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Alameda County  
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**FIRST QUARTER 2007  
GROUNDWATER MONITORING**

**ABE Petroleum LLC  
17715 Mission Boulevard  
Hayward, California 94539**

**Prepared for  
Mr. Paul Garg  
ABE Petroleum LLC**

**Prepared by  
Sierra Environmental, Inc.**

**April 23, 2007  
Project 03-103.07**

**April 23, 2007**  
**Project 03-103.07**

**Mr. Paul Garg**  
**ABE Petroleum LLC**  
**33090 Mission Boulevard**  
**Union City, California 94587**

**Subject: Report for First Quarter 2007 Groundwater Monitoring, ABE Petroleum LLC, 17715 Mission Boulevard, Hayward, California**

**Dear Mr. Garg:**

Sierra Environmental, Inc. (Sierra) is pleased to present this report summarizing the results for the first quarter 2007 groundwater monitoring at the subject location, hereafter, referred to as Site. Figure 1 shows the Site location. The groundwater monitoring was concurred by Alameda County Health Care Services (ACHCS) in a letter dated February 16, 2000, as result of gasoline impact to groundwater beneath the Site.

On March 12, 2007, Sierra obtained and recorded groundwater data, and collected groundwater samples from seven groundwater monitoring wells (MW1 through MW7) at and near the Site for chemical analysis. Sierra submitted the samples to Entech Analytical Labs, Inc. (Entech) of Santa Clara, California for chemical analysis. Entech is an independent State-certified analytical laboratory (# 2346).

## **BACKGROUND**

Please refer to Appendix A for Site's background information.

## **GROUNDWATER MONITORING**

On March 12, 2007, Sierra performed the first quarter 2007 groundwater monitoring at the Site. Sierra's field personnel measured the groundwater levels at MW1 through MW7 (Figure 2) using an electronic sounder. Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 16.68' to 20.71' feet below TOC with a northwesterly flow direction during this monitoring event. Table I presents the groundwater measurement data.

Sierra's field personnel purged the wells using bailers. pH, temperature, and electrical conductivity of groundwater were recorded during the purging activities to affirm that groundwater in the wells have stabilized. After completion of the purging, groundwater samples MW-1 through MW-7 were collected from the wells. After collection, the groundwater from each well was transferred into clean volatile organic analysis vials. The vials were sealed with Teflon-septum screw caps, labeled, placed on ice in a cooler, and delivered to Entech with chain-of-custody documentation.

All sampling and measurement equipment were washed with Liqui-Nox<sup>®</sup> (a phosphate free laboratory detergent), and rinsed with tap water at each measurement and sampling interval. Purged and wash water was stored in 55-gallon drums at a designated location at the Site. Sierra's quality assurance/quality control (QA/QC) protocol is presented in Appendix B.

## **CHEMICAL ANALYSIS**

The samples were analyzed for TPHG using the United States Environmental Protection Agency (EPA) method GC-MS. The samples were also analyzed for benzene, toluene, ethyl benzene, total xylenes (BTEX), and fuel oxygenates using EPA method 8260B. Copies of certified analytical results and chain-of-custody documentation are presented in Appendix C. Copies of the field notes are presented in Appendix D.

## **ANALYTICAL RESULTS**

Table II presents Summary of the analytical results.

## **CONCLUSION AND RECOMMENDATIONS**

Concentrations of the gasoline constituents in groundwater beneath the Site remain high. Except for 27 $\mu$ g/L TPHG detected in the water sample collected from MW7, analytical results for the water samples collected from the remaining offsite wells were none detected. Sierra recommends performing groundwater monitoring during the 2<sup>nd</sup> quarter 2007

## **LIMITATIONS**

The content and conclusion provided by Sierra in this report are based on information collected during its assessment/monitoring, which include, but are not limited to field observations and analytical results for the groundwater samples collected at the Site.

Sierra assumes that the samples collected and laboratory results are reasonably representative of the whole Site, which may not be the case at unsampled areas.

This assessment/monitoring was performed in accordance with generally accepted principles and practices of environmental engineering and assessment in Northern California at the time of the work. This report presents our professional opinion based on our findings, technical knowledge, and experience working on similar projects. No warranty, either expressed or implied, is made. The conclusions presented are based on the analytical results and current regulatory requirements. We are not responsible for the impact of any changes in environmental standards or regulations in the future.

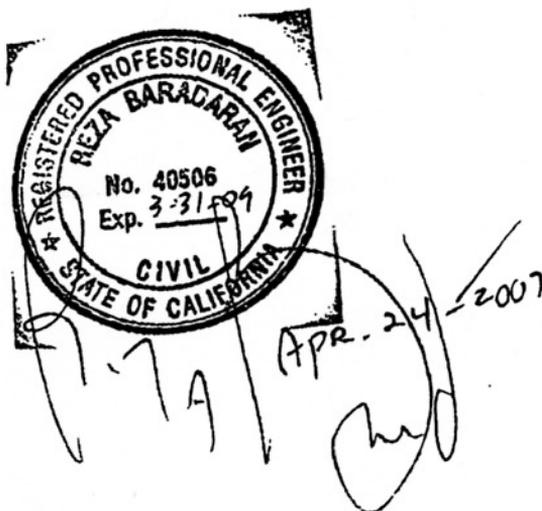
Please feel welcome to call us if you have questions.

**Very Truly Yours,  
Sierra Environmental, Inc.**

**Reza Baradaran, PE, GE  
Registered Geotechnical Engineer**



**Mitch Hajiaghahi, REA II, CAC  
Project Manager**



- Attachments:
- Table I - Groundwater Elevation Data
  - Table II - Analytical Results for Groundwater Samples
  - Figure 1 - Site Location Map
  - Figure 2 - Groundwater Monitoring Well Locations
  - Appendix A - Background Information
  - Appendix B - QA/QC Protocol
  - Appendix C - Certified Analytical Results and Chain-of-Custody Documentation
  - Appendix D - Field Notes

cc: Ms. Donna Drogos ACHCS (1 Copy)

R03-103.07\1stQ2007GWMH04232007

**TABLE I  
GROUNDWATER ELEVATION DATA**

Well ID	Measurement Date	Well Casing Diameter (in)	Well Casing Elevation (ft)	Depth to <sup>1</sup> Water (ft)	Water Table <sup>2</sup> Elevation (ft)
MW1	8-18-00	2	99.46	20.32	79.14
	3-30-01			20.30	79.16
	6-22-01			21.91	77.55
	9-20-01			23.56	75.90
	12-27-01			22.59	76.87
	9-24-02			23.69	75.77
	12-17-02			22.75	76.71
	4-2-03			21.15	78.31
	6-12-03			20.64	78.82
	9-29-03			22.95	76.51
	12-04-03			23.70	75.76
	03-09-04			19.80	79.66
	6-24-04			21.44	78.02
	9-09-04			23.30	76.16
	12-21-04			22.92	76.54
	3-16-05			18.99	80.47
	6-09-05			20.02	79.44
	9-22-05			20.69	78.77
	12-07-05			21.90	77.56
	3-10-06		17.85	81.61	
6-7-06	15.91	43.59			
9-11-06	18.60	40.90			
12-13-06	20.05	39.45			
3-12-07	19.47	40.03			
			59.50		

**TABLE I  
GROUNDWATER ELEVATION DATA  
(CONTINUED)**

Well ID	Measurement Date	Well Casing Diameter (in)	Well Casing Elevation (ft)	Depth to Water <sup>1</sup> (ft)	Water Table <sup>2</sup> Elevation (ft)
MW2	8-18-00	2	100.58	21.55	79.03
	3-30-01			21.55	79.03
	6-22-01			23.15	77.43
	9-20-01			24.78	75.80
	12-27-01			23.82	76.76
	9-24-02			24.89	75.69
	12-17-02			23.99	76.59
	4-2-03			22.32	78.26
	6-12-03			21.84	78.74
	9-29-03			24.15	76.43
	12-04-03			24.91	75.67
	03-09-04			21.05	79.53
	6-24-04			22.95	77.63
	9-09-04			24.55	76.03
	12-21-04			24.21	76.37
	3-16-05			20.29	80.29
	6-09-05			21.68	78.90
	9-22-05			21.98	78.60
	12-7-05			23.22	77.36
	3-10-06		19.15	81.43	
6-7-06	60.61	17.31	43.30		
9-11-06	19.99	40.62			
12-13-06	21.48	39.13			
3-12-07	20.71	39.90			

**TABLE I  
GROUNDWATER ELEVATION DATA  
(CONTINUED)**

Well ID	Measurement Date	Well Casing Diameter (in)	Well Casing Elevation (ft)	Depth to Water (ft)	Water Table Elevation (ft)
MW3	8-18-00	2	99.69	20.68	79.01
	3-30-01			20.68	79.01
	6-22-01			22.31	77.38
	9-20-01			23.92	75.77
	12-27-01			22.95	76.74
	9-24-02			24.03	75.66
	12-17-02			23.09	76.60
	4-2-03			21.46	78.23
	6-12-03			20.99	78.70
	9-29-03			23.30	76.39
	12-04-03			24.05	75.64
	03-09-04			20.20	79.49
	6-24-04			22.11	77.58
	9-09-04			20.20	79.49
	12-21-04			23.35	76.34
	3-16-05			19.43	80.26
	6-09-05			20.47	79.22
	9-22-05			21.13	78.56
	12-7-05			22.36	77.33
	3-10-06	18.30	81.39		
6-7-06	16.47	43.26			
9-11-06	19.13	40.60			
12-13-06	20.66	39.07			
3-12-07	19.88	39.85			
			59.73		

**TABLE I  
GROUNDWATER ELEVATION DATA  
(CONTINUED)**

Well ID	Measurement Date	Well Casing Diameter (in)	Well Casing Elevation (ft)	Depth to Water (ft)	Water Table Elevation (ft)
MW4	6-7-06	2	59.29	15.71	43.58
	9-11-06			18.40	40.89
	12-13-06			19.64	39.65
	3-12-07			19.13	40.16
MW5	6-7-06	2	56.31	13.35	42.96
	9-11-06			15.99	40.32
	12-13-06			17.45	38.86
	3-12-07			16.68	39.63
MW6	6-7-06	2	56.63	13.64	42.99
	9-11-06			16.25	40.38
	12-13-06			17.72	38.91
	3-12-07			16.95	39.68
MW7	6-7-06	2	57.50	14.50	43.00
	9-11-06			17.12	40.38
	12-13-06			18.58	38.92
	3-12-07			17.81	39.69

1. Depths to groundwater were measured to the top of the well casings
2. Water table elevations were measured in relation to mean sea level (MSL)

**TABLE II  
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES**

Sample ID	Sample Date	Sample Location	TPHG <sup>1</sup> µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MTBE <sup>2</sup> µg/L
MW-1	8-18-00	MW1	280,000	10,000	16,000	11,000	49,000	4,000
*	3-30-01		98,000	8,600	14,000	6,300	26,000	7,600
*	6-22-01		110,000	7,500	12,000	5,700	24,000	3,800
*	9-20-01		93,000	8,700	11,000	6,300	27,000	4,600
*	12-27-01		140,000	7,700	11,000	6,500	28,000	7,700
*	9-24-02		110,000	4,600	4,000	4,000	18,000	3,400
*	12-17-02		110,000	6,600	6,700	5,400	23,000	2,900
*	4-2-03		89,000	4,800	6,000	4,600	20,000	5,900
*	6-12-03		69,000	4,100	4,300	3,900	17,000	4,700
*	9-29-03		96,000	7,000	7,700	5,100	22,000	6,200
*	12-04-03		110,000	5,800	5,900	4,300	18,000	4,500
*	03-09-04		130,000	5,900	9,700	4,900	22,000	6,000
*	6-24-04		48,000	5,800	7,500	4,000	18,000	4,000
*	9-09-04		64,000	4,800	7,500	4,500	19,000	2,200
*	12-21-04		53,000	4,800	6,000	3,600	15,000	2,600
*	3-16-05		82,000	4,000	8,600	3,900	18,000	4,300
*	6-09-05		52,000	3,600	6,400	3,300	17,000	3,500
*	9-22-05		62,000	3,500	5,400	3,900	17,000	2,100
*	12-7-05		40,000	3,300	7,500	3,700	18,000	2,500
*	3-10-06		53,000	3,600	6,900	4,000	18,000	3,300
*	6-07-06		57,000	4,200	12,000	3,700	16,000	3,900
*	9-11-06		120,000	3,600	9,500	5,200	23,000	3,000
*	12-13-06		21,000	2,600	8,400	4,300	20,000	1,200
*	3-12-07		96,000	2,300	5,600	5,900	26,000	1,400

**TABLE II**  
**ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES**  
**(CONTINUED)**

Sample ID	Sample Date	Sample Location	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethyl benzene µg/L	Xylenes µg/L	MTBE µg/L
MW-2	8-18-00	MW2	290,000	3700	990	7,300	26,000	ND <sup>3</sup>
*	3-30-01		47,000	3,200	470	4,500	13,000	3,100
*	6-22-01		57,000	2,500	350	4,200	12,000	1,800
*	9-20-01		42,000	2,300	230	4,300	12,000	2,200
*	12-27-01		70,000	2,900	390	4,800	14,000	2,400
*	9-24-02		110,000	1,600	200	3,400	9,100	2,500
*	12-17-02		66,000	2,400	340	4,600	13,000	1,900
*	4-2-03		29,000	1,000	130	2,300	5,100	2,000
*	6-12-03		8,700	380	52	790	2,000	2,200
*	9-29-03		52,000	1,700	200	4,500	9,800	2,300
*	12-04-03		66,000	1,500	210	4,500	9,200	1,900
*	03-09-04		61,000	1,500	2,000	4,200	8,500	2,200
*	6-24-04		29,000	1,200	72	3,100	6,000	2,100
*	9-09-04		37,000	1,600	110	4,000	8,500	3,100
*	12-21-04		27,000	1,400	84	3,100	5,400	3,200
*	3-16-05		54,000	1,700	140	4,500	8,900	4,000
*	6-09-05		2,800	420	ND <sup>3</sup>	180	51	930
*	9-22-05		33,000	1,400	ND	3,400	5,700	2,200
*	12-7-05		20,000	1,600	130	3,400	6,000	3,000
*	3-10-06		34,000	2,100	170	4,200	7,500	4,400
*	6-07-06		29,000	2,400	250	3,600	5,100	3,200
*	9-11-06		32,000	1,100	140	2,400	3,500	1,600
*	12-13-06		36,000	1,400	220	3,400	4,900	1,900
*	3-12-07		36,000	1,200	250	3,800	5,700	1,800

**TABLE II**  
**ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES**  
**(CONTINUED)**

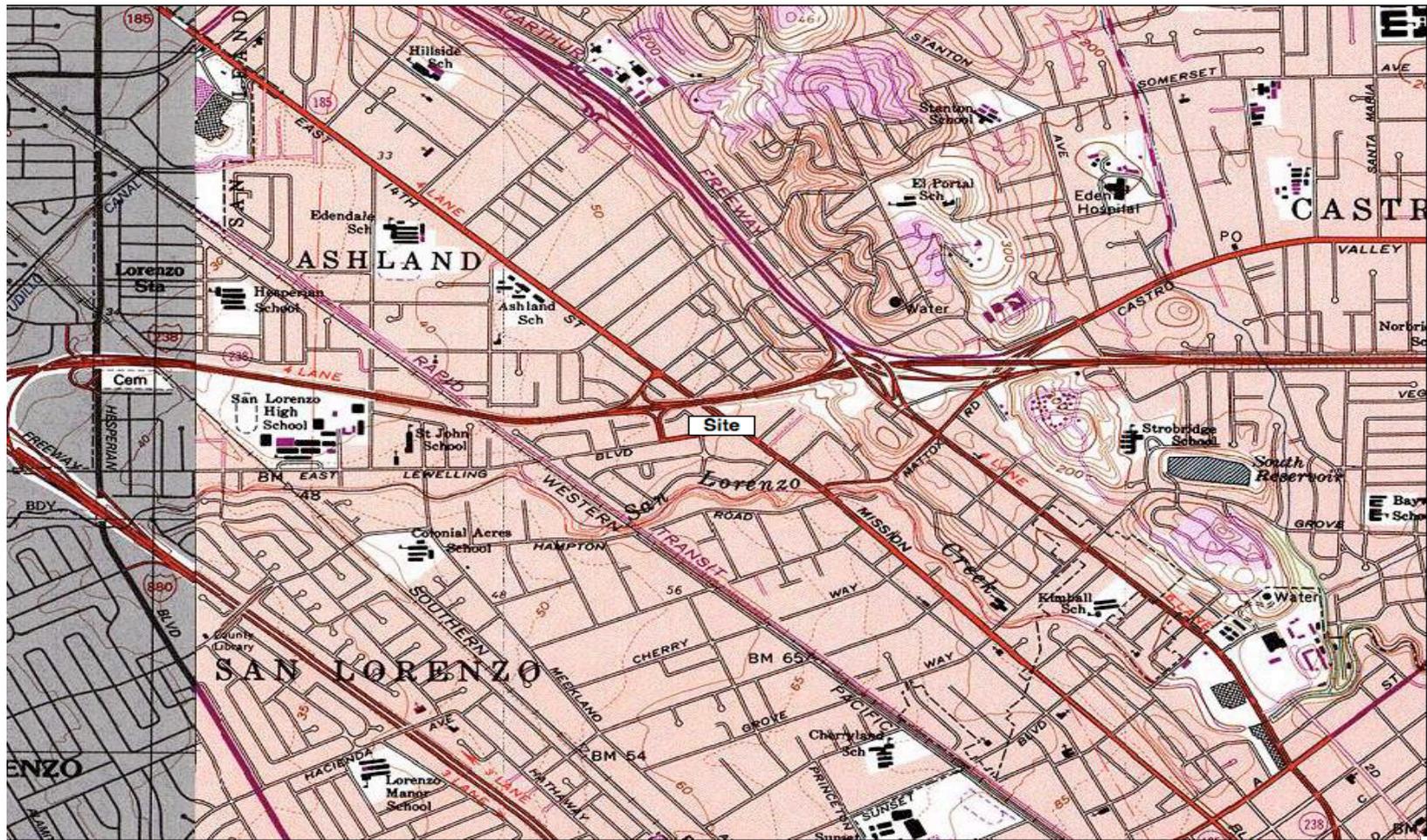
Sample ID	Sample Date	Sample Location	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MTBE µg/L
MW-3	8-18-00	MW3	46,000	3,200	550	3,700	14,000	2,200
*	3-30-01		30,000	3,300	340	2,800	9,100	4,700
*	6-22-01		35,000	4,000	340	2,900	7,600	4,100
*	9-20-01		30,000	3,800	260	2,500	6,600	5,300
*	12-27-01		39,000	4,400	340	3,000	6,700	5,500
*	9-24-02		53,000	4,100	270	3,100	6,600	6,400
*	12-17-02		40,000	3,600	240	2,200	5,700	5,200
*	4-2-03		24,000	2,000	130	1,800	3,300	3,000
*	6-12-03		26,000	2,700	180	2,000	4,200	5,500
*	9-29-03		39,000	4,000	220	3,200	5,300	4,800
*	12-04-03		40,000	3,200	180	2,200	4,300	4,400
*	03-09-04		39,000	3,100	160	2,100	4,400	4,000
*	6-24-04		21,000	3,000	110	2,300	3,800	3,400
*	9-09-04		26,000	4,100	140	2,200	4,300	6,000
*	12-21-04		20,000	3,400	99	1,700	2,900	6,400
*	3-16-05		35,000	1,800	78	1,900	2,600	4,000
*	6-09-05		2,000	55	ND	120	30	150
*	9-22-05		17,000	2,000	69	1,500	1,900	3,500
*	12-7-05		11,000	1,800	62	1,500	1,700	2,300
*	3-10-06		9,100	1,100	24	990	810	1,300
*	6-07-06		3,000	440	16	180	450	320
*	9-11-06		17,000	1,300	38	1,000	1,600	690
*	12-13-06		13,000	1,200	ND	1,000	1300	520
*	3-12-07		120,000	10,000	210	11,000	11,000	ND

**TABLE II  
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES  
(CONTINUED)**

Sample ID	Sample Date	Sample Location	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MTBE µg/L
MW-4	6-7-06	MW4	<25	<0.5	<0.5	<0.5	<0.5	<1
*	9-11-06		<25	<0.5	<0.5	<0.5	<0.5	<1
*	12-13-06		<25	<0.5	<0.5	<0.5	<0.5	<1
*	3-12-07		<25	<0.5	<0.5	<0.5	<0.5	<1
MW-5	6-7-06	MW5	<25	<0.5	<0.5	<0.5	<0.5	<1
*	9-11-06		<25	<0.5	<0.5	<0.5	<0.5	<1
*	12-13-06		<25	<0.5	<0.5	<0.5	<0.5	<1
*	3-12-07		<25	<0.5	<0.5	<0.5	<0.5	<1
MW-6	6-7-06	MW6	<25	<0.5	<0.5	<0.5	<0.5	<1
*	9-11-06		<25	<0.5	<0.5	<0.5	<0.5	<1
*	12-13-06		<25	<0.5	<0.5	<0.5	<0.5	<1
*	3-12-07		<25	<0.5	<0.5	<0.5	<0.5	<1
MW-7	6-7-06	MW7	<25	<0.5	<0.5	<0.5	<0.5	<1
*	9-11-06		<25	<0.5	<0.5	<0.5	<0.5	<1
*	12-13-06		<25	<0.5	<0.5	<0.5	<0.5	<1
*	3-12-07		27	<0.5	<0.5	<0.5	<0.5	<1

**NOTE:** Concentration of 17,000 µg/L of tert-Butanol (TBA) was also detected in sample MW-3.

1. TPHG = Total Petroleum Hydrocarbons as Gasoline
  2. MTBE = Methyl Tertiary Butyl Ether
  3. ND = Not Detected
- \* The Sample was analyzed for Fuel Oxygenates using EPA Method 8260B. Analytical result is for MTBE



TN  $\star$  MN  
15°

0 1000 FEET 0 500 1000 METERS  
Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)



**SIERRA ENVIRONMENTAL, INC.**  
*Environmental Consultants*

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**SITE LOCATION MAP**

**First Quarter 2007 Groundwater Monitoring Report  
ABE Petroleum LLC**

**17715 Mission Boulevard • Hayward • California**

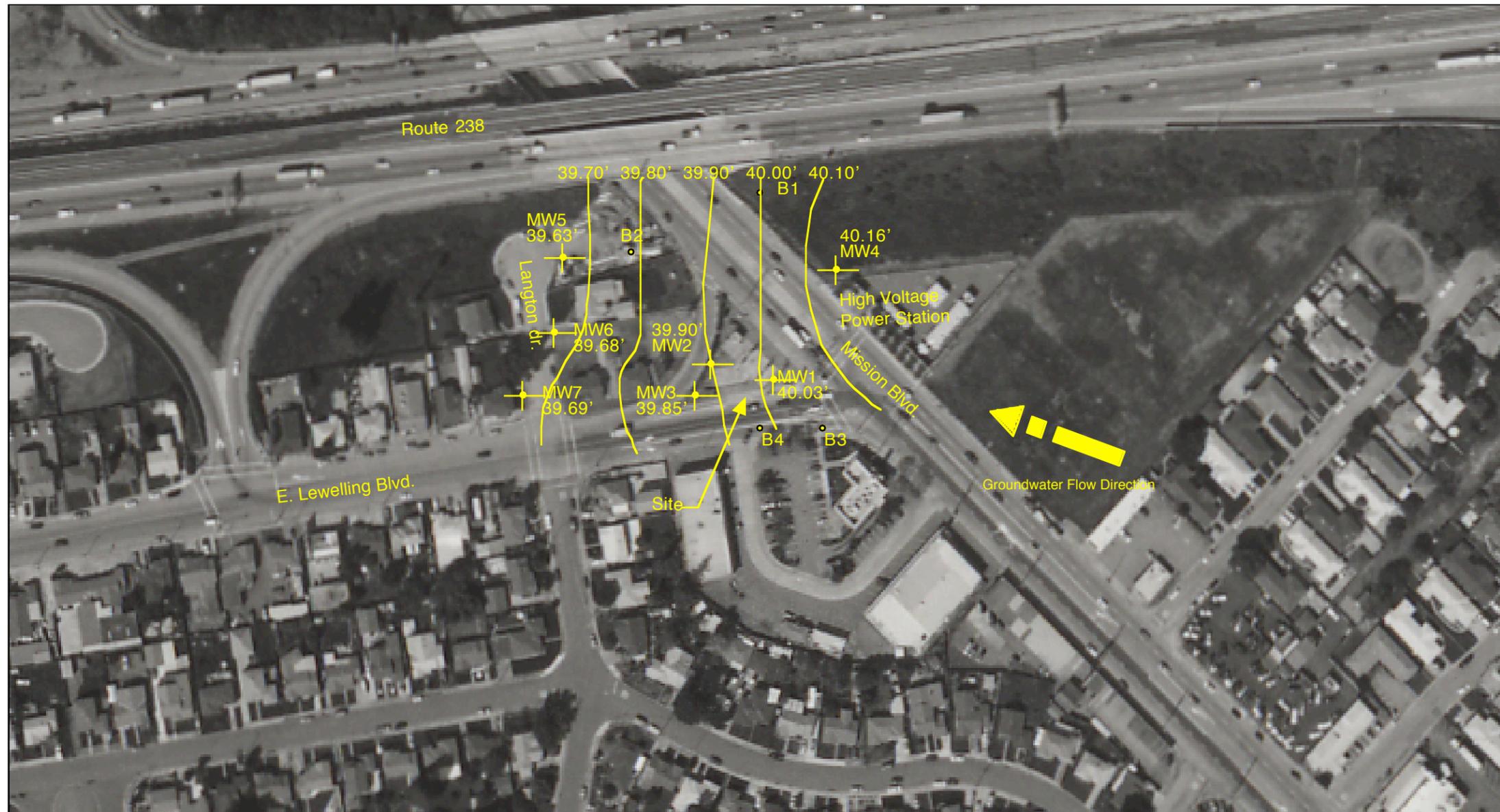
**FIGURE**

**1**

April 23, 2007  
Project 03-103.07

**LEGEND**

- B1 Historical Soil Boring Location And Designation
- ✦ MW4 Groundwater Monitoring Well Location And Designation



Source: Pacific Aerial Surveys 3-11-05

Approximate 0' 150' 300'



**SIERRA ENVIRONMENTAL, INC.**

*Environmental Consultants*

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Phone [408]971-6758 • Fax [408]971-6759

**On-Site & Off-Site Monitoring Well and Boring Locations**

**First Quarter 2007 Groundwater Monitoring  
ABE PETROLEUM LLC**

**17715 Mission Boulevard - Hayward - California**

**FIGURE**

**2**

April 23, 2007  
Project 03-103.07

**Appendix A**  
**BACKGROUND INFORMATION**

## **BACKGROUND**

On September 16, 1997, Balch Petroleum Contractors & Builders, Inc. (Balch) of Milpitas, California, removed one 2,000-gallon, two 6,000-gallon, one 10,000-gallon single-wall steel gasoline, and one 500-gallon single-wall steel waste oil USTs from the Site. Former UST locations are shown in Figure A of this appendix.

No hole or damage was observed in the tanks. No groundwater was encountered in the tank excavations. After UST removal, Sierra collected soil samples from the tank excavations for chemical analysis.

Up to 2,300 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPHG) was detected in the soil samples collected from beneath the tanks at approximately 14 feet below ground surface (bgs). The soil sample locations are shown in Figure A.

On August 14, 2000, Sierra drilled three exploratory soil borings and converted them to groundwater monitoring well MW1 through MW3. The wells are approximately 35 feet deep. Sierra collected soil and groundwater samples from the borings/wells for chemical analysis. The analytical results showed up to 720 ppm TPHG, 2.2 ppm benzene, and 3.4 ppm methyl tertiary butyl ether (MTBE) in the soil samples. Up to 290000 ppb TPHG, 10000 ppb benzene, and 4300 ppb MTBE were detected in the groundwater samples. Gasoline constituents were detected in groundwater samples collected from all three monitoring wells. Groundwater monitoring well locations are shown on Figure 2.

On March 30, 2001, Sierra performed first quarter 2001 groundwater monitoring at the Site. The field and analytical results are presented in Table I and II. Groundwater was measured at approximately 20 to 21 feet from top of the well casing (TOC) at the Site with a northwesterly flow direction.

On June 22, 2001, Sierra performed second quarter 2001 groundwater monitoring at the Site. Groundwater levels were measured at approximately 22 to 23 feet below TOC with a northwesterly flow direction during this monitoring event.

On September 20, 2001, Sierra performed third quarter 2001 groundwater monitoring at the Site. Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 24 to 25 feet below TOC with a northwesterly flow direction during this monitoring event.

On December 27, 2001, Sierra performed fourth quarter 2001 groundwater monitoring at the Site. Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 22.59 to 23.82 feet below TOC with a northwesterly flow direction during this monitoring event.

On September 24, 2002, Sierra performed third quarter 2002 groundwater monitoring at the Site. Depth of groundwater was measured to the TOC. Groundwater levels were

measured at approximately 23.69 to 24.89 feet below TOC with a northwesterly flow direction during this monitoring event.

On December 17, 2002, Sierra performed fourth quarter 2002 groundwater monitoring at the Site. Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 22.75 to 23.99 feet below TOC with a northwesterly flow direction during this monitoring event.

On April 2, 2003, Sierra performed first quarter 2003 groundwater monitoring at the Site. Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 21.25 to 22.32 feet below TOC with a westerly flow direction during this monitoring event.

On June 12, 2003, Sierra performed second quarter 2003 groundwater monitoring at the site. Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 20.64 to 20.94 feet below TOC with a westerly flow direction during this monitoring event.

Sierra prepared soil and Groundwater investigation plan and addendum to the plan dated May 27 and September 10, 2003 respectively for the site. The Addendum to the plan dated September 10, 2003 is being reviewed by ACHCS.

On September 29, 2003, Sierra performed third quarter 2003 groundwater monitoring at the site. Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 22.95 to 24.15 feet below TOC with a westerly flow direction during this monitoring event.

On December 4, 2003, Sierra performed fourth quarter 2003 groundwater monitoring at the site. Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 23.70 to 24.91 feet below TOC with a westerly flow direction during this monitoring event.

On March 9, 2004, Sierra performed first quarter 2004 groundwater monitoring at the Site. Sierra's field personnel measured the groundwater levels at MW1 through MW3 (Figure 2). Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 19.80 to 20.20 feet below TOC with a northwesterly flow direction during this monitoring event. Table I presents the groundwater measurement data.

On June 24, 2004, Sierra performed second quarter 2004 groundwater monitoring at the Site. Sierra's field personnel measured the groundwater levels at MW1 through MW3 (Figure 2). Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 21.44 to 22.95 feet below TOC with a northwesterly flow direction during this monitoring event. Table I presents the groundwater measurement data.

On September 9, 2004, Sierra performed third quarter 2004 groundwater monitoring at the Site. Sierra's field personnel measured the groundwater levels at MW1 through MW3 (Figure 2). Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 23.30' to 24.55' feet below TOC with a northwesterly flow direction during this monitoring event. Table I presents the groundwater measurement data.

On December 21, 2004, Sierra performed fourth quarter 2004 groundwater monitoring at the Site. Sierra's field personnel measured the groundwater levels at MW1 through MW3 (Figure 2). Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 22.92' to 24.21' feet below TOC with a northwesterly flow direction during this monitoring event. Table I presents the groundwater measurement data.

On March 16, 2005, Sierra performed first quarter 2004 groundwater monitoring at the Site. Sierra's field personnel measured the groundwater levels at MW1 through MW3 (Figure 2). Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 18.99' to 20.29' feet below TOC with a northwesterly flow direction during this monitoring event. Table I presents the groundwater measurement data.

On June 9, 2005, Sierra performed second quarter 2005 groundwater monitoring at the Site. Sierra's field personnel measured the groundwater levels at MW1 through MW3 (Figure 2). Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 20.02' to 21.68' feet below TOC with a northwesterly flow direction during this monitoring event. Table I presents the groundwater measurement data.

On September 22, 2005, Sierra performed Third quarter 2005 groundwater monitoring at the Site. Sierra's field personnel measured the groundwater levels at MW1 through MW3 (Figure 2). Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 20.69' to 23.22' feet below TOC with a northwesterly flow direction during this monitoring event. Table I presents the groundwater measurement data.

On December 7, 2005, Sierra performed fourth quarter 2005 groundwater monitoring at the Site. Sierra's field personnel measured the groundwater levels at MW1 through MW3 (Figure 2). Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 21.90' to 23.93' feet below TOC with a northwesterly flow direction during this monitoring event. Table I presents the groundwater measurement data.

On May 4, 2006, Sierra retained services of Vironex Environmental Services (Vironex) to drill soil boring B1 through B4 at the Jack In The Box and Cal/Trans properties. Sierra collected grab groundwater samples from the borings for chemical analysis. Up to 370 µg/l total petroleum hydrocarbons as gasoline (TPHG), 16 µg/l toluene, 15 µg/l ethylbenzene, and 100 µg/l xylenes were detected in the water sample collected from

the borings (B3 and B4) advanced at the Jack In The Box property. No benzene or methyl tertiary butyl ether (MTBE) was detected in water samples collected at this property. Only 3.2 µg/l MTBE was detected in the water samples collected from the borings advanced at the Cal/Trans properties. The MTBE was detected in boring B2 located within 300 feet northwest at hydraulic down gradient of the Site. On May 10 and 11, 2006, Sierra retained services of Hew Drilling Company, Inc. (Hew) to construct 4 groundwater monitoring wells (MW4 through MW7) at the CalTrans properties, and Langton Drive. After the well construction, Sierra had the wellheads surveyed, developed the wells, and collected groundwater samples from the wells for chemical analysis. No gasoline constituents were detected in the groundwater samples collected from the wells. The analytical results for the soil and groundwater samples collected from the boring and the wells suggest the tip of the dissolved MTBE plume in the groundwater is confined within 300 feet northwest of the Site. The length of the dissolved plume of other gasoline constituents in groundwater is shorter than the MTBE plume.

On May 10<sup>th</sup> and 11<sup>th</sup>, 2006, Sierra constructed groundwater monitoring well MW4 through MW7 at the Cal Tran properties in northwest and east of the Site and two of those monitoring wells were constructed along the Langton Drive in southwest and west of the site.

More than 72 hours after well construction, Sierra developed the wells to clean and stabilize the sand and aquifer material around the slotted section of the wells. Before the development, Sierra measured the depth of the groundwater level in the wells. The water extracted from the well during the well development activities was stored in 55-gallon drums for future proper disposal.

On July 7, 2006, Sierra retained CTL Engineering, Inc. (CTL) to survey the wellhead elevations with respect to mean sea level, as well as obtain horizontal and vertical controls using Global Positioning System (GPS). The wellhead elevations were tied to the monitoring wells MW1 through MW3 at the Site.

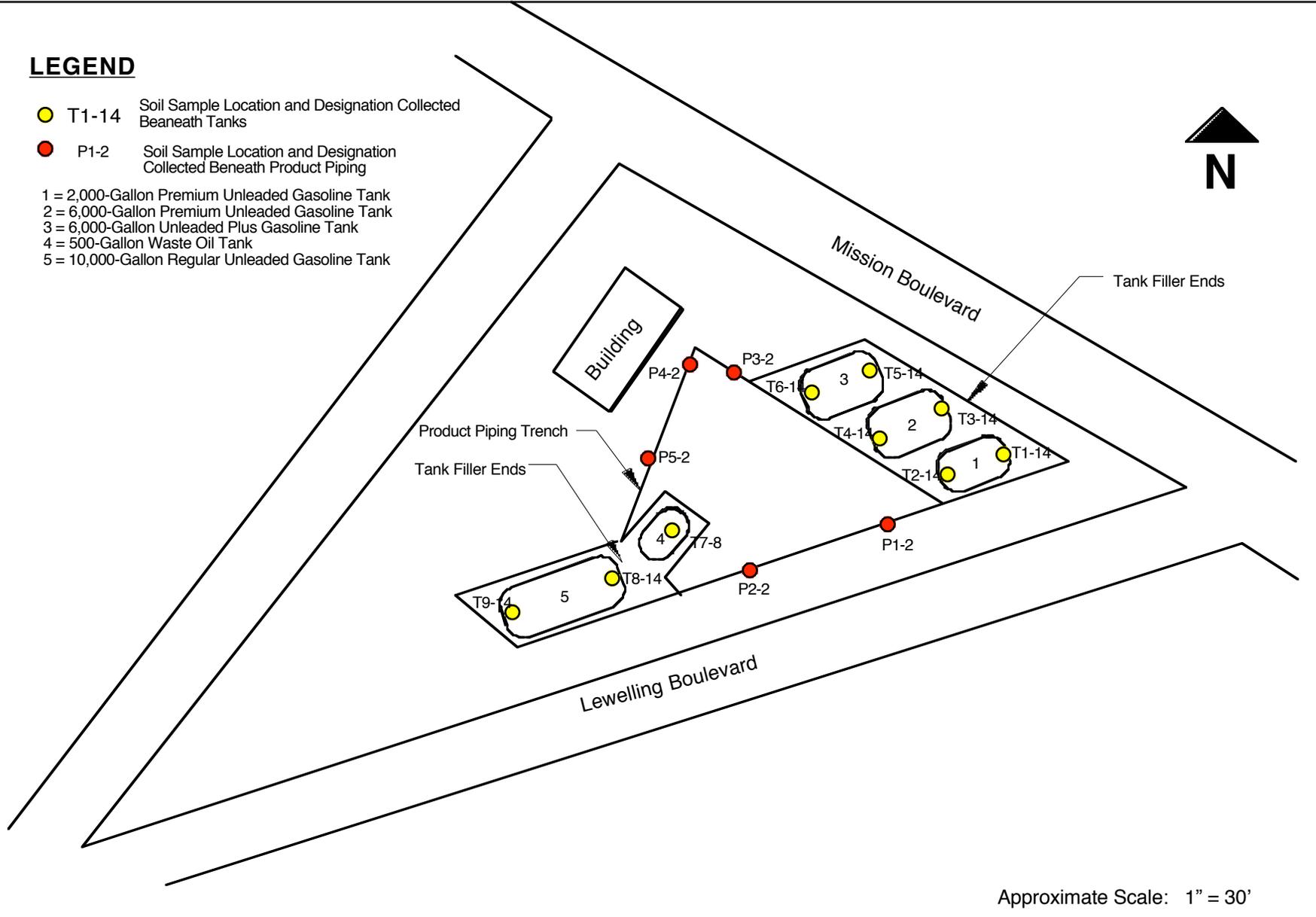
Based on the groundwater elevation measurements obtained on July 7, 2006, groundwater flow direction is toward northwest with an approximate gradient of 0.02 ft/ft. Figure 4 also shows groundwater elevation contour.

On September 11, 2006, Sierra performed third quarter 2006, groundwater monitoring at the Site. Sierra's field personnel measured the groundwater levels at MW1 through MW7 (Figure 2). Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 15.99' to 19.99' feet below TOC with a northwesterly flow direction during this monitoring event. Table I presents the groundwater measurement data.

On December 13, 2006, Sierra performed fourth quarter 2006, groundwater monitoring at the Site. Sierra's field personnel measured the groundwater levels at MW1 through MW7 (Figure 2). Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 17.45' to 21.48' feet below TOC with a northwesterly flow direction during this monitoring event. Table I presents the groundwater measurement data.

**LEGEND**

- T1-14 Soil Sample Location and Designation Collected Beneath Tanks
  - P1-2 Soil Sample Location and Designation Collected Beneath Product Piping
- 1 = 2,000-Gallon Premium Unleaded Gasoline Tank  
 2 = 6,000-Gallon Premium Unleaded Gasoline Tank  
 3 = 6,000-Gallon Unleaded Plus Gasoline Tank  
 4 = 500-Gallon Waste Oil Tank  
 5 = 10,000-Gallon Regular Unleaded Gasoline Tank



Approximate Scale: 1" = 30'



**SIERRA ENVIRONMENTAL, INC.**  
*Environmental Consultants*

980 W. Taylor St., San Jose, CA 95126  
 Phone [408]971-6758 • Fax [408] 971-6759

**Former UST and Soil Sample Locations**  
**First Quarter 2007 Groundwater Monitoring**  
**ABE Petroleum LLC**

**17715 Mission Boulevard • Hayward • California**

**FIGURE**

**A**

April 23, 2007  
 Project 03-103.07

**Appendix B**  
**QA/QC PROTOCOL**

## **QA/QC PROTOCOL**

### **Groundwater Level and Well Depth Measurements**

Groundwater level and well depths are measured using electrical sounder. An electrical sounder consists of a reel, two-conductor cable, a water sensor, and a control panel with a buzzer. To measure groundwater level, the sensor is lowered into a well. A low current circuit is completed when the sensor makes contact with water. The current in the circuit is then amplified and activates a buzzer which produce an audible signal. Cable markings are divided at 0.05-foot increments. Well depths are measured to the nearest 0.01 foot. Groundwater levels are measured before and after sample collection to ensure data accuracy.

### **Well Purging**

Low flow submersible electrical pumps or bailers are used to purge groundwater monitoring wells. Approximately 3 to 5 well casing volume of water is removed from the well as a measure to stabilize natural, and representative groundwater in each well. pH, electrical conductivity, and temperature of the purged water is measured and recorded at approximately each casing volume interval. Purge water is stabilized when pH is recorded within 0.5 unit, electrical conductivity is within 5 percent, and temperature is within 1.0 degree Celsius.

### **Groundwater Sampling**

Groundwater samples are transferred into appropriate containers provided by certified analytical laboratories. The containers include proper preservatives, and labels with appropriate project information. Groundwater is transferred into the containers with as little agitation as possible. After collection, containers are sealed and checked to ensure that no head space or air bubbles are present in the sample.

After collection, if required, samples are kept in a cooler to be delivered to analytical laboratory with chain-of-custody documentation.

### **Equipment Decontamination**

All sampling equipment are washed with Liqui-Nox<sup>®</sup> (a phosphate free laboratory detergent), and rinsed with tap water before each sampling event, and at each sampling interval. To reduce the risk of cross contamination, wells which have shown lower levels of contamination historically are purged and sampled first.

## **Analytical Procedures**

Samples are analyzed by an accredited State-certified analytical laboratory using procedures prescribed by United State Environmental Protection Agency (EPA) and other Federal, State, and Local agencies. At minimum a field blank is analyzed with each group of samples for quality assurance measures. At minimum two qualified personnel review analytical results and compare them with historical data for consistency and accuracy.

## **Field Reports**

All field observations are documented in field reports. A field report contain project information, climatic condition, contractor/subcontractor information, field observation, discussions and communications during each particular field activity. Field reports are stored in appropriate project files. Project managers review field reports to obtain necessary information regarding the status of each project on daily basis.

**Appendix C**  
**CERTIFIED ANALYTICAL REPORTS AND**  
**CHAIN-OF-CUSTODY DOCUMENTATION**

# ***Entech Analytical Labs, Inc.***

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**Fax: (408) 588-0201**

**Mitch Hajiaghai  
Sierra Environmental, Inc.  
980 West Taylor Street  
San Jose, CA 95126**

**Lab Certificate Number: 54360**

**Issued: 03/26/2007**

**Project Number: 03-103.00  
Project Name: ABE Petroleum  
Project Location: 17715 Mission Blvd**

**Global ID: T0600102154**

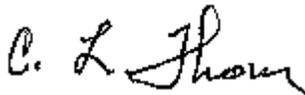
## **Certificate of Analysis - Final Report**

On March 12, 2007, samples were received under chain of custody for analysis.  
Entech analyzes samples "as received" unless otherwise noted. The following results are included:

<u>Matrix</u>	<u>Test / Comments</u>
Liquid	Electronic Deliverables for Geotracker TPH-Purgeable: GC/MS VOCs: EPA 8260B

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).  
If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,



C. L. Thom  
Laboratory Director

# Entech Analytical Labs, Inc.

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Sierra Environmental, Inc.  
980 West Taylor Street  
San Jose, CA 95126  
Attn: Mitch Hajiaghai

Project Number: 03-103.00  
Project Name: ABE Petroleum  
Project Location: 17715 Mission Blvd  
GlobalID: T0600102154

## Certificate of Analysis - Data Report

Samples Received: 03/12/2007  
Sample Collected by: Client

Lab # : 54360-001      Sample ID: MW-1

Matrix: Liquid      Sample Date: 3/12/2007

### VOCs: EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	2300		200	100	µg/L	N/A	N/A	3/14/2007	WM7070314
Toluene	5600		200	100	µg/L	N/A	N/A	3/14/2007	WM7070314
Ethyl Benzene	5900		200	100	µg/L	N/A	N/A	3/14/2007	WM7070314
Xylenes, Total	26000		200	100	µg/L	N/A	N/A	3/14/2007	WM7070314
Methyl-t-butyl Ether	1400		200	200	µg/L	N/A	N/A	3/14/2007	WM7070314
tert-Butyl Ethyl Ether	ND		200	1000	µg/L	N/A	N/A	3/14/2007	WM7070314
tert-Butanol (TBA)	ND		200	2000	µg/L	N/A	N/A	3/14/2007	WM7070314
Diisopropyl Ether	ND		200	1000	µg/L	N/A	N/A	3/14/2007	WM7070314
tert-Amyl Methyl Ether	ND		200	1000	µg/L	N/A	N/A	3/14/2007	WM7070314

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	101	60 - 130
Dibromofluoromethane	104	60 - 130
Toluene-d8	105	60 - 130

Analyzed by: BDhabalia  
Reviewed by: MaiChiTu

### TPH-Purgeable: GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	96000		200	5000	µg/L	N/A	N/A	3/14/2007	WM7070314

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	101	60 - 130
Dibromofluoromethane	108	60 - 130
Toluene-d8	105	60 - 130

Analyzed by: BDhabalia  
Reviewed by: MaiChiTu

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Attn: Mitch Hajiaghai

Project Number: 03-103.00  
Project Name: ABE Petroleum  
Project Location: 17715 Mission Blvd  
GlobalID: T0600102154

## Certificate of Analysis - Data Report

Samples Received: 03/12/2007  
Sample Collected by: Client

Lab # : 54360-002

Sample ID: MW-2

Matrix: Liquid Sample Date: 3/12/2007

### VOCs: EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	1200		100	50	µg/L	N/A	N/A	3/14/2007	WM7070314
Toluene	250		100	50	µg/L	N/A	N/A	3/14/2007	WM7070314
Ethyl Benzene	3800		100	50	µg/L	N/A	N/A	3/14/2007	WM7070314
Xylenes, Total	5700		100	50	µg/L	N/A	N/A	3/14/2007	WM7070314
Methyl-t-butyl Ether	1800		100	100	µg/L	N/A	N/A	3/14/2007	WM7070314
tert-Butyl Ethyl Ether	ND		100	500	µg/L	N/A	N/A	3/14/2007	WM7070314
tert-Butanol (TBA)	ND		100	1000	µg/L	N/A	N/A	3/14/2007	WM7070314
Diisopropyl Ether	ND		100	500	µg/L	N/A	N/A	3/14/2007	WM7070314
tert-Amyl Methyl Ether	ND		100	500	µg/L	N/A	N/A	3/14/2007	WM7070314

### Surrogate

### Surrogate Recovery

### Control Limits (%)

Analyzed by: BDhabalia

4-Bromofluorobenzene  
Dibromofluoromethane  
Toluene-d8

102  
103  
104

60 - 130  
60 - 130  
60 - 130

Reviewed by: MaiChiTu

### TPH-Purgeable: GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	36000		100	2500	µg/L	N/A	N/A	3/14/2007	WM7070314

### Surrogate

### Surrogate Recovery

### Control Limits (%)

Analyzed by: BDhabalia

4-Bromofluorobenzene  
Dibromofluoromethane  
Toluene-d8

101  
107  
104

60 - 130  
60 - 130  
60 - 130

Reviewed by: MaiChiTu

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Project Number: 03-103.00  
Project Name: ABE Petroleum  
Project Location: 17715 Mission Blvd  
GlobalID: T0600102154

## Certificate of Analysis - Data Report

Samples Received: 03/12/2007  
Sample Collected by: Client

Lab # : 54360-003

Sample ID: MW-3

Matrix: Liquid Sample Date: 3/12/2007

### VOCs: EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	10000		200	100	µg/L	N/A	N/A	3/14/2007	WM7070314
Toluene	210		200	100	µg/L	N/A	N/A	3/14/2007	WM7070314
Ethyl Benzene	11000		200	100	µg/L	N/A	N/A	3/14/2007	WM7070314
Xylenes, Total	11000		200	100	µg/L	N/A	N/A	3/14/2007	WM7070314
Methyl-t-butyl Ether	5700		200	200	µg/L	N/A	N/A	3/14/2007	WM7070314
tert-Butyl Ethyl Ether	ND		200	1000	µg/L	N/A	N/A	3/14/2007	WM7070314
tert-Butanol (TBA)	17000		200	2000	µg/L	N/A	N/A	3/14/2007	WM7070314
Diisopropyl Ether	ND		200	1000	µg/L	N/A	N/A	3/14/2007	WM7070314
tert-Amyl Methyl Ether	ND		200	1000	µg/L	N/A	N/A	3/14/2007	WM7070314

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	101	60 - 130
Dibromofluoromethane	104	60 - 130
Toluene-d8	104	60 - 130

Analyzed by: BDhabalia  
Reviewed by: MaiChiTu

### TPH-Purgeable: GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	120000		200	5000	µg/L	N/A	N/A	3/14/2007	WM7070314

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	100	60 - 130
Dibromofluoromethane	108	60 - 130
Toluene-d8	103	60 - 130

Analyzed by: BDhabalia  
Reviewed by: MaiChiTu

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Attn: Mitch Hajiaghai

Project Number: 03-103.00  
Project Name: ABE Petroleum  
Project Location: 17715 Mission Blvd  
GlobalID: T0600102154

## Certificate of Analysis - Data Report

Samples Received: 03/12/2007  
Sample Collected by: Client

Lab # : 54360-004    Sample ID: MW-4

Matrix: Liquid    Sample Date: 3/12/2007

### VOCs: EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	3/15/2007	WM7070315
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	3/15/2007	WM7070315
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	3/15/2007	WM7070315
Xylenes, Total	ND		1.0	0.50	µg/L	N/A	N/A	3/15/2007	WM7070315
Methyl-t-butyl Ether	ND		1.0	1.0	µg/L	N/A	N/A	3/15/2007	WM7070315
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	3/15/2007	WM7070315
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	3/15/2007	WM7070315
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	3/15/2007	WM7070315
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	3/15/2007	WM7070315

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	103	60 - 130
Dibromofluoromethane	105	60 - 130
Toluene-d8	102	60 - 130

Analyzed by: BDhabalia  
Reviewed by: xbian

### TPH-Purgeable: GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	25	µg/L	N/A	N/A	3/15/2007	WM7070315

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	102	60 - 130
Dibromofluoromethane	110	60 - 130
Toluene-d8	102	60 - 130

Analyzed by: BDhabalia  
Reviewed by: xbian

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Project Number: 03-103.00  
Project Name: ABE Petroleum  
Project Location: 17715 Mission Blvd  
GlobalID: T0600102154

## Certificate of Analysis - Data Report

Samples Received: 03/12/2007  
Sample Collected by: Client

Lab # : 54360-005

Sample ID: MW-5

Matrix: Liquid Sample Date: 3/12/2007

### VOCs: EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	3/13/2007	WM7070313
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	3/13/2007	WM7070313
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	3/13/2007	WM7070313
Xylenes, Total	ND		1.0	0.50	µg/L	N/A	N/A	3/13/2007	WM7070313
Methyl-t-butyl Ether	ND		1.0	1.0	µg/L	N/A	N/A	3/13/2007	WM7070313
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	3/13/2007	WM7070313
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	3/13/2007	WM7070313
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	3/13/2007	WM7070313
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	3/13/2007	WM7070313

### Surrogate

### Surrogate Recovery

### Control Limits (%)

Analyzed by: BDhabalia

4-Bromofluorobenzene  
Dibromofluoromethane  
Toluene-d8

101  
102  
103

60 - 130  
60 - 130  
60 - 130

Reviewed by: xbian

### TPH-Purgeable: GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	25	µg/L	N/A	N/A	3/13/2007	WM7070313

### Surrogate

### Surrogate Recovery

### Control Limits (%)

Analyzed by: BDhabalia

4-Bromofluorobenzene  
Dibromofluoromethane  
Toluene-d8

100  
107  
103

60 - 130  
60 - 130  
60 - 130

Reviewed by: xbian

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980 West Taylor Street  
San Jose, CA 95126  
Attn: Mitch Hajiaghai

Project Number: 03-103.00  
Project Name: ABE Petroleum  
Project Location: 17715 Mission Blvd  
GlobalID: T0600102154

## Certificate of Analysis - Data Report

Samples Received: 03/12/2007  
Sample Collected by: Client

Lab # : 54360-006 Sample ID: MW-6

Matrix: Liquid Sample Date: 3/12/2007

### VOCs: EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	3/13/2007	WM7070313
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	3/13/2007	WM7070313
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	3/13/2007	WM7070313
Xylenes, Total	ND		1.0	0.50	µg/L	N/A	N/A	3/13/2007	WM7070313
Methyl-t-butyl Ether	ND		1.0	1.0	µg/L	N/A	N/A	3/13/2007	WM7070313
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	3/13/2007	WM7070313
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	3/13/2007	WM7070313
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	3/13/2007	WM7070313
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	3/13/2007	WM7070313

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	101	60 - 130
Dibromofluoromethane	104	60 - 130
Toluene-d8	104	60 - 130

Analyzed by: BDhabalia  
Reviewed by: xbian

### TPH-Purgeable: GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	25	µg/L	N/A	N/A	3/13/2007	WM7070313

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	101	60 - 130
Dibromofluoromethane	108	60 - 130
Toluene-d8	104	60 - 130

Analyzed by: BDhabalia  
Reviewed by: xbian

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Sierra Environmental, Inc.  
980 West Taylor Street  
San Jose, CA 95126  
Attn: Mitch Hajiaghai

Project Number: 03-103.00  
Project Name: ABE Petroleum  
Project Location: 17715 Mission Blvd  
GlobalID: T0600102154

## Certificate of Analysis - Data Report

Samples Received: 03/12/2007

Sample Collected by: Client

Lab # : 54360-007 Sample ID: MW-7

Matrix: Liquid Sample Date: 3/12/2007

### VOCs: EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	3/13/2007	WM7070313
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	3/13/2007	WM7070313
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	3/13/2007	WM7070313
Xylenes, Total	ND		1.0	0.50	µg/L	N/A	N/A	3/13/2007	WM7070313
Methyl-t-butyl Ether	ND		1.0	1.0	µg/L	N/A	N/A	3/13/2007	WM7070313
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	3/13/2007	WM7070313
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	3/13/2007	WM7070313
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	3/13/2007	WM7070313
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	3/13/2007	WM7070313

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	103	60 - 130
Dibromofluoromethane	107	60 - 130
Toluene-d8	103	60 - 130

Analyzed by: BDhabalia

Reviewed by: xbian

### TPH-Purgeable: GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	27		1.0	25	µg/L	N/A	N/A	3/13/2007	WM7070313
Atypical pattern.									

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	102	60 - 130
Dibromofluoromethane	112	60 - 130
Toluene-d8	103	60 - 130

Analyzed by: BDhabalia

Reviewed by: xbian

# Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Liquid - VOCs: EPA 8260B

QC Batch ID: WM7070313

Validated by: xbian - 03/15/07

QC Batch Analysis Date: 3/13/2007

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Diisopropyl Ether	ND	1	5.0	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
tert-Amyl Methyl Ether	ND	1	5.0	µg/L
tert-Butanol (TBA)	ND	1	10	µg/L
tert-Butyl Ethyl Ether	ND	1	5.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	0.50	µg/L
<b>Surrogate for Blank</b>	<b>% Recovery</b>	<b>Control Limits</b>		
4-Bromofluorobenzene	106	60 - 130		
Dibromofluoromethane	103	60 - 130		
Toluene-d8	104	60 - 130		

Method Blank - Liquid - TPH-Purgeable: GC/MS

QC Batch ID: WM7070313

Validated by: xbian - 03/15/07

QC Batch Analysis Date: 3/13/2007

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	25	µg/L
<b>Surrogate for Blank</b>	<b>% Recovery</b>	<b>Control Limits</b>		
4-Bromofluorobenzene	105	60 - 130		
Dibromofluoromethane	107	60 - 130		
Toluene-d8	104	60 - 130		

# Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

LCS / LCSD - Liquid - VOCs: EPA 8260B

QC Batch ID: WM7070313

Reviewed by: xbian - 03/15/07

QC Batch ID Analysis Date: 3/13/2007

## LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
1,1-Dichloroethene	<0.50	20	17.1	µg/L	85.5	70 - 130
Benzene	<0.50	20	18.2	µg/L	91.0	70 - 130
Chlorobenzene	<0.50	20	18.4	µg/L	92.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	18.3	µg/L	91.5	70 - 130
Toluene	<0.50	20	18.4	µg/L	92.0	70 - 130
Trichloroethene	<0.50	20	19.6	µg/L	98.0	70 - 130

### Surrogate

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	102.0	60 - 130
Dibromofluoromethane	111.0	60 - 130
Toluene-d8	104.0	60 - 130

## LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.50	20	21.7	µg/L	108	24	25.0	70 - 130
Benzene	<0.50	20	22.0	µg/L	110	19	25.0	70 - 130
Chlorobenzene	<0.50	20	22.6	µg/L	113	20	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	22.6	µg/L	113	21	25.0	70 - 130
Toluene	<0.50	20	22.8	µg/L	114	21	25.0	70 - 130
Trichloroethene	<0.50	20	23.6	µg/L	118	19	25.0	70 - 130

### Surrogate

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	102.0	60 - 130
Dibromofluoromethane	110.0	60 - 130
Toluene-d8	104.0	60 - 130

LCS / LCSD - Liquid - TPH-Purgeable: GC/MS

QC Batch ID: WM7070313

Reviewed by: xbian - 03/15/07

QC Batch ID Analysis Date: 3/13/2007

## LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	126	µg/L	101	65 - 135

### Surrogate

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	101.0	60 - 130
Dibromofluoromethane	110.0	60 - 130
Toluene-d8	105.0	60 - 130

## LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	121	µg/L	96.9	4.2	30.0	65 - 135

### Surrogate

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	102.0	60 - 130
Dibromofluoromethane	107.0	60 - 130
Toluene-d8	104.0	60 - 130

# Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Liquid - VOCs: EPA 8260B

QC Batch ID: WM7070314

Validated by: MaiChiTu - 03/16/07

QC Batch Analysis Date: 3/14/2007

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Diisopropyl Ether	ND	1	5.0	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
tert-Amyl Methyl Ether	ND	1	5.0	µg/L
tert-Butanol (TBA)	ND	1	10	µg/L
tert-Butyl Ethyl Ether	ND	1	5.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	0.50	µg/L

**Surrogate for Blank    % Recovery    Control Limits**

4-Bromofluorobenzene	102	60 - 130
Dibromofluoromethane	102	60 - 130
Toluene-d8	104	60 - 130

Method Blank - Liquid - TPH-Purgeable: GC/MS

QC Batch ID: WM7070314

Validated by: MaiChiTu - 03/16/07

QC Batch Analysis Date: 3/14/2007

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	25	µg/L

**Surrogate for Blank    % Recovery    Control Limits**

4-Bromofluorobenzene	101	60 - 130
Dibromofluoromethane	106	60 - 130
Toluene-d8	104	60 - 130

# Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

LCS / LCSD - Liquid - VOCs: EPA 8260B

QC Batch ID: WM7070314

Reviewed by: MaiChiTu - 03/16/07

QC Batch ID Analysis Date: 3/14/2007

## LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
1,1-Dichloroethene	<0.50	20	17.9	µg/L	89.5	70 - 130
Benzene	<0.50	20	19.0	µg/L	95.0	70 - 130
Chlorobenzene	<0.50	20	19.6	µg/L	98.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	19.2	µg/L	96.0	70 - 130
Toluene	<0.50	20	19.4	µg/L	97.0	70 - 130
Trichloroethene	<0.50	20	20.2	µg/L	101	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	99.7	60 - 130
Dibromofluoromethane	107.0	60 - 130
Toluene-d8	104.0	60 - 130

## LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.50	20	17.7	µg/L	88.5	1.1	25.0	70 - 130
Benzene	<0.50	20	18.9	µg/L	94.5	0.53	25.0	70 - 130
Chlorobenzene	<0.50	20	19.8	µg/L	99.0	1.0	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	18.8	µg/L	94.0	2.1	25.0	70 - 130
Toluene	<0.50	20	19.5	µg/L	97.5	0.51	25.0	70 - 130
Trichloroethene	<0.50	20	20.1	µg/L	100	0.50	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	99.2	60 - 130
Dibromofluoromethane	104.0	60 - 130
Toluene-d8	104.0	60 - 130

LCS / LCSD - Liquid - TPH-Purgeable: GC/MS

QC Batch ID: WM7070314

Reviewed by: MaiChiTu - 03/16/07

QC Batch ID Analysis Date: 3/14/2007

## LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	145	µg/L	116	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	104.0	60 - 130
Dibromofluoromethane	105.0	60 - 130
Toluene-d8	107.0	60 - 130

## LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	128	µg/L	102	13	30.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	101.0	60 - 130
Dibromofluoromethane	106.0	60 - 130
Toluene-d8	103.0	60 - 130

# Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Liquid - VOCs: EPA 8260B

QC Batch ID: WM7070315

Validated by: xbian - 03/16/07

QC Batch Analysis Date: 3/15/2007

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Diisopropyl Ether	ND	1	5.0	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
tert-Amyl Methyl Ether	ND	1	5.0	µg/L
tert-Butanol (TBA)	ND	1	10	µg/L
tert-Butyl Ethyl Ether	ND	1	5.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	0.50	µg/L

**Surrogate for Blank    % Recovery    Control Limits**

4-Bromofluorobenzene	102	60 - 130
Dibromofluoromethane	102	60 - 130
Toluene-d8	103	60 - 130

Method Blank - Liquid - TPH-Purgeable: GC/MS

QC Batch ID: WM7070315

Validated by: xbian - 03/16/07

QC Batch Analysis Date: 3/15/2007

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	25	µg/L

**Surrogate for Blank    % Recovery    Control Limits**

4-Bromofluorobenzene	102	60 - 130
Dibromofluoromethane	107	60 - 130
Toluene-d8	103	60 - 130

# Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

LCS / LCSD - Liquid - VOCs: EPA 8260B

QC Batch ID: WM7070315

Reviewed by: xbian - 03/16/07

QC Batch ID Analysis Date: 3/15/2007

## LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
1,1-Dichloroethene	<0.50	20	20.3	µg/L	102	70 - 130
Benzene	<0.50	20	21.5	µg/L	108	70 - 130
Chlorobenzene	<0.50	20	22.5	µg/L	112	70 - 130
Methyl-t-butyl Ether	<1.0	20	20.4	µg/L	102	70 - 130
Toluene	<0.50	20	22.4	µg/L	112	70 - 130
Trichloroethene	<0.50	20	23.6	µg/L	118	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	101.0	60 - 130
Dibromofluoromethane	103.0	60 - 130
Toluene-d8	103.0	60 - 130

## LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.50	20	17.6	µg/L	88.0	14	25.0	70 - 130
Benzene	<0.50	20	18.2	µg/L	91.0	17	25.0	70 - 130
Chlorobenzene	<0.50	20	19.2	µg/L	96.0	16	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	19.5	µg/L	97.5	4.5	25.0	70 - 130
Toluene	<0.50	20	18.9	µg/L	94.5	17	25.0	70 - 130
Trichloroethene	<0.50	20	19.5	µg/L	97.5	19	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	101.0	60 - 130
Dibromofluoromethane	108.0	60 - 130
Toluene-d8	103.0	60 - 130

LCS / LCSD - Liquid - TPH-Purgeable: GC/MS

QC Batch ID: WM7070315

Reviewed by: xbian - 03/16/07

QC Batch ID Analysis Date: 3/15/2007

## LCS

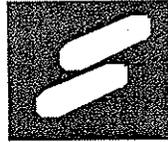
Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	139	µg/L	111	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	99.6	60 - 130
Dibromofluoromethane	104.0	60 - 130
Toluene-d8	102.0	60 - 130

## LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	131	µg/L	105	5.7	30.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	102.0	60 - 130
Dibromofluoromethane	108.0	60 - 130
Toluene-d8	103.0	60 - 130



SIERRA ENVIRONMENTAL, INC.  
Environmental Consultants

### CHAIN OF CUSTODY

Project Name: ABE Project No: 03-103.00 Date: 3-12-07  
Project Location: 17715 Mission Boulevard Client: Paul Garg Sampler: Mike Hagi

Sample ID	Date Sampled	Sampling Time	Matrix	N° of Containers	Analysis Requested						Turnaround Time		
					8015/8020 TPHG BTEX, MTBE	8015 TPHD	418.1 TRPH	BTEX 8020	TPHG&BTEX Fuel Oxygenates 8260B				
54360													
MW-1	3/12/07	001	Water	3					X			24-hour Other _____	Normal
MW-2	X	002	X	X					X			24-hour Other _____	Normal
MW-3	X	003	X	X					X			24-hour Other _____	Normal
MW-4	X	004	X	X					X			24-hour Other _____	Normal
MW-5	X	005	X	X					X			24-hour Other _____	Normal
MW-6	X	006	X	X					X			24-hour Other _____	Normal
MW-7	X	007	X	X					X			24-hour Other _____	Normal

Remarks: Samples contain preservative. Please email the results in 2DF format for Geotracker #0600102154 to maz.sierra@sbcglobal.net

Delinquished by <i>Mike Hagi</i>	Date 3/12/07	Time 12:20	Received by <i>J. Machado</i>	Date 3/12/07	Time 12:27
Delinquished by	Date	Time	Received by	Date	Time

980 W. Taylor Street • San Jose • California • 95126  
Phone (408) 971-6758 • Fax (408) 9716759

**Appendix D**  
**FIELD NOTES**



GROUNDWATER MONITORING DATA FORM

Project No: 03-103.00

Date: 3-12-07

Project Name: ABE

Well N°: MW1

Field Personnel: Mike & Maz

Weather: Sunny

Project Location: 17715 Mission Boulevard

PURGE WATER VOLUME CALCULATION	Total Well Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier Casing Diameter			Casing Volume (gal)	Purged Volume (gal)
				2"	4"	6"		
	33.25	19.47	13.78	0.16	0.64	1.44	2.20	6.60

Purge Method: Bailer Measuring Reference: TOC

Time						
Volume Purged (gal)		0	2.20	4.40	6.60	
Temperature (° F)		78.5	78.33	78.01	78.19	
pH		6.72	6.68	6.59	6.57	
Specific Conductivity (umhos/cm)		2200	2200	2200	2200	
Turbidity/Color		light gray	light gray	→	→	
Odor		yes	→	→	→	

Comments: HC odor and sheen



GROUNDWATER MONITORING DATA FORM

Project No: 03-103.00 Date: 3-12-07  
 Project Name: ABE Well N°: MW2  
 Field Personnel: Mike & Maz Weather: Sunny  
 Project Location: 17715 Mission Boulevard

PURGE WATER VOLUME CALCULATION	Total Well Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier Casing Diameter			Casing Volume (gal)	Purged Volume (gal)
				2"	4"	6"		
	33.75	20.71	13.04	0.16	0.64	1.44	2.08	≈ 6.0

Purge Method: Bailer Measuring Reference: TOC

Time						
Volume Purged (gal)	0	2	4	6		
Temperature (° F)	79.6	79.63	79.92	80.05		
pH	6.72	6.70	6.71	6.69		
Specific Conductivity (umhos/cm)	2100	2100	2100	2200		
Turbidity/Color	light gray	→	→	→		
Odor	Yes	→	→	→		

Comments: HC Odor



GROUNDWATER MONITORING DATA FORM

Project No: 03-103.00 Date: 3-12-07  
 Project Name: ABE Well N°: MW3  
 Field Personnel: Mike & Maz Weather: Sunny  
 Project Location: 17715 Mission Boulevard

PURGE WATER VOLUME CALCULATION	Total Well Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier Casing Diameter			Casing Volume (gal)	Purged Volume (gal)
				2"	4"	6"		
	33.75	19.88	13.87	0.16	0.64	1.44	2.22	6.65 ≈ 6.60

Purge Method: Bailer Measuring Reference: TOC

Time						
Volume Purged (gal)	0	2.20	4.40	6.60		
Temperature (° F)	79.3	79.72	80.01	80.10		
pH	6.70	6.63	6.60	6.59		
Specific Conductivity (umhos/cm)	2100	2200	2200	2200		
Turbidity/Color	light grey	→	→	→		
Odor	yes	→	→	→		

Comments: \_\_\_\_\_  
 \_\_\_\_\_



GROUNDWATER MONITORING DATA FORM

Project No: 03-103.00 Date: 3-12-07  
 Project Name: ABE Well N°: MW4  
 Field Personnel: Mike & Maz Weather: Sunny  
 Project Location: 17715 Mission Boulevard

PURGE WATER VOLUME CALCULATION	Total Well Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier Casing Diameter			Casing Volume (gal)	Purged Volume (gal)
				2"	4"	6"		
	29	19.63	9.87	0.16	0.64	1.44	1.58	4.7 45

Purge Method: Bailer Measuring Reference: TOC

Time						
Volume Purged (gal)		0	2	4	5	
Temperature (° F)		80.0	80.08	80.10	80.11	
pH		6.72	6.68	6.63	6.58	
Specific Conductivity (umhos/cm)		2200	2200	2200	→	
Turbidity/Color		light brown	→	→	→	
Odor		No	→	→	→	

Comments: \_\_\_\_\_  
 \_\_\_\_\_



GROUNDWATER MONITORING DATA FORM

Project No: 03-103.00 Date: 3-12-07  
 Project Name: ABE Well N°: MW5  
 Field Personnel: Mike & Maz Weather: Sunny  
 Project Location: 17715 Mission Boulevard

PURGE WATER VOLUME CALCULATION	Total Well Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier Casing Diameter			Casing Volume (gal)	Purged Volume (gal)
				2"	4"	6"		
	28	16.68	11.32	0.16	0.64	1.44	1.81	5.43 N 5.5

Purge Method: Bailer Measuring Reference: TOC

Time						
Volume Purged (gal)	0	1.5	3.0	5.5		
Temperature (° F)	81.0	81.3	81.33	81.39		
pH	6.71	6.73	6.77	6.79		
Specific Conductivity (umhos/cm)	2100	2300	2300	2200		
Turbidity/Color	light Brown	→	→	→		
Odor	No	→	→	→		

Comments: \_\_\_\_\_  
 \_\_\_\_\_



GROUNDWATER MONITORING DATA FORM

Project No: 03-103.00 Date: 3-12-07  
 Project Name: ABE Well N°: MW6  
 Field Personnel: Mike & Maz Weather: Sunny  
 Project Location: 17715 Mission Boulevard

PURGE WATER VOLUME CALCULATION	Total Well Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier Casing Diameter			Casing Volume (gal)	Purged Volume (gal)
				2"	4"	6"		
	25	16.95	8.05	0.16	0.64	1.44	1.28	3.86 = 4.0

Purge Method: Bailer Measuring Reference: TOC

Time						
Volume Purged (gal)		0	1	2.5	4	
Temperature (° F)		81.0	80.92	80.83	80.81	
pH		6.72	6.68	6.63	6.60	
Specific Conductivity (umhos/cm)		2200	2100	2200	2200	
Turbidity/Color		1.54 Brown	→	→	→	
Odor		No	→	→	→	

Comments: \_\_\_\_\_  
 \_\_\_\_\_



GROUNDWATER MONITORING DATA FORM

Project No: 03-103.00

Date: 3-12-07

Project Name: ABE

Well N°: MW7

Field Personnel: Mike & Maz

Weather: Sunny

Project Location: 17715 Mission Boulevard

PURGE WATER VOLUME CALCULATION

Total Well Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier Casing Diameter			Casing Volume (gal)	Purged Volume (gal)
			2"	4"	6"		
25	17.81	7.19	0.16	0.64	1.44	1.76	3.45 ± 3.5

Purge Method: Bailer Measuring Reference: TOC

Time						
Volume Purged (gal)	0	1.0	2.0	3-5		
Temperature (° F)	83.1	82.0	82.0	81.5		
pH	6.52	6.54	6.50	6.51		
Specific Conductivity (umhos/cm)	2100	2100	2200	2100		
Turbidity/Color	light brown	→	→	→		
Odor	No	→	→	→		

Comments: \_\_\_\_\_  
\_\_\_\_\_