



*Re 2525*

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175 Bernal Road • Suite 200  
San Jose, California 95119 USA  
408.224.4724 800.477.7411  
Fax 408.225.8506

June 15, 2004  
Project No. SJ31-8LI-1.2004

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

Alameda County  
JUN 18 2004  
Environmental Health  
Services Agency

Re: **Quarterly Monitoring Report – Second Quarter 2004**  
**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 second quarter 2004 groundwater monitoring and sampling report for the above referenced site. A site location map is included as Figure 1.

#### **BACKGROUND**

On March 7, 2003, Shell received a notice of responsibility letter from the Alameda County Health Care Services Agency (ACHCSA) 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.

On December 10, 2003, site USTs, fuel dispensers, and associated product piping were removed. A fuel system removal report, dated January 16, 2004, was submitted by Delta to the ACHCSA.

## **QUARTERLY GROUND WATER MONITORING PROGRAM**

Groundwater monitoring wells were gauged and sampled by Blaine Tech Services (Blaine), at the direction of Delta, on April 7, 2004. 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.

Groundwater samples were collected from Wells MW-5 through MW-8. Samples were submitted by Blaine to Severn Trent Laboratories, Inc. (STL) in Pleasanton, California for analysis for total purgeable petroleum hydrocarbons as gasoline (TPH-G); benzene, toluene, ethylbenzene, and total xylenes (BTEX compounds); and the fuel oxygenate MTBE 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**

Depth to groundwater in site wells has decreased by an average of 1.38 feet since last quarter. The groundwater gradient on April 7, 2004 was toward the west at a magnitude of 0.01 feet/feet, consistent with previous data.

MTBE continues to be detected in Well MW-7, at a concentration of 0.71 micrograms per liter (ug/l). The MTBE concentration in Well MW-8 is below the laboratory method detection limit this quarter. TPH-G and BTEX compounds were not detected in any site wells for the second consecutive quarter.

In the first quarter 2004 monitoring report, Delta proposed to reduce the sampling frequency to semi-annual during the first and third quarters. The ACHSA has not yet replied to this proposal.

## **REMARKS**

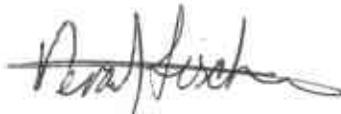
The information contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

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

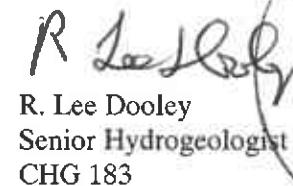
June 15, 2004

Page 3

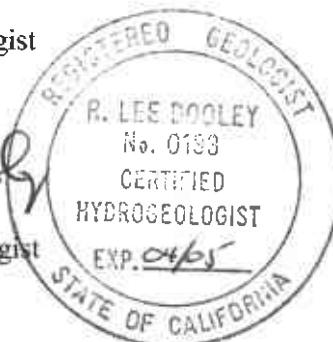
Sincerely,  
**Delta Environmental Consultants, Inc.**



Vera Fischer  
Senior Staff Geologist



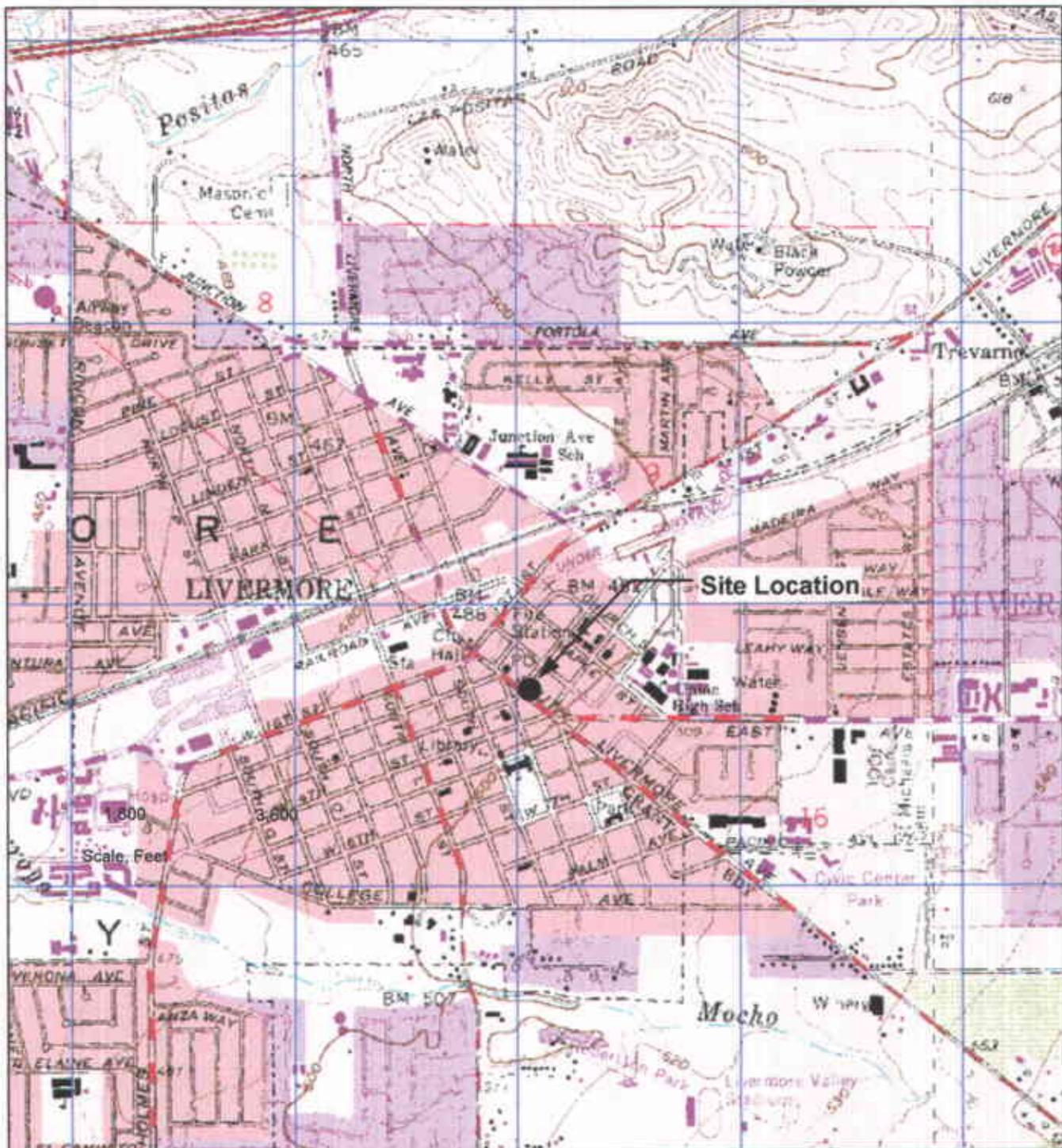
R. Lee Dooley  
Senior Hydrogeologist  
CHG 183



Attachments: Figure 1 – Site Location Map  
Figure 2 – Groundwater Elevation Contour Map  
Figure 3 – Benzene and MTBE Concentrations Map

Attachment A – Groundwater Monitoring and Sampling Report, May 6, 2004

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



#### **GENERAL NOTES:**

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

A horizontal scale bar with three numerical labels: 0, 1,800, and 3,600. The bar is divided into two equal segments by the midpoint between 0 and 1,800, and into four equal segments by the midpoint between 1,800 and 3,600.

**FIGURE 1**  
**SITE LOCATION MAP**

**FORMER SHELL-BRANDED SERVICE STATION**  
**318 South Livermore Avenue**

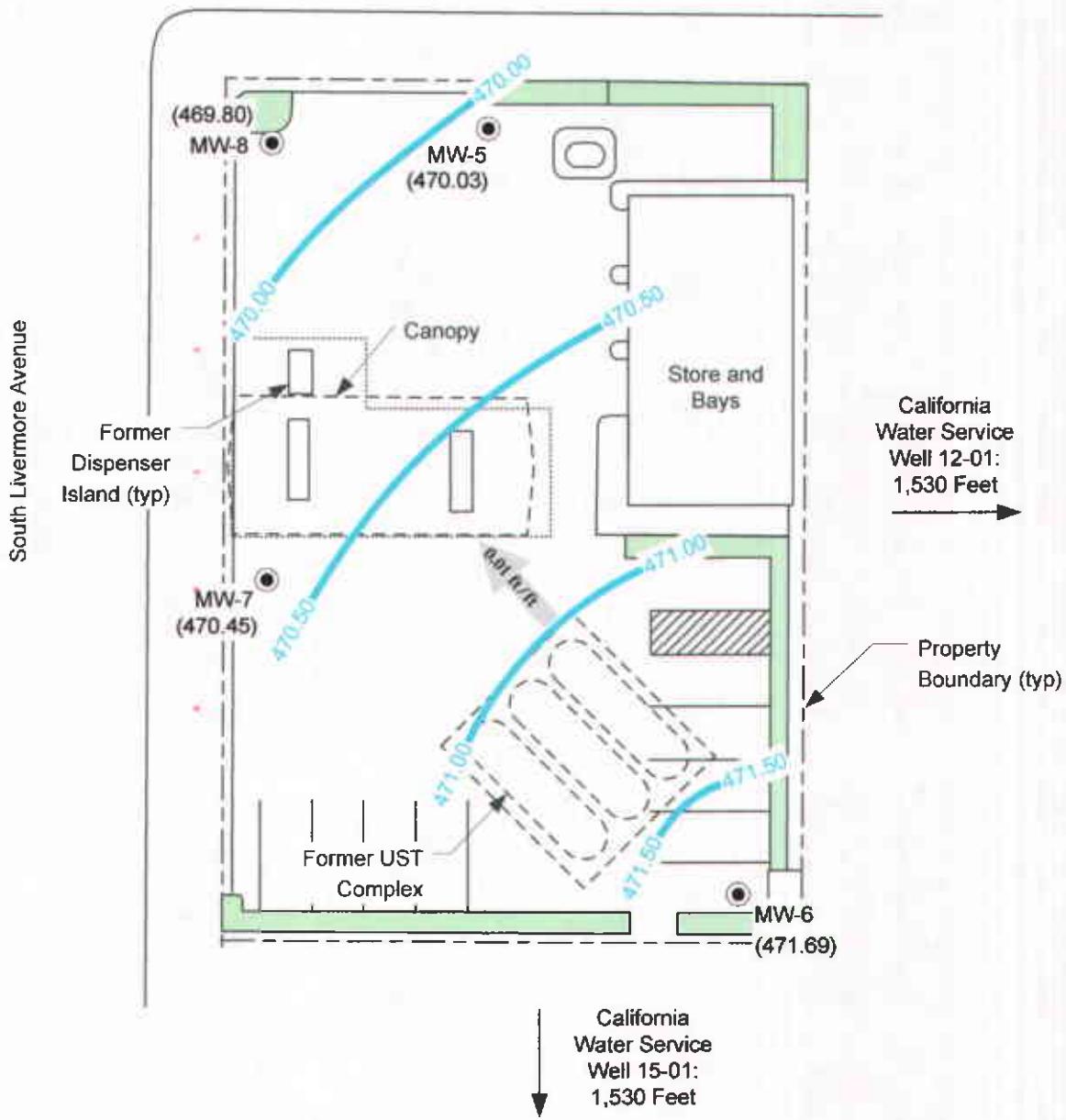
PROJECT NO. SJ31-BLI-1 2004	DRAWN BY VF 9/25/03	 <p><b>Delta</b> Environmental Consultants, Inc.</p>
FILE NO. SJ31-BLI-1 2004	PREPARED BY VF	
REVISION NO. 2	REVIEWED BY	



**Delta**  
Environmental  
Consultants, Inc.

 North

Third Street

**LEGEND**

- MW-6 ● **GROUNDWATER MONITORING WELL**
- (462.29) **GROUNDWATER ELEVATION (MSL), 4/7/04**
- 467.00 **GROUNDWATER ELEVATION CONTOUR**
- 0.012 ft/r **APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT**



**FIGURE 2**  
**GROUNDWATER ELEVATION CONTOUR MAP,**  
**APRIL 7, 2004**

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

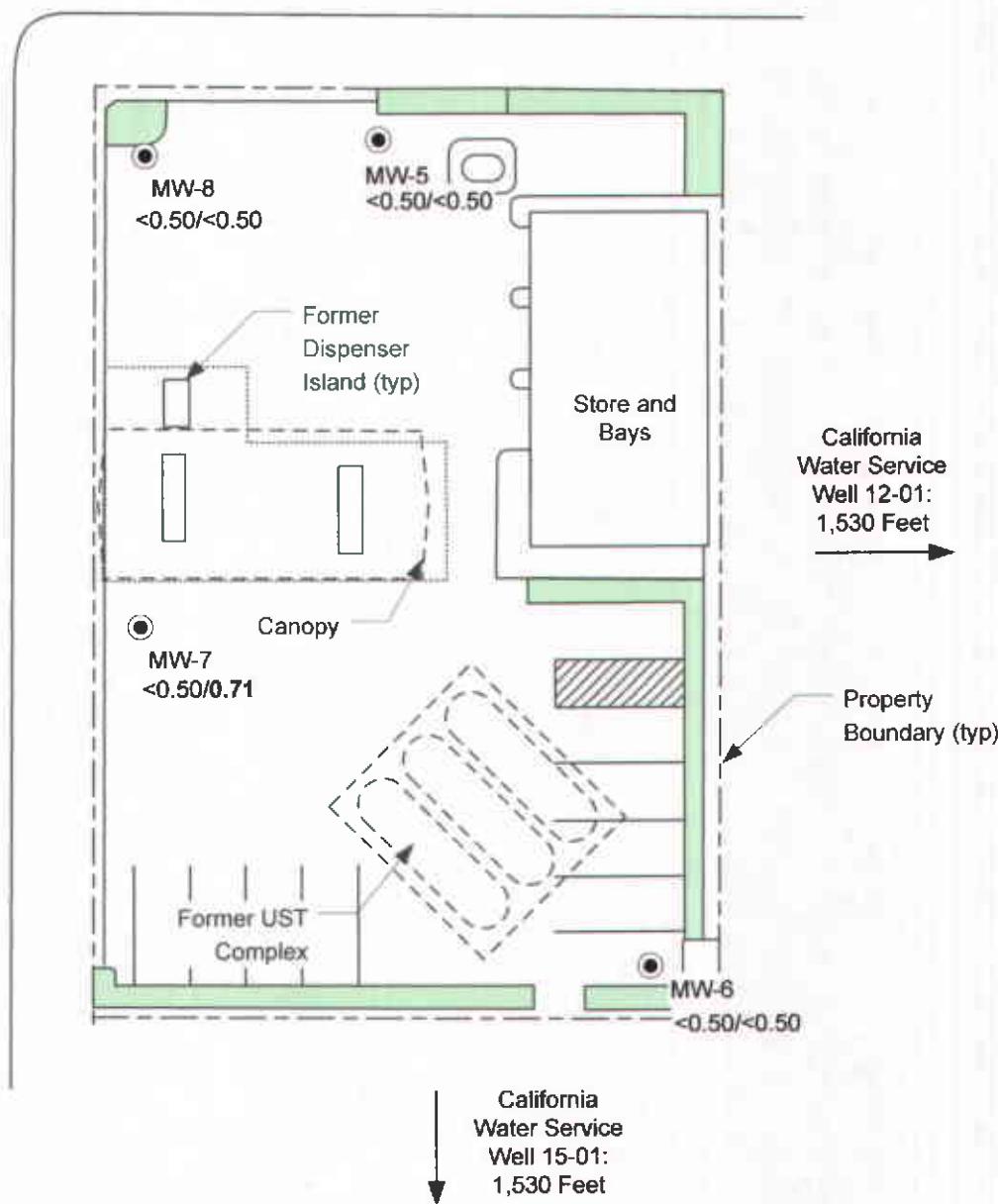
PROJECT NO. SJ31-BLU-1.2004	DRAWN BY VF 9/25/03
FILE NO. SJ31-BLU-1.2004	PREPARED BY VF
REVISION NO. 2	REVIEWED BY





Third Street

South Livermore Avenue



#### LEGEND

MW-6 ● GROUNDWATER MONITORING WELL  
● BENZENE / MTBE CONCENTRATIONS IN GROUNDWATER (UG/L),  
<0.50/<0.50 4/7/04

0 30 FT  
APPROX. SCALE

FIGURE 3  
BENZENE AND MTBE CONCENTRATION MAP,  
APRIL 7, 2004

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

PROJECT NO. SJ31-BLI-1.2004	DRAWN BY VF 9/25/03
FILE NO. SJ31-BLI-1.2004	PREPARED BY VF
REVISION NO. 2	REVIEWED BY



**Attachment A**

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**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](http://www.blainetech.com)

May 6, 2004

Karen Petryna  
Shell Oil Products US  
P.O. Box 7869  
Burbank, CA 91510-7869

Second Quarter 2004 Groundwater Monitoring at  
Shell-branded Service Station  
318 South Livermore Avenue  
Livermore, CA

Monitoring performed on April 7, 2004

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#### Groundwater Monitoring Report 040407-JP-1

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/ks

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

cc: Debbie Arnold  
Delta Environmental  
175 Bernal Road, Suite 200  
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)	DIPE (ug/l)	ETBE (ug/l)	TAME (ug/l)	TBA (ug/l)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
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MW-5	09/18/2001	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	NA	NA	NA
MW-5	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	495.47	34.85	460.62
MW-5	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	495.47	37.26	458.21
MW-5	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	495.47	27.30	468.17
MW-5	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	495.47	27.84	467.63
MW-5	07/17/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	495.47	30.54	464.93
MW-5	11/13/2003	60	<0.50	1.5	1.7	9.6	<0.50	<2.0	<2.0	<2.0	<5.0	495.47	33.94	461.53
MW-5	01/13/2004	<50	<0.50	<0.50	<0.50	<1.0	<0.50	NA	NA	NA	NA	495.47	26.59	468.88
MW-5	04/07/2004	<50	<0.50	<0.50	<0.50	<1.0	<0.50	NA	NA	NA	NA	495.47	25.44	470.03

MW-6	09/18/2001	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	NA	NA	NA
MW-6	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	497.57	35.41	462.16
MW-6	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	2.5	<2.0	<2.0	<2.0	<50	497.57	37.92	459.65
MW-6	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	497.57	27.71	469.86
MW-6	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	497.57	28.28	469.29
MW-6	07/17/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	497.57	30.56	467.01
MW-6	11/13/2003	90	<0.50	2.6	2.4	12	<0.50	<2.0	<2.0	<2.0	<5.0	497.57	34.18	463.39
MW-6	01/13/2004	<50	<0.50	<0.50	<0.50	<1.0	<0.50	NA	NA	NA	NA	497.57	27.16	470.41
MW-6	04/07/2004	<50	<0.50	<0.50	<0.50	<1.0	<0.50	NA	NA	NA	NA	497.57	25.88	471.69

MW-7	09/18/2001	NA	<0.50	<0.50	<0.50	<0.50	1.2	<2.0	<2.0	<2.0	<50	NA	NA	NA
MW-7	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	2.0	<2.0	<2.0	<2.0	<50	495.58	34.29	461.29
MW-7	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	1.9	<2.0	<2.0	<2.0	<50	495.58	36.80	458.78
MW-7	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	0.89	<2.0	<2.0	<2.0	<50	495.58	26.75	468.83
MW-7	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	4.0	<2.0	<2.0	<2.0	<5.0	495.58	27.31	468.27
MW-7	07/17/2003	<50	<0.50	<0.50	<0.50	<1.0	3.2	<2.0	<2.0	<2.0	<5.0	495.58	30.02	465.56

**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)	DIPE (ug/l)	ETBE (ug/l)	TAME (ug/l)	TBA (ug/l)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
MW-7	11/13/2003	72	<0.50	0.62	0.57	3.2	1.4	<2.0	<2.0	<2.0	<5.0	495.58	33.85	461.73
MW-7	01/13/2004	<50	<0.50	<0.50	<0.50	<1.0	0.85	NA	NA	NA	NA	495.58	27.13	468.45
MW-7	04/07/2004	<50	<0.50	<0.50	<0.50	<1.0	0.71	NA	NA	NA	NA	495.58	25.13	470.45
MW-8	09/18/2001	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	NA	NA	NA
MW-8	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	6.9	<2.0	<2.0	<2.0	<50	494.90	34.46	460.44
MW-8	10/25/2002	140	<0.50	<0.50	<0.50	<0.50	2.2	3.3	<2.0	<2.0	<50	494.90	36.98	457.92
MW-8	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	494.90	27.35	467.55
MW-8	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	0.67	<2.0	<2.0	<2.0	<5.0	494.90	27.44	467.46
MW-8	07/17/2003	<50	<0.50	<0.50	<0.50	<1.0	0.50	<2.0	<2.0	<2.0	<5.0	494.90	32.29	462.61
MW-8	11/13/2003	260	1.5	2.3	2.9	16	1.4	<2.0	<2.0	<2.0	<5.0	494.90	33.08	461.82
MW-8	01/13/2004	<50	<0.50	<0.50	<0.50	<1.0	0.92	NA	NA	NA	NA	494.90	26.18	468.72
MW-8	04/07/2004	<50	<0.50	<0.50	<0.50	<1.0	<0.50	NA	NA	NA	NA	494.90	25.10	469.80

**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)	DIPE (ug/l)	ETBE (ug/l)	TAME (ug/l)	TBA (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

DIPE = Diisopropyl ether

ETBE = Ethyl-t-butyl ether

TAME = Tert-amyl methyl ether

TBA = Tert-Butanol

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.**

April 22, 2004

1680 Rogers Avenue  
San Jose, CA 95112-1105  
Attn.: Leon Gearhart  
Project#: 040407-JP1  
Project: 97464709  
Site: 318 S. Livermore Ave., Livermore

Dear Mr. Gearhart,

Attached is our report for your samples received on 04/08/2004 18:54  
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  
05/23/2004 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@stl-inc.com](mailto:vvancil@stl-inc.com)

Sincerely,



Vincent Vancil  
Project Manager

**Gas/BTEX/MTBE 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) 573-7771Project: 040407-JP1  
97464709

Received: 04/08/2004 18:54

Site: 318 S. Livermore Ave., Livermore

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
MW-5	04/07/2004 13:35	Water	1
MW-6	04/07/2004 14:05	Water	2
MW-7	04/07/2004 14:25	Water	3
MW-8	04/07/2004 14:50	Water	4

## Gas/BTEX/MTBE 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: 040407-JP1  
97464709

Received: 04/08/2004 18:54

Site: 318 S. Livermore Ave., Livermore

Prep(s): 5030B

Test(s): 8260B

Sample ID: MW-5

Lab ID: 2004-04-0292 - 1

Sampled: 04/07/2004 13:35

Extracted: 4/18/2004 12:24

Matrix: Water

QC Batch#: 2004/04/18-1A.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	04/18/2004 12:24	
Benzene	ND	0.50	ug/L	1.00	04/18/2004 12:24	
Toluene	ND	0.50	ug/L	1.00	04/18/2004 12:24	
Ethylbenzene	ND	0.50	ug/L	1.00	04/18/2004 12:24	
Total xylenes	ND	1.0	ug/L	1.00	04/18/2004 12:24	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	04/18/2004 12:24	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	92.1	76-130	%	1.00	04/18/2004 12:24	
Toluene-d8	94.0	78-115	%	1.00	04/18/2004 12:24	

## Gas/BTEX/MTBE 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: 040407-JP1  
97464709

Received: 04/08/2004 18:54

Site: 318 S. Livermore Ave., Livermore

Prep(s): 5030B

Test(s): 8260B

Sample ID: MW-6

Lab ID: 2004-04-0292 - 2

Sampled: 04/07/2004 14:05

Extracted: 4/18/2004 12:43

Matrix: Water

QC Batch#: 2004/04/18-1A.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	04/18/2004 12:43	
Benzene	ND	0.50	ug/L	1.00	04/18/2004 12:43	
Toluene	ND	0.50	ug/L	1.00	04/18/2004 12:43	
Ethylbenzene	ND	0.50	ug/L	1.00	04/18/2004 12:43	
Total xylenes	ND	1.0	ug/L	1.00	04/18/2004 12:43	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	04/18/2004 12:43	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	90.0	76-130	%	1.00	04/18/2004 12:43	
Toluene-d8	93.1	78-115	%	1.00	04/18/2004 12:43	

## Gas/BTEX/MTBE 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) 573-7771Project: 040407-JP1  
97464709

Received: 04/08/2004 18:54

Site: 318 S. Livermore Ave., Livermore

Prep(s): 5030B

Test(s): 8260B

Sample ID: MW-7

Lab ID: 2004-04-0292-3

Sampled: 04/07/2004 14:25

Extracted: 4/16/2004 20:57

Matrix: Water

QC Batch#: 2004/04/16-2A.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	04/16/2004 20:57	
Benzene	ND	0.50	ug/L	1.00	04/16/2004 20:57	
Toluene	ND	0.50	ug/L	1.00	04/16/2004 20:57	
Ethylbenzene	ND	0.50	ug/L	1.00	04/16/2004 20:57	
Total xylenes	ND	1.0	ug/L	1.00	04/16/2004 20:57	
Methyl tert-butyl ether (MTBE)	0.71	0.50	ug/L	1.00	04/16/2004 20:57	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	92.9	76-130	%	1.00	04/16/2004 20:57	
Toluene-d8	88.9	78-115	%	1.00	04/16/2004 20:57	

## Gas/BTEX/MTBE 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: 040407-JP1  
97464709

Received: 04/08/2004 18:54

Site: 318 S. Livermore Ave., Livermore

Prep(s): 5030B

Sample ID: MW-8

Sampled: 04/07/2004 14:50

Matrix: Water

Test(s): 8260B

Lab ID: 2004-04-0292 - 4

Extracted: 4/16/2004 21:20

QC Batch#: 2004/04/16-2A.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	04/16/2004 21:20	
Benzene	ND	0.50	ug/L	1.00	04/16/2004 21:20	
Toluene	ND	0.50	ug/L	1.00	04/16/2004 21:20	
Ethylbenzene	ND	0.50	ug/L	1.00	04/16/2004 21:20	
Total xylenes	ND	1.0	ug/L	1.00	04/16/2004 21:20	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	04/16/2004 21:20	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	102.1	76-130	%	1.00	04/16/2004 21:20	
Toluene-d8	88.2	78-115	%	1.00	04/16/2004 21:20	

**Gas/BTEX/MTBE 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) 573-7771Project: 040407-JP1  
97464709

Received: 04/08/2004 18:54

Site: 318 S. Livermore Ave., Livermore

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Method Blank****QC Batch # 2004/04/16-2A.64**

MB: 2004/04/16-2A.64-037

Date Extracted: 04/16/2004 18:37

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	04/16/2004 18:37	
Benzene	ND	0.5	ug/L	04/16/2004 18:37	
Toluene	ND	0.5	ug/L	04/16/2004 18:37	
Ethylbenzene	ND	0.5	ug/L	04/16/2004 18:37	
Total xylenes	ND	1.0	ug/L	04/16/2004 18:37	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	04/16/2004 18:37	
<b>Surrogates(s)</b>					
Toluene-d8	98.0	78-115	%	04/16/2004 18:37	
1,2-Dichloroethane-d4	102.0	76-130	%	04/16/2004 18:37	

**Gas/BTEX/MTBE by 8260B (C6-C12)**

Blaine Tech Services, Inc.

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San Jose, CA 95112-1105

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

Project: 040407-JP1  
97464709

Received: 04/08/2004 18:54

Site: 318 S. Livermore Ave., Livermore

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

Method Blank

Water

QC Batch # 2004/04/18-1A.68

MB: 2004/04/18-1A.68-052

Date Extracted: 04/18/2004 11:52

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	04/18/2004 11:52	
Benzene	ND	0.5	ug/L	04/18/2004 11:52	
Toluene	ND	0.5	ug/L	04/18/2004 11:52	
Ethylbenzene	ND	0.5	ug/L	04/18/2004 11:52	
Total xylenes	ND	1.0	ug/L	04/18/2004 11:52	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	04/18/2004 11:52	
<b>Surrogates(s)</b>					
Toluene-d8	93.4	78-115	%	04/18/2004 11:52	
1,2-Dichloroethane-d4	92.8	76-130	%	04/18/2004 11:52	

**Gas/BTEX/MTBE 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: 040407-JP1  
97464709

Received: 04/08/2004 18:54

Site: 318 S. Livermore Ave., Livermore

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Laboratory Control Spike****Water****QC Batch # 2004/04/16-2A.64**

LCS 2004/04/16-2A.64-053

Extracted: 04/16/2004

Analyzed: 04/16/2004 17:53

LCSD 2004/04/16-2A.64-015

Extracted: 04/16/2004

Analyzed: 04/16/2004 18:15

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD %	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		Rec.	RPD	LCS	LCSD
Benzene	23.0	24.4	25	92.0	97.6	5.9	69-129	20		
Toluene	23.3	24.1	25	93.2	96.4	3.4	70-130	20		
Methyl tert-butyl ether (MTBE)	21.4	22.9	25	85.6	91.6	6.8	65-165	20		
<b>Surrogates(s)</b>										
Toluene-d8	471	477	500	94.2	95.4		78-115			
1,2-Dichloroethane-d4	478	491	500	95.6	98.2		76-130			

**Gas/BTEX/MTBE 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: 040407-JP1  
97464709

Received: 04/08/2004 18:54

Site: 318 S. Livermore Ave., Livermore

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Laboratory Control Spike****Water****QC Batch # 2004/04/18-1A.68**

LCS 2004/04/18-1A.68-014

Extracted: 04/18/2004

Analyzed: 04/18/2004 11:14

LCSD 2004/04/18-1A.68-033

Extracted: 04/18/2004

Analyzed: 04/18/2004 11:33

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		Rec.	RPD	LCS	LCSD
Benzene	25.0	25.7	25	100.0	102.8	2.8	69-129	20		
Toluene	28.2	29.3	25	112.8	117.2	3.8	70-130	20		
Methyl tert-butyl ether (MTBE)	27.2	30.1	25	108.8	120.4	10.1	65-165	20		
<b>Surrogates(s)</b>										
Toluene-d8	476	453	500	95.2	90.6		78-115			
1,2-Dichloroethane-d4	436	505	500	87.2	101.0		76-130			

**Gas/BTEX/MTBE 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) 573-7771Project: 040407-JP1  
97464709

Received: 04/08/2004 18:54

Site: 318 S. Livermore Ave., Livermore

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Matrix Spike ( MS / MSD )**

MW-8 &gt;&gt; MS

MS: 2004/04/16-2A.64-042

MSD: 2004/04/16-2A.64-004

**Water**

Extracted: 04/16/2004

Extracted: 04/16/2004

**QC Batch # 2004/04/16-2A.64**

Lab ID: 2004-04-0292 - 004

Analyzed: 04/16/2004 21:42

Dilution: 1.00

Analyzed: 04/16/2004 22:04

Dilution: 1.00

Compound	Conc. ug/L			Spk. Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample		ug/L	MS	MSD	RPD	Rec.	RPD	MS
Benzene	18.7	20.9	ND	25	74.8	83.6	11.1	69-129	20		
Toluene	19.1	21.3	ND	25	76.4	85.2	10.9	70-130	20		
Methyl tert-butyl ether	18.6	21.4	ND	25	74.4	85.6	14.0	65-165	20		
<b>Surrogate(s)</b>											
1,2-Dichloroethane-d4	463	437		500	92.6	87.4		76-130			
Toluene-d8	444	445		500	88.8	89.0		78-115			

LAB: S1

## **SHELL Chain Of Custody Record**

84671

**Lab Identification (if necessary)**

### Address.

Glossary

<b>Shell Project Manager to be Invoiced:</b>	
<input checked="" type="checkbox"/> SCIENCE & ENGINEERING	Karen Pe
<input type="checkbox"/> TECHNICAL SERVICES	<i>2004</i>
<input type="checkbox"/> CRNT HOUSTON	

Karen Petryna

2004-04-0292

# **WELLHEAD INSPECTION CHECKLIST**

Page 4 of 7

ent Shelt Date 4/7/04

Shakti

Date

4/7/04

Address 318 S. Livermore Ave., Livermore

318 S. Livermore Ave., Livermore

b Number 040403-3P1 Technician M. Green

040407-3P1

## Technician

M. Price

## **NOTES:**

## WELL GAUGING DATA

Project # 040407-3P1 Date 4/7/04 Client 9746 4709

Site 318 S. Livermore Ave., Livermore

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (408) 573-0555

# SHELL WELL MONITORING DATA SHEET

BTS #: 040407-JPI	Site: 97464709
Sampler: M. Pyrk	Date: 4-7-04
Well I.D.: MW-5	Well Diameter: ② 3 4 6 8
Total Well Depth (TD): 55.15	Depth to Water (DTW): 25.44
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]: 31.38	

Purge Method: Bailer  
 Disposable Bailer  
Positive Air Displacement  
 Electric Submersible

Waterra  
 Peristaltic  
 Extraction Pump  
 Other \_\_\_\_\_

Sampling Method:  
 Bailer  
 Disposable Bailer  
 Extraction Port  
 Dedicated Tubing

Other: \_\_\_\_\_

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

4.7 (Gals.) X 3 = 14.1 Gals.  
 1 Case Volume Specified Volumes Calculated Volume

Time	Temp (°F)	pH	Cond. (mS or <u>μS</u> )	Turbidity (NTUs)	Gals. Removed	Observations
1322	68.7	7.3	1097	> 200	5	brown, cloudy
1328	68.5	7.6	1115	> 200	10	cloudy
1333	69.5	7.6	1117	> 200	14.1	Cloudy

Did well dewater? Yes No Gallons actually evacuated: 14.1

Sampling Date: 4-7-04 Sampling Time: 1335 Depth to Water: 29.90

Sample I.D.: MW-5 Laboratory: STL Other: \_\_\_\_\_

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

EB I.D. (if applicable): @ <sub>Time</sub> 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

# SHELL WELL MONITORING DATA SHEET

TS #:	040407-JPI	Site:	77464709
Sampler:	M. Pyrah	Date:	4-7-04
Well I.D.:	MW-6	Well Diameter:	(2) 3 4 6 8
Total Well Depth (TD):	53.48	Depth to Water (DTW):	25.88
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	PVC	Grade:	D.O. Meter (if req'd): YSI HACH
TW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 31.40			

Large Method:	Bailer	Waterra	Sampling Method:				
Disposable Bailer	Peristaltic	Bailer					
<del>Positive Air Displacement</del>	Extraction Pump	Disposable Bailer					
Electric Submersible	Other _____	Extraction Port					
Other _____		Dedicated Tubing					
4.4 (Gals.) X 3 = 13.2 Gals.	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 <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or <del>PSI</del> )	Turbidity (NTUs)	Gals. Removed	Observations
352	69.7	7.9	977	>200	4.5	cloudy
357	70.9	7.7	976	>200	9	"
402	70.5	7.5	1008	>200	13.5	slightly cloudy

Did well dewater? Yes  No Gallons actually evacuated: 13.5

Sampling Date: 4-7-04 Sampling Time: 1405 Depth to Water: 29.84

Sample I.D.: MW-6 Laboratory: STL Other \_\_\_\_\_

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

EB I.D. (if applicable): @ \_\_\_\_\_ 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

# SHELL WELL MONITORING DATA SHEET

TS #:	040407-JPI	Site:	17464709
Sampler:	M. Pyrk	Date:	4-7-04
Well I.D.:	MW-7	Well Diameter:	(2) 3 4 6 8
Total Well Depth (TD):	51.21	Depth to Water (DTW):	25.13
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	PVC	Grade:	D.O. Meter (if req'd): YSI HACH
TW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:			30.34

Purge Method: Bailer  
 Disposable Bailer  
 Positive Air Displacement  
 Electric Submersible

Waterra  
 Peristaltic  
 Extraction Pump  
 Other \_\_\_\_\_

Sampling Method:  
 Bailer  
 Disposable Bailer  
 Extraction Port  
 Dedicated Tubing

Other: \_\_\_\_\_

Case Volume	(Gals.) X	Specified Volumes	Calculated Volume	Well Diameter	Multiplier	Well Diameter	Multiplier
4.1	X	3	= 12.3 Gals.	1"	0.04	4"	0.65
				2"	0.16	6"	1.47
				3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1416	73.8	7.8	983	> 200	4	cloudy
1420	74.1	7.4	1439	> 200	8	"
1424	74.0	7.4	1433	> 200	12.5	"

Did well dewater? Yes  No  Gallons actually evacuated: 12.5

Sampling Date: 4-7-04 Sampling Time: 1425 Depth to Water: 29.54

Sample I.D.: MW-7 Laboratory: STL Other: \_\_\_\_\_

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

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

# SHELL WELL MONITORING DATA SHEET

TS #:	040407-JPI	Site:	77464709
Sampler:	M. Pyrk	Date:	4-7-04
Well I.D.:	MW-8	Well Diameter:	(2) 3 4 6 8
Total Well Depth (TD):	51.15	Depth to Water (DTW):	25.10
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]: 30.31			

Purge Method:	Bailer Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing Other _____
Case Volume	4.1 (Gals.) X 3	= 12.3 Gals. 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 $\pi r^2 \times 0.163$

Time	Temp (°F)	pH	Cond. (mS or $\mu\text{S}$ )	Turbidity (NTUs)	Gals. Removed	Observations
1440	73.8	8.0	1083	> 200	4	cloudy
1445	72.7	7.6	1071	> 200	8	"
1449	72.6	7.8	1083	> 200	12.5	"

Did well dewater? Yes  No Gallons actually evacuated: 12.5

Sampling Date: 4-7-04 Sampling Time: 1450 Depth to Water: 27.46

Sample I.D.: MW-8 Laboratory: STL Other \_\_\_\_\_

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

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