



January 11, 2000

ENVIRONMENTAL  
PROTECTION  
02 JUN 14 PM 3:54

QUARTERLY GROUNDWATER MONITORING REPORT  
DECEMBER 9, 1999 GROUNDWATER SAMPLING  
ASE JOB NO. 3412

at  
Former Chan's Shell Station  
726 Harrison Street  
Oakland, CA 94602

Prepared by:  
AQUA SCIENCE ENGINEERS, INC.  
208 W. El Pintado  
Danville, CA 94526  
(925) 820-9391

## 1.0 INTRODUCTION

### Site Location (Site). See Figure 1

Former Chan's Shell Station  
726 Harrison Street  
Oakland, CA 94602  
(510) 444-6583

### Responsible Party

Kin Chan  
4328 Edgewood Avenue  
Oakland, CA 94602

### Environmental Consulting Firm

Aqua Science Engineers, Inc. (ASE)  
208 W. El Pintado  
Danville, CA 94526  
Contact: Robert Kitay, Senior Geologist  
(925) 820-9391

### Agency Review

Larry Seto  
Alameda County Health Care Services Agency (ACHCSA)  
1131 Harbor Bay Pkwy., Suite 250  
Alameda, CA 94502  
(510) 567-6700

California Regional Water Quality Control Board (RWQCB)  
San Francisco Bay Region  
1515 Clay Street, Suite 1400  
Oakland, CA 94612  
Contact: Mr. Chuck Headlee  
(510) 622-2433

The following is a report detailing the results of the December 9, 1999 quarterly groundwater sampling at the above-referenced site. This sampling was conducted as required by the ACHCSA and RWQCB. ASE has prepared this report on behalf of Kin Chan, property owner. This report is intended to supplement the ASE report: "Report of Soil and Groundwater Assesment" dated January 8, 1999.

## 2.0 GROUNDWATER FLOW DIRECTION AND GRADIENT

On December 9, 1999, ASE associate geologist Ian Reed measured the depth to groundwater in monitoring wells MW-1, MW-3, and MW-4 using an electric water level sounder. The surface of the groundwater was also checked for the presence of free-floating hydrocarbons or sheen. No free-floating hydrocarbons or sheen were observed in any site monitoring well. Monitoring well MW-2 was inaccessible due to cars parked over the well. Groundwater elevation data is presented in Table One.

**TABLE ONE**  
Groundwater Elevation Data  
Chan's Former Shell Station

Well I.D.	Date of Measurement	Top of Casing Elevation (relative to project datum)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-1	12-15-98	31.95	17.32	14.63
	03-04-99		15.52	16.43
	06-17-99		16.90	15.05
	08-27-99		17.39	14.56
	<b>12-09-99</b>		<b>18.03</b>	<b>13.92</b>
MW-2	12-15-98	32.40	18.03	14.37
	03-04-99		16.11	16.29
	06-17-99		17.72	14.68
	08-27-99		Inaccessible	
	<b>12-09-99</b>		<b>Inaccessible</b>	
MW-3	12-15-98	31.61	17.26	14.35
	03-04-99		15.47	16.14
	06-17-99		16.92	14.69
	08-27-99		17.40	14.21
	<b>12-09-99</b>		<b>18.01</b>	<b>13.60</b>
MW-4	12-15-98	32.53	17.59	14.94
	03-04-99		15.88	16.65
	06-17-99		17.14	15.39
	08-27-99		17.65	14.88
	<b>12-09-99</b>		<b>18.28</b>	<b>14.25</b>

A groundwater potentiometric surface map is presented as Figure 2. The groundwater flow direction is to the southwest with a gradient of approximately 0.012-feet/foot. This gradient and flow direction are consistent with previous results and neighboring sites. The water table has dropped approximately 0.63-feet this quarter.

### 3.0 GROUNDWATER SAMPLE COLLECTION AND ANALYSIS

Prior to sampling, monitoring wells MW-1, MW-3, and MW-4 were purged of four well casing volumes of groundwater using dedicated polyethylene bailers. Monitoring well MW-2 was inaccessible due to a car parked over the well, and therefore was not sampled. ~~Petroleum hydrocarbon odors were present during the purging and sampling of all three groundwater monitoring wells sampled.~~ The parameters pH, temperature and conductivity were monitored during the well purging, and samples were not collected until these parameters stabilized. Groundwater samples were collected from each well using dedicated polyethylene bailers. The samples were decanted from the bailers into 40-ml volatile organic analysis (VOA) vials, pre-preserved with hydrochloric acid. The samples were capped without headspace, labeled and placed in coolers with wet ice for transport to Chromolab, Inc., of Pleasanton California (DHS #1644) under appropriate chain-of-custody documentation. Well sampling field logs are presented in Appendix A.

The well purge water was placed in 55-gallon steel drums, labeled, and left on-site for temporary storage.

The groundwater samples were analyzed by Chromolab, Inc. for total petroleum hydrocarbons as gasoline (TPH-G) by EPA Method 5030/8015M, benzene, toluene, ethylbenzene and total xylenes (collectively known as BTEX) by EPA Method 8020 and methyl tertiary butyl ether (MTBE) by EPA Method 8020. The analytical results for this sampling period are presented in Table Two. The certified analytical report and chain-of-custody documentation are included as Appendix B.

**TABLE TWO**  
**Certified Analytical Results for GROUNDWATER Samples**  
**Chan's Former Shell Station**  
All results are in parts per billion (ppb)

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-1</u>						
07/03/97	18,000	2,700	350	450	900	7,400
12/05/98	18,000	1,500	270	260	560	14,000
03/04/99	44,000	2,800	400	440	960	43,000
06/17/99	33,000	2,200	250	460	660	25,000
08/27/99	6,000	1,000	97	190	230	14,000/ 16,000*
<b>12/09/99</b>	<b>15,000</b>	<b>1,500</b>	<b>160</b>	<b>220</b>	<b>420</b>	<b>17,000</b>
<u>MW-2</u>						
12/05/98	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
03/04/99	Inaccessible due to car parked over well					
06/17/99	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
08/27/99	Inaccessible due to car parked over well					
<b>12/09/99</b>	<b>Inaccessible due to car parked over well</b>					
<u>MW-3</u>						
12/05/98	6,500	< 50	50	60	50	3,900
03/04/99	2,800	< 25	< 25	< 25	< 25	1,600
06/17/99	1,000	< 10	< 10	< 10	< 10	1,400
08/27/99	230	< 0.5	0.51	0.5	1.0	1,500/ 1,600*
<b>12/09/99</b>	<b>870**</b>	<b>&lt; 0.5</b>	<b>&lt; 0.5</b>	<b>&lt; 0.5</b>	<b>&lt; 0.5</b>	<b>2,100</b>
<u>MW-4</u>						
12/05/98	880	3	< 0.5	< 0.5	< 0.5	950
03/04/99	3,800	< 25	< 25	< 25	< 25	3,700
06/17/99	2,700	< 25	< 25	< 25	< 25	2,700
08/27/99	440	4.7	1.1	0.58	1.3	1,600/ 1,700*
<b>12/09/99</b>	<b>1,100**</b>	<b>&lt; 2.5</b>	<b>&lt; 2.5</b>	<b>&lt; 2.5</b>	<b>&lt; 2.5</b>	<b>1,700</b>

DHS MCL	NE	1	150	700	1,750	13
---------	----	---	-----	-----	-------	----

Notes:

\* EPA Method 8020/EPA Method 8260 (MTBE confirmation)

\*\* Hydrocarbon reported in the gasoline range does not match the laboratory gasoline standard

DHS MCL = California Department of Health Services maximum contaminant level for

NE = DHS MCL not established

Non-detectable concentrations noted by the less than sign (<) followed by the laboratory detection limit.

#### **4.0 CONCLUSIONS**

Hydrocarbon concentrations in groundwater samples collected from monitoring wells MW-1, MW-3, and MW-4 were similar to previous results, although they were slightly increased from last quarter. The benzene and toluene concentrations detected in groundwater samples collected from monitoring well MW-1 exceeded the California Department of Health Services (DHS) maximum contaminant levels (MCLs) for drinking water. The MTBE concentrations detected in groundwater samples collected from monitoring wells MW-1, MW-3 and MW-4 all exceeded the DHS MCL for drinking water.

#### **5.0 RECOMMENDATIONS**

ASE recommends continued monitoring of the site on a quarterly basis. The next groundwater sampling is scheduled for March 1999.

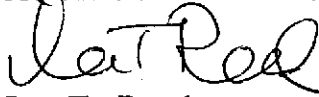
#### **6.0 REPORT LIMITATIONS**

The results of this report represent the conditions at the time of the groundwater sampling, at the specific locations where the groundwater samples were collected, and for the specific parameters analyzed by the laboratory. It does not fully characterize the site for contamination resulting from sources other than the former underground storage tanks and associated plumbing at the site, or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of independent CAL-EPA certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

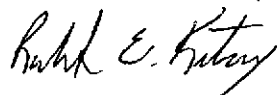
Aqua Science Engineers appreciates the opportunity to provide environmental consulting services for this project, and trust that this report meets your needs. Please feel free to call us at (925) 820-9391 if you have any questions or comments.

Respectfully submitted,

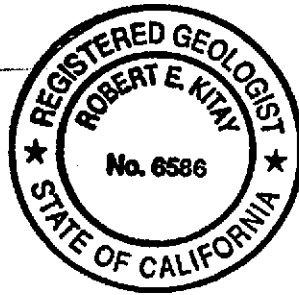
AQUA SCIENCE ENGINEERS, INC.



Ian T. Reed  
Associate Geologist

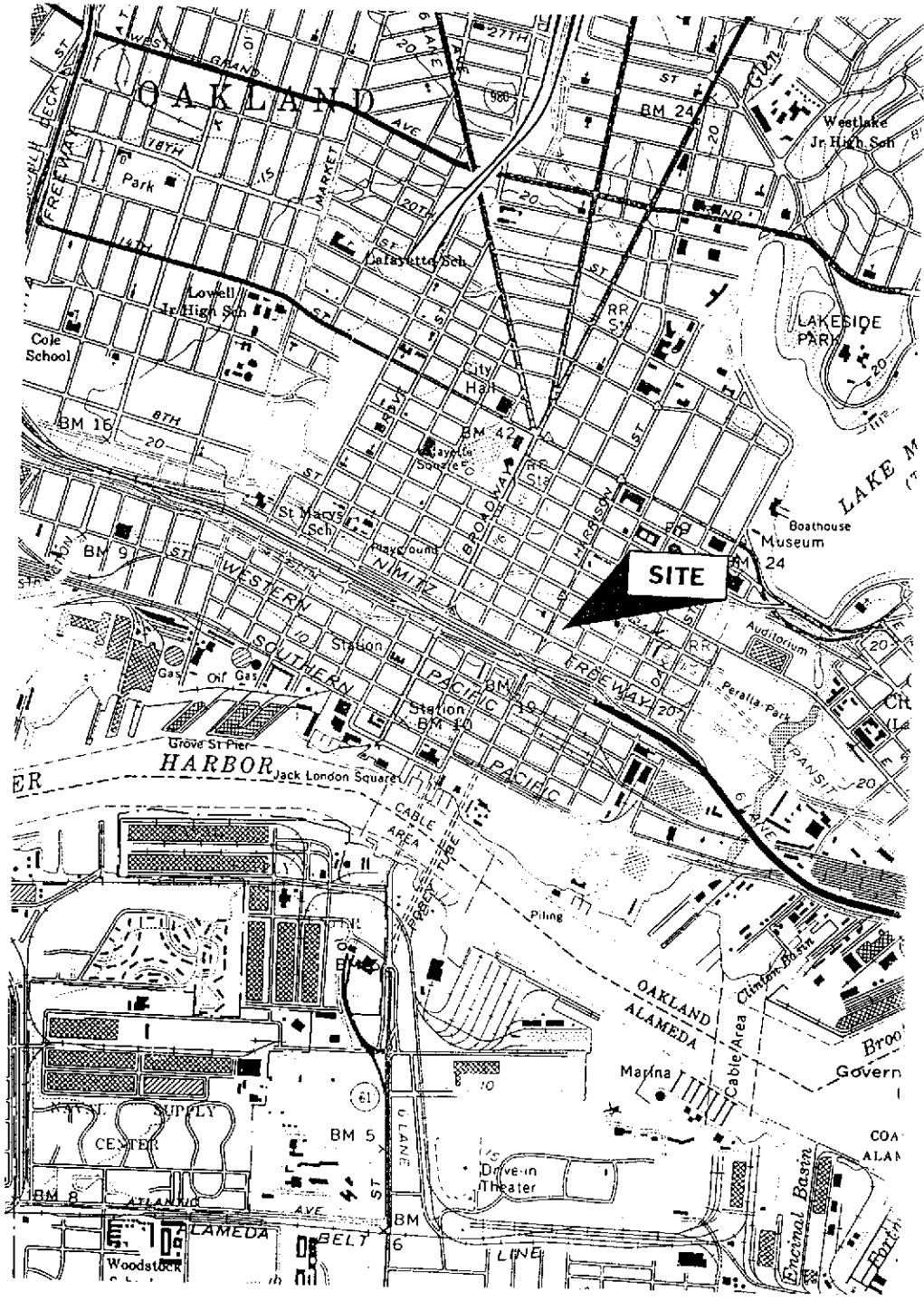


Robert E. Kitay, R.G., R.E.A.  
Senior Geologist



Attachments: Figures 1 and 2  
Appendices A and B

cc: Mr. Larry Seto, Alameda County Health Care Services  
Mr. Chuck Headlee, RWQCB, San Francisco Bay Region



<b>SITE LOCATION MAP</b>	
FORMER CHAN'S SHELL STATION 726 HARRISON STREET OAKLAND, CALIFORNIA	
Aqua Science Engineers	Figure 1





NORTH

SCALE

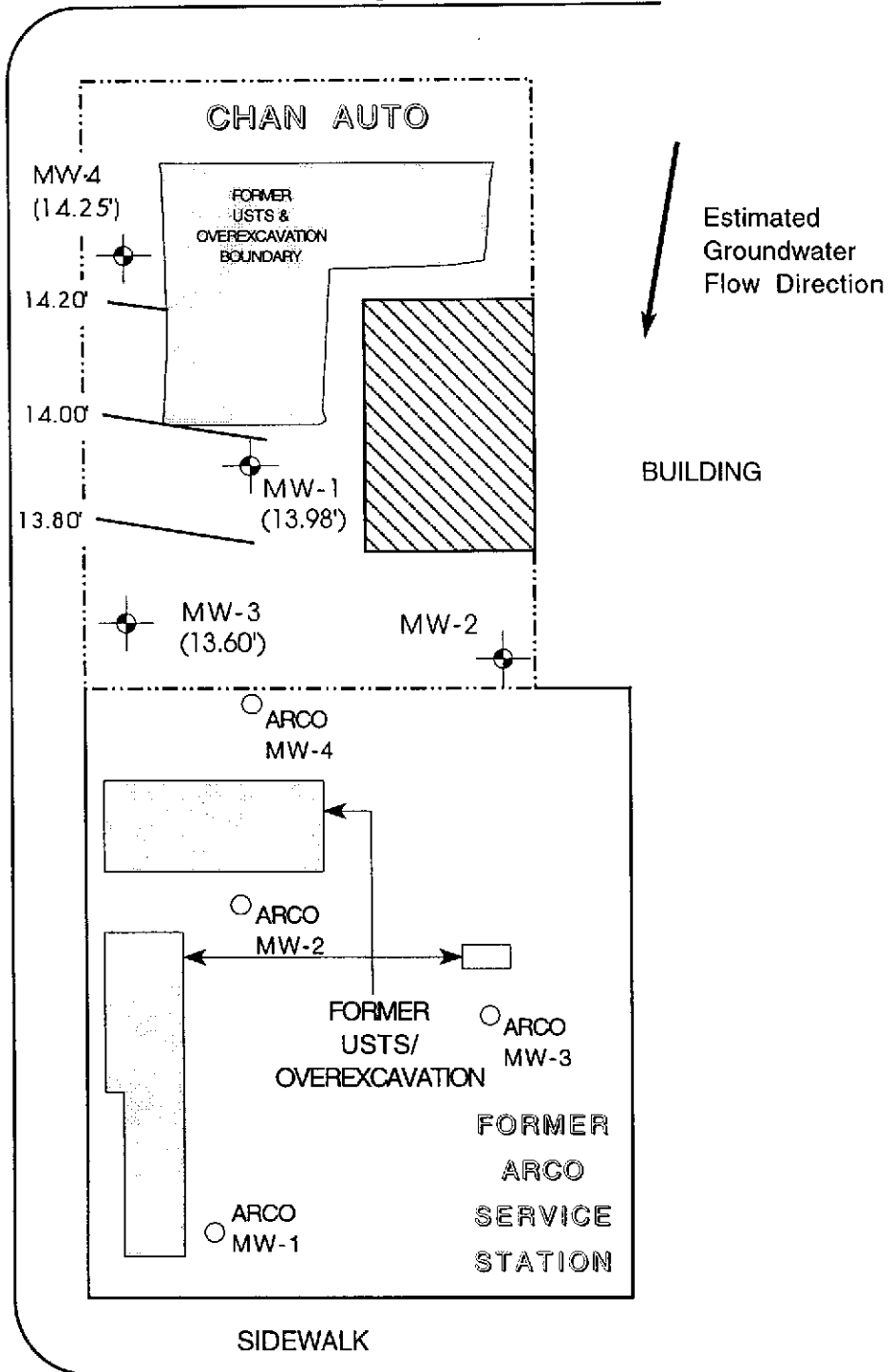
1" = 30'

8TH STREET

Unocal  
● MW-7

Unocal  
● MW-8

HARRISON STREET



ARCO  
○ MW-7

MW-1

**LEGEND**



ASE Monitoring Well

(14.69')

Groundwater elevation, relative to MSL



Groundwater elevation contour

7TH STREET

GROUNDWATER ELEVATION  
CONTOUR MAP - 12/09/99

726 HARRISON STREET  
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS

Figure 2

# **APPENDIX A**

Well Sampling Field Logs



# WELL SAMPLING FIELD LOG

Project Name and Address: CHAN  
 Job #: 3412 Date of sampling: 12-9-99  
 Well Name: MW-1 Sampled by: ITR  
 Total depth of well (feet): 27.21 Well diameter (inches): 2"  
 Depth to water before sampling (feet): 18.03'  
 Thickness of floating product if any: -  
 Depth of well casing in water (feet): 9.18'  
 Number of gallons per well casing volume (gallons): 1.6  
 Number of well casing volumes to be removed: 4  
 Req'd volume of groundwater to be purged before sampling (gallons): 6.2  
 Equipment used to purge the well: dedicated bailer  
 Time Evacuation Began: 0830 Time Evacuation Finished: 0845  
 Approximate volume of groundwater purged: 6.5  
 Did the well go dry?: NO After how many gallons: \_\_\_\_\_  
 Time samples were collected: 0850  
 Depth to water at time of sampling: 18.12'  
 Percent recovery at time of sampling: 98%  
 Samples collected with: dedicated bailer  
 Sample color: Gray Odor: HC odor  
 Description of sediment in sample: silt

## CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>72.3</u>	<u>7.17</u>	<u>514</u>
<u>2</u>	<u>71.6</u>	<u>7.54</u>	<u>512</u>
<u>3</u>	<u>73.4</u>	<u>7.61</u>	<u>473</u>
<u>4</u>	<u>71.6</u>	<u>7.13</u>	<u>461</u>

## SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-1</u>	<u>3</u>	<u>40 ml VOA</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	



## WELL SAMPLING FIELD LOG

Project Name and Address: CHAN  
 Job #: 3412 Date of sampling: 12-9-99  
 Well Name: MW-3 Sampled by: ITR  
 Total depth of well (feet): 29.66 Well diameter (inches): 2"  
 Depth to water before sampling (feet): 18.01  
 Thickness of floating product if any: \_\_\_\_\_  
 Depth of well casing in water (feet): 11.65  
 Number of gallons per well casing volume (gallons): 1.9  
 Number of well casing volumes to be removed: 4  
 Req'd volume of groundwater to be purged before sampling (gallons): 8  
 Equipment used to purge the well: dedicated bailer  
 Time Evacuation Began: 0855 Time Evacuation Finished: 0910  
 Approximate volume of groundwater purged: 8  
 Did the well go dry?: NO After how many gallons: \_\_\_\_\_  
 Time samples were collected: 0915  
 Depth to water at time of sampling: 18.11  
 Percent recovery at time of sampling: 90%  
 Samples collected with: dedicated bailer  
 Sample color: clear Odor: v. slight HC odor  
 Description of sediment in sample: clay

### CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>70.6</u>	<u>6.54</u>	<u>613</u>
<u>2</u>	<u>71.7</u>	<u>7.13</u>	<u>791</u>
<u>3</u>	<u>72.3</u>	<u>7.23</u>	<u>643</u>
<u>4</u>	<u>71.9</u>	<u>6.94</u>	<u>781</u>

### SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-3</u>	<u>3</u>	<u>40 ml VOA</u>	<u>✓</u>	<u>✓</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____



# WELL SAMPLING FIELD LOG

Project Name and Address: CHAN  
 Job #: 3412 Date of sampling: 12-9-99  
 Well Name: MW-4 Sampled by: ITR  
 Total depth of well (feet): 29.97 Well diameter (inches): 2"  
 Depth to water before sampling (feet): 18.28'  
 Thickness of floating product if any: \_\_\_\_\_  
 Depth of well casing in water (feet): 11.69  
 Number of gallons per well casing volume (gallons): 20  
 Number of well casing volumes to be removed: 4  
 Req'd volume of groundwater to be purged before sampling (gallons): 8  
 Equipment used to purge the well: dedicated bailer  
 Time Evacuation Began: 0805 Time Evacuation Finished: 0820  
 Approximate volume of groundwater purged: 8  
 Did the well go dry?: No After how many gallons: \_\_\_\_\_  
 Time samples were collected: 0825  
 Depth to water at time of sampling: 18.31  
 Percent recovery at time of sampling: 98%  
 Samples collected with: dedicated bailer  
 Sample color: brown gray Odor: v. slight odor  
 Description of sediment in sample: silt

## CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	71.6	6.71	619
2	72.3	7.18	707
3	71.6	7.92	718
4	73.1	7.54	694

## SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-4</u>	<u>3</u>	<u>40ml VFA</u>	<u>✓</u>	<u>✓</u>	

## **APPENDIX B**

Certified Analytical Report  
and  
Chain of Custody Documentation

Aqua Science Engineers, Inc.  
208 West El Pintado Road  
Danville, CA 94526

Attn.: Mr. Ian T. Reed

Project: 3412  
CHAN's Shell Station

Dear Mr. Reed,

Attached is our report for your samples received on Thursday December 9, 1999  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after January 8, 2000  
unless you have requested otherwise. We appreciate the opportunity to be of service to you.  
If you have any questions, please call me at (925) 484-1919. You can also contact me via email.  
My email address is: [vvancil@chromalab.com](mailto:vvancil@chromalab.com)

Sincerely,



Vincent Vancil

Gas/BTEX and MTBE

Aqua Science Engineers, Inc.



208 West El Pintado Road  
Danville, CA 94526

Attn: Ian T. Reed

Phone: (925) 820-9391 Fax: (925) 837-4853

Project #: 3412

Project: CHAN's Shell Station

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-3	Water	12/09/1999 09:15	1
MW-4	Water	12/09/1999 08:25	2
MW-1	Water	12/09/1999 08:50	3



Environmental Services (SDB)

To: Aqua Science Engineers, Inc.

Test Method: 8020  
8015M

Attn: Ian T. Reed

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: MW-3	Lab Sample ID: 1999-12-0185-001
Project: 3412 CHAN's Shell Station	Received: 12/09/1999 17:52
Sampled: 12/09/1999 09:15	Extracted: 12/16/1999 09:54
Matrix: Water	QC-Batch: 1999/12/16-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	870	50	ug/L	1.00	12/16/1999 09:54	g
Benzene	ND	0.50	ug/L	1.00	12/16/1999 09:54	
Toluene	ND	0.50	ug/L	1.00	12/16/1999 09:54	
Ethyl benzene	ND	0.50	ug/L	1.00	12/16/1999 09:54	
Xylene(s)	ND	0.50	ug/L	1.00	12/16/1999 09:54	
MTBE	2100	100	ug/L	20.00	12/17/1999 15:39	
<i>Surrogate(s)</i>						
Trifluorotoluene	94.8	58-124	%	1.00	12/16/1999 09:54	
4-Bromofluorobenzene-FID	72.0	50-150	%	1.00	12/16/1999 09:54	

Environmental Services (SDB)

To: Aqua Science Engineers, Inc.

Test Method: 8020  
8015M

Attn.: Ian T. Reed

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: MW-4	Lab Sample ID: 1999-12-0185-002
Project: 3412 CHAN's Shell Station	Received: 12/09/1999 17:52
Sampled: 12/09/1999 08:25	Extracted: 12/16/1999 10:22
Matrix: Water	QC-Batch: 1999/12/16-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	1100	250	ug/L	5.00	12/16/1999 10:22	g
Benzene	ND	2.5	ug/L	5.00	12/16/1999 10:22	
Toluene	ND	2.5	ug/L	5.00	12/16/1999 10:22	
Ethyl benzene	ND	2.5	ug/L	5.00	12/16/1999 10:22	
Xylene(s)	ND	2.5	ug/L	5.00	12/16/1999 10:22	
MTBE	1700	250	ug/L	50.00	12/17/1999 16:07	
<i>Surrogate(s)</i>						
Trifluorotoluene	99.9	58-124	%	1.00	12/16/1999 10:22	
4-Bromofluorobenzene-FID	75.8	50-150	%	1.00	12/16/1999 10:22	

To: Aqua Science Engineers, Inc.

Test Method: 8020  
8015M

Attn: Ian T. Reed

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>MW-1</b>	Lab Sample ID: <b>1999-12-0185-003</b>
Project: 3412 CHAN's Shell Station	Received: 12/09/1999 17:52
Sampled: 12/09/1999 08:50	Extracted: 12/16/1999 10:50
Matrix: Water	QC-Batch: 1999/12/16-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	15000	1000	ug/L	20.00	12/16/1999 10:50	
Benzene	1500	10	ug/L	20.00	12/16/1999 10:50	
Toluene	160	10	ug/L	20.00	12/16/1999 10:50	
Ethyl benzene	220	10	ug/L	20.00	12/16/1999 10:50	
Xylene(s)	420	10	ug/L	20.00	12/16/1999 10:50	
MTBE	17000	1300	ug/L	250.00	12/17/1999 18:32	
<i>Surrogate(s)</i>						
Trifluorotoluene	89.5	58-124	%	1.00	12/16/1999 10:50	
4-Bromofluorobenzene-FID	66.3	50-150	%	1.00	12/16/1999 10:50	

Environmental Services (SDB)

To: Aqua Science Engineers, Inc.

Test Method: 8020  
8015M

Attn.: Ian T. Reed

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX and MTBE**Method Blank****Water****QC Batch # 1999/12/16-01.01**

MB: 1999/12/16-01.01-001

Date Extracted: 12/16/1999 05:25

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	12/16/1999 05:25	
Benzene	ND	0.5	ug/L	12/16/1999 05:25	
Toluene	ND	0.5	ug/L	12/16/1999 05:25	
Ethyl benzene	ND	0.5	ug/L	12/16/1999 05:25	
Xylene(s)	ND	0.5	ug/L	12/16/1999 05:25	
MTBE	ND	5.0	ug/L	12/16/1999 05:25	
<i>Surrogate(s)</i>					
Trifluorotoluene	99.4	58-124	%	12/16/1999 05:25	
4-Bromofluorobenzene-FID	73.6	50-150	%	12/16/1999 05:25	

Environmental Services (SDB)

To: Aqua Science Engineers, Inc.

Test Method: 8020  
8015M

Attn.: Ian T. Reed

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX and MTBE

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/12/17-01.01</b>
MB: 1999/12/17-01.01-001		Date Extracted: 12/17/1999 08:33

Compound	Result	Rep. Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	12/17/1999 08:33	
Benzene	ND	0.5	ug/L	12/17/1999 08:33	
Toluene	ND	0.5	ug/L	12/17/1999 08:33	
Ethyl benzene	ND	0.5	ug/L	12/17/1999 08:33	
Xylene(s)	ND	0.5	ug/L	12/17/1999 08:33	
MTBE	ND	5.0	ug/L	12/17/1999 08:33	
<b>Surrogate(s)</b>					
Trifluorotoluene	106.6	58-124	%	12/17/1999 08:33	
4-Bromofluorobenzene-FID	80.2	50-150	%	12/17/1999 08:33	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-12-0185

To: Aqua Science Engineers, Inc.

Test Method: 8020  
8015M

Attn: Ian T. Reed

Prep Method: 5030

## Batch QC Report

Gas/BTEX and MTBE

Laboratory Control Spike (LCS/LCSD)		Water		QC Batch # 1999/12/16-01.01	
LCS:	1999/12/16-01.01-002	Extracted:	12/16/1999 05:53	Analyzed:	12/16/1999 05:53
LCSD:	1999/12/16-01.01-003	Extracted:	12/16/1999 06:21	Analyzed:	12/16/1999 06:21

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	474	425	500	500	94.8	85.0	10.9	75-125	20		
Benzene	99.2	103	100.0	100.0	99.2	103.0	3.8	77-123	20		
Toluene	100	106	100.0	100.0	100.0	106.0	5.8	78-122	20		
Ethyl benzene	102	108	100.0	100.0	102.0	108.0	5.7	70-130	20		
Xylene(s)	307	325	300	300	102.3	108.3	5.7	75-125	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	538	563	500	500	107.6	112.6		58-124			
4-Bromofluorobenzene-FI	328	345	500	500	65.6	69.0		50-150			

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

To: Aqua Science Engineers, Inc.

Test Method: 8020  
8015M

Attn: Ian T. Reed

Prep Method: 5030

**Batch QC Report**

Gas/BTEX and MTBE

Laboratory Control Spike (LCS/LCSD)		Water		QC Batch # 1999/12/17-01.01	
LCS:	1999/12/17-01.01-002	Extracted:	12/17/1999 05:55	Analyzed:	12/17/1999 05:55
LCSD:	1999/12/17-01.01-003	Extracted:	12/17/1999 06:22	Analyzed:	12/17/1999 06:22

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	417	448	500	500	83.4	89.6	7.2	75-125	20		
Benzene	97.3	104	100.0	100.0	97.3	104.0	6.7	77-123	20		
Toluene	98.2	105	100.0	100.0	98.2	105.0	6.7	78-122	20		
Ethyl benzene	99.5	106	100.0	100.0	99.5	106.0	6.3	70-130	20		
Xylene(s)	298	317	300	300	99.3	105.7	6.2	75-125	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	532	566	500	500	106.4	113.2		58-124			
4-Bromofluorobenzene-FI	339	343	500	500	67.8	68.6		50-150			

To: Aqua Science Engineers, Inc.

Test Method: 8015M  
8020

Attn: Ian T. Reed

Prep Method: 5030

## Legend & Notes

Gas/BTEX and MTBE

## Analyte Flags

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard.



99-12-0366

CHAIN OF CUSTODY FORM

PROJECT NAME: Benicia Industries - Railroad Excavation LAB: Chromalab  
 JOB NUMBER: \_\_\_\_\_ TURNAROUND: 48 hr.  
 PROJECT CONTACT: Glenn Young REQUESTED BY: Glenn Young  
 SAMPLED BY: Ron Reindl

ANALYSIS REQUESTED										
(SOIL)	(SOIL)	(SOIL)	(SOIL)	(SOIL)	(SOIL)	(SOIL)	(SOIL)	(SOIL)	(SOIL)	
X	X	X	X	X	X	X	X	X	X	

LABORATORY ID NUMBER	SOI SAMPLE NUMBER	MATRIX				CONTAINERS						METHOD PRESERVED				SAMPLING DATE				NOTES
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	U.S. Linc	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME	
	S1		X													12	21	99	10	(SOIL)
	S2		X													12	21	99	10	(SOIL)
	S3		X										X	X	X	12	21	99	10	(SOIL)
	S4		X										X	X	X	12	21	99	10	(SOIL)

**RUSH**

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
	12-21-99		
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
		<u>Debbie Harrington</u>	<u>12/21/99 1705</u>

COMMENTS & NOTES:  
Results by Thursday (12-23-99) afternoon.

**SOI** Subsurface Consultants, Inc.  
 171 - 12th Street, Suite 202, Oakland, CA 94607  
 (510) 268-0461 - FAX: (510) 268-0137  
 3736 ML Diablo Blvd., Ste. 200, Lafayette, CA 94548  
 (925) 299-7960 - (925) 298-7970