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Alameda County

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OCT 01 2003

Environmental Health

Letter of Transmittal

To: Alameda County Environmental Health Services Date: 9/26/2003
1131 Harbor Bay Pkwy
Alameda CA 94502 Job No: SJ31-8LI-1

Attn: Mr. Scott Seery

We are sending the following items:

Table with 3 columns: Date, Copies, Description. Row 1: 23-Sep-03, 1, Quarterly Monitoring Report - Third Quarter 2003 Shell-Branded Service Station 318 South Livermore Avenue Livermore, CA

These are transmitted:

- For your Information, For action specified below, For review and comment, [X] For your use, As requested

Remarks

Copies to: By: R Lee Dooley Title: Senior Hydrogeologist

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Alameda County
OCT 07 2003
Environmental Health

September 23, 2003
Project No. SJ31-8LI-1.000G

Mr. Scott Seery
Environmental Health Services – Environmental Protection
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Quarterly Monitoring Report – Third Quarter 2003**
Shell-branded Service Station
318 South Livermore Avenue
Livermore, California

Dear Mr. Seery:

Delta Environmental Consultants, Inc. (Delta), on behalf of Shell Oil Products US (Shell), has prepared the following third quarter 2003 groundwater monitoring and sampling report for the above referenced site. A site location map is included as Figure 1.

On March 7, 2003, Shell received a notice of responsibility letter from the Alameda County Health Care Services Agency placing the site in the Local Oversight Program due to the presence of methyl tert-butyl ether (MTBE) in groundwater beneath the site. In a work plan, dated May 27, 2003, Delta proposed to continue quarterly sampling of site wells for the remainder of 2003 in order to monitor MTBE concentrations.

QUARTERLY GROUND WATER MONITORING PROGRAM

Groundwater monitoring wells were gauged and sampled by Blaine Tech Services (Blaine), at the direction of Delta, on July 17, 2003. Depth to groundwater was measured in Wells MW-5 through MW-8. Wells MW-1 through MW-4 were previously destroyed. Groundwater elevation data and contours are presented on Figure 2.

A member of:



Groundwater samples were collected from Wells MW-5 through MW-8. Samples were submitted by Blaine to Severn Trent Laboratories, Inc. in Pleasanton, California for analysis for total purgeable petroleum hydrocarbons as gasoline (TPH-g); benzene, toluene, ethylbenzene, and total xylenes (BTEX); and the five fuel oxygenates methyl tert-butyl ether (MTBE), diisopropyl ether (DIPE), ethyl-t-butyl ether (ETBE), tert-amyl methyl ether (TAME), and tert-butanol (TBA) using EPA Method 8260B. Benzene and MTBE concentrations in groundwater are presented on Figure 3.

Blaine's groundwater monitoring and sampling report, which includes historical and current groundwater elevation data, historical and current analytical results, and field data records for the current monitoring event, is included as Attachment A.

DISCUSSION

The groundwater gradient on July 17, 2003 was toward the west at a magnitude of 0.04 feet/feet, consistent with previous data.

MTBE was detected in Wells MW-7 and MW-8 at concentrations of 3.2 micrograms per liter (ug/l) and 0.5 ug/l, respectively. MTBE concentrations have decreased since second quarter 2003. All other analytes were below laboratory detection limits.

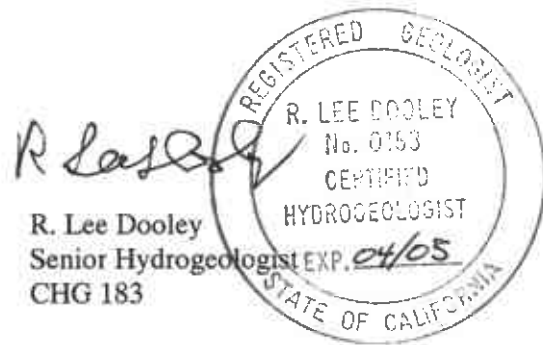
Delta proposes that DIPE, ETBE, TAME, and TBA be eliminated from the monitoring program. These analytes have been below the laboratory detection limits for the past three quarters.

Please call if you have any questions regarding the contents of this letter.

Sincerely,
Delta Environmental Consultants, Inc.



Vera Fischer
Staff Geologist

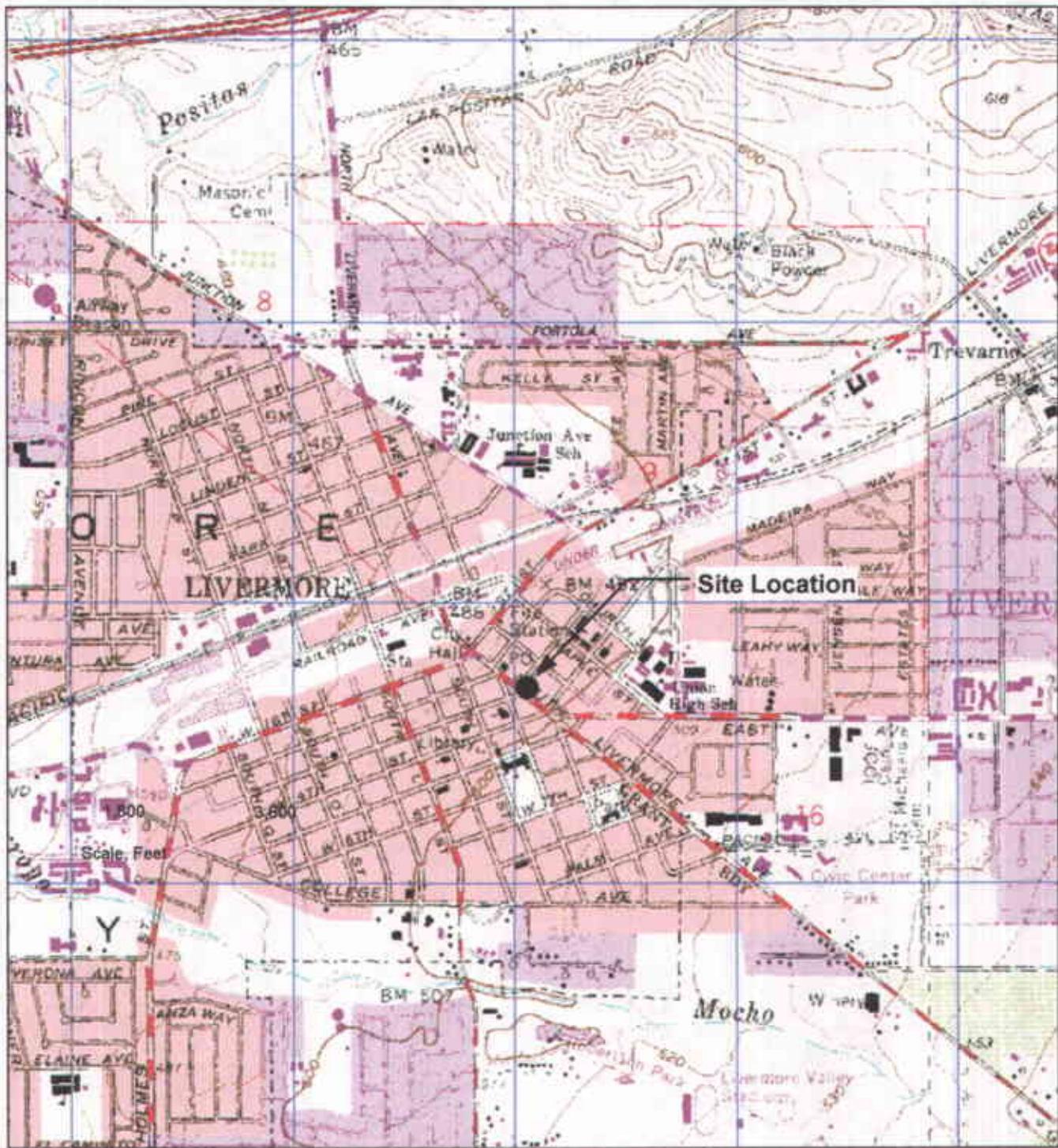


Attachments:

- Figure 1 – Site Location Map
- Figure 2 – Groundwater Elevation Contour Map
- Figure 3 – Benzene and MTBE Concentration Map

Attachment A – Groundwater Monitoring and Sampling Report, August 4, 2003

cc: Karen Petryna, Shell Oil Products US, Burbank
Betty Graham, RWQCB – Oakland



GENERAL NOTES:
 Base Map from: DeLorme Yarmouth, ME 04096
 Source Data: USGS

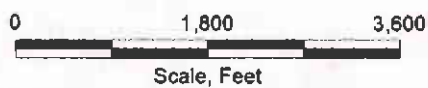


FIGURE 1
 SITE LOCATION MAP

SHELL-BRANDED SERVICE STATION
 318 South Livemore Avenue
 Livermore, CA

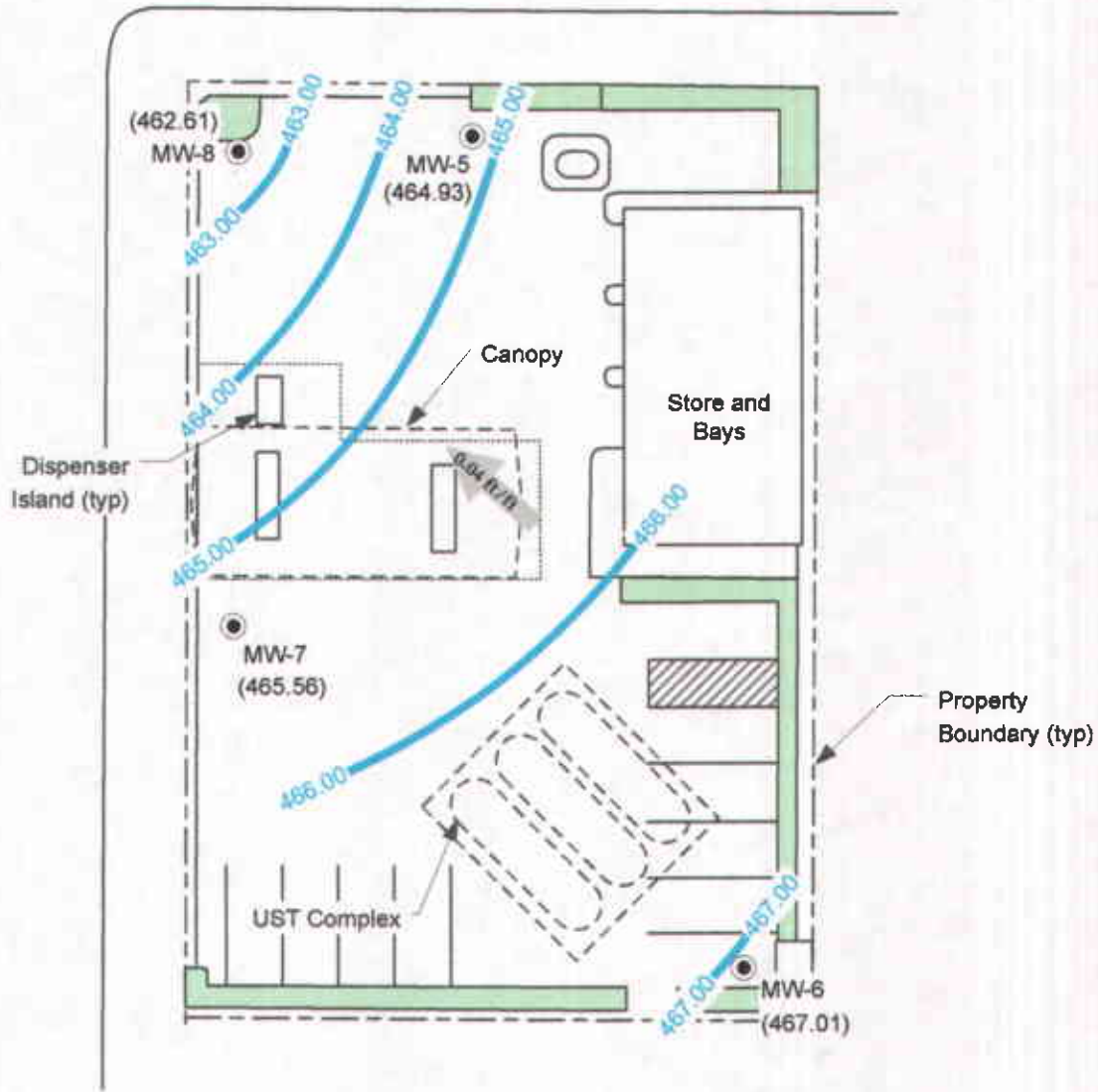
PROJECT NO. SJ31-BL-1.000G	DRAWN BY VF 9/25/03
FILE NO. SJ31-BL-1.000G	PREPARED BY VF
REVISION NO. 2	REVIEWED BY



Third Street



South Livemore Avenue



Property Boundary (typ)



LEGEND

- MW-6 ● **GROUNDWATER MONITORING WELL**
- **PLANTER**
- (462.29) **GROUNDWATER ELEVATION (MSL), 7/17/03**
- 467.00 — **GROUNDWATER ELEVATION CONTOUR**
- ← 0.012 ft./ft. **APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT**

FIGURE 2
GROUNDWATER ELEVATION CONTOUR MAP, JULY 17, 2003

SHELL-BRANDED SERVICE STATION
 318 South Livemore Avenue
 Livermore, California

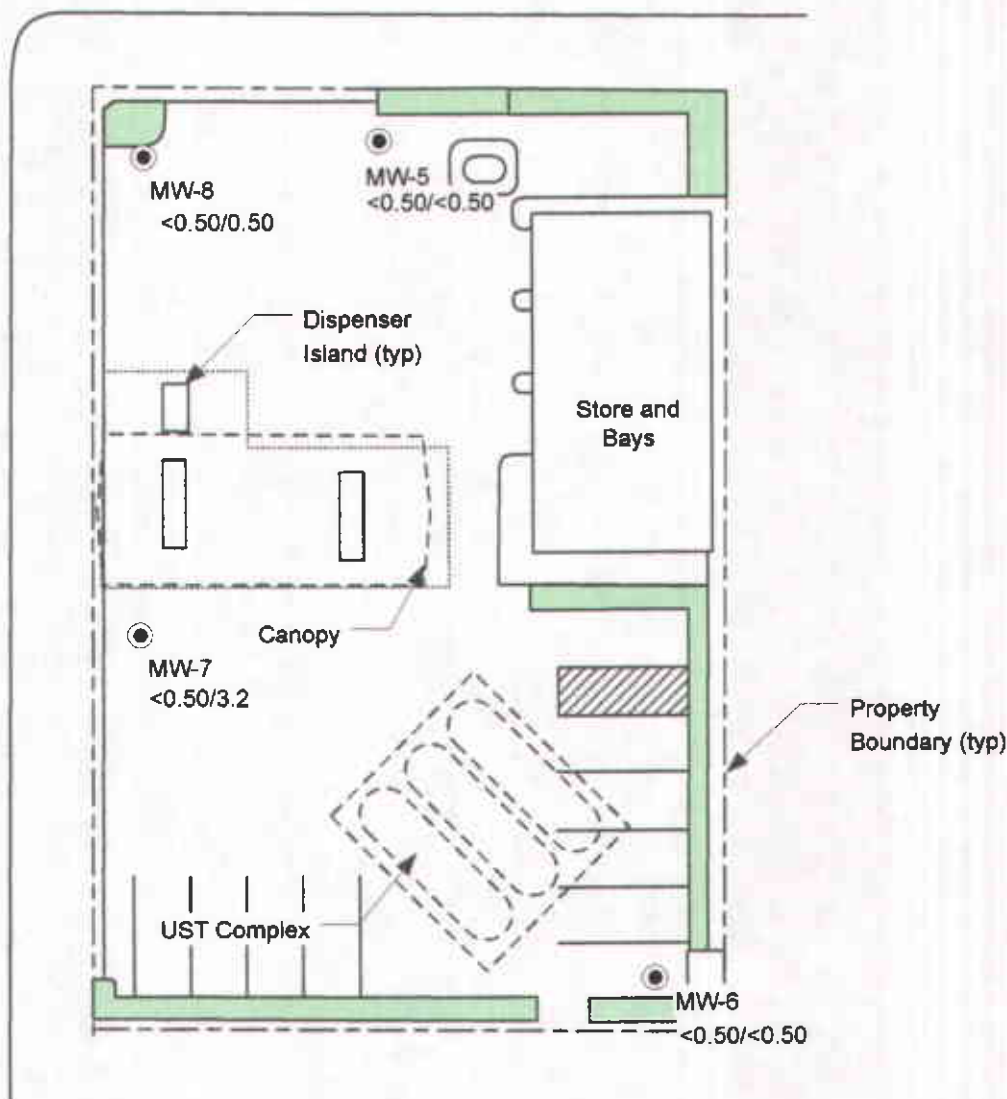
PROJECT NO. SJ31-BJ-1.000G	DRAWN BY VF 8/25/03
FILE NO. SJ31-BJ-1.000G	PREPARED BY VF
REVISION NO. 2	REVIEWED BY



Third Street



South Livermore Avenue



LEGEND

- MW-6 ● **GROUNDWATER MONITORING WELL**
- **PLANTER**
- <math><0.50/<0.50</math> **BENZENE / MTBE CONCENTRATIONS IN GROUNDWATER (UG/L), 7/17/03**

FIGURE 3
BENZENE AND MTBE CONCENTRATION MAP, JULY 17, 2003

SHELL-BRANDED SERVICE STATION
 318 South Livermore Avenue
 Livermore, California

PROJECT NO. SJ31-SLI-1.000G	DRAWN BY VF 9/25/03
FILE NO. SJ31-SLI-1.000G	PREPARED BY VF
REVISION NO. 2	REVIEWED BY



Delta
Environmental
Consultants, Inc.

Attachment A

GROUNDWATER MONITORING AND SAMPLING REPORT

BLAINE
TECH SERVICES INC.



1680 ROGERS AVENUE
SAN JOSE, CA 95112-1105
(408) 573-7771 FAX
(408) 573-0555 PHONE
CONTRACTOR'S LICENSE #746684
www.blainetech.com

August 4, 2003

Lynn Walker
Shell Oil Products US
P.O. Box 7869
Burbank, CA 91510-7869

Third Quarter 2003 Groundwater Monitoring at
Shell-branded Service Station
318 South Livermore Avenue
Livermore, CA

Monitoring performed on July 17, 2003

Groundwater Monitoring Report 030717-MM-3

This report covers the routine monitoring of groundwater wells at this Shell-branded facility. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater (if applicable) is, likewise, collected and transported to the Martinez Refining Company.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty-hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight-hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. Our activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrological conditions or formulation of recommendations was performed.

Please call if you have any questions.

Yours truly,

Leon Gearhart
Project Coordinator

LG/jt

attachments: Cumulative Table of WELL CONCENTRATIONS
Certified Analytical Report
Field Data Sheets

cc: Debbie Arnold
KHM Environmental
6234 San Ignacio Avenue, Suite E
San Jose, CA 95119

WELL CONCENTRATIONS
Shell-branded Service Station
318 South Livermore Avenue
Livermore, CA

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
MW-5	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	495.47	34.85	460.62
MW-5	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	495.47	37.26	458.21
MW-5	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	495.47	27.30	468.17
MW-5	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	495.47	27.84	467.63
MW-5	07/17/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	495.47	30.54	464.93
MW-6	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	497.57	35.41	462.16
MW-6	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	2.5	497.57	37.92	459.65
MW-6	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	497.57	27.71	469.86
MW-6	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	497.57	28.28	469.29
MW-6	07/17/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	497.57	30.56	467.01
MW-7	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	2.0	495.58	34.29	461.29
MW-7	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	1.9	495.58	36.80	458.78
MW-7	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	0.89	495.58	26.75	468.83
MW-7	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	4.0	495.58	27.31	468.27
MW-7	07/17/2003	<50	<0.50	<0.50	<0.50	<1.0	3.2	495.58	30.02	465.56
MW-8	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	6.9	494.90	34.46	460.44
MW-8	10/25/2002	140	<0.50	<0.50	<0.50	<0.50	2.2	494.90	36.98	457.92
MW-8	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	494.90	27.35	467.55
MW-8	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	0.67	494.90	27.44	467.46
MW-8	07/17/2003	<50	<0.50	<0.50	<0.50	<1.0	0.50	494.90	32.29	462.61

WELL CONCENTRATIONS
Shell-branded Service Station
318 South Livermore Avenue
Livermore, CA

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
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Abbreviations:

TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B.

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B.

MTBE = Methyl-tertiary-butyl ether

TOC = Top of Casing Elevation

GW = Groundwater

ug/L = Parts per billion

MSL = Mean sea level

ft = Feet

<n = Below detection limit

NA = Not applicable

Notes:

Survey data provided by KHM Environmental Management, Inc.

Blaine Tech Services, Inc.

July 31, 2003

1680 Rogers Avenue
San Jose, CA 95112-1105
Attn.: Leon Gearhart
Project#: 030717-MM3
Project: 97464709
Site: 318 S. Livermore Ave., Livermore

Dear Mr.Gearhart,

Attached is our report for your samples received on 07/18/2003 14:30
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
09/01/2003 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: tgranicher@stl-inc.com

Sincerely,



Tod Granicher
Project Manager

Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue

San Jose, CA 95112-1105

Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 030717-MM3

97464709

Received: 07/18/2003 14:30

Site: 318 S. Livermore Ave., Livermore

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-5	07/17/2003 12:55	Water	1
MW-6	07/17/2003 12:21	Water	2
MW-7	07/17/2003 13:52	Water	3
MW-8	07/17/2003 13:24	Water	4

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

07/31/2003 12:37

Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue

San Jose, CA 95112-1105

Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 030717-MM3

97464709

Received: 07/18/2003 14:30

Site: 318 S. Livermore Ave., Livermore

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	MW-5	Lab ID:	2003-07-0625 - 1
Sampled:	07/17/2003 12:55	Extracted:	7/29/2003 21:19
Matrix:	Water	QC Batch#:	2003/07/29-2C.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	07/29/2003 21:19	
Benzene	ND	0.50	ug/L	1.00	07/29/2003 21:19	
Toluene	ND	0.50	ug/L	1.00	07/29/2003 21:19	
Ethylbenzene	ND	0.50	ug/L	1.00	07/29/2003 21:19	
Total xylenes	ND	1.0	ug/L	1.00	07/29/2003 21:19	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	07/29/2003 21:19	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	07/29/2003 21:19	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	07/29/2003 21:19	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	07/29/2003 21:19	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	07/29/2003 21:19	
Surrogates(s)						
1,2-Dichloroethane-d4	96.4	76-130	%	1.00	07/29/2003 21:19	
Toluene-d8	105.9	78-115	%	1.00	07/29/2003 21:19	

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

07/31/2003 12:37

Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue
San Jose, CA 95112-1105
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 030717-MM3
97464709

Received: 07/18/2003 14:30

Site: 318 S. Livermore Ave., Livermore

Prep(s): 5030B	Test(s): 8260FAB
Sample ID: MW-6	Lab ID: 2003-07-0625 - 2
Sampled: 07/17/2003 12:21	Extracted: 7/29/2003 21:41
Matrix: Water	QC Batch#: 2003/07/29-2C.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	07/29/2003 21:41	
Benzene	ND	0.50	ug/L	1.00	07/29/2003 21:41	
Toluene	ND	0.50	ug/L	1.00	07/29/2003 21:41	
Ethylbenzene	ND	0.50	ug/L	1.00	07/29/2003 21:41	
Total xylenes	ND	1.0	ug/L	1.00	07/29/2003 21:41	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	07/29/2003 21:41	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	07/29/2003 21:41	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	07/29/2003 21:41	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	07/29/2003 21:41	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	07/29/2003 21:41	
Surrogates(s)						
1,2-Dichloroethane-d4	99.4	76-130	%	1.00	07/29/2003 21:41	
Toluene-d8	105.7	78-115	%	1.00	07/29/2003 21:41	

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

07/31/2003 12:37

Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue
San Jose, CA 95112-1105
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 030717-MM3
97464709

Received: 07/18/2003 14:30

Site: 318 S. Livermore Ave., Livermore

Prep(s): 5030B	Test(s): 8260FAB
Sample ID: MW-7	Lab ID: 2003-07-0625 - 3
Sampled: 07/17/2003 13:52	Extracted: 7/29/2003 22:03
Matrix: Water	QC Batch#: 2003/07/29-2C.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	07/29/2003 22:03	
Benzene	ND	0.50	ug/L	1.00	07/29/2003 22:03	
Toluene	ND	0.50	ug/L	1.00	07/29/2003 22:03	
Ethylbenzene	ND	0.50	ug/L	1.00	07/29/2003 22:03	
Total xylenes	ND	1.0	ug/L	1.00	07/29/2003 22:03	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	07/29/2003 22:03	
Methyl tert-butyl ether (MTBE)	3.2	0.50	ug/L	1.00	07/29/2003 22:03	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	07/29/2003 22:03	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	07/29/2003 22:03	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	07/29/2003 22:03	
Surrogates(s)						
1,2-Dichloroethane-d4	98.2	76-130	%	1.00	07/29/2003 22:03	
Toluene-d8	103.8	78-115	%	1.00	07/29/2003 22:03	

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

07/31/2003 12:37

Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue

San Jose, CA 95112-1105

Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 030717-MM3

97464709

Received: 07/18/2003 14:30

Site: 318 S. Livermore Ave., Livermore

Prep(s): 5030B	Test(s): 8260FAB
Sample ID: MW-8	Lab ID: 2003-07-0625 - 4
Sampled: 07/17/2003 13:24	Extracted: 7/29/2003 22:26
Matrix: Water	QC Batch#: 2003/07/29-2C.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	07/29/2003 22:26	
Benzene	ND	0.50	ug/L	1.00	07/29/2003 22:26	
Toluene	ND	0.50	ug/L	1.00	07/29/2003 22:26	
Ethylbenzene	ND	0.50	ug/L	1.00	07/29/2003 22:26	
Total xylenes	ND	1.0	ug/L	1.00	07/29/2003 22:26	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	07/29/2003 22:26	
Methyl tert-butyl ether (MTBE)	0.50	0.50	ug/L	1.00	07/29/2003 22:26	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	07/29/2003 22:26	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	07/29/2003 22:26	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	07/29/2003 22:26	
Surrogates(s)						
1,2-Dichloroethane-d4	100.1	76-130	%	1.00	07/29/2003 22:26	
Toluene-d8	104.4	78-115	%	1.00	07/29/2003 22:26	

Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue
San Jose, CA 95112-1105
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 030717-MM3
97464709

Received: 07/18/2003 14:30

Site: 318 S. Livermore Ave., Livermore

Batch QC Report

Prep(s): 5030B

Method Blank

MB: 2003/07/29-2C.65-056

Water

Test(s): 8260FAB

QC Batch # 2003/07/29-2C.65

Date Extracted: 07/29/2003 20:56

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	07/29/2003 20:56	
Benzene	ND	0.5	ug/L	07/29/2003 20:56	
Toluene	ND	0.5	ug/L	07/29/2003 20:56	
Ethylbenzene	ND	0.5	ug/L	07/29/2003 20:56	
Total xylenes	ND	1.0	ug/L	07/29/2003 20:56	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	07/29/2003 20:56	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	07/29/2003 20:56	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	07/29/2003 20:56	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	07/29/2003 20:56	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	07/29/2003 20:56	
Surrogates(s)					
1,2-Dichloroethane-d4	91.6	76-130	%	07/29/2003 20:56	
Toluene-d8	104.0	78-115	%	07/29/2003 20:56	

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

07/31/2003 12:37

Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)

Blaine Tech Services, Inc.
Attn.: Leon Gearhart

1680 Rogers Avenue
San Jose, CA 95112-1105
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 030717-MM3
97464709

Received: 07/18/2003 14:30

Site: 318 S. Livermore Ave., Livermore

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Laboratory Control Spike

Water

QC Batch # 2003/07/29-2C.65

LCS 2003/07/29-2C.65-011

Extracted: 07/29/2003

Analyzed: 07/29/2003 20:11

LCSD 2003/07/29-2C.65-034

Extracted: 07/29/2003

Analyzed: 07/29/2003 20:34

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	27.0	28.5	25	108.0	114.0	5.4	69-129	20		
Toluene	27.6	27.8	25	110.4	111.2	0.7	70-130	20		
Methyl tert-butyl ether (MTBE)	24.5	22.6	25	98.0	90.4	8.1	65-165	20		
Surrogates(s)										
1,2-Dichloroethane-d4	469	453	500	93.8	90.6		76-130			
Toluene-d8	509	532	500	101.8	106.4		78-115			

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

07/31/2003 12:37

LAB: STL

SHELL Chain Of Custody Record

76188

Lab Identification (if necessary)

Address

City, State, Zip

Shell Project Manager to be invoiced:

- SCIENCE & ENGINEERING
- TECHNICAL SERVICES
- CRMT HOUSTON

Karen Petryna

2003-07-0625

INCIDENT NUMBER (S&E ONLY)

9 7 4 6 4 7 0 9

SAP or CRMT NUMBER (TS/CRMT)

DATE: 7/17/03

PAGE: 1 of 1

Blaine Tech Services 1680 Rogers Avenue, San Jose, CA 95112 Leon Gearhart 408-573-0555 408-573-7771 lgearhart@blaineitech.com	BTSS	318 S. Livermore Ave., Livermore	pending	BTSS # 030707-1143
Debbie Arnold (408) 224-4724 darnold@khm1.com		MIKE MCNAMARA		

TURN-AROUND TIME (BUSINESS DAYS):
 30 DAYS 15 DAYS 72 HOURS 48 HOURS 24 HOURS LESS THAN 24 HOURS

LA: AROUND REPORT FORMAT UST AGENCY

ANALYSIS CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EOD IS NOT NEEDED

REQUESTED ANALYSIS					FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes
TPH - Gas, Purgable	BTEX	MTBE (0.021B - 9ppb RL)	MTBE (0.008B - 0.5ppb RL)	Oxygenates (S) by (0.008B)	
					2.2°C TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	NO. OF CONT.
		DATE	TIME		
	MW-5	7/17/03	1255	GW	3
	MW-6		1221		3
	MW-7		1352		3
	MW-8		1224		3

Received by (Signature): <i>SAS MIKE</i>	Received by (Signature): <i>SAS MIKE - WORLD FOR STL</i>	Date: 7/17/03	Time: 14:30
Received by (Signature): <i>[Signature]</i>	Received by (Signature): <i>[Signature]</i>	Date: 07/16/03	Time: 1550

NOTE: Write with blue report, Green to Fax, Yellow and Pink to Client

161610 Rev.06/02

CS&O Computer: (714) 899-8702

WELL GAUGING DATA

Project # D30717-MM3 Date 7/17/03 Client Shell

Site 318 S. Livermore Ave, Livermore

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC
MW-5	2					30.54	55.20	TOC
MW-6	2					30.56	53.60	}
MW-7	2					30.02	51.20	
MW-8	2					30.29	51.15	

SHELL WELL MONITORING DATA SHEET

BTS #: 030717-MM3	Site: 319 S. Livermore Ave., Livermore
Sampler: MM	Date: 7/17/03
Well I.D.: Mw-5	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 66.20	Depth to Water (DTW): 30.54
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: ^{24.66} 35.47	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer Peristaltic Disposable Bailer
 Middleburg Extraction Pump Extraction Port
 Electric Submersible Other _____ Dedicated Tubing

$$3.9 \text{ (Gals.)} \times 3 = 11.7 \text{ Gals.}$$
 1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS or μS)	Turbidity (NTUs)	Gals. Removed	Observations
1239	76.1	7.5	1079	>1000	3.9	cloudy (brown)
1243	75.4	7.5	1081	>1000	7.8	" "
1247	72.1	7.4	1099	>1000	11.7	" "
						11.7 11.7

Did well dewater? Yes No Gallons actually evacuated: 11.7

Sampling Date: 7/17/03 Sampling Time: 1255 Depth to Water: 31.74

Sample I.D.: Mw-5 Laboratory: STL Other _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: 0x45 (5) by 8260

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL WELL MONITORING DATA SHEET

BTS #: 030717-MM3	Site: 310 S. Livermore Ave., Livermore
Sampler: MM	Date: 7/17/03
Well I.D.: MW-6	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 53.50	Depth to Water (DTW): 30.56
Depth to Free Product:	Thickness of Free Product (feet): 35.15
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 22.47	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer Peristaltic Disposable Bailer
 Middleburg Extraction Pump Extraction Port
 Electric Submersible Other _____ Dedicated Tubing

3.7 (Gals.) X 3	= 11.1 Gals.	
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond (mS or μS)	Turbidity (NTUs)	Gals. Removed	Observations
1203	74.2	7.6	886	>1000	3.7	cloudy brown
1212	75.8	7.5	948	>1000	7.4	" "
1216	74.8	7.5	960	386	11.1	clearing

Did well dewater? Yes No Gallons actually evacuated: 11.1

Sampling Date: 7/17/03 Sampling Time: 1221 Depth to Water: 32.69

Sample I.D.: MW-6 Laboratory: STL Other _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: UXY/S/G by 8260

EB I.D. (if applicable): _____ @ _____ Time Duplicate I.D. (if applicable): _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

