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10:28 am, Aug 13, 2008

Alameda County Environmental Health



August 12, 2008

Mr. Paresh Khatri Alameda County Health Care Services Agency 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577

#### Subject: Texaco Gasoline Service Station (Formerly Freedom ARCO Station) Site Address: 15101 Freedom Avenue, San Leandro, California STID 4473/RO0000473

Dear Mr. Khatri:

SOMA's "Third Quarter 2008 Groundwater Monitoring Report" for the subject property has been uploaded to the State's GeoTracker database and Alameda County's FTP site for your review.

Thank you for your time in reviewing our report. Please do not hesitate to call me at (925) 734-6400, if you have questions or comments.

Sincerely,

Mansour Sepehr, Ph.D.,PE Principal Hydrogeologist

cc: Mr. Mohammad Pazdel w/report enclosure



# Third Quarter 2008 Groundwater Monitoring Report

Texaco Gasoline Service Station 15101 Freedom Avenue San Leandro, California

August 12, 2008

Project 2551

**Prepared for** 

Mr. Mohammad Pazdel 1770 Pistacia Court Fairfield, California



## CERTIFICATION

SOMA Environmental Engineering, Inc. has prepared this report on behalf of Mr. Mohammad Pazdel, property owner of 15101 Freedom Avenue, San Leandro, California, to comply with Alameda County Health Care Services requirements for the Third Quarter 2008 groundwater monitoring event.

Mansour Sepéhr, PhD, PE Principal Hydrogeologist



Third Quarter 2008 Groundwater Monitoring Report

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# 1. INTRODUCTION

SOMA Environmental Engineering, Inc. (SOMA) has prepared this report on behalf of Mr. Mohammad Pazdel, property owner of 15101 Freedom Avenue, San Leandro, California. The site is located in an area of primarily residential properties and adjacent commercial areas (Figure 1).

This report summarizes results of the Third Quarter 2008 groundwater monitoring event conducted on July 2 and 3, 2008, and includes physical and chemical properties measured in the field for each groundwater sample. This report also includes laboratory analysis results for groundwater samples.

#### 1.1 Field Activities

On July 2 and 3, 2008, SOMA's field crew conducted a groundwater monitoring event in accordance with procedures and guidelines of Alameda County Health Care Services (ACHCS) and the California Regional Water Quality Control Board (CRWQCB). Figure 2 shows well locations.

On July 2, 2008, five on-site monitoring wells (MW-1 to MW-5), and four off-site wells (MW-6 to MW-9) in the First water bearing zone (WBZ), and three on-site monitoring wells (MW-1D, MW-3D, and MW-4D) in the Second WBZ were measured for depth to groundwater. On July 2 and 3, 2008, additional field measurements and grab groundwater samples were collected from all monitoring wells. Properties measured include pH, temperature, and electrical conductivity (EC). A natural attenuation study was conducted during this event to determine whether petroleum hydrocarbons in groundwater are biodegrading. Dissolved oxygen (DO) and oxidation reduction potential (ORP) measurements were taken for all wells. In accordance with the ACHCS directive dated April 25, 2008, SOMA attempted to collect groundwater samples from the irrigation well located at 1575 153<sup>rd</sup> Avenue. However, no such residence was found. SOMA contacted the county assessor's office and found that no such address exists; therefore, SOMA collected a grab groundwater sample from the irrigation well located at 1573 153<sup>rd</sup> Avenue.

Purged groundwater from each well was transferred to a 55-gallon drum. Two filled 55-gallon drums were generated during this event, which are stored on-site.

#### 1.2 Laboratory Analysis

Pacific Analytical Laboratory, a California state-certified laboratory, analyzed the groundwater samples for total petroleum hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene, total xylenes (collectively termed BTEX), methyl tertiary-butyl ether (MtBE), gasoline oxygenates, ethanol and lead scavengers. Samples were prepared using EPA Method 5030B and analyzed using Method 8260B.

# 2. RESULTS

Following are results of field measurements and laboratory analyses for the July 2 and 3, 2008 groundwater monitoring event.

#### 2.1 Field Measurements for First WBZ Wells

Table 1 presents calculated groundwater elevations and depths to groundwater for each monitoring well. Depths to groundwater ranged from 11.95 feet in well MW-9 to 23.33 feet in MW-1. Corresponding groundwater elevations ranged from 28.31 feet in MW-9 to 31.13 feet in MW-1.

Figure 3 displays the contour map of groundwater elevations. Groundwater flows south to southwesterly across the site at a gradient of 0.0044 feet/feet. The groundwater flow direction and gradient have remained consistent with the previous monitoring event (Second Quarter 2008).

Upon equalization with the surrounding aquifer at each well location, when the purge cycle was terminated, DO concentrations in the First WBZ ranged from 0.12 mg/L in wells MW-1 and MW-2 to 0.66 mg/L in MW-7. ORP showed negative redox potentials in all First WBZ monitoring wells except for MW-7, MW-8, and MW-9. Therefore, oxidation of petroleum hydrocarbons could have occurred in these monitoring wells. Negative redox potentials indicate that contaminants in the groundwater are conducive to anaerobic biodegradation.

Field measurements taken during this monitoring event are included in Appendix B.

#### 2.2 Laboratory Analysis for First WBZ Wells

Appendix C includes the laboratory report and chain-of-custody form for this monitoring event.

Table 1 presents TPH-g, BTEX, and MtBE analysis results for the current and historical groundwater monitoring events.

TPH-g concentrations were detected throughout the site and ranged from 94.8  $\mu$ g/L in MW-8 to 48,500  $\mu$ g/L in MW-3. The TPH-g concentration in MW-3 was significantly higher than in the other site wells and has increased since the previous monitoring event (Second Quarter 2008).

Third Quarter 2008 Groundwater Monitoring Report

Figure 4 displays the contour map of TPH-g concentrations in groundwater. As illustrated, the highest TPH-g impact is in the vicinity of the dispenser islands and former underground storage tanks (USTs).

The following BTEX concentrations were observed during this monitoring event.

- Toluene was below the laboratory-reporting limit in all First WBZ wells except MW-3 and MW-5.
- In MW-8 and MW-9, all BTEX analytes were below the laboratoryreporting limit except for ethylbenzene, which was detected at low levels.
- In MW-7, benzene and toluene were below the laboratory-reporting limit.
- In MW-2, benzene was below the laboratory-reporting limit.
- The highest BTEX concentrations were detected at MW-3, at 3,760 μg/L, 346 μg/L, 3,130 μg/L, and 12,980 μg/L, respectively.

Figure 5 displays the contour map of benzene concentrations in groundwater. The highest benzene impact is in the vicinity of the dispenser islands and former USTs. The benzene concentration detected in well MW-3 was significantly higher than in the other site wells. Benzene appears to have only minimally impacted off-site well MW-6 and was non-detectable in the remaining off-site wells.

Levels of MtBE below the laboratory-reporting limit were observed at wells MW-2, MW-8 and MW-9. Detectable MtBE concentrations ranged from 3.58  $\mu$ g/L at MW-6 to 4,050  $\mu$ g/L at MW-4. Figure 6 displays the contour map of MtBE concentrations in the groundwater. The highest MtBE impact was in the vicinity of the dispenser islands and former USTs, around wells MW-4 and MW-3.

As shown in Table 1, since the previous monitoring event (Second Quarter 2008), all TPH-g, BTEX, and MtBE analytes have increased in the more impacted MW-3.

Table 2 shows analysis results for gasoline oxygenate and lead scavenger concentrations for the current as well as historical events.

The following gasoline oxygenate and lead scavenger concentrations were observed during this monitoring event.

- All isopropyl ether (DIPE), 1,2-dibromoethane (EDB), and ethanol constituents were below the laboratory-reporting limit in all groundwater samples collected during this monitoring event. Analysis results for ethanol are shown in Appendix C.
- Ethyl tertiary-butyl ether (ETBE) was detected at 75.2 µg/L in well MW-4 and was below the laboratory-reporting limit in the remaining tested wells.

- 1,2-dichloroethane (1,2-DCA) was detected in groundwater samples collected from wells MW-1 and MW-9 at 1.08 μg/L and 2.07 μg/L, respectively. 1,2-DCA was below the laboratory-reporting limit in the remaining tested wells.
- Tertiary-butyl alcohol (TBA) was the major gasoline oxygenate observed during this monitoring event. TBA was below the laboratory-reporting limit in wells MW-2, MW-7, MW-8, and MW-9. Detectable TBA concentrations ranged from 4.54 μg/L in MW-6 to 8,720 μg/L in MW-4.

Figure 7 displays the contour map of TBA concentrations in the groundwater. The most TBA-impacted regions were in the vicinity of the dispenser islands and former USTs, around wells MW-3 to MW-5. Due to the high mobility rate of TBA in groundwater, the TBA plume appears to have migrated southwesterly with the flow of groundwater from the UST cavity and pump islands toward MW-4.

 Tertiary-amyl methyl ether (TAME) was below the laboratory-reporting limit in all groundwater samples except for samples from MW-3 and MW-5, where TAME was detected at 124 µg/L and 53.3 µg/L, respectively.

Figure 8 displays the map showing concentrations of ETBE, 1,2-DCA, and TAME in First WBZ wells.

#### 2.3 Field Measurements for Second WBZ Wells

Table 1 presents calculated groundwater elevations and depths to groundwater for each monitoring well. Depths to groundwater ranged from 22.39 feet in well MW-4D to 23.44 feet in MW-1D. Corresponding groundwater elevations ranged from 30.73 feet in MW-4D to 30.98 feet in MW-1D.

Figure 9 displays the contour map of groundwater elevations in the Second WBZ. Groundwater flows southwesterly at a gradient of 0.0019 feet/feet. The groundwater flow direction during the previous monitoring event (Second Quarter 2008) was northwesterly.

Upon equalization with the surrounding aquifer at each well location, when the purge cycle was terminated, DO concentrations in the Second WBZ ranged from 0.10 mg/L in well MW-3D to 0.13 mg/L in wells MW-1D and MW-4D. ORP showed positive potentials in all Second WBZ monitoring wells. Positive redox potentials are more energetically favorable in utilizing electron acceptors during chemical reactions. This promotes removal of organic mass from the contaminated groundwater by indigenous bacteria in the subsurface during the release of the transfer of electrons.

Field measurements taken during this monitoring event are included in Appendix B.

#### 2.4 Laboratory Analysis for Second WBZ Wells

Appendix C includes the laboratory report and chain-of-custody form for this monitoring event.

Table 1 presents TPH-g, BTEX, and MtBE analysis results for the current and historical groundwater monitoring events.

TPH-g concentrations were below the laboratory-reporting limit in all Second WBZ wells except for MW-1D, where TPH-g was detected at 75.9  $\mu$ g/L.

All BTEX analytes were below the laboratory-reporting limit in all groundwater samples collected from second WBZ wells, except for ethylbenzene being detected in trace concentrations in well MW-1D.

MtBE was below laboratory-reporting limits in MW-1D. In wells MW-3D and MW-4D, MtBE was detected at 67.4  $\mu$ g/L and 6.27  $\mu$ g/L, respectively. MtBE concentrations in these wells have decreased since the previous monitoring event (Second Quarter 2008).

Table 2 shows analysis results for gasoline oxygenate and lead scavenger concentrations for the current as well as historical events.

The following gasoline oxygenate and lead scavenger concentrations were observed during this monitoring event.

- All DIPE, ETBE, 1,2-DCA, EDB, and ethanol constituents were below laboratory-reporting limits in all groundwater samples collected from the Second WBZ during this monitoring event. (Analysis results for ethanol are included in Appendix C.)
- TAME was detected at 7.45 µg/L in well MW-3D and was below the laboratory-reporting limit in wells MW-1D and MW-4D.
- TBA was below the laboratory-reporting limit in wells MW-1D and MW-3D, and detected at 3.38 µg/L in well MW-4D. In general, TBA concentrations decreased in Second WBZ wells since the previous monitoring event (First Quarter 2008).

Figure 10 displays concentrations of MtBE, TBA, and TAME in Second WBZ wells. In general, the most impacted region is in the vicinity of the dispenser islands at wells MW-3D and MW-4D.

## 2.5 Laboratory Analysis for Irrigation well located at 1573 153<sup>rd</sup> Avenue

All TPH-g, BTEX, MtBE, gasoline oxygenates, lead scavengers, and ethanol analytes were below laboratory-reporting limits in groundwater samples from the irrigation well located at 1573 153<sup>rd</sup> Avenue.

# 3. CONCLUSIONS AND RECOMMENDATIONS

Results of the Third Quarter 2008 groundwater monitoring event are summarized below.

- The groundwater flow direction has remained south to southwesterly in the First WBZ throughout the site. Unlike previous monitoring events, groundwater flow direction was also southwesterly in the Second WBZ.
- The hydrocarbon source area remains in the vicinity of the former UST cavity, near well MW-3, where a previous release of petroleum hydrocarbons occurred.
- The southerly migration of impacted groundwater from the source area of the former UST cavity is evidenced by high MtBE and TBA concentrations at well MW-4. However, in general, the contaminant region appears to be centrally located in the vicinity of the former UST cavity and pump islands, especially at MW-3.
- Based on quarterly groundwater monitoring results, in general, all BTEX, MtBE and gasoline oxygenates have remained at low or non-detectable levels in the off-site wells.
- The TPH-g concentration in well MW-6, at 7,900 µg/L, remained significantly lower this quarter than the historical peak value of 34,000 µg/L observed in September 2004. TPH-g was detected at low levels in MW-8 and MW-9.
- In the Second WBZ, the contaminant region appears to be in the vicinity of wells MW-3D and MW-4D.
- The address 1575 153<sup>rd</sup> Avenue does not exist. However, all tested constituents were below laboratory-reporting limits in groundwater samples collected from the irrigation well located at 1573 153<sup>rd</sup> Avenue.

Based on results of this monitoring event, SOMA recommends the following action items:

- Continue quarterly groundwater monitoring to increase understanding of seasonal variations in groundwater quality conditions.
- Based on continued low to non-detectable levels of all tested constituents in off-site wells MW-7 to MW-9, modify the existing quarterly sampling schedule to annual sampling for these off-site wells.

# 4. REPORT LIMITATIONS

This report is the summary of work done by SOMA, including observations and descriptions of site conditions. It includes analysis results produced by Pacific Analytical Laboratory for the current groundwater-monitoring event. Quantities and locations of wells were selected to provide the required information, but may not be completely representative of entire site conditions. All conclusions and recommendations are based on laboratory analysis results. Conclusions beyond those specifically stated in this document should not be inferred from this report.

SOMA warrants that services were provided in accordance with generally accepted practices in the environmental engineering and consulting field at the time of this sampling.

# Figures

Third Quarter 2008 Groundwater Monitoring Report





	approximate scale i	n feet
0	150	300







approximate scale in feet



Figure 2: Site map showing locations of groundwater monitoring wells and soil borings





First WBZ. July 2, 2008.

100

0

50

ENVIRONMENTAL ENGINEERING, INC.



0 50 100

Figure 4: Contour map of TPH-g concentrations in groundwater, First WBZ. July 2 and 3, 2008.





0 50 100

Figure 5: Contour map of benzene concentrations in groundwater, First WBZ. July 2 and 3, 2008.





0 50 100

Figure 6: Contour map of MtBE concentrations in groundwater (EPA Method 8260B), First WBZ. July 2 and 3, 2008.





50 100

0

Figure 7: Contour map of TBA concentrations in groundwater, First WBZ. July 2 and 3, 2008. ENVIRONMENTAL ENGINEERING, INC



approximate scale in feet 0 50 100

Figure 8: Map showing concentrations of ETBE, 1,2-DCA, and TAME, First WBZ. July 2 and 3, 2008.







approximate scale in feet

0 50 100

Figure 10: Map showing concentrations of MtBE, TBA and TAME, Second WBZ. July 2 and 3, 2008.

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# **Tables**

Third Quarter 2008 Groundwater Monitoring Report

Table 1
Historical Groundwater Elevation Data and Analytical Results
15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (μg/L)	Total Xylenes (μg/L)	MtBE 8260B <sup>2</sup> (µg/L)
				1st WB	z					
MW-1	5/10/2002	51.71	22.85	28.86	5,700	360	4.5	340	450	2
	8/8/2002	51.71	23.31	28.40	9,100	590	2.6	830	362	<1.3
	11/8/2002	51.71	23.58	28.13	7,900	570	3.1	680	392	< 1.0
	2/21/2003	51.71	22.62	29.09	2,900	160	1.6 C	170	211	<0.5
	5/28/2003	51.71	22.43	29.28	1,700	55	<0.5	90	115	2.00
	8/12/2003	51.71	21.30	30.41	2,600	2.5	<0.5	190	130	<0.5
	10/9/2003	51.71	23.49	28.22	9,200	560.0	2.7 C	670	648	<1.0
	1/15/2004	51.71	22.43	29.28	5,500	190	<1.0	220	124.4	<0.5
	5/25/2004	51.71	22.94	28.77	8,000	400	1.50	420	393	3.40
	9/21/2004	54.46	23.49	30.97	9,300	580	9.30	690	683	4.60
	12/14/2004	54.46	23.01	31.45	7,360	337	<4.3	731	633	<4.3
	3/11/2005	54.46	21.48	32.98	2,510	45.2	<0.5	23.2	39.63	2.80
	6/15/2005	54.46	22.42	32.04	1,690	36.3	<2.0	59.5	28.73	2.01
	8/26/2005	54.46	23.00	31.46	7,310	318	<8.60	475	316	5.15
	11/11/2005	54.46	21.40	33.06	9,640	341	<8.6	467	329.7	6.04

Table 1
Historical Groundwater Elevation Data and Analytical Results
15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (μg/L)	Total Xylenes (μg/L)	MtBE 8260B <sup>2</sup> (µg/L)
MW-1 cont	2/9/2006	54.46	21.81	32.65	775	14	<2.0	12.6	10.32	4.01
	5/9/2006	54.46	21.68	32.78	444	7.80	<2.0	12.1	6.31	1.75
	8/10/2006	54.46	22.79	31.67	5,090	324	<8.60	108	59.9	8.24
	10/26/2006	54.46	23.19	31.27	6,950	556	<4.0	190	136.09	8.61
	1/25/2007	54.46	22.82	31.64	2,640	196	<2.0	105	25.5	7.92
	4/26/2007	54.46	22.67	31.79	861	95.5	<2.0	17	6.36	4.00
	7/25/2007	54.46	23.25	31.21	4,520	412	<4.0	182	77.9	7.48
	10/23/2007	54.46	23.42	31.04	3,900	117	<2.0	87.1	23.87	4.54
	1/22/2008	54.46	22.59	31.87	2,260	81.3	<2.0	17.5	<2.0	4.23
	4/16/2008	54.46	22.89	31.57	2,320	248	<2.0	54.1	37.3	<0.5
	7/3/2008	54.46	23.33	31.13	5,240	414	<2.0	168	94	6.56
MW-2	5/10/2002	49.66	22.83	26.83 *	3,100	67	8	250	215	56
	8/8/2002	49.66	21.41	28.25	2,700	4.6	<0.5	310	140	<0.5
	11/8/2002	49.66	21.79	27.87	3,400	4.6	< 0.5	310	160	< 0.5
	2/21/2003	49.66	20.51	29.15	890	1.7 C	0.80 C	68	38.92 C	<0.5
	5/28/2003	49.66	20.33	29.33	2,700	5.2 C	<0.5	120	140	1.2
	8/12/2003	49.66	23.18	26.48*	8,500	640	<2.5	560	659	<0.8
	10/9/2003	49.66	21.71	27.95	3100 H	4.3 C	<0.5	210	160	<0.5
	1/15/2004	49.66	20.31	29.35	660 H	1.5 C	<0.5	8.9	25	<0.5
	5/25/2004	49.66	21.09	28.57	4,500	5.1 C	<0.5	190	230	0.70
	9/21/2004	52.41	21.71	30.70	370	0.76 C	<0.5	25	16	0.50
	12/14/2004	52.41	21.20	31.21	880	1.0	<0.5	66	52	<0.5

Table 1
Historical Groundwater Elevation Data and Analytical Results
15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (μg/L)	Total Xylenes (μg/L)	MtBE 8260B <sup>2</sup> (µg/L)
MW-2 cont.	3/11/2005	52.41	19.15	33.26	564	<0.5	<0.5	21	11.9	<0.5
	6/15/2005	52.41	20.30	32.11	2,040	1.2	<2.0	78.2	22	<0.5
	8/26/2005	52.41	20.97	31.44	1,500	0.930	<2.00	87.6	21	0.86
	11/11/2005	52.41	25.30	27.11	2,140	1.08	<2.0	104	29	0.79
	2/9/2006	52.41	19.41	33.00	1,410	<0.5	<2.0	99.6	21.4	0.72
	5/9/2006	52.41	19.41	33.00	1,100	<0.5	<2.0	86.5	17	<0.5
	8/10/2006	52.41	20.8	31.61	3,180	2.87	<2.0	88.9	24.8	<0.50
	10/26/2006	52.41	21.22	31.19	1,200	<0.5	<2.0	23.5	4.79	0.6
	1/25/2007	52.41	20.89	31.52	623	0.64	<2.0	42.4	4.37	0.66
	4/26/2007	52.41	20.65	31.76	169	<0.5	<2.0	15.2	2.3	<0.5
	7/25/2007	52.41	21.43	30.98	276	0.78	<2.0	22.1	4.04	<0.5
	10/23/2007	52.41	21.59	30.82	535	<0.5	<2.0	18	5.11	<0.5
	1/22/2008	52.31	20.45	31.86	132	<0.5	<2.0	12.2	<2.0	<0.5
	4/15/2008	52.41	20.89	31.52	852	<0.5	<2.0	27.2	4.78	<0.5
	7/2/2008	52.41	21.5	30.91	98.3	<0.5	<2.0	2.76	<2.0	<0.5
MW-3	5/10/2002	51.16	22.28	28.88	44,000	6,000	900	1,500	6,200	2,400
	8/8/2002	51.16	22.88	28.28	40,000	5,800	1,100	1,600	6,500	1,300
	11/8/2002	51.16	23.19	27.97	47,000	5,300	1,200	2,200	8,600	1,000
	2/21/2003	51.16	22.02	29.14	39,000	5,500	1,500	2,000	8,600	1,300
	5/28/2003	51.16	21.89	29.27	52,000	7,300	3,000	2,800	12,700	2,100
	8/12/2003	51.16	22.66	28.50	31,000	6,100	860	1,500	6,900	1,200
	10/9/2003	51.16	23.06	28.10	41,000	6,100	1,100	2,200	10,200	960

Table 1
Historical Groundwater Elevation Data and Analytical Results
15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (μg/L)	Total Xylenes (μg/L)	MtBE 8260B <sup>2</sup> (μg/L)
MW-3 cont.	1/15/2004	51.16	21.85	29.31	51,000	4,100	1,100	2,000	8,400	590
	5/25/2004	51.16	22.55	28.61	65,000	4,300	1,300	2,500	10,500	720
	9/21/2004	53.91	23.08	30.83	42,000	4,900	890	2,200	8,700	480
	12/14/2004	53.91	22.52	31.39	35,151	4,066	972	2,942	13,032	491
	3/11/2005	53.91	20.90	33.01	42,600	3,040	1,100	1,530	6,670	968
	6/15/2005	53.91	21.85	32.06	84,100	5,110	2,160	3,030	8,800	2,670
	8/26/2005	53.91	22.49	31.42	43,500	3,630	1,080	2,500	6,830	1,440
	11/11/2005	53.91	22.81	31.10	47,700	4,240	520	2,170	6,320	1,390
	2/9/2006	53.91	21.12	32.79	44,500	5,070	1360	1,920	4,840	3,280
	5/9/2006	53.91	21.09	32.82	48,100	2,510	1,140	1,950	5,030	2,210
	8/10/2006	53.91	22.26	31.65	42,100	3,450	869	1,760	5,650	3,570
	10/26/2006	53.91	22.73	31.18	33,400	4,800	331	1,170	3,510	4,790
	1/25/2007	53.91	22.34	31.57	19,300	4,820	167	1,540	3,740	3,430
	4/26/2007	53.91	22.24	31.67	30,700	2,350	158	1,470	4,320	1,330
	7/25/2007	53.91	22.83	31.08	34,900	5,400	364	2,080	6,360	1,980
	10/23/2007	53.91	23.01	30.9	22,600	4,070	<86	1,120	3,095	970
	1/22/2008	53.96	22.04	31.92	22,100	1,280	453	1,330	3,520	490
	4/16/2008	53.91	22.4	31.51	20,700	2,790	182	860	3,389	263
	7/3/2008	53.91	22.9	31.01	48,500	3,760	346	3,130	12,980	573
MW-4	5/10/2002	50.54	21.78	28.76	880	25	1.0C	110	52	12,000
	8/8/2002	50.54	22.50	28.04	3,800	70	<5.0	300	115	4,800
	11/8/2002	50.54	22.81	27.73	5,100	150	10	460	258	2,400

Table 1
Historical Groundwater Elevation Data and Analytical Results
15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (μg/L)	Total Xylenes (μg/L)	MtBE 8260B <sup>2</sup> (µg/L)
MW-4 cont.	2/21/2003	50.54	21.48	29.06	3,200	98	66	220	360	6,600
	5/28/2003	50.54	21.24	29.30	6,200	140	46	200	790	2,300
	8/12/2003	50.54	22.32	28.22	7,500	180	57	220	1450	1,900
	10/9/2003	50.54	22.74	27.80	5,800	250	32	300	970	7,800
	1/15/2004	50.54	21.19	29.35	5,900	270	17 C	150	640	7,300
	5/25/2004	50.54	22.03	28.51	9,100	210	51	200	1190	1800
	9/21/2004	53.31	22.76	30.55	5,200	290	12	370	600	7300
	12/14/2004	53.31	21.99	31.32	8,937	538	114	416	2379	5021
	3/11/2005	53.31	20.01	33.30	12,300	225	39.6	80.1	1465	3870
	6/15/2005	53.31	21.25	32.06	7,690	114	32.6	77.1	555	1150
	8/26/2005	53.31	22.03	31.28	8,850	175	24.6	150	851	1380
	11/11/2005	53.31	22.43	30.88	9,990	356	<43	196	700	3,640
	2/9/2006	53.31	20.31	33.00	6,850	205	<43	67.2	255.2	5,120
	5/9/2006	53.31	20.33	32.98	1,290	18.1	<8.6	12.9	25.87	799
	8/10/2006	53.31	21.74	31.57	7,830	118	<8.60	25.3	174.6	919
	10/26/2006	53.31	22.29	31.02	1,540	81.9	<43	96	46.4	3,610
	1/25/2007	53.31	21.86	31.45	4,370	163	<8.6	85.1	269.1	1,050
	4/26/2007	53.31	21.63	31.68	4,380	140	<8.6	67	276.8	576
	7/25/2007	53.31	22.49	30.82	4,970	220	<8.60	198	241.5	1,040
	10/23/2007	53.31	22.69	30.62	4,200	267	<8.6	147	155.5	1,220
	1/22/2008	53.36	21.39	31.97	2,180	133	<22.0	43.1	32.2	1,800
	4/15/2008	53.31	21.9	31.41	4,240	90.4	<22.0	107	380	674
	7/2/2008	53.31	22.55	30.76	2,300	193	<22.0	212	183	4,050

Table 1
Historical Groundwater Elevation Data and Analytical Results
15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (μg/L)	Total Xylenes (μg/L)	MtBE 8260B <sup>2</sup> (µg/L)
			-							
MW-5	5/10/2002	47.79	19.02	28.77	25,000	1,000	1200	1,100	3,060	1,800
	8/8/2002	47.79	19.80	27.99	18,000	1,000	660	950	1,720	1,500
	11/8/2002	47.79	20.14	27.65	16,000	1,300	380	930	1,550	1,200
	2/21/2003	47.79	18.70	29.09	12,000	390	71	770	1,100	860
	5/28/2003	47.79	18.52	29.27	9,100	210	31	560	790	600
	8/12/2003	47.79	19.54	28.25	12,000	660	75	660	1,110	1,000
	10/9/2003	47.79	20.06	27.73	15,000	1,000	130	1,000	1,430	1,700
	1/15/2004	47.79	18.42	29.37	9,900	450 C	16	500	431	1,100
	5/25/2004	47.79	19.30	28.49	9,200	380	24	490	536	720
	9/21/2004	50.53	20.15	30.38	10,000	980	71	560	770	1200
	12/14/2004	50.53	19.30	31.23	10,502	587	64	1040	1133	1015
	3/11/2005	50.53	17.20	33.33	8,390	407	<5.5	83	42.5	1530
	6/15/2005	50.53	18.54	31.99	9,350	147	18.3	435	146.2	573
	8/26/2005	50.53	19.31	31.22	9,500	261	<22	726	321.3	749
	11/11/2005	50.53	19.75	30.78	10,000	443	41.5	527	278.5	1,430
	2/9/2006	50.53	17.58	32.95	7,640	237	<22	187	50.2	2,050
	5/9/2006	50.53	17.54	32.99	8,360	111	<8.6	300	75.84	566
	8/10/2006	50.53	19.02	31.51	16,100	250	<22	455	187.4	1,590
	10/26/2006	50.53	19.61	30.92	10,100	430	<22	375	192.6	3,060

Table 1
Historical Groundwater Elevation Data and Analytical Results
15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (μg/L)	Total Xylenes (μg/L)	MtBE 8260B <sup>2</sup> (µg/L)
MW-5 cont.	1/25/2007	50.53	19.19	31.34	3,960	340	<22	323	150.1	1,740
	4/26/2007	50.53	18.89	31.64	4,590	187	<8.6	307	116.5	861
	7/25/2007	50.53	19.81	30.72	6,490	419	21.8	413	223.2	913
	10/23/2007	50.53	19.98	30.55	6,120	550	11	284	141.4	433
	1/22/2008	50.18	18.69	31.49	9,810	572	22	574	184.1	126
	4/15/2008	50.18	19.16	31.02	8,890	335	15.1	477	397.5	136
	7/3/2008	50.53	19.88	30.65	13,100	949	34.4	875	825.5	176
	T		-	•	T	T		r	ī	
MW-6	9/21/2004	45.82	17.64	28.18	34,000	150	130	2200	8100	0.6
	12/14/2004	45.82	15.75	30.07	5,161	137	7	436	1136	<5.5
	3/11/2005	45.82	13.80	32.02	6,040	125	3.22	260	722.1	4.94
	6/15/2005	45.82	14.78	31.04	5,590	44.3	6.60	272	382	5.85
	8/26/2005	45.82	15.91	29.91	6,130	99	<8.6	378	492.9	5.66
	11/11/2005	45.82	16.55	29.27	11,400	101	<8.6	645	834.7	4.33
	2/9/2006	45.82	13.92	31.90	2,790	32.3	<8.6	131	131.22	7.30
	5/9/2006	45.82	13.95	31.87	3,730	25	<2.0	213	207.82	5.87
	8/10/2006	45.82	15.28	30.54	4,800	41.9	<2.0	201	189	10.4
	10/26/2006	45.82	16.11	29.71	6,080	37.4	<2.0	116	183	9.78
	1/25/2007	45.82	15.76	30.06	3,220	25.2	<2.0	219	174	14.7
	4/26/2007	45.82	15.18	30.64	3,110	28	<2.0	165	138.47	14.6
	7/25/2007	45.82	16.82	29.00	4,960	54.1	<2.0	199	255.87	8.05
	10/23/2007	45.82	16.91	28.91	9,610	64.3	<2.0	188	302.6	5.81
	1/21/2008	45.82	15.36	30.46	3,290	33	<2.0	149	131.31	3.86
	4/15/2008	45.82	15.73	30.09	2,070	10.8	<2.0	51.1	67	<0.5
	7/2/2008	45.82	16.9	28.92	7,900	42.4	<2.0	194	296	3.58
MW-7	9/21/2004	44.74	15.21	29.53	2,900	<0.5	<0.5	52	61	8.1
	12/14/2004	44.74	13.90	30.84	<50	1.6	<0.5	29	58	6.0

Table 1										
Historical Groundwater Elevation Data and Analytical Results										
15101 Freedom Avenue, San Leandro, CA										

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Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (μg/L)	Total Xylenes (μg/L)	MtBE 8260B <sup>2</sup> (µg/L)
MW-7 cont	3/11/2005	44.74	11.46	33.28	2,230	<2.5	<2.5	39.4	51.4	12.4
	6/15/2005	44.74	12.97	31.77	2,940	0.85	<2.0	50.6	31.9	13.7
	8/26/2005	44.74	14.10	30.64	2,310	<0.50	<2.0	55.7	29.6	4.01
	11/11/2005	44.74	14.59	30.15	3,030	<0.5	<2.0	66.5	42.3	9.76
	2/9/2006	44.74	NM	NM	NA	NA	NA	NA	NA	NA
	5/9/2006	44.74	12.02	32.72	1,400	<0.5	<2.0	19.8	12.4	2.30
	8/10/2006	44.74	13.72	31.02	604	<0.50	<2.0	6.2	4.63	1.42
	10/26/2006	44.74	14.38	30.36	1350	<0.50	<2.0	16.6	10.8	1.87
	1/25/2007	44.74	13.93	30.81	340	<0.5	<2.0	6.84	2.44	1.63
	4/26/2007	44.74	14.44	30.30	552	<0.5	<2.0	11.4	6.11	4.12
	7/25/2007	44.74	14.79	29.95	1,230	<0.5	<2.0	27	19.24	3.2
	10/23/2007	44.74	14.88	29.86	1,730	0.67	<2.0	20.7	17.31	8.44
	1/21/2008	44.74	13.34	31.40	610	1.15	<2.0	8.4	4.34	17.2
	4/15/2008	44.74	13.91	30.83	1,460	<0.5	<2.0	15.9	19.7	17.3
	7/2/2008	44.74	14.87	29.87	1,450	<0.5	<2.0	11	6.8	22.1
MW-8	9/21/2004	41.14	12.98	28.16	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	12/14/2004	41.14	11.22	29.92	<50	<0.5	<0.5	<0.5	<1.0	<0.5
	3/11/2005	41.14	NM	NM	NA	NA	NA	NA	NA	NA
	6/15/2005	41.14	10.46	30.68	<200	0.53	<2.0	<0.5	<1.0	<0.5
	8/26/2005	41.14	11.53	29.61	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	11/11/2005	41.14	11.92	29.22	<50	<0.5	<2.0	1.36	1.8	<0.5

Table 1
Historical Groundwater Elevation Data and Analytical Results
15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (μg/L)	Total Xylenes (μg/L)	MtBE 8260B <sup>2</sup> (μg/L)
MW-8 cont.	2/9/2006	41.14	9.74	31.40	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	5/9/2006	41.14	9.90	31.24	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	8/10/2006	41.14	10.9	30.24	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	10/26/2006	41.14	11.68	29.46	<50	<0.50	<2.0	3.37	<1.0	<0.50
	1/25/2007	41.14	11.44	29.70	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/26/2007	41.14	10.81	30.33	<50	<0.5	<2.0	4.29	<2.0	<0.5
	7/25/2007	41.14	12.31	28.83	<50	<0.5	<2.0	4.39	<2.0	<0.5
	10/23/2007	41.14	12.37	28.77	<50	<0.5	<2.0	4.31	<2.0	<0.5
	1/21/2008	41.14	11.02	30.12	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/15/2008	41.14	11.44	29.70	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/2/2008	41.14	12.39	28.75	94.8	<0.5	<2.0	1	<2.0	<0.5
	I	T			r	r				-
MW-9	9/21/2004	40.26	12.18	28.08	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	12/14/2004	40.26	10.91	29.35	<50	<0.5	<0.5	<0.5	<1.0	<0.5
	3/11/2005	40.26	10.52	29.74	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	6/15/2005	40.26	14.73	25.53	<200	<0.5	<2.0	<0.5	<1.0	<0.5
	8/26/2005	40.26	10.59	29.67	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	11/11/2005	40.26	11.25	29.01	<50	<0.5	<2.0	<0.5	<1.0	<0.5
	2/9/2006	40.26	10.05	30.21	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	5/9/2006	40.26	9.06	31.20	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	8/10/2006	40.26	10.01	30.25	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	10/26/2006	40.26	10.81	29.45	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	1/25/2007	40.26	10.67	29.59	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/26/2007	40.26	10.05	30.21	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/25/2007	40.26	11.44	28.82	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	10/23/2007	40.26	11.59	28.67	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	1/21/2008	40.26	10.37	29.89	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/15/2008	40.26	10.56	29.70	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/2/2008	40.26	11.95	28.31	161	<0.5	<2.0	2.15	<2.0	<0.5

Table 1
Historical Groundwater Elevation Data and Analytical Results
15101 Freedom Avenue, Son Loondro, CA

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (μg/L)	Total Xylenes (μg/L)	MtBE 8260B <sup>2</sup> (μg/L)
				2nd WB	Z					
MW-1D	1/3/2008	54.42		-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
	1/22/2008	54.42	22.85	31.57	<50	<0.50	<2.0	<0.50	<2.0	<0.50
	4/16/2008	54.42	23.10	31.32	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/3/2008	54.42	23.44	30.98	75.9	<0.5	<2.0	0.54	<2.0	<0.5
MW-3D	1/3/2008	54.10			<50	<0.50	<2.0	< 0.50	<2.0	87.6
	1/22/2008	54.10	22 31	31 79	<50	<0.50	<2.0	<0.50	<2.0	88.3
	4/16/2008	54.10	22.64	31.46	<50	<0.5	<2.0	<0.5	<2.0	71 1
	7/3/2008	54.10	23.17	30.93	<50	<0.5	<2.0	<0.5	<2.0	67.4
			-							-
MW-4D	1/4/2008	53.12		-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
	1/22/2008	53.12	21.11	32.01	91.5	18.7	<2.0	7.08	11.42	219
	4/15/2008	53.12	21.67	31.45	<50	<0.5	<2.0	<0.5	<2.0	27
	7/3/2008	53.12	22.39	30.73	<50	<0.5	<2.0	<0.5	<2.0	6.27
						1	[	[	1	
1573 153 RD	7/2/2008	NS	NM	NC	<50	<0.5	<2.0	<0.5	<2.0	<0.5
EB-PMP	1/21/2008	-	-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
EB-PRB	1/21/2008	-	-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
EB-PMP2	1/22/2008	-	-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
EB-PRB2	1/22/2008	-	-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
ESL (ug/L)	-	-	-	-	100	1	40	30	20	5

15101 Freedom Avenue, San Leandro, CA

# Table 1 Historical Groundwater Elevation Data and Analytical Results

#### 15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (μg/L)	Total Xylenes (μg/L)	MtBE 8260B <sup>2</sup> (μg/L)
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Notes:

The first time SOMA monitored this Site was in May 2002.

\*: Due to minimal recharge rates in well MW-2, the groundwater elevation recorded on these dates did not

match the overall site conditions, May 2002 & August 2003.

NC: Not Calculated

<sup>1</sup>: Top of casing elevations were surveyed to a datum of 67.07 M.S.L by Kier & Wright Civil Engineers & Land Surveyors on May 7, 2002.

On October 11, 2004, the site was re-surveyed by Harrington Surveys, Inc. of Walnut Creek, CA to a datum of California Coordinate System, Zone 3, NAD 83.

<sup>2</sup> MtBE analyzed by EPA Method 8021B, and confirmed by EPA Method 8260B.

<: Not detected above the laboratory reporting limit.

<sup>c</sup> Presence confirmed, but confirmation concentration differed by more than a factor of two.

C: Presence confirmed, but RPD between columns exceeds 40%.

H: Heavier hydrocarbons contributed to the quantitation.

NA: Not Analyzed. Well MW-8 was inaccessible during the First Quarter 2005, car was parked over well. Not Analyzed. Well MW-7 was inaccessible during the First Quarter 2006, car was parked over well.

NM: Not Measured. Well MW-8 was inaccessible during the First Quarter 2005, car was parked over well. Not Measured. Well MW-7 was inaccessible during the First Quarter 2006, car was parked over well.

The first time SOMA monitored wells MW-6 to MW-9 was in September 2004.

EB-PMP/EB-PRB: Equipment Blanks for Pump and Probe

ESL: Environmental Screening Levels per CRWQCB SFBay Region Interim Final Nov. 2007;

Table F-1a, Groundwater Screening Levels (groundwater is a current or potential drinking water resource)

# Table 2Historical Gasoline Oxygenates Results15101 Freedom Avenue, San Leandro, CA

Monitoring	Date	ТВА	DIPE	ETBE	TAME	1,2-DCA	EDB
Well	Date	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)
1st WBZ							
MW-1	8/8/2002	78	<1.3	<1.3	<1.3	NA	NA
	11/1/2002	42	< 1.0	< 1.0	< 1.0	NA	NA
	2/21/2003	47	<0.5	<0.5	<0.5	NA	NA
	5/28/2003	25	<0.5	<0.5	<0.5	NA	NA
	8/12/2003	<10	<0.5	<0.5	<0.5	NA	NA
	10/9/2003	70	<1.0	<1.0	<1.0	NA	NA
	1/15/2004	55	<0.5	<0.5	<0.5	NA	NA
	5/25/2004	62	<0.7	<0.7	<0.7	NA	NA
	9/21/2004	<10	<0.5	<0.5	<0.5	NA	NA
	12/14/2004	<21.5	<4.3	<4.3	<17.2	NA	NA
	3/11/2005	81	<0.5	<0.5	<2.0	NA	NA
	6/15/2005	<10	<0.5	<0.5	<2.0	NA	NA
	8/26/2005	68.9	<2.15	<2.15	<8.6	NA	NA
	11/11/2005	46	<2.15	<2.15	<8.6	NA	NA
	2/9/2006	11.3	<0.5	<0.5	<2.0	NA	NA
	5/9/2006	<10	<0.5	<0.5	<2.0	0.51	<0.5
	8/10/2006	<43	<2.15	<2.15	<8.60	3.37	<2.15
	10/26/2006	39.4	<1.0	<1.0	<4.0	2.92	<1.0
	1/25/2007	41.4	<0.5	<0.5	<2.0	1.36	<0.5
	4/26/2007	39.6	<0.5	<0.5	<2.0	<0.5	<0.5
	7/25/2007	46.5	<1.0	<1.0	<4.0	<1.0	<1.0
	10/23/2007	53.7	<0.5	<0.5	<2.0	<0.5	<0.5
	1/22/2008	23.8	<0.5	<0.5	2.16	<0.5	<0.5
	4/16/2008	8.36	<0.5	<0.5	<2.0	164	<0.5
	//3/2008	30.5	<0.5	<0.5	<2.0	1.08	<0.5
104/ 0	0/0/0000	01	<u> </u>	<u> </u>	<u> </u>	NIA	N14
MIVV-2	8/8/2002	21	<0.5	<0.5	<0.5	NA	NA
	11/1/2002	15	<0.5	<0.5	<0.5	NA	NA
	2/21/2003	12	<0.5	<0.5	<0.5	NA	NA
	5/28/2003	31	<0.5	<0.5	<0.5	NA	NA
	8/12/2003	69	<0.8	<0.8	<0.8	NA	NA
	10/9/2003	12	<0.5	<0.5	<0.5	NA	NA
	1/15/2004	<10	<0.5	<0.5	<0.5	NA	NA
	5/25/2004	14	<0.5	<0.5	<0.5	NA	NA
	9/21/2004	<10	<0.5	<0.5	<0.5	NA	NA
	12/14/2004	<2.5	<0.5	<0.5	<2.0	NA	NA
Monitoring	Date	ТВА	DIPE	ETBE	TAME	1,2-DCA	EDB
------------	------------	--------	--------	--------	--------------	---------	--------
Well	Bato	(µg/L)	(μg/L)	(µg/L)	(μg/L)	(µg/L)	(µg/L)
MW-2 cont.	3/11/2005	<2.5	<0.5	<0.5	<2.0	NA	NA
	6/15/2005	<10	<0.5	<0.5	<2.0	NA	NA
	8/26/2005	<10	<0.5	<0.5	<2.0	NA	NA
	11/11/2005	<10	<0.5	<0.5	<2.0	NA	NA
	2/9/2006	<10	<0.5	<0.5	<2.0	NA	NA
	5/9/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	8/10/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	10/26/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	1/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	4/26/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	1/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	1/22/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	1/22/2008	<2.0	<0.5	<0.5	<2.0	2 14	<0.5
	7/2/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	112/2000	1210	1010	1010	1210	4010	1010
MW-3	8/8/2002	<330	<8.3	<8.3	330	NA	NA
	11/1/2002	85	< 1.3	<1.3	220	NA	NA
	2/21/2003	140	<5.0	<5.0	320	NA	NA
	5/28/2003	520	<10	<10	530	NA	NA
	8/12/2003	180	<4.2	<4.2	270	NA	NA
	10/9/2003	<170	<8.3	<8.3	200	NA	NA
	1/15/2004	<100	<5.0	<5.0	150	NA	NA
	5/25/2004	<100	<5.0	<5.0	270	NA	NA
	9/21/2004	<140	<7.1	<7.1	110	NA	NA
	12/14/2004	<100	<20	<20	154	NA	NA
	3/11/2005	<215	<43	<43	256	NA	NA
	6/15/2005	<215	<10.8	<10.8	374	NA	NA
	8/26/2005	699	<21.5	<21.5	277	NA	NA
	11/11/2005	<430	<21.5	<21.5	171	NA	NA
	2/9/2006	<430	<21.5	<21.5	620	NA	NA
	5/9/2006	367	<10.8	<10.8	594	<10.8	<10.8
	8/10/2006	365	<10.8	<10.8	727	<10.8	<10.8
	10/26/2006	591	<10.8	<10.8	899	<10.8	<10.8
	1/25/2007	711	<10.8	<10.8	768	<10.8	<10.8
	4/26/2007	690	<10.8	<10.8	369	<10.8	<10.8
	7/25/2007	1,340	<10.8	<10.8	565	<10.8	<10.8
	10/23/2007	1,050	<21.5	<21.5	301	<21.5	<21.5
	1/22/2008	373	<10.8	<10.8	170	<0.5	<0.5
	4/16/2008	801	< 5.50	<5.50	<22.0 124	1,850	12.1
	11312000	420	<10.0	<10.0	124	<10.0	<10.0
MW-4	8/8/2002	1500	<17	<17	18	ΝΔ	ΝΔ
10100-7	11/1/2002	580	< 5.0	6	13	NA	NA
I			: 0:0	,			

Monitoring	Dete	ТВА	DIPE	ETBE	TAME	1,2-DCA	EDB
Well	Date	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(µg/L)	(µg/L)
MW-4 cont.	2/21/2003	1600	<20	22	<20	NA	NA
	5/28/2003	690	<8.3	<8.3	17	NA	NA
	8/12/2003	550	<7.1	7.3	18	NA	NA
	10/9/2003	1400	<31	50	<31	NA	NA
	1/15/2004	1,300	<20	25	21	NA	NA
	5/25/2004	560	<8.3	<8.3	24	NA	NA
	9/21/2004	1,300	<50	<50	<50	NA	NA
	12/14/2004	826	<10.75	21	49	NA	NA
	3/11/2005	1,110	<10.8	12.1	<43	NA	NA
	6/15/2005	<110	<5.5	<5.5	22.9	NA	NA
	8/26/2005	902	<5.50	<5.50	37.4	NA	NA
	11/11/2005	884	<10.8	<10.8	<43	NA	NA
	2/9/2006	769	<10.8	16.4	45.6	NA	NA
	5/9/2006	405	<2.15	2.95	31.3	<2.15	<2.15
	8/10/2006	306	<2.15	<2.15	35.3	<2.15	<2.15
	10/26/2006	3430	<10.8	13.8	<43	<10.8	<10.8
	1/25/2007	822	<2.15	2.4	28	2.25	<2.15
	4/26/2007	556	<2.15	2.28	29.2	<2.15	<2.15
	7/25/2007	1,860	<2.15	9.94	24	<2.15	<2.15
	10/23/2007	3,400	<2.15	18.4	25.9	<2.15	<2.15
	1/22/2008	2,580	<5.50	64.7	<22	<0.5	<0.5
	4/15/2008	1,100	<5.50	11.7	<22	39.9	<5.50
	7/2/2008	8,720	<5.50	75.2	<22	<5.50	<5.50
	0/0/0000	050	2.2	0.0	540	N14	N1.4
MW-5	8/8/2002	<250	<6.3	<6.3	510	NA	NA
	11/1/2002	66	< 2.0	< 2.0	560	NA	NA
	2/21/2003	<63	<3.1	<3.1	280	NA	NA
	5/28/2003	<33	<1.7	<1./	110	NA	NA
	8/12/2003	130	<3.6	<3.6	270	NA	NA
	10/9/2003	<100	<5.0	<5.0	740	NA	NA
	1/15/2004	<63	<3.1	<3.1	300	NA	NA
	5/25/2004	<100	<5.0	<5.0	210	NA	NA
	9/21/2004	<130	<6.3	<6.3	550	NA	NA
	12/14/2004	40	<5.5	<5.5	444	NA	NA
	3/11/2005	88.8	<5.5	<5.5	448	NA	NA
	6/15/2005	<43	<2.15	<2.15	88.1	NA	NA
	8/26/2005	274	<5.50	<5.50	195	NA	NA
	11/11/2005	192	<5.50	<5.50	360	NA	NA
	2/9/2006	218	< 5.50	< 5.50	523	NA 12.45	NA 12.15
	5/9/2006	91.8	<2.15	<2.15	163	<2.15	<2.15
	0/10/2006	138	<5.50	<5.50	34∠ 710	<5.50	<5.50
	10/26/2006	322	<5.50	<5.50	/12	<2.50	<2.50

Monitoring	Data	ТВА	DIPE ETBE TAME 1,2-DCA		EDB		
Well	Date	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(µg/L)	(µg/L)
MW-5 cont.	1/25/2007	878	<5.50	<5.50	552	<5.50	<5.50
	4/26/2007	708	<2.15	<2.15	310	<2.15	<2.15
	7/25/2007	1,020	<2.15	<2.15	356	<2.15	<2.15
	10/23/2007	1,510	<2.15	<2.15	181	<2.15	<2.15
	1/22/2008	470	<0.5	4.56	62.1	<0.5	<0.5
	4/15/2008	566	<1.0	<1.0	29.6	231	5.66
	7/3/2008	2,320	<2.15	<2.15	53.3	<2.15	<2.15
MW-6	9/21/2004	<10	<0.5	<0.5	<0.5	NA	NA
	12/14/2004	<5.5	<5.5	<5.5	<22	NA	NA
	3/11/2005	2.54	<0.5	<0.5	<2.0	NA	NA
	6/15/2005	<20	<1.0	<1.0	<4.0	NA	NA
	8/26/2005	<43	<2.15	<2.15	<8.6	NA	NA
	11/11/2005	<43	<2.15	<2.15	<8.6	NA	NA
	2/9/2006	<43	<2.15	<2.15	<8.6	NA	NA
	5/9/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	8/10/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	10/26/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	1/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	4/26/2007	7.21	<0.5	<0.5	<2.0	<0.5	<0.5
	7/25/2007	5.66	<0.5	<0.5	<2.0	<0.5	<0.5
	10/23/2007	6.68	<0.5	<0.5	<2.0	<0.5	<0.5
	1/21/2008	13.9	<0.5	<0.5	<2.0	<0.5	<0.5
	7/2/2008	<2.0 4 54	<0.5	<0.5	<2.0	-0.78	-0 5
	112/2000		40.0	40.0	12.0	40.0	40.0
MW-7	9/21/2004	<10	<0.5	<05	15	NA	NA
	12/14/2004	<25	<0.5	<0.5	<2.0	NA	NA
	3/11/2005	<12.5	<2.5	<2.5	<10	NA	NA
	6/15/2005	<10	<0.5	<0.5	2.23	NA	NA
	8/26/2005	<10	<0.5	<0.5	<2.0	NA	NA
	11/11/2005	<10	<0.5	<0.5	<2.0	NA	NA
	2/9/2006	NA	NA	NA	NA	NA	NA
	5/9/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	8/10/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	10/26/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	1/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	4/26/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	10/23/2007	6.49	<0.5	<0.5	2.58	<0.5	<0.5
	1/21/2008	<2.0	<0.5	<0.5	6.01	<0.5	<0.5
	4/15/2008	8.8	<0.5	<0.5	<2.0	<0.5	1.26
	7/2/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	- /		-	-			
MW-8	9/21/2004	<10	<0.5	<0.5	<0.5	NA	NA
	12/14/2004	<2.5	<0.5	<0.5	<2.0	NA	NA
	3/11/2005	NA	NA	NA	NA	NA	NA
	6/15/2005	<10	<0.5	<0.5	<2.0	NA	NA
	8/26/2005	<10	<0.5	<0.5	<2.0	NA	NA
	11/11/2005	<10	<0.5	<0.5	<2.0	NA	NA

Monitoring		ТВА	DIPE	ETBE	TAME	1.2-DCA	EDB
Well	Date	(μg/L)	(μg/L)	(µg/L)	(μg/L)	(μg/L)	(μg/L)
MW-8 cont	2/9/2006	<10	<0.5	<0.5	<2.0	NA	NA
	5/9/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	8/10/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	10/26/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	1/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	4/26/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	10/23/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	1/21/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	4/15/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/2/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
MW-9	9/21/2004	<10	<0.5	<0.5	<0.5	NA	NA
	12/14/2004	<2.5	<0.5	<0.5	<2.0	NA	NA
	3/11/2005	<2.5	<0.5	<0.5	<2.0	NA	NA
	6/15/2005	<10	<0.5	<0.5	<2.0	NA	NA
	8/26/2005	<10	<0.5	<0.5	<2.0	NA	NA
	11/11/2005	<10	<0.5	<0.5	<2.0	NA	NA
	2/9/2006	<10	<0.5	<0.5	<2.0	NA	NA
	5/9/2006	<10	<0.5	<0.5	<2.0	2.8	<0.5
	8/10/2006	<10	<0.5	<0.5	<2.0	1.83	<0.5
	10/26/2006	<10	<0.5	<0.5	<2.0	3.07	<0.5
	1/25/2007	<2.0	<0.5	<0.5	<2.0	2.92	<0.5
	4/26/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	10/23/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	1/21/2008	<2.0	<0.5	<0.5	<2.0	1.18	<0.5
	4/15/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/2/2008	<2.0	<0.5	<0.5	<2.0	2.07	<0.5
			2nd W	BZ		•••	•••
MW-1D	1/3/2008	111	<0.5	<0.5	<2.0	NA	NA
	1/22/2008	12.9	<0.5	<0.5	<2.0	<0.5	<0.5
	4/16/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/3/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
MW-3D	1/3/2008	37.3	<0.5	3.12	15.3	NA	NA
	1/22/2008	15.6	< 0.5	3.1	15.3	<0.5	<0.5
	4/16/2008	17.7	<0.5	<0.5	<2.0	<0.5	<0.5
	7/3/2008	<2.0	<0.5	<0.5	7.45	<0.5	<0.5
MW-4D	1/4/2008	25	<0.5	<0.5	<2.0	NA	NA
	1/22/2008	124	<0.5	4.9	3.32	<0.5	<0.5
	4/15/2008	25.7	<0.5	<0.5	<2.0	<0.5	<0.5
	7/3/2008	3.38	<0.5	<0.5	<2.0	<0.5	<0.5

Monitoring Well	Date	ТВА (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (μg/L)	1,2-DCA (μg/L)	EDB (µg/L)
1573 153 RD	7/2/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	-		-		-		
EB-PMP	1/21/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
EB-PRB	1/21/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
EB-PMP2	1/22/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
EB-PRB2	1/22/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
ES	L	NE	NE	NE	NE	0.5	0.05

Notes:

August 8, 2002 was the first time that samples were analyzed for Gasoline Oxygenates <: Not detected above the laboratory reporting limit.

NA: Not Analyzed. Well MW-8 was inaccessible during the 1Q05

& well MW-7 (1Q06) car was parked over each well.

NE: Not Established

TBA: tert-Butyl Alcohol DIPE: Isopropyl Ether ETBE: Ethyl tert-Butyl Ether

TAME: Methyl tert-Amyl Ether

ESL: Environmental Screening Levels per CRWQCB SFBay Region Interim Final Nov. 2007;

Table F-1a, Groundwater Screening Levels (groundwater is a current or potential drinking water resource)

# **Appendix A**

Standard Operating Procedures for Conducting Groundwater Monitoring Activities

# Standard Operating Procedures for Conducting Groundwater Monitoring Activities

## Water Level Measurements

Prior to measurement of groundwater depth at each well, equalization with the surrounding aquifer must be achieved. Initially, the well cap is removed and the pressure is allowed to dissipate, creating a more stable water table level within the well. After about 10-15 minutes, once the water level in the well stabilizes, the depth to groundwater is measured from the top of the casing to the nearest 0.01 foot using an electric sounder.

## Purging and Field Measurements

Prior to sample collection, each well is purged using a battery-operated, 2-inchdiameter pump (Model ES-60 DC). During purging, groundwater is measured for parameters such as dissolved oxygen (DO), pH, temperature, electrical conductivity (EC), and oxygen-reduction potential (ORP) using a Hanna HI-9828 multi-parameter instrument. Turbidity is measured using a Hanna HI-98703 portable turbidimeter. The equipment is calibrated at the Site using standard solutions and procedures provided by the manufacturer.

The pH of groundwater has an effect on the activity of microbial populations in the groundwater. The groundwater temperature affects the metabolic activity of bacteria. The groundwater EC is directly related to the concentration of total dissolved solids (TDS) in solution.

There is a strong correlation between the turbidity level and the biological oxygen demand of natural water bodies. The main purpose for checking the turbidity level is to provide a general overview of the extent of the suspended solids in the groundwater.

ORP is the measure of the potential for an oxidation or reduction process to occur. In the oxidation process, a molecule or ion loses one or several electrons. In the reduction process, a molecule or ion gains one or several electrons. The unit of the redox potential is the volt or millivolt. The most important redox reaction in petroleum-contaminated groundwater is the oxidation of petroleum hydrocarbons in the presence of bacteria and free molecular oxygen. Because the solubility of O<sub>2</sub> in water is low (9 mg/L at 25 °C and 11 mg/L at 5 °C), and because the rate of O<sub>2</sub> replenishment in subsurface environments is limited, DO can be entirely consumed when the oxidation of only a small amount of petroleum hydrocarbons occurs.

Oxidation of petroleum hydrocarbons can still occur when all the dissolved  $O_2$  in the groundwater is consumed; however, the oxidizing agents (i.e., the constituents that undergo reduction) now become NO<sup>-</sup><sub>3</sub>, MnO<sub>2</sub>, Fe (OH)<sub>3</sub>, SO<sub>4</sub><sup>2-</sup>

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and others (Freeze and Cherry, 1979). As these oxidizing agents are consumed, the groundwater environment becomes more and more reduced. If the process advances far enough, the environment may become so strongly reduced that the petroleum hydrocarbons undergo anaerobic degradation, resulting in the production of methane and carbon dioxide. The concept of oxidation and reduction in terms of changes in oxidation states is illustrated below.



Purging of wells continues until the parameters for DO, pH, temperature, EC, turbidity, and redox stabilize, or three casing volumes are purged.

Once stabilization occurs, the groundwater samples are also tested on-site for ferrous iron (Fe<sup>+2</sup>), nitrate (NO<sub>3</sub><sup>-</sup>), and sulfate (SO<sub>4</sub><sup>-2</sup>) concentrations.

 $Fe^{+2}$ ,  $NO_3^{-1}$ , and  $SO_4^{-2}$  are measured colorimetrically using the Hach Colorimeter Model 890, a microprocessor-controlled photometer suitable for colorimetric testing in the laboratory or the field. The required reagents for each specific test are provided in AccuVac ampuls.

## Sampling

For sampling purposes, after purging a disposable polyethylene bailer is used to collect sufficient samples from each monitoring well for laboratory analyses. Groundwater samples are transferred into 40-mL VOA vials and preserved with hydrochloric acid. The vials are sealed to prevent air bubbles from developing within the headspace. For TPH-d analysis, groundwater samples are collected using 1-L, amber, nonpreserved glass containers. Samples are placed in an ice-filled cooler and maintained at 4°C. A chain of custody form for all samples is prepared to accompany the samples, which are promptly delivered to a California state-certified analytical laboratory.

# **Appendix B**

Table of Elevations and Coordinates on Monitoring Wells and Field Measurements of Physical and Chemical Parameters of Groundwater Samples

# Harrington Surveys Inc.

Land Surveying & Mapping

2278 Larkey Lane, Walnut Creek, Ca. 94596 Phone (925)935-7228 Fax (925)935-5118 Cel (925)788-7359 E-Mail (ben5132@pacbell.net)

Soma Environmental Engineering 2680 Bishop Dr. # 203 San Ramon, Ca. 94583 Oct. 14, 2004

Attn: Elena Manzo Job # 2445

Ref: 15101 Freedom Ave, San Leandro, Ca.

**HORZONTAL CONTROL, NAD 88:** 

Survey based on California Coordinate System, Zone 3, NAD 83.

CHABOT "B', NORTH 2,087,731.02 EAST 6,094,039.23 sft. LAT. N37°43'02.71762" W122°07"00.46339", NAVD 88, ELEV. 134.957.

CHABOT "A", NORTH 2,088,584.99 EAST 6,093,351.39 sft. LAT. N37°43'11.04190" W122°07'09.20691", NAVD 88, ELEV. 492.08.

VERTICAL CONTROL, NAVD 88:

NGS 1974, STATION K 1256, NAVD 88 ELEV. 58.50. PID # HT1871

GPS: TRIMBLE 5800, LEICA TCA 1800, 1" HORZ. & VERT.

EPOCH DATE 1998.5

**OBSERVATION: EPOCH=180.** 

FIELD SURVEY: OCT. 11, 2004.

Ben Harrington

PLS 5132



## SURVEY REPORT 15101 FREEDOM AVE SAN LEANDRO, CA.

#### HARRINGTON SURVEYS INC. 2278 LARKEY LANE WALNUT CREEK, CA. 94597 925-935-7228 FAX. 935-5118

	NAD 83	NAD 83	NAVD 88		NORTH	WEST
PT	NORTH (sft)	EAST(sft)	ELEV.	DESCRIPTION	LATITUDE (DMS)	LONGITUDE (DMS)
1	2087731.02	6094039.23	442.77	FD CHABOT B	37°43'02.71762"	122°07'00.46339"
2	2088584.99	6093351.39	492.08	FD CHABOT A	37°43'11.04190"	122°07'09.20691"
51	2084348.54	6092159.32	55.44	FD. X-8		
52	2084073.17	6092141.24	46.15	MW-6 PAV		
53	2084072.72	6092140.95	46.15	MW-6 PUNCH		
54	2084072.47	6092140.95	45.82	MW-6 NOTCH	37°42'26.22635"	122°07'23.29643
55	2083909.71	6091947.10	40.61	MW-9 PAV		
56	2083909.10	6091946.97	40.61	MW-9 PUNCH		
57	2083908.71	6091947.00	40.26	MW-9 NOTCH	37°42'24.57425"	122°07'25.67431"
58	2083861.20	6092118.11	41.38	MW-8 PAV		
59	2083860.43	6092118.36	41.44	MW-8 PUNCH		
60	2083860.03	6092118.52	41.14	MW-8 NOTCH	37°42'24.12245"	122°07'23.52966"
61	2084008.21	6092290.11	44.94	MW-7 PAV		
62	2084007.88	6092290.27	44.95	MW-7 PVNCH		
63	2084007.68	6092290.40	44.74	MW-7 NOTCH	37°42'25.61150"	122°07'21.42290"
64	2084206.49	6092175.95	51.03	MW-5 PAV		
65	2084206.17	6092176.55	50.96	MW-5 PUNCH		
66	2084206.01	6092176.79	50.53	MW-5 NOTCH	37°42'27.55260	122°07'22.87930
67	2084670.41	6092307.68	69.79	FD BM FAIR580		
68	2084443.65	6092198.88	53.70	MW-4 PAV		
69	2084444.39	6092199.72	53.74	MW-4 PUNCH		
70	2084444.59	6092199.51	53.31	MW-4 NOTCH	37°42'29.91496"	122°07'22.64809"
71	2084399.10	6092145.43	54.37	MW-3 PAV		
72	2084399.78	6092145.28	54.33	MW-3 PUNCH		
73	2084400.15	6092145.27	53.91	MW-3 NOTCH	37°42'29.46636''	122°07'23.31339"
74	2084329.47	6092199.72	54.82	MW-1 PAV		
75	2084330.44	6092199.45	54.79	MW-1 PUNCH		
76	2084330.75	6092199.20	54.46	MW-1 NOTCH	37°42'28.78955"	122°07'22.62738"
77	2084367.59	6092256.38	52.88	MW-2 PAV		
78	2084368.15	6092256.14	52.92	MW-2 PUNCH	1.8	
79	2084368.53	6092256.06	52.41	MW-2 NOTCH	37°42'29.17277"	122°07'21.92804"
80	2084930.49	6091759.33	58.50	FD BM K1256	37°42'34.64279"	122°07'28.23011"
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AMMENDED REPORT

15101 FREEDOM AVE SAN LEANDRO, CA.

#### HARRINGTON SURVEYS INC. 2278 LARKEY LANE WALNUT CREEK, CA. 94597 925-935-7228 FAX. 935-5118

	NAD 83	NAD 83	NAVD 88		NORTH	WEST
PΤ	NORTH (sft)	EAST(sft)	ELEV.	DESCRIPTION	LATITUDE (DMS)	LONGITUDE (DMS)
1	2087731.02	6094039.23	442.77	FD CHABOT B	37°43'02.71762"	122°07'00.46339"
2	2088584.99	6093351.39	492.08	FD CHABOT A	37°43'11.04190"	122°07'09.20691"
51	2084348.54	6092159.32	55.44	FD. X-8		
52	2084073.17	6092141.24	46.15	MW-6 PAV		
53	2084072.72	6092140.95	46.15	MW-6 PUNCH		
54	2084072.47	6092140.95	45.82	MW-6 NOTCH	37°42'26.22635"	122°07'23.29643
55	2083909.71	6091947.10	40.61	MW-9 PAV		
56	2083909.10	6091946.97	40.61	MW-9 PUNCH		
57	2083908.71	6091947.00	40.26	MW-9 NOTCH	37°42'24.57425"	122°07'25.67431"
58	2083861.20	6092118.11	41.38	MW-8 PAV		
59	2083860.43	6092118.36	41.44	MW-8 PUNCH		
60	2083860.03	6092118.52	41.14	MW-8 NOTCH	37°42'24.12245"	122°07'23.52966"
61	2084008.21	6092290.11	44.94	MW-7 PAV		
62	2084007.88	6092290.27	44.95	MW-7 PVNCH		
63	2084007.68	6092290.40	44.74	MW-7 NOTCH	37°42'25.61150"	122°07'21.42290"
64	2084206.49	6092175.95	51.03	MW-5 PAV		
65	2084206.17	6092176.55	50.96	MW-5 PUNCH		
66	2084206.01	6092176.79	50.53	MW-5 NOTCH	37°42'27.55260	122°07'22.87930
67	2084670.41	6092307.68	69.79	FD BM FAIR580		
68	2084251.32	6092125.25	53.70	MW-4 PAV	Ammended 2\21\08	From here down
69	2084250.55	6092124.46	53.74	MW-4 PUNCH		
70	2084250.36	6092124.67	53.31	MW-4 NOTCH	37°42'27.98205"	122°07'23.53734"
71	2084298.86	6092176.07	54.37	MW-3 PAV		
72	2084298.19	6092176.26	54.33	MW-3 PUNCH		
73	2084297.82	6092176.29	53.91	MW-3 NOTCH	37°42'28.46009"	122°07'22.90536"
74	2084365.28	6092117.89	54.82	MW-1 PAV		
75	2084364.32	6092118.22	54.79	MW-1 PUNCH		
76	2084364.03	6092118.49	54.46	MW-1 NOTCH	37°42'29.10470"	122°07'23.63882"
77	2084323.98	6092063.51	52.88	MW-2 PAV		
78	2084323.44	6092063.77	52.92	MW-2 PUNCH		
79	2084323.06	6092063.88	52.41	MW-2 NOTCH	37°42'28.69039"	122°07'24.30947"
80	2084930.49	6091759.33	58.50	FD BM K1256	37°42'34.64279"	122°07'28.23011"

#### DATE: 1/08/2008 JOB NUMBER 0208101 DATE OF SURVEY 1/03/07 INSTRUMENT LIECA SR520

# TABLE OF ELEVATIONS & COORDINATESINSON MONITORING WELLSSOMA ENVIRONMENTAL, PROJECT 15101 FREEDOM DRIVE - SAN LEANDRO

WELL ID#	NORTHING (ft.) LATITUDE	EASTING (ft.) LONGITUDE	ELEVATION (ft.)	DESCRIPTION
MW-1D	2084371.23	6092127.90	54.42	MW-1D NOTCH
	37.708104856	122.123200912	54.94	MW-1D RIM
	37º 42' 29.1" N	122º 07' 23" W	54.74	PAVEMENT
MW-3D	2084303.98	6092183.53	54.10	MW-3D NOTCH
	37.707922851	122.123004590	54.56	MW-3D RIM
	37º 42' 28.5" N	122º 07' 22" W	54.47	PAVEMENT
MW-4D	2084222.77	6092116.37	53.12	MW-4D NOTCH
	37.707696648	122.123231858	53.37	MW-4D RIM
	37º 42' 27.7" N	122º 07' 23" W	53.39	PAVEMENT

BENCH MARK: NGS BENCH MARK NO. HT1871

3.0 KM (1.85 MI) NORTH FROM SAM LORENZO. 1.85 MILES NORTH ALONG INTERSTATE HIGHWAY 580 FROM THE JUNCTION OF STATE HIGHWAY 238 IN SAN LORENZO, IN THE WEST CORNER OF THE CROSSING OF 150TH AVENUE, IN TOP OF THE CONCRETE BRIDGE DECK, 15.5 FEET NORTHWEST OF THE SOUTHWEST BOUND LANES OF THE AVENUE, 10.9 FEET NORTHEAST OF THE SOUTH CORNER OF THE SOUTHWEST END OF THE NORTHWEST CONCRETE GUARDRAIL, 0.7 FOOT NORTHEAST OF THE SOUTHWEST EDGE OF THE DECK, 0.9 FOOT SOUTHEAST OF THE NORTHWEST CONCRETE GUARDRAIL, AND ABOUT LEVEL WITH THE HIGHWAY.

ELEVATION = 58.50 NAVD 88 DATUM

HORIZONTAL AND VERTICAL CONTROL BASED ON HARRINGTON SURVEY DATED 10-12-2004

FD CHABOT A, CALIFORNIA STATE PLAIN COORDINATE SYSTEM, NAD 83, ZONE 3. NORTH 2,088,584.99 EAST 6,093,351.39. LAT N 37°43'11.04190" LONG W 122°07'09.20691", ELEVATION 492.08 NAVD 88.

FD CHABOT B, CALIFORNIA STATE PLAIN COORDINATE SYSTEM, NAD 83, ZONE 3. NORTH 2,087,731.02 EAST 6,094,039.23. . LAT N 37°43'02.71762" LONG W 122°07'00.46339", ELEVATION 442.77 NAVD 88.



ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-1	Project No.: 2551
Casing Diameter:	inches	Address: 15101 Freedom Avenue
Depth of Well:	80.50 feet	San Leandro, CA
Top of Casing Elevation:	<u>54-46</u> feet	Date: July 2-3, 2008
Depth to Groundwater:	<u>_23.33</u> feet	Sampler: Eric Gassner-Wollwage
Groundwater Elevation:	<u>31.13</u> feet	Ruchi Mathur
Water Column Height:	<u>7.17</u> feet	
Purged Volume:	16 gallons	
Purging Method: Sampling Method:	Bailer 🗆 Bailer 🏑	Pump 🔤
Color:	Yes 🔲 No 🛱	Describe:
Sheen:	Yes 🔲 No 🗒	Describe:
Odor:	Yes 👌 No 🗆	Describe: <u></u>

Time	Volume	D.O.	рН	Temp	E.C.	Turb.	ORP
	(galions)	mg/L		°C	(μS/cm)	NTU	
//33	startes	R ph	Fin	9 well	······		
1125	4	0.13	6.74	21.83	979	19.1	+992
7/37	8	12.12	6.75	21.89	1005	17.2	-22.3
//39	/2	0.12	6.95	21.98	996	12.0	-35.3
1141	16	0.12	6.80	21.94	1028	12.3	41.3
1146	Sample	R					
<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>						ļ	



ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-2	Project No.: 2551
Casing Diameter:	inches	Address: 15101 Freedom Avenue
Depth of Well:	<u>30.15</u> feet	San Leandro, CA
Top of Casing Elevation:	<u>52,41</u> feet	Date: July 2-X, 2008
Depth to Groundwater:	<u>21.50</u> feet	Sampler: Eric Gassner-Wollwage
Groundwater Elevation:	<u></u>	Ruchi Mathur
Water Column Height:	<u>68.65</u> feet	
Purged Volume:	gallons	
Purging Method:	Bailer 🛛	Pump _
Sampling Method:	Bailer	Pump 🛛
	хе N_ Х	Describer
Color:	Yes D NO	
Sheen:	Yes 🗆 No 🛱	Describe:
Odor:	Yes 🔩 No 🗆	Describe: <u>petro</u>

and the second second second

Time	Volume	D.O.	рН	Temp	E.C.	Turb.	ORP
	(gailons)	mg/L		°C	(µS/cm)	NTU	
1446	Starte	Il p	Kapper L	I nel	1		
1440	2	0.19	7.41	Z1.68	1019	153	-65.8
1449	6	0.13	7.05	21.78	925	19.7	-65.5
1.851	10	0.12	6.96	21.87	1055	19.2	-66.3
1403	14	0,12	6097	21.96	1119	15.9	-70.0
14.55	18	0.12	6.91	2207	1172	12.8	-66.6
1.5700	Samp	Jed				<u> </u>	



ENVIRONMENTAL ENGINEERING, INC

Well No.:	<u>MWI-3</u>	Project No.: 2551
Casing Diameter:	inches	Address: 15101 Freedom Avenue
Depth of Well:	<u>_29.90</u> feet	San Leandro, CA
Top of Casing Elevation:	<u>53.9</u> feet	Date: July X-3, 2008
Depth to Groundwater:	<u>22,90</u> feet	Sampler: Eric Gassner-Wollwage
Groundwater Elevation:	<u>31.0</u> feet	Ruchi Mathur
Water Column Height:	<u></u>	
Purged Volume:	i 4gallons	
Purging Method: Sampling Method:	Bailer 🗆 Bailer 🔽	Pump 🖉
Color:	Yes 🛛 No 🖵 🦯	Describe:
Sheen:	Yes 🛛 No 🖵	Describe:
Odor:	Yes 🖓 No 🖂	Describe: <u>Petro Ddor</u>

Time	Volume	D.O.	рН	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(μS/cm)	NTU	
1301	larted	Der	sing				
1303	4	0.19	6.80	22.01	1122	13.5	-19.3
1305	8	0.20	6.73	22.10	1112	11.3	-41.6
1307	12	0.2	6.81	22.72	1060	12.2	-49.3
1308	14	0:20	6.72	22,76	1097	10.2	-51.7
1315	Cample	bd					
						1	



Well No.:	<u>MW-400</u>	Project No.: 2551
Casing Diameter:	inches	Address: 15101 Freedom Avenue
Depth of Well:	<u>30,20</u> feet	San Leandro, CA
Top of Casing Elevation:	<u>53.3</u> feet	Date: July 2-%, 2008
Depth to Groundwater:	22.55 feet	Sampler: Eric Gassner-Wollwage
Groundwater Elevation:	<u>30.76</u> feet	Ruchi Mathur
Water Column Height:	<u>7-6 S</u> feet	
Purged Volume:	gallons	
Purging Method: Sampling Method:	Bailer 🗆	Pump 🔽
Color:	Yes 🛛 No 🖵	Describe:
Sheen:	Yes 🔲 No 📈	Describe:
Odor:	Yes 🖵 No 🗆	Describe: <u>petro</u>

#### Field Measurements:

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Time	Volume	D.O.	pН	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(μS/cm)	NTU	
1516	Start	ed pu	ering	<u>ት</u>			
1517	2	0.24	6.98	21.37	1180	14.0	-3.8
1519	6	81.0	6.69	21.33	1294	14.0	-20.9
1521	16	0.18	6.60	21,42	1317	9.43	-25-9
1522	14	0.20	6.63	22.08	1286	11.90	-23.5
1524	16	0.20	6.55	22.09	1307	12,50	-20.0
1520	Sam	10100	¥				
		Y					



Well No.:	<u>NW-5</u>	Project No.: 2551
Casing Diameter:	<u> </u>	Address: 15101 Freedom Avenue
Depth of Well:	<u>29.80</u> feet	San Leandro, CA
Top of Casing Elevation:	<u>50.53</u> feet	Date: July 2-3, 2008
Depth to Groundwater:	<u>19+98</u> feet	Sampler: Eric Gassner-Wollwage
Groundwater Elevation:	<u>30.65</u> feet	Ruchi Mathur
Water Column Height:	feet	
Purged Volume:	<u>)</u> gallons	
Purging Method:	Bailer 🗆	Pump J
Sampling Method:	Bailer 🖂	Pump 🔲
E 14.7	$\checkmark$	_
Calar	Vec No	Describe
Color:		Describe.
Sheen:	Yes 🗆 No 🖢	Describe:
Odan	Vac - No -	Describe: Potom polon
0001.		

Time	Volume	D.O.	pН	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(µS/cm)	NTU	
1227	Starte	dp	ugi	9			
1239	4	0.17	6.72	22.62	1041	16.5	+54.0
12.41	8	0.17	6.71	21.92	1060	13.4	-4.7
12.43	12	0.17	6.79	21.97	1029	11.8	-25.6
1245	16	0.17	6.67	21.99	1073	11.7	-33.5
1247	20	0.18	6.64	21.99	1081	11.7	-39.2
1253	camp	lea					



Well No.:	MW-6	Project No.: 2551
Casing Diameter:	inches	Address: 15101 Freedom Avenue
Depth of Well:	<u>27,30</u> feet	San Leandro, CA
Top of Casing Elevation:	<u>45.82</u> feet	Date: July 2-% 2008
Depth to Groundwater:	<u> </u>	Sampler: Eric Gassner-Wollwage
Groundwater Elevation:	<u>2.8.92</u> feet	Ruchi Mathur
Water Column Height:	10-40 feet	
Purged Volume:	gallons	
Purging Method: Sampling Method:	Bailer 🗆 Bailer 🔎	Pump д
Color:	Yes 🛛 No 🖵	Describe:
Sheen:	Yes 🖸 No 🦯	Describe:
Odor:	Yes 🗆 No 🗖	Describe: <u>Alight petro</u>

Time	Volume	D.O.	рН	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(μS/cm)	NTU	
1218	Start	DI	wgi	9			
1219	3	0.21	6,90	021.47	870	26.1	-7.5
1020	9	0.17	6.81	21.59	877	15.3	-25.3
1223	15	0.18	7.05	21.73	825	15.7	-45.8
1225	21	0.16	6.85	21.76	875	15.2	-51.6
1220	Can	ble	Ы				
	······································		•				



Well No.:	MW-7		Project No.:	2551
Casing Diameter:	<u> </u>	inches	Address:	15101 Freedom Avenue
Depth of Well:	21.00	feet		San Leandro, CA
Top of Casing Elevation:	<u>44.74</u>	feet	Date:	July 2-X, 2008
Depth to Groundwater:	14.87	feet	Sampler:	Eric Gassner-Wollwage
Groundwater Elevation:	29.87	feet		Ruchi Mathur
Water Column Height:	6.13	feet		
Purged Volume:	3	gallons		
Purging Method:	Bailer 🖞		Pump 🗆	
Sampling Method:	Bailer G		Pump 🗆	
Color:	Yes д	No 🗆	Describe:	greyish cloudy
Sheen:	Yes 🛛	No 🖌	Describe:	
Odor:	Yes Ja	No 🗆	Describe:	putro

Time	Volume	D.O.	рН	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(µS/cm)	NTU	
1146	Start	ed a	KILAN	Puel	1		
1140	1	0.45	5.95	5.70.97	1044	737	+169.3
1150	2	0.57	5,82	19.89	1060	830	+185.1
1158	3	0.66	5.82	20.62	104 3	1000	+195,0
X 1204	Sample	ed					



Well No.:	MW-8		Project No.:	2551
Casing Diameter:	2_	inches	Address:	15101 Freedom Avenue
Depth of Well:	28.75	feet		San Leandro, CA
Top of Casing Elevation:	<u> </u>	feet	Date:	July 2-2, 2008
Depth to Groundwater:	12.39	feet	Sampler:	Eric Gassner-Wollwage
Groundwater Elevation:	28.75	feet		Ruchi Mathur
Water Column Height:	16.36	feet		
Purged Volume:	<u> </u>	gallons		
Purging Method:	Bailer 🗆		Pump	4
Sampling Method:	Bailer 👌		Pump 🗆	
Color:	Yes 🛛	No	Describe:	
Sheen:	Yes 🗀	No	Describe:	
Odor:	Yes 🗖	No	Describe:	

Time	Volume	D.O.	рН	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(μS/cm)	NTU	
1312	Hart	d R	Marine M	~R			
1313	2	0.23	6.09	20.77	1137	105	+275
1314	Ч	0,15	6.01	20.84	1157	30.1	72720
1315	Ĺ	0.13	5-99	20.90	1161	16.5	+276.0
1316	do	0.13	5.99	20.88	1164	14.9	4275.2
(320)	San	ple	b		,,,,		
		]]					



ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-9	Project No.: 2551
Casing Diameter:	inches	Address: 15101 Freedom Avenue
Depth of Well:	32,55 feet	San Leandro, CA
Top of Casing Elevation:	<u>40.26</u> feet	Date: July 2,32, 2008
Depth to Groundwater:	<u>//,95</u> feet	Sampler: Eric Gassner-Wollwage
Groundwater Elevation:	<u>28,31</u> feet	Ruchi Mathur
Water Column Height:	<u>20-60</u> feet	
Purged Volume:	gallons	
Purging Method:	Bailer 🗆	Pump 🖳
Sampling Method:	Bailer R	Pump 🔲
Color:	Yes 🔲 No д	Describe:
Sheen:	Yes 🗆 No д	Describe:
Odor:	Yes 🗖 No 🖵	Describe:

#### Field Measurements:

Time	Volume	D.O.	рН	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(µS/cm)	NTU	
1245	Starte	d per	rgin	A			
1246	3	0.99	5.81	20.51	1051	n.s	+298.3
12-48	6	0.76	5.80	20.88	180	22.2	t201.7
1248	10	0.31	5.96	20.92	1033	20.1	+300·8
1058	San	mpl	ad				
· · · · · · · · · · · · · · · · · · ·							<u> </u>

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Well No.:	MW-1D		Project No.:	2551
Casing Diameter:	2	inches	Address:	15101 Freedom Avenue
Depth of Well:	59.81	feet		San Leandro, CA
Top of Casing Elevation:	54.42	feet	Date:	July <b>X-</b> 3, 2008
Depth to Groundwater:	23.44	feet	Sampler:	Eric Gassner-Wollwage
Groundwater Elevation:	30.98	feet		Ruchi Mathur
Water Column Height:	36.37	feet		
Purged Volume:	18	gallons		
Purging Method:	Bailer 🗆		Pump 📈	
Sampling Method:	Bailer 🗹		Pump 🗆	
Color:	Yes 🗖	No	Describe:	
Sheen:	Yes 🛛	No 🗤	Describe:	
Odor:	Yes 🛛	No 🤕	Describe:	

Time	Volume	D.O.	pН	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		S	(µS/cm)	NTU	
958	startes	l pi	2-fit	3 All	1		
1600	4	014	6.18	20.99	1126	999	+306.4
1002	8	0.13	6.23	21.00	1123	416	+ 303.5
1004	12	0.13	6.29	21.07	1106	99.8	+304.0
1005	16	013	6.29	21.07	0111	38.1	+305.9
1007	18	0.13	6.29	21.06	1109	32.6	+306.3
1012	Sam	Dle c				1	
•		1	•				



Well No.:	<u>MW-3D</u>	Project No.:	2551
Casing Diameter:	inches	Address:	15101 Freedom Avenue
Depth of Well:	<u>58.59</u> feet		San Leandro, CA
Top of Casing Elevation:	<u>54,10</u> feet	Date:	July 🔀 3, 2008
Depth to Groundwater:	<u>23.17</u> feet	Sampler:	Eric Gassner-Wollwage
Groundwater Elevation:	<u>30,93</u> feet		Ruchi Mathur
Water Column Height:	<u>35.42</u> feet		
Purged Volume:	<u> </u>		
Purging Method:	Bailer 🛛	Pump 🖉	
Sampling Method:	Bailer 🖉	Pump 🛛	
Color:	Yes 🛛 No 🚽	Describe:	
Sheen:	Yes 🗖 No 🗧	Describe:	
Odor:	Yes 🛛 No 🛛	Describe:	
		1	

Time	Volume	D.O.	pН	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(μS/cm)	NTU	
1048	Classte	d Du	ran	2			
1050	4	0.11	6.37	22.03	953	11.7	1300.3
1052	ଚ	D.10	6.28	22.06	959	15.6	1298.4
1054	12	6.11	6.24	22.11	936	12.3	+296,1
1056	16	0,10	6.15	22.07	954	13.0	+293.4
1057	18	0.10	6.13	22.06	456	10.5	t 292,5
XXXX /103	Campl	6d				'	

A L



Well No.:	MW-4D	Project No.: 2551
Casing Diameter:	inches	Address: 15101 Freedom Avenue
Depth of Well:	<u>58.79</u> feet	San Leandro, CA
Top of Casing Elevation:	<u>53.12</u> feet	Date: JulyX-3, 2008
Depth to Groundwater:	<u>22.39</u> feet	Sampler: Eric Gassner-Wollwage
Groundwater Elevation:	<u>30.73</u> feet	Ruchi Mathur
Water Column Height:	<u>36.4</u> feet	
Purged Volume:	gallons	
Purging Method:	Bailer 🛛	Pump VZ
Sampling Method:	Bailer y	Pump 🔲
Color:	Yes 🔲 No 🚽	Describe:
Sheen:	Yes 🔲 No 🛱	Describe:
Odor:	Yes 🗆 No 🗖	Describe:

Time	Volume	D.O.	рH	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(µS/cm)	NTU	
1022	Starte	d Du	2 grin	2			
1024	4	0,15	6.34	0.20.74	1006	38	+29P (
1026	8	0.12	6.31	20,77	1009	51.1	+30.5
1028	12	0.12	6.35	21.18	985	61.6	13=4.6
1030	16	D112	6.31	21.16	994	51.9	+309.2
1034	18	0.13	6.25	21.46	990	31.4	+3/4.0
1037	Samp	ed	-	<u> </u>			
	]						



Well No.:	1573 153RD	Project No.:	2551
Casing Diameter:	inches	Address:	15101 Freedom Avenue
Depth of Well:	NM feet		San Leandro, CA
Top of Casing Elevation:	feet	Date:	July 2-🕱 2008
Depth to Groundwater:	NM feet	Sampler:	Eric Gassner-Wollwage
Groundwater Elevation:	NM feet		Ruchi Mathur
Water Column Height:	NM feet		
Purged Volume:	gallons		
Purging Method:	Bailer 🗆	Pump 🗆	
Sampling Method:	Bailer d	Pump 🗆	
Color:	Yes 🗹 No 🗆	Describe:	Light brown
Sheen:	Yes 🗆 No 🖵	Describe:	
Odor:	Yes 🗖 No 🖵	Describe:	

Time	Volume	D.O.	рН	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(µS/cm)	NTU	
1425	là rab	Samp	le				,,
, ,							
				······			aw,
· · · · · · · · · · · · · · · · · · ·							
					<u></u>		
				·			

# **Appendix C**

Laboratory Report and Chain of Custody Form for the Third Quarter 2008 Monitoring Event

# **CHAIN OF CUSTODY FORM**

Page \_1\_of\_2\_

PAL Pacific Analytical Laboratory 851 West Midway Ave., Suite 201B

PAL Login#

8070001

Alameda, CA 94501 510-864-0364 Telephone

510-864-0365 Fax

Proje	Project No: 2551			Sa	mple	er:	Eric Gassn	er-W	ollwa	age/	Ruchi	i Mathur			Ana	lyses/	Metho	1	
Proje	ect Name: 15101   San Lea	Freedom Av andro, CA	e.	Re	port	To:	Joyce Bob	bek						MtBE	nates ers				
				Co	mpa	any:	SOMA En	viror	nmer	ntal	Engi	neering, Inc.		×	/gei				
Turn	around Time: St	andard		Tel Fa	l: x:	925 925	-734-6400 -734-6401							g, BTE	ine Oxy Scave				
		Sampling	Date/Time	N	latri	x	# of Containers	1	Prese	rvati	ives			TPH-	Gasol & Lead				
Lab No.	Sample ID	Date	Time	Soil	Water	Waste		HCL	H <sub>2</sub> So4	HNO <sub>3</sub>	ICE	Fi	ield Notes						
	MW-1	713108	1146		X		3 VOAS	X			X	Gra	ab Sample	X	Х				
	MW-1D	713108	1012		X		3 VOAS	X			X	Gra	ab Sample	X	Х				
	MW-2	7/2/08	1500		X		3 VOAS	X			X	Gra	ab Sample	X	Х				
-	MW-3	713/08	1315		X		3 VOAS	X			X	Gra	ab Sample	X	Х				
	MW-3D	713108	1103		X		3 VOAS	X			X	Gra	ab Sample	X	Х				
	MW-4	7/2/08	1530		X		3 VOAS	X		-	X	Gra	ab Sample	X	Х				
	MW-4D	71308	1037		X		3 VOAS	X			X	Gra	ab Sample	X	Х				
	MW-5	73108	1253		X		3 VOAS	X			X	Gra	ab Sample	X	Х				
	MW-6	7/2/08	1230		X		3 VOAS	X			X	Gra	ab Sample	X	Х				
	MW-7	7/2/08	1204		X		3 VOAS	X			X	Gra	ab Sample	X	X				
Sam	pler Remarks:						Relinquis	hed	by:	-	Date	e/Time:	Received by:			Date	/Time:		
EDF Etha	REQUIRED						Kuchi !	hat	aus	L	73	108 1435	2hul	4	-	0	763/	15	
	0									)								De	

# **CHAIN OF CUSTODY FORM**

Page \_2 of \_2\_

PAL Pacific Analytical Laboratory 851 West Midway Ave., Suite 201B

PAL Login#

3070001

Alameda, CA 94501 510-864-0364 Telephone

510-864-0365 Fax

Proje	roject No: 2551			Sar	mple	er:	Eric Gassn	er-W	ollwa	age/	Ruch	i Mathur			Analyses/Meti			od	
Proje	oct Name: 15101 Fi San Lear	reedom Av ndro, CA	/e.	Re	port	To:	Joyce Bol	bek						MtBE	nates jers				
				Co	mpa	any:	SOMA En	viror	nmer	ntal	Engi	neering, Inc.		X	oge				
Turn	around Time: Sta	ndard		Tel Faz	l: x:	925 925	5-734-6400 5-734-6401							-g, BTE	ine Ox d Scav				
		Sampling	Date/Time	M	latri	x	# of Containers	1	Prese	rvati	ves			TPH	Gasol & Lea				
Lab No.	Sample ID	Date	Time	Soil	Water	Waste		HCL	H <sub>2</sub> So4	HNO <sub>3</sub>	ICE	Fie	eld Notes					-	
	MW-8	7/2/08	1320		X		3 VOAS	X			Х	Gra	b Sample	X	Х				
	MW-9	7/2/08	1255		Х		3 VOAS	Х			Х	Gra	b Sample	X	Х				
	1573 153RD	7/2/08	1425		×		3 VOAS	X			×	GR	AB SAMPLE	×	X				
Sam	pler Remarks:			-	-		Relinguis	hed	by:		Dat	e/Time:	Received by:/	1		Date	/Tim	e:	-
EDF Etha	REQUIRED						Luchi M	atl	ul		7	3/081435	- Ilmt	h	-	0	7/03	108	
	-								1	1								n	



16 July 2008

Mansour Sepehr SOMA Environmental Engineering Inc. 6620 Owens Drive, Suite A Pleasanton, CA 94588

RE: 15101 Freedom Ave., San Leandro

Work Order Number: 8070001

This Laboratory report has been reviewed for technical correctness and completeness. This entire report was reviewed and approved by the Laboratory Director or the Director's designee, as verified by the following signature.

Sincerely,

Mapd Ach

Maiid Akhavan Laboratorv Director



Project: 15101 Freedom Ave., San Leandro Project Number: 2551 Project Manager: Mansour Sepehr

**Reported:** 16-Jul-08 19:30

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	8070001-01	Water	03-Jul-08 11:46	03-Jul-08 14:45
MW-1D	8070001-02	Water	03-Jul-08 10:12	03-Jul-08 14:45
MW-2	8070001-03	Water	02-Jul-08 15:00	03-Jul-08 14:45
MW-3	8070001-04	Water	03-Jul-08 13:15	03-Jul-08 14:45
MW-3D	8070001-05	Water	03-Jul-08 11:03	03-Jul-08 14:45
MW-4	8070001-06	Water	02-Jul-08 15:30	03-Jul-08 14:45
MW-4D	8070001-07	Water	03-Jul-08 10:37	03-Jul-08 14:45
MW-5	8070001-08	Water	03-Jul-08 12:53	03-Jul-08 14:45
MW-6	8070001-09	Water	02-Jul-08 12:30	03-Jul-08 14:45
MW-7	8070001-10	Water	02-Jul-08 12:04	03-Jul-08 14:45
MW-8	8070001-11	Water	02-Jul-08 13:20	03-Jul-08 14:45
MW-9	8070001-12	Water	02-Jul-08 12:55	03-Jul-08 14:45
1573 153RD	8070001-13	Water	02-Jul-08 14:25	03-Jul-08 14:45



Project: 15101 Freedom Ave., San Leandro Project Number: 2551 Project Manager: Mansour Sepehr

**Reported:** 16-Jul-08 19:30

#### Volatile Organic Compounds by EPA Method 8260B

	]	Pacific An	alytical	Laborat	ory				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (8070001-01) Water Sampled: 03-	-Jul-08 11:46 Receiv	ved: 03-Jul-08	14:45						
Gasoline (C6-C12)	5240	50.0	ug/l	1	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Benzene	414	0.500	"	"	"	"	"	"	
Ethylbenzene	168	0.500	"	"	"	"	"	"	
m&p-Xylene	94.0	2.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
MTBE	6.56	0.500	"	"	"	"	"	"	
DIPE	ND	0.500	"	"	"	"	"	"	
ETBE	ND	0.500	"	"	"	"	"	"	
TAME	ND	2.00	"	"	"	"	"	"	
ТВА	30.5	2.00	"	"	"	"	"	"	
1,2-dichloroethane	1.08	0.500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.500	"	"	"	"	"	"	
Ethanol	ND	1000	"	"		"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	70-	-130	"	"	"	"	
Surrogate: Dibromofluoromethane		88.8 %	70-	-130	"	"	"	"	
Surrogate: Perdeuterotoluene		99.8 %	70-	-130	"	"	"	"	
MW-1D (8070001-02) Water Sampled: 0	3-Jul-08 10:12 Rece	eived: 03-Jul-0	8 14:45						
Gasoline (C6-C12)	75.9	50.0	ug/l	1	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Benzene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	0.540	0.500	"	"	"	"	"	"	
m&p-Xylene	ND	2.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"		"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
MTBE	ND	0.500	"	"	"	"	"	"	
DIPE	ND	0.500	"	"	"	"	"	"	
ETBE	ND	0.500	"	"	"	"	"	"	
TAME	ND	2.00	"	"	"	"	"	"	
TBA	ND	2.00	"	"	"	"	"	"	
1,2-dichloroethane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.500	"	"	"	"	"	"	
Ethanol	ND	1000	"	"		"	"	"	
Surrogate: 4-Bromofluorobenzene		93.6 %	70-	-130	"	"	"	"	

Pacific Analytical Laboratory



Project Number: 2551 Project Manager: Mansour Sepehr

Project: 15101 Freedom Ave., San Leandro

**Reported:** 16-Jul-08 19:30

### Volatile Organic Compounds by EPA Method 8260B

#### Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1D (8070001-02) Water Sample	d: 03-Jul-08 10:12 Rece	ived: 03-Jul-0	8 14:45						
Surrogate: Dibromofluoromethane		101 %	70-1.	30	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Surrogate: Perdeuterotoluene		92.2 %	70-1.	30	"	"	"	"	
MW-2 (8070001-03) Water Sampled	: 02-Jul-08 15:00 Receiv	ed: 03-Jul-08	14:45						
Gasoline (C6-C12)	98.3	50.0	ug/l	1	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Benzene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	2.76	0.500	"	"	"	"	"	"	
m&p-Xylene	ND	2.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
MTBE	ND	0.500	"	"	"	"	"	"	
DIPE	ND	0.500	"	"	"	"	"	"	
ETBE	ND	0.500	"	"	"	"	"	"	
TAME	ND	2.00	"	"	"	"	"	"	
TBA	ND	2.00	"	"	"	"		"	
1,2-dichloroethane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.500	"	"	"	"	"	"	
Ethanol	ND	1000	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	70-1.	30	"	"	"	"	
Surrogate: Dibromofluoromethane		97.8 %	70-1.	30	"	"	"	"	
Surrogate: Perdeuterotoluene		92.8 %	70-1.	30	"	"	"	"	

#### MW-3 (8070001-04RE1) Water Sampled: 03-Jul-08 13:15 Received: 03-Jul-08 14:45

Gasoline (C6-C12)	48500	1080	ug/l	21.5	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Benzene	3760	10.8	"	"	"	"		"	
Ethylbenzene	3130	10.8	"	"	"	"	"	"	
m&p-Xylene	9790	43.0	"	"	"	"		"	
o-xylene	3190	10.8	"	"	"	"		"	
Toluene	346	43.0	"	"	"	"		"	
MTBE	573	10.8	"	"	"	"		"	
DIPE	ND	10.8	"	"	"	"		"	
ETBE	ND	10.8	"	"	"	"	"	"	
TAME	124	43.0	"	"	"	"	"	"	
TBA	426	43.0	"	"	"	"	"	"	
1,2-dichloroethane	ND	10.8	"	"	"	"		"	
1,2-Dibromoethane (EDB)	ND	10.8	"	"	"	"	"	"	
Ethanol	ND	21500	"	"		"	"	"	

Pacific Analytical Laboratory



Project Number: 2551 Project Manager: Mansour Sepehr

Project: 15101 Freedom Ave., San Leandro

**Reported:** 16-Jul-08 19:30

### Volatile Organic Compounds by EPA Method 8260B

#### **Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (8070001-04RE1) Water Samp	led: 03-Jul-08 13:15	Received: 03-Ju	ıl-08 14:45						
Surrogate: 4-Bromofluorobenzene		106 %	70-13	0	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Surrogate: Dibromofluoromethane		92.4 %	70-13	0	"	"	"	"	
Surrogate: Perdeuterotoluene		95.2 %	70-13	0	"	"	"	"	

#### MW-3D (8070001-05) Water Sampled: 03-Jul-08 11:03 Received: 03-Jul-08 14:45

ND	50.0	ug/l	1	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
ND	0.500	"	"	"	"		"	
ND	0.500	"	"	"	"		"	
ND	2.00	"	"	"	"	"	"	
ND	0.500	"	"	"	"		"	
ND	2.00	"	"	"	"		"	
67.4	0.500	"	"	"	"		"	
ND	0.500	"	"	"	"		"	
ND	0.500	"	"	"	"		"	
7.45	2.00	"	"	"	"		"	
ND	2.00	"	"	"	"		"	
ND	0.500	"	"	"	"		"	
ND	0.500	"	"	"	"		"	
ND	1000	"	"	"	"	"	"	
	90.2 %	70	-130	"	"	"	"	
	98.0 %	70	-130	"	"	"	"	
	89.0 %	70	-130	"	"	"	"	
	ND ND ND ND ND <b>67.4</b> ND ND <b>7.45</b> ND ND ND ND	ND 50.0   ND 0.500   ND 0.500   ND 2.00   ND 2.00   ND 2.00   67.4 0.500   ND 0.500   ND 0.500   ND 0.500   ND 0.500   ND 0.500   ND 2.00   ND 2.00   ND 0.500   ND 1000   90.2 % 98.0 %   89.0 % 89.0 %	ND 50.0 ug/l   ND 0.500 "   ND 0.500 "   ND 2.00 "   67.4 0.500 "   ND 1000 "   90.2 % 70   98.0 % 70   89.0 % 70	ND 50.0 ug/l 1   ND 0.500 " "   ND 0.500 " "   ND 2.00 " "   ND 0.500 " "   ND 1000 " "   90.2 % 70-130 89.0 % 70-130   89.0 % 70-130 130	ND 50.0 ug/l 1 BG80701   ND 0.500 " " "   ND 0.500 " " "   ND 0.500 " " "   ND 2.00 " " "   ND 0.500 " " "   ND 0.500 " " "   ND 0.500 " " "   ND 2.00 " " "   ND 0.500 " " "   ND 0.500 " " "   ND 0.500 " " "   ND 1000 " " "   90.2 % 70-130 " "   98.0 %	ND 50.0 ug/l 1 BG80701 07-Jul-08   ND 0.500 " " " " "   ND 0.500 " " " " " "   ND 0.500 " " " " " "   ND 2.00 " " " " " "   ND 0.500 " " " " " "   ND 2.00 " " " " " "   ND 0.500 " " " " "	ND 50.0 ug/l 1 BG80701 07-Jul-08 07-Jul-08   ND 0.500 " " " " " " "   ND 0.500 " " " " " " "   ND 0.500 " " " " " "   ND 2.00 " " " " " "   ND 0.500 " " " " " "   ND 2.00 " " " " " "   ND 0.500 " " " " " "   ND 0.500 " " " " " "   ND 2.00 " " " " " "   ND 0.500 " " " " " "   ND 0.500 " <td>ND 50.0 ug/l 1 BG80701 07-Jul-08 EPA 8260B   ND 0.500 "</td>	ND 50.0 ug/l 1 BG80701 07-Jul-08 EPA 8260B   ND 0.500 "

#### MW-4 (8070001-06) Water Sampled: 02-Jul-08 15:30 Received: 03-Jul-08 14:45

Gasoline (C6-C12)	2300	550	ug/l	11	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Benzene	193	5.50	"	"	"	"	"	"	
Ethylbenzene	212	5.50	"	"	"	"	"	"	
m&p-Xylene	183	22.0	"	"	"	"		"	
o-xylene	ND	5.50	"	"	"	"		"	
Toluene	ND	22.0	"	"	"	"		"	
MTBE	4050	5.50	"	"	"	"	"	"	
DIPE	ND	5.50	"	"	"	"	"	"	
ETBE	75.2	5.50	"	"	"	"	"	"	
TAME	ND	22.0	"	"	"	"	"	"	
TBA	8720	22.0	"	"	"	"		"	
1,2-dichloroethane	ND	5.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.50	"		"	"	"	"	

Pacific Analytical Laboratory



Project Number: 2551 Project Manager: Mansour Sepehr

Project: 15101 Freedom Ave., San Leandro

**Reported:** 16-Jul-08 19:30

### Volatile Organic Compounds by EPA Method 8260B

#### **Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-4 (8070001-06) Water Sampled: 02	Jul-08 15:30 Receiv	ed: 03-Jul-08	14:45						
Ethanol	ND	11000	ug/l	11	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Surrogate: 4-Bromofluorobenzene		98.0 %	70-	130	"	"	"	"	
Surrogate: Dibromofluoromethane		95.4 %	70-	130	"	"	"	"	
Surrogate: Perdeuterotoluene		91.2 %	70-	130	"	"	"	"	

#### MW-4D (8070001-07) Water Sampled: 03-Jul-08 10:37 Received: 03-Jul-08 14:45

Gasoline (C6-C12)	ND	50.0	ug/l	1	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Benzene	ND	0.500	"		"	"	"	"	
Ethylbenzene	ND	0.500	"		"	"	"	"	
m&p-Xylene	ND	2.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
MTBE	6.27	0.500	"	"	"	"	"	"	
DIPE	ND	0.500	"	"	"	"	"	"	
ETBE	ND	0.500	"	"	"	"	"	"	
TAME	ND	2.00	"	"	"	"	"	"	
TBA	3.38	2.00	"	"	"	"	"	"	
1,2-dichloroethane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.500	"	"	"	"	"	"	
Ethanol	ND	1000	"		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.4 %	70-1.	30	"	"	"	"	
Surrogate: Dibromofluoromethane		104 %	70-1.	30	"	"	"	"	
Surrogate: Perdeuterotoluene		92.2 %	70-1.	30	"	"	"	"	

#### MW-5 (8070001-08RE1) Water Sampled: 03-Jul-08 12:53 Received: 03-Jul-08 14:45

13100	215	ug/l	4.3	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
949	2.15	"	"	"	"		"	
875	2.15	"	"	"	"	"	"	
790	8.60	"	"	"	"		"	
35.5	2.15	"	"	"	"		"	
34.4	8.60	"	"	"	"		"	
176	2.15	"	"	"	"		"	
ND	2.15	"	"	"	"		"	
ND	2.15	"	"	"	"		"	
53.3	8.60	"	"	"	"		"	
2320	8.60	"	"	"	"		"	
ND	2.15	"	"	"	"	"	"	
	13100 949 875 790 35.5 34.4 176 ND ND 53.3 2320 ND	13100 215   949 2.15   875 2.15   790 8.60   35.5 2.15   34.4 8.60   176 2.15   ND 2.15   53.3 8.60   2320 8.60   ND 2.15	13100 215 ug/l   949 2.15 "   875 2.15 "   790 8.60 "   35.5 2.15 "   34.4 8.60 "   176 2.15 "   ND 2.15 "   53.3 8.60 "   2320 8.60 "   ND 2.15 "	13100 215 ug/l 4.3   949 2.15 " "   875 2.15 " "   790 8.60 " "   35.5 2.15 " "   34.4 8.60 " "   176 2.15 " "   ND 2.15 " "   S3.3 8.60 " "   12320 8.60 " "   ND 2.15 " "	13100 215 ug/l 4.3 BG80701   949 2.15 " " " "   875 2.15 " " " "   790 8.60 " " " "   35.5 2.15 " " " "   34.4 8.60 " " " "   176 2.15 " " " "   ND 2.15 " " " "   S3.3 8.60 " " " "   53.3 8.60 " " " "   ND 2.15 " " " "   MD 2.15 " " " "   MD 2.15 " " " "   ND 2.15 " " " "	13100 215 ug/l 4.3 BG80701 07-Jul-08   949 2.15 " " " " " "   875 2.15 " " " " " "   790 8.60 " " " " " "   35.5 2.15 " " " " " "   34.4 8.60 " " " " " "   176 2.15 " " " " " "   ND 2.15 " " " " " "   ND 2.15 " " " " " "   S3.3 8.60 " " " " " "   ND 2.15 " " " " " "   ND 2.15 " " " "	13100 215 ug/l 4.3 BG80701 07-Jul-08 07-Jul-08   949 2.15 "	13100 215 ug/l 4.3 BG80701 07-Jul-08 07-Jul-08 EPA 8260B   949 2.15 "

Pacific Analytical Laboratory


SOMA Environmental Engineering Inc. 6620 Owens Drive, Suite A

Pleasanton CA, 94588

Project Number: 2551 Project Manager: Mansour Sepehr

Project: 15101 Freedom Ave., San Leandro

**Reported:** 16-Jul-08 19:30

# Volatile Organic Compounds by EPA Method 8260B

### **Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-5 (8070001-08RE1) Water	Sampled: 03-Jul-08 12:53	Received: 03-Ju	ul-08 14:4	5					
1,2-Dibromoethane (EDB)	ND	2.15	ug/l	4.3	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Ethanol	ND	4300	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	70-	-130	"	"	"	"	
Surrogate: Dibromofluoromethane		90.2 %	70-	70-130		"	"	"	
Surrogate: Perdeuterotoluene		95.8 %	70-	130	"	"	"	"	

#### MW-6 (8070001-09) Water Sampled: 02-Jul-08 12:30 Received: 03-Jul-08 14:45

7900	50.0	ug/l	1	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
42.4	0.500	"	"	"	"		"	
194	0.500	"	"	"	"	"	"	
296	2.00	"	"	"	"		"	
ND	0.500	"	"	"	"		"	
ND	2.00	"	"	"	"		"	
3.58	0.500	"	"	"	"		"	
ND	0.500	"	"	"	"	"	"	
ND	0.500	"	"	"	"		"	
ND	2.00	"	"	"	"		"	
4.54	2.00	"	"	"	"		"	
ND	0.500	"	"	"	"	"	"	
ND	0.500	"	"	"	"	"	"	
ND	1000	"		"	"	"	"	
	103 %	70-	130	"	"	"	"	
	87.0 %	70-	130	"	"	"	"	
	102 %	70-	130	"	"	"	"	
	7900 42.4 194 296 ND ND 3.58 ND ND ND ND ND ND ND	7900         50.0           42.4         0.500           194         0.500           296         2.00           ND         0.500           ND         2.00           3.58         0.500           ND         1000           103 %           87.0 %           102 %	7900         50.0         ug/l           42.4         0.500         "           194         0.500         "           296         2.00         "           ND         0.500         "           ND         0.500         "           ND         0.500         "           ND         2.00         "           3.58         0.500         "           ND         1000         "           103 %         70-           87.0 %         70-           102 %         70-	7900         50.0         ug/l         1           42.4         0.500         "         "           194         0.500         "         "           296         2.00         "         "           ND         0.500         "         "           ND         1000         "         "           103 %         70-130         87.0 %         70-130           102 %         70-130         102 %         70-130	7900         50.0         ug/l         1         BG80701           42.4         0.500         "         "         "           194         0.500         "         "         "           296         2.00         "         "         "           ND         0.500         "         "         "           ND         0.500         "         "         "           ND         2.00         "         "         "           ND         2.00         "         "         "           ND         0.500         "         "         "           ND         1000         "         "         "           IO3 %         70-130         "         "         " <tr< td=""><td>7900         50.0         ug/l         1         BG80701         07-Jul-08           42.4         0.500         "         "         "         "         "           194         0.500         "         "         "         "         "         "           296         2.00         "         "         "         "         "         "           ND         0.500         "         "         "         "         "         "           ND         0.500         "         "         "         "         "         "           ND         2.00         "         "         "         "         "         "           ND         0.500         "         "         "         "         "           ND         0.500         "         "         "         "</td><td>7900         50.0         ug/l         1         BG80701         07-Jul-08         07-Jul-08           42.4         0.500         "         "         "         "         "         "         "           194         0.500         "         "         "         "         "         "         "           296         2.00         "         "         "         "         "         "           ND         0.500         "         "         "         "         "         "           ND         2.00         "         "         "         "         "         "           ND         2.00         "         "         "         "         "         "           ND         0.500         <t< td=""><td>7900         50.0         ug/l         1         BG80701         07-Jul-08         EPA 8260B           42.4         0.500         "</td></t<></td></tr<>	7900         50.0         ug/l         1         BG80701         07-Jul-08           42.4         0.500         "         "         "         "         "           194         0.500         "         "         "         "         "         "           296         2.00         "         "         "         "         "         "           ND         0.500         "         "         "         "         "         "           ND         0.500         "         "         "         "         "         "           ND         2.00         "         "         "         "         "         "           ND         0.500         "         "         "         "         "           ND         0.500         "         "         "         "	7900         50.0         ug/l         1         BG80701         07-Jul-08         07-Jul-08           42.4         0.500         "         "         "         "         "         "         "           194         0.500         "         "         "         "         "         "         "           296         2.00         "         "         "         "         "         "           ND         0.500         "         "         "         "         "         "           ND         2.00         "         "         "         "         "         "           ND         2.00         "         "         "         "         "         "           ND         0.500         "         "         "         "         "         "           ND         0.500 <t< td=""><td>7900         50.0         ug/l         1         BG80701         07-Jul-08         EPA 8260B           42.4         0.500         "</td></t<>	7900         50.0         ug/l         1         BG80701         07-Jul-08         EPA 8260B           42.4         0.500         "



SOMA Environmental Engineering Inc. 6620 Owens Drive, Suite A Pleasanton CA, 94588

Project Number: 2551 Project Manager: Mansour Sepehr **Reported:** 16-Jul-08 19:30

# Volatile Organic Compounds by EPA Method 8260B

Project: 15101 Freedom Ave., San Leandro

## Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-7 (8070001-10) Water Sampled	: 02-Jul-08 12:04 Receiv	ed: 03-Jul-08	14:45						
Gasoline (C6-C12)	1450	50.0	ug/l	1	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Benzene	ND	0.500	"	"	"	"	"		
Ethylbenzene	11.0	0.500	"	"	"	"	"		
m&p-Xylene	6.80	2.00	"	"	"	"	"		
o-xylene	ND	0.500	"		"	"	"		
Toluene	ND	2.00	"	"	"	"	"		
MTBE	22.1	0.500	"		"	"			
DIPE	ND	0.500	"		"	"			
ETBE	ND	0.500	"		"	"			
TAME	ND	2.00	"		"	"			
TBA	ND	2.00	"		"	"			
1,2-dichloroethane	ND	0.500	"		"	"			
1,2-Dibromoethane (EDB)	ND	0.500	"	"	"	"		"	
Ethanol	ND	1000	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	70-13	30	"	"	"	"	
Surrogate: Dibromofluoromethane		89.4 %	70-13	30	"	"	"	"	
Surrogate: Perdeuterotoluene		101 %	70-13	30	"	"	"	"	

#### MW-8 (8070001-11) Water Sampled: 02-Jul-08 13:20 Received: 03-Jul-08 14:45

Gasoline (C6-C12)	94.8	50.0	ug/l	1	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Benzene	ND	0.500	"	"	"	"		"	
Ethylbenzene	1.00	0.500	"	"	"	"		"	
m&p-Xylene	ND	2.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"		"	
Toluene	ND	2.00	"	"	"	"	"	"	
MTBE	ND	0.500	"	"	"	"	"	"	
DIPE	ND	0.500	"	"	"	"	"	"	
ETBE	ND	0.500	"	"	"	"	"	"	
TAME	ND	2.00	"	"	"	"		"	
TBA	ND	2.00	"	"	"	"		"	
1,2-dichloroethane	ND	0.500	"	"	"	"		"	
1,2-Dibromoethane (EDB)	ND	0.500	"	"	"	"		"	
Ethanol	ND	1000	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.8 %	70-	130	"	"	"	"	
Surrogate: Dibromofluoromethane		97.2 %	70-	130	"	"	"	"	
Surrogate: Perdeuterotoluene		94.4 %	70-	130	"	"	"	"	

Pacific Analytical Laboratory



SOMA Environmental Engineering Inc. 6620 Owens Drive, Suite A

Pleasanton CA, 94588

Project Number: 2551 Project Manager: Mansour Sepehr

Project: 15101 Freedom Ave., San Leandro

**Reported:** 16-Jul-08 19:30

# Volatile Organic Compounds by EPA Method 8260B

### Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-9 (8070001-12) Water	Sampled: 02-Jul-08 12:55 Rec	ceived: 03-Jul-08	3 14:45						
Gasoline (C6-C12)	161	50.0	ug/l	1	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Benzene	ND	0.500	"		"	"	"	"	
Ethylbenzene	2.15	0.500	"		"	"	"	"	
m&p-Xylene	ND	2.00	"		"	"		"	
o-xylene	ND	0.500	"		"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
MTBE	ND	0.500	"		"	"	"	"	
DIPE	ND	0.500	"		"	"	"	"	
ETBE	ND	0.500	"		"	"	"	"	
TAME	ND	2.00	"		"	"	"	"	
TBA	ND	2.00	"		"	"	"	"	
1,2-dichloroethane	2.07	0.500	"		"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.500	"		"	"	"	"	
Ethanol	ND	1000	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenze	ene	98.4 %	7	70-130	"	"	"	"	
Surrogate: Dibromofluorometh	ane	95.2 %	7	70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		98.0 %	7	70-130	"	"	"	"	

#### 1573 153RD (8070001-13) Water Sampled: 02-Jul-08 14:25 Received: 03-Jul-08 14:45

Gasoline (C6-C12)	ND	50.0	ug/l	1	BG80701	07-Jul-08	07-Jul-08	EPA 8260B	
Benzene	ND	0.500	"	"	"	"		"	
Ethylbenzene	ND	0.500		"	"	"	"	"	
m&p-Xylene	ND	2.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"		"	
Toluene	ND	2.00		"		"		"	
MTBE	ND	0.500	"	"	"	"		"	
DIPE	ND	0.500	"	"	"	"		"	
ETBE	ND	0.500	"	"	"	"		"	
TAME	ND	2.00	"	"	"	"		"	
TBA	ND	2.00	"	"	"	"		"	
1,2-dichloroethane	ND	0.500	"	"	"	"		"	
1,2-Dibromoethane (EDB)	ND	0.500	"	"	"	"		"	
Ethanol	ND	1000	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.8 %	70-1	130	"	"	"	"	
Surrogate: Dibromofluoromethane		103 %	70-1	130	"	"	"	"	
Surrogate: Perdeuterotoluene		92.4 %	70-1	130	"	"	"	"	

Pacific Analytical Laboratory



SOMA Environmental Engineering Inc.	Project: 15101 Freedom Ave., San Leandro	
6620 Owens Drive, Suite A	Project Number: 2551	Reported:
Pleasanton CA, 94588	Project Manager: Mansour Sepehr	16-Jul-08 19:30

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

## Pacific Analytical Laboratory

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch BG80701 - EPA 5030 Water MS										
Blank (BG80701-BLK1)				Prepared &	Analyzed:	07-Jul-08				
Surrogate: 4-Bromofluorobenzene	44.1		ug/l	50.0		88.2	70-130			
Surrogate: Dibromofluoromethane	51.8		"	50.0		104	70-130			
Surrogate: Perdeuterotoluene	45.9		"	50.0		91.8	70-130			
MTBE	ND	0.500	"							
DIPE	ND	0.500	"							
ETBE	ND	0.500	"							
TAME	ND	2.00	"							
Gasoline (C6-C12)	ND	50.0	"							
TBA	ND	2.00	"							
1,2-dichloroethane	ND	0.500	"							
1,2-Dibromoethane (EDB)	ND	0.500	"							
Ethanol	ND	1000	"							
Benzene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
m&p-Xylene	ND	2.00	"							
o-xylene	ND	0.500	"							
Toluene	ND	2.00	"							
LCS (BG80701-BS1)				Prepared &	Analyzed:	07-Jul-08				
Surrogate: 4-Bromofluorobenzene	45.6		ug/l	50.0		91.2	70-130			
Surrogate: Dibromofluoromethane	43.5		"	50.0		87.0	70-130			
Surrogate: Perdeuterotoluene	40.9		"	50.0		81.8	70-130			
MTBE	91.9	0.500	"	100		91.9	70-130			
ETBE	113	0.500	"	100		113	70-130			
TAME	99.3	2.00	"	100		99.3	70-130			
Gasoline (C6-C12)	2290	50.0	"	2000		114	70-130			
TBA	524	2.00	"	500		105	70-130			
Benzene	106	0.500	"	100		106	70-130			
Toluene	108	2.00	"	100		108	70-130			



SOMA Environmental Engineering Inc.Project:15101 Freedom Ave., San Leandro6620 Owens Drive, Suite AProject Number:2551Reported:Pleasanton CA, 94588Project Manager:Mansour Sepehr16-Jul-08 19:30

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

## **Pacific Analytical Laboratory**

Analyte Batch BG80701 - EPA 5030 Water MS	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BG80701-BSD1)				Prepared &	Analyzed:	07-Jul-08				
Surrogate: 4-Bromofluorobenzene	45.4		ug/l	50.0		90.8	70-130			
Surrogate: Dibromofluoromethane	43.5		"	50.0		87.0	70-130			
Surrogate: Perdeuterotoluene	41.3		"	50.0		82.6	70-130			
MTBE	86.6	0.500	"	100		86.6	70-130	5.94	20	
ETBE	114	0.500	"	100		114	70-130	0.881	20	
TAME	97.3	2.00	"	100		97.3	70-130	2.03	20	
TBA	529	2.00	"	500		106	70-130	0.950	20	
Gasoline (C6-C12)	2260	50.0	"	2000		113	70-130	1.32	20	
Benzene	107	0.500	"	100		107	70-130	0.939	20	
Toluene	107	2.00	"	100		107	70-130	0.930	20	



SOMA Environmental Engineering Inc. 6620 Owens Drive, Suite A Pleasanton CA, 94588 Project: 15101 Freedom Ave., San Leandro Project Number: 2551 Project Manager: Mansour Sepehr

**Reported:** 16-Jul-08 19:30

#### **Notes and Definitions**

DET Analyte DETECTED

- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

```
File :C:\MSDChem\1\DATA\2008-Jul-03-1532.b\03070802.D
Operator :
Acquired : 3 Jul 2008 4:01 pm using AcqMethod OXY32408.M
Instrument : PAL GCMS
Sample Name: BG80701-BLK1
Misc Info :
Vial Number: 2
```



```
File :C:\MSDChem\1\DATA\2008-Jul-03-1532.b\03070803.D
Operator :
Acquired : 3 Jul 2008 4:26 pm using AcqMethod OXY32408.M
Instrument : PAL GCMS
Sample Name: BG80701-BS1
Misc Info :
Vial Number: 3
```



```
File :C:\MSDChem\1\DATA\2008-Jul-03-1532.b\03070804.D
Operator :
Acquired : 3 Jul 2008 4:51 pm using AcqMethod OXY32408.M
Instrument : PAL GCMS
Sample Name: BG80701-BS1
Misc Info :
Vial Number: 4
```



-1