#### **RECEIVED**

Mark Detterman Alameda County Health Care Services Agency 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502

2:14 pm, Oct 04, 2012

Alameda County Environmental Health

SUBJECT:

RO0000321

Yee Property

726 Harrison Street Oakland, CA 94602

Dear Mr. Detterman:

Attached please find a copy of the Groundwater Sampling Report dated 3/20/2012 for the above referenced site. I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Sincerely,

Leteryll Peter Yee



September 30, 2012

#### GROUNDWATER SAMPLING DATA REPORT AUGUST 2012 GROUNDWATER SAMPLING ASE JOB NO. 3412

at Yee Property 726 Harrison Street Oakland, CA 94602

Prepared by:
AQUA SCIENCE ENGINEERS, INC.
55 Oak Court, Suite 220
Danville, CA 94526
(925) 820-9391



#### 1.0 INTRODUCTION

Site Location (Site), See Figure 1
Yee Property
(Previously Former Chan's Shell Station)
726 Harrison Street
Oakland, CA 94602
(510) 444-6583

Responsible Party
Peter Yee
1000 San Antonio Avenue
Alameda, CA 94501

Environmental Consulting Firm Aqua Science Engineers, Inc. (ASE) 55 Oak Court, Suite 220 Danville, CA 94526 Contact: Robert Kitay, Senior Geologist (925) 820-9391

Arcadis US, Inc. 2000 Powell Street, 7<sup>th</sup> Floor Emeryville, CA 94608 Contact: Katherine Brandt, Project Geologist (510) 596-9675

Agency Review
Alameda County Health
Care Services Agency (ACHCSA)
1131 Harbor Bay Pkwy
Suite 250
Alameda, CA 94502
Contact: Mr. Steven Plunkett
(510) 567-6700

The following is a report detailing the August 9, 2012 groundwater sampling at the Yee Property, previously referred to as the former Chan's Shell Station. This sampling was conducted as required by the ACHCSA and RWQCB. ASE has prepared this report on behalf of Peter Yee, the current responsible party, who purchased the property from Kin Chan. This report is intended to supplement the ASE report: "Report of Soil and Groundwater Assessment" dated January 8, 1999. At the request of the ACHCSA, one report is to be submitted for the three properties with comingled plumes: Yee property, the adjacent property former ARCO Station located at 706 Harrison Street, and the operating 76 Station located at 800 Harrison Street. A full report will be written by Arcadis. This report only provides a description of the sampling and data collected at the Yee property.



#### 2.0 GROUNDWATER FLOW DIRECTION AND GRADIENT

On August 9, 2012, ASE measured the depth to groundwater in all six site monitoring wells 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 were observed in any site well. ASE coordinated this groundwater sampling with Arcadis, who is investigating the adjacent properties located at 706 Harrison Street, referred to in this report as the former ARCO station, and the 76 Station located at 800 Harrison Street. Tables and a potentiometric surface map will be provided in a report prepared by Arcadis for all three properties.

#### 3.0 GROUNDWATER SAMPLE COLLECTION

On August 9, 2012, ASE collected groundwater samples from monitoring wells MW-1 through MW-6. Prior to sampling, each well was purged of three well casing volumes of groundwater using disposable polyethylene bailers. 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 disposable polyethylene bailers and were decanted from the bottom of the bailers using low-flow emptying devices 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 BC Laboratories, Inc. of Bakersfield, California under appropriate chain-of-custody documentation. Well sampling field logs are presented in Appendix A. Well sampling purge water was contained in a sealed and labeled 55-gallon steel drum and is being currently stored on-site until off-site disposal can be arranged.

#### 4.0 GROUNDWATER SAMPLING ANALYSIS

All groundwater samples were analyzed by BC Laboratories, Inc. for total petroleum hydrocarbons as gasoline (TPH-G) by modified EPA Method 8015, and benzene, toluene, ethylbenzene and xylenes (collectively known as BTEX), methyl tertiary butyl ether (MTBE), and lead scavengers by EPA Method 8260B. The certified analytical report and chain-of-custody documentation are included as Appendix B. All data interpretation will be provided in the report prepared by Arcadis for all three properties in the comingled plume.

#### 6.0 REPORT LIMITATIONS

The results presented in this report represent 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 an independent CAL-DHS 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.





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

Attachments: Figures 1 and 2

Appendices A and B

cc: Mr. Peter Yee, property owner

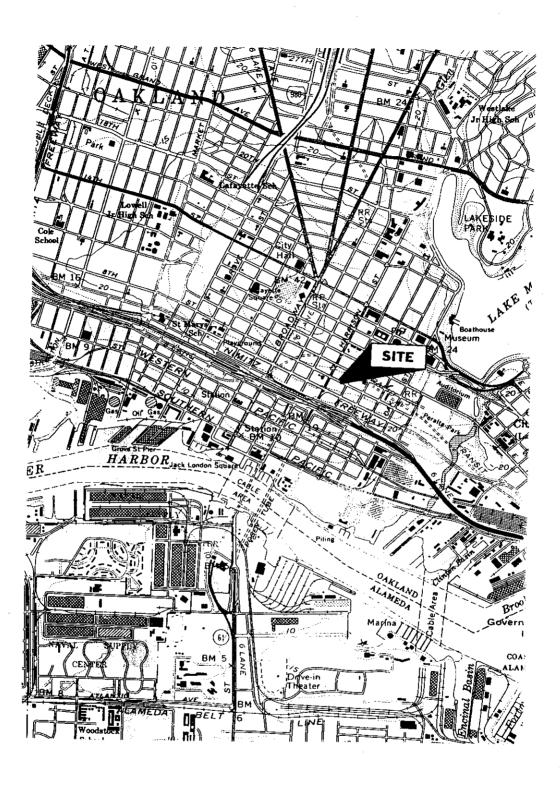
Mr. Steven Plunkett, Alameda County Health Care Services Agency via FTP upload

RWQCB, San Francisco Bay Region via Geotracker



## **FIGURES**



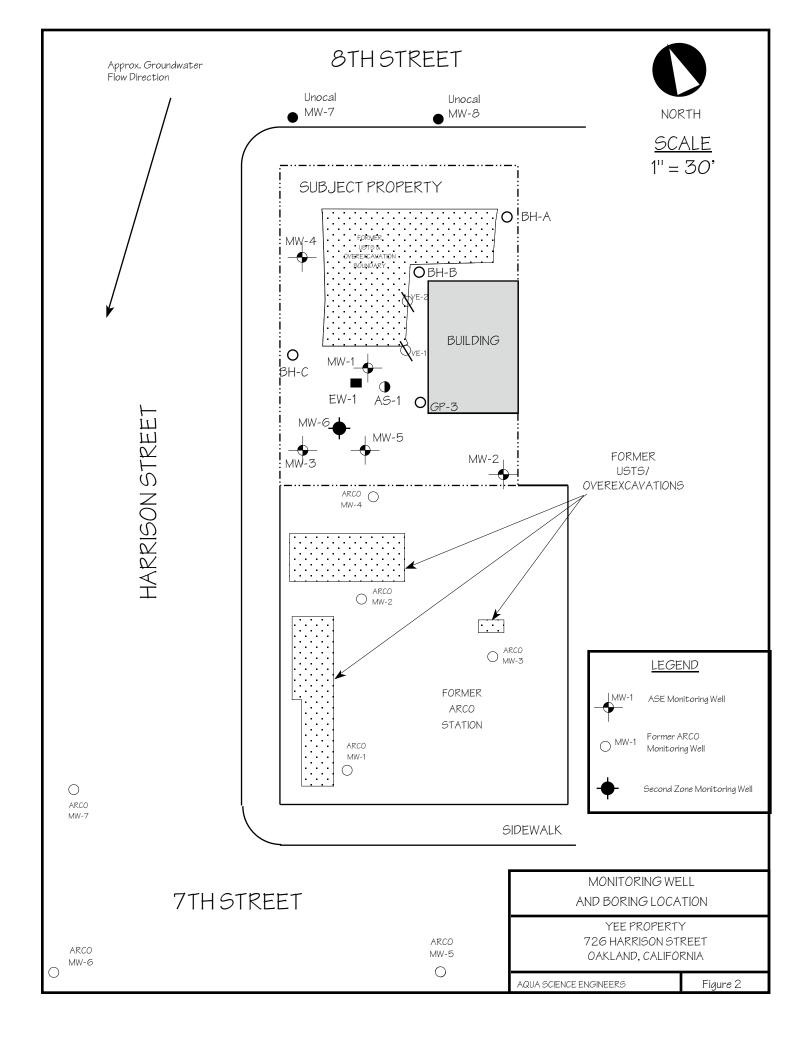


## SITE LOCATION MAP

YEE PROPERTY
726 HARRISON STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS

Figure 1





## **APPENDIX A**

Well Sampling Field Logs

## WELL SAMPLING FIELD LOG

DATE OF SAMPLING 08.09.12
SAMPLER DA
WELL DIAMETER 2
TIME OF MEASUREMENT 6,36
1.5
3
OR TO SAMPLING 4.5
DISPOSABLE BAILER
TIME EVACUATION COMPLETED 0201
AFTER HOW MANY GALLONS
ILER )
ODOR/SEDIMENT CONTROL CONTROL

### CHEMICAL DATA

YOLUME PURGED:	TEMPERATURE	PH	CONDUCTIVITY
,	19.0	43	(12)
.9.	19,0	2,0	540
2	(A,1	7.0	530

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINE	ANALYSIS	PRESERVED
MW-1	3	40 pel vox	8260 B	

## WELL SAMPLING FIELD LOG

PROJECT NAME YEE	
JOB NUMBER 3412	DATE OF SAMPLING 68.09.12
WELLID. MW-2	SAMPLER DA
TOTAL DEPTH OF WELL 1810	WELL DIAMETER 2
DEPTH TO WATER PRIOR TO PURGING 18,55	TIME OF MEASUREMENT 0628
PRODUCT THICKNESS	
DEPTH OF WELL CASING IN WATER 9	45
NUMBER OF GALLONS PER WELL CASING VOLUME	1.51
NUMBER OF WELL CASING VOLUMES TO BE REMOVED	3
REQUIRED VOLUME OF GROUNDWATER TO BE PURGED P	RIOP TO SAMPLING +, 5
EQUIPMENT USED TO PURGE WELL NET	W DISPOSABLE BAILER
TIME EVACUATION STARTED 67 23	TIME EVACUATION COMPLETED
TIME SAMPLES WERE COLLECTED 5	
DID WELL GO DRY	AFTER FOW MANY GALLONG CONTROL
YCLUME OF GROUNDWATER PURGED	d . 5
SAMPLING DEVICE NEW DISPOSABLE B	ALER
SAMPLE COLOR (A P. 10)	ODOR/SEDIMENT NO A / N
	· · · - · · · · · · · · · · · · · · · ·

#### CHEMICAL DATA

YOLUME PURGED	TEMPERATURE	PH (	CÔNDUCTIVITY
	17.2	7.2	360
2	14.2	4.0	310
3	190	6.9	350

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINE	RANALYSIS	PRESERVED
MW-2	3	40 ml vox	8260 B	

## WELL SAMPLING FIELD LOG

PROJECT NAME YEE	
JOB NUMBER 3412-	DATE OF SAMPLING 08.09.12
WELLID. MW-3	SAMPLER D
TOTAL DEPTH OF WELL 29.2	WELL DIAMETER 2
DEPTH TO WATER PRIOR TO PURGING 17,74	TIME OF MEASUREMENT 0630
PRODUCT THICKNESS &	
DEPTH OF WELL CASING IN WATER \(\((1.4)\)	6
NUMBER OF GALLONS PER WELL CASING VOLUME	1.83
NUMBER OF WELL CASING VCLUMES TO BE REMOVED	3
REQUIRED VOLUME OF GROUNDWATER TO BE PURGED PR	IOR TO SAMPLING 5.5
EQUIPMENT USED TO PURGE WELL NEW	DISPOSABLE BAILER
TIME EVACUATION STARTED	TIME EVACUATION COMPLETED * 6 1 2
TIME SAMPLES WERE COLLECTED	
DID WELL GO DRY	AFTER HOW MANY GALLONS
VOLUME OF GROUNDWATER PJRGED	
SAMPLING DEVICE NEW DISPOSABLE BA	MLER
SAMPLE COLOR 1977 1977	ODOR/SEDIMENT .

## CHEMICAL DATA

R VOLUME PURGED	TEMPERATURE	PH	CONDUCTIVITY
1	1	<u> </u>	
. 2	(et , 1,	2.1	400
3	· 27	7.2	d eve,

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINER	ANALYSIS	PRESERVED
MW-3	3	40 pel vox	8260 B	1

## WELL SAMPLING FIELD LOG

_

#### CHEMICAL DATA

Z VOLÜME PURGED	TEMPERATURE	PHT PHT	CONDUCTIVITY
	1.4%	7.0	100
2_	19.3	5.9	
3	14.3	0.9	

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINE	R ANALYSIS	PRESERVED
MW- 4	3	40 ml vox	8260 в	

## WELL SAMPLING FIELD LOG

PROJECTNAME YEE	
JOB NUMBER 3412-	DATE OF SAMPLING 08.09.12
WELLID. MW-5	SAMPLER DA
TOTAL DEPTH OF WELL 28,5	WELL DIAMETER 2
DEPTH TO WATER PRIOR TO PURGING	TIME OF MEASUREMENT 08 20
PRODUCT THICKNESS	
DEPTH OF WELL CASING IN WATER 10.24	
NUMBER OF GALLONS PER WELL CASING VOLUME	1.64
NUMBER OF WELL CASING VOLUMES TO BE REMOVE	D 3
REQUIRED VOLUME OF GROUNDWATER TO BE PURGE	ED PRIOR TO SAMPLING 5
EQUIPMENT USED TO PURGE WELL	NEW DISPOSABLE BAILER
TIME EVACUATION STARTED	TIME EVACUATION COMPLETED 083
TIME SAMPLES WERE COLLECTED C & 4	>
DID WELL GO DRY NO	AFTER HOW MANY GALLONS
VOLUME OF GROUNDWATER PURGED	
SAMPLING DEVICE NEW DISPOSAB	LE BAILER )
SAMPLE COLOR (1 67 4 7	ODOR/SEDIMENT TO THE STATE OF T
•	

## CHEMICAL DATA

VOLUME PURGED	TEMPERATURE	PH 1995	CÓNDUCTIVITY
	18,4	2 2	257
1	1 14 y		
2		11 /	

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINI	ER ANALYSIS	PRESERVE
MW-5	3	40 ml vox	8260 B	
	<del></del>			
		<u> </u>		1

## WELL SAMPLING FIELD LOG

PROJECT NAME YEE	
JOB NUMBER 3412-	DATE OF SAMPLING 08.09.12
WELLID. MW-6	SAMPLER 🔀
TOTAL DEPTH OF WELL 467. (	WELL DIAMETER 2
DEPTH TO WATER PRIOR TO PURGING	TIME OF MEASUREMENT (OF A THE
PRODUCT THICKNESS	
DEPTH OF WELL CASING IN WATER	) 0 . 73
NUMBER OF GALLONS PER WELL CASING VOLL	IME
NUMBER OF WELL CASING VCLUMES TO BE RE	MOVED 3
REQUIRED VOLUME OF GROUNDWATER TO BE	PURGED PRIOR TO SAMPLING
EQUIPMENT USED TO PURGE VELL	NEW DISPOSABLE BAILER
TIME EVACUATION STARTED	TIME EVACUATION COMPLETED
TIME SAMPLES WERE COLLECTED 2 7 7 7	
DID WELL GO DRY	AFTER HOW MANY GALLONS
YOLUME OF GROUNDWATER PURGED	
SAMPLING DEVICE NEW DISP	OSABLE BAILER )
SAMPLE COLOR	ODOR/SEDIMENT

### CHEMICAL DATA

YOLUME PURGED	TEMPERATURE: 1	PH (1,41)	CÔNDUCTIVITY
1	1 -7 - 2	41	
2			
3			1

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAIN	ER ANALYSIS	PRESERVE
MW-6	3	40 ml vox	8260 B	



## APPENDIX B

Certified Analytical Report and Chain of Custody Documentation



Date of Report: 08/16/2012

Robert Kitay

Aqua Science Engineers, Inc. 55 Oak Court, Ste. 220 Danville, CA 94526

Yee Project:

1215020 BC Work Order: B128032 Invoice ID:

Enclosed are the results of analyses for samples received by the laboratory on 8/10/2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Kerrie Vaughan

**Client Services** 

**Authorized Signature** 

Certifications: CA ELAP #1186; NV #CA00014



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SAMPLE ID.	DATE	TIME	матніх	OUANTITY	FPH-GAS / MTBE & BT EPA 5030/8015-8020)	FPH-DIESEL EPA 3510/8015)	TPH-DIESEL & MOTOR (EPA 3510/8015)	CAM 17 METALS (EPA 6010+7000)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PESTICIDES (EPA 8081)	FUEL OXYGENATES (EPA 8260)	PURGEABLE HALOCARBONS (EPA 601/8010)	TPH-G/BTEX/5 OXYS (EPA METHOD 8260)	MULTI-RANGE HYDHOCARBONS WITH SILICA GEL CLEANUP (EPA 8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	LUFT METALS (5) (EPA 6010+7000)	COMPOSITE 4:1	EDF	TPH-6/BTEX 1,2-0CA, E 64 EPA 82	
Mw-1 _1	8/9/12	6702	-	3			F		1						210	>=		0		<del>/ 2</del> <del>2</del>	
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Mw-2 -2 Mw-3 -3 Mw-4 -4 Mw-5 -5		6815		71											<u> </u>				12	<del></del>	
mw-4 -4		0718	7																7		
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Chain of Custody and Cooler Receipt Form for 1215020 Page 2 of 2

BC LABORATORIES INC. Submission #: 12-15020		COOL	ER RECE	IPT FOR	M	Rev. No. 1	12/3	0/10 P	age <u>\</u> C	)f L
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All samples received? Yes No □	All samples	containers	intact? Ye	sozk No		Descript	ion(s) mate	h COC? Y	(eeK No	
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PT INORGANIC CHEMICAL METALS										
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PT TOTAL SULFIDE										
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PT TOTAL ORGANIC CARBON										
PT TOX										
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40ml VOA VIAL TRAVEL BLANK	0.2	1\ 7	0.2		0.5			ļ	<u> </u>	
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Aqua Science Engineers, Inc.

Reported: 08/16/2012 15:00

55 Oak Court, Ste. 220 Project: Yee
Danville, CA 94526 Project Number: 3412
Project Manager: Robert Kitay

#### **Laboratory / Client Sample Cross Reference**

**Laboratory** Client Sample Information

1215020-01 COC Number:

Project Number: YEE
Sampling Location: --Sampling Point: MW-1
Sampled By: ASED

**Receive Date:** 08/10/2012 18:50 **Sampling Date:** 08/09/2012 07:02

Sample Depth: --Lab Matrix: Water
Sample Type: Water

Delivery Work Order: Global ID: T0600102122 Location ID (FieldPoint):

Matrix: WX

Sample QC Type (SACode): CS

Cooler ID:

1215020-02 COC Number: ---

Project Number: YEE
Sampling Location: --Sampling Point: MW-2
Sampled By: ASED

**Receive Date:** 08/10/2012 18:50 **Sampling Date:** 08/09/2012 07:32

Sample Depth: --Lab Matrix: Water
Sample Type: Water
Delivery Work Order:
Global ID: T0600102122

Location ID (FieldPoint):

Matrix: WX

Sample QC Type (SACode): CS

Cooler ID:

1215020-03 COC Number: ---

Project Number: YEE
Sampling Location: --Sampling Point: MW-3
Sampled By: ASED

**Receive Date:** 08/10/2012 18:50 **Sampling Date:** 08/09/2012 08:15

Sample Depth: --Lab Matrix: Water
Sample Type: Water
Delivery Work Order:

Global ID: T0600102122 Location ID (FieldPoint):

Matrix: WX

Sample QC Type (SACode): CS

Cooler ID:

Aqua Science Engineers, Inc. Reported: 08/16/2012 15:00

55 Oak Court, Ste. 220 Project: Yee
Danville, CA 94526 Project Number: 3412
Project Manager: Robert Kitay

#### **Laboratory / Client Sample Cross Reference**

**Laboratory** Client Sample Information

1215020-04 COC Number:

Project Number: YEE
Sampling Location: --Sampling Point: MW-4
Sampled By: ASED

**Receive Date:** 08/10/2012 18:50 **Sampling Date:** 08/09/2012 07:18

Sample Depth: --Lab Matrix: Water
Sample Type: Water

Delivery Work Order: Global ID: T0600102122 Location ID (FieldPoint):

Matrix: WX

Sample QC Type (SACode): CS

Cooler ID:

1215020-05 COC Number: ---

Project Number: YEE
Sampling Location: --Sampling Point: MW-5
Sampled By: ASED

**Receive Date:** 08/10/2012 18:50 **Sampling Date:** 08/09/2012 08:40

Sample Depth: --Lab Matrix: Water
Sample Type: Water
Delivery Work Order:
Global ID: T0600102122

Location ID (FieldPoint):

Matrix: WX

Sample QC Type (SACode): CS

Cooler ID:

1215020-06 COC Number: ---

Project Number: YEE
Sampling Location: --Sampling Point: MW-6
Sampled By: ASED

**Receive Date:** 08/10/2012 18:50 **Sampling Date:** 08/09/2012 08:02

Sampling Date: 08/09/2012
Sample Depth: --Lab Matrix: Water
Sample Type: Water

Delivery Work Order: Global ID: T0600102122 Location ID (FieldPoint):

Matrix: WX

Sample QC Type (SACode): CS

Cooler ID:

Aqua Science Engineers, Inc.

55 Oak Court, Ste. 220

Danville, CA 94526

Reported: 08/16/2012 15:00

Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

BCL Sample ID:	1215020-01	Client Sampl	YEE, MW	/-1, 8/9/201	2 7:02:00AM				
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		760	ug/L	6.2	1.0	EPA-8260	ND	A01	1
1,2-Dibromoethane		ND	ug/L	0.50	0.16	EPA-8260	ND		2
1,2-Dichloroethane		ND	ug/L	0.50	0.17	EPA-8260	ND		2
Ethylbenzene		58	ug/L	0.50	0.098	EPA-8260	ND		2
Methyl t-butyl ether		6700	ug/L	50	11	EPA-8260	ND	A01	3
Toluene		27	ug/L	0.50	0.093	EPA-8260	ND		2
Total Xylenes		60	ug/L	1.0	0.36	EPA-8260	ND		2
p- & m-Xylenes		52	ug/L	0.50	0.28	EPA-8260	ND		2
o-Xylene		8.2	ug/L	0.50	0.082	EPA-8260	ND		2
Total Purgeable Petro Hydrocarbons	oleum	6600	ug/L	620	90	Luft-GC/MS	ND	A01	1
1,2-Dichloroethane-d4	4 (Surrogate)	103	%	75 - 125 (LC	L - UCL)	EPA-8260			1
1,2-Dichloroethane-d4	4 (Surrogate)	98.0	%	75 - 125 (LC	L - UCL)	EPA-8260			2
1,2-Dichloroethane-d4	4 (Surrogate)	97.1	%	75 - 125 (LC	CL - UCL)	EPA-8260			3
Toluene-d8 (Surrogate	e)	99.2	%	80 - 120 (LC	CL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate	e)	94.0	%	80 - 120 (LC	CL - UCL)	EPA-8260			2
Toluene-d8 (Surrogate	e)	106	%	80 - 120 (LC	L - UCL)	EPA-8260			3
4-Bromofluorobenzen	e (Surrogate)	101	%	80 - 120 (LC	L - UCL)	EPA-8260			1
4-Bromofluorobenzen	e (Surrogate)	125	%	80 - 120 (LC	L - UCL)	EPA-8260		S09	2
4-Bromofluorobenzen	e (Surrogate)	98.4	%	80 - 120 (LC	CL - UCL)	EPA-8260			3

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260	08/13/12	08/14/12 14:36	JMC	MS-V12	12.500	BVH0912
2	EPA-8260	08/13/12	08/13/12 23:30	JMC	MS-V12	1	BVH0912
3	EPA-8260	08/13/12	08/14/12 14:54	JMC	MS-V12	100	BVH0912

Aqua Science Engineers, Inc. 55 Oak Court, Ste. 220 Danville, CA 94526

08/16/2012 15:00 Reported:

Project: Yee Project Number: 3412 Project Manager: Robert Kitay

BCL Sample ID: 1	215020-02	Client Sampl	e Name:	YEE, MW	-2, 8/9/201	2 7:32:00AM			
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	0.083	EPA-8260	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	0.16	EPA-8260	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	0.17	EPA-8260	ND		1
Ethylbenzene		ND	ug/L	0.50	0.098	EPA-8260	ND		1
Methyl t-butyl ether		ND	ug/L	0.50	0.11	EPA-8260	ND		1
Toluene		ND	ug/L	0.50	0.093	EPA-8260	ND		1
Total Xylenes		ND	ug/L	1.0	0.36	EPA-8260	ND		1
p- & m-Xylenes		ND	ug/L	0.50	0.28	EPA-8260	ND		1
o-Xylene		ND	ug/L	0.50	0.082	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons		ND	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surr	rogate)	99.0	%	75 - 125 (LC	L - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)		91.7	%	80 - 120 (LC	L - UCL)	EPA-8260			1
4-Bromofluorobenzene (Sur	rogate)	95.0	%	80 - 120 (LC	L - UCL)	EPA-8260			1

			Run			QC					
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID				
1	EPA-8260	08/13/12	08/13/12 23:12	JMC	MS-V12	1	BVH0912				

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Aqua Science Engineers, Inc. 55 Oak Court, Ste. 220 Danville, CA 94526 **Reported:** 08/16/2012 15:00

Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

BCL Sample ID: 1	215020-03	Client Sampl	e Name:	YEE, MW	-3, 8/9/201	2 8:15:00AM			
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene		ND	ug/L	0.50	0.083	EPA-8260	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	0.16	EPA-8260	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	0.17	EPA-8260	ND		1
Ethylbenzene		ND	ug/L	0.50	0.098	EPA-8260	ND		1
Methyl t-butyl ether		9.2	ug/L	0.50	0.11	EPA-8260	ND		1
Toluene		ND	ug/L	0.50	0.093	EPA-8260	ND		1
Total Xylenes		ND	ug/L	1.0	0.36	EPA-8260	ND		1
p- & m-Xylenes		ND	ug/L	0.50	0.28	EPA-8260	ND		1
o-Xylene		ND	ug/L	0.50	0.082	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	1	39	ug/L	50	7.2	Luft-GC/MS	ND	J	1
1,2-Dichloroethane-d4 (Sur	rogate)	105	%	75 - 125 (LC	L - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)		94.8	%	80 - 120 (LC	L - UCL)	EPA-8260			1
4-Bromofluorobenzene (Sui	rrogate)	95.0	%	80 - 120 (LC	L - UCL)	EPA-8260			1

			Run					
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260	08/13/12	08/13/12 22:54	JMC	MS-V12	1	BVH0912	

**Reported:** 08/16/2012 15:00

Project Number: 3412
Project Manager: Robert Kitay

Aqua Science Engineers, Inc. 55 Oak Court, Ste. 220 Danville, CA 94526

BCL Sample ID:	1215020-04	Client Sampl	e Name:	YEE, MW	-4, 8/9/201	2 7:18:00AM			
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		2.0	ug/L	0.50	0.083	EPA-8260	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	0.16	EPA-8260	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	0.17	EPA-8260	ND		1
Ethylbenzene		ND	ug/L	0.50	0.098	EPA-8260	ND		1
Methyl t-butyl ether		21	ug/L	0.50	0.11	EPA-8260	ND		1
Toluene		ND	ug/L	0.50	0.093	EPA-8260	ND		1
Total Xylenes		ND	ug/L	1.0	0.36	EPA-8260	ND		1
p- & m-Xylenes		ND	ug/L	0.50	0.28	EPA-8260	ND		1
o-Xylene		ND	ug/L	0.50	0.082	EPA-8260	ND		1
Total Purgeable Petroleu Hydrocarbons	m	280	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Su	ırrogate)	107	%	75 - 125 (LC	L - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)		98.8	%	80 - 120 (LC	L - UCL)	EPA-8260		<u> </u>	1
4-Bromofluorobenzene (S	urrogate)	104	%	80 - 120 (LC	L - UCL)	EPA-8260			1

			Run		QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8260	08/13/12	08/13/12 22:36	JMC	MS-V12	1	BVH0912		

Aqua Science Engineers, Inc. 55 Oak Court, Ste. 220 Danville, CA 94526 **Reported:** 08/16/2012 15:00

Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

BCL Sample ID: 1	215020-05	Client Sampl	e Name:	YEE, MW	-5, 8/9/201	2 8:40:00AM			
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene		1400	ug/L	50	8.3	EPA-8260	ND	A01	1
1,2-Dibromoethane		ND	ug/L	5.0	1.6	EPA-8260	ND	A01	2
1,2-Dichloroethane		ND	ug/L	5.0	1.7	EPA-8260	ND	A01	2
Ethylbenzene		470	ug/L	5.0	0.98	EPA-8260	ND	A01	2
Methyl t-butyl ether		16000	ug/L	250	55	EPA-8260	ND	A01	3
Toluene		580	ug/L	5.0	0.93	EPA-8260	ND	A01	2
Total Xylenes		960	ug/L	10	3.6	EPA-8260	ND	A01	2
p- & m-Xylenes		730	ug/L	5.0	2.8	EPA-8260	ND	A01	2
o-Xylene		220	ug/L	5.0	0.82	EPA-8260	ND	A01	2
Total Purgeable Petroleum Hydrocarbons	ı	16000	ug/L	5000	720	Luft-GC/MS	ND	A01	1
1,2-Dichloroethane-d4 (Suri	rogate)	101	%	75 - 125 (LC	L - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Surr	rogate)	104	%	75 - 125 (LC	L - UCL)	EPA-8260			2
1,2-Dichloroethane-d4 (Suri	rogate)	103	%	75 - 125 (LC	L - UCL)	EPA-8260			3
Toluene-d8 (Surrogate)		102	%	80 - 120 (LC	L - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)		97.5	%	80 - 120 (LC	L - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)		103	%	80 - 120 (LC	L - UCL)	EPA-8260			3
4-Bromofluorobenzene (Sur	rogate)	98.8	%	80 - 120 (LC	L - UCL)	EPA-8260			1
4-Bromofluorobenzene (Sur	rogate)	110	%	80 - 120 (LC	L - UCL)	EPA-8260			2
4-Bromofluorobenzene (Sur	rogate)	96.9	%	80 - 120 (LC	L - UCL)	EPA-8260			3

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260	08/13/12	08/14/12 14:18	JMC	MS-V12	100	BVH0912	
2	EPA-8260	08/13/12	08/13/12 22:18	JMC	MS-V12	10	BVH0912	
3	EPA-8260	08/13/12	08/15/12 10:22	JMC	MS-V12	500	BVH0912	

Aqua Science Engineers, Inc. 55 Oak Court, Ste. 220 Danville, CA 94526 **Reported:** 08/16/2012 15:00

Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

BCL Sample ID:	1215020-06	Client Sampl	e Name:	YEE, MW	-6, 8/9/201	2 8:02:00AM			
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	0.083	EPA-8260	ND	40.0.0	1
1,2-Dibromoethane		ND	ug/L	0.50	0.16	EPA-8260	ND		1
1,2-Dichloroethane		1.2	ug/L	0.50	0.17	EPA-8260	ND		1
Ethylbenzene		ND	ug/L	0.50	0.098	EPA-8260	ND		1
Methyl t-butyl ether		970	ug/L	25	5.5	EPA-8260	ND	A01	2
Toluene		ND	ug/L	0.50	0.093	EPA-8260	ND		1
Total Xylenes		ND	ug/L	1.0	0.36	EPA-8260	ND		1
p- & m-Xylenes		ND	ug/L	0.50	0.28	EPA-8260	ND		1
o-Xylene		ND	ug/L	0.50	0.082	EPA-8260	ND		1
Total Purgeable Petroleu Hydrocarbons	m	830	ug/L	50	7.2	Luft-GC/MS	ND	A90	1
1,2-Dichloroethane-d4 (Si	urrogate)	98.0	%	75 - 125 (LC	L - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Si	urrogate)	99.6	%	75 - 125 (LC	L - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)		102	%	80 - 120 (LC	L - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)		102	%	80 - 120 (LC	L - UCL)	EPA-8260			2
4-Bromofluorobenzene (S	urrogate)	95.9	%	80 - 120 (LC	L - UCL)	EPA-8260			1
4-Bromofluorobenzene (S	urrogate)	94.7	%	80 - 120 (LC	L - UCL)	EPA-8260			2

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260	08/13/12	08/13/12 22:01	JMC	MS-V12	1	BVH0993	
2	EPA-8260	08/13/12	08/14/12 14:00	JMC	MS-V12	50	BVH0993	

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Aqua Science Engineers, Inc. 55 Oak Court, Ste. 220 Danville, CA 94526 Reported: 08/16/2012 15:00

Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

## Volatile Organic Analysis (EPA Method 8260)

#### **Quality Control Report - Method Blank Analysis**

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BVH0912						
Benzene	BVH0912-BLK1	ND	ug/L	0.50	0.083	
1,2-Dibromoethane	BVH0912-BLK1	ND	ug/L	0.50	0.16	
1,2-Dichloroethane	BVH0912-BLK1	ND	ug/L	0.50	0.17	
Ethylbenzene	BVH0912-BLK1	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	BVH0912-BLK1	ND	ug/L	0.50	0.11	
Toluene	BVH0912-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	BVH0912-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BVH0912-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BVH0912-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BVH0912-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BVH0912-BLK1	104	%	75 - 12	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BVH0912-BLK1	105	%	80 - 120	0 (LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BVH0912-BLK1	98.9	%	80 - 120	0 (LCL - UCL)	
QC Batch ID: BVH0993						
Benzene	BVH0993-BLK1	ND	ug/L	0.50	0.083	
1,2-Dibromoethane	BVH0993-BLK1	ND	ug/L	0.50	0.16	
1,2-Dichloroethane	BVH0993-BLK1	ND	ug/L	0.50	0.17	
Ethylbenzene	BVH0993-BLK1	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	BVH0993-BLK1	ND	ug/L	0.50	0.11	
Toluene	BVH0993-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	BVH0993-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BVH0993-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BVH0993-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BVH0993-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BVH0993-BLK1	98.7	%	75 - 12	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BVH0993-BLK1	107	%	80 - 120	0 (LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BVH0993-BLK1	102	%	80 - 120	0 (LCL - UCL)	

Aqua Science Engineers, Inc. 55 Oak Court, Ste. 220 Danville, CA 94526 **Reported:** 08/16/2012 15:00

Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

## Volatile Organic Analysis (EPA Method 8260)

#### **Quality Control Report - Laboratory Control Sample**

							<b>Control Limits</b>			
Constituent	QC Sample ID	Tuno	Result	Spike	Units	Percent	RPD	Percent	RPD	Lab Quals
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	KPD	Recovery	KPD	Quais
QC Batch ID: BVH0912										
Benzene	BVH0912-BS1	LCS	30.200	25.000	ug/L	121		70 - 130		
Toluene	BVH0912-BS1	LCS	26.410	25.000	ug/L	106		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BVH0912-BS1	LCS	10.300	10.000	ug/L	103		75 - 125		
Toluene-d8 (Surrogate)	BVH0912-BS1	LCS	10.340	10.000	ug/L	103		80 - 120		
4-Bromofluorobenzene (Surrogate)	BVH0912-BS1	LCS	10.610	10.000	ug/L	106		80 - 120		
QC Batch ID: BVH0993										
Benzene	BVH0993-BS1	LCS	30.140	25.000	ug/L	121		70 - 130		
Toluene	BVH0993-BS1	LCS	26.120	25.000	ug/L	104		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BVH0993-BS1	LCS	9.6400	10.000	ug/L	96.4		75 - 125		
Toluene-d8 (Surrogate)	BVH0993-BS1	LCS	10.090	10.000	ug/L	101		80 - 120		
4-Bromofluorobenzene (Surrogate)	BVH0993-BS1	LCS	10.370	10.000	ug/L	104		80 - 120		

**Reported:** 08/16/2012 15:00

Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Aqua Science Engineers, Inc. 55 Oak Court, Ste. 220 Danville, CA 94526

### **Volatile Organic Analysis (EPA Method 8260)**

#### **Quality Control Report - Precision & Accuracy**

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BVH0912	Use	d client samp	le: N								
Benzene	MS	1213312-46	ND	30.850	25.000	ug/L		123		70 - 130	
	MSD	1213312-46	ND	28.690	25.000	ug/L	7.3	115	20	70 - 130	
Toluene	MS	1213312-46	ND	26.610	25.000	ug/L		106		70 - 130	
	MSD	1213312-46	ND	25.770	25.000	ug/L	3.2	103	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1213312-46	ND	9.8100	10.000	ug/L		98.1		75 - 125	
	MSD	1213312-46	ND	9.3300	10.000	ug/L	5.0	93.3		75 - 125	
Toluene-d8 (Surrogate)	MS	1213312-46	ND	10.190	10.000	ug/L		102		80 - 120	
	MSD	1213312-46	ND	9.8100	10.000	ug/L	3.8	98.1		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1213312-46	ND	10.690	10.000	ug/L		107		80 - 120	
	MSD	1213312-46	ND	10.980	10.000	ug/L	2.7	110		80 - 120	
QC Batch ID: BVH0993	Use	d client samp	le: N								
Benzene	<b>−</b> MS	1215016-04	ND	30.640	25.000	ug/L		123		70 - 130	
	MSD	1215016-04	ND	29.950	25.000	ug/L	2.3	120	20	70 - 130	
Toluene	MS	1215016-04	ND	25.370	25.000	ug/L		101		70 - 130	
	MSD	1215016-04	ND	25.140	25.000	ug/L	0.9	101	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1215016-04	ND	10.380	10.000	ug/L		104		75 - 125	
	MSD	1215016-04	ND	9.8100	10.000	ug/L	5.6	98.1		75 - 125	
Toluene-d8 (Surrogate)	MS	1215016-04	ND	10.040	10.000	ug/L		100		80 - 120	
	MSD	1215016-04	ND	9.7400	10.000	ug/L	3.0	97.4		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1215016-04	ND	10.370	10.000	ug/L		104		80 - 120	
	MSD	1215016-04	ND	10.580	10.000	ug/L	2.0	106		80 - 120	

Aqua Science Engineers, Inc. Reported: 08/16/2012 15:00

55 Oak Court, Ste. 220 Project: Yee Danville, CA 94526 Project Number: 3412 Project Manager: Robert Kitay

#### **Notes And Definitions**

Estimated Value (CLP Flag)

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

Practical Quantitation Limit **PQL** Relative Percent Difference RPD

PQL's and MDL's are raised due to sample dilution. A01

A90 TPPH does not exhibit a "gasoline" pattern. TPPH is entirely due to MTBE.

S09 The surrogate recovery on the sample for this compound was not within the control limits.