STID 4117 ✓

SECOND QUARTER 2001
GROUNDWATER MONITORING

ABE Petroleum LLC
17715 Mission Boulevard
Hayward, California 94539

Mike H

Prepared for

Mr. Paul Garg
ABE Petroleum LLC

Prepared by

Sierra Environmental, Inc.

July 2, 2001
Project 01-103.04

Sierra Environmental, Inc.
Environmental Consultants

July 2, 2001
Project 01-103.04

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

Subject: Report for Second Quarter 2001 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 of the second quarter 2001 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.

Sierra obtained and recorded groundwater data, and collected groundwater samples from three groundwater monitoring wells (MW1 through MW3) at the Site for chemical analysis. Sierra submitted the samples to Entech Analytical Labs, Inc. (Entech) of Santa Clara, California. Entech is an independent State-certified analytical laboratory (ELAP # 2346).

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 2. 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.

2084 Alameda Way, Suite 201
San Jose, California 95126
Phone (408) 248-3700
Fax (408) 248-4700

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 2. The analytical results are presented in Appendix A.

On August 14, 2000, Sierra drilled three exploratory 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 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.

On March 30, 2001, Sierra performed 1st quarter 2001 groundwater monitoring at the Site. The field and analytical results are presented in table I and II. Groundwater was measured at approximately 20-21 feet bgs at the Site with a northwesterly flow direction.

GROUNDWATER MONITORING

On June 22, 2001, Sierra's field personnel measured the groundwater levels at MW1 through MW3 (Figure 3) using an electronic sounder. Depth of groundwater was measured to the top of the well casings (TOC). Table I presents the groundwater measurement data.

Groundwater levels were measured at approximately 22 to 23 feet below TOC with a northwesterly flow direction during this monitoring event.

Sierra's field personnel purged the wells using bailers. pH, temperature, and conductivity of groundwater was 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-3 were collected from the wells. After collection, the groundwater from each well was transferred into clean volatile organic analysis (VOA) vials. The VOAs were sealed with Teflon-septum screw caps, labeled, placed in a cooler, and delivered to Entech with chain-of-custody documentation.

All sampling and measurement equipment were washed with Liqui-Nox® (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) modified method 8015, and for benzene, toluene, ethyl benzene, and total xylenes (BTEX) and methyl tertiary butyl ether (MTBE) using EPA method 8020. Additionally, the samples were analyzed for fuel oxygenates using EPA method 8260B. Copies of certified analytical results and chain-of-custody documentation are presented in Appendix C.

ANALYTICAL RESULTS

Except for MTBE, the analytical results for the water samples showed an increasing trend of gasoline constituents in the groundwater beneath the Site.

Table II presents Summary of the analytical results.

CONCLUSION AND RECOMMENDATIONS

The groundwater data obtained during this monitoring event show increase in TPHG concentrations and decrease in Benzene and MTBE concentrations. However, the concentrations of TPHG, benzene, and MTBE remain to be high in the groundwater samples. To confirm that this trend will not change with the further drop in groundwater levels at the end of the summer, Sierra recommends continuing with the remaining groundwater monitoring for 2001.

LIMITATIONS

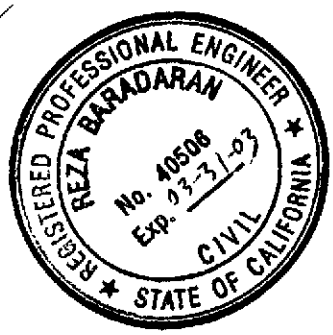
The content and conclusion provided by Sierra in this report are based on information collected during its assessment/monitoring, which include, but are not limited to field observations and analytical results for the groundwater samples collected at the Site.

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.

Sierra appreciates to have the opportunity assisting you on this project. Please feel welcome to call us if you have questions.

Very Truly Yours,
Sierra Environmental, Inc.



Reza Baradaran, PE, GE
Principal

Mitch Hajiaghai, REA II, CAC
Principal

Attachments:

Table I	-	Groundwater Elevation Data
Table II	-	Analytical Results for Groundwater Samples
Figure 1	-	Site Location Map
Figure 2	-	Former UST and Soil Sample Locations
Figure 3	-	Groundwater Monitoring Well Locations
Appendix A	-	Historical Analytical Results
Appendix B	-	QA/QC Protocol
Appendix C	-	Certified Analytical Results and Chain-of-Custody Documentation & Field Notes

cc: Mr. Amir Gholami, ACHCS (1 Copy)

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TABLE I

GROUNDWATER ELEVATION DATA

Well ID	Measurement Date	Well Casing Diameter (in)	Well Casing Elevation (ft)	Depth to Water[1] (ft)	Water Table[2] Elevation (ft)
MW1	8-18-00 3-30-01 6-22-01	2	99.46	20.32 20.30 21.91	79.14 79.16 77.55
MW2	8-18-00 3-30-01 6-22-01	2	100.58	21.55 21.55 23.15	79.03 79.03 77.43
MW3	8-18-00 3-30-01 6-22-01	2	99.69	20.68 20.68 22.31	79.01 79.01 77.38

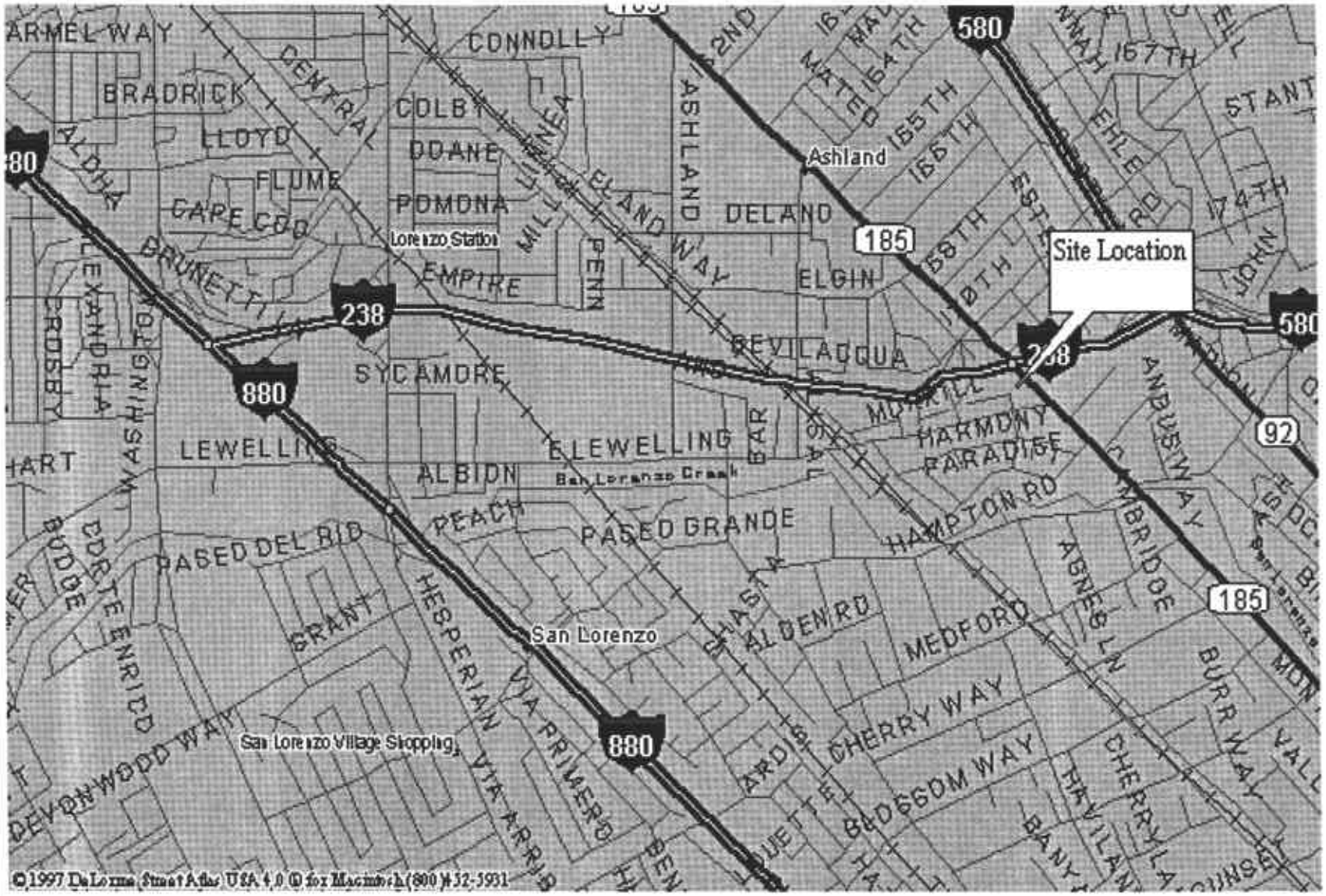
1. Depths to groundwater were measured to the top of the well casings
2. Water table elevations were measured in relation to an assumed datum (100') relative elevation

TABLE II
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Sample ID	Sample Date	Sample Location	TPHG[1] ppb[3]	Benzene ppb	Toluene ppb	Ethylbenzene ppb	Xylenes ppb	MTBE[2] ppb
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
MW-2	8-18-00	MW2	290,000	3700	990	7,300	26,000	ND[4]
*	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
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

1. TPHG = Total Petroleum Hydrocarbons as Gasoline
2. MTBE = Methyl Tertiary Butyl Ether
3. ppb = Parts Per Billion
4. ND = Below Laboratory Detection Limit

* The Sample was Analyzed for Fuel Oxygenates using EPA Method 8260B. Only MTBE was Detected using the method



SIERRA ENVIRONMENTAL, INC.
Environmental Consultants

2084 Alameda Way, Suite 201, San Jose, CA 95126
Phone [408]248-2700 • Fax [408] 248-4700

SITE LOCATION MAP

Second Quarter 2001, Groundwater Monitoring
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FIGURE 1

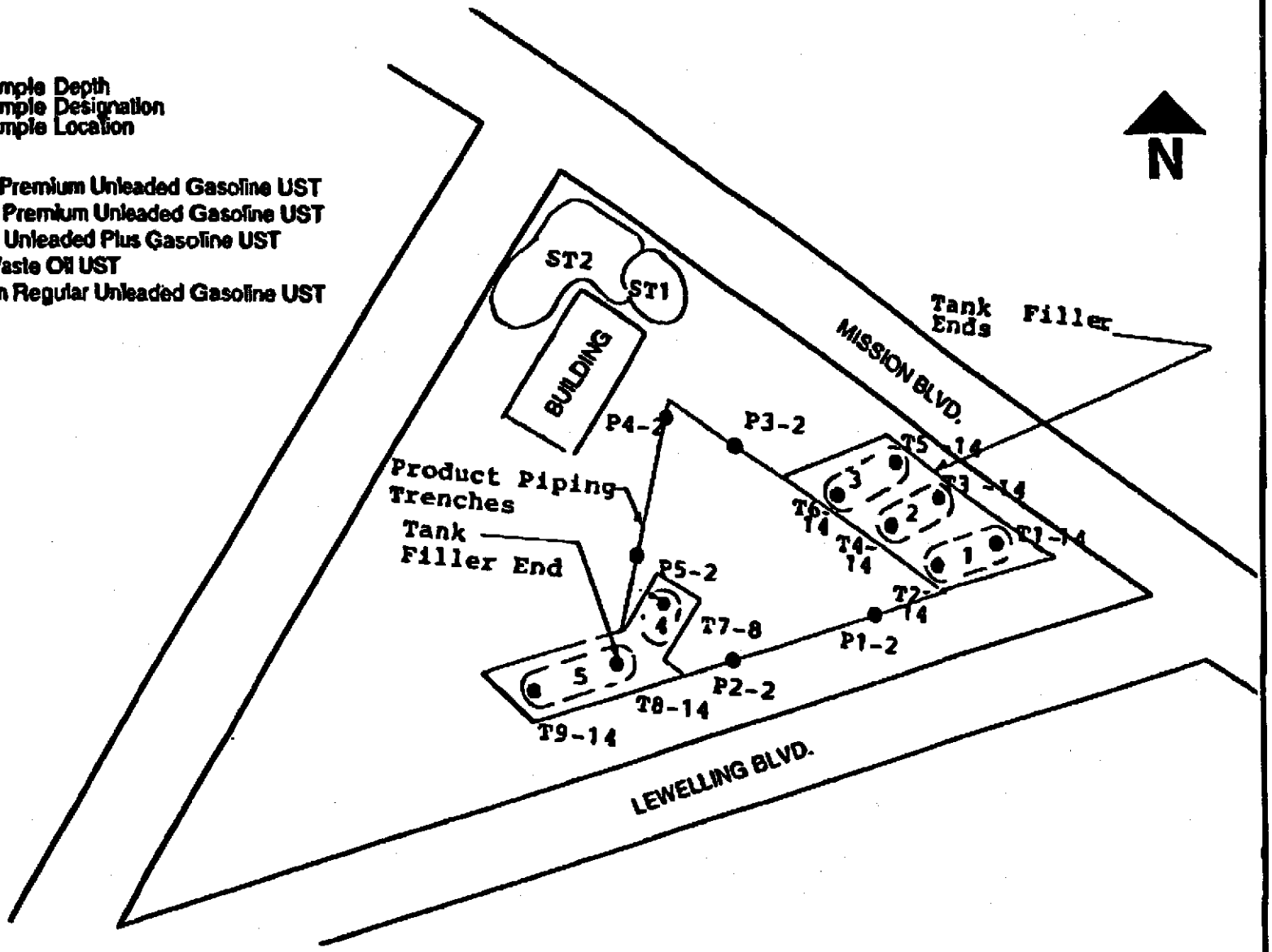
July 2, 2001
Project 01-103.04

LEGEND

● T1-14

Sample Depth
Sample Designation
Sample Location

1 = 2,000-gallon Premium Unleaded Gasoline UST
2 = 6,000-Gallon Premium Unleaded Gasoline UST
3 = 6,000-Gallon Unleaded Plus Gasoline UST
4 = 500-gallon Waste Oil UST
5 = 10,000-gallon Regular Unleaded Gasoline UST



Approximate Scale: 1"=30'

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Former UST and Soil Sample Locations

Second Quarter 2001 Groundwater Monitoring
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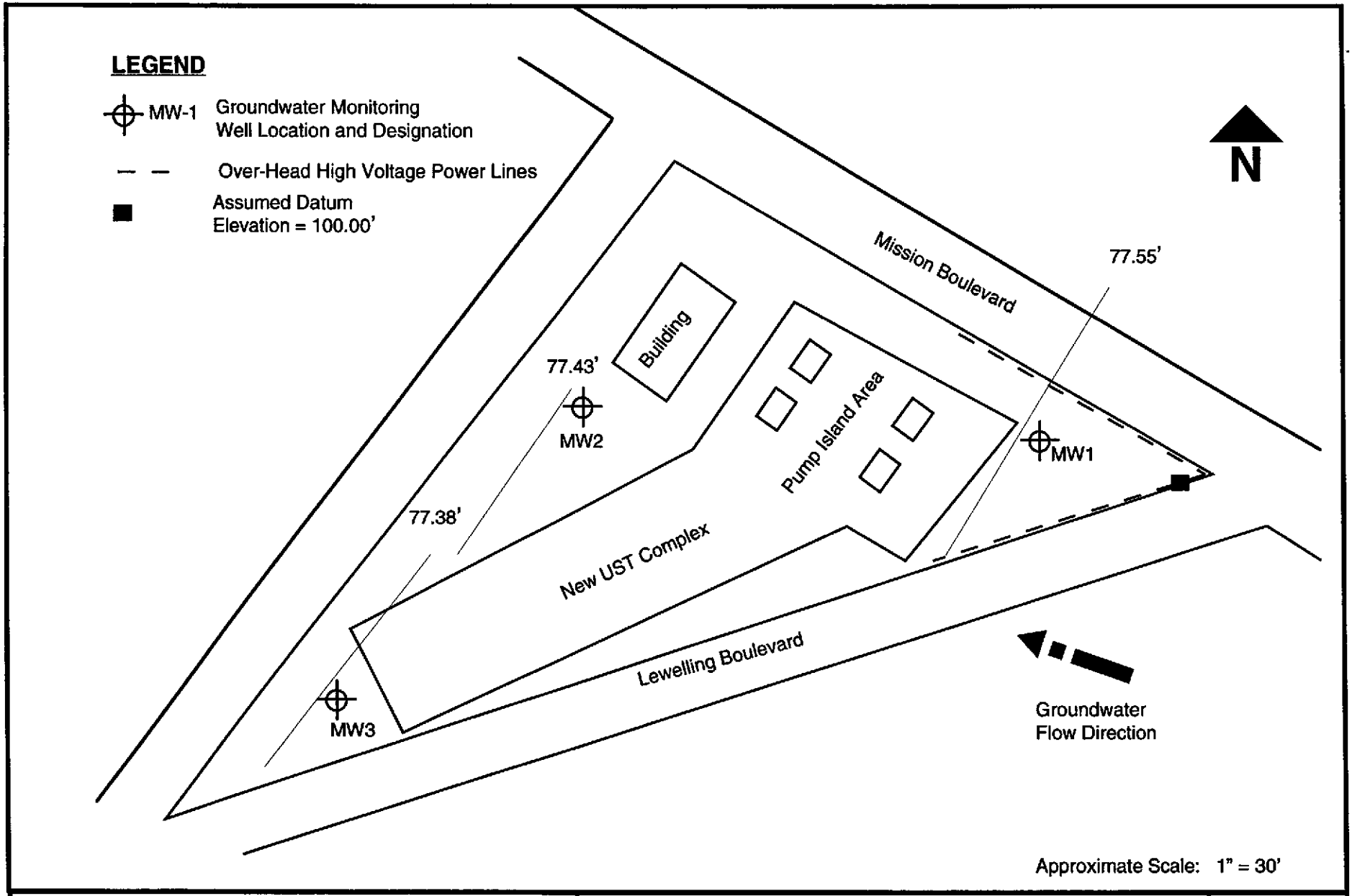
FIGURE 2
July 2 2001
Project 01-103.04



SIERRA ENVIRONMENTAL, INC.
Environmental Consultants
2084 Alameda Way, Suite 201, San Jose, CA 95126
Phone [408]248-3700 • Fax [408] 248-4700

Groundwater Monitoring Well Locations

Second Quarter 2001, Groundwater Monitoring
ABE Petroleum LLC

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FIGURE 3

July 2,2001
Project 01-103.04

Appendix A
HISTORICAL ANALYTICAL RESULTS

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS, FUEL TANK EXCAVATIONS

Sample	Date	Matrix	TPHG[1] ppm[8]	Lead[2] ppm	B[3] ppb[9]	T[4] ppb	E[5] ppb	X[6] ppb	MTBE[7] ppb
T1-14	9-16-97	Soil	2300	5.6	230	4800	2200	6100	ND[10]
T2-14	9-16-97	Soil	28	4.1	22	92	40	180	ND
T3-14	9-16-97	Soil	2700	7.5	460	3100	2400	6500	ND
T4-14	9-16-97	Soil	1100	12	100	1900	1500	4800	ND
T5-14	9-16-97	Soil	64	6.1	48	100	110	380	ND
T6-14	9-16-97	Soil	66	7.1	48	270	120	560	ND
T8-14	9-16-97	Soil	260	7.1	200	93	310	330	ND
T9-14	9-16-97	Soil	1.1	9.3	ND	5.3	ND	8.8	ND

1. TPHG = Total petroleum hydrocarbons as gasoline
2. Lead = Analyzed as total lead
3. B = Benzene
4. T = Toluene
5. E = Ethylbenzene
6. X = Total xylenes
7. MTBE = Methyl teritary butyl ether
8. ppm = Parts per million
9. ppb = Parts per billion
10. ND = Not Detected

TABLE 2

SOIL SAMPLE ANALYTICAL RESULTS, WASTE OIL TANK EXCAVATION

Sample	Date	Matrix	TPHG[1] ppm[8]	TPHD[2] ppm	BTEX[3] ppm	TRPH[4] ppm	VOCs[5] ppm	SVOCs[6] ppm	Metals[7] ppm
T7-8	9-16-97	Soil	ND[9]	ND	ND	14	ND	ND	*

1. TPHG = Total petroleum hydrocarbons as gasoline
2. TPHD = Total petroleum hydrocarbons as diesel
3. BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
4. TRPH = Total Recoverable Petroleum Hydrocarbons
5. VOCs = Volatile Organic Compounds
6. SVOCs = Semivolatile Organic Compounds
7. Metals = * Cd @ 2.1 ppm, Cr @ 3.9 ppm, Pb @ 4.9 ppm, Ni @ 18 ppm, Zn @ 84 ppm
8. ppm = Parts per million
9. ND = Not Detected

TABLE 3

SOIL SAMPLE ANALYTICAL RESULTS, PIPING TRENCHES

Sample	Date	Matrix	TPHG[1] ppm[8]	Lead[2] ppm	B[3] ppb[9]	T[4] ppb	E[5] ppb	X[6] ppb	MTBE[7] ppb
P1-2	9-16-97	Soil	ND[10]	5.6	ND	ND	ND	ND	ND
P2-2	9-16-97	Soil	ND	11	ND	ND	ND	ND	ND
P3-2	9-16-97	Soil	ND	9.3	ND	ND	ND	ND	ND
P4-2	9-16-97	Soil	ND	5.5	ND	ND	ND	ND	ND
P5-2	9-16-97	Soil	ND	6.9	ND	ND	ND	ND	ND

1. TPHG = Total petroleum hydrocarbons as gasoline
2. Lead = Analyzed as total lead
3. B = Benzene
4. T = Toluene
5. E = Ethylbenzene
6. X = Total xylenes
7. MTBE = Methyl teritary butyl ether
8. ppm = Parts per million
9. ppb = Parts Per Billion
10. ND = Not Detected

TABLE 4

SOIL SAMPLE ANALYTICAL RESULTS, SOIL STOCKPILES

Sample	Date	Matrix	TPHG[1] ppm[8]	Lead[2] ppm	B[3] ppb[9]	T[4] ppb	E[5] ppb	X[6] ppb	MTBE[7] ppb
ST1 A,B,C,D	9-18-97	Soil	4.5	7.9	ND[10]	ND	ND	25	ND
ST2 A,B,C,D	9-18-97	Soil	ND	8.3	ND	ND	ND	ND	ND

1. TPHG = Total petroleum hydrocarbons as gasoline
2. Lead = Analyzed as total lead
3. B = Benzene
4. T = Toluene
5. E = Ethylbenzene
6. X = Total xylenes
7. MTBE = Methyl teritary butyl ether
8. ppm = Parts per million
9. ppb = Parts Per Billion
10. ND = Not Detected

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® (a phosphate free laboratory detergent), and rinsed with tab and deionized 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 & FIELD NOTES

Entech Analytical Labs, Inc.

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

June 28, 2001

Mitch Hajiaghai
Sierra Environmental, Inc.
2084 Alameda Way, Suite 201
San Jose, CA 95126

Order: 26040
Project Name: ABE Petroleum
Project Number: 01-103 04
Project Notes:

Date Collected: 6/22/01
Date Received: 6/22/01
P.O. Number: 01-103 04

On June 22, 2001, samples were received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Liquid	Gas/BTEX/MTBE	EPA 8015 MOD. (Purgeable)
		EPA 8020
	Oxygenates by EPA 8260B	EPA 8260B

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. .USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-588-0200.

Sincerely,

Michelle L. Anderson
Laboratory Director

Entech Analytical Labs, Inc.

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

Sierra Environmental, Inc.
2064 Alameda Way, Suite 201
San Jose, CA 95126
Attn: Mitch Hajiaghai

Date: 6/28/01
Date Received: 6/22/01
Project Name: ABE Petroleum
Project Number: 01-103 04
P.O. Number: 01-103 04
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 26040 **Lab Sample ID:** 26040-001 **Client Sample ID:** MW-1

Sample Time: **Sample Date:** 6/22/01 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	7500		500	0.5	250	µg/L	N/A	6/25/01	WGC22065	EPA 8020
Toluene	12000		500	0.5	250	µg/L	N/A	6/25/01	WGC22065	EPA 8020
Ethyl Benzene	5700		500	0.5	250	µg/L	N/A	6/25/01	WGC22065	EPA 8020
Xylenes, Total	24000		500	0.5	250	µg/L	N/A	6/25/01	WGC22065	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	104	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	6400		500	5	2500	µg/L	N/A	6/25/01	WGC22065	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	104	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	110000		500	50	25000	µg/L	N/A	6/25/01	WGC22065	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	100	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

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Sierra Environmental, Inc.
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Attn: Mitch Hajiaghai

Date: 6/28/01
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Project Name: ABE Petroleum
Project Number: 01-103 04
P.O. Number: 01-103 04
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 26040 **Lab Sample ID:** 26040-001 **Client Sample ID:** MW-1

Sample Time: **Sample Date:** 6/22/01 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
Diisopropyl Ether	ND		50	5	250	µg/L	6/26/01	WMS21076	EPA 8260B
Ethyl-t-butyl Ether	ND		50	5	250	µg/L	6/26/01	WMS21076	EPA 8260B
Methyl-t-butyl Ether	3800		50	5	250	µg/L	6/26/01	WMS21076	EPA 8260B
tert-Amyl Methyl Ether	ND		50	5	250	µg/L	6/26/01	WMS21076	EPA 8260B
tert-Butanol	ND		50	20	1000	µg/L	6/26/01	WMS21076	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	106	65 - 135
Dibromofluoromethane	82	57 - 139
Toluene-d8	84	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

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Attn: Mitch Hajiaghai

Date: 6/28/01
Date Received: 6/22/01
Project Name: ABE Petroleum
Project Number: 01-103 04
P.O. Number: 01-103 04
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 26040 **Lab Sample ID:** 26040-002 **Client Sample ID:** MW-2

Sample Time: **Sample Date:** 6/22/01 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	2500		200	0.5	100	µg/L	N/A	6/25/01	WGC22065	EPA 8020
Toluene	350		200	0.5	100	µg/L	N/A	6/25/01	WGC22065	EPA 8020
Ethyl Benzene	4200		200	0.5	100	µg/L	N/A	6/25/01	WGC22065	EPA 8020
Xylenes, Total	12000		200	0.5	100	µg/L	N/A	6/25/01	WGC22065	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	104	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	3000		200	5	1000	µg/L	N/A	6/25/01	WGC22065	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	104	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	57000		200	50	10000	µg/L	N/A	6/25/01	WGC22065	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	98	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

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Project Name: ABE Petroleum
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Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 26040 **Lab Sample ID:** 26040-002 **Client Sample ID:** MW-2

Sample Time: **Sample Date:** 6/22/01 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
Diisopropyl Ether	ND		20	5	100	µg/L	6/26/01	WMS21076	EPA 8260B
Ethyl-t-butyl Ether	ND		20	5	100	µg/L	6/26/01	WMS21076	EPA 8260B
Methyl-t-butyl Ether	1800		20	5	100	µg/L	6/26/01	WMS21076	EPA 8260B
tert-Amyl Methyl Ether	ND		20	5	100	µg/L	6/26/01	WMS21076	EPA 8260B
tert-Butanol	ND		20	20	400	µg/L	6/26/01	WMS21076	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	107	65 - 135
Dibromofluoromethane	83	57 - 139
Toluene-d8	84	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

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

Sierra Environmental, Inc.
2084 Alameda Way, Suite 201
San Jose, CA 95126
Attn: Mitch Hajiaghai

Date: 6/28/01
Date Received: 6/22/01
Project Name: ABE Petroleum
Project Number: 01-103 04
P.O. Number: 01-103 04
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 26040 **Lab Sample ID:** 26040-003 **Client Sample ID:** MW-3

Sample Time: **Sample Date:** 6/22/01 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	4000		100	0.5	50	µg/L	N/A	6/26/01	WGC42068	EPA 8020
Toluene	340		100	0.5	50	µg/L	N/A	6/26/01	WGC42068	EPA 8020
Ethyl Benzene	2900		100	0.5	50	µg/L	N/A	6/26/01	WGC42068	EPA 8020
Xylenes, Total	7600		100	0.5	50	µg/L	N/A	6/26/01	WGC42068	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	100	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	3200		100	5	500	µg/L	N/A	6/26/01	WGC42068	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	100	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	35000		100	50	5000	µg/L	N/A	6/26/01	WGC42068	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	102	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

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Order ID: 26040 **Lab Sample ID:** 26040-003 **Client Sample ID:** MW-3

Sample Time: **Sample Date:** 6/22/01 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
Diisopropyl Ether	ND		50	5	250	µg/L	6/26/01	WMS21076	EPA 8260B
Ethyl-t-butyl Ether	ND		50	5	250	µg/L	6/26/01	WMS21076	EPA 8260B
Methyl-t-butyl Ether	4100		50	5	250	µg/L	6/26/01	WMS21076	EPA 8260B
tert-Amyl Methyl Ether	ND		50	5	250	µg/L	6/26/01	WMS21076	EPA 8260B
tert-Butanol	ND		50	20	1000	µg/L	6/26/01	WMS21076	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	106	65 - 135
Dibromofluoromethane	84	57 - 139
Toluene-d8	83	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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Environmental Consultants

GROUNDWATER MONITORING DATA FORM

Project No: 01-103.04 **Date:** 6/22/01

Project Name: ABE PETROLEUM **Well Nº:** MW1

Field Personnel: MH **Weather:** Sunny and Warm

Project Location: 17715 MISSION BLVD. HAYWARD.

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	21.91	11.34	0.16	0.64	1.44	1.8	6

Purge Method: Bailing **Measuring Reference:** TOC

Time		11:27	11:33	11:39	11:45	
Volume Purged (gal)		0	2	4	6	
Temperature (° F)		80.4	75.9	76.5	78.5	
pH		7.70	7.04	6.55	6.38	
Specific Conductivity (umhos/cm)		500	500	480	490	
Turbidity/Color		clear	Brown	→	→	
Odor		HC Odor	→	→	→	

Comments: NO Product. Hydrocarbon sheen. Wellhead ok. A 55-gallon drum (Empty) will be needed for next GWM event.

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GROUNDWATER MONITORING DATA FORM

Project No: 01-103.04 **Date:** 6/22/01

Project Name: ABG PETROLEUM **Well Nº:** MW2

Field Personnel: MH **Weather:** Sunny and Warm

Project Location: 17715 MISSION BLVD. HAYWARD

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	28.15	10.6	0.16	0.64	1.44	1.7	6

Purge Method: Bailing **Measuring Reference:** TOC

Time	10:40	10:45	10:53	11:00		
Volume Purged (gal)	~~0~~	2	4	6		
Temperature (° F)	80.7	77.3	76.6	76.5		
pH	6.70	6.20	5.98	5.97		
Specific Conductivity (umhos/cm)	820	790	790	790		
Turbidity/Color	Clear	Brown	→	→		
Odor	HC Odor	→	→	→		

Comments: No Product. Hydrocarbon Sheen, Wellhead OK

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GROUNDWATER MONITORING DATA FORM

Project No: 01-103.04 **Date:** 6/22/01

Project Name: ABE PETROLEUM **Well Nº:** MW3

Field Personnel: M.H. **Weather:** Sunny and Mild

Project Location: 17715 MISSION BLVD. Hayward.

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	22.31	11.14	0.16	0.64	1.44	1.8	6

Purge Method: Bailey **Measuring Reference:** TOC

Time	9:50	9:58	10:05	10:10		
Volume Purged (gal)	0	2	4	6		
Temperature (° F)	76.7	75.2	74.2	73.8		
pH	8.20	6.81	6.22	6.08		
Specific Conductivity (umhos/cm)	950	920	890	930		
Turbidity/Color	clear	Brown →	→	→		
Odor	HC odor	→	→	→		

Comments: No Product. Hydrocarbon Sheen, Wellhead OK

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SIERRA ENVIRONMENTAL, INC.
Environmental Consultants

CHAIN OF CUSTODY

Project Name: ABE Petroleum **Project No:** 01-103.04 **Date:** 6-22-01

Project Location: 17715 Mission Blvd. Hayward **Client:** ABE Petroleum **Sampler:** M. Hajiaghai

Sample ID	Date Sampled	Sampling Time	Matrix	Nº of Containers	Analysis Requested							Turnaround Time
					8015/8020 TPHG BTEX, MTBE	8015 TPHD	418.1 TRPH	8010 VOCs	8270 SVOCs	Total Lead	Fuel Oxygenates	
MW-1	6/22/01		Water	6	X						X	24-hour Other ____ Normal
MW-2	↓		↓	↓	↓						↓	24-hour Other ____ Normal
MW-3	↓		↓	↓	↓						↓	24-hour Other ____ Normal
												24-hour Other ____ Normal
												24-hour Other ____ Normal
												24-hour Other ____ Normal
												24-hour Other ____ Normal

Remarks:

Relinquished by M. Hajiaghai	*Date* 6/22/01 *Time* 4:45	*Received by* Joseph Machado	*Date* 6/22/01 *Time* 1645
Relinquished by	*Date* *Time*	*Received by*	*Date* *Time*

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