



Tetra Tech EM Inc.

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RO 504

December 1, 2003

Mr. Barney M. Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

**Subject: Submittal of Site Closure Reports for J. W. Silveira Company
Underground Storage Tank Sites at 744 East 12th Street and
1200 20th Avenue in Oakland, California**

Dear Mr. Chan:

In previous discussions with you, it was agreed that closure reports should be completed for the J. W. Silveira Company underground storage tank sites located at 744 East 12th Street and 1200 20th Avenue in Oakland, California. Enclosed are two copies of each closure report for these two sites. Your review and comments are appreciated.

If you have any questions or wish to discuss either of the closure reports further, please feel free to contact me at (775) 333-8466.

Sincerely,

Hal Dawson

Hal Dawson
TtEMI Geologist/Project Manager

SITE CLOSURE REPORT

**1200 20th AVENUE
OAKLAND, CALIFORNIA**

December 2003

Prepared for:
J.W. Silveira Company
499 Embarcadero Street
Oakland, California 94606



TETRA TECH EM Inc.
135 Main Street, Suite 1800
San Francisco, California 94105

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1.0 APPROVAL PAGE

This Site Closure Report for the underground storage tank (UST) site located at 1200 20th Avenue, in Oakland, California, was prepared for J.W. Silveira Company, the owner of the site. Should you have any questions about this report, please feel free to contact me at (775) 333-8466.

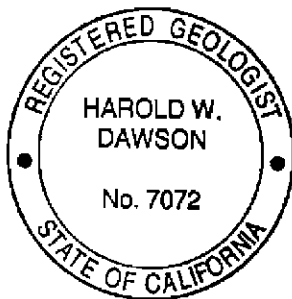
Sincerely,

Harold W. Dawson

Harold W. Dawson

TtEMI Project Manager

California Registered Geologist #7072



2.0 INTRODUCTION

The purpose of this report is to recommend closure for the J. W. Silveira Company underground storage tank (UST) site at 1200 20th Avenue in Oakland, California (Figure 1). Tetra Tech EM Inc. (TtEMI) conducted quarterly groundwater monitoring at the site in the year 2000, and one event of groundwater monitoring at the site in the year 2001. The year 2000 quarterly sampling dates were February 9, May 23, September 27, and December 18, 2000, respectively; the year 2001 sampling date was August 30, 2001. The analytical data for the years 2000 and 2001, and all other associated environmental sampling conducted at the site are summarized in this closure report.

3.0 SITE BACKGROUND

The location of the UST site is shown on Figure 1. Two USTs were previously located at the eastern corner of the intersection of 20th Avenue and Solano Way in Oakland, California (Figure 1). 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), and TPH as diesel (TPH-d). The highest concentrations of BTEX compounds and TPH-g were detected at the southwestern edge of the excavation along 20th Avenue. TPH-d was not detected in any of the soil samples. Groundwater was not encountered during removal of the USTs.

As part of the UST removal action activities, three soil borings were advanced and completed as groundwater monitoring wells in February 1995. The three monitoring wells (MW-1, MW-2, and MW-3) were constructed to a depth of 30, 35, and 30 feet bgs, respectively (Figure 2). Two soil samples were collected from each of the three soil borings and analyzed for TPH-g and BTEX. The samples collected from the soil boring for MW-1 contained concentrations of TPH-g and BTEX compounds. TPH-g in soil at MW-1 was detected at 4.8 milligrams per

kilogram (mg/kg) at 5 feet bgs and 1.3 mg/kg at 15 feet bgs. No TPH-g or BTEX compounds were detected in the remaining four soil samples from MW-2 and MW-3. For groundwater, only the sample from MW-1 detected any chemical compounds. TPH-g was detected at 1,900 micrograms per liter ($\mu\text{g/L}$), and benzene was detected at 92 $\mu\text{g/L}$.

In June 1999, two additional soil borings were also advanced to determine whether soil or groundwater contamination were present south of the former UST location. Two soil samples were collected and analyzed for TPH-g, BTEX, and methyl tertiary-butyl ether (MTBE). No contamination was detected in these soil samples. Groundwater samples were not collected since groundwater was not encountered in the two soil borings at a depth of 36 and 38 feet bgs. Figure 2 shows the locations of all soil borings and groundwater monitoring wells at the site. Figure 4 provides soil concentration data for the site.

4.0 GROUNDWATER MONITORING ACTIVITIES

The three groundwater monitoring wells at the site were sampled sporadically from February 1995 to August 2001; the only year in which quarterly sampling was conducted for each of the three wells at the site was the year 2000. TtEMI conducted the groundwater monitoring activities in 2000 and 2001. All previous monitoring was conducted by another environmental consultant. The following text describes the groundwater monitoring activities conducted by TtEMI. For each sampling event in the year 2000, the depth to groundwater was measured in all three monitoring wells with an electronic depth probe. The monitoring well cap was removed from the top of each well, and the groundwater table was allowed to equilibrate before the depth to groundwater was measured. Each well was purged and sampled with a dedicated disposable bailer. During the purging of each monitoring well, a Horiba U10 water quality meter was used to measure the following physical parameters of the groundwater: pH, temperature, electrical conductivity, dissolved oxygen, and turbidity. These physical parameters were monitored to determine when groundwater within the well casing was representative of groundwater surrounding each monitoring well. Copies of the groundwater field sampling sheets are provided in Appendix A. After the physical parameters of the groundwater had stabilized, a groundwater sample was collected from each well. The samples were placed in appropriate sample containers provided by the laboratory. After each sample was labeled, the sample was stored in a cooler of ice under chain-of-custody control. The groundwater samples were received by Curtis & Tompkins Analytical Laboratories (C&T), in Berkeley, California. C&T is a California state-certified laboratory. The groundwater samples were analyzed for BTEX, TPH-g, and MTBE.

There was no indication of remaining mobile or potentially mobile free product at the site during the UST removals or during subsequent non-TtEMI and TtEMI groundwater monitoring activities. The only visible signs of contamination currently present at the site are a slight oily sheen on the groundwater that is removed from MW-1 during monitoring activities. The contamination appears to be localized around MW-1 as this visual indicator is not present in groundwater removed from MW-2 or MW-3 during monitoring activities. Presently, groundwater at the site is not used for any domestic or industrial purposes. For this reason, groundwater is assumed to be nonpotable.

Only MW-1 was sampled in August 2001. The same procedures described above were followed during this sampling event. As directed by Alameda County, TtEMI placed nine oxygen-releasing compound (ORC) socks into well MW-1 following the December 2000 sampling event. The ORC socks are made by Regenesis and are designed to oxygenate the water in a monitoring well to enhance biodegradation of chemical contaminants in groundwater. Alameda County, J. W. Silveira, and TtEMI agreed that it would be worth investigating whether ORC socks would have any effect on the analytical results from this well. The ORC socks were removed from well MW-1 one month before the August 2001 sampling event. Their placement in the well appeared to have little to no effect on the groundwater analytical results.

4.1 GROUNDWATER GRADIENT

Using the data collected during the TtEMI groundwater monitoring activities, groundwater elevations were calculated for each of the three monitoring wells at the site using the measured depth to groundwater and the top-of-casing elevation of each well. The depth to groundwater was measured from the top of casing of each monitoring well. The groundwater elevation measurements from the site in 2000 and 2001 are presented in Table 1. The groundwater flow direction and gradient at the site were calculated using these data. The flow direction at the site was consistently northeast, ranging from north 13 degrees east (N13E) in December 2000 to north 29 degrees east (N29E) in September 2000. The calculated groundwater gradient at the site was found to range from the lowest (0.038 feet/foot [ft/ft]) in December 2000 to the highest (0.06 ft/ft) in February 2000.

Figure 3 is a potentiometric map and graphically presents the August 2001 groundwater flow direction (north 26 degrees east [N26E]) and gradient (0.051 ft/ft) at the site. These are the latest collected data from the site and show the typical average groundwater flow direction and gradient. The direction of groundwater flow 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 flow directions and gradients calculated from TtEMI's 2000 and 2001 data are consistent with the groundwater gradients and directions calculated using previous water-level measurements from the three wells at the site.

4.2 GROUNDWATER ANALYTICAL RESULTS

Groundwater monitoring was conducted for the three wells at the site from February 1995 to August 2001. Tables 2, 3, and 4 show the groundwater results for MW-1, MW-2, and MW-3, respectively, for this time frame. No detectable concentrations of TPH-g or BTEX have been present in the groundwater samples from wells MW-2 and MW-3 since July 1998.

From February 1995 to August 2001, TPH-g has been detected in MW-1 groundwater at concentrations ranging from 1,300 to 23,00 ug/L. From September 2000 to August 2001, the TPH-g concentrations in MW-1 appear to have stabilized in the 3,000 to 5,000 ug/L range. Benzene has been detected in groundwater from MW-1 over the same time frame (from February 1995 to August 2001) at concentrations ranging from 92 to 3,700 ug/L. From December 2000 to August 2001, the benzene concentrations in MW-1 appear to have stabilized in the 500 to 850 ug/L range. Toluene has been detected in groundwater from MW-1 over the same time frame (from February 1995 to August 2001) at concentrations ranging from 7 to 560 ug/L. From September 2000 to August 2001, the toluene concentrations in MW-1 appear to have stabilized below 65 ug/L. Ethylbenzene has been detected in groundwater from MW-1 over the same time frame (from February 1995 to August 2001) at concentrations ranging from 14 to 1000 ug/L. From September 2000 to August 2001, the ethylbenzene concentrations in MW-1 appear to have stabilized in the 130 to 420 ug/L range. Xylenes have been detected in groundwater from MW-1 over the same time frame (from February 1995 to August 2001) at concentrations ranging from 31 to 3,100 ug/L. From September 2000 to August 2001, the concentrations of xylenes in MW-1 appear to have stabilized in the 130 to 330 ug/L range. MTBE was only analyzed for in groundwater from February 2000 to August 2001. MTBE was not detected in groundwater from MW-1. Figure 4 provides groundwater concentration data for the site.

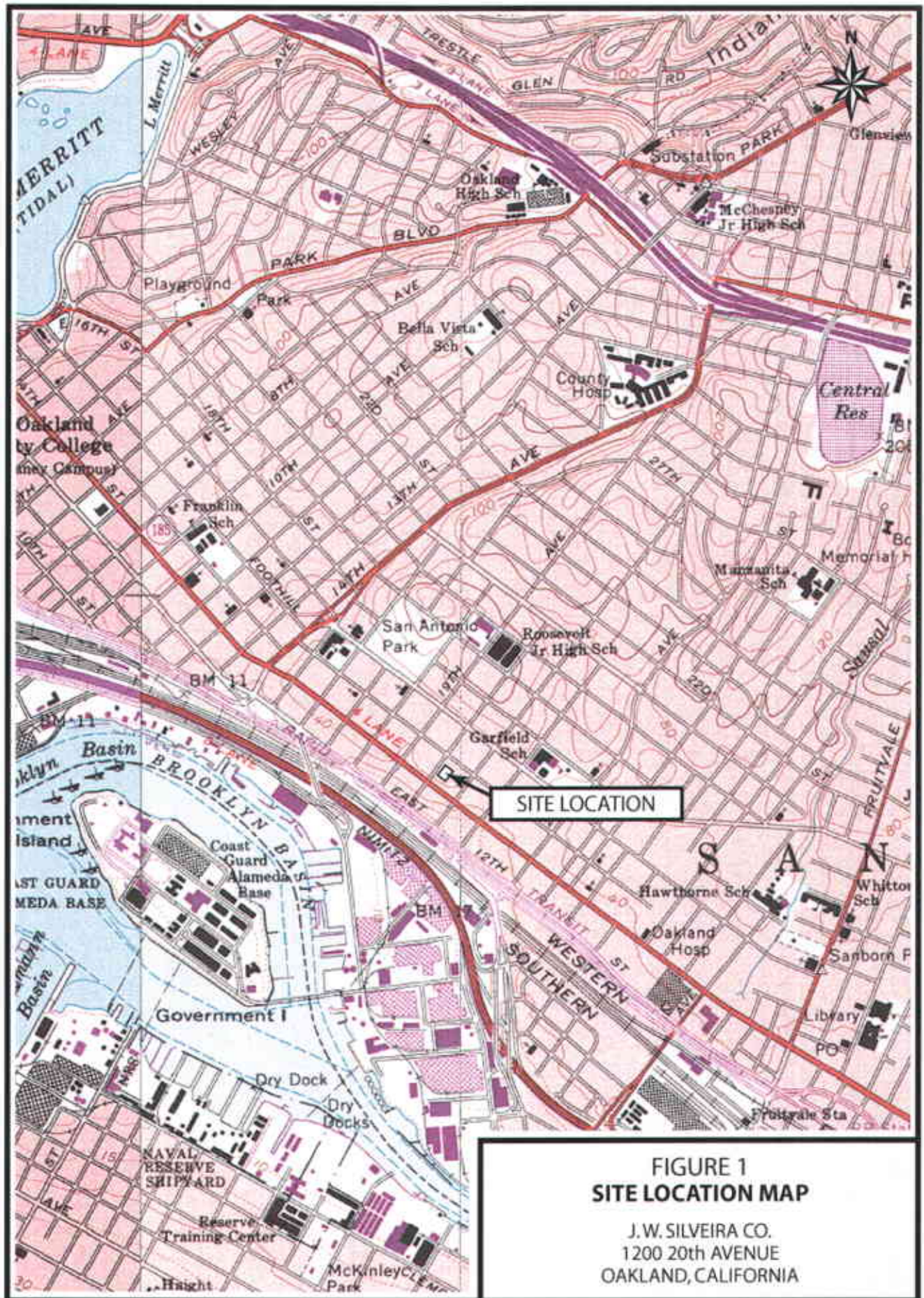
The complete laboratory data packages and chains-of-custody for the years 2000 and 2001 sampling events at the site are provided in Appendix B.

5.0 CONCLUSIONS AND RECOMMENDATIONS

This closure report presents the analytical data for groundwater monitoring, and all other associated environmental sampling conducted at the UST site located at 1200 20th Avenue in Oakland, California. Moderate concentrations of soil and groundwater contamination are present locally around MW-1. However, no mobile or potentially mobile free product has been observed at the site. A slight oily sheen is present on groundwater removed from MW-1. No groundwater contaminants have been detected in the samples collected from wells MW-2 and MW-3 since July 1998. The TPH-g and BTEX contaminant concentrations present in groundwater samples from MW-1 appear to have stabilized since about September 2000.

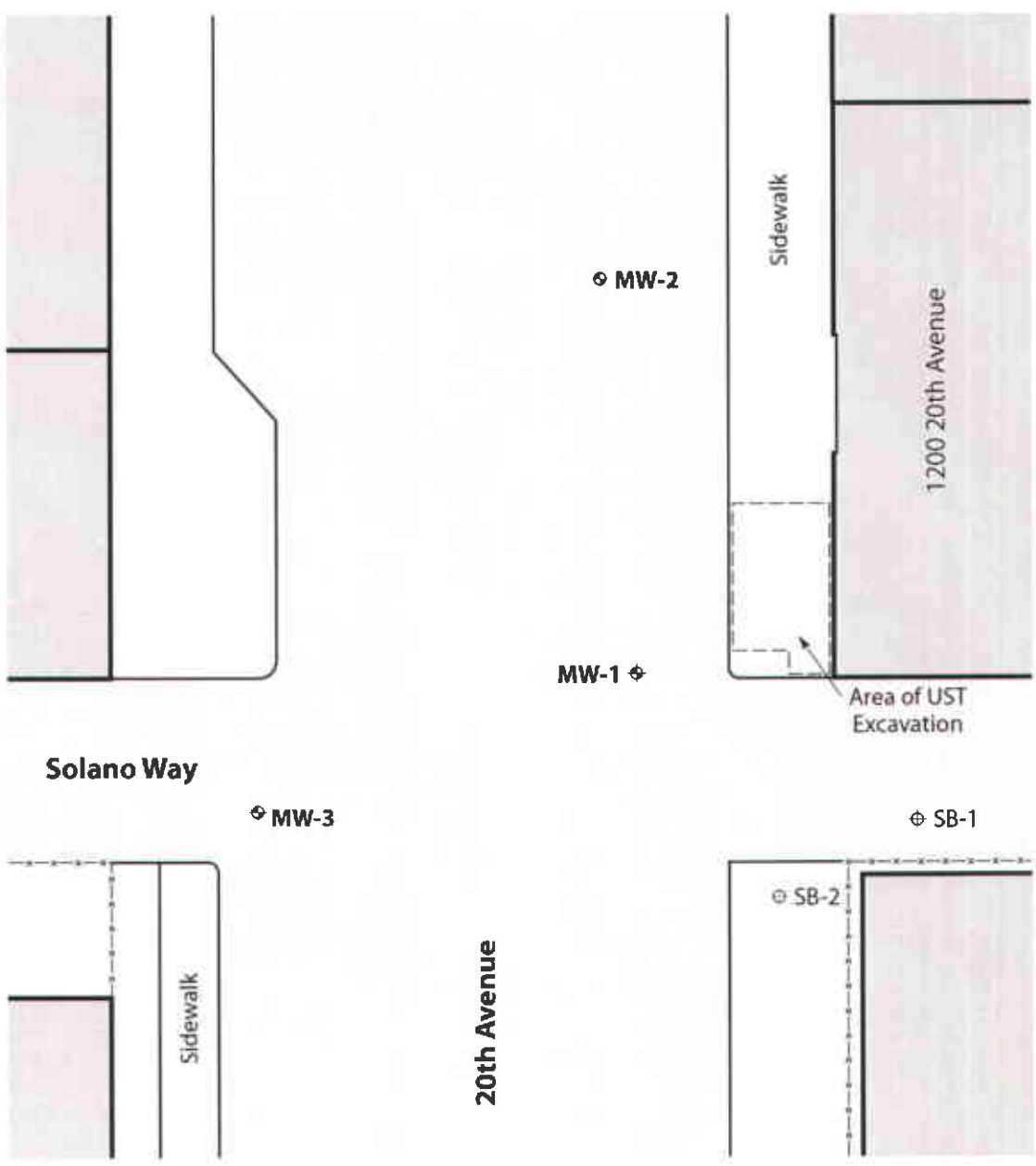
Based on the analytical data accumulated for the site, TtEMI recommends that the site be closed. The moderate contaminant concentrations around MW-1 are localized and the contamination does not appear to be migrating downgradient. Based on the depth to groundwater, the detected contaminant concentrations in MW-1 do not pose a risk to human health or the environment. It appears that the overexcavation of soil during the UST removals eliminated any future source of groundwater contamination and the localized contamination does not give evidence that there is a plume at the site. Groundwater is assumed to be nonpotable at the site. The three monitoring wells should be abandoned after approval of site closure

FIGURES



**FIGURE 1
SITE LOCATION MAP**

J. W. SILVEIRA CO.
1200 20th AVENUE
OAKLAND, CALIFORNIA



Solano Way

Sidewalk

1200 20th Avenue

⊕ MW-2

MW-1 ⊕

Area of UST
Excavation

⊕ MW-3

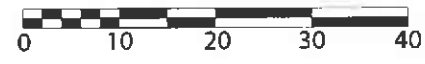
⊕ SB-1

⊕ SB-2

20th Avenue

Sidewalk

Scale: 1 inch = 20 feet

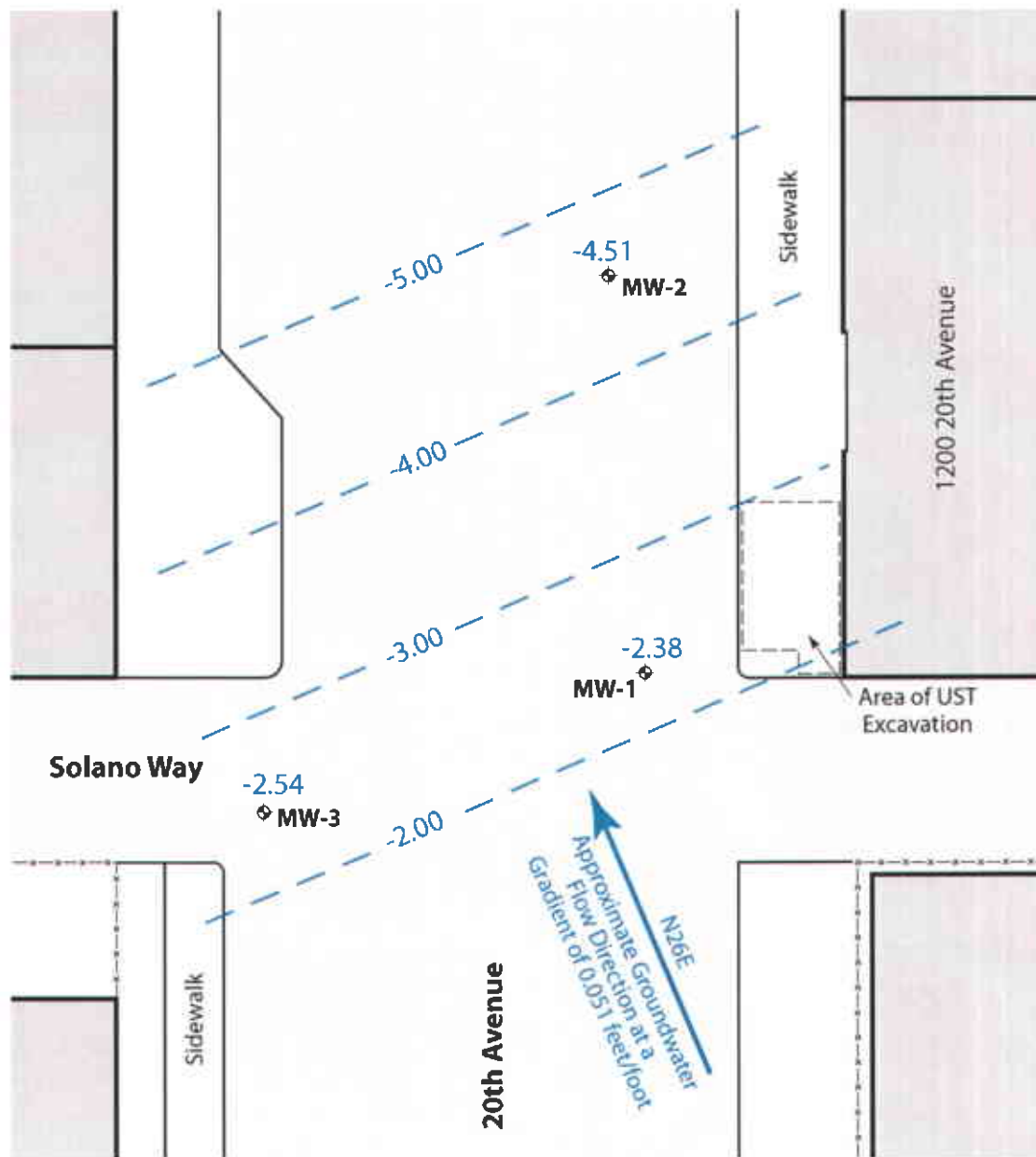


Notes:

- ⊕ Monitoring Well (MW)
- ⊕ Soil Boring (SB)

**FIGURE 2
MONITORING WELL
AND SOIL BORING LOCATIONS**

J. W. SILVEIRA CO.
1200 20th AVENUE
OAKLAND, CALIFORNIA



Notes:

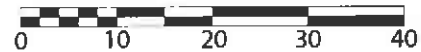
◊ Monitoring Well (MW)

-2.38 Groundwater elevation in feet below mean sea level

-3.00 Groundwater elevation contour in feet below mean sea level

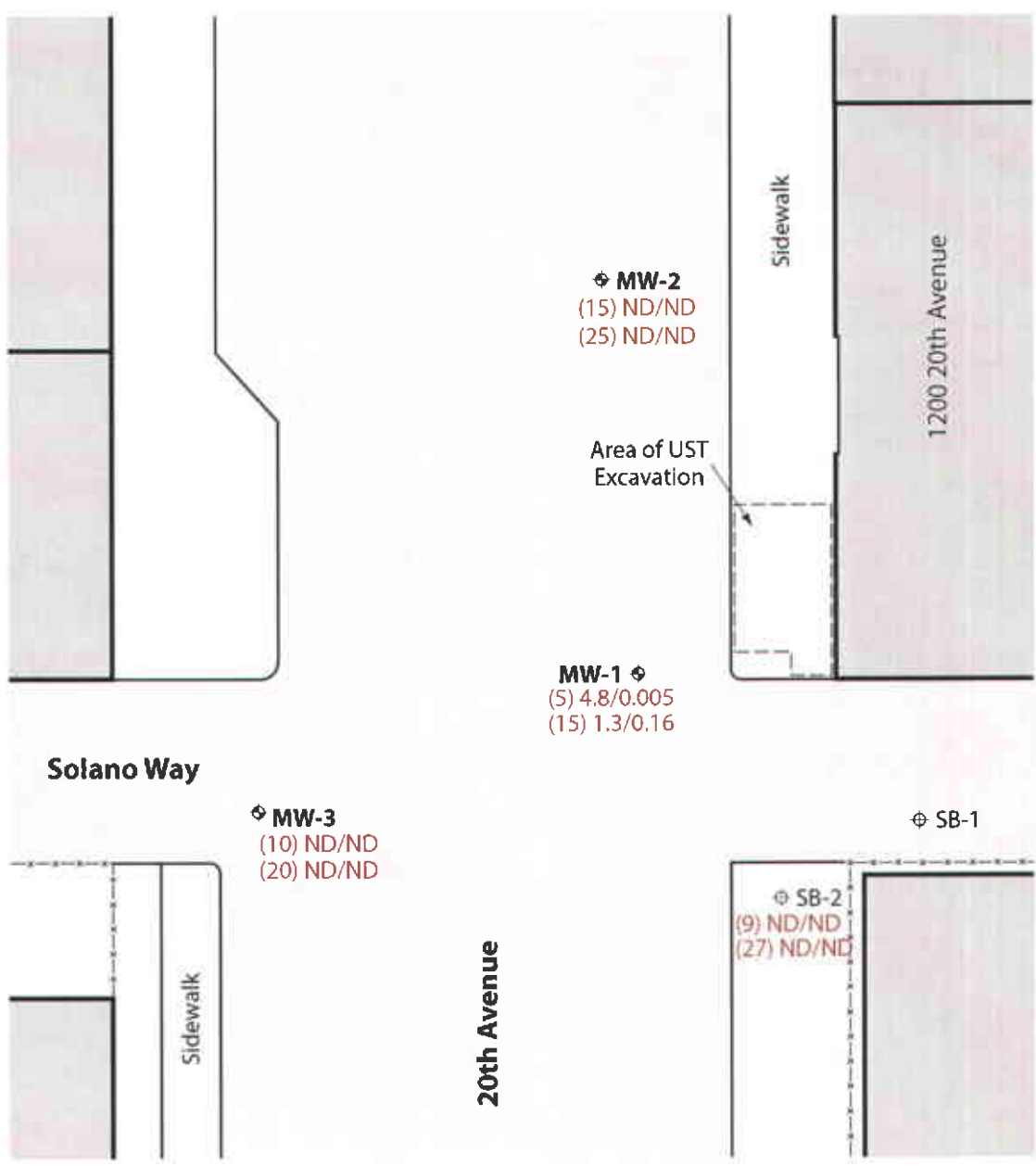
Sampling Date: August 30, 2001

Scale: 1 inch = 20 feet



**FIGURE 3
POTENTIOMETRIC MAP**

J. W. SILVEIRA CO.
1200 20th AVENUE
OAKLAND, CALIFORNIA



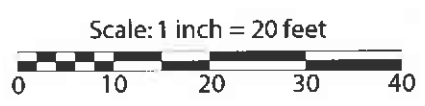
⊕ MW-2
(15) ND/ND
(25) ND/ND

MW-1 ⊕
(5) 4.8/0.005
(15) 1.3/0.16

⊕ MW-3
(10) ND/ND
(20) ND/ND

⊕ SB-1

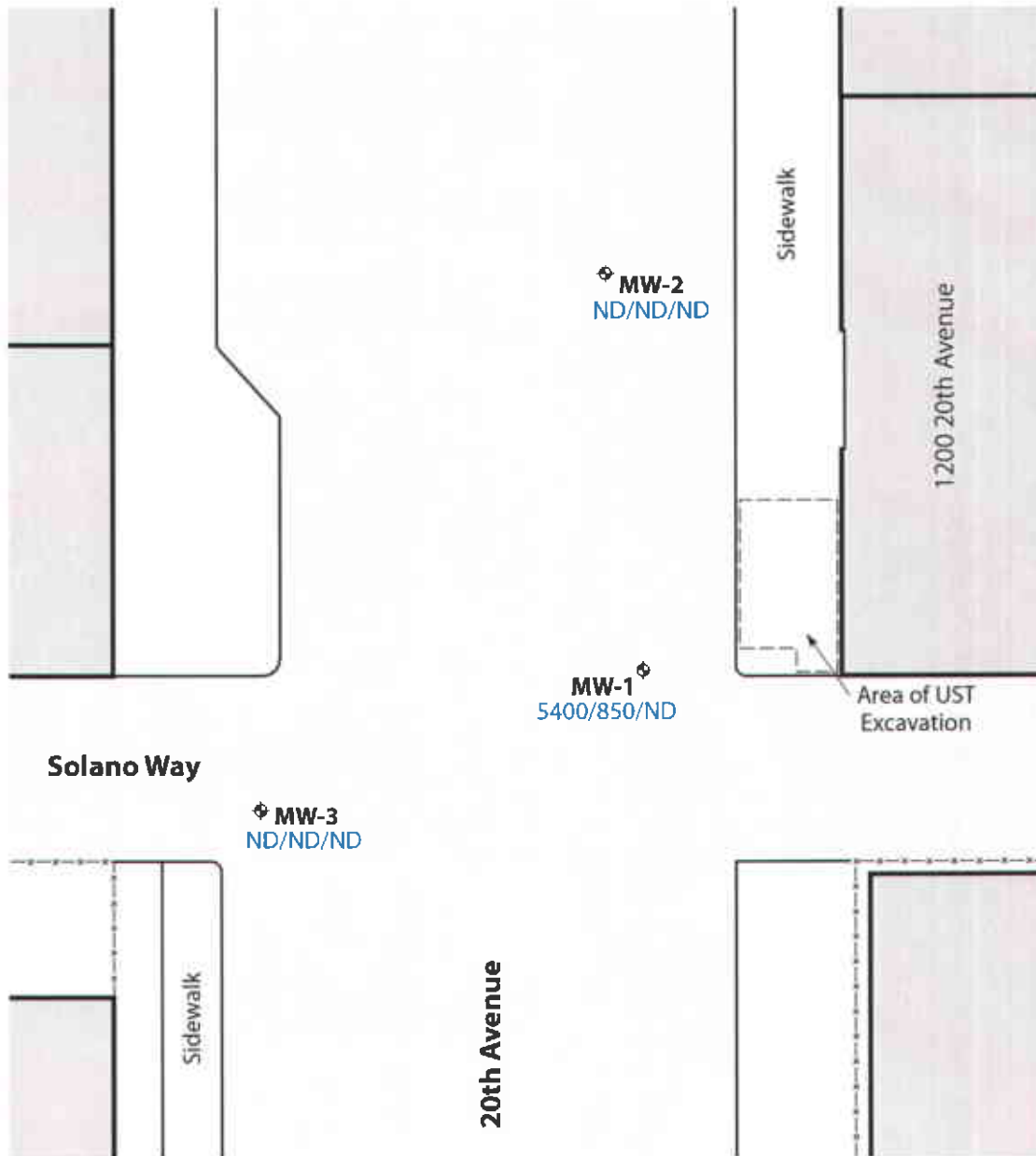
⊕ SB-2
(9) ND/ND
(27) ND/ND



Notes:

- ⊕ Monitoring Well (MW)
- ⊖ Soil Boring (SB)
- (x) A/B (depth in feet) TPH-gas/Benzene in milligrams per kilogram
- ND Non Detected

FIGURE 4
SOIL CONCENTRATION MAP
J. W. SILVEIRA CO.
1200 20th AVENUE
OAKLAND, CALIFORNIA



Notes:

- ◆ Monitoring Well (MW)
 - A/B/C TPH-gas/Benzene/MTBE
in micrograms per liter
 - ND Non Detected
- Sampling Date: August 30, 2001

Scale: 1 inch = 20 feet



FIGURE 5
GROUNDWATER
CONCENTRATION MAP

J. W. SILVEIRA CO.
1200 20th AVENUE
OAKLAND, CALIFORNIA



TABLES

TABLE 1
GROUNDWATER ELEVATIONS
FEBRUARY 2000 TO AUGUST 2001
1200 20TH AVENUE, OAKLAND

Date	Groundwater Elevations (msl)		
	MW-1	MW-2	MW-3
2/9/00	0.07	-2.50	-0.10
5/23/00	0.42	-2.03	0.15
9/27/00	-2.78	-4.94	-2.66
12/18/00	-2.45	-4.94	-2.98
8/30/01	-2.38	-4.51	-2.54

Notes:

msl Mean sea level
 TOC Top of casing

MW-1 TOC Elevation: 17.15 feet
 MW-2 TOC Elevation: 20.11 feet
 MW-3 TOC Elevation: 16.06 feet

TABLE 2
VOCs AND TPH CONCENTRATIONS IN GROUNDWATER
MONITORING WELL MW-1
FEBRUARY 1995 TO AUGUST 2001
1200 20TH AVENUE, OAKLAND

Date	TPH ($\mu\text{g/L}$)	VOC ($\mu\text{g/L}$)				
	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
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	ND
May-00	18,000	3,700	430	770	2,440	ND
Sep-00	4,300	1,200	59	420	330	ND
Dec-00	3,200	500	26	130	130	ND
Aug-01	5,400	850	64	230	200	ND

Notes:

MTBE Methyl tertiary-butyl ether
 $\mu\text{g/L}$ Micrograms per liter
 -- Not analyzed
 ND Not detected
 TPH Total petroleum hydrocarbons
 VOC Volatile organic compound

TABLE 3
VOCs AND TPH CONCENTRATIONS IN GROUNDWATER
MONITORING WELL MW-2
FEBRUARY 1995 TO AUGUST 2001
1200 20TH AVENUE, OAKLAND

Date	TPH (µg/L)	VOC (µg/L)				
	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
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	ND
May-00	ND	ND	ND	ND	ND	ND
Sep-00	ND	ND	ND	ND	ND	ND
Dec-00	ND	ND	ND	ND	ND	ND
Aug-01	--	--	--	--	--	--

Notes:

MTBE Methyl tertiary-butyl ether
µg/L Micrograms per liter
-- Not analyzed
ND Not detected
TPH Total petroleum hydrocarbons
VOC Volatile organic compound

TABLE 4
VOCs AND TPH CONCENTRATIONS IN GROUNDWATER
MONITORING WELL MW-3
FEBRUARY 1995 TO AUGUST 2001
1200 20TH AVENUE, OAKLAND

Date	VOC (ug/L)						
	TPH (ug/L)	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
Feb-95	ND	ND	ND	ND	ND	ND	--
Jun-95	160	0.6	ND	ND	0.6	0.72	--
Oct-95	130	5.8	ND	ND	3.2	ND	--
Feb-96	54	5.6	2.8	ND	2.9	8.1	--
Jun-96	ND	ND	ND	ND	ND	ND	--
Sep-96	96	12	7.1	ND	4	6.2	--
Jan-97	ND	ND	ND	ND	ND	ND	--
Jul-98	ND	ND	ND	ND	ND	ND	--
Apr-99	ND	ND	ND	ND	ND	ND	--
Feb-00	ND	ND	ND	ND	ND	ND	ND
May-00	ND	ND	ND	ND	ND	ND	ND
Sep-00	ND	ND	ND	ND	ND	ND	ND
Dec-00	ND	ND	ND	ND	ND	ND	ND
Aug-01	--	--	--	--	--	--	--

Notes:

MTBE Methyl tertiary-butyl ether
 µg/L Micrograms per liter
 -- Not analyzed
 ND Not detected
 TPH Total petroleum hydrocarbons
 VOC Volatile organic compound

APPENDIX A

GROUNDWATER SAMPLING SHEETS

GROUNDWATER SAMPLING RECORD

DATE 2-9-00 PAGE 1 OF 2

MONITORING WELL NO. MW1

PROJECT JW SILVEIRA

SITE #2 - 1200 20th AVE

PROJECT NO. PL106

TOTAL GALLONS TO BE PURGED _____

PURGING METHOD _____

SAMPLING METHOD _____

Time	Volume of Water Removed (gallons)	Discharge Rate (gal/min)	Field Parameters Measured							Comments	
			pH	Specific Conductivity (ms/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temp. (°C)				Water Level (feet)
1010 Initial			6.66 6.74	1.15 1.19	200-600 14	0.7-1.2 0.70	18.7 19.2°			18.30	Well needs new locking well cap - could use whole new christy box.
1018	2.5 gal	~4 gal/10 min	6.75	1.20	85	0.37	19.3°				
1023	5 gal	~4 gal/10 min	6.74	1.18	289	0.30	19.3°				
1030	7.5 gal	~4 gal/10 min	6.74	1.17	420	0.31	19.2°				
1036	10 gal	~4 gal/10 min	6.75	1.16	356	0.29	19.2°				
1044	12.5 gal	~4 gal/10 min	6.75	1.16	541	0.32	19.2°				
1048	15 gal	~4 gal/10 min	6.75	1.16	662	0.55	19.2°				
1055	17.5 gal	~4 gal/10 min	6.76	1.16	999	0.54	19.2°				
1101	20 gal	~4 gal/10 min	6.77	1.17	999	0.58	19.2°				

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY
HORIBA U-10		Equip Co

SAMPLE ID: JW2-05 SAMPLING PERSONNEL: _____
 ANALYSIS: TPH-g, MTBE, BTEX _____
 COC NUMBER: _____

GROUNDWATER SAMPLING RECORD

DATE 2-9-00 PAGE 2 OF 2

MONITORING WELL NO. MW1

PROJECT JW SILVEIRA

SITE #2 - 1200 20th Ave

PROJECT NO. P1106

CASING DIAMETER 2 inches

BOREHOLE DIAMETER 8.25 inches

TOP OF CASING ELEVATION 17.15 feet

WATER LEVEL 18.30 feet btoc @

WATER LEVEL ELEVATION _____ feet msl

STANDING WATER COLUMN 10.52 feet

WELL VOLUMES TO BE PURGED 2-3

MINIMUM PURGE VOLUME 20 gallons

ACTUAL VOLUME PURGED _____ gallons

VOLUME CALCULATED BY:

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

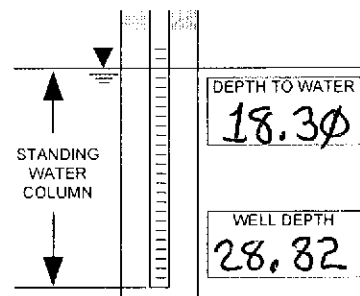
One Well Volume = _____ gal + _____ gal

One Well Volume = _____ gallons

Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a

Casing Volume = 10.52 ft x 0.17 gal/linear ft

Casing Volume = 1.8 gallons



NOTE

- a Refer to Table 1
- b Refer to Table 2
- c Assuming Sand Pack Porosity of 30%

Annulus Volume = [(Standing Water Column (ft) x Borehole Volume (gal/linear ft)^b) - Casing Volume] x 0.3^c

Annulus Volume = [(10.52 ft x 2.78 gal/linear ft) - 1.8 gal] x 0.3

Annulus Volume = 8.2 gallons

Table 1
Pipe Volume of Schedule 40 PVC Pipe

Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)	Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Table 2
Volume of Borehole

Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29

GROUNDWATER SAMPLING RECORD

DATE 2-9-00 PAGE 1 OF 2

MONITORING WELL NO. MW 2
 PROJECT JW SILVEIRA
 SITE #2 - 1200 10th AVE
 PROJECT NO. P1106

TOTAL GALLONS TO BE PURGED _____
 PURGING METHOD _____
 SAMPLING METHOD _____

Time	Volume of Water Removed (gallons)	Discharge Rate (gal/min)	Field Parameters Measured							Comments
			pH	Specific Conductivity (ms/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temp. (°C)		Water Level (feet)	
0830	Initial		6.55	0.715	15	5.83	18.5°		23.49	Well needs new locking well cap - could use whole new christy box.
0840	2.5 gal	2.5 gal/10min	6.67	0.701	92	4.76	18.7°			
0846	5 gal	~4 gal/10min	6.62	0.687	75	4.94	18.7°			
0853	7.5 gal	~4 gal/10min	6.64	0.688	72	4.81	18.7°			
0902	10 gal	~4 gal/10min	6.65	0.690	154	4.84	18.7°			
0910	12.5 gal	~4 gal/10min	6.64	0.696	245	4.78	18.7°			
0921	15 gal	~4 gal/10min	6.70	0.692	126	5.05	18.7°			
0930	17.5 gal	~4 gal/10min	6.69	0.693	99	4.98	18.7°			
0940	20 gal	~4 gal/10min	6.68	0.691	66	4.92	18.7°			

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY
HORIBA U-10		EQUIP. Co.

SAMPLE ID: JW2-06 SAMPLING PERSONNEL: _____
 ANALYSIS: TPH-g, MTBE, BTEX
 COC NUMBER: _____

GROUNDWATER SAMPLING RECORD

DATE 2-9-00 PAGE 2 OF 2

MONITORING WELL NO. MWZ

PROJECT JW SILVEIRA

SITE #2 - 1200 20th AVE

PROJECT NO. P1146

CASING DIAMETER 2 inches

BOREHOLE DIAMETER 8.25 inches

TOP OF CASING ELEVATION 20.11 feet

WATER LEVEL 23.49 feet btoc @

WATER LEVEL ELEVATION _____ feet msl

STANDING WATER COLUMN 7.71 feet

WELL VOLUMES TO BE PURGED 2-3

MINIMUM PURGE VOLUME 15 gallons

ACTUAL VOLUME PURGED 20 gallons

VOLUME CALCULATED BY:

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

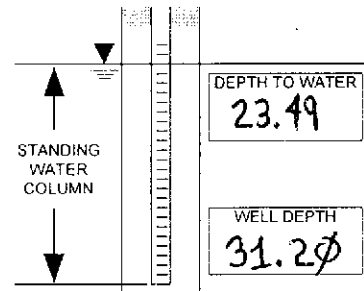
One Well Volume = 1.31 gal + 6.04 gal

One Well Volume = 7.35 gallons

Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a

Casing Volume = 7.71 ft x 0.17 gal/linear ft

Casing Volume = 1.31 gallons



NOTE:

- a Refer to Table 1
- b Refer to Table 2
- c Assuming Sand Pack Porosity of 30%

Annulus Volume = [(Standing Water Column (ft) x Borehole Volume (gal/linear ft)^b) - Casing Volume] x 0.3^c

Annulus Volume = [(7.71 ft x 2.78 gal/linear ft) - 1.31 gal] x 0.3

Annulus Volume = 6.04 gallons

Table 1
Pipe Volume of Schedule 40 PVC Pipe

Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)	Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Table 2
Volume of Borehole

Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29



TETRA TECH EM INC.
• SAN FRANCISCO •

GROUNDWATER SAMPLING RECORD

DATE 2-9-00 PAGE 1 OF 2

MONITORING WELL NO. MW 3

PROJECT JW SILVEIRA

SITE # 2 - 1200 20th AVE

PROJECT NO. P1106

TOTAL GALLONS TO BE PURGED _____

PURGING METHOD _____

SAMPLING METHOD _____

Time	Volume of Water Removed (gallons) <small>13</small>	Discharge Rate (gal/min)	Field Parameters Measured						Water Level (feet)	Comments
			pH <small>6.82</small>	Specific Conductivity (ms/cm) <small>1.5</small>	Turbidity (ntu) <small>500-450</small>	Dissolved Oxygen (mg/L) <small>5.95</small>	Temp. (°C) <small>18.8</small>			
1150	Initial	—	6.93	1.45	322	5.33	19.3			Well needs new locking well cap - could use whole new christy box.
1157	2.5 gal	~4 gal/10 min	6.93	1.45	695	5.47	19.5°			
1203	5 gal	~4 gal/10 min	6.93	1.40	999	5.46	19.6°			
1211	7.5 gal	~4 gal/10 min	6.95	1.40	999	5.48	19.5°			
1217	10 gal	~4 gal/10 min	6.94	1.34	999	5.63	19.5°			
1225	12.5 gal	~4 gal/10 min	6.92	1.31	999	5.20	19.5°			
1231	15 gal	" "	6.93	1.30	999	5.92	19.4°			
1239	17.5 gal	" "	6.94	1.28	999	5.93	19.4°			
1244	20 gal	" "	6.95	1.28	999	5.98	19.5°			

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY
HORIBA U10		Equip Co.

SAMPLE ID: JW2-07

SAMPLING PERSONNEL: _____

ANALYSIS: TPH-g, MTBE, BTEX

COC NUMBER: _____

GROUNDWATER SAMPLING RECORD

DATE 2-9-00 PAGE 2 OF 2

MONITORING WELL NO. MW 3
 PROJECT JW SILVEIRA
 SITE #2 - 1200 20th Ave
 PROJECT NO. P1106
 CASING DIAMETER 2 inches
 BOREHOLE DIAMETER 8.25 inches
 TOP OF CASING ELEVATION 16.06 feet
 WATER LEVEL _____ feet btoC @ _____
 WATER LEVEL ELEVATION _____ feet msl

STANDING WATER COLUMN _____ feet
 WELL VOLUMES TO BE PURGED _____
 MINIMUM PURGE VOLUME _____ gallons
 ACTUAL VOLUME PURGED _____ gallons

VOLUME CALCULATED BY:

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

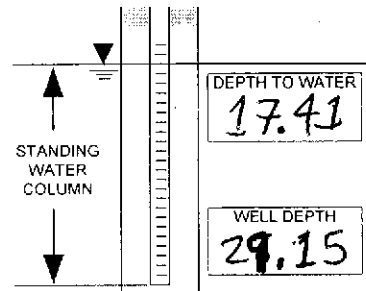
One Well Volume = _____ gal + _____ gal

One Well Volume = 11.2 gallons

Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a

Casing Volume = 11.74 ft x 0.17 gal/linear ft

Casing Volume = 2 gallons



NOTE:
 a Refer to Table 1
 b Refer to Table 2
 c Assuming Sand Pack Porosity of 30%

Annulus Volume = [(Standing Water Column (ft) x Borehole Volume (gal/linear ft)^b) - Casing Volume] x 0.3^c

Annulus Volume = [(11.74 ft x 2.78 gal/linear ft) - 2 gal] x 0.3

Annulus Volume = 9.2 gallons

Table 1
Pipe Volume of Schedule 40 PVC Pipe

Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)	Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Table 2
Volume of Borehole

Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29

GROUNDWATER SAMPLING RECORD

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MONITORING WELL NO. 1
 PROJECT JW Silveira
 SITE 2 - 1200 20th Ave.
 PROJECT NO. P110604

TOTAL GALLONS TO BE PURGED _____
 PURGING METHOD _____
 SAMPLING METHOD _____

Time	Volume of Water Removed (gallons)	Discharge Rate (gal/min)	Field Parameters Measured						Water Level (feet)	Comments
			pH	Specific Conductivity (ms/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temp. (°C)			
1405	Initial		6.75	1.15	89	0.09	21.1°			
1411	3 gal		6.77	1.17	151	0.43	20.3°			
1417	6 gal		6.75	1.15	118	0.16	20.2°			
1421	9 gal		6.75	1.19	350	0.61	19.9°			
1425	12 gal		6.75	1.18	599	0.69	20.0			
1432	15 gal		6.74	1.18	506	0.75	20.0			
									Parameters Stable Sample Well @ 1435 (COC + Labels Say 13500 because they were pre-made)	

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY

SAMPLE ID: JW2-15 SAMPLING PERSONNEL: _____
 ANALYSIS: _____
 COC NUMBER: _____

GROUNDWATER SAMPLING RECORD

DATE 5/23/00 PAGE 2 OF 2

MONITORING WELL NO. 1
 PROJECT JW Silveira
 SITE 2 - 1200 20th Ave
 PROJECT NO. P110604
 CASING DIAMETER 2 inches
 BOREHOLE DIAMETER 8.25 inches
 TOP OF CASING ELEVATION 17.15 feet
 WATER LEVEL 16.73 feet bgs @ _____
 WATER LEVEL ELEVATION 0.42 feet msl

STANDING WATER COLUMN 12.09 feet
 WELL VOLUMES TO BE PURGED _____
 MINIMUM PURGE VOLUME _____ gallons
 ACTUAL VOLUME PURGED _____ gallons

VOLUME CALCULATED BY:
HWD

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

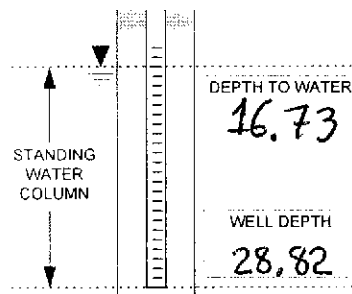
One Well Volume = 2.06 gal + 9.47 gal

One Well Volume = 11.53 gallons

Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a

Casing Volume = 12.09 ft x 0.17 gal/linear ft

Casing Volume = 2.06 gallons



NOTE:
 a Refer to Table 1
 b Refer to Table 2
 c Assuming Sand Pack Porosity of 30%

Annulus Volume = [(Standing Water Column (ft) x Borehole Volume (gal/linear ft)^b) - Casing Volume] x 0.3^c

Annulus Volume = [(12.09 ft x 2.78 gal/linear ft) - 2.06 gal] x 0.3

Annulus Volume = 9.47 gallons

Table 1
Pipe Volume of Schedule 40 PVC Casing

Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)	Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Table 2
Volume of Borehole

Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29



GROUNDWATER SAMPLING RECORD

DATE 5/23/00 PAGE 1 OF 2

MONITORING WELL NO. 2
 PROJECT JW Silveira
 SITE 2 - 1200 20th Ave.
 PROJECT NO. P110604

TOTAL GALLONS TO BE PURGED _____
 PURGING METHOD _____
 SAMPLING METHOD _____

Time	Volume of Water Removed (gallons)	Discharge Rate (gal/min)	Field Parameters Measured					Water Level (feet)	Comments
			pH	Specific Conductivity (ms/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temp. (°C)		
1455	Initial		6.65	0.749	18	4.62	20.3°		
1507	4 gal		6.69	0.764	113	4.85	19.8°		
1509	6 gal		6.70	0.768	323	4.82	19.6°		
1513	9 gal		6.65	0.760	158	4.75	19.5°		
1522	12 gal		6.67	0.761	275	4.79	19.5°		
									Parameters Stable Sample @ 1425 (COC + labels say 1400 because labels were pre-prepared)

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY

SAMPLE ID: JW2-16 SAMPLING PERSONNEL: _____
 ANALYSIS: _____
 COC NUMBER: _____

GROUNDWATER SAMPLING RECORD

DATE 5/23/00 PAGE 2 OF 2

MONITORING WELL NO. 2
 PROJECT JW Silveira
 SITE 2 - 1200 20th Ave
 PROJECT NO. P110604
 CASING DIAMETER 2 inches
 BOREHOLE DIAMETER 8.25 inches
 TOP OF CASING ELEVATION 20.11 feet
 WATER LEVEL 22.14 feet bgs @ _____
 WATER LEVEL ELEVATION -2.03 feet msl

STANDING WATER COLUMN 9.06 feet
 WELL VOLUMES TO BE PURGED _____
 MINIMUM PURGE VOLUME _____ gallons
 ACTUAL VOLUME PURGED _____ gallons

VOLUME CALCULATED BY:
HWD

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

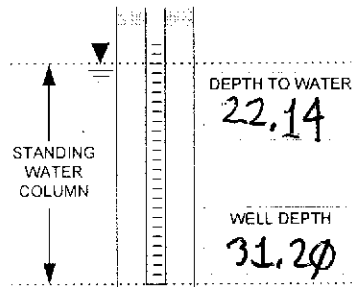
One Well Volume = 1.54 gal + 7.09 gal

One Well Volume = 8.63 gallons

Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a

Casing Volume = 9.06 ft x 0.17 gal/linear ft

Casing Volume = 1.54 gallons



NOTE:
 a Refer to Table 1
 b Refer to Table 2
 c Assuming Sand Pack Porosity of 30%

Annulus Volume = [(Standing Water Column (ft) x Borehole Volume (gal/linear ft)^b) - Casing Volume] x 0.3^c

Annulus Volume = [(9.06 ft x 2.78 gal/linear ft) - 1.54 gal] x 0.3

Annulus Volume = 7.09 gallons

Table 1
Pipe Volume of Schedule 40 PVC Casing

Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)	Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Table 2
Volume of Borehole

Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29

GROUNDWATER SAMPLING RECORD

DATE 5/23/00 PAGE 1 OF 2

MONITORING WELL NO. 3
 PROJECT JW Silveira
 SITE 2 - 1200 20th Ave
 PROJECT NO. P110604

TOTAL GALLONS TO BE PURGED _____
 PURGING METHOD _____
 SAMPLING METHOD _____

Time	Volume of Water Removed (gallons)	Discharge Rate (gal/min)	Field Parameters Measured							Comments	
			pH	Specific Conductivity (ms/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temp. (°C)				Water Level (feet)
1542	Initial		6.82	1.41	779	6.51	19.8°				
1548	3 gal		6.90	1.45	983	6.33	19.6°				
1553	6 gal		6.91	1.42	999	6.31	19.5°				
1558	9 gal		6.92	1.41	999	6.28	19.4°				
1604	12 gal		6.90	1.35	990	6.23	19.3				
1609	15 gal		6.94	1.36	999	6.30	19.4				Parameters Stable
											Sample @ 1612
											(COC + Labels say 1600 because labels were pre-made).

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY

SAMPLE ID: JW2-17 SAMPLING PERSONNEL: _____
 ANALYSIS: _____
 COC NUMBER: _____

GROUNDWATER SAMPLING RECORD

DATE 5/23/00 PAGE 2 OF 2

MONITORING WELL NO. 3
 PROJECT JW Silveira
 SITE 2 - 1200 20th Ave
 PROJECT NO. P110604
 CASING DIAMETER 2 inches
 BOREHOLE DIAMETER 8.25 inches
 TOP OF CASING ELEVATION 16.06 feet
 WATER LEVEL 15.91 feet bgs @ _____
 WATER LEVEL ELEVATION 0.15 feet msl

STANDING WATER COLUMN 13.24 feet
 WELL VOLUMES TO BE PURGED _____
 MINIMUM PURGE VOLUME _____ gallons
 ACTUAL VOLUME PURGED _____ gallons

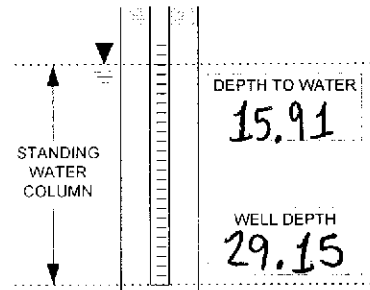
VOLUME CALCULATED BY:

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

One Well Volume = $2.25 \text{ gal} + 8.50 \text{ gal}$

One Well Volume = 10.75 gallons



Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a

Casing Volume = $13.24 \text{ ft} \times 0.17 \text{ gal/linear ft}$

Casing Volume = 2.25 gallons

NOTE:
 a Refer to Table 1
 b Refer to Table 2
 c Assuming Sand Pack Porosity of 30%

Annulus Volume = $\left(\left(\text{Standing Water Column (ft)} \times \text{Borehole Volume (gal/linear ft)}^b \right) - \text{Casing Volume} \right) \times 0.3^c$

Annulus Volume = $\left(\left(13.24 \text{ ft} \times 2.78 \text{ gal/linear ft} \right) - 2.25 \text{ gal} \right) \times 0.3$

Annulus Volume = 8.50 gallons

Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)	Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29

GROUNDWATER SAMPLING RECORD

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MONITORING WELL NO. MW-1

PROJECT JW SILVEIRA

SITE 2, 1200 20th AVE

PROJECT NO. P110604

TOTAL GALLONS TO BE PURGED _____

PURGING METHOD BAILER

SAMPLING METHOD BAILER

Time	Volume of Water Removed (gallons)	Discharge Rate (gal/min)	Field Parameters Measured							Comments
			pH	Specific Conductivity (ms/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temp. (°C)		Water Level (feet)	
1538	0		6.15	1.18	33	0.42	19.7°			
1544	3		6.21	1.20	332	0.62	19.7°			
1551	6		6.25	1.19	376	0.85	19.5°			
1557	9		6.26	1.19	310	0.86	19.4			
1603	12		6.26	1.18	555	0.82	19.4			

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY

SAMPLE ID: JW2-18 @ 1610

ANALYSIS: BTEX, MTBE, TPH-P

COC NUMBER: 0106

SAMPLING PERSONNEL: _____

Har & Roy

GROUNDWATER SAMPLING RECORD

DATE 9-27-00 PAGE 2 OF 2

MONITORING WELL NO. MW-1
 PROJECT JW SILVEIRA
 SITE 2, 1200 20th AVE
 PROJECT NO. P110604
 CASING DIAMETER 2 inches
 BOREHOLE DIAMETER 8.25 inches
 TOP OF CASING ELEVATION 17.15 feet
 WATER LEVEL 19.93 feet btoe 1530 @
 WATER LEVEL ELEVATION -2.78 feet msl

STANDING WATER COLUMN 8.89 feet
 WELL VOLUMES TO BE PURGED _____
 MINIMUM PURGE VOLUME _____ gallons
 ACTUAL VOLUME PURGED _____ gallons

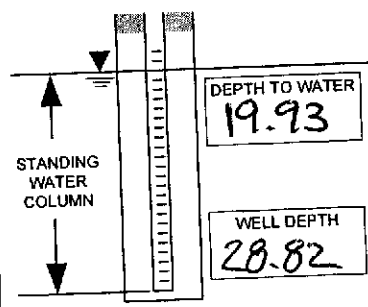
VOLUME CALCULATED BY:

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

One Well Volume = 1.51 gal + 6.96 gal

One Well Volume = 8.47 gallons



Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a
 Casing Volume = 8.89 ft x 0.17 gal/linear ft
 Casing Volume = 1.51 gallons

NOTE:
 a Refer to Table 1
 b Refer to Table 2
 c Assuming Sand Pack Porosity of 30%

Annulus Volume = [(Standing Water Column (ft) x Borehole Volume (gal/linear ft)^b) - Casing Volume] x 0.3^c
 Annulus Volume = [(8.89 ft x 2.78 gal/linear ft) - 1.51 gal] x 0.3
 Annulus Volume = 6.96 gallons

Table 1
Pipe Volume of Schedule 40 PVC Pipe

Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)	Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Table 2
Volume of Borehole

Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29

GROUNDWATER SAMPLING RECORD

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MONITORING WELL NO. MW-2

PROJECT JW SILVEIRA

SITE 2, 1200 20th AVE

PROJECT NO. P110604

TOTAL GALLONS TO BE PURGED _____

PURGING METHOD BAILER

SAMPLING METHOD BAILER

Time	Volume of Water Removed (gallons)	Discharge Rate (gal/min)	Field Parameters Measured						Water Level (feet)	Comments
			pH	Specific Conductivity (ms/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temp. (°C)			
1458	0		6.12	0.720	21	4.83	19.3°			
1503	2		6.05	0.723	140	4.92	19.0°			
1506	4		6.10	0.724	211	4.98	19.0°			
1511	6		6.09	0.719	279	5.00	18.9°			
1515	8		6.09	0.717	285	5.02	18.9°			

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY

SAMPLE ID: JW2-19 @ 1520

SAMPLING PERSONNEL: _____

ANALYSIS: BTEX, MTBE, TPH-P

Har & Roy

COC NUMBER: 0106

GROUNDWATER SAMPLING RECORD

DATE 9-27-00 PAGE 2 OF 2

MONITORING WELL NO. MW-2

PROJECT JW SILVEIRA

SITE 2, 1200 20th Ave

PROJECT NO. P110604

CASING DIAMETER 2 inches

BOREHOLE DIAMETER 8.25 inches

TOP OF CASING ELEVATION 20.11 feet

WATER LEVEL 25.05 / 6.15 feet btoe 1450 @

WATER LEVEL ELEVATION -4.94 feet msl

STANDING WATER COLUMN 6.15 feet

WELL VOLUMES TO BE PURGED _____

MINIMUM PURGE VOLUME _____ gallons

ACTUAL VOLUME PURGED _____ gallons

VOLUME CALCULATED BY:

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

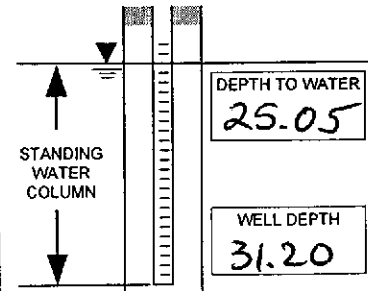
One Well Volume = 1.05 gal + 4.81 gal

One Well Volume = 5.86 gallons

Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a

Casing Volume = 6.15 ft x 0.17 gal/linear ft

Casing Volume = 1.05 gallons



NOTE:

- a Refer to Table 1
- b Refer to Table 2
- c Assuming Sand Pack Porosity of 30%

Annulus Volume = [(Standing Water Column (ft) x Borehole Volume (gal/linear ft)^b) - Casing Volume] x 0.3^c

Annulus Volume = [(6.15 ft x 2.78 gal/linear ft) - 1.05 gal] x 0.3

Annulus Volume = 4.81 gallons

Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)	Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29

GROUNDWATER SAMPLING RECORD

DATE 9-27-00 PAGE 1 OF 2

MONITORING WELL NO. MW-3
 PROJECT JW SILVEIRA
 SITE 2, 1200 20th Ave
 PROJECT NO. P110604

TOTAL GALLONS TO BE PURGED _____
 PURGING METHOD BAILER
 SAMPLING METHOD BAILER

Time	Volume of Water Removed (gallons)	Discharge Rate (gal/min)	Field Parameters Measured							Comments	
			pH	Specific Conductivity (ms/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temp. (°C)				Water Level (feet)
1348	0		6.34	1.61	248	5.63	19.8				
1402	3		6.38	1.53	369	6.05	19.9				
1409	6		6.33	1.44	387	5.14	19.8				
1420	9		6.38	1.38	392	5.28	19.7				
1427	12		6.36	1.34	375	5.62	19.7				

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY
HORIBA U-10	U-10.08	EQUIPO

SAMPLE ID: JW2-20 c 1430
 ANALYSIS: BTEX, MTBE, TPH-P
 COC NUMBER: 0106

SAMPLING PERSONNEL: Hill & Roy

GROUNDWATER SAMPLING RECORD

DATE 9-27-00 PAGE 2 OF 2

MONITORING WELL NO. MW-3

PROJECT JW SILVEIRA

SITE 2, 1200th Ave

PROJECT NO. P110604

CASING DIAMETER 2" inches

BOREHOLE DIAMETER 8.25 inches

TOP OF CASING ELEVATION 16.06 feet

WATER LEVEL 18.72 feet btoC @

WATER LEVEL ELEVATION -2.66 feet msl

STANDING WATER COLUMN 10.43 feet

WELL VOLUMES TO BE PURGED _____

MINIMUM PURGE VOLUME _____ gallons

ACTUAL VOLUME PURGED _____ gallons

VOLUME CALCULATED BY:

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

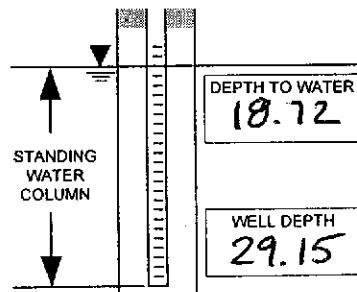
One Well Volume = 1.77 gal + 7.81 gal

One Well Volume = 9.58 gallons

Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a

Casing Volume = 10.43 ft x 0.17 gal/linear ft

Casing Volume = 1.77 gallons



NOTE:
 a Refer to Table 1
 b Refer to Table 2
 c Assuming Sand Pack Porosity of 30%

Annulus Volume = [(Standing Water Column (ft) x Borehole Volume (gal/linear ft)^b) - Casing Volume] x 0.3^c

Annulus Volume = [(10 ft x 2.78 gal/linear ft) - 1.77 gal] x 0.3

Annulus Volume = 7.81 gallons

Table 1
Pipe Volume of Schedule 40 PVC Pipe

Diameter (Inches)	OD (Inches)	ID (Inches)	Volume (gal/linear ft)	Diameter (Inches)	OD (Inches)	ID (Inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Table 2
Volume of Borehole

Diameter (Inches)	Volume (gal/linear ft)	Diameter (Inches)	Volume (gal/linear ft)	Diameter (Inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29

GROUNDWATER SAMPLING RECORD

DATE 12-18-00 PAGE 1 OF 2

MONITORING WELL NO. MW1
 PROJECT JW SILVEIRA
 SITE 2, 1200 20th Ave
 PROJECT NO. P1106.04

TOTAL GALLONS TO BE PURGED _____
 PURGING METHOD BALUR
 SAMPLING METHOD BALUR

Time	Volume of Water Removed (gallons)	Discharge Rate (gal/min)	Field Parameters Measured						Water Level (feet)	Comments
			pH	Specific Conductivity (ms/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temp. (°C)			
1514			6.45	1.17	10	3.24	20.0			
1523	3		6.58	1.17	174	3.23	19.9			
1532	6		6.58	1.15	275	3.41	19.8			
1540	9		6.58	1.15	240	3.35	19.7			
1549	12		6.57	1.15	245	3.39	19.7			

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY
HORIBA U-10	U-10.10	Equipco
Water Level	107-100P2	"

SAMPLE ID: JW2-21 @ 1555
 ANALYSIS: BTEX, MTBE, TPH-P
 COC NUMBER: 5005

SAMPLING PERSONNEL:
H. Dawson
R. Glenn

GROUNDWATER SAMPLING RECORD

DATE 12-18-00 PAGE 2 OF 2

MONITORING WELL NO. MW 1

PROJECT JW SILVEIRA

SITE 2, 1200 20th AVE

PROJECT NO. P1106.04

CASING DIAMETER 2 inches

BOREHOLE DIAMETER 8.25 inches

TOP OF CASING ELEVATION 17.15 feet

WATER LEVEL 19.60 feet btoc 1510 @

WATER LEVEL ELEVATION -2.45 feet msl

STANDING WATER COLUMN 9.22 feet

WELL VOLUMES TO BE PURGED _____

MINIMUM PURGE VOLUME _____ gallons

ACTUAL VOLUME PURGED _____ gallons

VOLUME CALCULATED BY:
R. Glenn

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

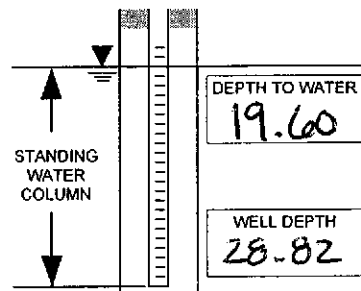
One Well Volume = 7.18 gal + 1.57 gal

One Well Volume = 8.75 gallons

Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a

Casing Volume = 9.22 ft x 0.17 gal/linear ft

Casing Volume = 1.57 gallons



NOTE:
a Refer to Table 1
b Refer to Table 2
c Assuming Sand Pack Porosity of 30%

Annulus Volume = [(Standing Water Column (ft) x Borehole Volume (gal/linear ft)^b) - Casing Volume] x 0.3^c

Annulus Volume = [(9.22 ft x 2.78 gal/linear ft) - 1.57 gal] x 0.3

Annulus Volume = 7.18 gallons

Table 1
Pipe Volume of Schedule 40 PVC Pipe

Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)	Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Table 2
Volume of Borehole

Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29

GROUNDWATER SAMPLING RECORD

DATE 12-18-00 PAGE 1 OF 2

MONITORING WELL NO. MW2
 PROJECT JW SILVEIRA
 SITE 2, 1200 & 20th Ave
 PROJECT NO. P1106.04

TOTAL GALLONS TO BE PURGED _____
 PURGING METHOD BAILER
 SAMPLING METHOD BAILER

Time	Volume of Water Removed (gallons)	Discharge Rate (gal/min)	Field Parameters Measured						Water Level (feet)	Comments
			pH	Specific Conductivity (ms/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temp. (°C)			
1425			6.42	.760	10	6.21	19.2			
1432	2		6.44	.761	111	6.38	19.2			
1439	4		6.44	.758	104	6.26	19.1			
1447	6		6.45	.755	116	6.19	19.1			
1456	8		6.45	.754	167	6.30	19.2			

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY
HORIBA U-10	U-10.10	EQUIPO
Water Level	101-10DP2	"

SAMPLE ID: JW2-22 @ 1500
 ANALYSIS: BTEX, MTBE, TPH-P
 COC NUMBER: 5005

SAMPLING PERSONNEL:
H. Dawson
R. Glenn

GROUNDWATER SAMPLING RECORD

DATE 12-18-00 PAGE 2 OF 2

MONITORING WELL NO. MW2

PROJECT JW SILVEIRA

SITE Z, 1200 20th Ave

PROJECT NO. P1106.04

CASING DIAMETER 2 inches

BOREHOLE DIAMETER 8.25 inches

TOP OF CASING ELEVATION 20.11 feet

WATER LEVEL 24.57 feet btoc @

WATER LEVEL ELEVATION -4.46 feet msl

STANDING WATER COLUMN 6.63 feet

WELL VOLUMES TO BE PURGED _____

MINIMUM PURGE VOLUME _____ gallons

ACTUAL VOLUME PURGED _____ gallons

VOLUME CALCULATED BY:
P. Glenn

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

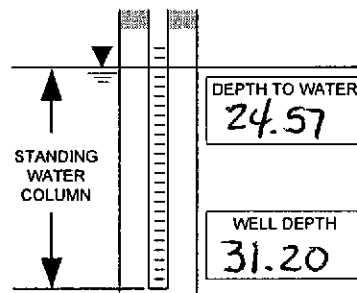
One Well Volume = 5.19 gal + 1.13 gal

One Well Volume = 6.32 gallons

Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a

Casing Volume = 6.63 ft x 0.17 gal/linear ft

Casing Volume = 1.13 gallons



NOTE:

- a Refer to Table 1
- b Refer to Table 2
- c Assuming Sand Pack Porosity of 30%

Annulus Volume = [(Standing Water Column (ft) x Borehole Volume (gal/linear ft)^b) - Casing Volume] x 0.3^c

Annulus Volume = [(6.63 ft x 2.78 gal/linear ft) - 1.13 gal] x 0.3

Annulus Volume = 5.19 gallons

Table 1
Pipe Volume of Schedule 40 PVC Pipe

Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)	Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Table 2
Volume of Borehole

Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29

GROUNDWATER SAMPLING RECORD

DATE 12-18-00 PAGE 1 OF 2

MONITORING WELL NO. MW3
 PROJECT JW SILVEIRA
 SITE 2, 1200 20th AVE
 PROJECT NO. P1106-04

TOTAL GALLONS TO BE PURGED _____
 PURGING METHOD Bailer
 SAMPLING METHOD Bailer

Time	Volume of Water Removed (gallons)	Discharge Rate (gal/min)	Field Parameters Measured						Water Level (feet)	Comments
			pH	Specific Conductivity (ms/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temp. (°C)			
1023			6.49	1.45	21	7.22	19.5			
1032	3		6.70	1.43	429	7.26	19.9			
1050	6		6.74	1.33	198	7.33	19.8			
1100	9		6.72	1.33	680	7.30	19.8			
1107	12		6.71	1.29	999	7.32	19.8			

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY
<u>HORIBA U-10</u>		
<u>Water Level</u>		

SAMPLE ID: JW2-23 @ 1120
 ANALYSIS: BTEX, MTBE, TPH-P
 COC NUMBER: 5005

SAMPLING PERSONNEL:
H. Dawson
R. Green

GROUNDWATER SAMPLING RECORD

DATE 12-18-00 PAGE 2 OF 2

MONITORING WELL NO. MW3

PROJECT JW SILVEIRA

SITE 2, 1200 20th Ave

PROJECT NO. P1106.04

CASING DIAMETER 2 inches

BOREHOLE DIAMETER 8.25 inches

TOP OF CASING ELEVATION 16.06 feet

WATER LEVEL ~~2.98~~ feet bloc @ 1015 @

WATER LEVEL ELEVATION 19.04 - 2.98 feet msl

STANDING WATER COLUMN 10.11 feet

WELL VOLUMES TO BE PURGED _____

MINIMUM PURGE VOLUME _____ gallons

ACTUAL VOLUME PURGED _____ gallons

VOLUME CALCULATED BY:
R. GLOWN

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

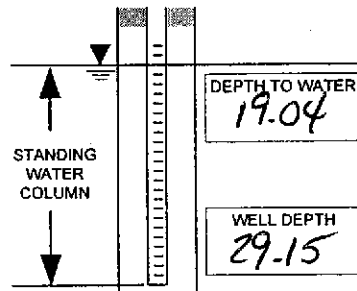
One Well Volume = 1.72 gal + 7.92 gal

One Well Volume = 9.64 gallons

Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a

Casing Volume = 10.11 ft x 0.17 gal/linear ft

Casing Volume = 1.72 gallons



NOTE:

- a Refer to Table 1
- b Refer to Table 2
- c Assuming Sand Pack Porosity of 30%

Annulus Volume = [(Standing Water Column (ft) x Borehole Volume (gal/linear ft)^b) - Casing Volume] x 0.3^c

Annulus Volume = [(10.11 ft x 2.78 gal/linear ft) - 1.72 gal] x 0.3

Annulus Volume = 7.92 gallons

Table 1
Pipe Volume of Schedule 40 PVC Pipe

Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)	Diameter (inches)	OD (inches)	ID (inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Table 2
Volume of Borehole

Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)	Diameter (inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29

GROUNDWATER SAMPLING RECORD

DATE 8-30-01 PAGE 1 OF 2

MONITORING WELL NO. MW-1

PROJECT JW SILVEIRA

SITE 1200 20th Ave

PROJECT NO. P1106-04

PURGING METHOD BAILOR

SAMPLING METHOD BAILOR

Time	Volume of Water Removed (gallons)	Discharge Rate (gal/min)	Field Parameters Measured							Water Level (feet)	Comments
			pH	Specific Conductivity (ms/cm)	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Temp. (°C)				
1435	0									19.53	
1437	1.5		6.68	1.26	37	0.72	20.6			20.6	
1444	4.5		7.22	1.37	35	0.64	20.0				
1449	7		7.30	1.35	67	0.91	19.7				
1457	10		7.26	1.31	132	0.89	19.7				
1500	12		7.25	1.29	108	0.83	19.7				

FIELD EQUIPMENT	SERIAL NUMBER	RENTAL COMPANY

SAMPLE ID: JW2-24 @1505
 ANALYSIS: BTEX & TPH-P
 COC NUMBER: 3595

SAMPLING PERSONNEL:
H. DAWSON
R. GLENN

GROUNDWATER SAMPLING RECORD

DATE 8-30-01 PAGE 2 OF 2

MONITORING WELL NO. MW-1

PROJECT JW SILVEIRA

SITE 1200 20th Ave

PROJECT NO. P1106.04

CASING DIAMETER 2 inches

BOREHOLE DIAMETER 8.25 inches

TOP OF CASING ELEVATION 17.15 feet

WATER LEVEL 19.53 feet btoc @ 1428

WATER LEVEL ELEVATION -2.38 feet msl

STANDING WATER COLUMN 9.29 feet

ACTUAL VOLUME PURGED _____ gallons

CALCULATED BY:

PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

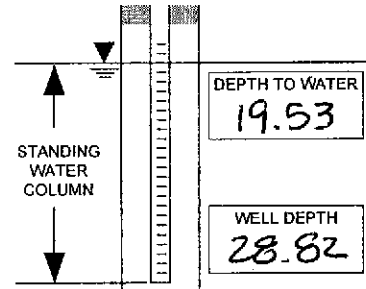
One Well Volume = 1.58 gal + 7.27 gal

One Well Volume = 8.85 gallons

Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a

Casing Volume = 9.29 ft x 0.17 gal/linear ft

Casing Volume = 1.58 gallons



NOTE:

- a Refer to Table 1
- b Refer to Table 2
- c Assuming Sand Pack Porosity of 30%

Annulus Volume = [(Standing Water Column (ft) x Borehole Volume (gal/linear ft)^b) - Casing Volume] x 0.3^c

Annulus Volume = [(9.29 ft x 2.78 gal/linear ft) - 1.58 gal] x 0.3

Annulus Volume = 7.27 gallons

Table 1 Pipe Volume of Schedule 40 PVC Pipe							
Diameter (Inches)	OD (Inches)	ID (Inches)	Volume (gal/linear ft)	Diameter (Inches)	OD (Inches)	ID (Inches)	Volume (gal/linear ft)
1.25	1.660	1.380	0.08	4	4.500	4.026	0.66
2	2.375	2.067	0.17	6	6.625	6.065	1.50
3	3.500	3.068	0.38	8	8.625	7.981	2.60

Table 2 Volume of Borehole					
Diameter (Inches)	Volume (gal/linear ft)	Diameter (Inches)	Volume (gal/linear ft)	Diameter (Inches)	Volume (gal/linear ft)
7.25	2.14	8.25	2.78	9.25	3.52
7.75	2.45	8.75	3.12	10.25	4.29

APPENDIX B

**LABORATORY DATA AND
CHAIN-OF-CUSTODY**



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
Location: JW Silveira Props

Sample ID	Lab ID
JW2-0508	143867-001
JW2-0809	143867-002
JW2-07	143867-003

*ms
7/21/00*

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: *Teresa K Morrison*
Title: Operations Manager

Date: 3/17/00

Signature: *Carol Watbun*
Title: Project Manager

Date: 3/17/00

0001



135 Main St. Suite 1800
San Francisco, CA 94105
415-543-4880
Fax 415-543-5480

Chain of Custody Record

PO#		Lab: CFT			No./Container Types		Preservative Added HCl											
Project name: 1200 20th Avenue Silveira Site 2		TTEMI technical contact: Jackie Luta		Field samplers: Hal Dawson Roy Glenn		Analysis Required												
Project number: P110604		TTEMI project manager: Hal Dawson		Field samplers' signatures: Hal Dawson		40 ml VOA	1 Liter Amber	1 Liter Poly	Brass Tube	Glass Jar	CLP VOA	CLP SVOA	CLP Pest/PCBs	CLP Metals	TPH Purgeables	TPH Extractables	BTEX	MTBE
Sample ID	Sample Description/Notes		Date	Time	Matrix													
JW2-05	MW1	1200 20th Ave	2-9-00	1145	WATER	6								X	X	X		
JW2-06	MW2	"	"	1100	"	6								X	X	X		
JW2-07	MW3	"	"	1230	"	6								X	X	X		

Relinquished by:	Name (print)	Company Name	Date	Time
	Roy Glenn	TT EMI	2-10-00	
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

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 JW2-05⁰⁸ (CT#143867-001) due to coelution with a hydrocarbon peak. The recovery for bromofluorobenzene was within criteria. No other analytical problems were encountered.

JW2
3/22/00



Gasoline by GC/FID CA LUFT

Lab #:	143867	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Field ID:	JW2-0508	Batch#:	53760
Lab ID:	143867-001	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	3,000	50

Surrogate	%REC	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

0006

Gasoline by GC/FID CA LUFT

Lab #:	143867	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Field ID:	JW2-0809	Batch#:	53760
Lab ID:	143867-002	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

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



Gasoline by GC/FID CA LUFT

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

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

Gasoline by GC/FID CA LUFT

Lab #:	143867	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	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	Result	%REC	Limits	RPD	Li
Gasoline C7-C12	2,000	1,975	99	65-131	9	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	59-135
Bromofluorobenzene (FID)	112	60-140

Gasoline by GC/FID CA LUFT

Lab #:	143867	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC107851	Batch#:	53760
Matrix:	Water	Analyzed:	02/14/00
Units:	ug/L		

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

Surrogate	%REC	Limits
Trifluorotoluene (FID)	111	59-135
Bromofluorobenzene (FID)	103	60-140

Gasoline by GC/FID CA LUFT

Lab #:	143867	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC107853	Batch#:	53760
Matrix:	Water	Analyzed:	02/14/00
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50

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



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

Aromatic Volatile Organics by GC/MS
EPA 8260

TETRA TECH EM INC.

Tetra Tech EMI
135 Main Street
Suite 1800
San Francisco, CA 94105

Project#: P110604
Location: JW Silveira Props

Sample ID

Lab ID

JW2-0508

143867-001

JW2-0609

143867-002

JW2-07

143867-003

JWS 3/21/00

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: *Teresa K Morrison for JG*
Title: Operations Manager

Date: 3/17/00

Signature: *Carol Worthem*
Title: Project Manager

Date: 3/17/00 0001

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.

Purgeable Aromatics by GC/MS

Lab #:	143867	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Field ID:	JW2-0508	Batch#:	53818
Lab ID:	143867-001	Sampled:	02/09/00
Matrix:	Water	Received:	02/10/00
Units:	ug/L	Analyzed:	02/16/00
Diln Fac:	2.000		

*mvz
3/21/00*

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



Purgeable Aromatics by GC/MS

Lab #:	143867	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Field ID:	JW2-0609	Batch#:	53818
Lab ID:	143867-002	Sampled:	02/09/00
Matrix:	Water	Received:	02/10/00
Units:	ug/L	Analyzed:	02/16/00
Diln Fac:	1.000		

ms 3/21/00

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
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 Aromatics by GC/MS

Lab #:	143867	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Field ID:	JW2-07	Batch#:	53818
Lab ID:	143867-003	Sampled:	02/09/00
Matrix:	Water	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
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

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

Purgeable Aromatics by GC/MS

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

Type: BS Lab ID: QC108062

Analyte	Spiked	Result	%REC	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

Type: BSD Lab ID: QC108063

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

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	95	78-123
Toluene-d8	97	80-110
Bromofluorobenzene	99	80-115



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
m,p-Xylenes	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



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

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

RECEIVED

Laboratory Number 145790

TETRA TECH EM INC.

Tetra Tech EMI
135 Main Street
Suite 1800
San Francisco, CA 94105

Project#: P1106.05
Location: JW Silveria UST, Oak.

Sample ID	Lab ID
JW2-15	145790-001
JW2-16	145790-002
JW2-17	145790-003

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Signature: [Signature]
Operational Manager

Date: 6/23/00

Signature: [Signature]
Project Manager

Date: 6/23/00



Chain of Custody Record

135 Main St. Suite 1800
San Francisco, CA 94105
415-543-4880
Fax 415-543-5480

PO#	Lab: <u>C&T</u>
TIEMI technical contact: <u>JACKIE COTA</u>	Field samplers: <u>HAR DAWSON & ROY GREEN</u>
TIEMI project manager: <u>HAR DAWSON</u>	Field samplers' signatures:

No./Container Types					Analysis Required									
40 ml VOA	1 Liter Amber	1 Liter Poly	Brass Tube	Glass Jar	CLP VOA	CLP SVOA	CLP Pest/PCBs	CLP Metals	TPH Purgeables	TPH Extractables	BTEX	MTBE		
3									X	X	X			
3									X	X	X			
3									X	X	X			

Relinquished by:	Name (print)	Company Name	Date	Time
<u>Roy Green</u>	<u>Roy Green</u>	<u>TIEMI</u>	<u>5-24-00</u>	
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

Laboratory Number: 145790
Client: Tetra Tech EMI
Location: JW Silveria UST, Oak.
Project#: P1106.05

Receipt Date: 05/24/00

TPH-PURGEABLE HYDROCARBONS AND BTXE CASE NARRATIVE

This hardcopy data package contains sample and QC results for three water samples that were received on May 24, 2000.

Sample JW2-15 (CT#145790-001) was originally analyzed within the EPA recommended hold time of fourteen days but the results were greater than the linear range of the instrument. The reported results were analyzed less than two days beyond the recommended hold time.

The surrogate recoveries in the gasoline and BTXE continuing calibration verifications were flagged but the recoveries were within the laboratory's statistically derived limits.

No other analytical problems were encountered.



Gasoline by GC/FID CA LUFT

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8015M
Field ID:	JW2-15	Batch#:	56336
Lab ID:	145790-001	Sampled:	05/23/00
Matrix:	Water	Received:	05/24/00
Units:	ug/L	Analyzed:	06/07/00
Diln Fac:	20.00		

Analyte	Result	RL
Gasoline C7-C12	18,000 G	1,000

Surrogate	%REC	Limits
Trifluorotoluene (FID)	114	59-135
Bromofluorobenzene (FID)	125	60-140

G = Pattern resembles gasoline

RL = Reporting Limit



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8021B
Field ID:	JW2-15	Batch#:	56394
Lab ID:	145790-001	Sampled:	05/23/00
Matrix:	Water	Received:	05/24/00
Units:	ug/L	Analyzed:	06/08/00
Diln Fac:	20.00		

Analyte	Result	RL
MTBE	ND	40
Benzene	3,700	10
Toluene	430	10
Ethylbenzene	770	10
m, p-Xylenes	2,000	10
o-Xylene	440	10

Surrogate	%REC	Limits
Trifluorotoluene (PID)	121	56-142
Bromofluorobenzene (PID)	131	55-149



Gasoline by GC/FID CA LUFT

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8015M
Field ID:	JW2-16	Batch#:	56307
Lab ID:	145790-002	Sampled:	05/23/00
Matrix:	Water	Received:	05/24/00
Units:	ug/L	Analyzed:	06/06/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	59-135
Bromofluorobenzene (FID)	108	60-140



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8021B
Field ID:	JW2-16	Batch#:	56307
Lab ID:	145790-002	Sampled:	05/23/00
Matrix:	Water	Received:	05/24/00
Units:	ug/L	Analyzed:	06/06/00
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	96	56-142
Bromofluorobenzene (PID)	94	55-149

ND = Not Detected
RL = Reporting Limit

Gasoline by GC/FID CA LUFT

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8015M
Field ID:	JW2-17	Batch#:	56307
Lab ID:	145790-003	Sampled:	05/23/00
Matrix:	Water	Received:	05/24/00
Units:	ug/L	Analyzed:	06/06/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	59-135
Bromofluorobenzene (FID)	107	60-140



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8021B
Field ID:	JW2-17	Batch#:	56307
Lab ID:	145790-003	Sampled:	05/23/00
Matrix:	Water	Received:	05/24/00
Units:	ug/L	Analyzed:	06/06/00
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	96	56-142
Bromofluorobenzene (PID)	96	55-149

Gasoline by GC/FID CA LUFT

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Batch#:	56307
MSS Lab ID:	145802-003	Sampled:	05/24/00
Matrix:	Water	Received:	05/24/00
Units:	ug/L	Analyzed:	06/06/00
Diln Fac:	1.000		

Type: MS Lab ID: QC117469

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	43.89	2,000	2,006	98	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	121	59-135
Bromofluorobenzene (FID)	121	60-140

Type: MSD Lab ID: QC117470

Analyte	Spiked	Result	%REC	Limits	RPD	Lim.
Gasoline C7-C12	2,000	1,977	97	65-131	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	122	59-135
Bromofluorobenzene (FID)	123	60-140

Gasoline by GC/FID CA LUFT

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	PI106.05	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Batch#:	56336
MSS Lab ID:	145814-004	Sampled:	05/25/00
Matrix:	Water	Received:	05/25/00
Units:	ug/L	Analyzed:	06/07/00
Diln Fac:	1.000		

Type: MS Lab ID: QC117562

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	43.46	2,000	1,989	97	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	122	59-135
Bromofluorobenzene (FID)	127	60-140

Type: MSD Lab ID: QC117563

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,023	99	65-131	2	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	122	59-135
Bromofluorobenzene (FID)	128	60-140

Gasoline by GC/FID CA LUFT

Lab #:	145790	Location:	JW Silveria UST,Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC117466	Batch#:	56307
Matrix:	Water	Analyzed:	06/05/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,951	98	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	59-135
Bromofluorobenzene (FID)	123	60-140

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC117467	Batch#:	56307
Matrix:	Water	Analyzed:	06/05/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.94	95	66-126
Benzene	20.00	18.09	90	67-117
Toluene	20.00	18.89	94	69-117
Ethylbenzene	20.00	19.47	97	68-124
m, p-Xylenes	40.00	40.22	101	70-125
o-Xylene	20.00	19.21	96	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	95	56-142
Bromofluorobenzene (PID)	92	55-149

Gasoline by GC/FID CA LUFT

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC117559	Batch#:	56336
Matrix:	Water	Analyzed:	06/07/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,806	90	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	116	59-135
Bromofluorobenzene (FID)	124	60-140



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC117774	Batch#:	56394
Matrix:	Water	Analyzed:	06/08/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	21.72	109	66-126
Benzene	20.00	20.75	104	67-117
Toluene	20.00	20.38	102	69-117
Ethylbenzene	20.00	20.00	100	68-124
m,p-Xylenes	40.00	42.41	106	70-125
o-Xylene	20.00	19.80	99	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	107	56-142
Bromofluorobenzene (PID)	113	55-149



Gasoline by GC/FID CA LUFT

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8015M
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC117468	Batch#:	56307
Matrix:	Water	Analyzed:	06/05/00
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	59-135
Bromofluorobenzene (FID)	109	60-140

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8021B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC117468	Batch#:	56307
Matrix:	Water	Analyzed:	06/05/00
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	97	56-142
Bromofluorobenzene (PID)	93	55-149

Gasoline by GC/FID CA LUFT

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8015M
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC117561	Batch#:	56336
Matrix:	Water	Analyzed:	06/07/00
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	98	59-135
Bromofluorobenzene (FID)	98	60-140

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	145790	Location:	JW Silveria UST, Oak.
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P1106.05	Analysis:	EPA 8021B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC117775	Batch#:	56394
Matrix:	Water	Analyzed:	06/08/00
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	103	56-142
Bromofluorobenzene (PID)	108	55-149

Chain of Custody Record

135 Main St. Suite 1800
San Francisco, CA 94105
415-543-4880
Fax 415-543-5480

PO#	Lab:	Preservative Added																	
Project name:	TIEMI technical contact:	Field samplers:	Analysis Required																
			40 ml VOA	1 Liter Amber	1 Liter Poly	Brass Tube	Glass Jar	CLP VOA	CLP SVOA	CLP Pest/PCBs	CLP Metals	TPH Purgeables	TPH Extractables	BTEX	MTBE				
Project number:	TIEMI project manager:	Field samplers' signatures:	Sample ID	Sample Description/Notes	Date	Time	Matrix												
JW SILVEIRA - 2	SARA WOOLEY	Har & Roy																	
P110604	HAR DAWSON																		
			JW 2-18	MW-1	9-27-00	1610	WATER	4									X	X	X
			JW 2-19	MW-2	"	1520	"	4									X	X	X
			JW 2-20	MW-3	"	1430	"	4									X	X	X

Relinquished by:	Name (print)	Company Name	Date	Time
Roy D. Glenn	Roy Glenn	TT EMI	9-28-00	
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:



Chain of Custody Record

135 Main St. Suite 1800
San Francisco, CA 94105
415-543-4880
Fax 415-543-5480

PO#		Lab: C&T			No./Container Types					Preservative Added									
Project name: 1200 20th Ave JW S LVEIRA - 2		TTEMI technical contact: SARA WOOLEY		Field samplers: Hal & Roy			40 ml VOA	1 Liter Amber	1 Liter Poly	Brass Tube	Glass Jar	CLP VOA	CLP SVOA	CLP Pest/PCBs	CLP Metals	TPH Purgeables	TPH Extractables	BTX	MTBE
Project number: P110604		TTEMI project manager: Hal Dawson		Field samplers' signatures:															
Sample ID	Sample Description/Notes	Date	Time	Matrix	40 ml VOA	1 Liter Amber	1 Liter Poly	Brass Tube	Glass Jar	CLP VOA	CLP SVOA	CLP Pest/PCBs	CLP Metals	TPH Purgeables	TPH Extractables	BTX	MTBE		
JW 2-18		9-27-00	1610	WATER	4									X	X	X			
JW 2-19		"	1520	"	4									X	X	X			
JW 2-20		"	1430	"	4									X	X	X			

TEMP. RECEIVED: **6.5°**
RECEIVED BY: **JAB**

Relinquished by:	Name (print)	Company Name	Date	Time
Roy D. Glenn	Roy Glenn	TT EMI	9-28-00	
Hal Dawson	Hal Dawson	TTEMI	9/28/00	1100
Lisa Bennett	Lisa Bennett	C&T	9/29/00	1100

Turnaround time/remarks:
Received chilled in a cooler.

TPH/Purgeable Data

000005

Gasoline by GC/FID CA LUFT

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Field ID:	JW2-18	Batch#:	58651
Lab ID:	147754-001	Sampled:	09/27/00
Matrix:	Water	Received:	09/28/00
Units:	ug/L	Analyzed:	10/03/00
Diln Fac:	5.000		

Analyte	Result	RL
Gasoline C7-C12	4,300 G	250

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	59-135
Bromofluorobenzene (FID)	105	60-140

000000



Gasoline by GC/FID CA LUFT

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Field ID:	JW2-19	Batch#:	58599
Lab ID:	147754-002	Sampled:	09/27/00
Matrix:	Water	Received:	09/28/00
Units:	ug/L	Analyzed:	09/29/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50 <i>UIC</i>

Surrogate	%REC	Limits
Trifluorotoluene (FID)	118	59-135
Bromofluorobenzene (FID)	122	60-140

000007



Gasoline by GC/FID CA LUFT

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Field ID:	JW2-20	Batch#:	58599
Lab ID:	147754-003	Sampled:	09/27/00
Matrix:	Water	Received:	09/28/00
Units:	ug/L	Analyzed:	09/29/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50 <i>UJC</i>

Surrogate	%REC	Limits
Trifluorotoluene (FID)	117	59-135
Bromofluorobenzene (FID)	121	60-140

000000



Gasoline by GC/FID CA LUFT

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Field ID:	JW2-18	Batch#:	58599
MSS Lab ID:	147754-001	Sampled:	09/27/00
Matrix:	Water	Received:	09/28/00
Units:	ug/L	Analyzed:	09/29/00
Diln Fac:	1.000		

Type: MS Lab ID: QC126339

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	6,154	2,000	8,109 b	98	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	326 *	>LR 59-135
Bromofluorobenzene (FID)	128	60-140

Type: MSD Lab ID: QC126340

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	8,048 b	95	65-131	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	325 *	>LR 59-135
Bromofluorobenzene (FID)	128	60-140

* = Value outside of QC limits; see narrative
b = See narrative
>LR= Response exceeds instrument's linear range
RPD= Relative Percent Difference
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Gasoline by GC/FID CA LUFT

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Batch#:	58651
MSS Lab ID:	147794-010	Sampled:	09/26/00
Matrix:	Water	Received:	09/29/00
Units:	ug/L	Analyzed:	10/04/00
Diln Fac:	1.000		

Type: MS Lab ID: QC126520

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	91.97	2,000	1,817	86	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	59-135
Bromofluorobenzene (FID)	109	60-140

Type: MSD Lab ID: QC126521

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,978	94	65-131	8	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	111	59-135
Bromofluorobenzene (FID)	109	60-140

000010



Gasoline by GC/FID CA LUFT

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC126338	Batch#:	58599
Matrix:	Water	Analyzed:	09/29/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,324 b	116	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	131	59-135
Bromofluorobenzene (FID)	112	60-140



Gasoline by GC/FID CA LUFT

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC126517	Batch#:	58651
Matrix:	Water	Analyzed:	10/03/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,901	95	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	108	59-135
Bromofluorobenzene (FID)	105	60-140

000012



Gasoline by GC/FID CA LUFT

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC126337	Batch#:	58599
Matrix:	Water	Analyzed:	09/29/00
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	59-135
Bromofluorobenzene (FID)	109	60-140



Gasoline by GC/FID CA LUFT

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8015M
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC126519	Batch#:	58651
Matrix:	Water	Analyzed:	10/03/00
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	96	59-135
Bromofluorobenzene (FID)	100	60-140

000014

BTXE Data

Purgeable Aromatics by GC/MS

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Field ID:	JW2-18	Batch#:	58617
Lab ID:	147754-001	Sampled:	09/27/00
Matrix:	Water	Received:	09/28/00
Units:	ug/L	Analyzed:	10/02/00
Diln Fac:	7.143		

Analyte	Result	RL
MTBE	ND	3.6
Benzene	1,200	3.6
Toluene	59	3.6
Ethylbenzene	420	3.6
m,p-Xylenes	330	3.6
o-Xylene	35	3.6

Surrogate	WREC	Limits
1,2-Dichloroethane-d4	102	78-123
Toluene-d8	104	80-110
Bromofluorobenzene	100	80-115

Purgeable Aromatics by GC/MS

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Field ID:	JW2-19	Batch#:	58609
Lab ID:	147754-002	Sampled:	09/27/00
Matrix:	Water	Received:	09/28/00
Units:	ug/L	Analyzed:	10/01/00
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
o-Xylene	ND	0.5

Surrogate	REC	Limits
1,2-Dichloroethane-d4	116	78-123
Toluene-d8	101	80-110
Bromofluorobenzene	107	80-115



Purgeable Aromatics by GC/MS

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Field ID:	JW2-20	Batch#:	58581
Lab ID:	147754-003	Sampled:	09/27/00
Matrix:	Water	Received:	09/28/00
Units:	ug/L	Analyzed:	09/30/00
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
o-Xylene	ND	0.5

Surrogate	REC	Limits
1,2-Dichloroethane-d4	100	78-123
Toluene-d8	99	80-110
Bromofluorobenzene	102	80-115

ND = Not Detected
RL = Reporting Limit
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Purgeable Aromatics by GC/MS

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	58581
Units:	ug/L	Analyzed:	09/29/00
Diln Fac:	1.000		

Type: BS Lab ID: QC126262

Analyte	Spiked	Result	%REC	Limits
Benzene	50.00	48.19	96	80-116
Toluene	50.00	48.71	97	80-120

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

Type: BSD Lab ID: QC126263

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	50.00	47.32	95	80-116	2	20
Toluene	50.00	48.07	96	80-120	1	20

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

Purgeable Aromatics by GC/MS

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	58609
Units:	ug/L	Analyzed:	10/01/00
Diln Fac:	1.000		

Type: BS Lab ID: QC126378

Analyte	Spiked	Result	%REC	Limits
Benzene	50.00	50.34	101	80-116
Toluene	50.00	48.90	98	80-120

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

Type: BSD Lab ID: QC126379

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	50.00	49.31	99	80-116	2	20
Toluene	50.00	47.94	96	80-120	2	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	112	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	103	80-115



Purgeable Aromatics by GC/MS

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	58617
Units:	ug/L	Analyzed:	10/02/00
Diln Fac:	1.000		

Type: BS Lab ID: QC126398

Analyte	Spiked	Result	AREC	Limits
Benzene	50.00	57.05	114	80-116
Toluene	50.00	59.82	120	80-120

Surrogate	AREC	Limits
1,2-Dichloroethane-d4	98	78-123
Toluene-d8	105	80-110
Bromofluorobenzene	95	80-115

Type: BSD Lab ID: QC126399

Analyte	Spiked	Result	AREC	Limits	RPD	Lim
Benzene	50.00	56.66	113	80-116	1	20
Toluene	50.00	58.63	117	80-120	2	20

Surrogate	AREC	Limits
1,2-Dichloroethane-d4	96	78-123
Toluene-d8	104	80-110
Bromofluorobenzene	96	80-115

Purgeable Aromatics by GC/MS

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC126265	Batch#:	58581
Matrix:	Water	Analyzed:	09/29/00
Units:	ug/L		

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
o-Xylene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	78-123
Toluene-d8	101	80-110
Bromofluorobenzene	102	80-115

Purgeable Aromatics by GC/MS

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC126380	Batch#:	58609
Matrix:	Water	Analyzed:	10/01/00
Units:	ug/L		

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
o-Xylene	ND	0.5

Surrogate	REC	Limits
1,2-Dichloroethane-d4	117	78-123
Toluene-d8	103	80-110
Bromofluorobenzene	107	80-115

Purgeable Aromatics by GC/MS

Lab #:	147754	Location:	JW Silveira Props
Client:	Tetra Tech EMI	Prep:	EPA 5030
Project#:	P110604	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC126400	Batch#:	58617
Matrix:	Water	Analyzed:	10/02/00
Units:	ug/L		

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
o-Xylene	ND	0.5

Surrogate	REC	Limits
1,2-Dichloroethane-d4	97	78-123
Toluene-d8	105	80-110
Bromofluorobenzene	102	80-115



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

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

Laboratory Number 149311

RECEIVED

JAN 25 2001

TETRA TECH EM INC.

Tetra Tech EMI
135 Main Street
Suite 1800
San Francisco, CA 94105

Project#: P1106.04
Location: JW SILVEIRA

Sample ID	Lab ID
JW3-21	149311-001
JW3-22	149311-002
JW3-23	149311-003
JW2-21	149311-004
JW2-22	149311-005
JW2-23	149311-006

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Signature: [Signature]
Operations Manager

Date: 1/24/01

Signature: [Signature]
Project Manager

Date: 1/24/01



Laboratory Number: **149311**
Client: **Tetra Tech EMI**
Project#: **P1106.04**
Location: **JW SILVEIRA**

Receipt Date: **12/19/00**

CASE NARRATIVE

This hardcopy data package contains sample and QC results for six water samples that were received on December 19, 2000. The samples were received cold and intact.

Total Volatile Hydrocarbons by EPA 8015M: High Trifluorotoluene surrogate recovery was observed in sample **JW2-21** (CT#149311-004). This outlier is due to the hydrocarbon peaks coeluting with the surrogate peak.

No other analytical problems were encountered.

BTXE by EPA 8021B: No analytical problems were encountered.

000002

std

Chain of Custody Record

135 Main St. Suite 1800
San Francisco, CA 94105
415-543-4880
Fax 415-543-5480

PO# _____ Lab: **C&T**

Preservative Added		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Project name: **JW SILVEIRA** TtEMI technical contact: **SARA WOOLEY** Field samplers: **HAL & Roy**

Project number: **P1106.04** TtEMI project manager: **HAL DAWSON** Field samplers' signatures: _____

No./Container Types

Analysis Required

Sample ID	Sample Description/Notes	Date	Time	Matrix	No./Container Types					Analysis Required									
					40 ml VOA	1 Liter Amber	1 Liter Poly	Brass Tube	Glass Jar	CLP VOA	CLP SVOA	CLP Pest/PCBs	CLP Metals	TPH Purgeables	TPH Extractables	BTEX	MTBE		
JW2-21	MW-1	12-18-00	1555	WATER	3														
JW2-22	MW-2	↓	1500	↓	3								X	X	X	X	X		
JW2-23	MW-3	↓	1120	↓	3								X	X	X	X	X		

Received Cold Ambient On Ice Intact

Relinquished by:	Name (print)	Company Name	Date	Time
<i>Roy D. Glenn</i>	ROY GLENN	TT EMI	12-19-00	12:15
<i>[Signature]</i>	Roy Glenn	C&T	12-19-00	10:05
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:



Gasoline by GC/FID CA LUFT

Lab #:	149311	Prep:	EPA 5030
Client:	Tetra Tech EMI	Analysis:	EPA 8015M
Project#:	STANDARD		
Field ID:	JW2-21	Batch#:	60491
Lab ID:	149311-004	Sampled:	12/18/00
Matrix:	Water	Received:	12/19/00
Units:	ug/L	Analyzed:	12/29/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	3,200 G <i>Ja</i>	50

Surrogate	SRRC Limits
Trifluorotoluene (FID)	174 * 59-135
Bromofluorobenzene (FID)	109 60-140

*= Value outside of QC limits; see narrative
G= Pattern resembles gasoline
RL= Reporting Limit
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Gasoline by GC/FID CA LUFT

Lab #:	149311	Prep:	EPA 5030
Client:	Tetra Tech EMI	Analysis:	EPA 8015M
Project#:	STANDARD		
Field ID:	JW2-22	Batch#:	60491
Lab ID:	149311-005	Sampled:	12/18/00
Matrix:	Water	Received:	12/19/00
Units:	ug/L	Analyzed:	12/29/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	59-135
Bromofluorobenzene (FID)	112	60-140



Gasoline by GC/FID CA LUFT

Lab #:	149311	Prep:	EPA 5030
Client:	Tetra Tech EMI	Analysis:	EPA 8015M
Project#:	STANDARD		
Field ID:	JW2-23	Batch#:	60491
Lab ID:	149311-006	Sampled:	12/18/00
Matrix:	Water	Received:	12/19/00
Units:	ug/L	Analyzed:	12/29/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	59-135
Bromofluorobenzene (FID)	105	60-140



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149311	Prep:	EPA 5030
Client:	Tetra Tech EMI	Analysis:	EPA 8021B
Project#:	STANDARD		
Field ID:	JW2-21	Batch#:	60524
Lab ID:	149311-004	Sampled:	12/18/00
Matrix:	Water	Received:	12/19/00
Units:	ug/L	Analyzed:	12/30/00
Diln Fac:	5.000		

Analyte	Result	RL
MTBE	ND	10
Benzene	500	2.5
Toluene	26	2.5
Ethylbenzene	130	2.5
m,p-Xylenes	130	2.5
o-Xylene	38	2.5

Surrogate	%REC	Limits
Trifluorotoluene (PID)	132	56-142
Bromofluorobenzene (PID)	119	55-149



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149311	Prep:	EPA 5030
Client:	Tetra Tech EMI	Analysis:	EPA 8021B
Project#:	STANDARD		
Field ID:	JW2-22	Batch#:	60491
Lab ID:	149311-005	Sampled:	12/18/00
Matrix:	Water	Received:	12/19/00
Units:	ug/L	Analyzed:	12/29/00
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	114	56-142
Bromofluorobenzene (PID)	115	55-149



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149311	Prep:	EPA 5030
Client:	Tetra Tech EMI	Analysis:	EPA 8021B
Project#:	STANDARD		
Field ID:	JW2-23	Batch#:	60491
Lab ID:	149311-006	Sampled:	12/18/00
Matrix:	Water	Received:	12/19/00
Units:	ug/L	Analyzed:	12/29/00
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	56-142
Bromofluorobenzene (PID)	114	55-149



Gasoline by GC/FID CA LUFT

Lab #:	149311	Prep:	EPA 5030
Client:	Tetra Tech EMI	Analysis:	EPA 8015M
Project#:	STANDARD		
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC133746	Batch#:	60491
Matrix:	Water	Analyzed:	12/28/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,049	102	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	59-135
Bromofluorobenzene (FID)	101	60-140



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149311	Prep:	EPA 5030
Client:	Tetra Tech EMI	Analysis:	EPA 8021B
Project#:	STANDARD		
Matrix:	Water	Batch#:	60491
Units:	ug/L	Analyzed:	12/28/00
Diln Fac:	1.000		

Type: BS Lab ID: QC133749

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	19.41	97	51-125
Benzene	20.00	20.68	103	67-117
Toluene	20.00	20.31	102	69-117
Ethylbenzene	20.00	20.74	104	68-124
m,p-Xylenes	40.00	41.36	103	70-125
o-Xylene	20.00	20.33	102	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	110	56-142
Bromofluorobenzene (PID)	110	55-149

Type: BSD Lab ID: QC133750

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	20.10	101	51-125	4	20
Benzene	20.00	20.88	104	67-117	1	20
Toluene	20.00	20.16	101	69-117	1	20
Ethylbenzene	20.00	20.64	103	68-124	0	20
m,p-Xylenes	40.00	42.00	105	70-125	2	20
o-Xylene	20.00	20.60	103	65-129	1	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	56-142
Bromofluorobenzene (PID)	113	55-149



Gasoline by GC/FID CA LUFT

Lab #:	149311	Prep:	EPA 5030
Client:	Tetra Tech EMI	Analysis:	EPA 8015M
Project#:	STANDARD		
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC133745	Batch#:	60491
Matrix:	Water	Analyzed:	12/28/00
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	59-135
Bromofluorobenzene (FID)	108	60-140

ND= Not Detected
RL= Reporting Limit
Page 1 of 1

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Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149311	Prep:	EPA 5030
Client:	Tetra Tech EMI	Analysis:	EPA 8021B
Project#:	STANDARD		
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC133745	Batch#:	60491
Matrix:	Water	Analyzed:	12/28/00
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	108	56-142
Bromofluorobenzene (PID)	108	55-149

23 (16)



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149311	Prep:	EPA 5030
Client:	Tetra Tech EMI	Analysis:	EPA 8021B
Project#:	STANDARD		
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC133880	Batch#:	60524
Matrix:	Water	Analyzed:	12/30/00
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	110	56-142
Bromofluorobenzene (PID)	110	55-149

000024



Chain of Custody Record

135 Main St. Suite 1800
San Francisco, CA 94105
415-543-4880
Fax 415-543-5480

Project name: JW SILVEIRA 1200 20th AVE Project number: P1106.04		PO# Lab: CURTIS & TOMPKINS		No./Container Types					Preservative Added										
TtEMI technical contact: SARA WOODLEY TtEMI project manager: HAL DAWSON		Field samplers: Field samplers' signatures:		40 ml VOA	1 Liter Amber	1 Liter Poly	Brass Tube	Glass Jar	CLP VOA	CLP SVOA	CLP Pest/PCBs	CLP Metals	TPH Purgeables	TPH Extractables	BTX				
Sample ID	Sample Description/Notes	Date	Time	Matrix															
JW2-24	MW-1	8-30-01	1505	WATER	4								X	X					

Relinquished by:	Name (print)	Company Name	Date	Time
	Roy D. Glenn	Tetra Tech EM Inc	8-31-01	
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:



Chain of Custody Record

135 Main St. Suite 1800
San Francisco, CA 94105
415-543-4880
Fax 415-543-5480

Project name: JW SILVEIRA 1200 20th AVE Project number: P1106.04	PO#	Lab: CURTIS & TOMPKINS					Preservative Added HCO HCO	
	TYEMI technical contact: SARA WOODLEY	Field samplers:	No./Container Types		Analysis Required			
	TYEMI project manager: HAL DAWSON	Field samplers' signatures:		40 ml VOA 1 Liter Amber 1 Liter Poly Brass Tube Glass Jar	CLP VOA CLP SVOA CLP Pest/PCBs CLP Metals TPH Purgeables TPH Extractables BTEX			
Sample ID	Sample Description/Notes	Date	Time	Matrix				
JW 2-24		8-30-01	1505	WATER	4			X X
<i>(The remaining rows of the table are crossed out with a diagonal line.)</i>								

	Name (print)	Company Name	Date	Time
Relinquished by: <i>[Signature]</i>	Roy D. GLENN	TETRA TECH L.M. INC	8-31-01	1130
Received by: <i>[Signature]</i>	Steven Stanley	CST	8/31/01	1130
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

000005



Curtis & Tompkins, Ltd.

TPH/Purgeable and BTXE Data

000007

Gasoline by GC/FID CA LUFT

Lab #:	153916	Location:	JW SILVEIRA
Client:	Tetra Tech EMI	Prep:	EPA 5030B
Project#:	P1106.04	Analysis:	8015B(M)
Field ID:	JW2-24	Batch#:	66342
Lab ID:	153916-007	Sampled:	08/30/01
Matrix:	Water	Received:	08/31/01
Units:	ug/L	Analyzed:	09/12/01
Diln Fac:	5.000		

Analyte	Result	RL
Gasoline C7-C12	5,400 G	250

Surrogate	REC	Limits
Trifluorotoluene (FID)	112	59-135
Bromofluorobenzene (FID)	108	60-140

G= Pattern resembles gasoline
 L= Reporting Limit
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000014

**Benzene, Toluene, Ethylbenzene, Xylenes**

Lab #:	153916	Location:	JW SILVEIRA
Client:	Tetra Tech EMI	Prep:	EPA 5030B
Project#:	P1106.04	Analysis:	EPA 8021B
Field ID:	JW2-24	Batch#:	66342
Lab ID:	153916-007	Sampled:	08/30/01
Matrix:	Water	Received:	08/31/01
Units:	ug/L	Analyzed:	09/12/01
Diln Fac:	5.000		

Analyte	Result	RL
Benzene	850	2.5
Toluene	64	2.5
Ethylbenzene	230	2.5
m,p-Xylenes	200	2.5
o-Xylene	130	2.5

Surrogate	%REC	Limits
Trifluorotoluene (PID)	140	56-142
Bromofluorobenzene (PID)	132	55-149