Tetra Tech EM Inc.



135 Main Street, Suite 1800 • San Francisco, CA 94105 • (415) 543-4880 • FAX (415) 543-5480

May 30, 2000 J. W. Silveira Company 499 Embarcadero Oakland, California 94606

Subject:

February 2000 Quarterly Monitoring Report for the Site Located at

1200 20th Avenue, Oakland, California

INTRODUCTION

The site is located at the east corner of the intersection of 20th Avenue and Solano Way in Oakland, California (Figure 1). Two underground storage tanks (USTs) were previously located at the site. The two 600-gallon USTs, which reportedly contained gasoline, were removed in January 1994. The physical size of both of the tanks (estimated during the removal activities) was 8 feet long by 3.5 feet in diameter. During removal of the USTs, it was noted that the single-walled steel tanks had rusted through and had leaked. The approximate surface area of the removal excavation was about 20 feet by 10 feet. Approximately 80 cubic yards of soil was over-excavated and transported off site for disposal. The bottom of the excavation was approximately 15 feet below the ground surface (bgs). The exact depth to the bottom of the USTs was not recorded during the removal activities; the estimated depth to the bottom of the former USTs is 6 to 8 feet bgs.

Six soil samples were collected from the sidewalls and the bottom of the removal excavation. The soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), total petroleum hydrocarbons (TPH) as gasoline (TPH-g), TPH as diesel (TPH-d), and total lead. The highest concentrations of BTEX and TPH-g were detected along 20th Avenue at the western end of the removal excavation. Groundwater was not encountered during removal of USTs. As part of the UST removal action activities, three groundwater monitoring wells were installed at the site (Figure 2). This report discusses the February 2000 quarterly groundwater sampling of the three monitoring wells at the site.

GROUNDWATER GRADIENT

Groundwater elevations were measured in each of the monitoring wells at the site during the quarterly sampling event that was conducted in February 2000. The depth to groundwater from the top of casing in each well, the top of casing elevations for each well, and the groundwater elevations measured at the site are presented in Table 1. The groundwater flow direction and gradient at the site were calculated using these data. The groundwater flow direction is north 24 degrees east (N24E), as shown on Figure 3; this flow direction is nearly opposite to the direction of the ground surface slope at the site. Although MW-2 is located at a higher elevation than the location of the former USTs, this well is downgradient (with respect to groundwater flow) from the location of the former USTs. The groundwater gradient was calculated to be 0.06 feet/foot (ft/ft). The direction of groundwater flow and the groundwater gradient are consistent with those calculated using previous water-level measurements from the three wells at the site.

GROUNDWATER SAMPLING ACTIVITIES

For the first quarterly sampling event in the year 2000, the three monitoring wells at the site were sampled on February 9, 2000. Each well was purged with a dedicated disposable teflon bailer. The well volume was calculated and a minimum of 1 to 2 well volumes was removed from each well prior to sampling. During removal of the 1 to 2 well volumes from each well, the following physical parameters of the groundwater being removed from the well were monitored: pH, temperature, electrical conductivity, dissolved oxygen, and turbidity. These physical parameters were monitored to determine when the groundwater entering the well casing had stabilized. After the physical parameters of the groundwater had stabilized and a minimum of 1 to 2 well volumes had been removed from each well, groundwater samples were collected from each well. The groundwater samples were sent to an analytical laboratory to be analyzed for BTEX, methyl tertiary-butyl ether (MTBE), and TPH-g.

GROUNDWATER ANALYTICAL RESULTS

BTEX and TPH-g were detected in the groundwater sample collected from MW-1 (sample number JW2-08); MBTE was not detected in this groundwater sample. BTEX, MTBE, and TPH-g were not detected in the groundwater samples collected from MW-2 and MW-3. Table 2 presents the analytical results for the February 2000 quarterly sampling event at the site. The detected concentrations of benzene, toluene, ethylbenzene, and total xylenes in the groundwater sample from MW-1 (sample number JW2-08) were 280 micrograms per liter (ug/L), 17, 92, and 118 ug/L, respectively. The average detected concentration of TPH-g in this groundwater sample was 3,000 ug/L.

Tables 3, 4, and 5 provide the analytical groundwater sample results for BTEX and TPH-g for monitoring wells MW-1, MW-2, and MW-3, respectively, since February 1995. Tables 6, 7, 8, 9, and 10 provide graphical presentations of benzene, toluene, ethylbenzene, total xylenes, and TPH-g concentrations, respectively, in groundwater from MW-1, MW-2, and MW-3 since February 1995.

CONCLUSIONS AND RECOMMENDATIONS

This report presents the analytical results of the February 2000 quarterly groundwater monitoring event for the three wells located at the site. The contaminant concentrations in the groundwater at the site continue to range from not detectable to relatively low levels. Groundwater from MW-1 still contains BTEX and TPH-g at concentrations of potential concern. However, these contaminant concentrations decreased significantly since the previous sampling event in April 1999.

TtEMI has discussed this site with the Alameda County Health Care Services Agency (ACHCSA). Their office has recommended that the groundwater contamination in MW-1 be addressed through some form of remediation such that site closure can be attained. After the April 1999 sampling event, TtEMI discussed inserting an oxygen-releasing compound (ORC) sock into MW-1 with ACHSCA. However, an ORC sock has yet to be inserted into the well. As the February 2000 contaminant concentrations in groundwater from MW-1 decreased significantly this sampling event (without the presence of an ORC sock in the well), TtEMI recommends reviewing the analytical results of the

May 2000 quarterly sampling prior to installing an ORC sock into the well. The May 2000 quarterly sampling results will be available for review by July 2000.

If contaminant concentrations in groundwater from MW-1 continue to decrease over time, this will show that natural attenuation is occurring and the site should be suitable for closure without requiring use of an ORC sock. If contaminant concentrations do not continue to decrease (or if they increase) in groundwater from MW-1 over time, TtEMI will install an ORC sock into the well for remediation purposes

Should you have any questions, please contact the undersigned project manager, Hal Dawson, at (415) 222-8316.

Sincerely,

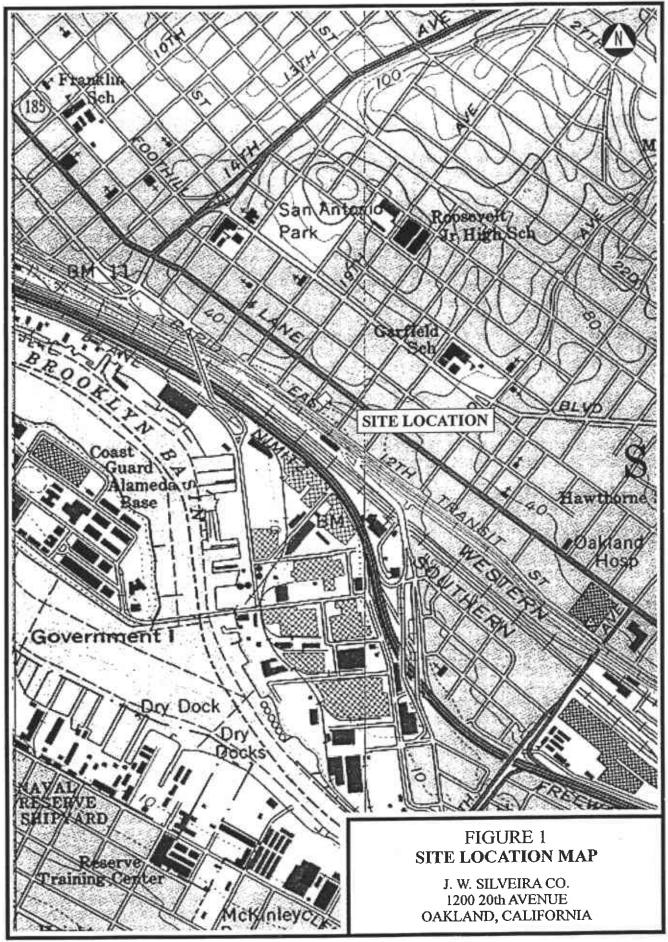
Hal Dawson

TtEMI Project Manager

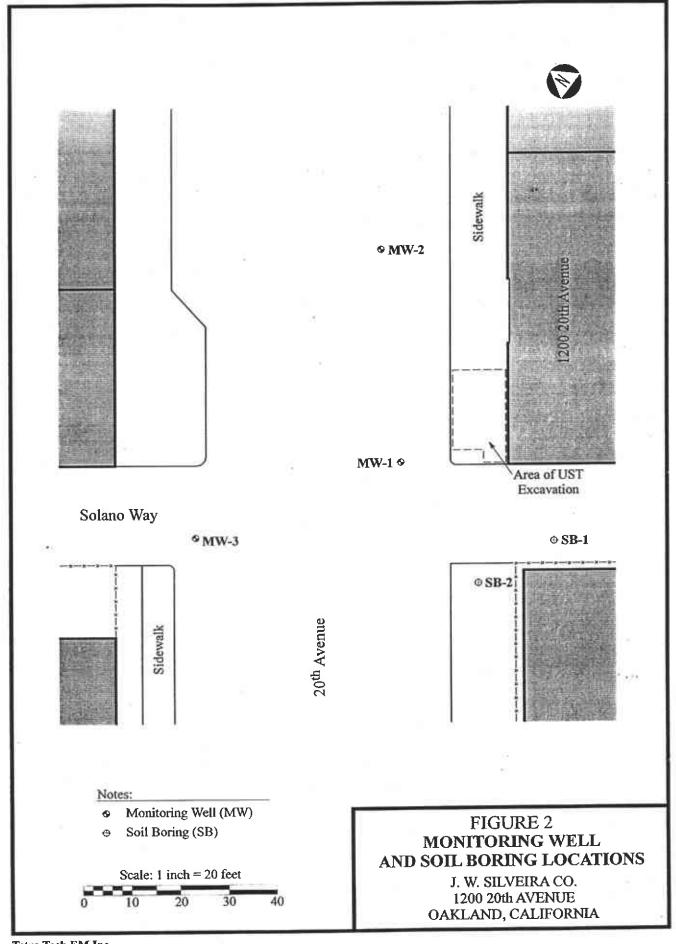
Jerry Wickham

Registered Geologist #3766

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Tetra Tech EM Inc.



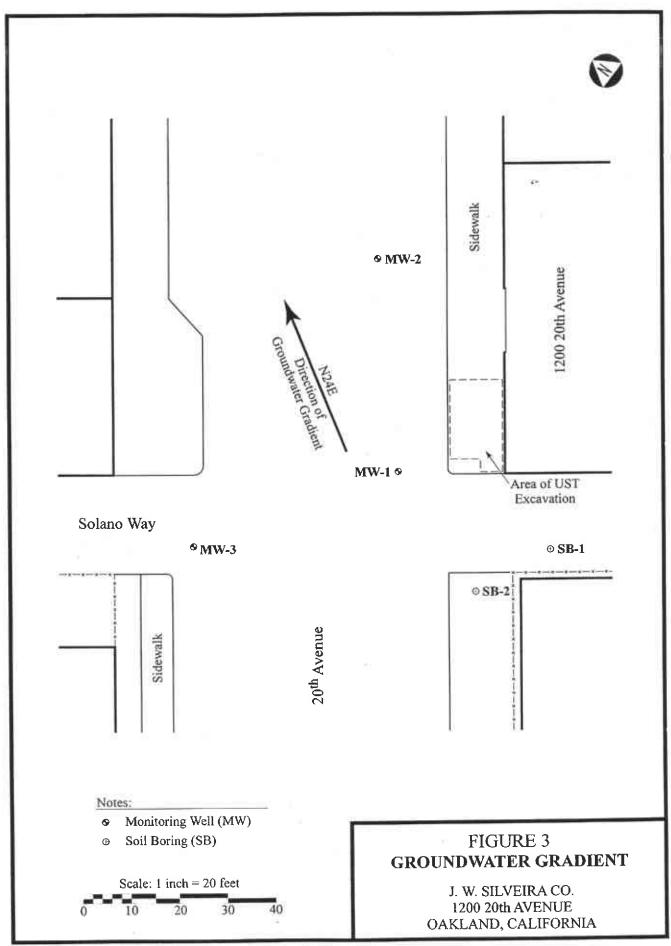


TABLE 1 FEBRUARY 2000 GROUNDWATER ELEVATIONS 1200 20TH AVENUE

Date	Groundwate	er Elevations from T	OC (in feet)
	MVV-1	MW-2	MW-3
2/9/00	-1.15	-3.38	-1.35

Notes:

MW-1 Monitoring Well Number 1

MW-2 Monitoring Well Number 2

MW-3 Monitoring Well Number 3

TOC Top of Casing

MW-1 TOC Elevation (in feet)/Depth to Groundwater from TOC (in feet) - 17.15/18.30

MW-2 TOC Elevation (in feet)/Depth to Groundwater from TOC (in feet) - 20.11/23.49

MW-3 TOC Elevation (in feet)/Depth to Groundwater from TOC (in feet) - 16.06/17.41

TABLE 2 QUARTERLY GROUNDWATER MONITORING RESULTS FOR FEBRUARY 2000 1200 20TH AVENUE

Analyte		Monitoring Well								
	MW-1	MW-2	MW-3							
VOC (μg/L)	Sample JW2-08	Sample JW2-09	Sample JW2-07							
Benzene	280	ND	ND							
Ethylbenzene	92	ND	ND							
Toluene	17	ND	ND							
m,p-Xylenes	100	ND	ND							
o-Xylene	18	ND	ND							
MTBE	ND	ND	ND							
	MW-1	MW-2	MW-3							
TPH (μg/L)	Sample JW2-08	Sample JW2-09	Sample JW2-07							
Gasoline	3,000	ND	ND							

Notes:

μg/L micrograms per Liter

ND not detected

TPH total petroleum hydrocarbons VOC volitile organic compound

TABLE 3
ANALYTICAL RESULTS FOR MW-1 GROUNDWATER
FROM FEBRUARY 1995 TO FEBRUARY 2000
1200 20TH AVENUE

Date	TPH (μg/L)		VO	C (μg/L)	
	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes
Feb-95	1,900	92	39	57	260
Jun-95	4,100	410	32	14	180
Oct-95	1,300	180	22	32	81
Feb-96	1,700	200	21	41	120
Jun-96	1,900	160	7	34	31
Sep-96	4,700	460	66	190	680
Jan-97	2,200	230	35	100	330
Jul-98	23,000	3,500	450	1,000	3,100
Apr-99	14,000	2,600	560	340	1,600
Feb-00	3,000	280	17	92	118

Notes:

μg/L micrograms per Liter

TPH total petroleum hydrocarbons
VOC volitile organic compound

TABLE 4
ANALYTICAL RESULTS FOR MW-2 GROUNDWATER
FROM FEBRUARY 1995 TO FEBRUARY 2000
1200 20TH AVENUE

Date	TPH (μg/L)		VO	C (μg/L)	
	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes
Feb-95	ND	ND	ND	ND	ND
Jun-95	ND	1.8	ND	1.1	0.62
Oct-95	55	2.2	ND	1.5	ND
Feb-96	ND	3.3	2.7	0.99	2.4
Jun-96	ND	ND	0.6	ND	1.2
Sep-96	ND	9.3	0.57	1.3	1.9
Jan-97	ND	2.6	ND	ND	0.76
Jul-98	ND	ND	ND	ND	ND
Apr-99	ND	ND	ND	ND	ND
Feb-00	ND	ND	ND	ND	- ND

Notes:

μg/L micrograms per Liter

ND not detected

TPH total petroleum hydrocarbons VOC volitile organic compound

TABLE 5
ANALYTICAL RESULTS FOR MW-3 GROUNDWATER
FROM FEBRUARY 1995 TO FEBRUARY 2000
1200 20TH AVENUE

Date	TPH (μg/L)		VO	C (µg/L)	
	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes
Feb-95	ND	ND	ND	ND	ND
Jun-95	160	0.6	ND	0.6	0.72
Oct-95	130	5.8	ND	3.2	ND
Feb-96	54	5.6	2.8	2.9	8.1
Jun-96	ND	ND	ND	ND	ND
Sep-96	96	12	7,1	4	6.2
Jan-97	ND	ND	ND	ND	ND
Jul-98	ND	ND	ND	ND	ND
Apr-99	מא	ND	ND	ND	ND
Feb-00	ND	ND	ND	ND	ND

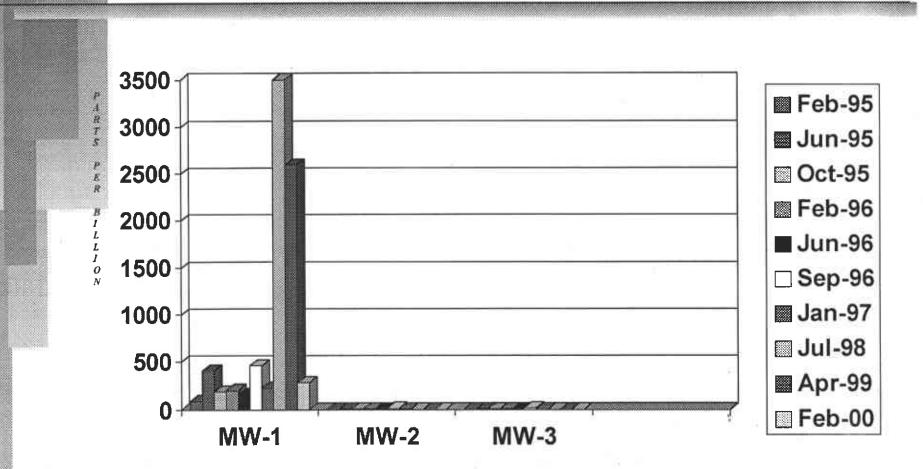
Notes:

μg/L micrograms per Liter

ND not detected

TPH total petroleum hydrocarbons VOC volitile organic compound

TABLE 6 BENZENE IN GROUNDWATER FEBRUARY 1995 TO FEBRUARY 2000 1200 20TH AVENUE

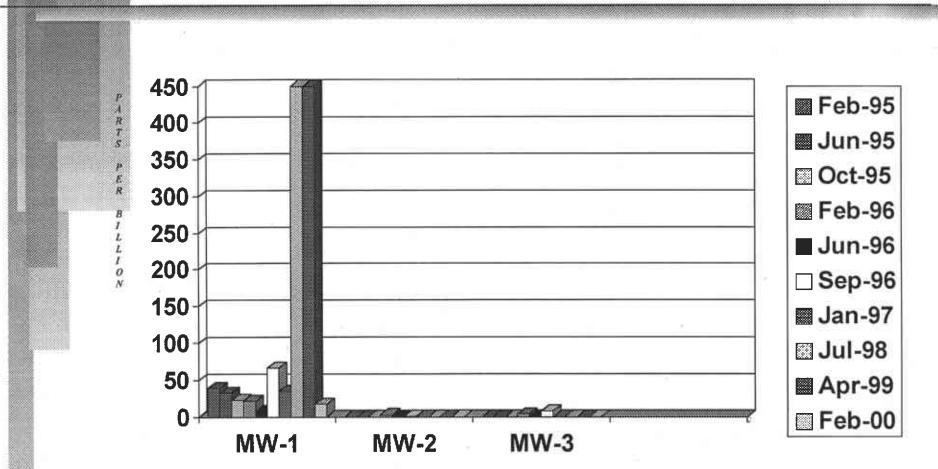


Notes:

MW-1 Monitoring Well Number 1

MW-2 Monitoring Well Number 2

TABLE 7 TOLUENE IN GROUNDWATER FEBRUARY 1995 TO FEBRUARY 2000 1200 20TH AVENUE

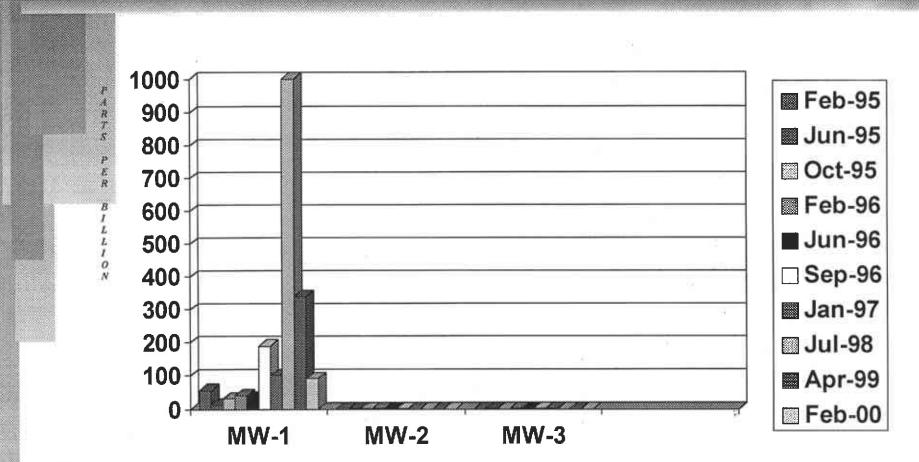


Notes:

MW-1 Monitoring Well Number 1

MW-2 Monitoring Well Number 2

TABLE 8 ETHYLBENZENE IN GROUNDWATER FEBRUARY 1995 TO FEBRUARY 2000 1200 20TH AVENUE

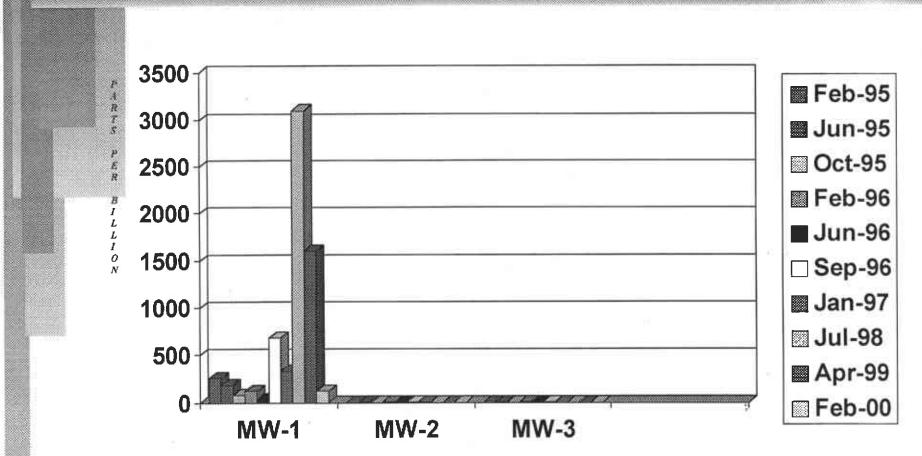


Notes

MW-1 Monitoring Well Number 1

MW-2 Monitoring Well Number 2

TABLE 9 XYLENES IN GROUNDWATER FEBRUARY 1995 TO FEBRUARY 2000 1200 20TH AVENUE

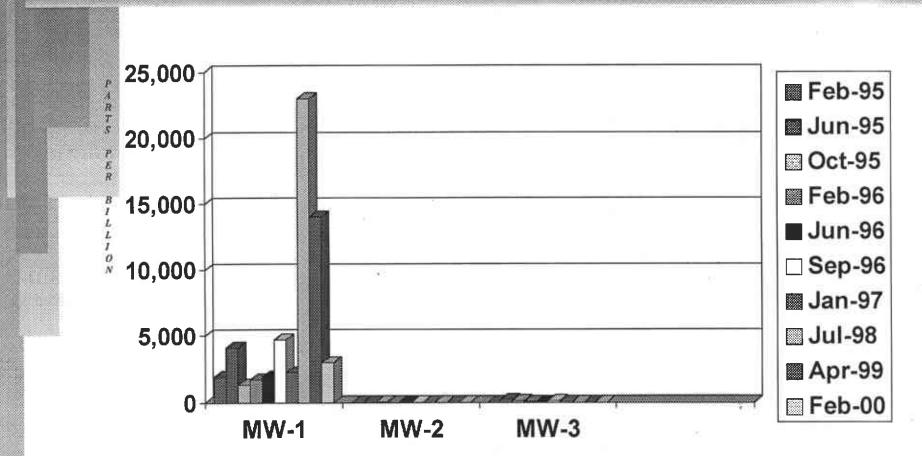


Notes

MW-1 Monitoring Well Number 1

MW-2 Monitoring Well Number 2

TABLE 10 TPH IN GROUNDWATER FEBRUARY 1995 TO FEBRUARY 2000 1200 20TH AVENUE



Notes:

MW-1 Monitoring Well Number 1

MW-2 Monitoring Well Number 2

APPENDIX A ANALYTICAL DATA PACKAGE



Chain	of	Custody	Record
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Sample ID		Description/Notes	Date	Time	Matrix	3	= :	= =	5		1	디	5 5	디	EE	80	2					
JW2-0508	mwi	1200 ZOT AVE	2-9-00	1145	WATER	4									X	X	<u>XI</u>					
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Turnaround time/remarks:



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

RECEIVED

Laboratory Number 143867

Total Volatile Hydrocarbons EPA 8015 (Mod)

TETRA TECH EM INC.

Tetra Tech EMI 135 Main Street

Suite 1800

San Francisco, CA 94105

Project#: P110604

143867-003

Location: JW Silveira Props

 Sample ID
 Lab ID

 JW2-0508
 143867-001

 JW2-0609
 143867-002

Ins col

I certify that this data package has been reviewed for technical correctness and completeness. Please see attached narrative for a discussion of any analytical problems related to this sample set. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

The case narrative is an integral and inseparable part of this report.

Signature: K Morrison DJ6
Title: Operations Manager

JW2-07

signature: Caul Worthon

Title: Project Manager

Date: 3/17/07

Date: 3/17/00

9901



Laboratory Number: 143867

Client: Tetra Tech EMI Location: Silveira Site 2

Project#: P110604

Receipt Date: 02/10/00

TPH-PURGEABLES CASE NARRATIVE

This hardcopy data package contains sample and QC results for three water samples that were received on February 10, 2000.

A high surrogate recovery was observed for trifluorotoluene in sample JW2-95 (CT#143867-001) due to coelution with a hydrocarbon peak. The recovery for bromofluorobenzene was within criteria. No other analytical problems were encountered.

312/00



		Gasoline b	y GC/FID CA LU	PT
Lab #:	143867		Location:	JW Silveira Props
Client:	Tetra Tech EMI		Prep:	EPA 5030
Project#:	P110604		Analysis:	EPA 8015M
Field ID:	JW2-9508		Batch#:	53760
Lab ID:	143867-001	prostrilos	Sampled:	02/09/00
Matrix:	Water	A Mailes	Received:	02/10/00
Units:	ug/L		Prepared:	02/14/00
Diln Fac:	1.000	·	Analyzed:	02/15/00

Analyte		RL	
Gasoline C7-C12	3,000	50	

Surrogate	%R	2C	Limits
Trifluorotoluene (FID)	174	*	59-135
Bromofluorobenzene (FID)	112		60-140

^{* =} Value outside of QC limits; see narrative
RL = Reporting Limit
Page 1 of 1



		Gasoline b	y GC/FID CA LU	JET
Lab #:	143867		Location:	JW Silveira Props
Client:	Tetra Tech EMI		Prep:	EPA 5030
Project#:	P110604		Analysis:	EPA 8015M
Field ID:	JW2-9801		Batch#:	53760
Lab ID:	143867-002	ms	Sampled:	02/09/00
Matrix:	Water	1/4/w	Received:	02/10/00
Units:	ug/L		Prepared:	02/14/00
Diln Fac:	1.000		Analyzed:	02/15/00

Analyte	Result	RL:	
Gasoline C7-C12	ND	50	<u> </u>
			·

Trifluorotoluene (FID) 101 59-135	Surrogate	%REC	Limits	
	Trifluorotoluene (FID)	101	59-135	
Bromofluorobenzene (FID) 110 60-140	Bromofluorobenzene (FID)	110	60-140	



	Gasoli	ne by GC/FID CA LU	IFT
Lab #:	143867	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Field ID:	JW2-07	Batch#:	53760
Lab ID:	143867-003	Sampled:	02/09/00
Matrix:	Water	Received:	02/10/00
Units:	ug/L	Prepared:	02/14/00
Diln Fac:	1.000	Analyzed:	02/15/00

Analyte	Result	RL
Gasoline C7-C12	ND	50

Bromofluorobenzene (FID)	108	60-140
Trifluorotoluene (FID)	100	59-135
Surrogate	%REC	Limits



				i.														

Lab #:	143867	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZ	Batch#:	53760
MSS Lab ID:	143892-005	Sampled:	02/10/00
Matrix:	Water	Received:	02/10/00
Units:	ug/L	Analyzed:	02/14/00
Diln Fac:	1.000		

Type:

MS

Lab ID:

QC107854

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<50.00	2,000	2,158	108	65-131

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	116	59-135	
Bromofluorobenzene (FID)	113	60-140	

Type:

MSD

Lab ID:

QC107855

Analyte		Spiked	Resu	it shi	(Completes)	KPD	L.3
Gasoline C7-C12		2,000	1,97	5 99	65-131	9	20
Surrogate	%REC	Limits					
Trifluorotoluene (FID)	113	59-135					
Browofluorobenzene (FID)	112	60-140					



Gasoline by GC/FID CA LUFT

Lab #: Client: 143867

Tetra Tech EMI

Location:

JW Silveira Props

Prep:

EPA 5030

Project#:

P110604 LCS

Analysis:

EPA 8015M

Type:

Diln Fac:

1.000

Lab ID: Matrix: QC107851

Batch#:

53760

Water

Analyzed:

Units:

ug/L

02/14/00

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,097	105	73-121

Trifluorotoluene (FID) 111 59-135 Bromofluorobenzene (FID) 103 60-140	Surrogate	%REC	Limits	
DIOMOTICO (11D) 103 00 110	Trifluorotoluene (FID)	111	59-135	·
	Bromofluorobenzene (FI	D) 103	60-140	



Gasoline by GC/FID CA LUFT

Lab #: 143867 Location: JW Silveira Props EPA 5030

Client: Prep: Tetra Tech EMI EPA 8015M Project# P110604 Analysis: 1.000 Diln Fac:

Type: BLANK 53760 Lab ID: QC107853 Batch#: 02/14/00 Matrix: Water Analyzed: Units:

ug/L

Gasoline C7-C12 ND

9			
Surrogate	%REC	' Limits	
Trifluorotoluene (FID)	97	59-135	
Bromofluorobenzene (FID)	99	60-140	



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2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532; EIVED

Laboratory Number 143867

TETRA TECH EM INC.

Aromatic Volatile Organics by GC/MS EPA 8260

Tetra Tech EMI 135 Main Street Suite 1800

San Francisco, CA 94105 Project#: P110604

Location: JW Silveira Props

Sample ID

JW2-2508 JW2-0609

JW2-07

Lab ID

143867-001 143867-002

143867-003

I certify that this data package has been reviewed for technical correctness and completeness. Please see attached narrative for a discussion of any analytical problems related to this sample Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

The case narrative is an integral and inseparable part of this report.

Signature: The K Morrison for JG Date: 3/17/00

Title: Operations Manager

Signature: Const Workson Date: 3/17/00

Signature: Title: Project Manager



Laboratory Number: 143867

Client: Tetra Tech EMI Location: Silveira Site 2

Project#: P110604

Receipt Date: 02/10/00

PURGEABLE AROMATICS CASE NARRATIVE

This hardcopy data package contains sample and QC results for three water samples that were received on February 10, 2000.

There was insufficient sample provided to perform a matrix spike and spike duplicate analysis. No analytical problems were encountered.



		by GC/MS

Lab #:	143867	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Field ID:	JW2-9 5 0 8	Batch#:	53818
Lab ID:	143867-001 hz	Sampled:	02/09/00
Matrix:	Water 3(21)	Received:	02/10/00
Units:	ug/L	Analyzed:	02/16/00
Diln Fac:	2.000		

Analyte	Result	RL	
MTBE	ND	1.0	
Benzene	280	1.0	
Toluene	17	1.0	
Ethylbenzene	92	1.0	
m,p-Xylenes o-Xylene	100	1.0	
o-Xylene	18	1.0	

Surrogate	%REC	Limits	
1,2-Dichloroethane-d4	102	78-123	
Toluene-d8	99	80-110	•
Bromofluorobenzene	98	80-115	



			GC/MS

Lab #:	143867		Location:	JW Silveira Props
Client:	Tetra Tech EMI		Prep:	EPA 5030
Project#:	P110604		Analysis:	EPA 8260B
Field ID:	JW2-2609		Batch#:	53818
Lab ID:	143867-002		Sampled:	02/09/00
Matrix:	Water	ms sinia	Received:	02/10/00
Units:	ug/L		Analyzed:	02/16/00
Diln Fac:	1.000			

Analyte	Result	RL	
MTBE	ND	0.5	•
Benzene	ND	0.5	
Toluene	ND	0.5	
	ND	0.5	
m.p-Xvlenes	ND	0.5	
Ethylbenzene m,p-Xylenes o-Xylene	ND	0.5	

Surrogate	%REC	Limits	
1,2-Dichloroethane-d4	100	78-123	
Toluene-d8	100	80-110	
Bromofluorobenzene	100	80-115	



Purgeable		/MS	
143867	Location:	JW Silveira Props	
Tetra Tech EMI	Prep:	EPA 5030	
P110604	Analysis:	EPA 8260B	
TWO OF	Batch#.	53919	

Field ID: JW2-07 Batch#: Sampled: 02/09/00 Lab ID: 143867-003 02/10/00 Received: Matrix: Water 02/16/00 Analyzed: Units: ug/L Diln Fac: 1.000

Analyte	Result	RL	
MTBE	ND	0.5	
Benzene	ND	0.5	
Toluene	ND	0.5	
Ethylbenzene	ND	0.5	-
m,p-Xylenes	ND	0.5	
Ethylbenzene m,p-Xylenes o-Xylene	ND	0.5	

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	78-123
Toluene-d8	99	80-110
Bromofluorobenzene	100	80-115

Lab #:

Client:

Project#:



Purgeable Aromatics by GC/MS

JW Silveira Props Lab #: 143867 Location: Client: Tetra Tech EMI Prep: EPA 5030 EPA 8260B Project#: P110604 Analysis: Batch#: 53818 Matrix: Water 02/16/00 Units: Analyzed: ug/L Diln Fac: 1.000

Type:

BS

Lab ID:

QC108062

Analyte	Spiked	Result	%RE	C Limits
Benzene	50.00	46.09	92	80-116
Toluene	50.00	47.22	94	80-120

Surrogate	%REC	: Limits	
1,2-Dichloroethane-d4	98	78-123	
Toluene-d8	99	80-110	
Bromofluorobenzene	99	80-115	

Туре:

BSD

Lab ID:

QC108063

Analyte	Spiked	Result			RPD	Lin
Benzene	50.00	44.46	89	80-116	4	20
Toluene	50.00	45.58	91	80-120	4	20

Surrogate	%REC	2 Limits		
1,2-Dichloroethane-d4	95	78-123	 •	
Toluene-d8	97	80-110		•
Bromofluorobenzene	99	80-115	 <u> </u>	···



Purgeable Aromatics by GC/MS

Lab #:	143867	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC108065	Batch#:	53818
Matrix:	Water	Analyzed:	02/16/00
Units:	ug/L		•

Analyte	Result	RL	
MTBE	ND	0.5	
Benzene	. ND	0.5	
Toluene	ND	0.5	
Ethylbenzene	ND	0.5	
Ethylbenzene m,p-Xylenes o-Xylene	ND	. 0.5	
o-Xylene	ND _	0.5	

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	99	80-115