RO 2566

Delta
Environmental Consultants, Inc.

Solving environment-related business problems worldwide

www.deltaenv.com

175 Bernal Road • Suite 200
San Jose, California 95119 USA

408.224.4724 800.477.7411
Fax 408.225.8506

Letter of Transmittal

To: Local Oversight Program Manager — Date: 6/8/2004

Alameda County Environmental Health Services

1131 Harbor Bay Pkwy, Ste 250 — Job No: SJ11-55P-1.2004

Alameda CA 94502-6540

Attn: Ms. Donna Drogos

We are sending the following items:

Date	Copies	Description
7-Jun-04	1	**Quarterly Monitoring Report - First Quarter 2004**
		Shell-branded Service Station
		1155 Portola Avenue
		Livermore, CA

These are transmitted:

☐ For your Information ☐ For action specified below ☐ For review and comment ☒ For your use ☐ As requested

Remarks

Copies to:

By: Vera Fischer

Title: Senior Staff Geologist

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June 7, 2004
Project No. SJ11-55P-1.2004

Ms. Donna Drogos
Alameda County Health Care Services Agency
Environmental Health Services – Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Quarterly Monitoring Report – First Quarter 2004**
Shell-branded Service Station
1155 Portola Avenue
Livermore, California

Dear Ms. Drogos:

Delta Environmental Consultants, Inc. (Delta), on behalf of Shell Oil Products US (Shell), has prepared the following first quarter 2004 groundwater monitoring and sampling report for the above referenced site. Groundwater sampling was performed by Blaine Tech Services (Blaine) at the direction of Delta. A site location map is included as Figure 1.

QUARTERLY GROUND WATER MONITORING PROGRAM

Groundwater monitoring wells were gauged and sampled by Blaine on March 8, 2004. Depth to groundwater was measured in Wells MW-1 through MW-4. Groundwater elevation data and contours are presented on Figure 2.

Groundwater samples were collected from Wells MW-1 through MW-4. 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 five fuel oxygenates: methyl tert-butyl ether (MTBE), diisopropyl ether (DIPE), ethyl-tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), and tert-butanol (TBA), using EPA Method 8260B. Benzene and MTBE concentrations 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 has decreased by an average of 4.80 feet in site wells since last quarter. Depth to groundwater at the site typically fluctuates by about 6 feet annually. Well screens in Wells MW-1 through MW-4 are seasonally drowned by the rise and fall of the water table at the site. The groundwater gradient on March 8, 2004 was towards the southwest at a magnitude of 0.025 ft/ft. The groundwater gradient at the site has ranged between northwest and south-southwest since fourth quarter 2002 (initial gauging event).

MTBE was detected in Wells MW-1 and MW-3 at 3.9 micrograms per liter (ug/l) and 120 ug/l, respectively. The MTBE concentration in Well MW-1 has continued on a decreasing trend since last quarter, where as the MTBE concentration in Well MW-3 marks a historic high. MTBE has only been detected once in Well MW-3 previously, at a concentration of 8.7 ug/l (12/20/02). All other analytes tested were below laboratory detection limits in all site wells.

Delta proposes to reduce the sampling frequency of DIPE, ETBE, TAME, and TBA from quarterly to annually in the first quarter. These constituents have not been detected in 6 consecutive quarters of monitoring.

REMARKS

The information and recommendations 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.

Sincerely,
Delta Environmental Consultants, Inc.

Vera Fischer
Senior Staff Geologist

R. Lee Dooley
Senior Hydrogeologist
CHG 0183

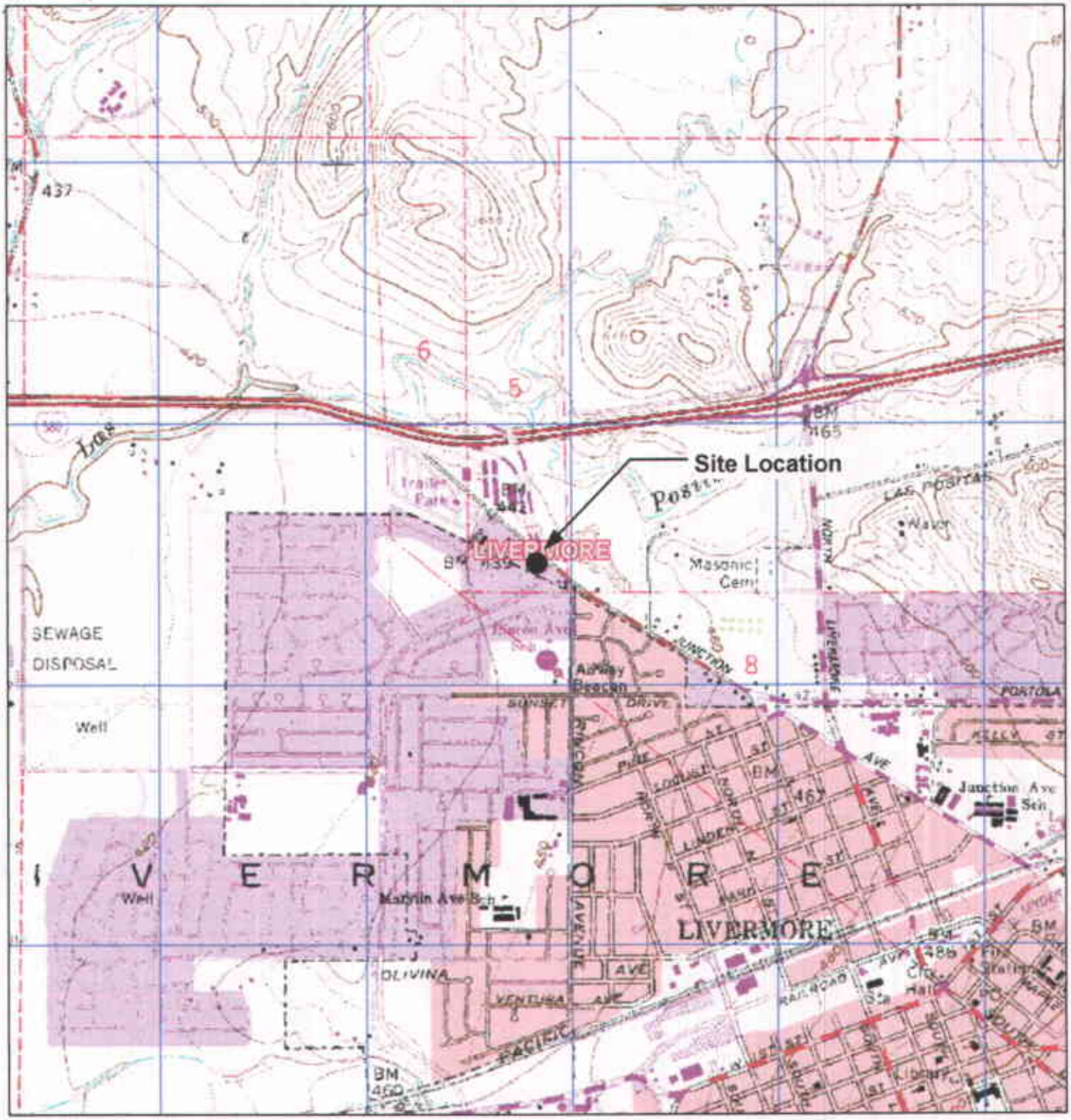
R. LEE DOOLEY
No. 0183
CERTIFIED
HYDROGEOLOGIST
EXP. 2005
STATE OF CALIFORNIA

SJ11-55P-1.2004/1Q04 QMR

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, April 13, 2004

cc: Karen Petryna, Shell Oil Products US, Carson
Betty Graham, RWQCB - San Francisco Bay Region, Oakland
Danielle Stefani, Livermore-Pleasanton Fire Department, Livermore
Terrell & Kimberley Bass, Danville



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

North

QUADRANGLE LOCATION

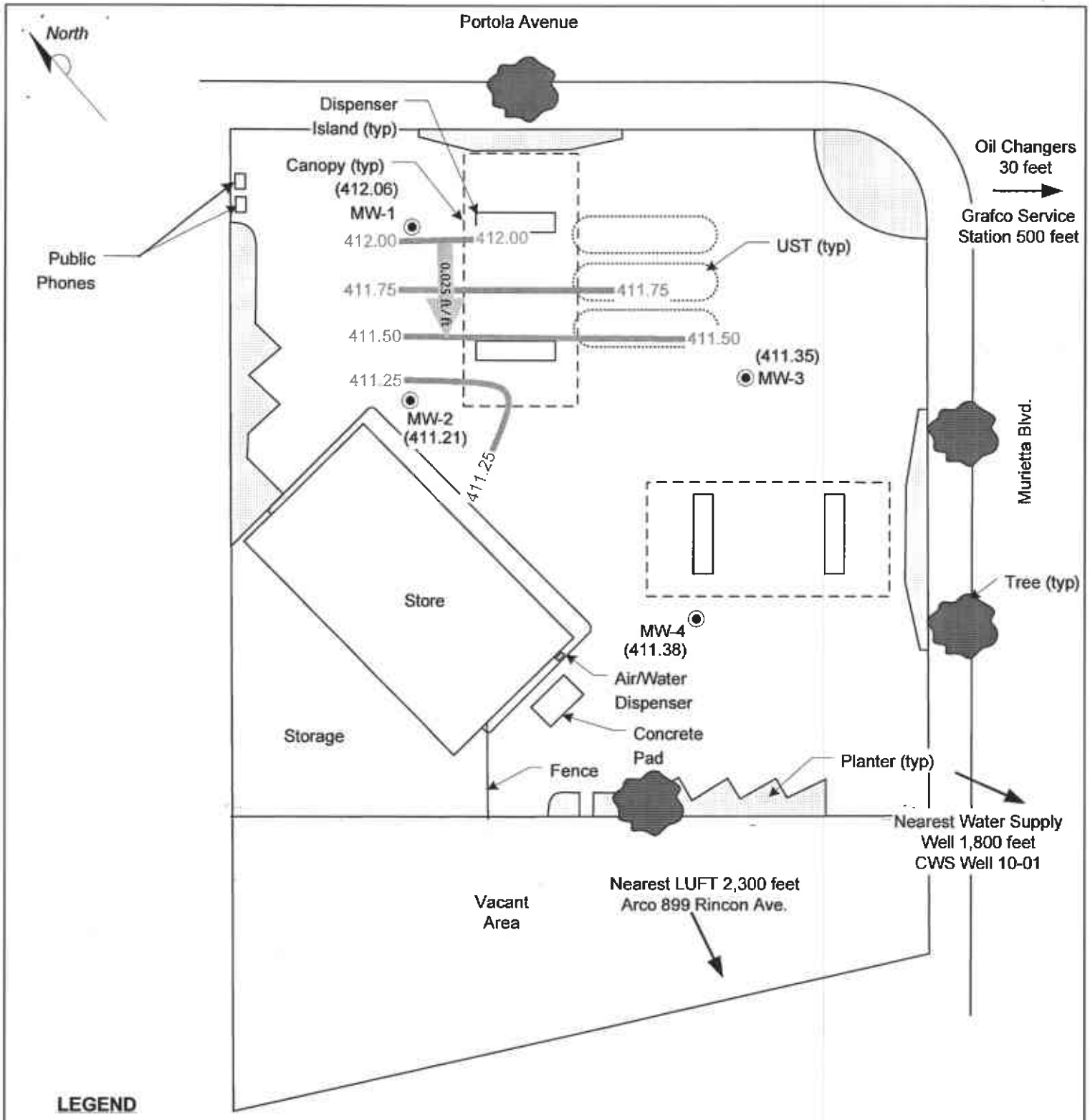
0 1,800 3,600
Scale, Feet

FIGURE 1
SITE LOCATION MAP

SHELL-BRANDED SERVICE STATION
1155 Portola Avenue
Livermore, California

PROJECT NO. SJ11-55P-1.2004	DRAWN BY VF 10/22/03
FILE NO. SJ11-55P-1.2004	PREPARED BY VF
REVISION NO.	REVIEWED BY

Delta
Environmental Consultants, Inc.



LEGEND

MW-4 ◉ **GROUNDWATER MONITORING WELL**

(407.56) **GROUNDWATER ELEVATION (FEET - MSL), 3/8/04**

407.20 **GROUNDWATER ELEVATION CONTOUR**

APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT

0 30 FT

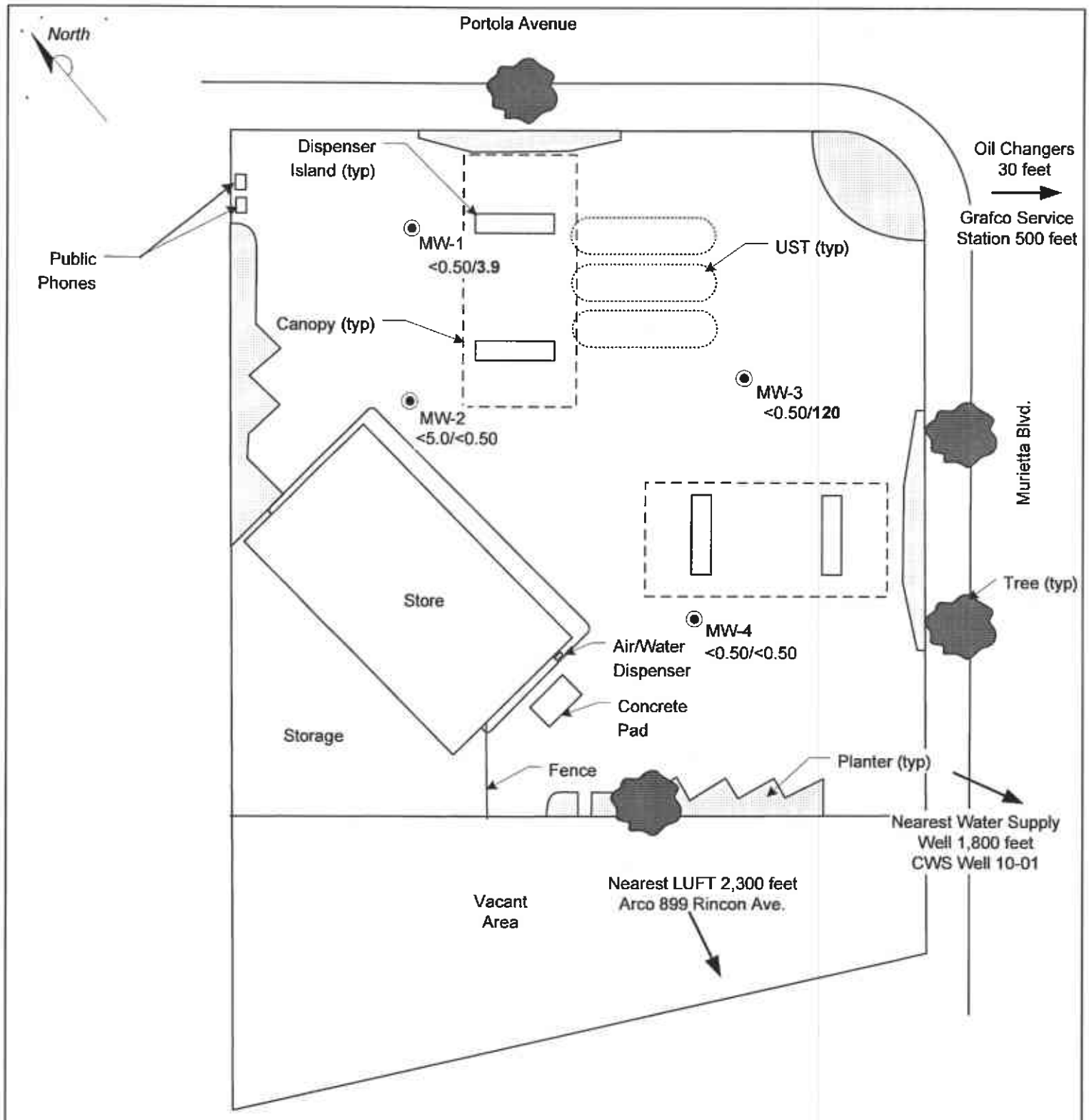
APPROX. SCALE

FIGURE 2
GROUNDWATER ELEVATION CONTOUR MAP,
MARCH 8, 2004

SHELL-BRANDED SERVICE STATION
1155 Portola Avenue
Livermore, California

PROJECT NO. SJ11-55P-1.2004	DRAWN BY VF 10/22/03
FILE NO. SJ11-55P-1.2004	PREPARED BY VF
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.



LEGEND

MW-4 ◉ **GROUNDWATER MONITORING WELL**

64/53 **BENZENE/MTBE CONCENTRATIONS (UG/L), 3/8/04**

0 30 FT

APPROX. SCALE

FIGURE 3
BENZENE AND MTBE CONCENTRATIONS MAP, MARCH 8, 2004

SHELL-BRANDED SERVICE STATION
1155 Portola Avenue
Livermore, California

PROJECT NO. SJ11-55P-1.2004	DRAWN BY VF 10/22/03
FILE NO. SJ11-55P-1.2004	PREPARED BY VF
REVISION NO. 1	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

April 13, 2004

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

First Quarter 2004 Groundwater Monitoring at
Shell-branded Service Station
1155 Portola Avenue
Livermore, CA

Monitoring performed on March 8, 2004

Groundwater Monitoring Report **040308-DA-2**

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
Delta Environmental
175 Bernal Road, Suite 200
San Jose, CA 95119

WELL CONCENTRATIONS
Shell-branded Service Station
1155 Portola Avenue
Livermore, CA

Well ID	Date	TPPH (ug/L)	TEPH (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.)	Screened Interval (ft.)	GW Elevation (MSL)
MW-1	12/05/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41.12	40-59	NA
MW-1	12/20/2002	<50	<50	<0.50	<0.50	<0.50	<0.50	78	<2.0	<2.0	<2.0	<50	NA	38.40	40-59	NA
MW-1	03/28/2003	<50	<50	<0.50	<0.50	<0.50	<1.0	7.0	<2.0	<2.0	<2.0	<5.0	443.81	36.25	40-59	407.56
MW-1	06/26/2003	<50	<50	<0.50	<0.50	<0.50	<1.0	1.4	<2.0	<2.0	<2.0	<5.0	443.81	39.53	40-59	404.28
MW-1	08/25/2003	64	NA	<0.50	<0.50	<0.50	<1.0	53	<2.0	<2.0	<2.0	<5.0	443.81	42.52	40-59	401.29
MW-1	12/09/2003	<50	NA	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	443.81	36.84	40-59	406.97
MW-1	**03/08/2004**	**<50**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**3.9**	**<2.0**	**<2.0**	**<2.0**	**<5.0**	**443.81**	**31.75**	**40-59**	**412.06**
MW-2	12/05/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41.57	40-60	NA
MW-2	12/20/2002	<50	<50	<0.50	<0.50	<0.50	<0.50	190	<2.0	<2.0	<2.0	<50	NA	40.00	40-60	NA
MW-2	03/28/2003	<50	<50	<0.50	<0.50	<0.50	<1.0	46	<2.0	<2.0	<2.0	<5.0	444.61	37.40	40-60	407.21
MW-2	06/26/2003	<500	<50	<5.0	<5.0	<5.0	<10	330	<20	<20	<20	<50	444.61	40.51	40-60	404.10
MW-2	08/25/2003	<500	NA	<5.0	<5.0	<5.0	<10	400	<20	<20	<20	<50	444.61	43.38	40-60	401.23
MW-2	12/09/2003	<50	NA	<0.50	<0.50	<0.50	<1.0	27	<2.0	<2.0	<2.0	<5.0	444.61	37.92	40-60	406.69
MW-2	**03/08/2004**	**<50**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**<2.0**	**<2.0**	**<2.0**	**<5.0**	**444.61**	**33.40**	**40-60**	**411.21**
MW-3	12/05/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	40.49	40-55	NA
MW-3	12/20/2002	<50	<50	<0.50	<0.50	<0.50	<0.50	8.7	<2.0	<2.0	<2.0	<50	NA	36.00	40-55	NA
MW-3	03/28/2003	<50	56	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	443.84	36.47	40-55	407.37
MW-3	06/26/2003	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	443.84	38.70	40-55	405.14
MW-3	08/25/2003	76 a	NA	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	443.84	41.12	40-55	402.72
MW-3	12/09/2003	<50	NA	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	443.84	37.27	40-55	406.57
MW-3	**03/08/2004**	**<50**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**120**	**<2.0**	**<2.0**	**<2.0**	**<5.0**	**443.84**	**32.49**	**40-55**	**411.35**
MW-4	12/05/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41.45	41-61	NA
MW-4	12/20/2002	<50	61	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	NA	40.61	41-61	NA
MW-4	03/28/2003	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	444.18	37.16	41-61	407.02
MW-4	06/26/2003	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	444.18	40.05	41-61	404.13
MW-4	08/25/2003	67 a	NA	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	444.18	43.04	41-61	401.14

WELL CONCENTRATIONS
Shell-branded Service Station
1155 Portola Avenue
Livermore, CA

Well ID	Date	TPPH (ug/L)	TEPH (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.)	Screened Interval (ft.)	GW Elevation (MSL)
MW-4	12/09/2003	<50	NA	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	444.18	37.62	41-61	406.56
MW-4	**03/08/2004**	**<50**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**<2.0**	**<2.0**	**<2.0**	**<5.0**	**444.18**	**32.80**	**41-61**	**411.38**

Abbreviations:
TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B.
TEPH = Total petroleum hydrocarbons as diesel by modified EPA Method 8015.
BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B.
MTBE = Methyl tertiary butyl ether
DIPE = Di-Isopropyl ether
ETBE = Ethyl tertiary butyl ether
TAME = Tertiary amyl methyl ether
TBA = Tertiary 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:
a = Hydrocarbon does not match pattern of laboratory's standard.
Site surveyed November 25, 2002, by Mid Coast Engineers.

SEVERN TRENT STL

Submission#: 2004-03-0311

Blaine Tech Services, Inc.

March 24, 2004

1680 Rogers Avenue
San Jose, CA 95112-1105

Attn.: Leon Gearhart

Project#: 040308-DA1
Project: 97495539
Site: 1155 Portola Ave., Livermore

Dear Mr.Gearhart,

Attached is our report for your samples received on 03/09/2004 13:16
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 04/23/2004 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

Sincerely,

Vincent Vancil
Project Manager

SEVERN TRENT STL

Submission #: 2004-03-0311

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: 040308-DA1
97495539

Received: 03/09/2004 13:16

Site: 1155 Portola Ave., Livermore

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	03/08/2004 10:57	Water	1
MW-2	03/08/2004 11:38	Water	2
MW-3	03/08/2004 11:20	Water	3
MW-4	03/08/2004 12:00	Water	4

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: 040308-DA1
97495539

Received: 03/09/2004 13:16

Site: 1155 Portola Ave., Livermore

Prep(s): 5030B
Sample ID: **MW-1**
Sampled: 03/08/2004 10:57
Matrix: Water

Test(s): 8260B
Lab ID: 2004-03-0311 - 1
Extracted: 3/18/2004 20:45
QC Batch#: 2004/03/18-2A.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	03/18/2004 20:45	
Benzene	ND	0.50	ug/L	1.00	03/18/2004 20:45	
Toluene	ND	0.50	ug/L	1.00	03/18/2004 20:45	
Ethylbenzene	ND	0.50	ug/L	1.00	03/18/2004 20:45	
Total xylenes	ND	1.0	ug/L	1.00	03/18/2004 20:45	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	03/18/2004 20:45	
Methyl tert-butyl ether (MTBE)	3.9	0.50	ug/L	1.00	03/18/2004 20:45	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	03/18/2004 20:45	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	03/18/2004 20:45	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	03/18/2004 20:45	
Surrogate(s)						
1,2-Dichloroethane-d4	99.2	76-130	%	1.00	03/18/2004 20:45	
Toluene-d8	93.7	78-115	%	1.00	03/18/2004 20:45	

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: 040308-DA1
97495539

Received: 03/09/2004 13:16

Site: 1155 Portola Ave., Livermore

Prep(s): 5030B
Sample ID: **MW-2**
Sampled: 03/08/2004 11:38
Matrix: Water

Test(s): 8260B
Lab ID: 2004-03-0311 - 2
Extracted: 3/18/2004 21:04
QC Batch#: 2004/03/18-2A.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	03/18/2004 21:04	
Benzene	ND	0.50	ug/L	1.00	03/18/2004 21:04	
Toluene	ND	0.50	ug/L	1.00	03/18/2004 21:04	
Ethylbenzene	ND	0.50	ug/L	1.00	03/18/2004 21:04	
Total xylenes	ND	1.0	ug/L	1.00	03/18/2004 21:04	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	03/18/2004 21:04	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	03/18/2004 21:04	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	03/18/2004 21:04	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	03/18/2004 21:04	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	03/18/2004 21:04	
Surrogate(s)						
1,2-Dichloroethane-d4	102.6	76-130	%	1.00	03/18/2004 21:04	
Toluene-d8	96.5	78-115	%	1.00	03/18/2004 21:04	

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: 040308-DA1
97495539

Received: 03/09/2004 13:16

Site: 1155 Portola Ave., Livermore

Prep(s): 5030B
Sample ID: **MW-3**
Sampled: 03/08/2004 11:20
Matrix: Water

Test(s): 8260B
Lab ID: 2004-03-0311 - 3
Extracted: 3/18/2004 21:23
QC Batch#: 2004/03/18-2A.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	03/18/2004 21:23	
Benzene	ND	0.50	ug/L	1.00	03/18/2004 21:23	
Toluene	ND	0.50	ug/L	1.00	03/18/2004 21:23	
Ethylbenzene	ND	0.50	ug/L	1.00	03/18/2004 21:23	
Total xylenes	ND	1.0	ug/L	1.00	03/18/2004 21:23	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	03/18/2004 21:23	
Methyl tert-butyl ether (MTBE)	120	0.50	ug/L	1.00	03/18/2004 21:23	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	03/18/2004 21:23	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	03/18/2004 21:23	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	03/18/2004 21:23	
Surrogate(s)						
1,2-Dichloroethane-d4	101.8	76-130	%	1.00	03/18/2004 21:23	
Toluene-d8	89.4	78-115	%	1.00	03/18/2004 21:23	

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: 040308-DA1
97495539

Received: 03/09/2004 13:16

Site: 1155 Portola Ave., Livermore

Prep(s): 5030B
Sample ID: **MW-4**
Sampled: 03/08/2004 12:00
Matrix: Water

Test(s): 8260B
Lab ID: 2004-03-0311 - 4
Extracted: 3/18/2004 21:42
QC Batch#: 2004/03/18-2A.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	03/18/2004 21:42	
Benzene	ND	0.50	ug/L	1.00	03/18/2004 21:42	
Toluene	ND	0.50	ug/L	1.00	03/18/2004 21:42	
Ethylbenzene	ND	0.50	ug/L	1.00	03/18/2004 21:42	
Total xylenes	ND	1.0	ug/L	1.00	03/18/2004 21:42	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	03/18/2004 21:42	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	03/18/2004 21:42	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	03/18/2004 21:42	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	03/18/2004 21:42	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	03/18/2004 21:42	
Surrogate(s)						
1,2-Dichloroethane-d4	96.3	76-130	%	1.00	03/18/2004 21:42	
Toluene-d8	89.1	78-115	%	1.00	03/18/2004 21:42	

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: 040308-DA1
97495539

Received: 03/09/2004 13:16

Site: 1155 Portola Ave., Livermore

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Method Blank — **Water** — **QC Batch # 2004/03/18-2A.68**

MB: 2004/03/18-2A.68-010 — Date Extracted: 03/18/2004 20:10

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	03/18/2004 20:10	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	03/18/2004 20:10	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	03/18/2004 20:10	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	03/18/2004 20:10	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	03/18/2004 20:10	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	03/18/2004 20:10	
Benzene	ND	0.5	ug/L	03/18/2004 20:10	
Toluene	ND	0.5	ug/L	03/18/2004 20:10	
Ethylbenzene	ND	0.5	ug/L	03/18/2004 20:10	
Total xylenes	ND	1.0	ug/L	03/18/2004 20:10	
Surrogates(s)					
1,2-Dichloroethane-d4	90.4	76-130	%	03/18/2004 20:10	
Toluene-d8	91.2	78-115	%	03/18/2004 20:10	

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: 040308-DA1
97495539

Received: 03/09/2004 13:16

Site: 1155 Portola Ave., Livermore

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2004/03/18-2A.68**

LCS 2004/03/18-2A.68-032 Extracted: 03/18/2004 Analyzed: 03/18/2004 19:32

LCSD 2004/03/18-2A.68-051 Extracted: 03/18/2004 Analyzed: 03/18/2004 19:51

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	23.5	26.2	25	94.0	104.8	10.9	65-165	20		
Benzene	22.2	25.5	25	88.8	102.0	13.8	69-129	20		
Toluene	24.4	26.7	25	97.6	106.8	9.0	70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	473	449	500	94.6	89.8		76-130			
Toluene-d8	454	456	500	90.8	91.2		78-115			

LAB: STL

Lab Identification (if necessary):

Address:

City, State, Zip:

SHELL Chain Of Custody Record

83707

Shell Project Manager to be Invoiced:

- [x] SCIENCE & ENGINEERING
- [ ] TECHNICAL SERVICES
- [ ] CRMT HOUSTON

Karen Petryna

2004-03-0311

INCIDENT NUMBER (S&E ONLY)

9	7	4	9	5	5	3	9

SAP or CRMT NUMBER (TS/CRMT)

PAGE: 1 of 1

SAMPLING COMPANY: Blaine Tech Services	LOG CODE: BTSS	SITE ADDRESS (Street and City): 1155 Portola Ave., Livermore	GLOBAL ID NO.: pending
ADDRESS: 1680 Rogers Avenue, San Jose, CA 95112		EDF DELIVERABLE TO (Responsible Party or Designee): Debbie Arnold	PHONE NO.: (408)224-4724
		E-MAIL: darnold@khm1.com	CONSULTANT PROJECT NO.: 040309-DA1 BTS #
PROJECT CONTACT (Hardcopy or PDF Report to): Leon Gearhart		SAMPLER NAME(S) (Print): David Allbut	LAB USE ONLY
TELEPHONE: 408-573-0555	FAX: 408-573-7771	E-MAIL: lgearhart@blainetech.com	

TURNAROUND TIME (BUSINESS DAYS):

- [x] 10 DAYS
- [ ] 5 DAYS
- [ ] 72 HOURS
- [ ] 48 HOURS
- [ ] 24 HOURS
- [ ] LESS THAN 24 HOURS

- [ ] LA - RWQCB REPORT FORMAT
- [ ] UST AGENCY: ______

GC/MS MTBE CONFIRMATION: HIGHEST ______ HIGHEST per BORING ______ ALL ______

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED [ ]

REQUESTED ANALYSIS

FIELD NOTES:
Container/Preservative or PID Readings or Laboratory Notes

TEMPERATURE ON RECEIPT C°: 4.0

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	FIELD NOTES
	MW-1	3/9/04	1057	w	3	x	x			x	
	MW-2	↓	1133	↓	↓	x	x			x	
	MW-3	↓	1120	↓	↓	x	x			x	
	MW-4	↓	1200	↓	↓	x	x			x	

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
David Allbut	[signature]	3/9/04	1316
[signature] 3/9/04 1722			
Relinquished by: (Signature)	Received by: (Signature) [signature]	3-9-04	1732

DISTRIBUTION: White with final report, Green to File, Yellow and Pink to Client.

10/16/00 Revision

WELLHEAD INSPECTION CHECKLIST

Client Shell Date 3/8/04

Site Address 1155 Portola Ave: Livermore, CA

Job Number 040308-DA2 Technician DA

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
MW-1	X							
MW-2		X						
MW-3	X							
MW-4	X							

NOTES: Note: MW-1, MW-2, MW-3 had partially open caps due to pressure in well

WELL GAUGING DATA

Project # 040308-DA2 Date 3/8/04 Client Shell

Site 1155 Portola Ave, Livermore, CA

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-1	2					31.75	59.07	TOC	
MW-2	2					33.40	59.26	↓	
MW-3	2					32.49	54.40		
MW-4	2					32.80	59.08		

SHELL WELL MONITORING DATA SHEET

BTS #: 040308-DA2	Site: 1155 Portola Ave. Livermore, CA
Sampler: DA	Date: 3/8/04
Well I.D.: MW-1	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 59.07	Depth to Water (DTW): 31.75
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]: 37.55	

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: ___

4.3 (Gals.) X 3 = 12.9 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	radius² * 0.163

Time	Temp (°C) (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1047	20.2	7.0	950	7200	4.5	tan, cloudy
1050	20.2	7.2	965	7200	9	"
1054	20.0	7.3	969	7200	13	"

Did well dewater? Yes (No) Gallons actually evacuated: 13

Sampling Date: 3/8/04 Sampling Time: 1057 Depth to Water: 32.01

Sample I.D.: MW-1 Laboratory: (STL) Other ___

Analyzed for: ~~TPH-G~~ ~~BTEX~~ MTBE TPH-D Other: Oxy's

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

BTS #: 040308-DA2	Site: 1155 Portola Ave. Livermore, CA
Sampler: DA	Date: 3/8/04
Well I.D.: MW-2	Well Diameter: ② 3 4 6 8 ___
Total Well Depth (TD): 59.26	Depth to Water (DTW): ~~38.40~~ 4-15-04 33.40
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]: 42.57	

Purge Method: Bailer; Disposable Bailer; X Positive Air Displacement; Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: X Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other: _____

3.3 (Gals.) X 3 = 9.9 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	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1131	69.8	7.5	1031	>200	3.5	tan, turbid
1133	69.2	7.4	1034	>200	7	"
1135	69.0	7.4	1031	>200	10	"

Did well dewater? Yes (No) Gallons actually evacuated: 10

Sampling Date: 3/8/04 Sampling Time: 1138 Depth to Water: 38.40

Sample I.D.: MW-2 Laboratory: (STL) Other_____

Analyzed for: (TPH-G BTEX) MTBE TPH-D Other: Oxy's

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

BTS #: 040308-DA2	Site: 1155 Portola Ave. Livermore, CA
Sampler: DA	Date: 3/8/04
Well I.D.: MW-3	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 54.48	Depth to Water (DTW): 32.49
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (TOC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 36.89	

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: ____

3.5 (Gals.) X 3 = 10.5 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	radius² * 0.163

Time	Temp °C (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1110	20.5	7.3	1026	7700	3.5	tan, turbid
1113	20.7	7.2	1027	7200	7	"
1116	21.0	7.3	1023	7200	10.5	"

Did well dewater? Yes (No) Gallons actually evacuated: 10.5

Sampling Date: 3/8/04 Sampling Time: 1120 Depth to Water: 32.60

Sample I.D.: MW-3 Laboratory: (STL) Other____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxy's

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

BTS #: 040308-DA2	Site: 1155 Portola Ave. Livermore, CA
Sampler: DA	Date: 3/8/04
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 59.08	Depth to Water (DTW): 32.80
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]: 38.06	

Purge Method: Bailer, Disposable Bailer, X Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other____

Sampling Method: X Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other:____

4.2 (Gals.) X	3	= 12.6 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	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1150	69.6	7.5	1057	7200	4.5	tan, cloudy
1153	69.8	7.5	1037	7200	9	"
1156	70.6	7.5	1029	7200	13	"

Did well dewater? Yes (No) Gallons actually evacuated: 13

Sampling Date: 3/8/04 Sampling Time: 1200 Depth to Water: 32.99

Sample I.D.: MW-4 Laboratory: (STL) Other____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxy's

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