	47.67
				Dec-12	45.63	46.06
				Mar-13	44.33	47.36
				May-13	44.11	47.58
				Sep-13	46.29	45.40
				Dec-13	46.52	45.17
				Feb-14	45.93	45.76
				Apr-14	45.28	46.41
				Sep-14	49.45	42.24
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
				Aug-12	40.26	50.00
				Dec-12	41.33	48.93
				Mar-13	40.49	49.77
				May-13	40.35	49.91
				Sep-13	41.48	48.78
				Dec-13	41.80	48.46
				Feb-14	41.76	48.50
				Apr-14	41.45	48.81
				Sep-14	44.08	46.18
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
				Aug-12	44.91	48.02
				Dec-12	46.20	46.73
				Mar-13	44.96	47.97
				May-13	44.81	48.12
				Sep-13	46.91	46.02
				Dec-13	47.00	45.93
				Feb-14	46.47	46.46
				Apr-14	45.99	46.94
				Sep-14	49.87	43.06

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-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
				Aug-12	44.12	47.66
				Dec-12	45.62	46.16
				Mar-13	44.29	47.49
				May-13	44.14	47.64
				Sep-13	46.40	45.38
				Dec-13	46.53	45.25
				Feb-14	45.81	45.97
				Apr-14	45.31	46.47
				Sep-14	48.86	42.92
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
				Aug-12	41.78	47.93
				Dec-12	43.50	46.21
				Mar-13	42.19	47.52
				May-13	41.97	47.74
				Sep-13	44.18	45.53
				Dec-13	44.46	45.25
				Feb-14	43.87	45.84
				Apr-14	43.25	46.46
				Sep-14	47.07	42.64
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
				Aug-12	41.19	48.15
				Dec-12	42.89	46.45
				Mar-13	41.65	47.69
				May-13	41.42	47.92
				Sep-13	43.62	45.72
				Dec-13	43.93	45.41
				Feb-14	43.41	45.93
				Apr-14	42.82	46.52
				Sep-14	46.41	42.93

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-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
				Aug-12	40.52	48.69
				Dec-12	41.91	47.30
				Mar-13	40.46	48.75
				May-13	40.60	48.61
				Sep-13	42.40	46.81
				Dec-13	42.61	46.60
				Feb-14	42.36	46.85
				Apr-14	41.89	47.32
				Sep-14	45.21	44.00
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
				Aug-12	40.63	49.11
				Dec-12	41.74	48.00
				Mar-13	40.67	49.07
				May-13	40.60	49.14
				Sep-13	42.33	47.41
				Dec-13	42.50	47.24
				Feb-14	42.26	47.48
				Apr-14	41.84	47.90
				Sep-14	45.20	44.54
MW-30A	155.00	89 - 99	89.58	Sep-13	39.85	49.73
				Dec-13	40.06	49.52
				Feb-14	40.04	49.54
				Apr-14	39.72	49.86
				Sep-14	42.34	47.24
MW-30B	156.00	145 - 155	89.57	Sep-13	40.73	48.84
				Dec-13	40.01	49.56
				Feb-14	39.97	49.60
				Apr-14	39.89	49.68
				Sep-14	43.44	46.13
MW-31A	108.00	90 - 100	89.57	Sep-13	40.60	48.97
				Dec-13	41.33	48.24
				Feb-14	41.06	48.51
				Apr-14	40.93	48.64
				Sep-14	42.12	47.45

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-32B	240.00	145 - 155	91.75	Sep-13	46.70	45.05
				Dec-13	46.25	45.50
				Feb-14	45.51	46.24
				Apr-14	44.94	46.81
				Sep-14	49.92	41.83
MW-32C	240.00	226 - 236	91.86	Sep-13	51.00	40.86
				Dec-13	47.00	44.86
				Feb-14	45.91	45.95
				Apr-14	45.97	45.89
				Sep-14	55.04	36.82
MW-33B	160.00	150 - 160	91.34	Sep-13	46.70	44.64
				Dec-13	46.35	44.99
				Feb-14	45.51	45.83
				Apr-14	44.87	46.47
				Sep-14	49.79	41.55
MW-34B	156.00	145 - 155	88.06	Sep-13	39.95	48.11
				Dec-13	40.57	47.49
				Feb-14	40.00	48.06
				Apr-14	39.82	48.24
				Sep-14	42.99	45.07
MW-35B	175.00	159 - 169	89.33	Sep-13	49.05	40.28
				Dec-13	43.37	45.96
				Feb-14	42.81	46.52
				Apr-14	42.38	46.95
				Sep-14	45.82	43.51

ft bgs - feet below ground surface
MSL - Mean Sea Level
MW - Monitoring Well
NA - Not Applicable
TOC - Top of Casing

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Table G-3. Historical through Current Analytical Data
(Provided on CD only)

FIGURE G-4(a)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

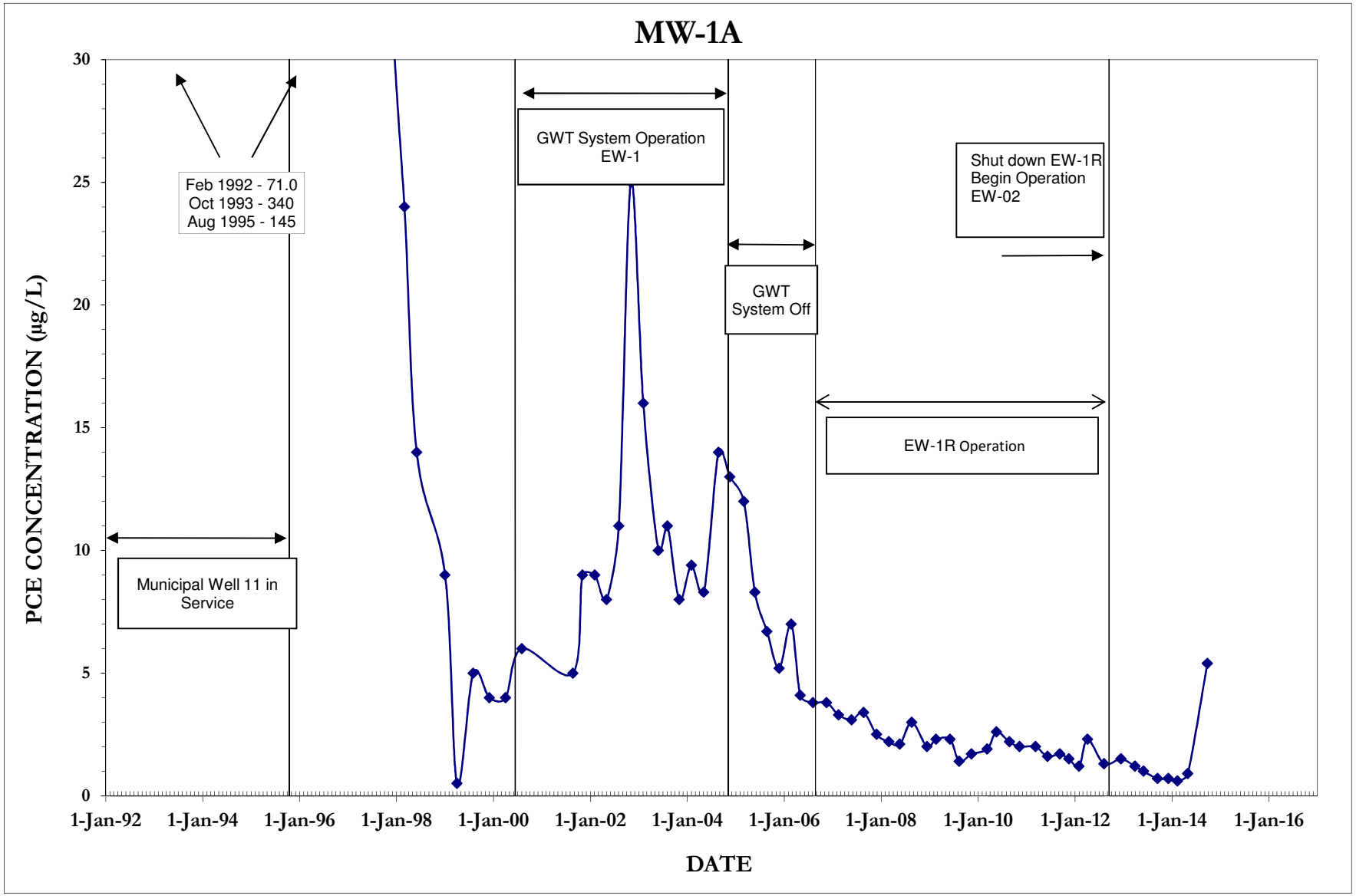

FIGURE G-4(b)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

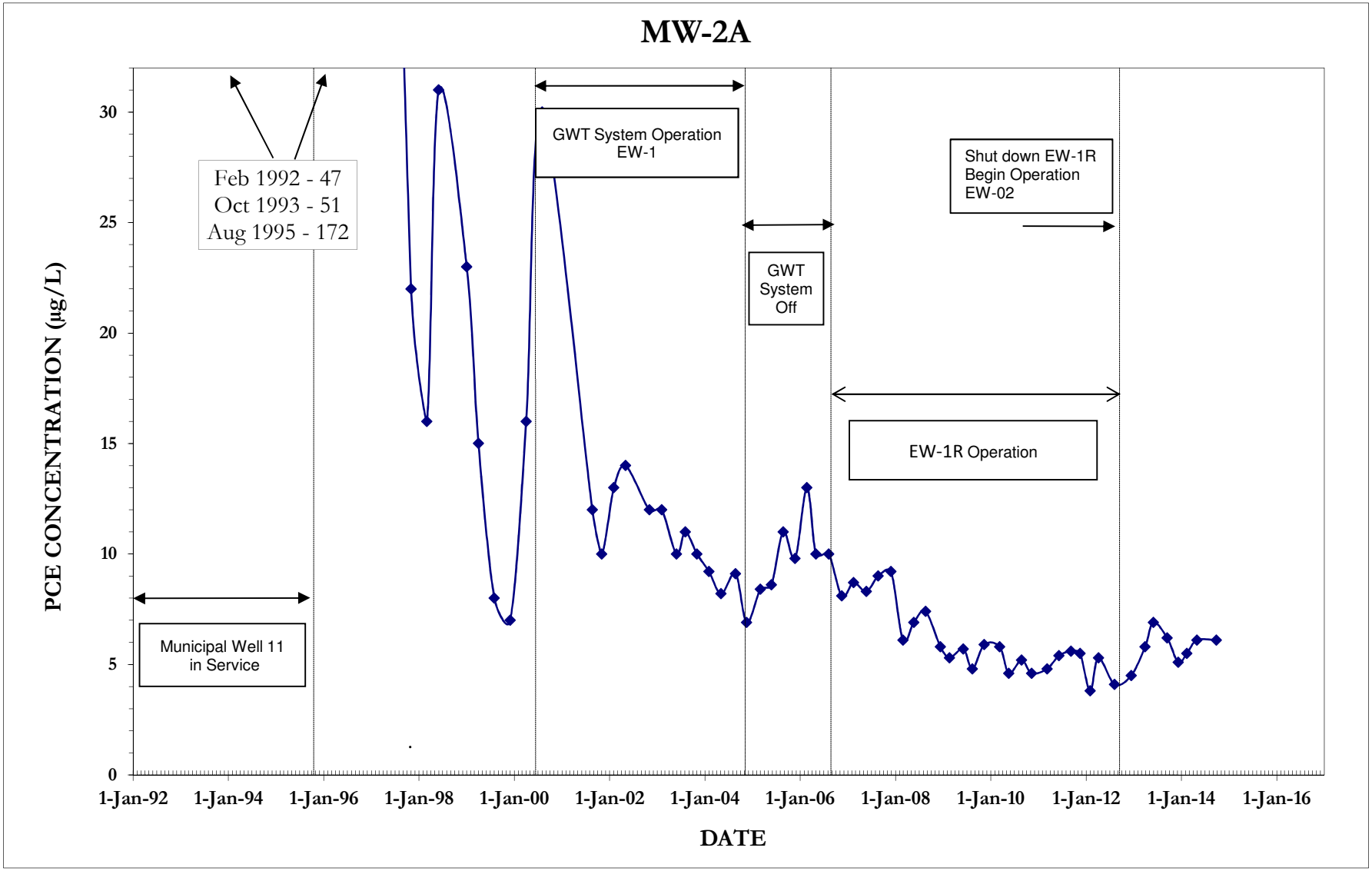

FIGURE G-4(c)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

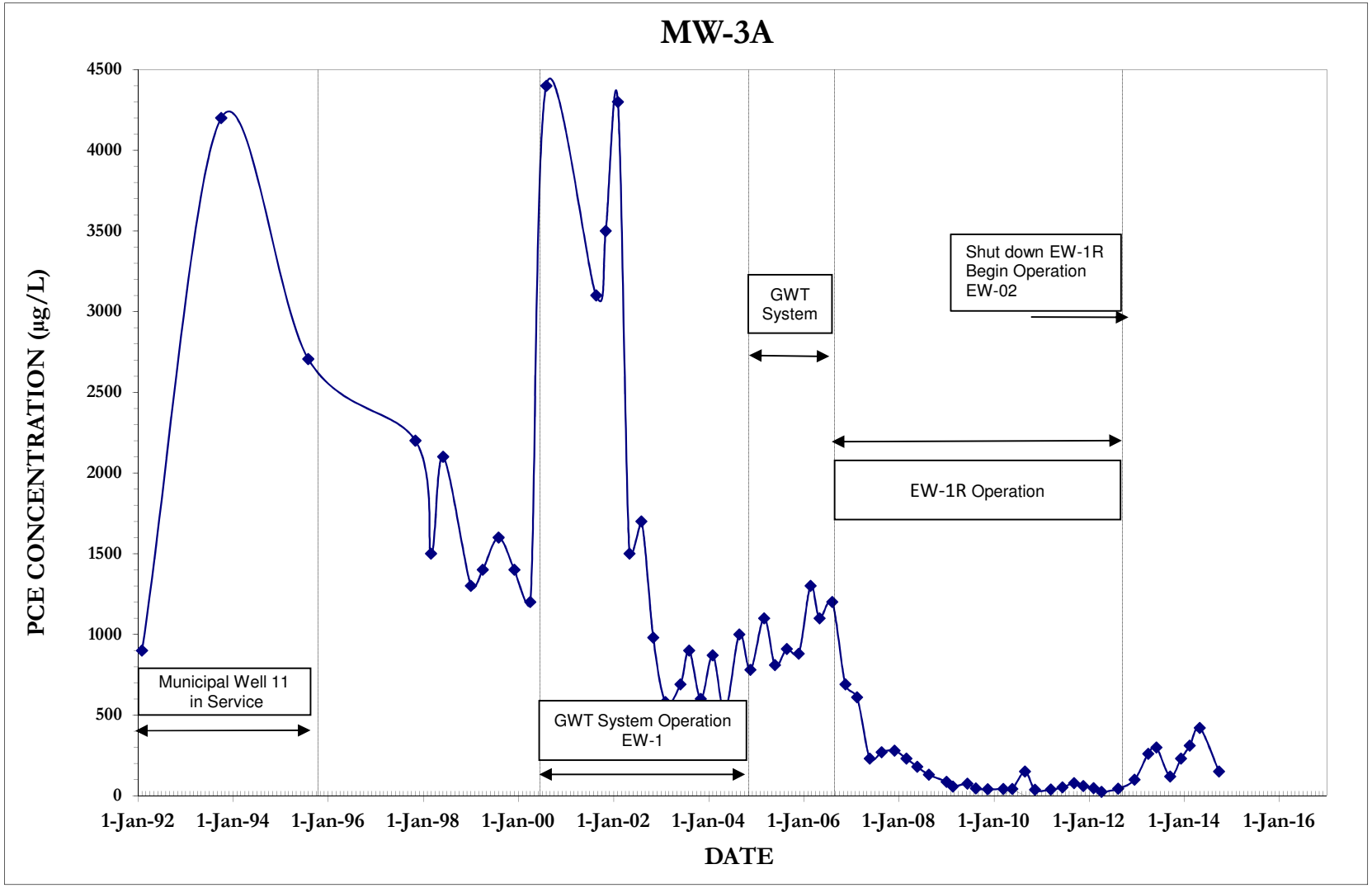

FIGURE G-4(d)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

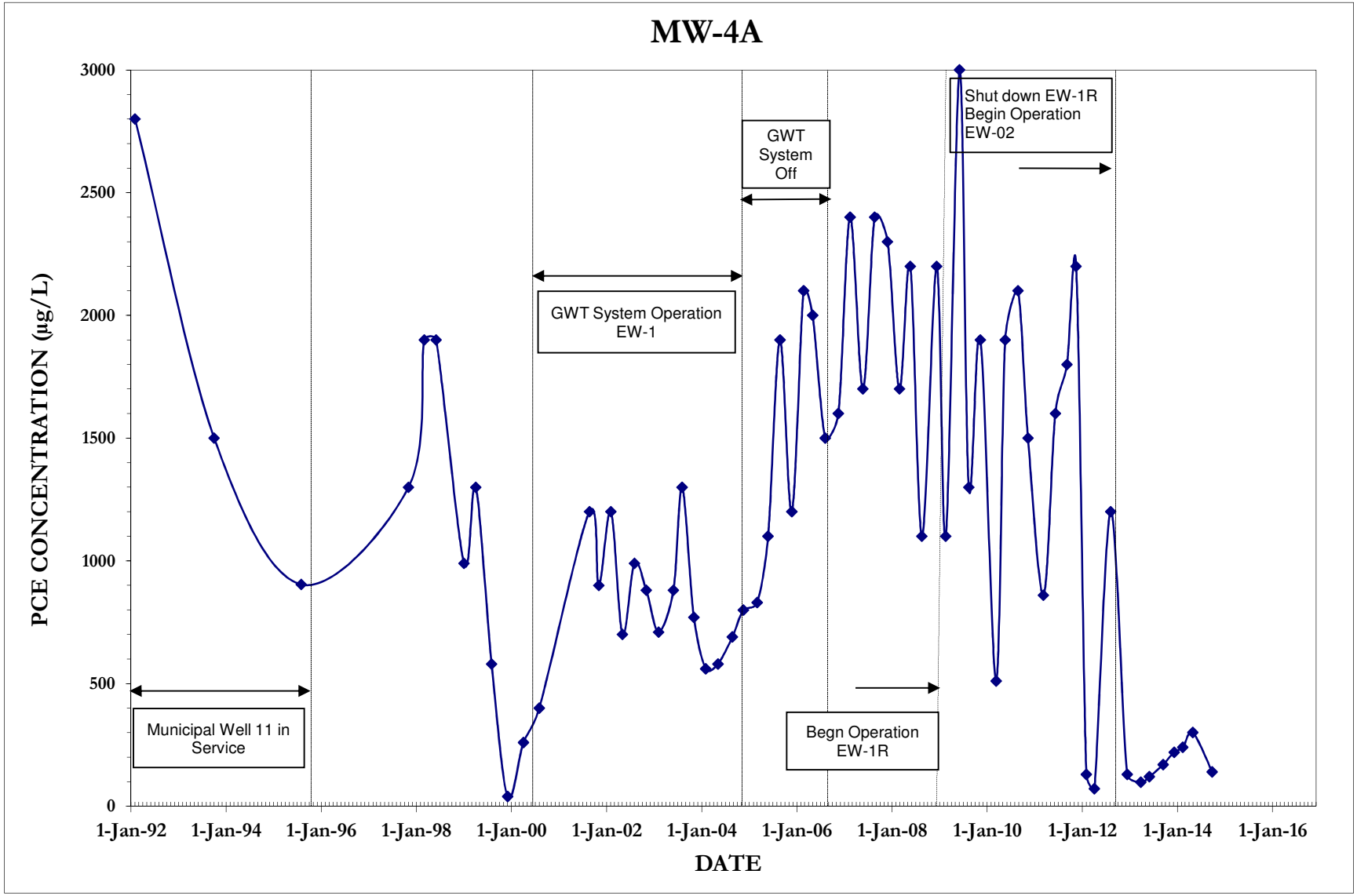

FIGURE G-4(e)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

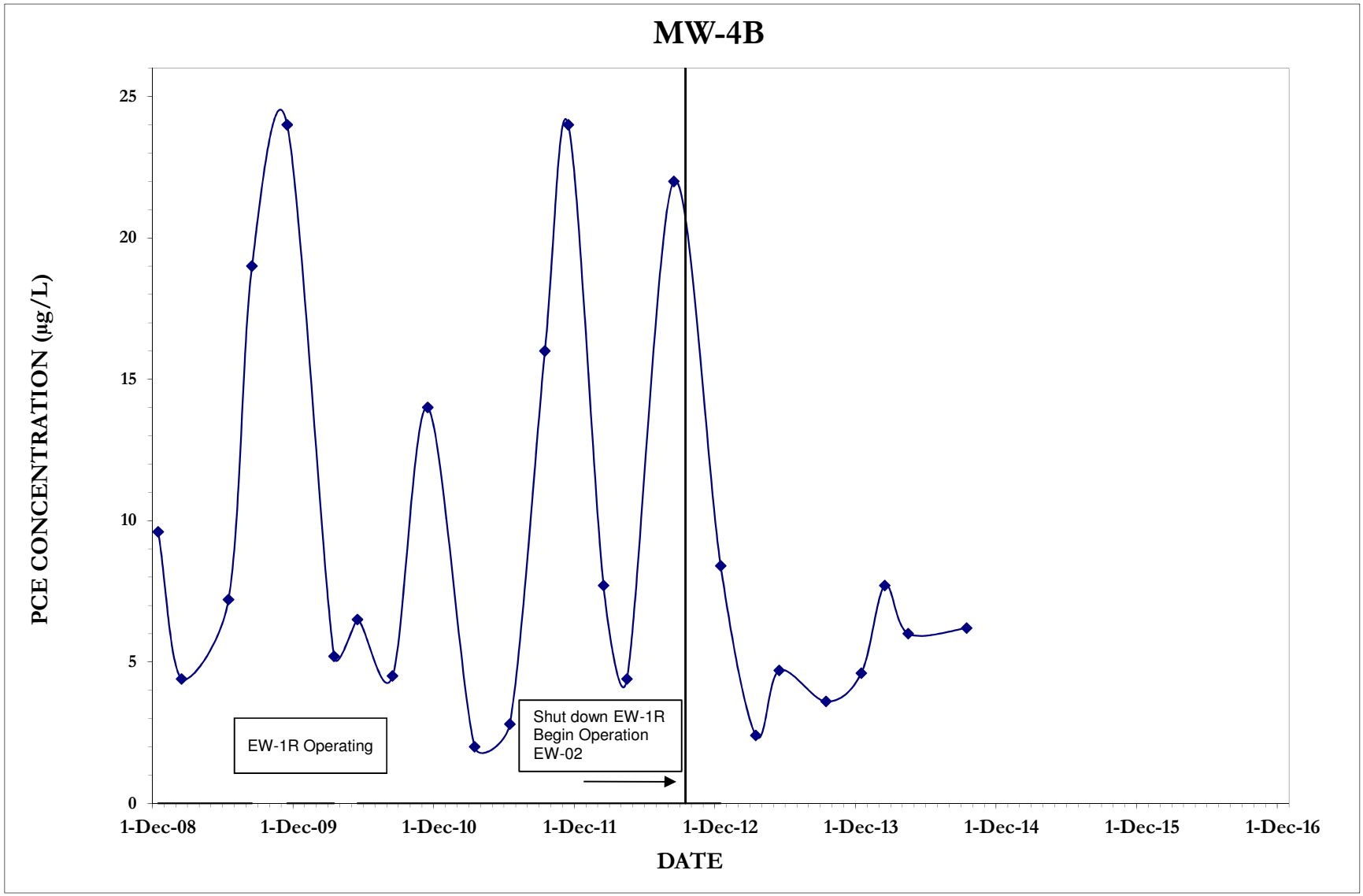

FIGURE G-4(f)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

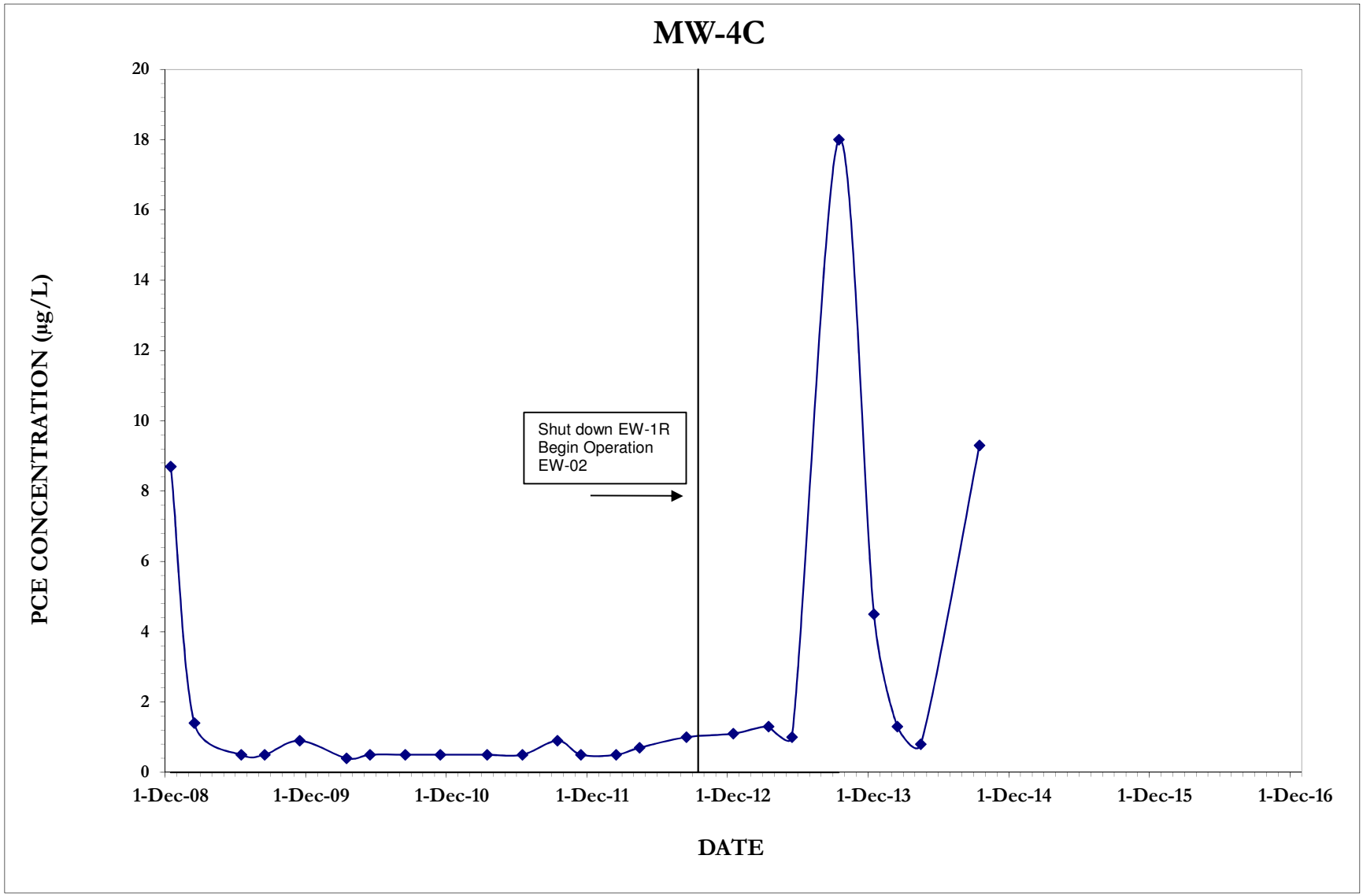

FIGURE G-4(g)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

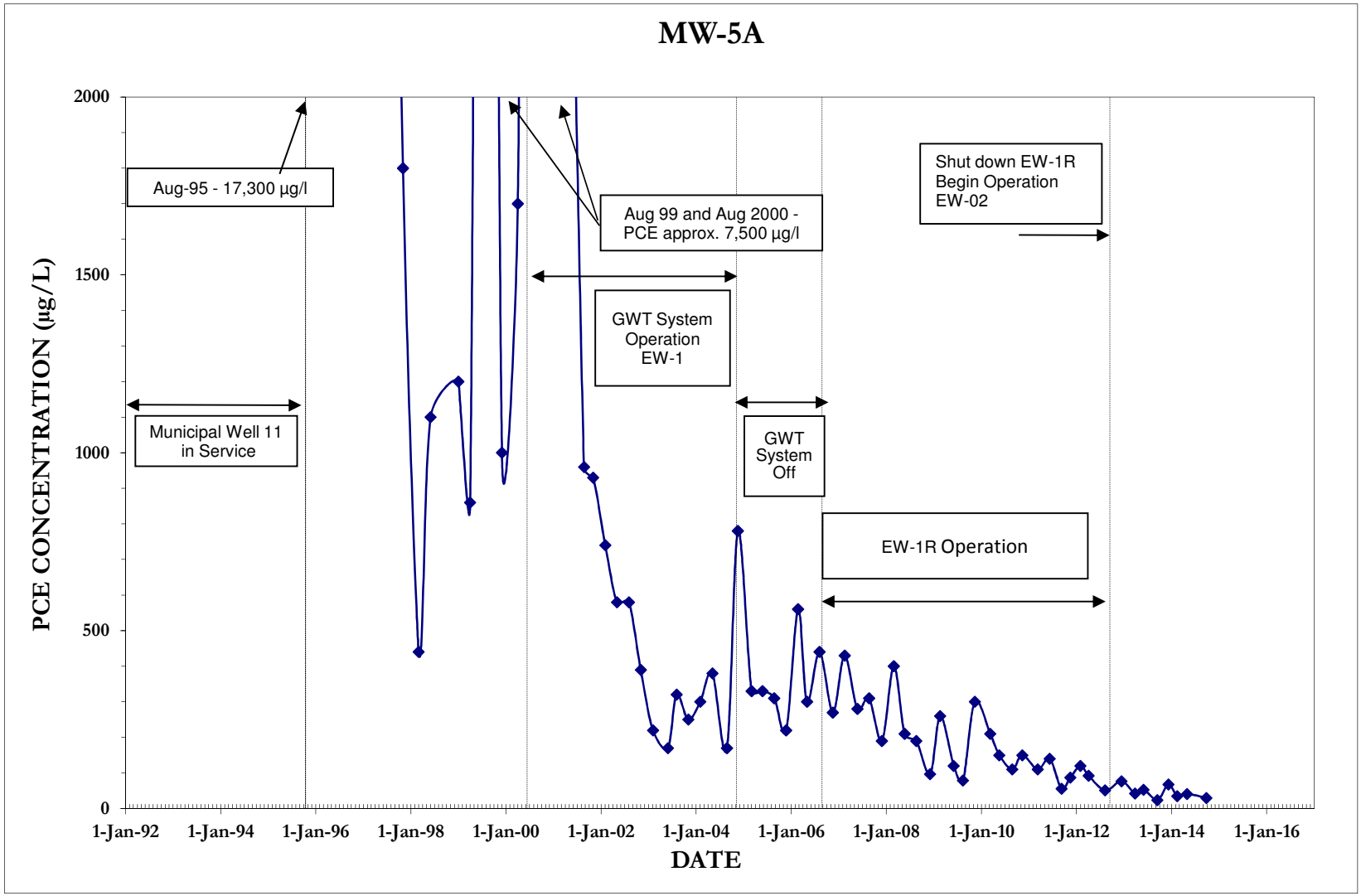

FIGURE G-4(h)

HISTORICAL PCE CONCENTRATION IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

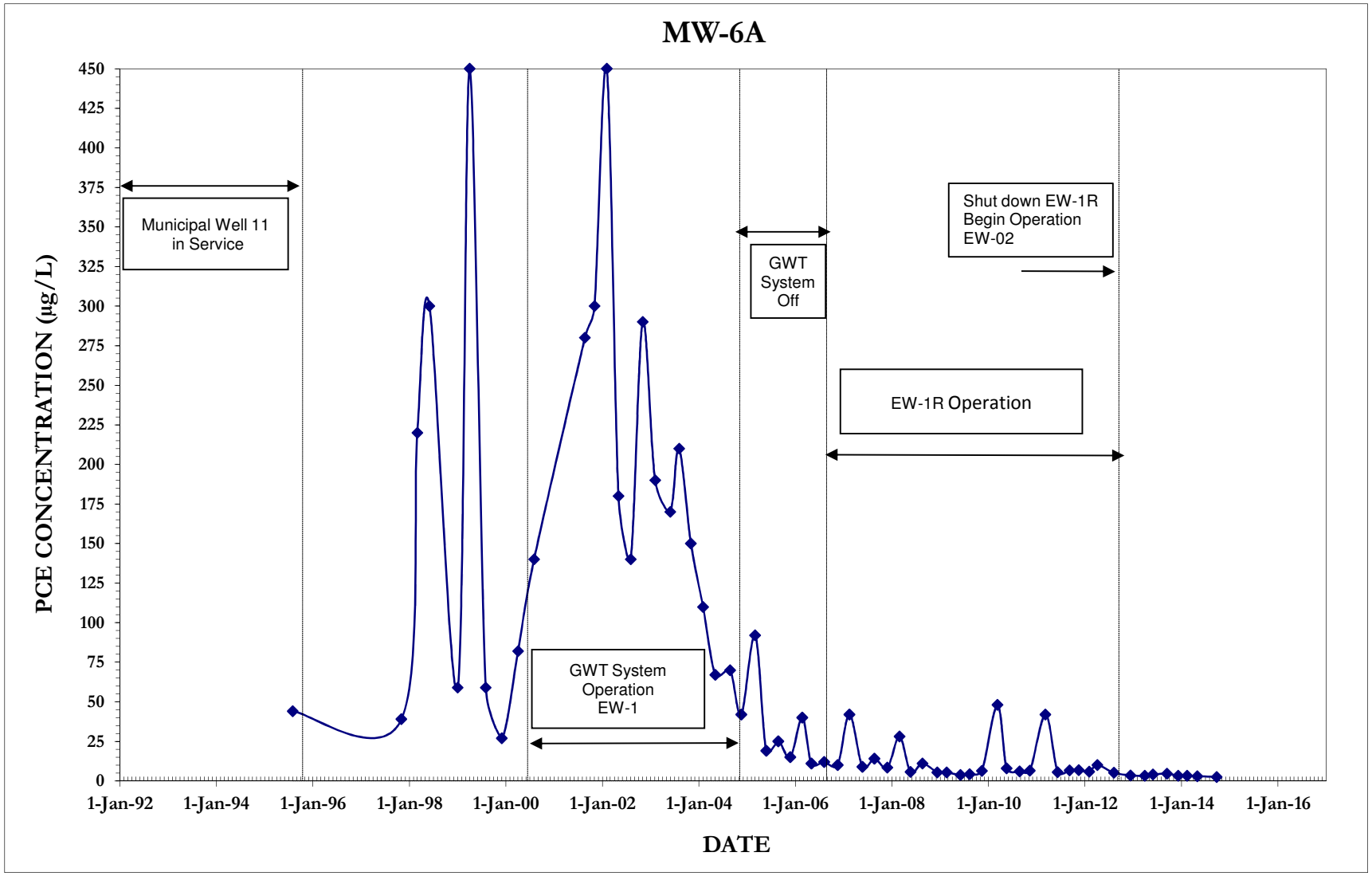

FIGURE G-4(i)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

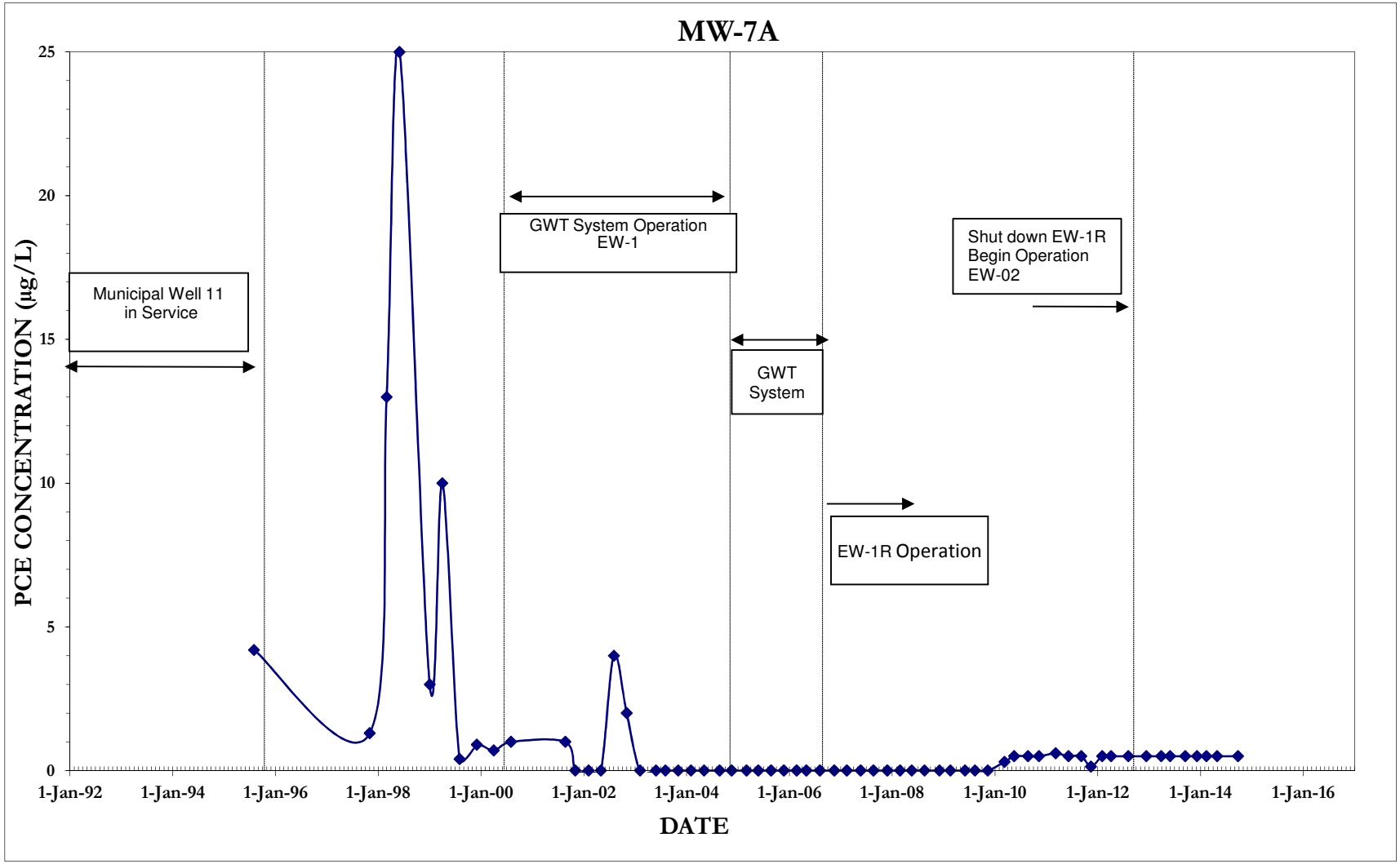

FIGURE G-4(j)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

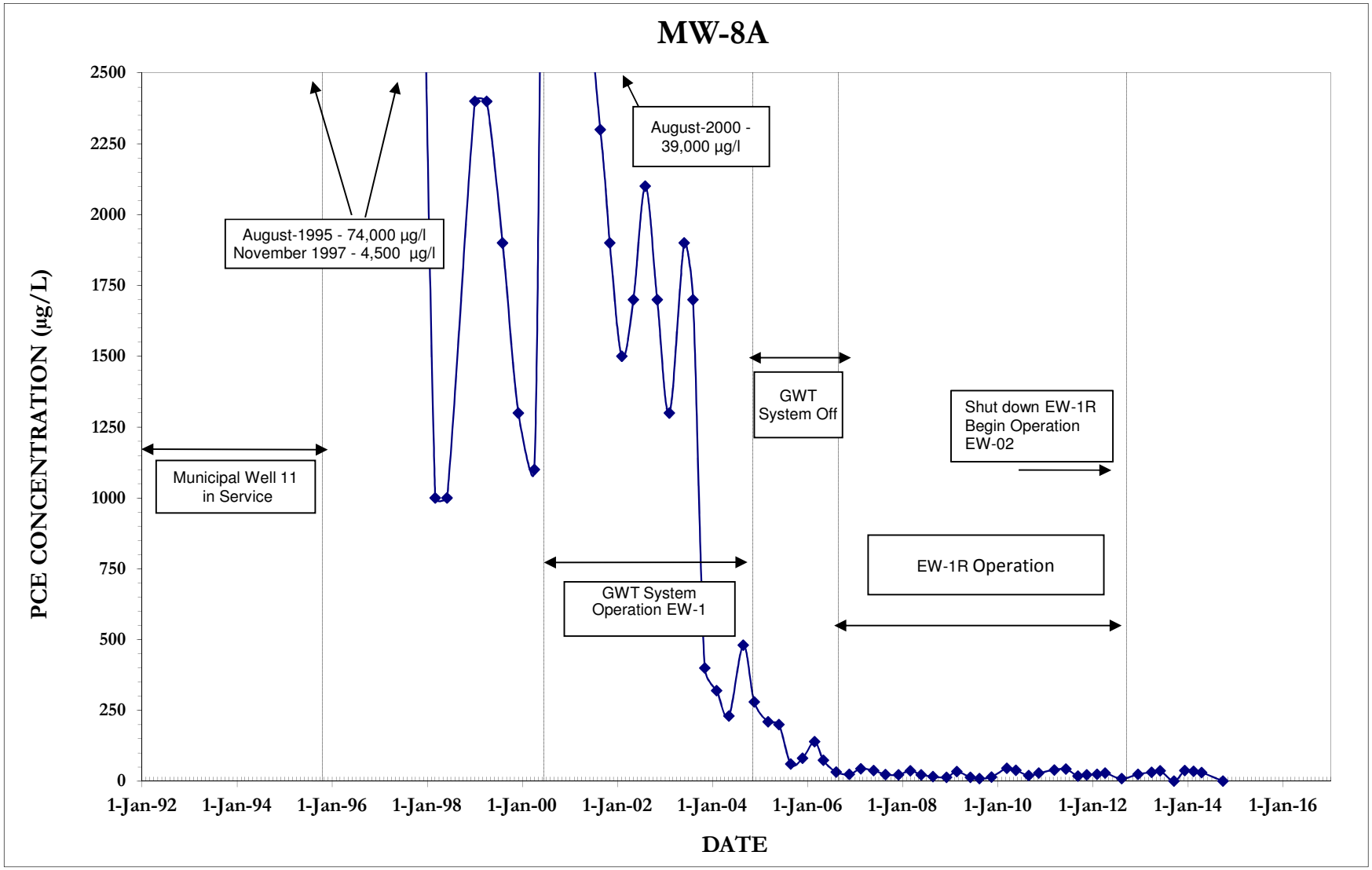

FIGURE G-4(k)

HISTORICAL PCE CONCENTRATIONS IN GROUDNWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

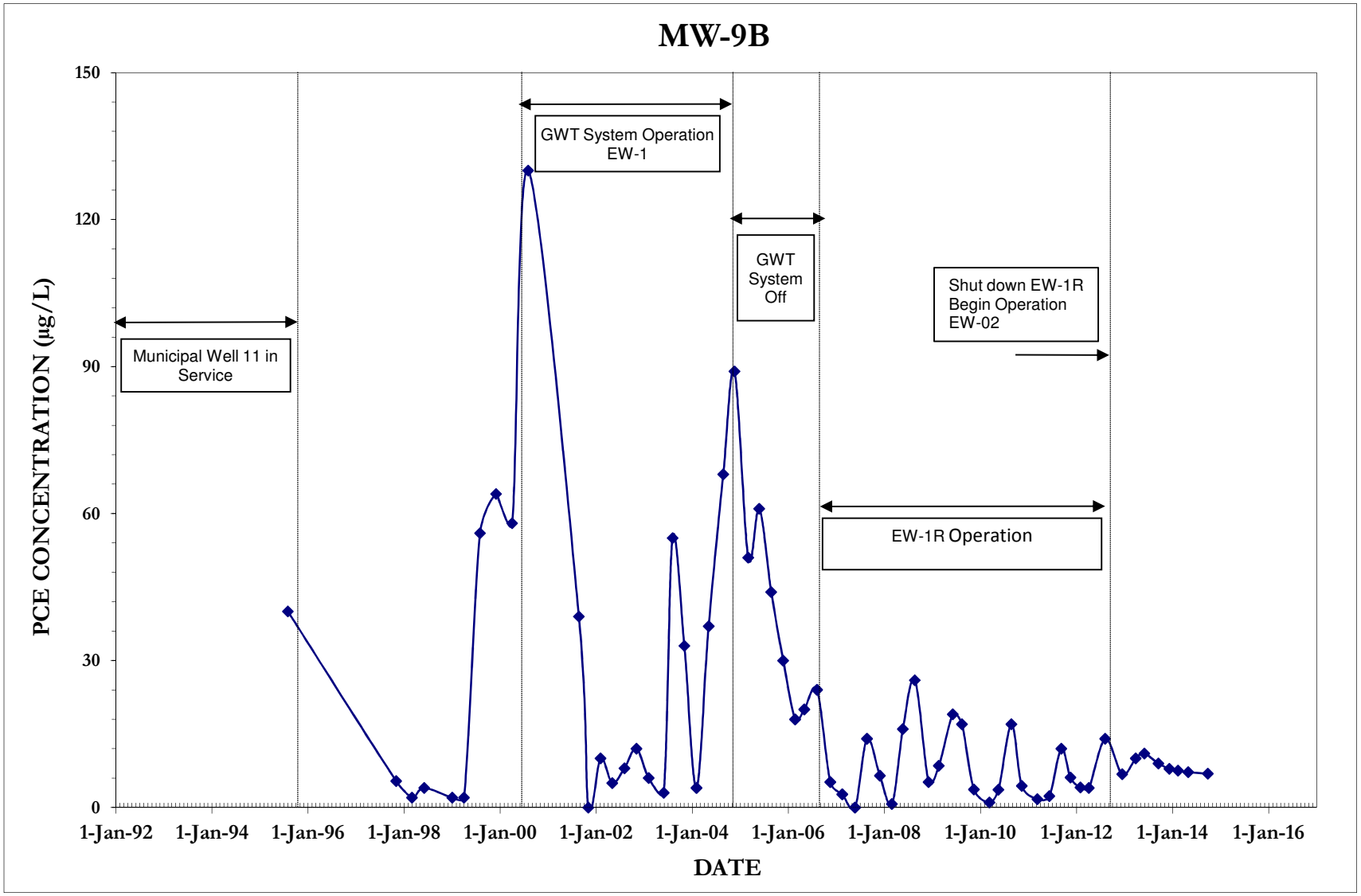

FIGURE G-4(I)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

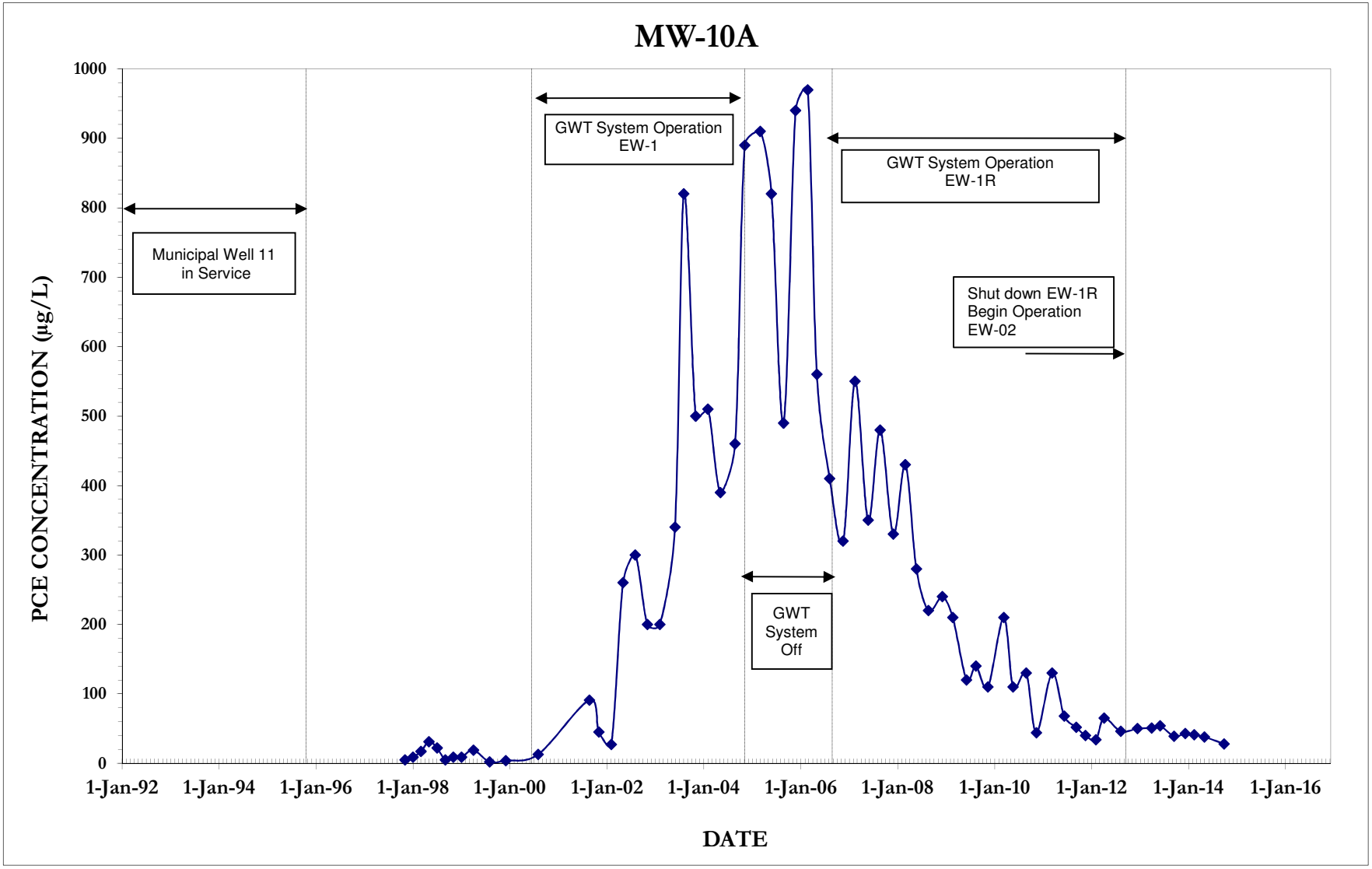

FIGURE G-4(m)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

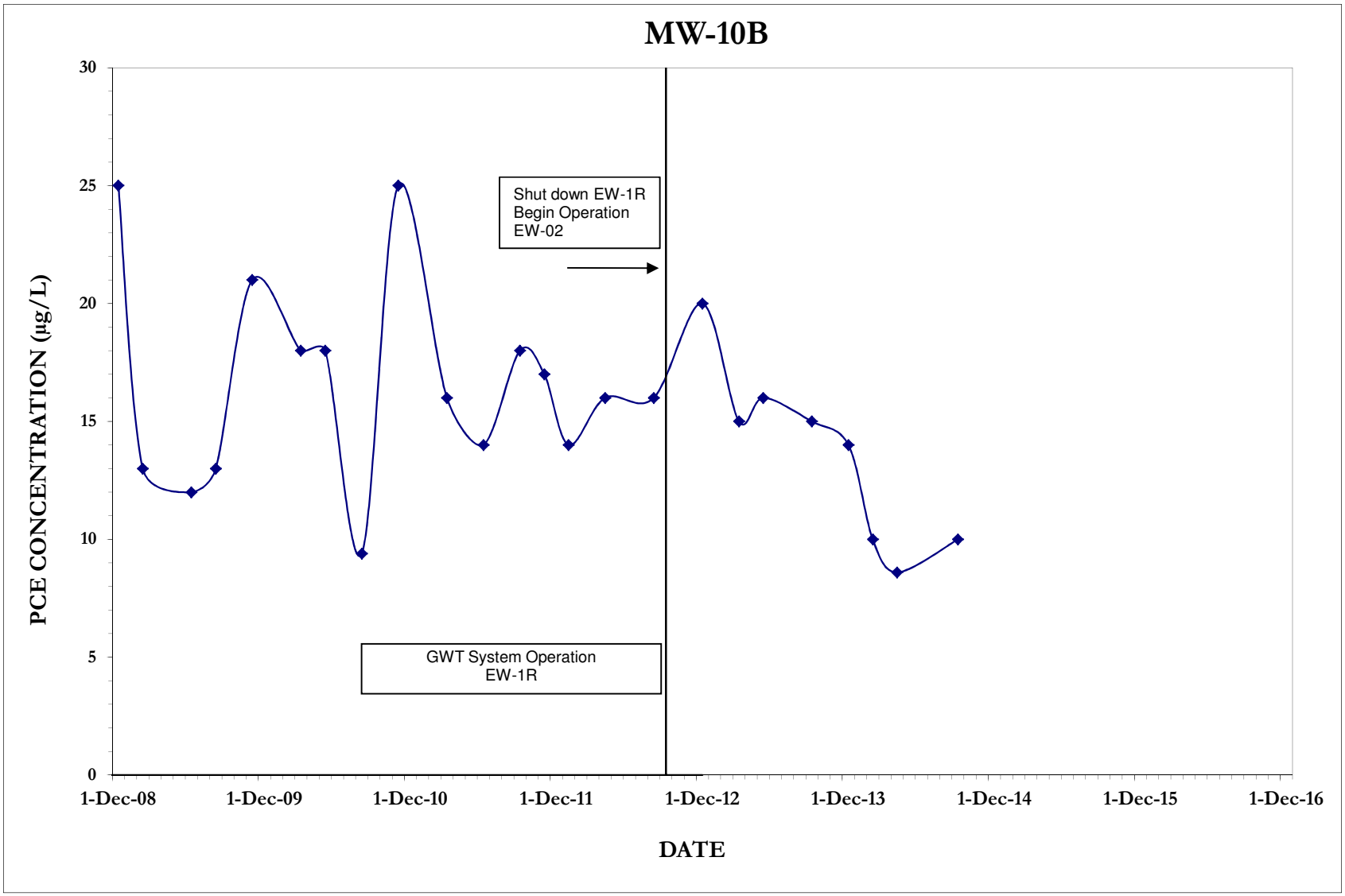

FIGURE G-4(n)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

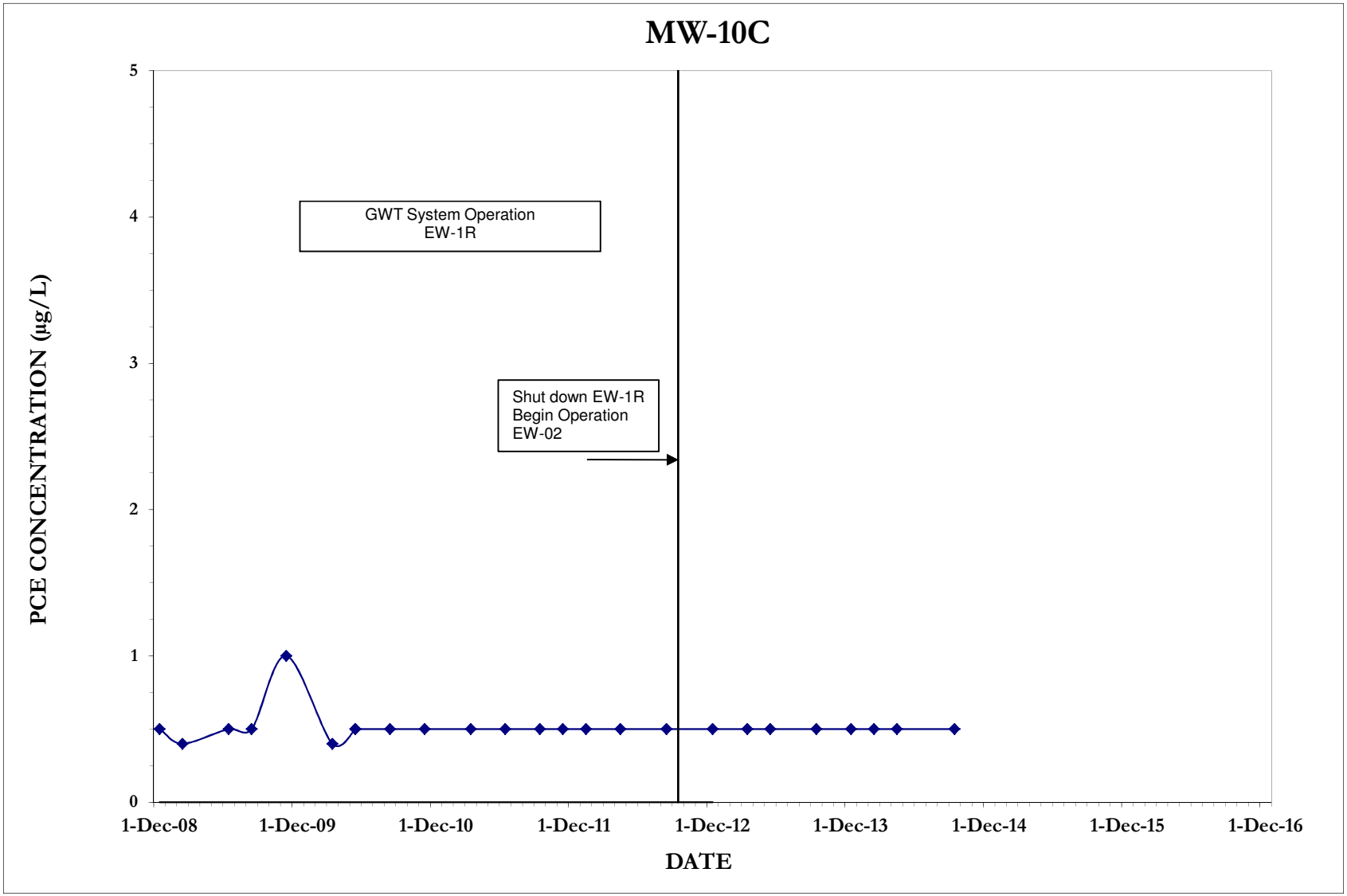

FIGURE G-4(o)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

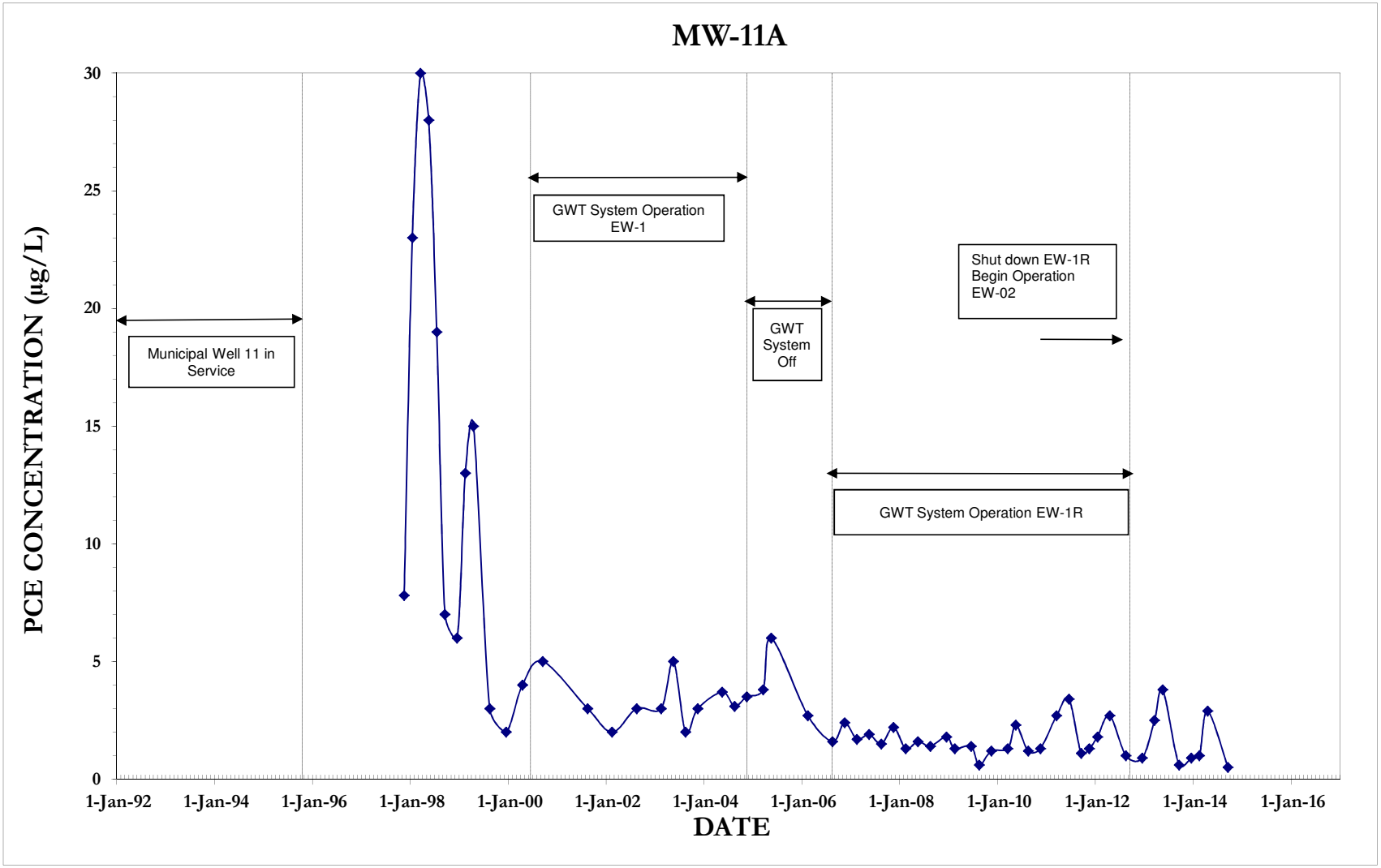

FIGURE G-4(p)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

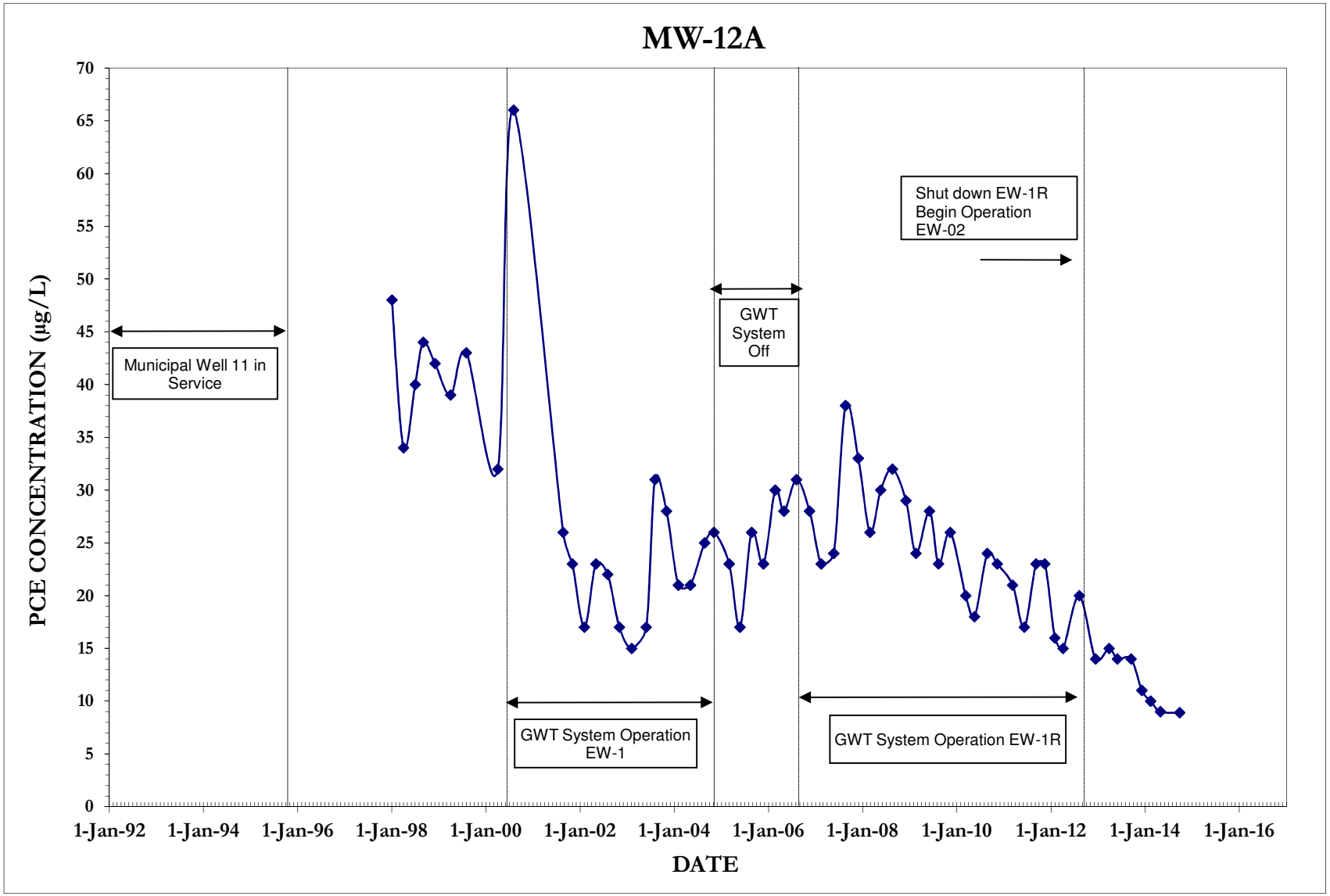

FIGURE G-4(q)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

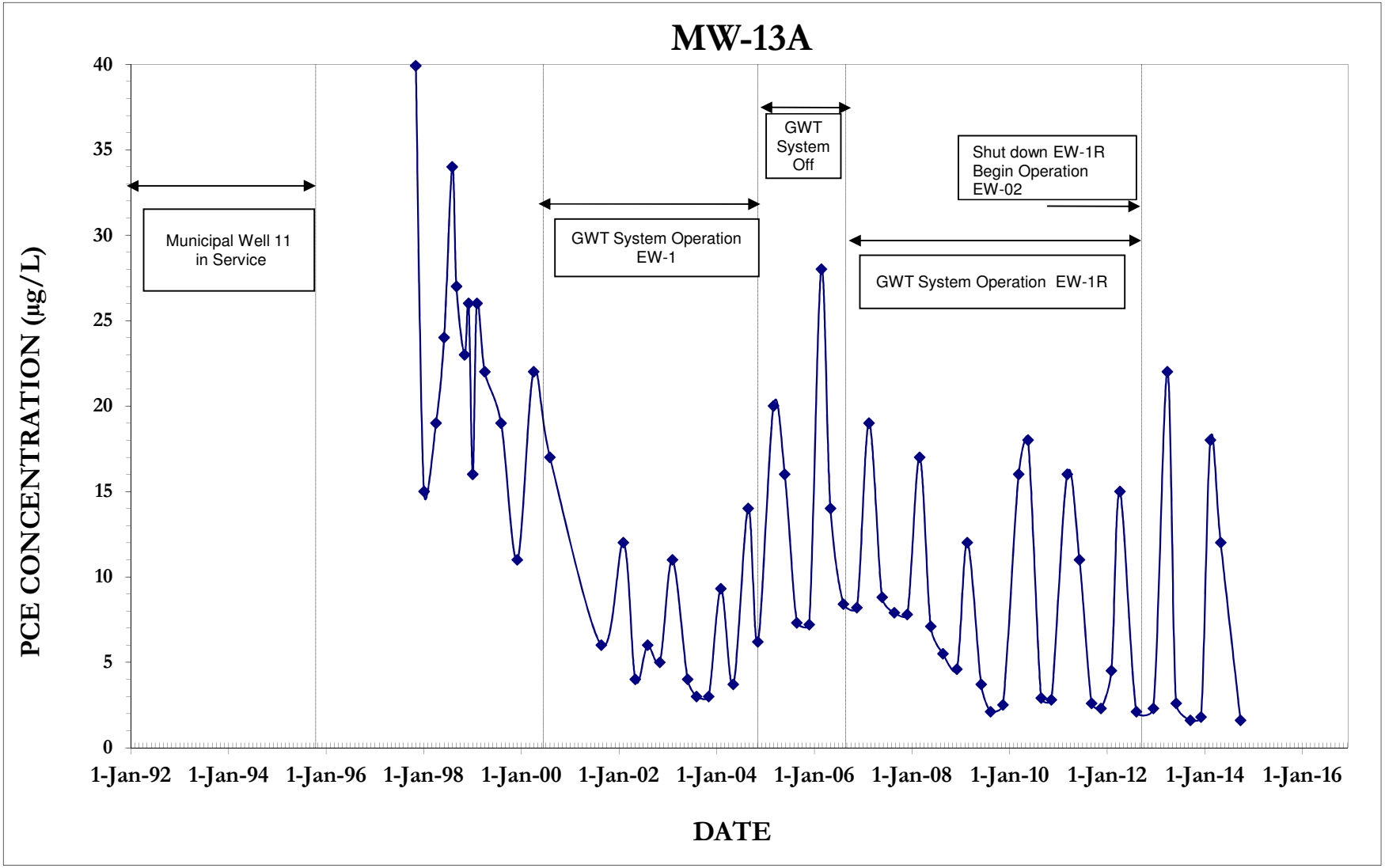

FIGURE G-4(r)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

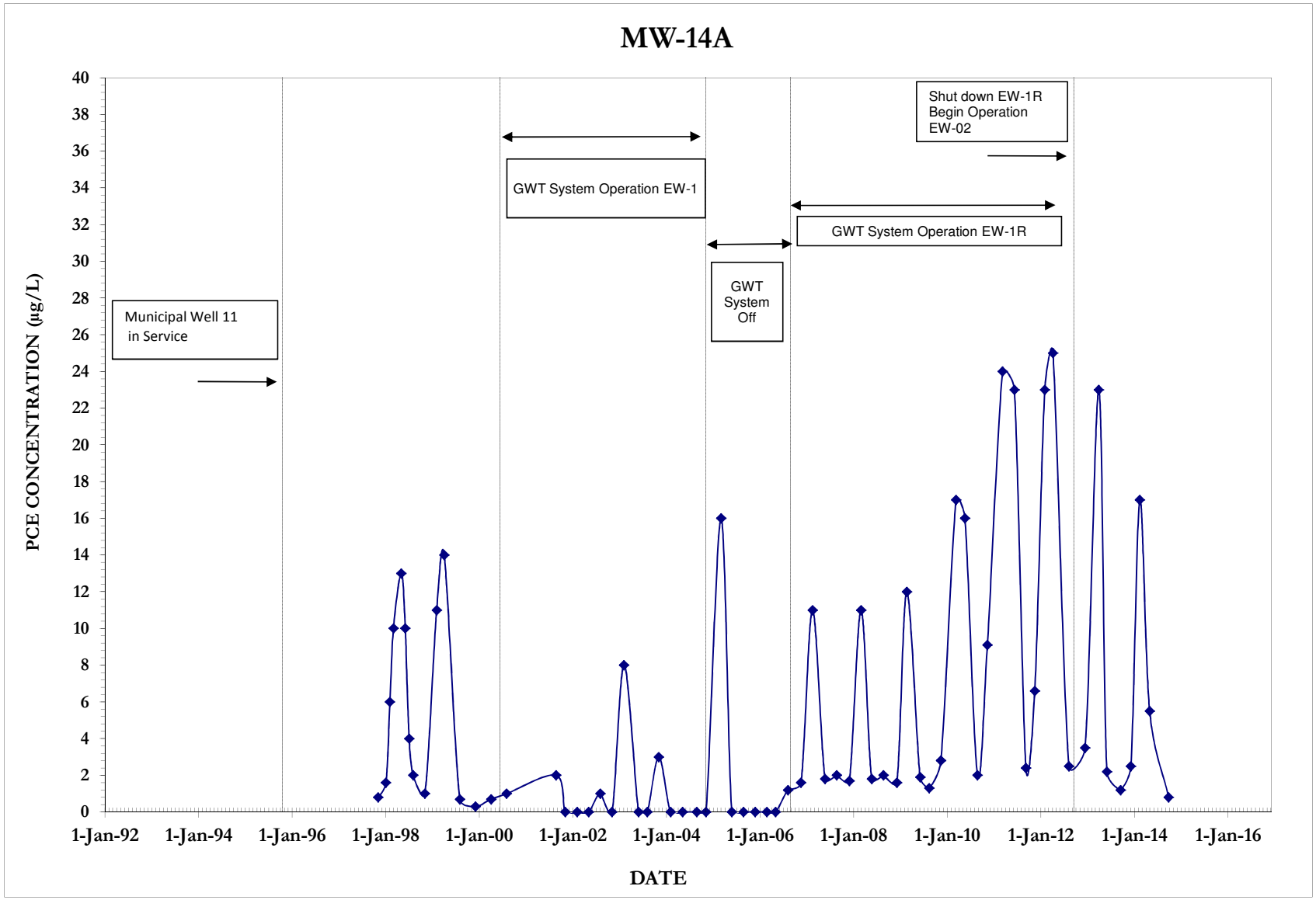

FIGURE G-4(s)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

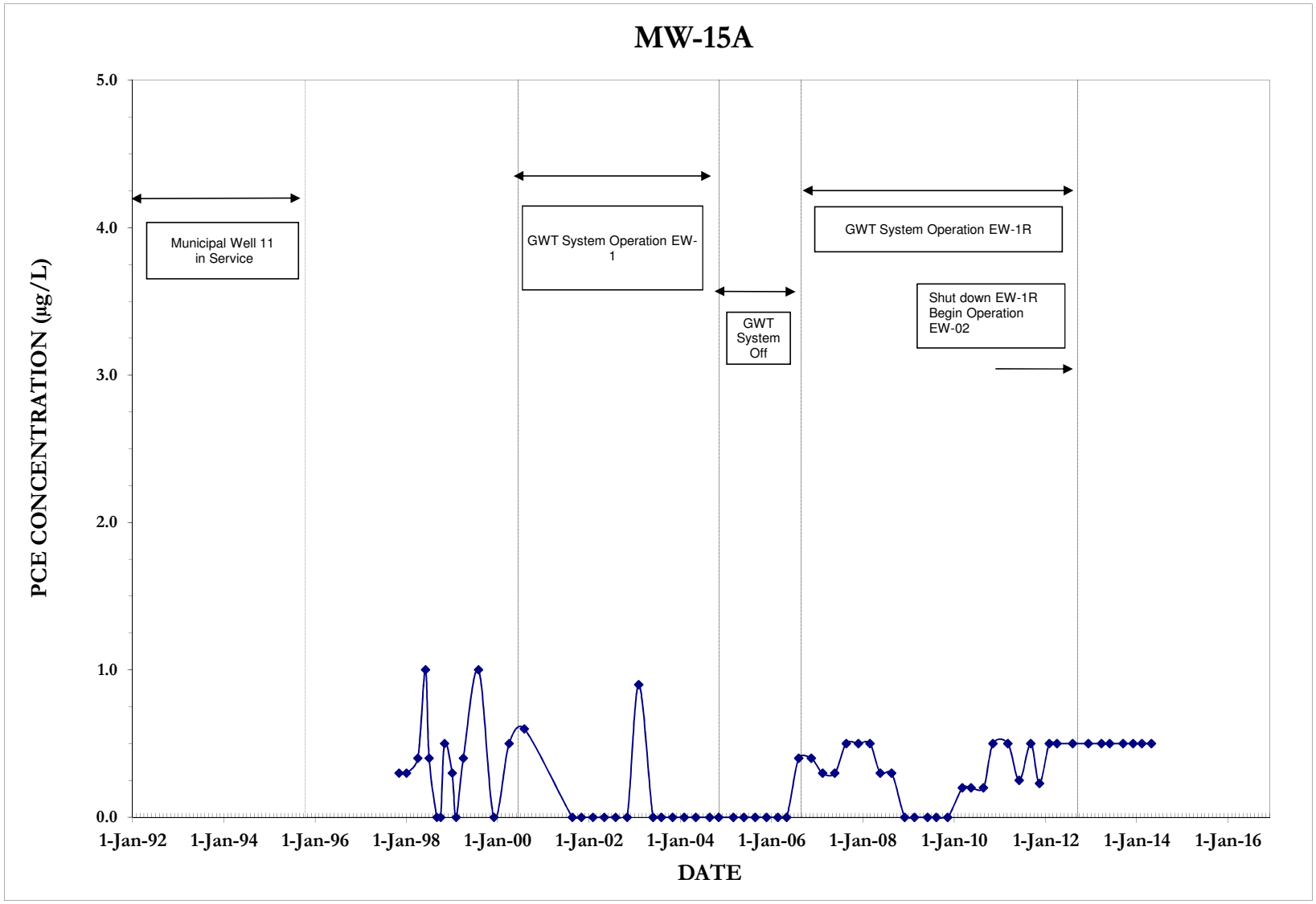

FIGURE G-4(t)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

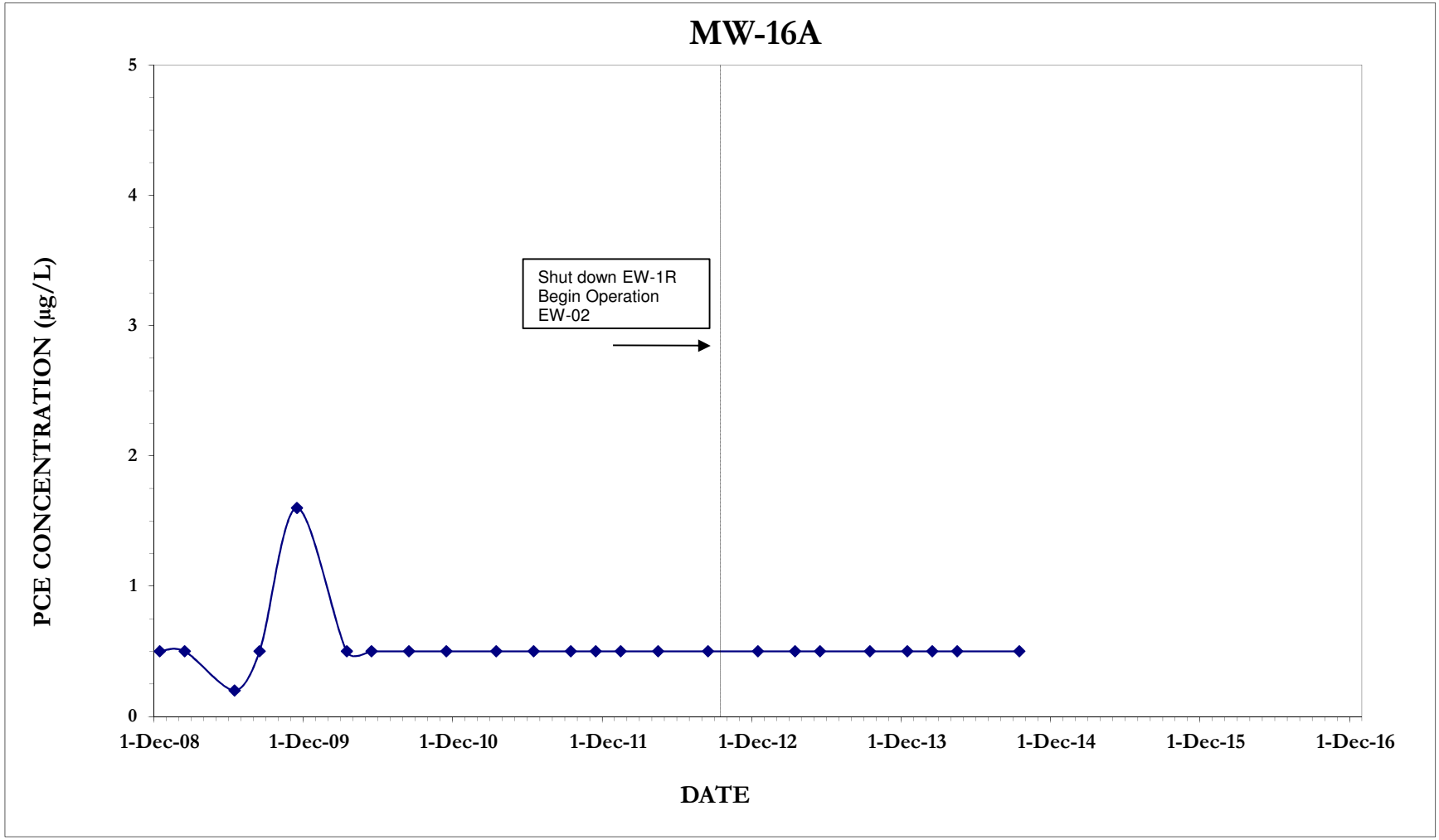

FIGURE G-4(u)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

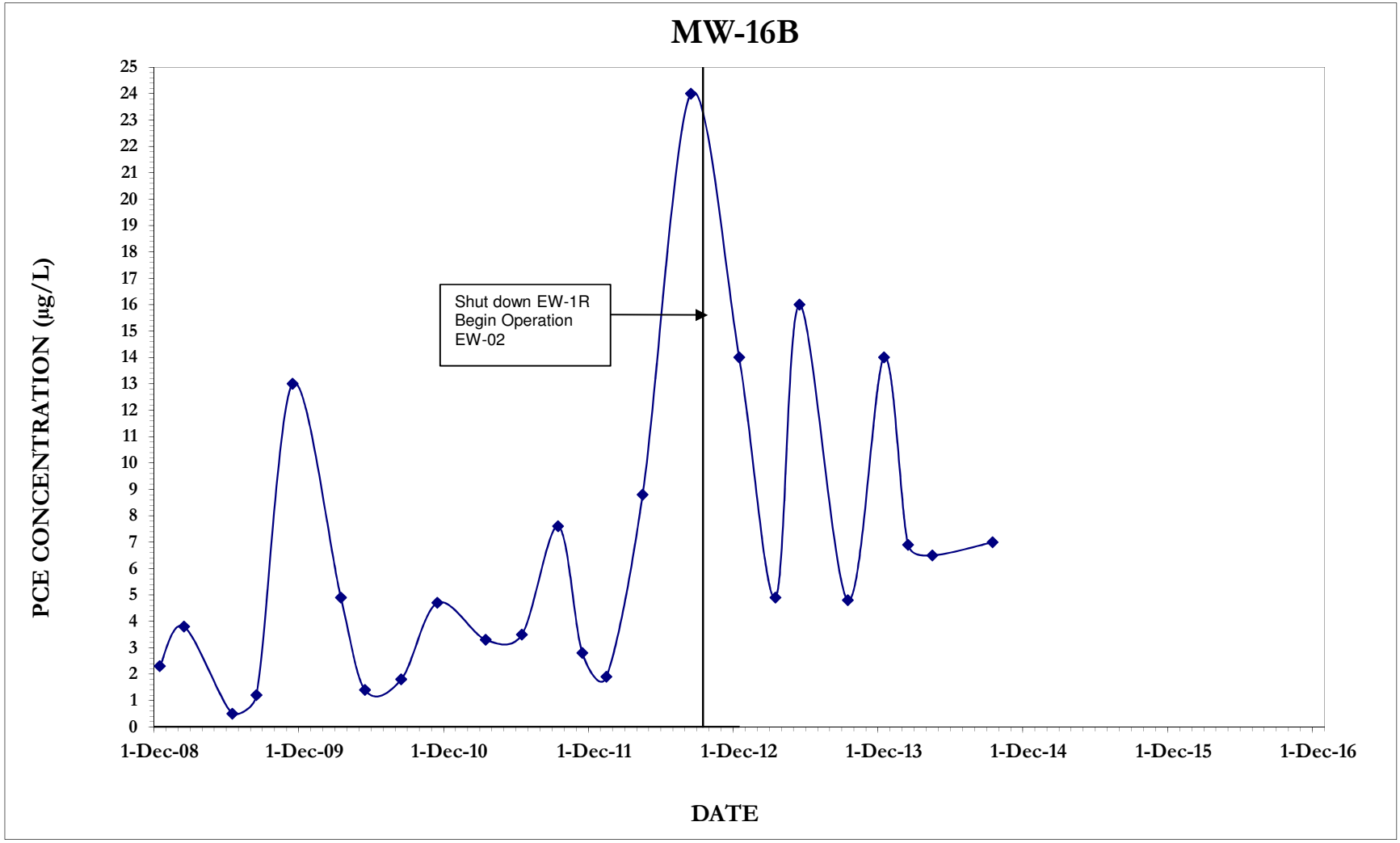

FIGURE G-4(v)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

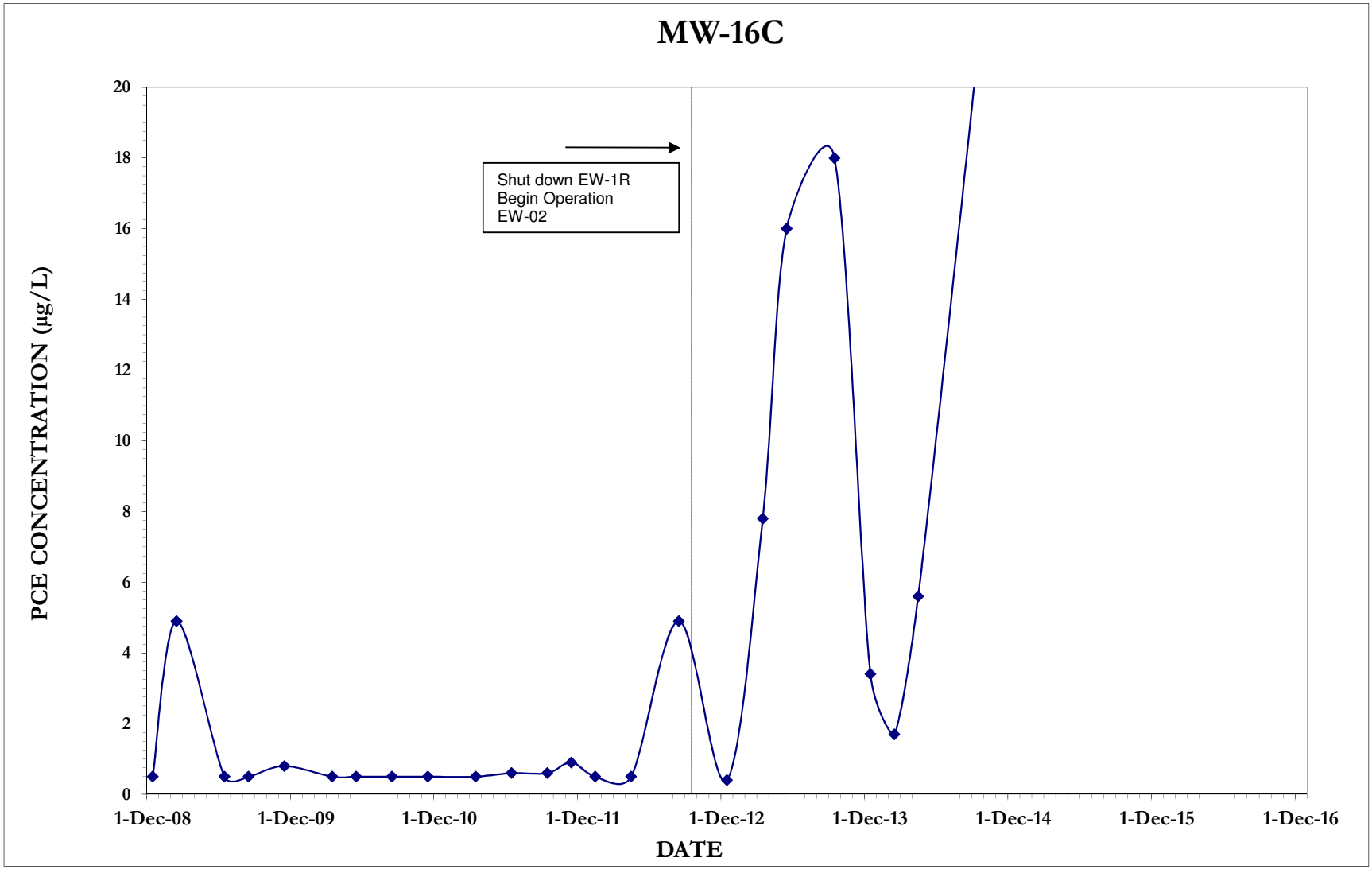

FIGURE G-4(w)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

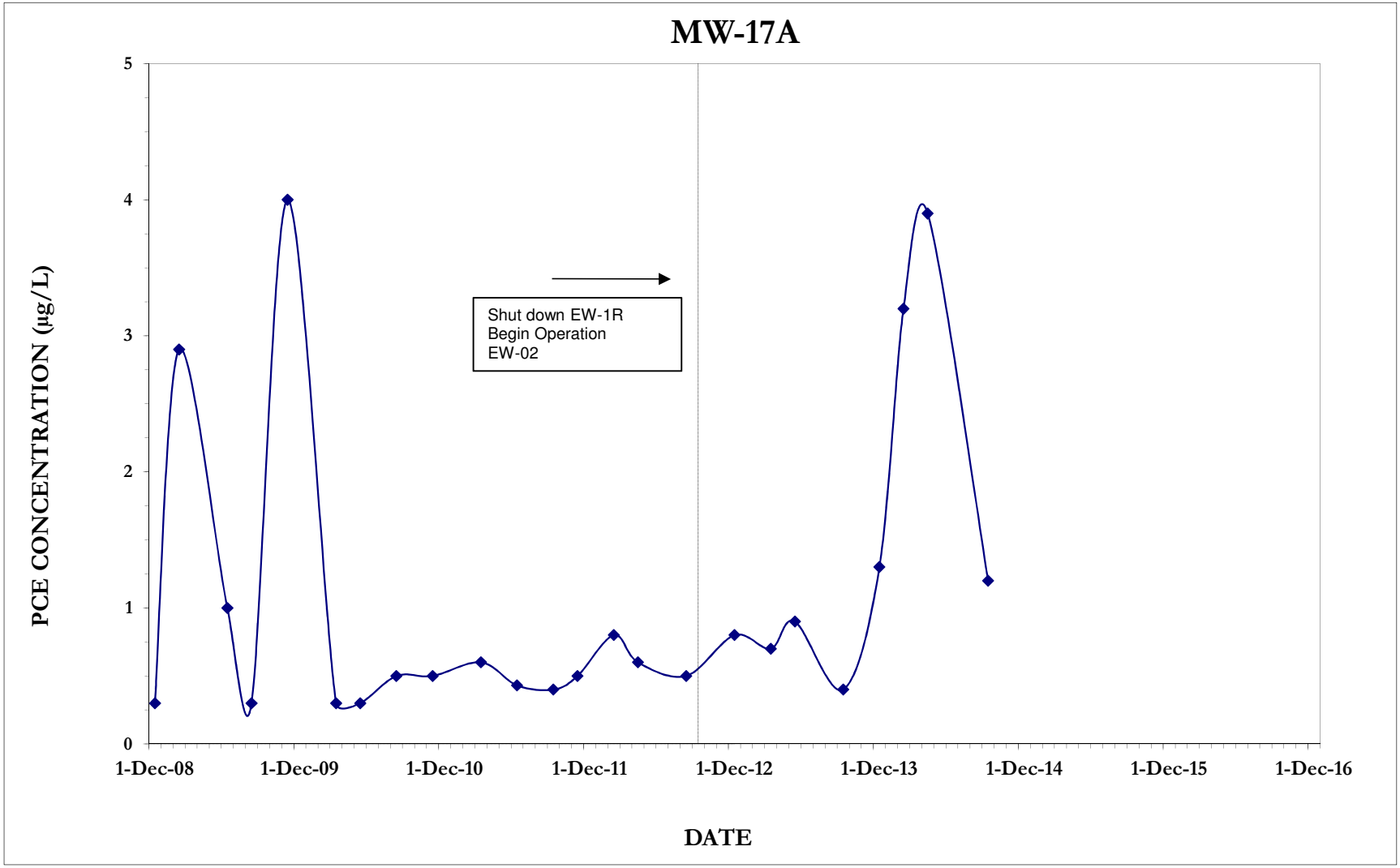

FIGURE G-4(x)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

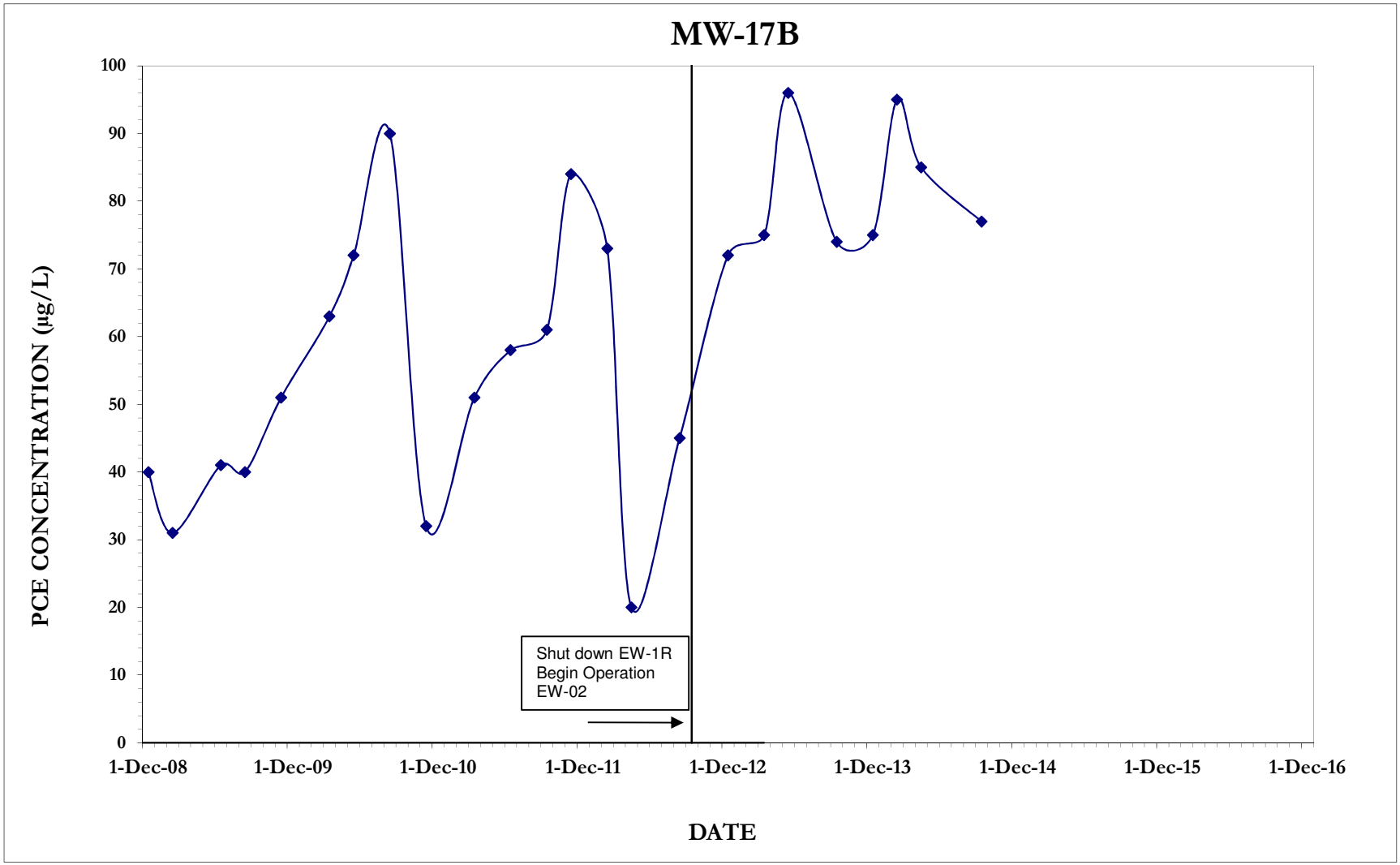

FIGURE G-4(y)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

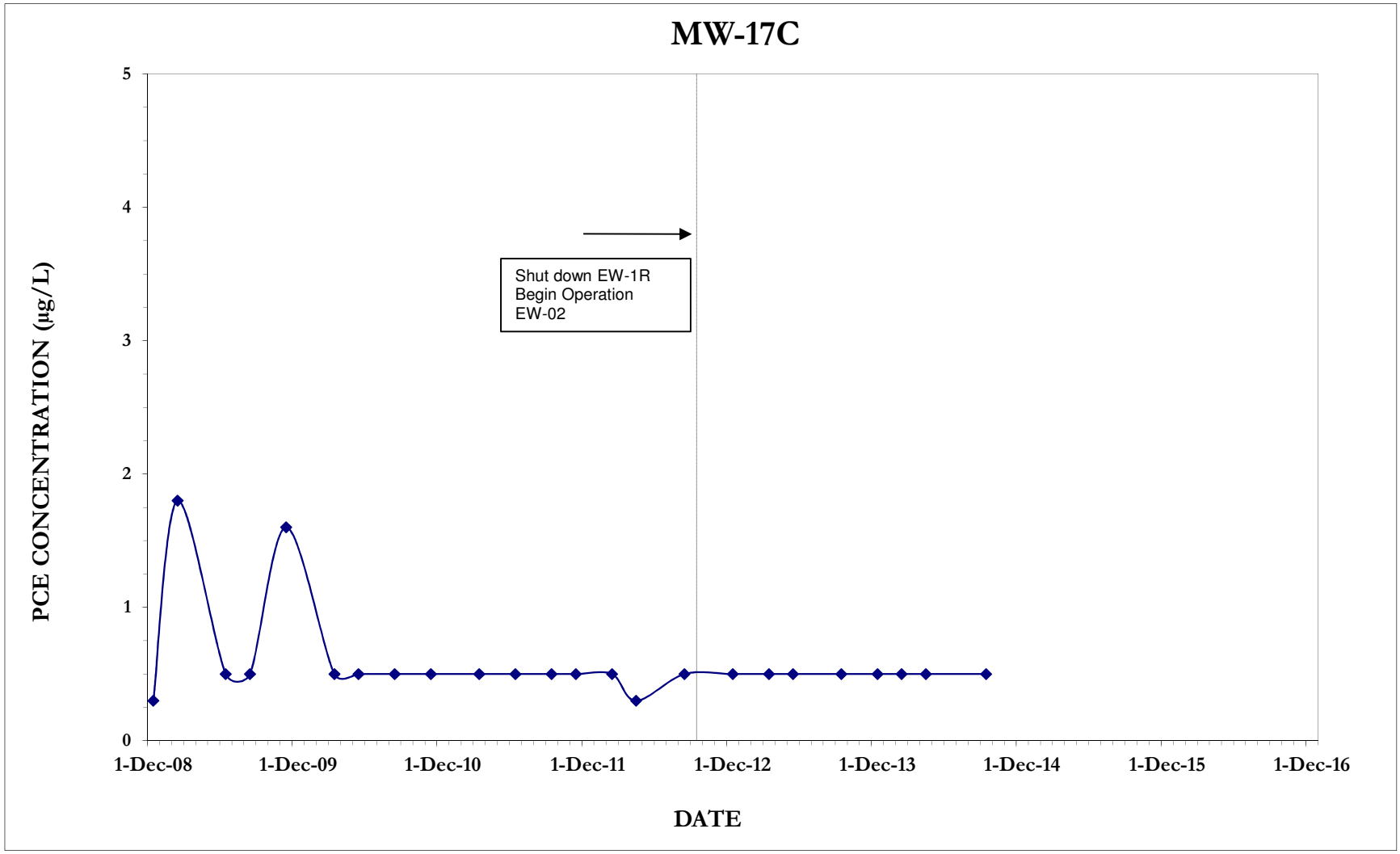

FIGURE G-4(z)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

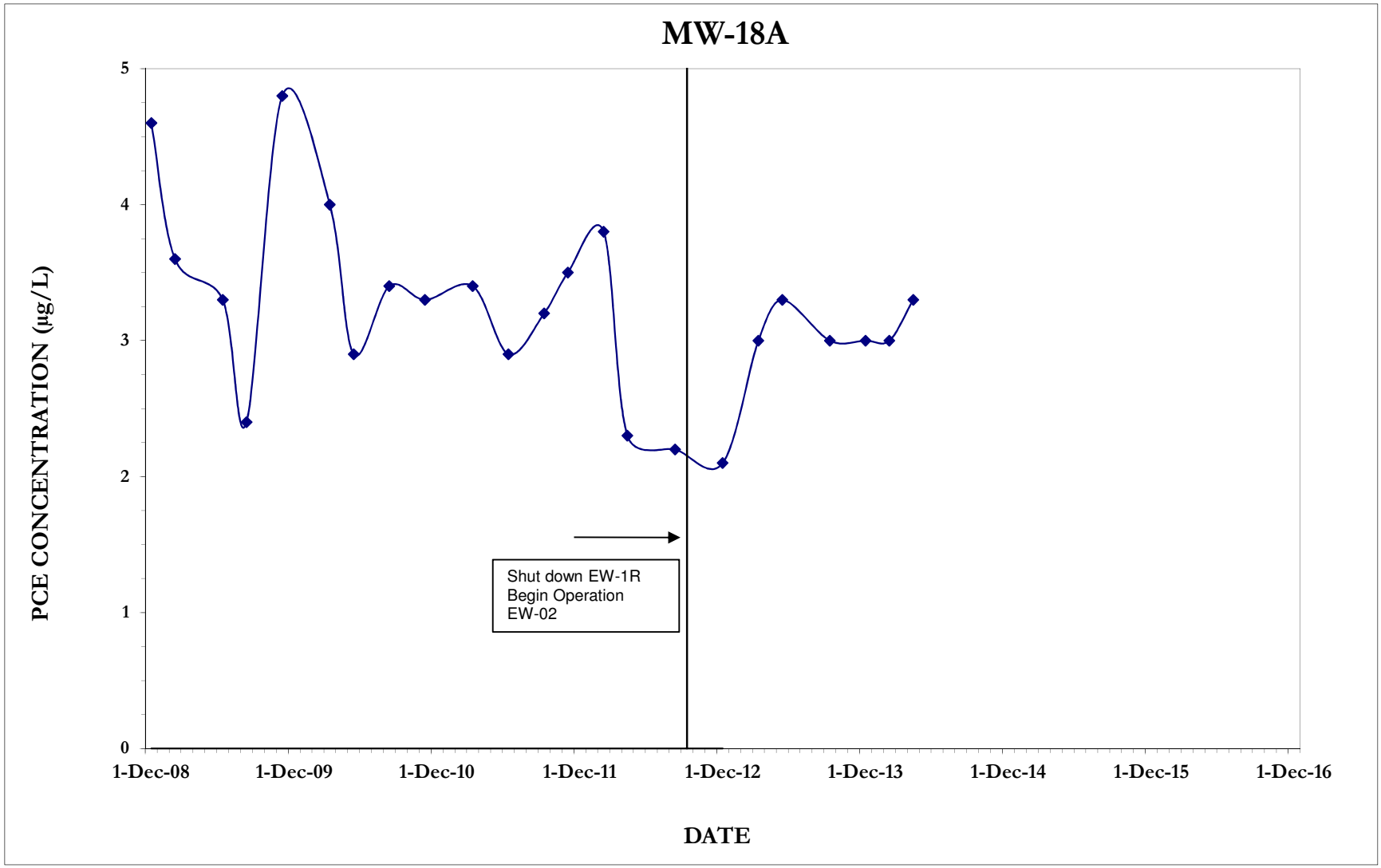

FIGURE G-4(aa)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

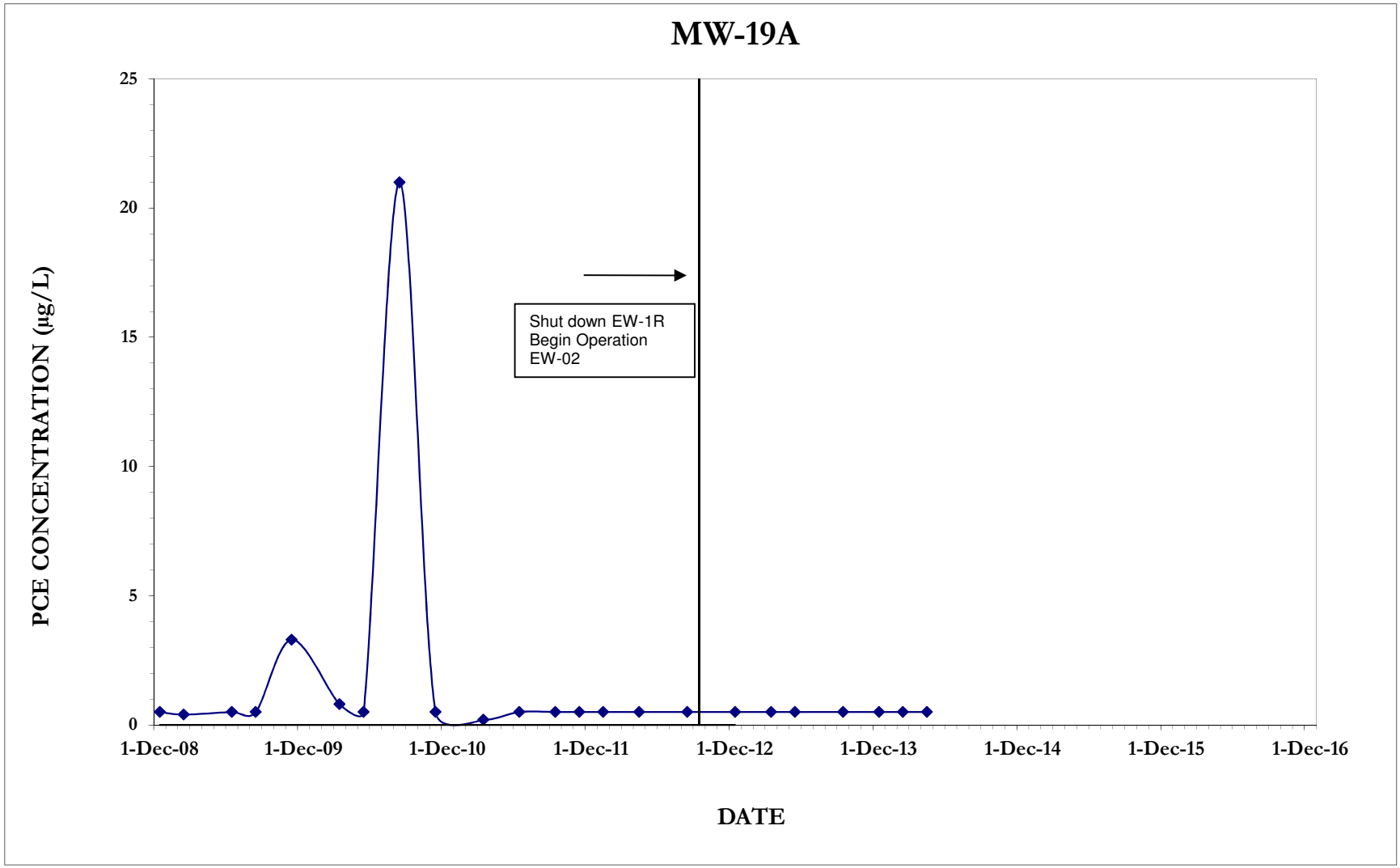

FIGURE G-4(ab)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

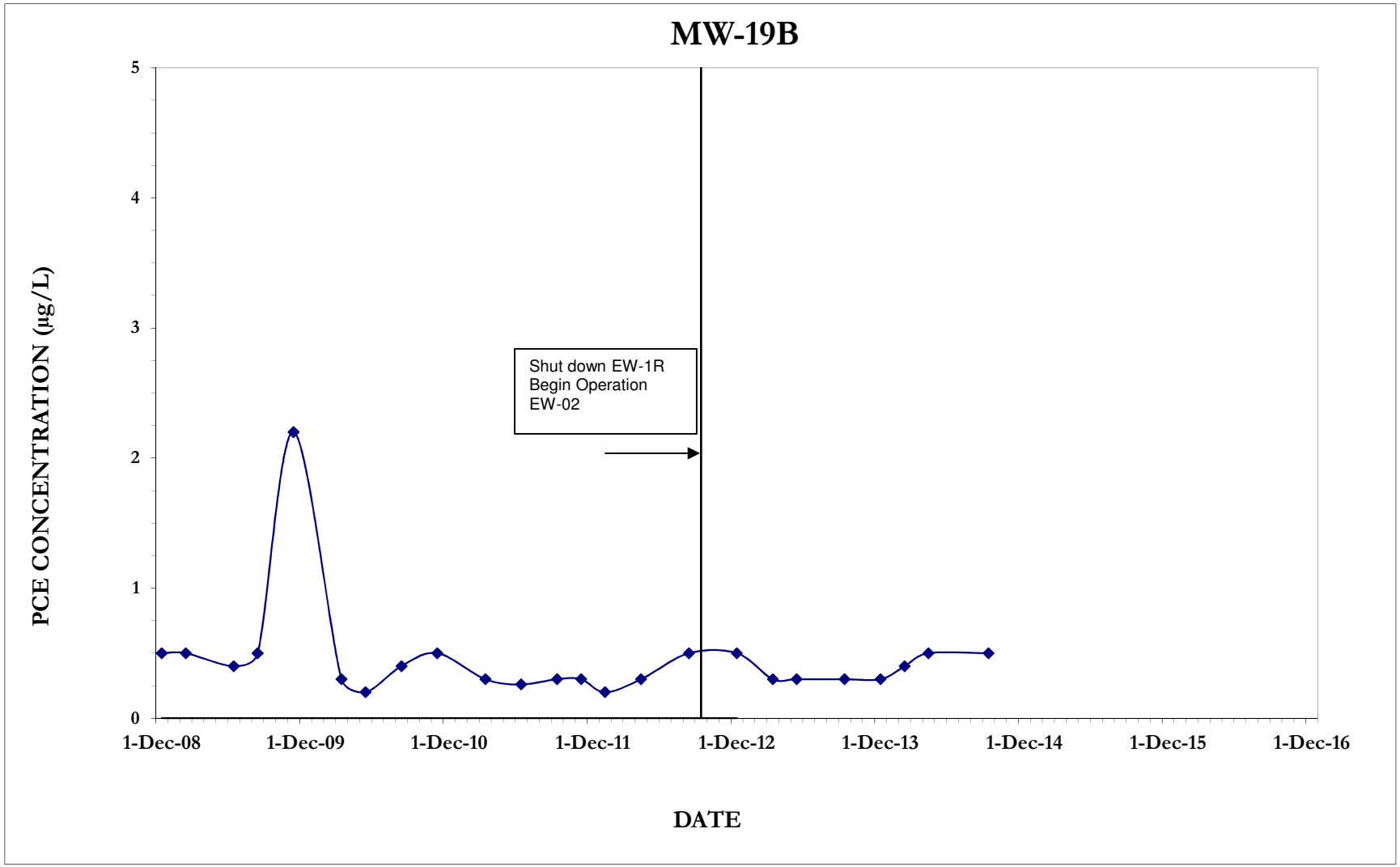

FIGURE G-4(ac)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

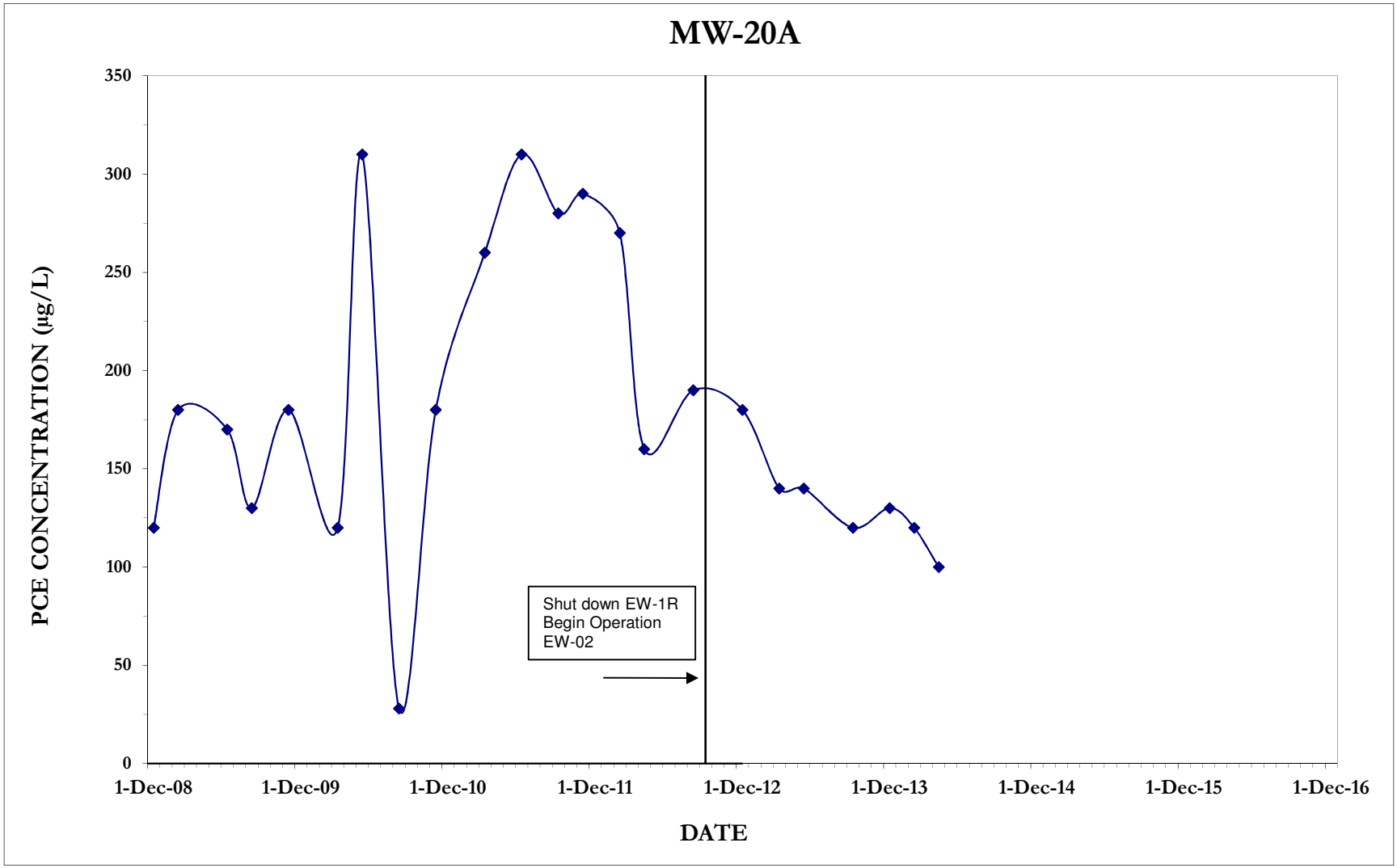

FIGURE G-4(ad)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

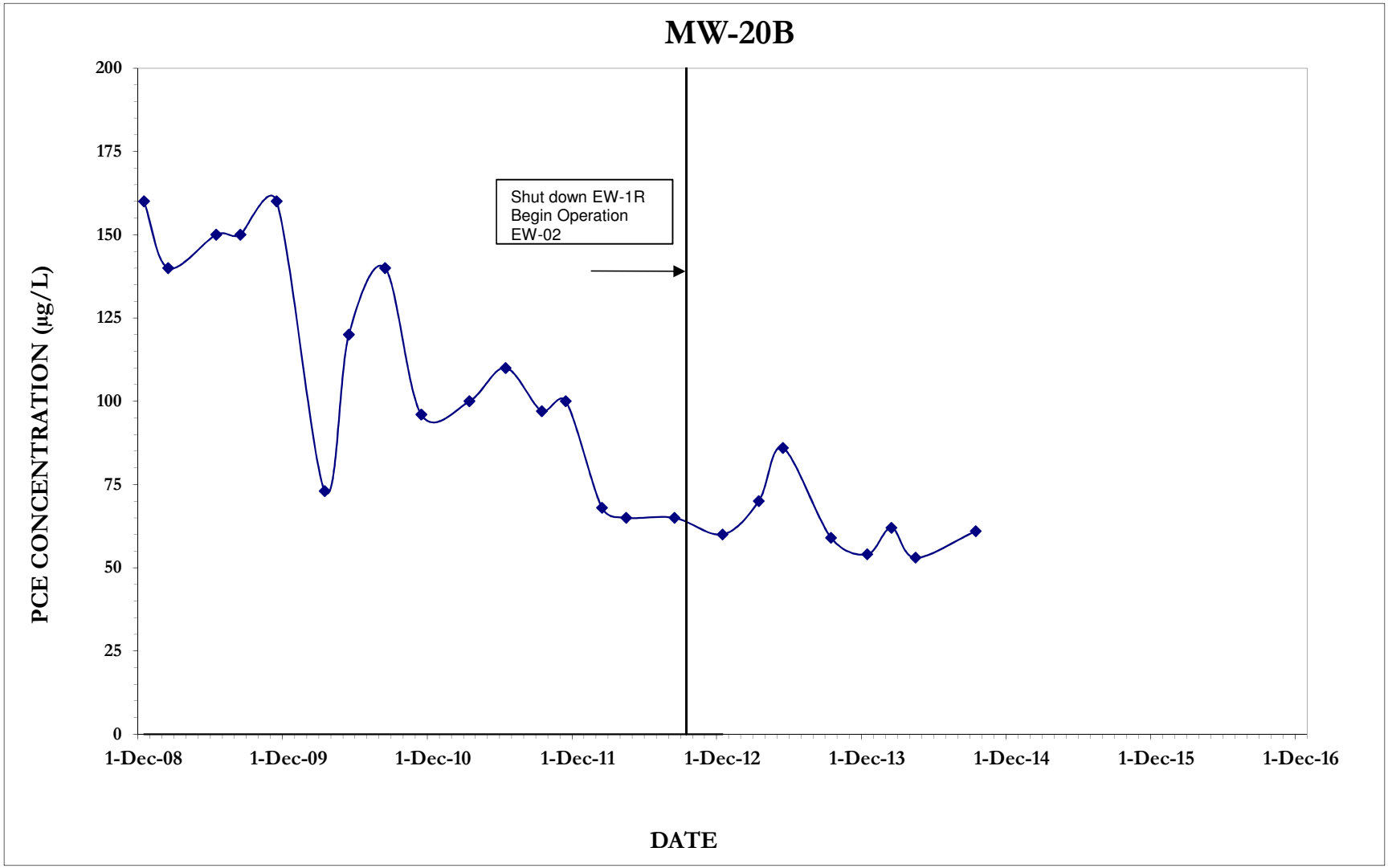

FIGURE G-4(ae)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

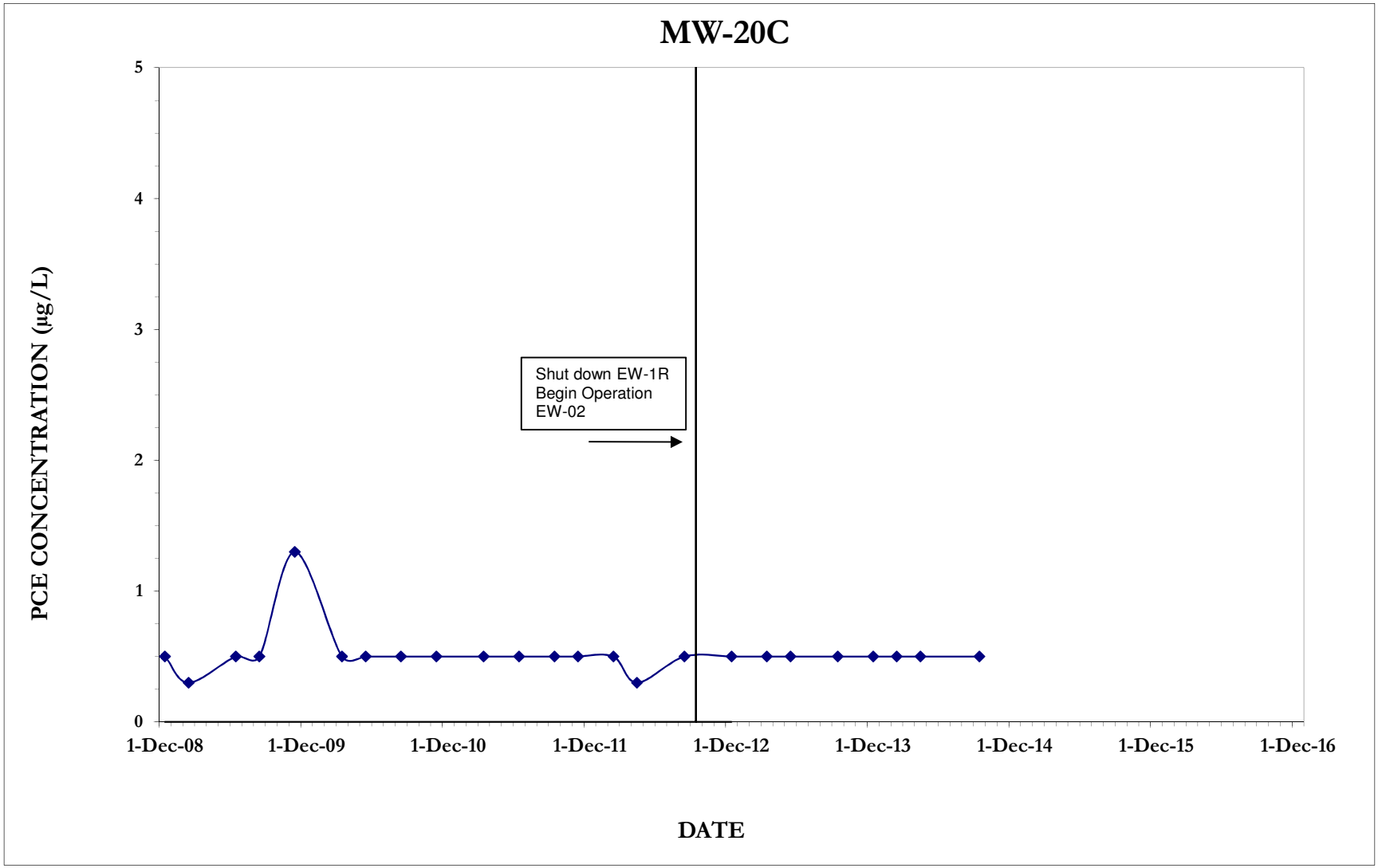

FIGURE G-4(af)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

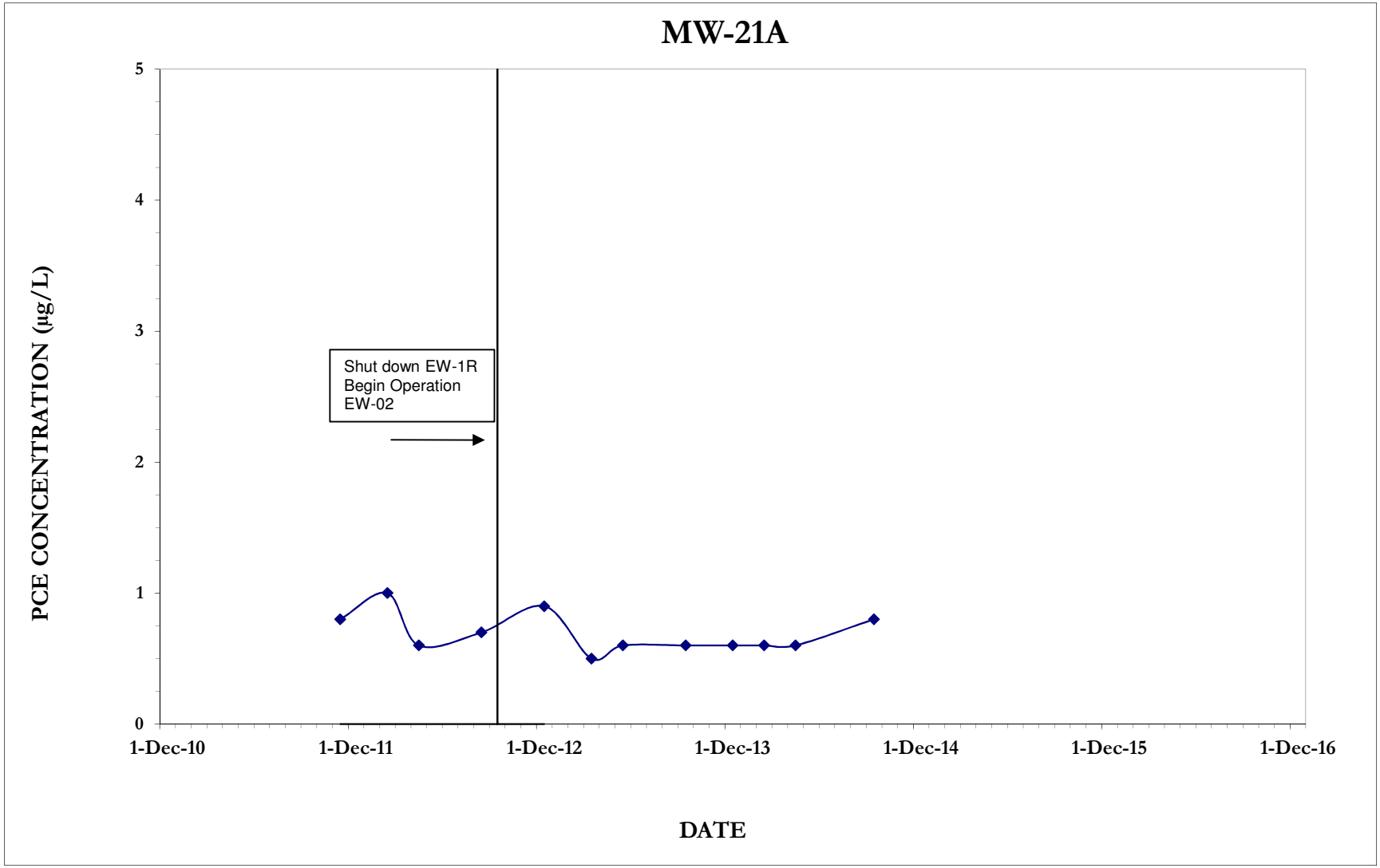

FIGURE G-4(ag)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

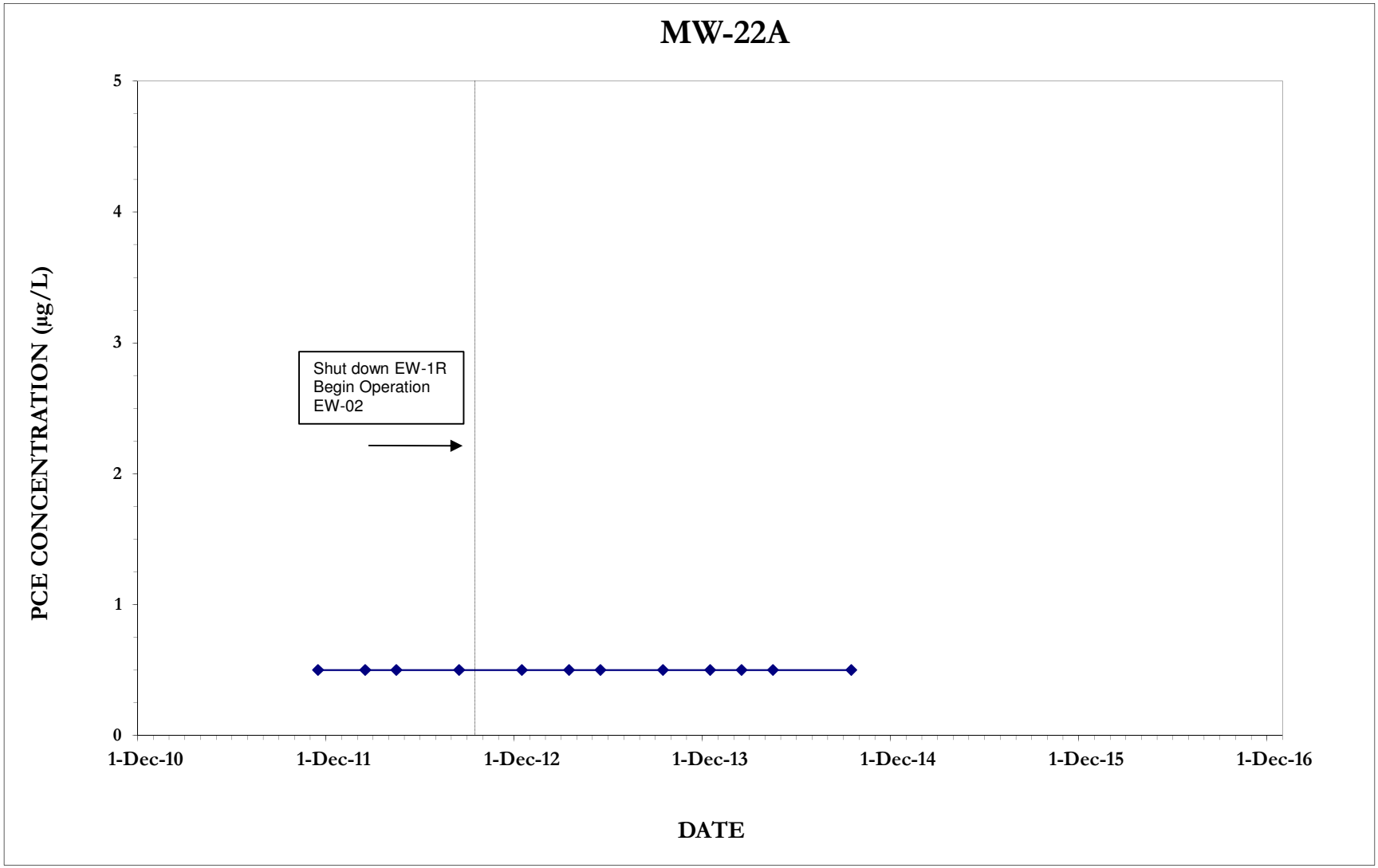

FIGURE G-4(ah)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

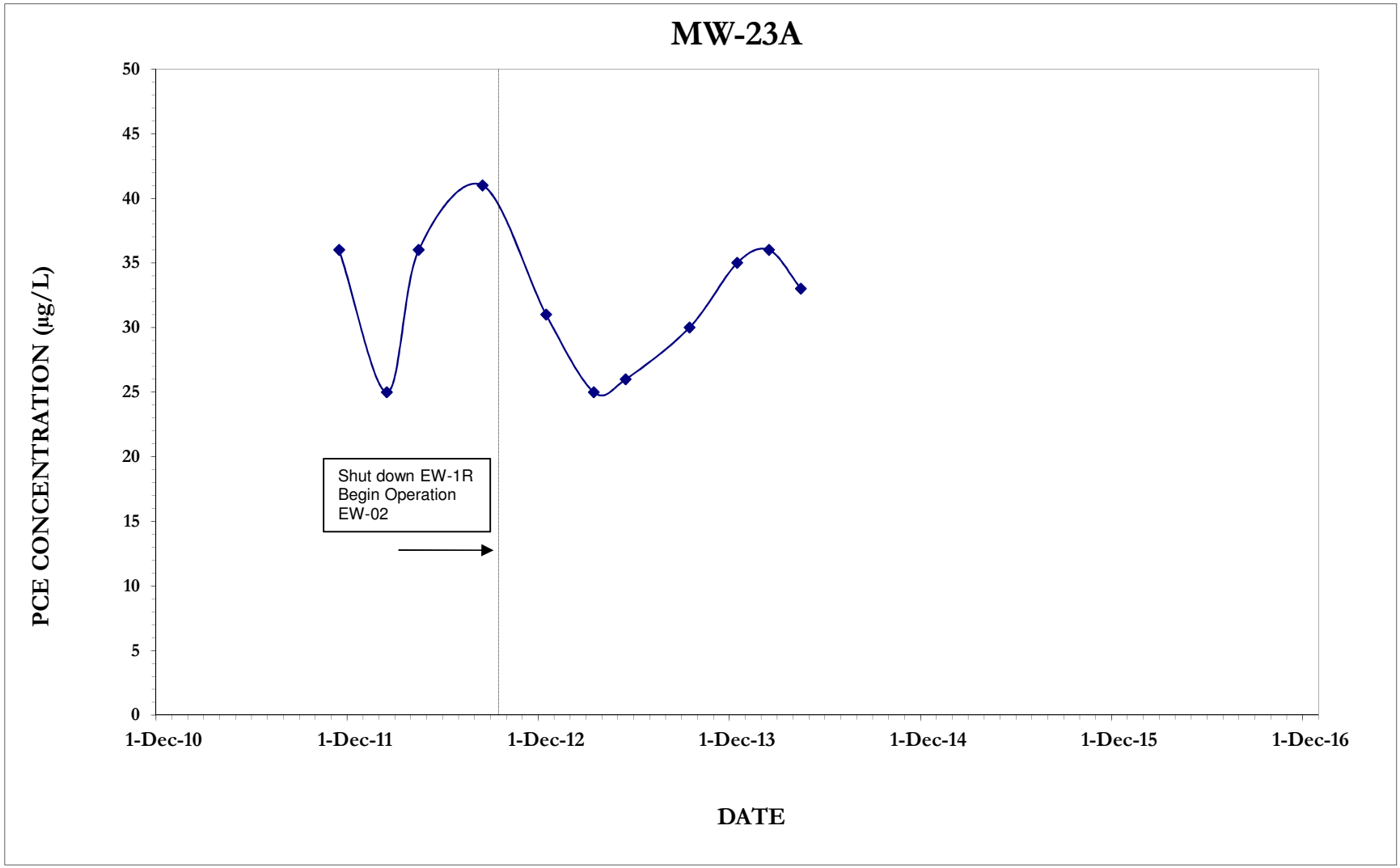

FIGURE G-4(ai)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

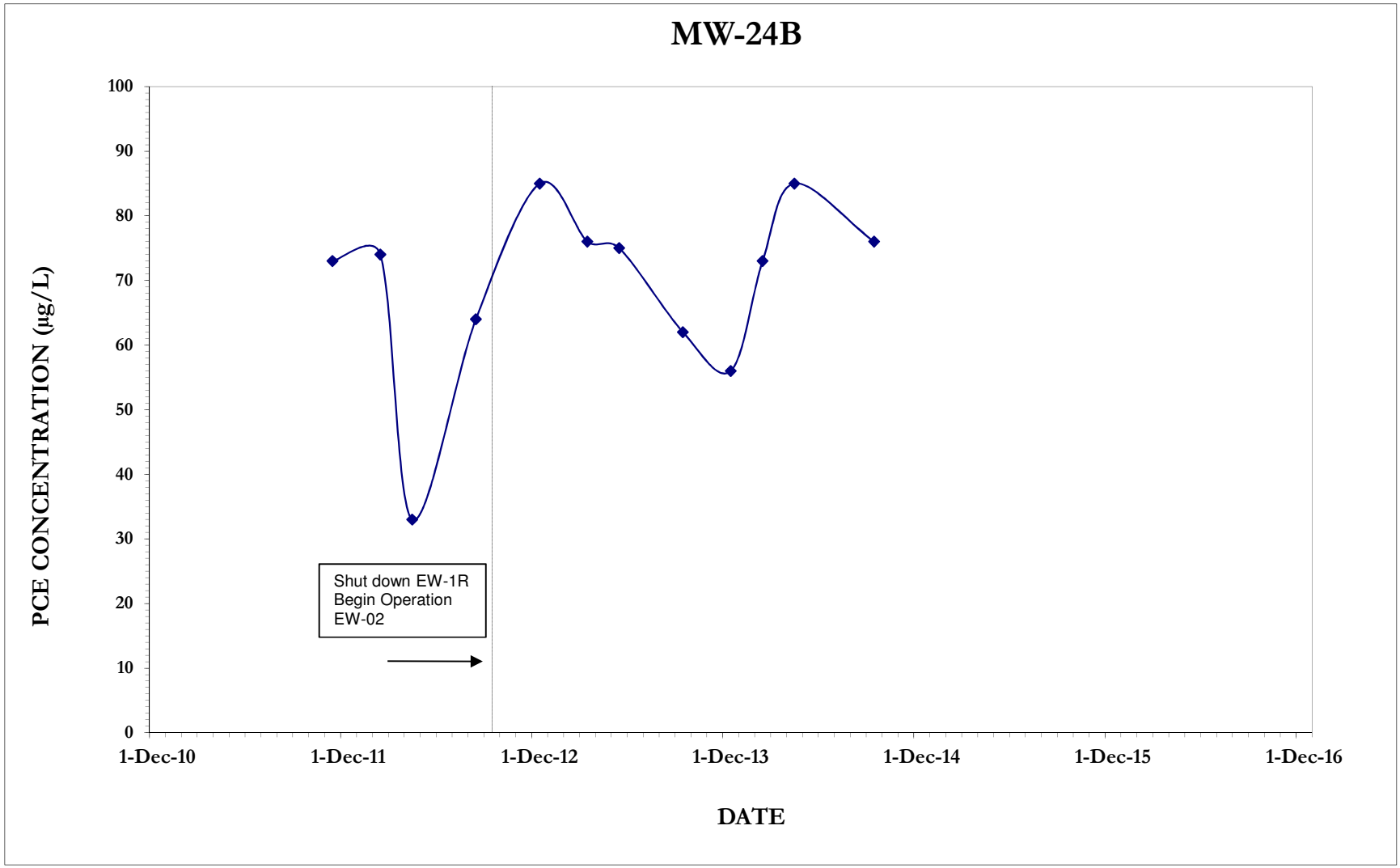

FIGURE G-4(aj)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

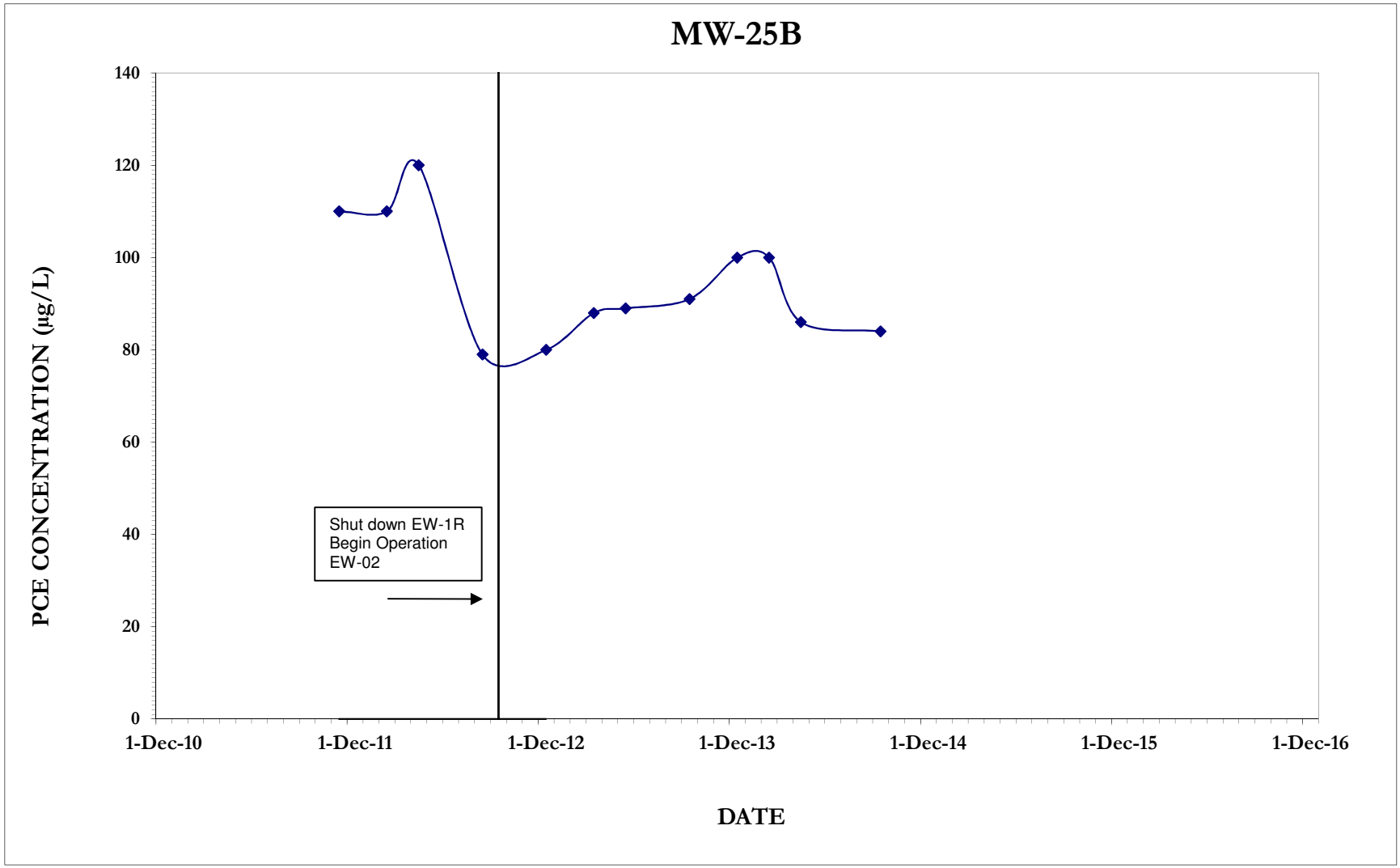

FIGURE G-4(ak)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

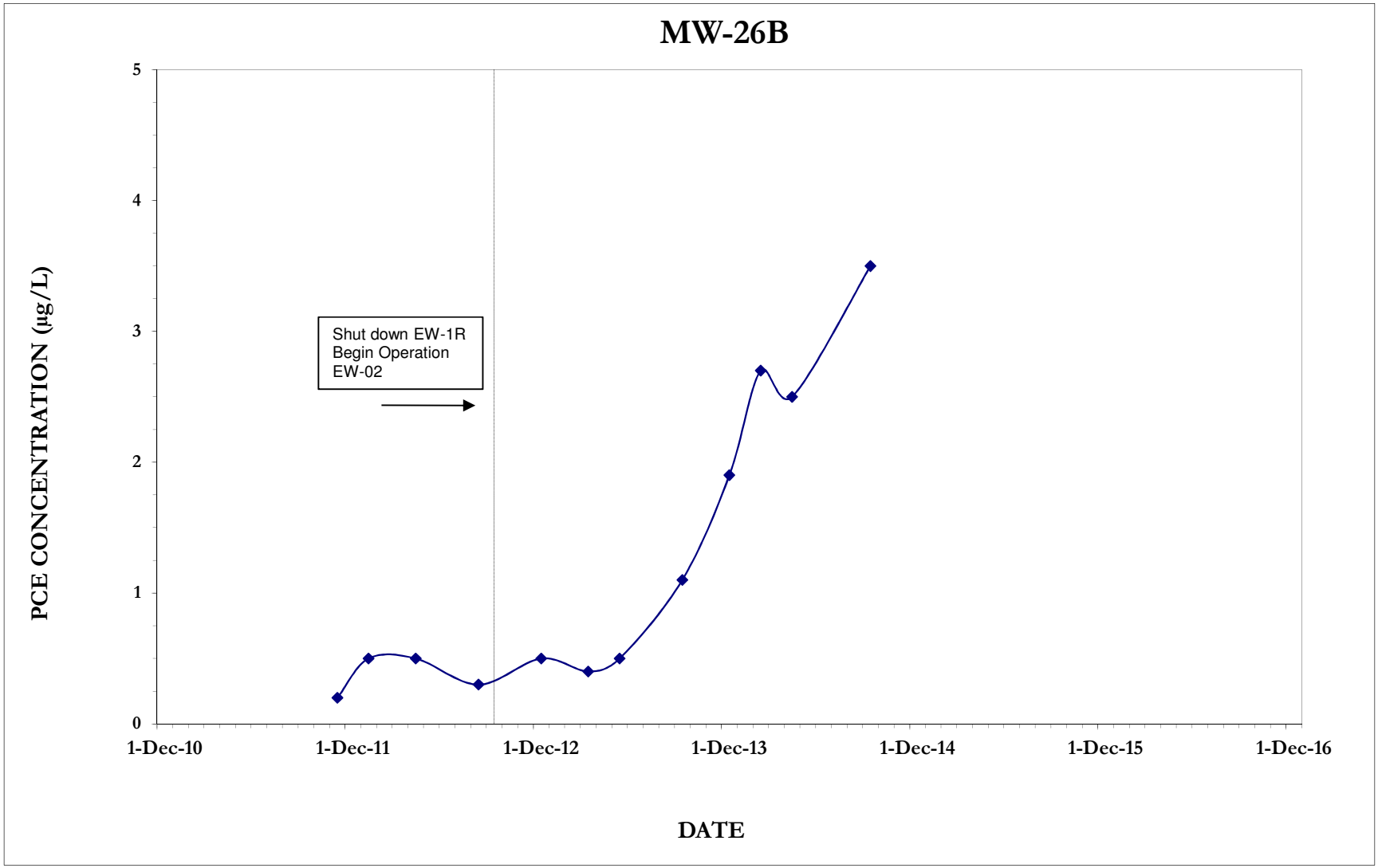

FIGURE G-4(al)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

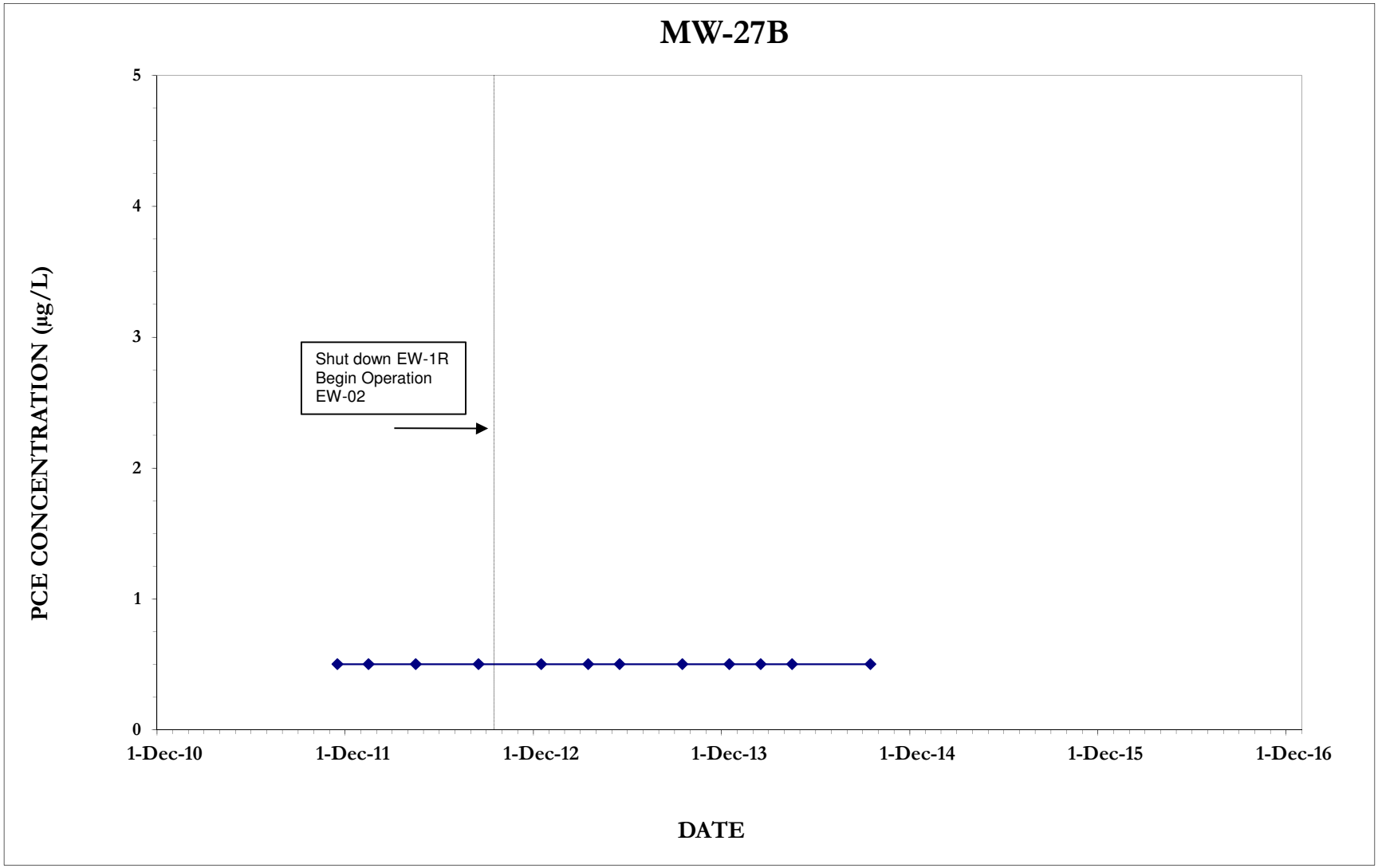

FIGURE G-4(am)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

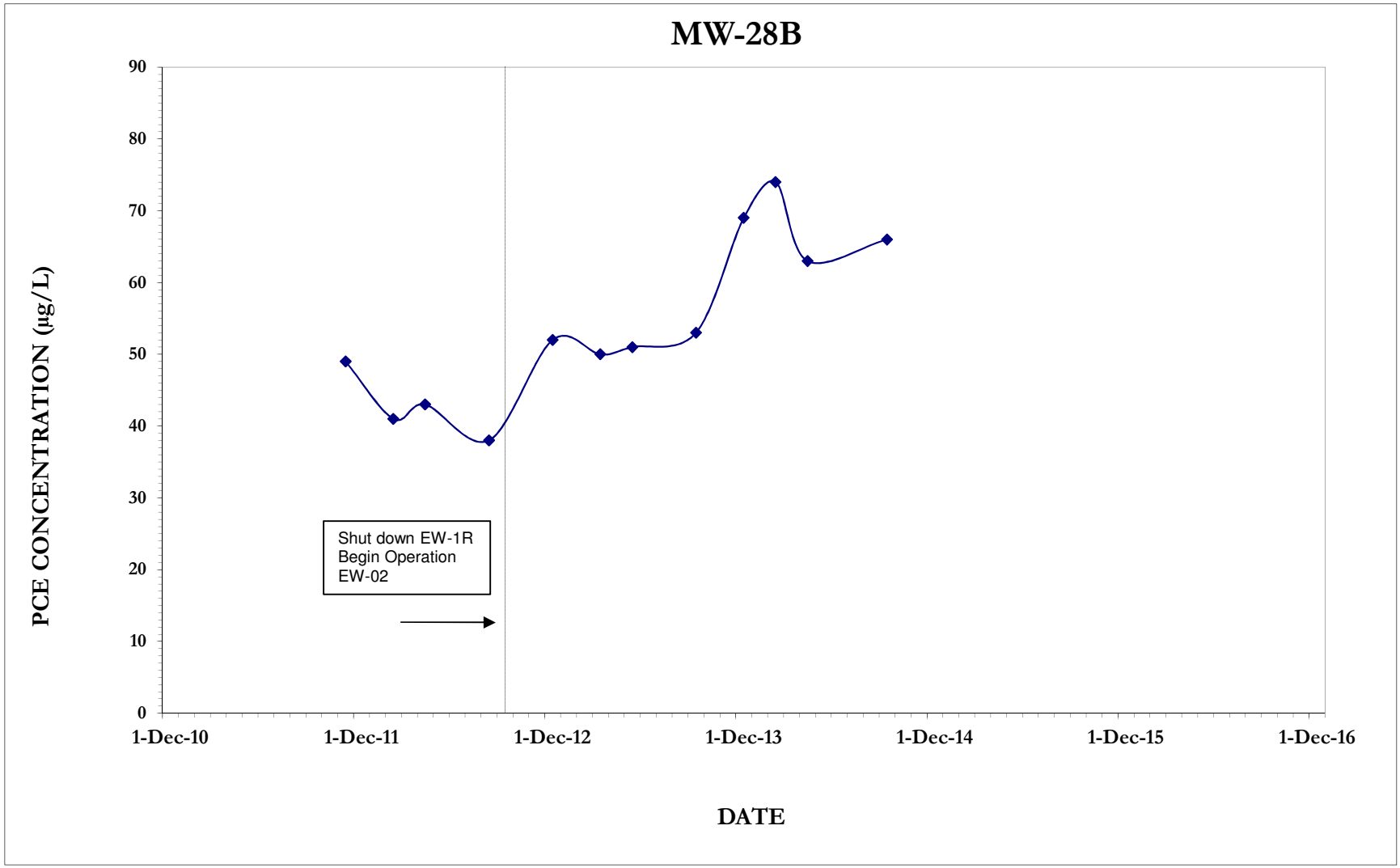

FIGURE G-4(an)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

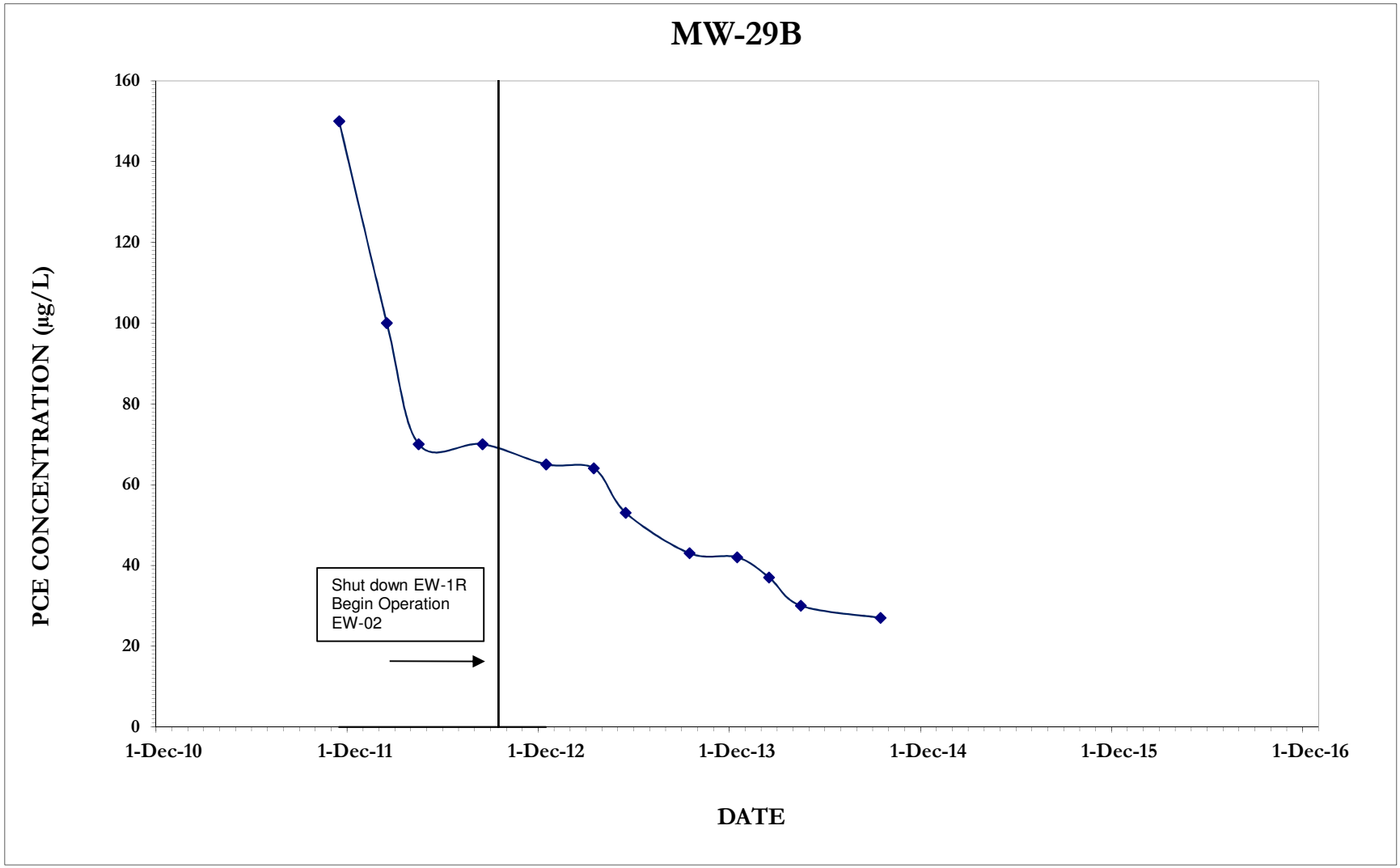

FIGURE G-4 (ao)
HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

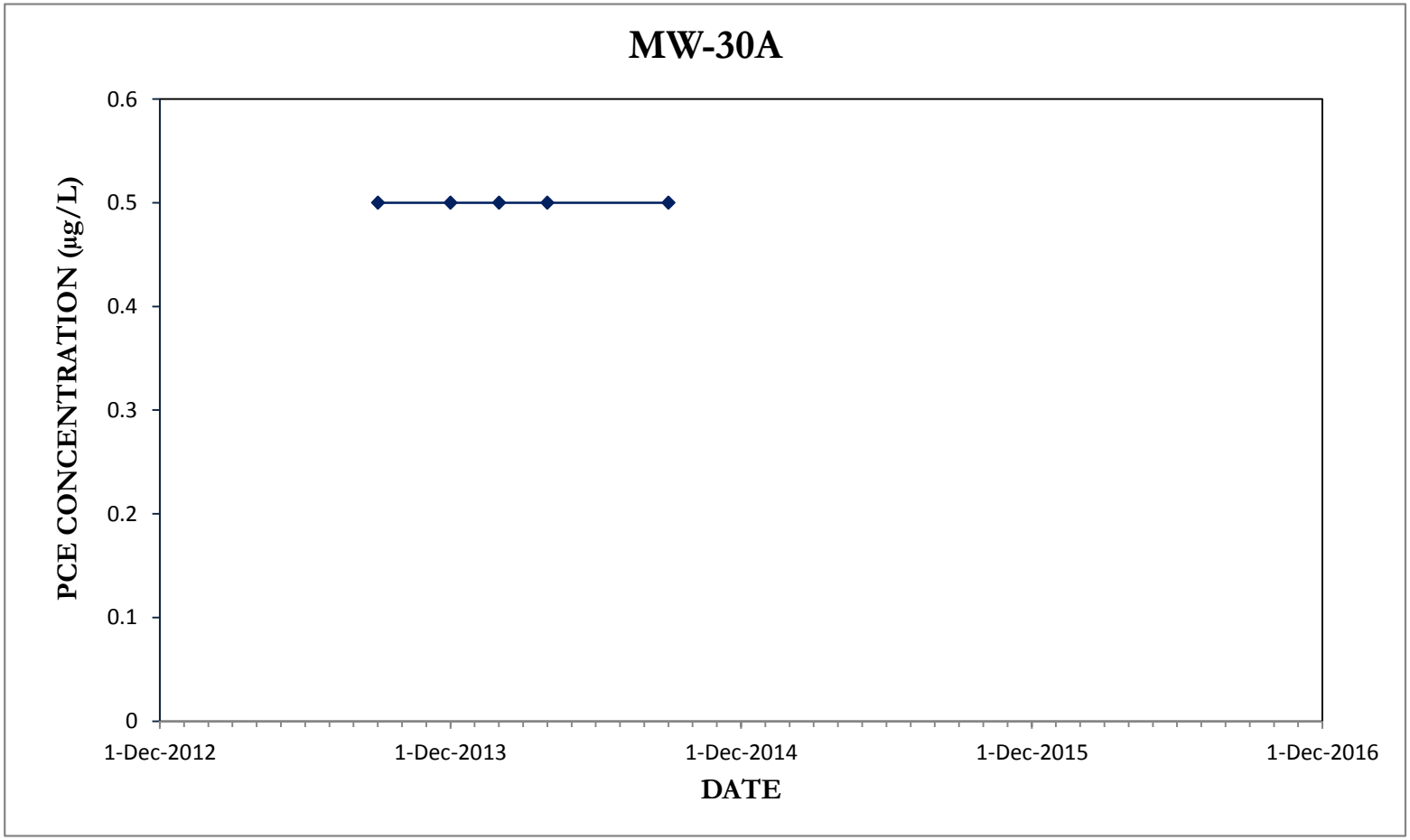

FIGURE G-4 (ap)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

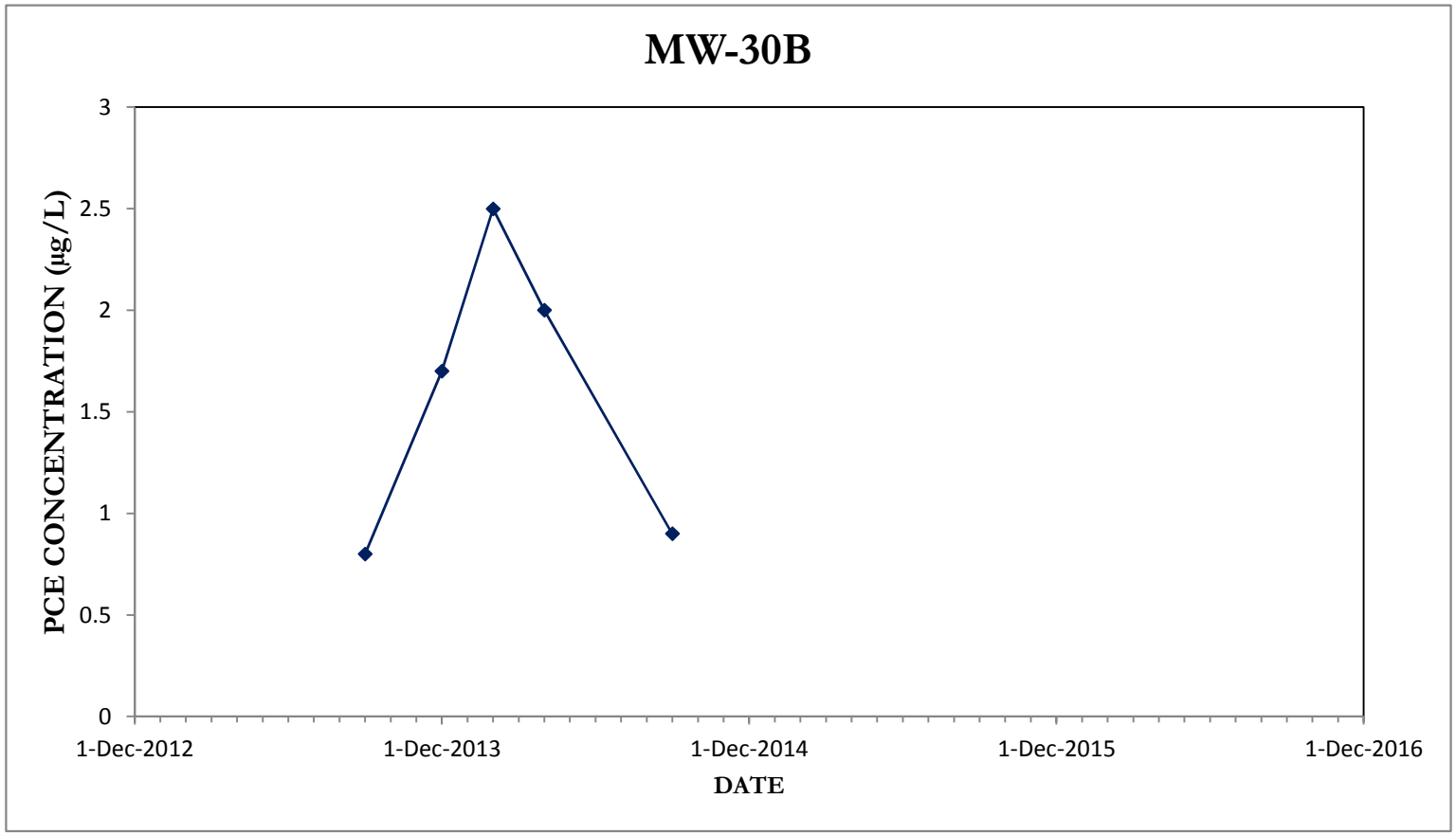

FIGURE G-4 (aq)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

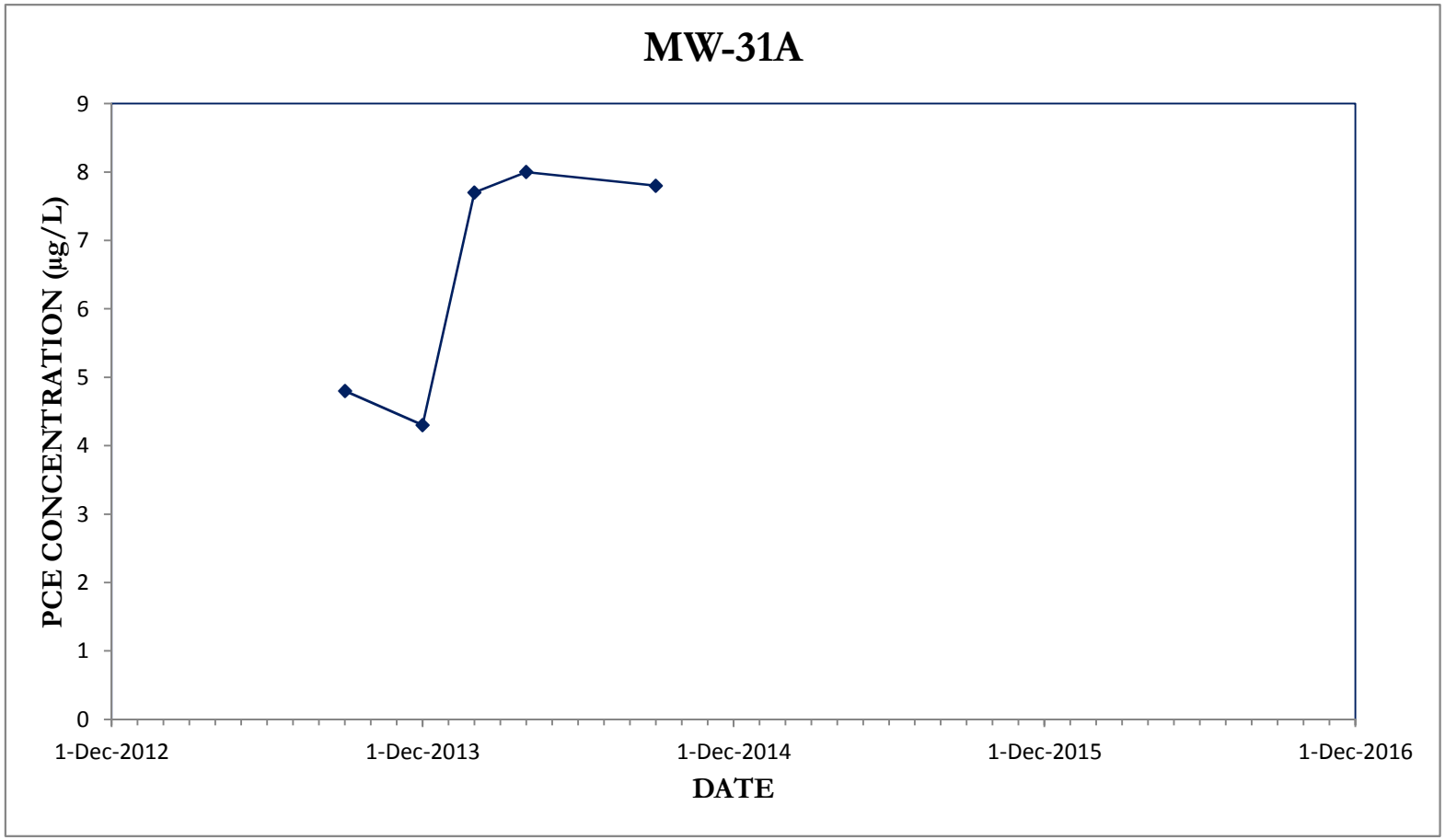

FIGURE G-4 (ar)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

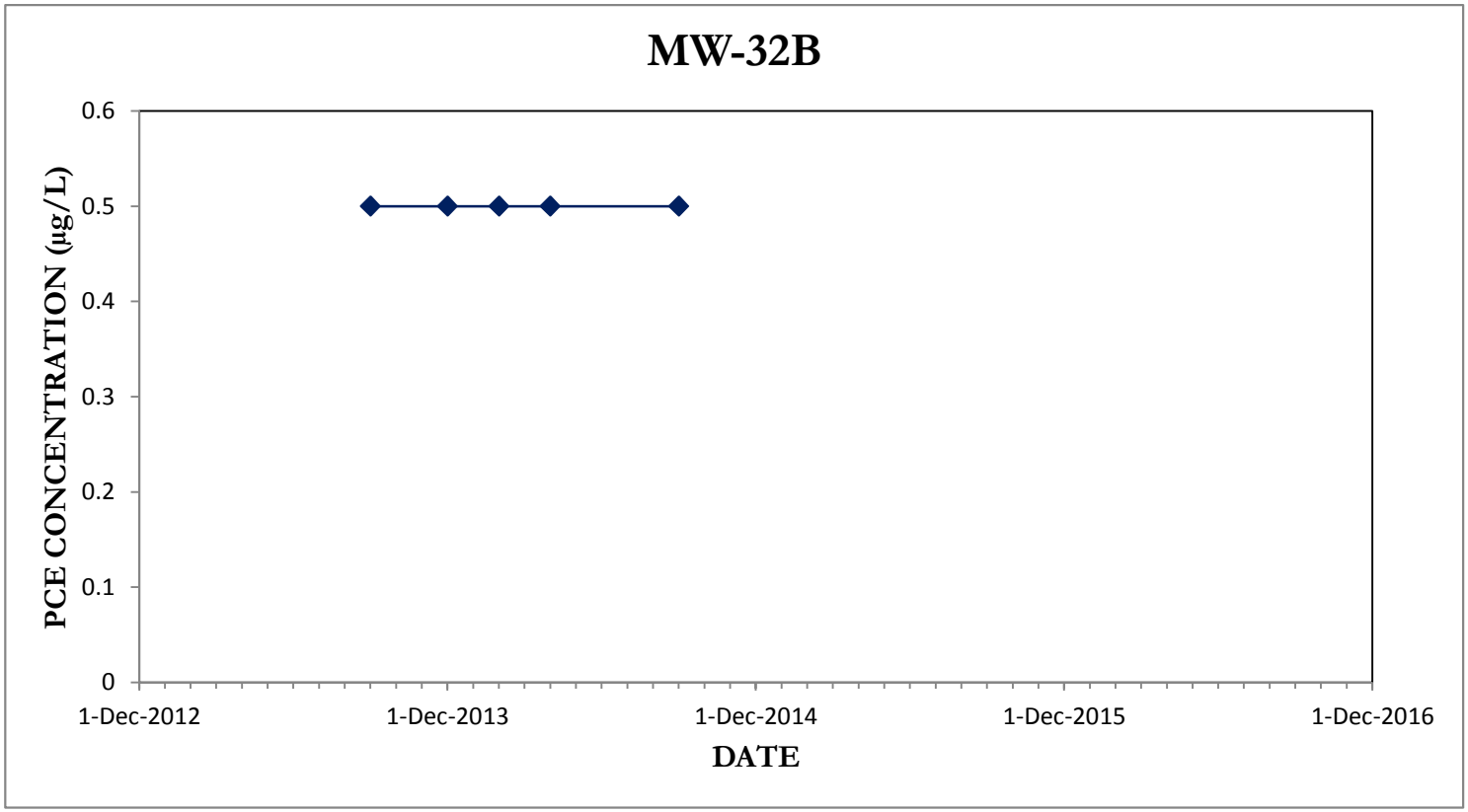

FIGURE G-4 (as)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

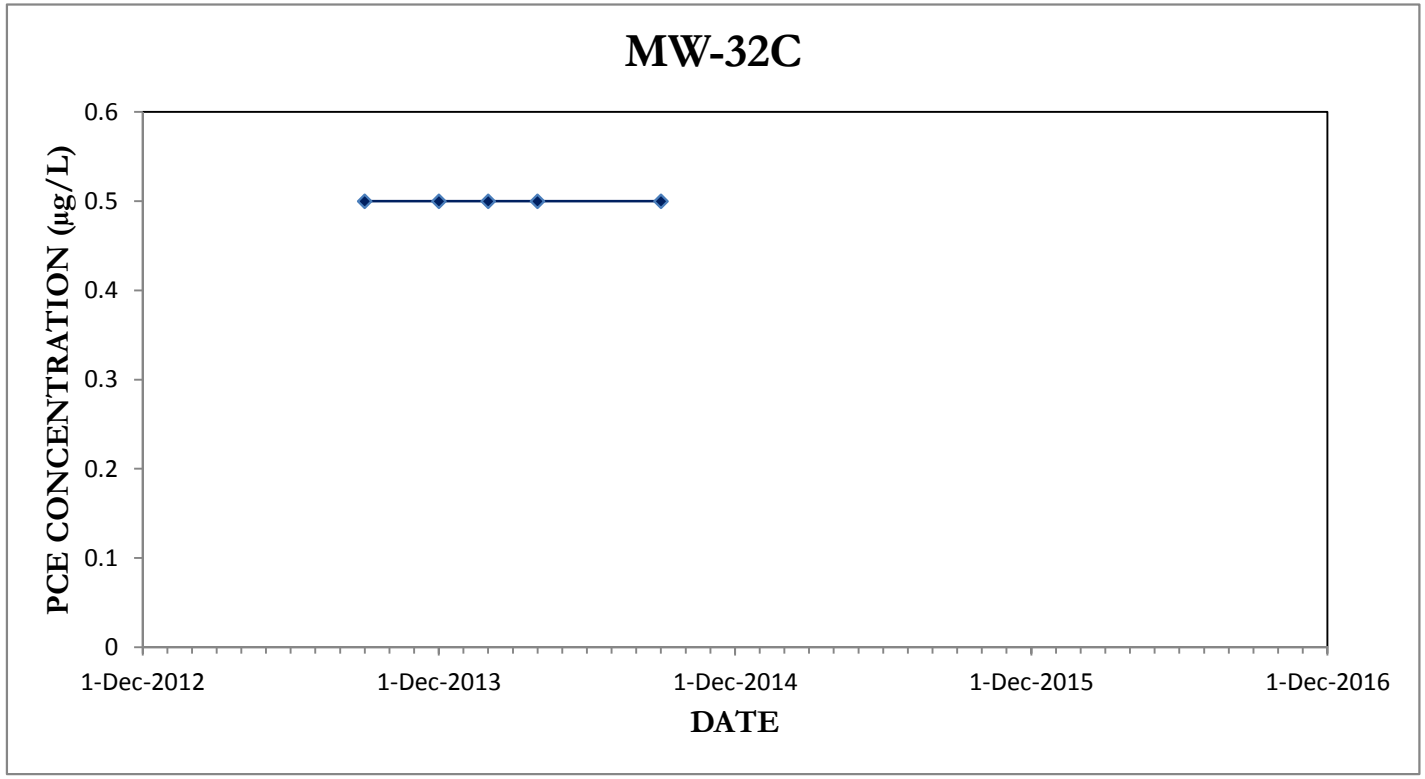

FIGURE G-4 (at)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

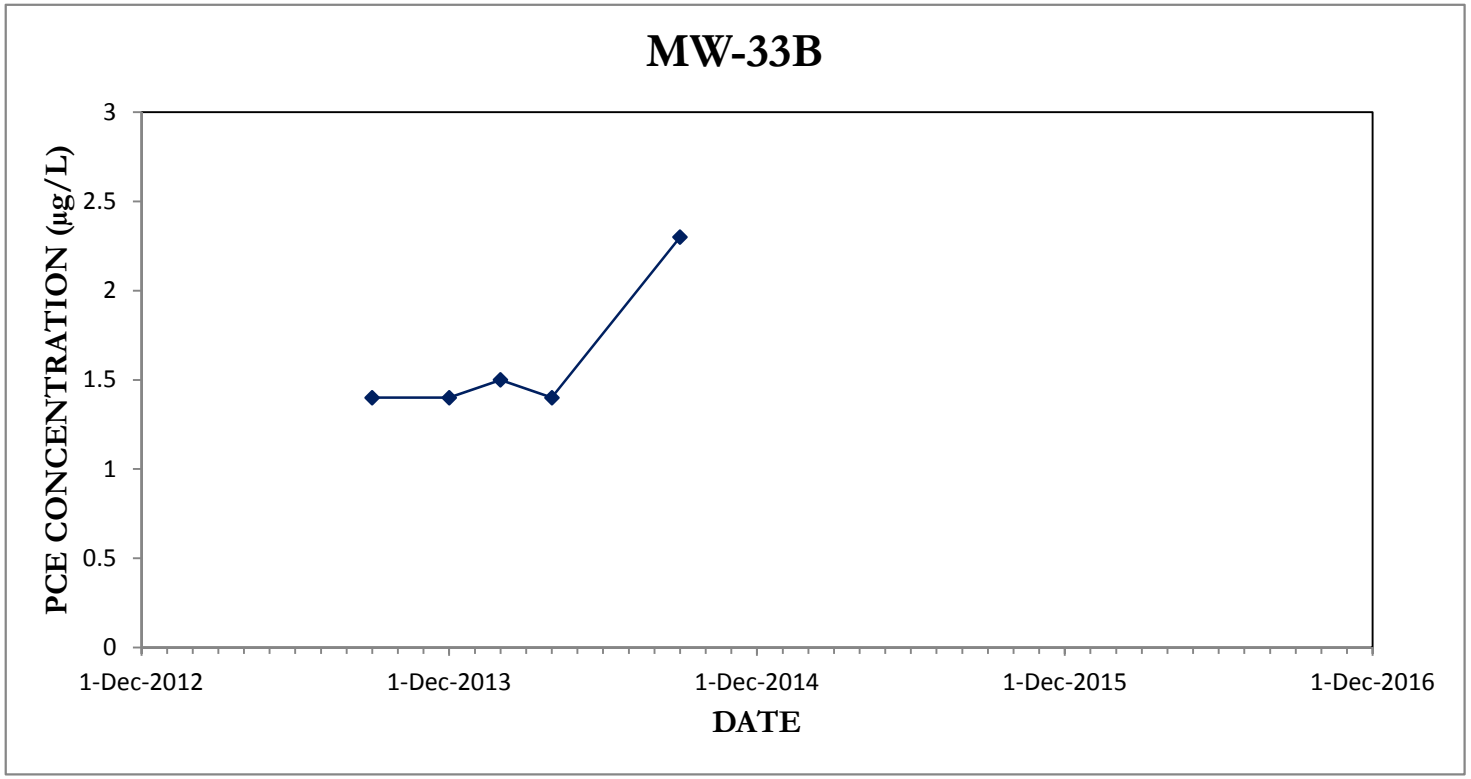

FIGURE G-4 (au)

HISTORICAL PCE CONCENTRATIONS IN GROUNDWATER MONITORING WELLS MODESTO SUPERFUND SITE MODESTO, CALIFORNIA

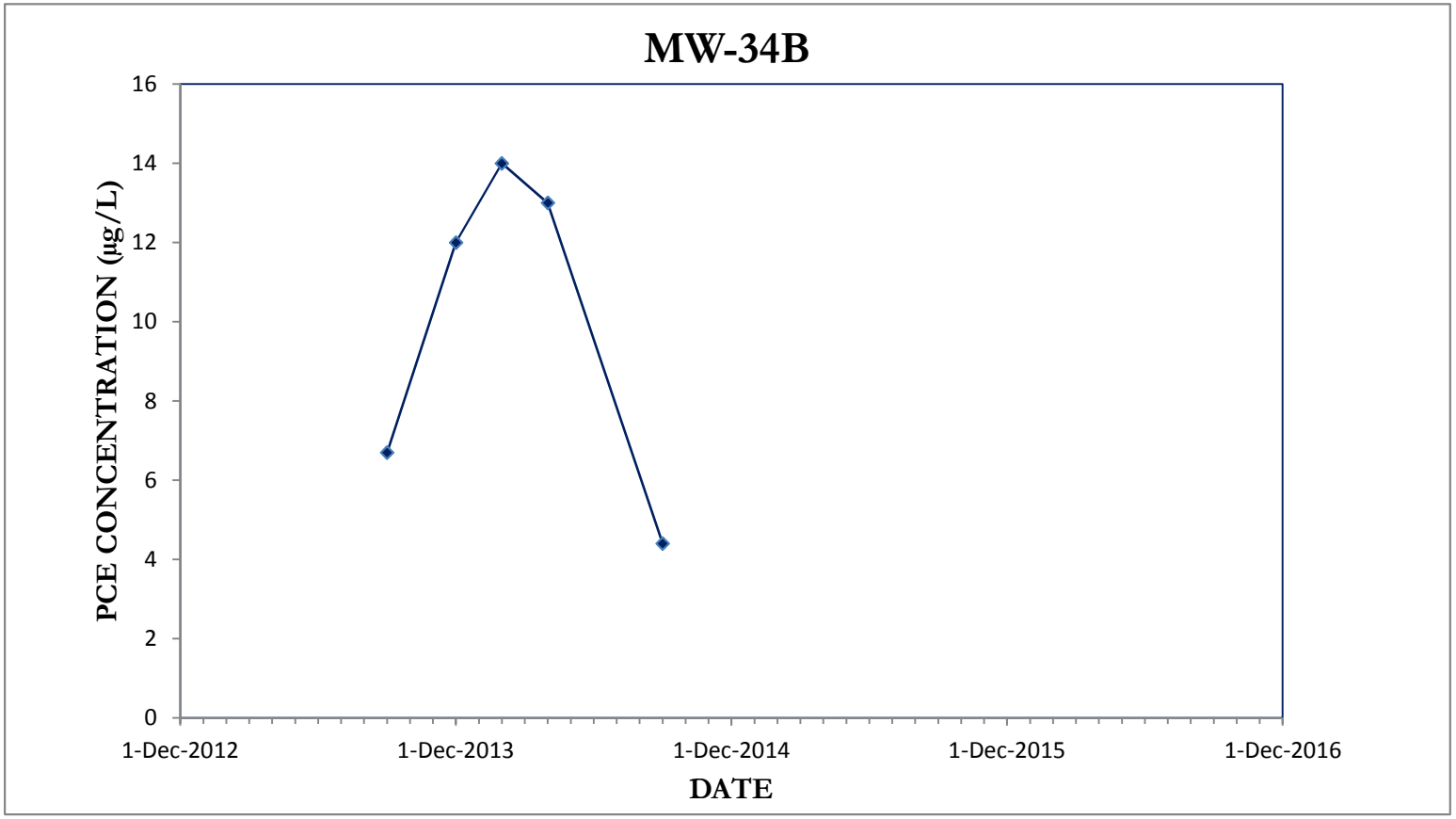

FIGURE G-4 (av)

HISTORICAL PCE CONCENTRATIONS IN
GROUNDWATER MONITORING WELLS
MODESTO SUPERFUND SITE
MODESTO, CALIFORNIA

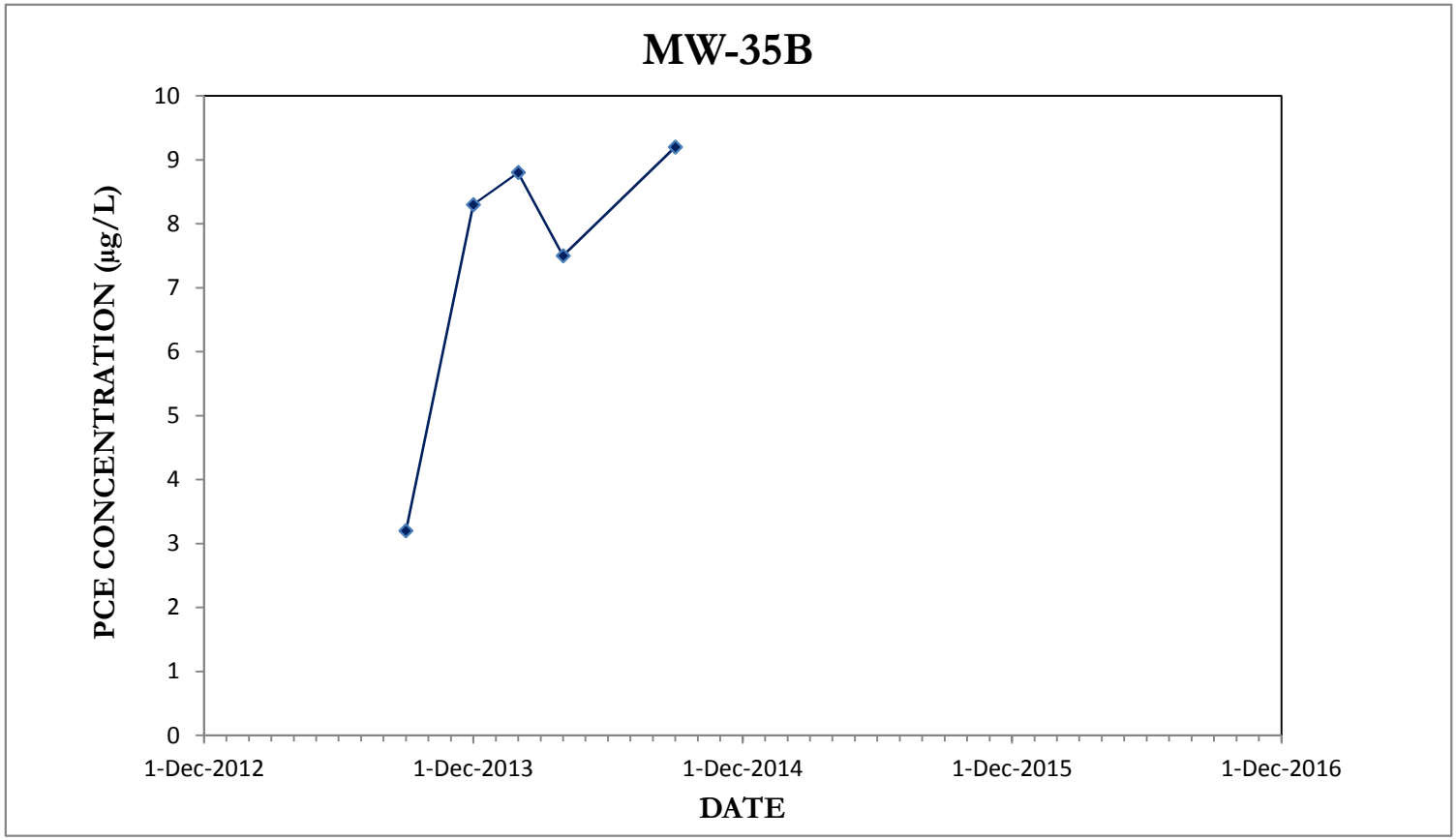

TABLE G-5 PCE MASS REMOVED BY GROUNDWATER TREATMENT SYSTEM MODESTO SUPERFUND SITE MODESTO, CALIFORNIA
(Page 1 of 3)

Sample Date	Volume of Water Treated Since Previous Sample (gallons)	Total Volume of Water Treated (gallons)	Influent PCE Concentration (µg/L)	Mass of PCE Removed Since Previous 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-5 PCE MASS REMOVED BY GROUNDWATER TREATMENT SYSTEM MODESTO SUPERFUND SITE MODESTO, CALIFORNIA
(Page 2 of 3)

Sample Date	Volume of Water Treated Since Previous Sample (gallons)	Total Volume of Water Treated (gallons)	Influent PCE Concentration (µg/L)	Mass of PCE Removed Since Previous 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

TABLE G-5 PCE MASS REMOVED BY GROUNDWATER TREATMENT SYSTEM MODESTO SUPERFUND SITE MODESTO, CALIFORNIA
(Page 3 of 3)

Sample Date	Volume of Water Treated Since Previous Sample (gallons)	Total Volume of Water Treated (gallons)	Influent PCE Concentration (µg/L)	Mass of PCE Removed Since Previous Sample (lbs)	Cumulative Mass of PCE Removed (lbs)
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
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
18-Jul-12	592,700	195,353,733	740.0	3.66	515.01
8-Aug-12	1,363,800	196,717,533	97.0	1.10	516.12
6-Sep-12	1,837,500	198,555,033	110.0	1.69	517.80
11-Oct-12	1,907,200	200,462,233	840.0	13.37	531.17
8-Nov-12	1,367,800	201,830,033	860.0	9.82	540.99
6-Dec-12	1,611,200	203,441,233	690.0	9.28	550.27
16-Jan-13	2,374,000	205,815,233	580.0	11.49	561.76
6-Feb-13	1,395,400	207,210,633	520.0	6.06	567.82
7-Mar-13	1,585,100	208,795,733	560.0	7.41	575.23
4-Apr-13	1,855,900	210,651,633	490.0	7.59	582.82
2-May-13	1,635,500	212,287,133	440.0	6.01	588.82
6-Jun-13	2,322,000	214,609,133	370.0	7.17	595.99
11-Jul-13	2,016,500	216,625,633	350.0	5.89	601.88
8-Aug-13	1,838,400	218,464,033	340.0	5.22	607.10
12-Sep-13	2,299,000	220,763,033	280.0	5.37	612.47
3-Oct-13	1,106,400	221,869,433	260.0	2.40	614.87
7-Nov-13	2,188,300	224,057,733	260.0	4.75	619.62
5-Dec-13	1,835,700	225,893,433	270.0	4.14	623.76
9-Jan-14	2,219,400	228,112,833	260.0	4.82	628.57
6-Feb-14	1,821,900	229,934,733	240.0	3.65	632.22
13-Mar-14	2,013,600	231,948,333	210.0	3.53	635.75
2-Apr-14	1,249,600	233,197,933	210.0	2.19	637.94
1-May-14	1,909,200	235,107,133	190.0	3.03	640.97
5-Jun-14	2,223,000	237,330,133	210.0	3.90	644.87
3-Jul-14	#REF!	239,147,433	170.0	3.27	648.14
7-Aug-14	2,304,900	241,452,333	110.0	1.71	649.84
4-Sep-14	1,859,900	243,312,233	110.0	1.82	651.66

Notes:
µg/L - micrograms per liter
lbs - pounds
PCE - Tetrachloroethene

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