RO-2525

ENVIRONMENTAL MANAGEMENT, INC.

KHM

December 3, 2002
KHM Project C81- 318 South Livermore

Mr. Scott Seery
Alameda County Environmental Health Services
113 Harbor Bay Parkway
Alameda, CA 94502-6577

Re: SHELL GRASP MONITORING REPORT
Shell Service Station
318 South Livermore Avenue
Livermore, California

Dear Mr. Seery:

KHM Environmental Management, Inc. (KHM) on behalf of Equilon Enterprises LLC dba Shell Oil Products US (SHELL) has prepared the *Shell GRASP Monitoring Report* for the above referenced site.

GRASP (GRoundwater ASsessment Program) is a voluntary initiative by SHELL to install groundwater monitoring wells at numerous retail service stations nationwide that do not have any active release cases but have been identified to be in close proximity to one or more public water supply wells. The purpose of this program is to proactively monitor the groundwater beneath these sites and, in the event of a subsurface release, to respond quickly to protect public wells from this impact.

A telephone notification of an unauthorized release was made to your office on October 10, 2002. An Unauthorized Release Report has been submitted. If you have any questions regarding this site, please contact Lee Dooley (KHM) at (408) 224-4724, or Mr. Lynn Walker (SHELL GRASP Northern California Coordinator) at (925) 706-1559.

Sincerely,
KHM Environmental Management, Inc.

R. Lee Dooley, CHG
Senior Hydrogeologist

REGISTERED GEOLOGIST
R. LEE DOOLEY
No. 0183
CERTIFIED
HYDROGEOLOGIST
EXP. 6/03
STATE OF CALIFORNIA

6284 SAN IGNACIO AVENUE, SUITE E • SAN JOSE, CALIFORNIA • 95119 • PHONE: (408) 224-4724 • FAX: (408) 224-4518

REDMOND, WASHINGTON (425) 558-0134 • PORTLAND, OREGON (503) 233-4068 • CROCKETT, CALIFORNIA (510) 787-6756 • MONROVIA, CALIFORNIA (626) 256-6662

December 3, 2002

SHELL GRASP MONITORING REPORT

Station Address.:	318 South Livermore Avenue Livermore, CA 94550
SHELL GRASP Incident No.	97306783
KHM Project No.	C81-318 South Livermore
SHELL Environmental Engin./Phone No.:	Karen Petryna (925) 706-1559
KHM Project Manager/Phone No.:	Lee Dooley /(408) 224-4724

Current Phase of Project:	GRASP Groundwater monitoring
Frequency of Sampling:	Quarterly
Frequency of Monitoring:	Quarterly
Is Separate Phase Hydrocarbon Present On-site (Well #'s):	☐ Yes ☒ No
Cumulative SPH Recovered to Date :	None
SPH Recovered This Quarter :	None
Water Wells or Surface Waters within 2000 ft. Radius and Their Respective Directions:	Nearest production well, California Water Service Co. Well 12-01 (03S/02E-09P01 M), is approximately 1,192 feet northeast of the site.
Approximate Depth to Groundwater:	36.80' to 37.92'
Groundwater Gradient	West @ approximately 0.012 ft/ft
Summary of Unusual Activity:	TPH-g detected for the first time in Well MW-8 at 140 ppb . MTBE detected for the first time in Well MW-6 at 2.5 ug/l.

Lee Dooley
Project Manager (KHM)

Attachments: Shell GRASP Monitoring Report

CC: Isabel Mejia, Shell Oil Products US, P.O. Box 7869, Burbank, CA 91510
Joe Lentini, Shell Oil Products US (PDF by email)
Karen Petryna, Shell Oil Products US (PDF by email)
Chuck Headlee, Regional Water Quality Control Board, San Francisco Bay Region, 1515 Clay Street, Suite 1400, Oakland, CA 94612

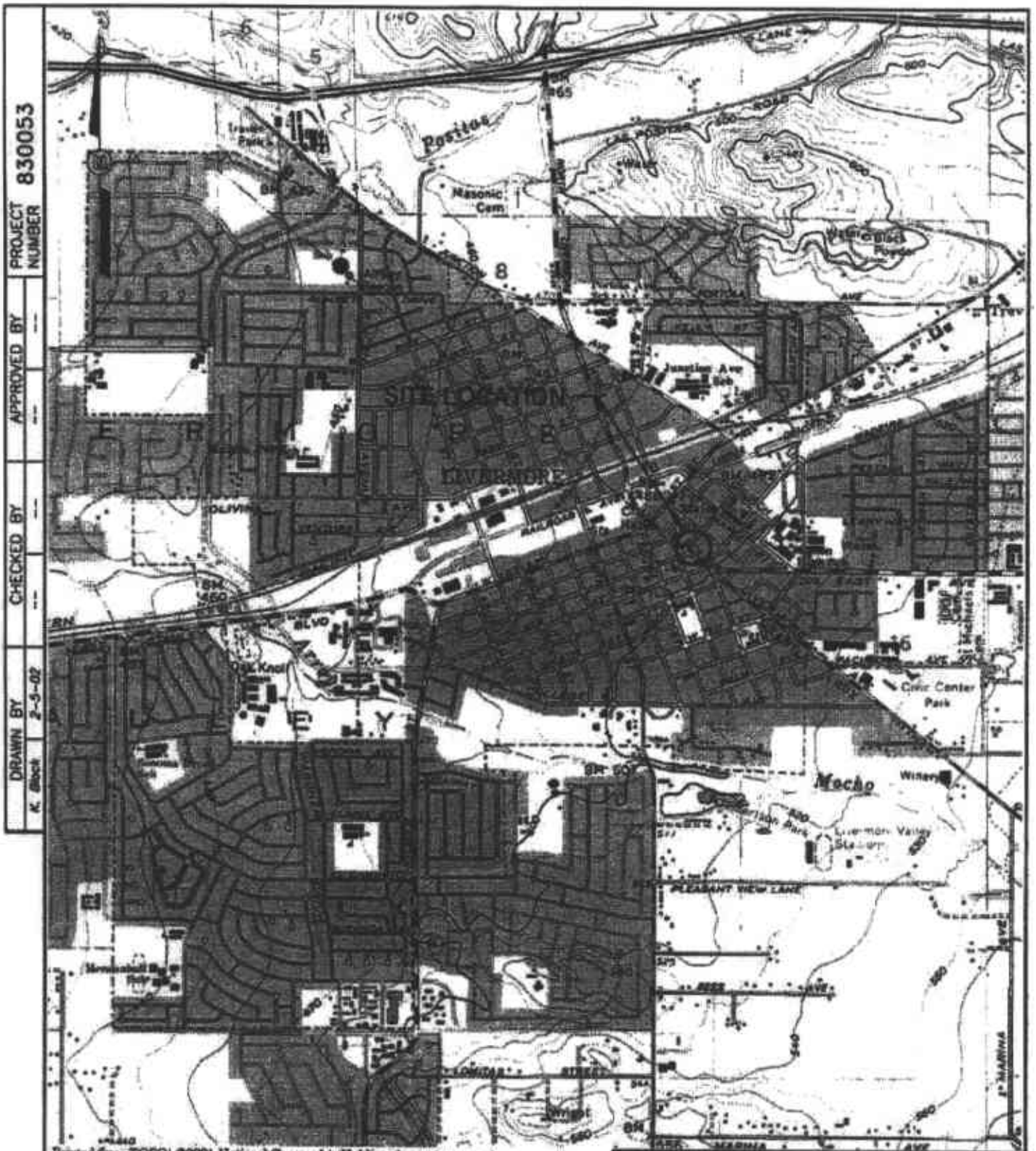
ATTACHED:

- Table 1 – Summary of Groundwater Data
- Figure 1 – Site Location Map
- Figure 2 – Groundwater Elevation Contour Map
- Figure 3 – TPH-G, Benzene, MTBE Concentrations Map
- Appendix A – Blaine Tech Services, Groundwater Monitoring and Sampling Report, November 21, 2002

Table 1
Summary of Groundwater Data
Shell Service Station
318 South Livermore Avenue
Livermore, California

Well Designation	Date Sampled	TPH-g (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethlybenzene (ug/l)	Xylene (ug/l)	MTBE (ug/l)	TOC (MSL)	Depth to Water (ft.)	GW Elev. (MSL)
MW-5	9/18/01	NA	<0.50	<0.50	<0.50	<0.50	<0.50	NM	NM	NM
	7/9/02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	495.47	34.85	460.62
	10/25/02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	495.47	37.26	458.21
MW-6	9/18/01	NA	<0.50	<0.50	<0.50	<0.50	<0.50	NM	NM	NM
	7/9/02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	497.57	35.41	462.16
	10/25/02	<50	<0.50	<0.50	<0.50	<0.50	**2.5**	497.57	37.92	459.65
MW-7	9/18/01	NA	<0.50	<0.50	<0.50	<0.50	**1.2**	NM	NM	NM
	7/9/02	<50	<0.50	<0.50	<0.50	<0.50	**2.0**	495.58	34.29	461.29
	10/25/02	<50	<0.50	<0.50	<0.50	<0.50	**1.9**	495.58	36.80	458.78
MW-8	9/18/01	NA	<0.50	<0.50	<0.50	<0.50	<0.50	NM	NM	NM
	7/9/02	<50	<0.50	<0.50	<0.50	<0.50	**6.9**	494.90	34.46	460.44
	10/25/02	**140**	<0.50	<0.50	<0.50	<0.50	**2.2**	494.90	36.98	457.92

Notes:
All analysis performed by EPA Method 8260B
ug/l = micrograms per liter
TPH-g = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tert-butyl ether
TOC = Top of Well Casing
NM = Not measured
NA = Not analyzed



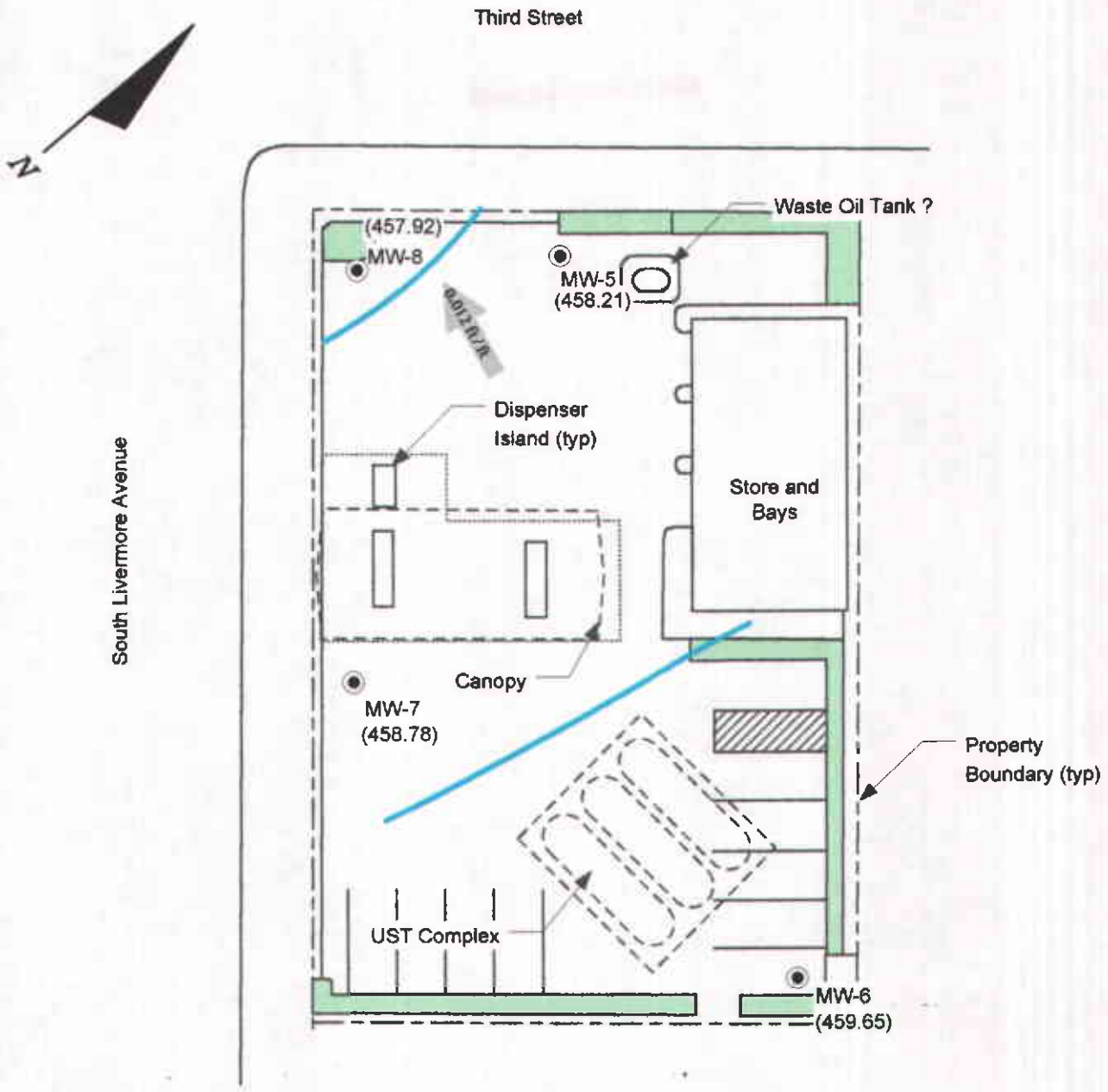
IT CORPORATION

SHELL OIL PRODUCTS US

FIGURE 1
SITE LOCATION MAP

318 SOUTH LIVERMORE AVENUE
LIVERMORE, CALIFORNIA

N:\cad\DWG\ORASP\318SLivermore\SiteLoc.dwg Thu, 21/Mar/02 09:08am kblock



LEGEND

MW-6 ◉ **GROUNDWATER MONITORING WELL**

PLANTER

(462.16) **GROUNDWATER ELEVATION (MSL), 10/25/02**

461.00 **GROUNDWATER ELEVATION CONTOUR**

0.012 ft/ft **APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT**

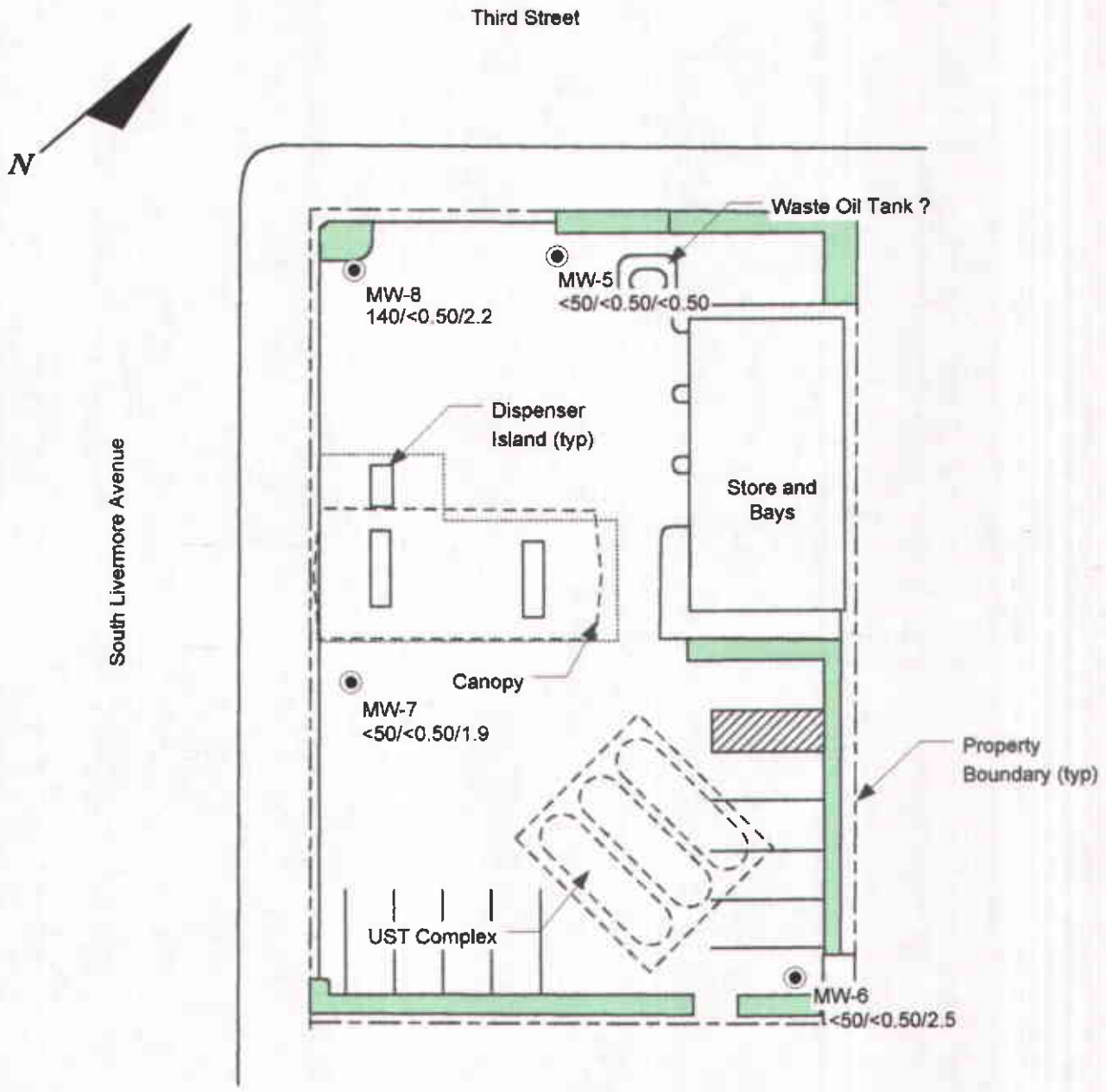
0 ft. 30 ft. 60 ft.

KHM ENVIRONMENTAL MANAGEMENT, INC.

GROUNDWATER ELEVATION CONTOUR MAP, OCTOBER 25, 2002

Shell Service Station
318 South Livermore Avenue
Livermore, California

DATE	PROJECT	FIGURE
12/03/02	C81-318 Livermore	2



0 ft. 30 ft. 60 ft.

LEGEND

MW-6 ◉ **GROUNDWATER MONITORING WELL**

PLANTER

<50/<0.50/<0.50 **TPH-G/BENZENE/MTBE CONCENTRATIONS IN GROUNDWATER (UG/L), 10/25/02**

KHM ENVIRONMENTAL MANAGEMENT, INC.

TPH-G, BENZENE, MTBE CONCENTRATION MAP, OCTOBER 25, 2002

Shell Service Station
318 South Livermore Avenue
Livermore, California

DATE	PROJECT	FIGURE
12/03/02	C81-318 Livermore	3

APPENDIX 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

November 21, 2002

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

Fourth Quarter 2002 Groundwater Monitoring at
Shell-branded Service Station
318 South Livermore Avenue
Livermore, CA

Monitoring performed on October 25, 2002

Groundwater Monitoring Report **021025-DW-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/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-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-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-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**

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.

KIFF ANALYTICAL LLC

Report Number : 29405
Date : 11/01/2002

Leon Gearhart
Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112-1105

Subject : 4 Water Samples
Project Name : 318 S. Livermore Ave., Livermore
Project Number : 021025-DW-1
P.O. Number : 97306783

Dear Mr. Gearhart,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 29405
Date : 11/01/2002

Project Name : **318 S. Livermore Ave., Livermore**
Project Number : **021025-DW-1**

Sample : **MW-5** Matrix : Water Lab Number : 29405-01
Sample Date :10/25/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Diisopropyl ether (DIPE)	**< 2.0**	2.0	ug/L	EPA 8260B	10/30/2002
Ethyl-t-butyl ether (ETBE)	**< 2.0**	2.0	ug/L	EPA 8260B	10/30/2002
Tert-amyl methyl ether (TAME)	**< 2.0**	2.0	ug/L	EPA 8260B	10/30/2002
Tert-Butanol	**< 50**	50	ug/L	EPA 8260B	10/30/2002
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	10/30/2002
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	10/30/2002
4-Bromofluorobenzene (Surr)	98.3		% Recovery	EPA 8260B	10/30/2002

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 29405
Date : 11/01/2002

Project Name : **318 S. Livermore Ave., Livermore**
Project Number : **021025-DW-1**

Sample : **MW-6** Matrix : Water Lab Number : 29405-02
Sample Date :10/25/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Methyl-t-butyl ether (MTBE)	**2.5**	0.50	ug/L	EPA 8260B	10/30/2002
Diisopropyl ether (DIPE)	**< 2.0**	2.0	ug/L	EPA 8260B	10/30/2002
Ethyl-t-butyl ether (ETBE)	**< 2.0**	2.0	ug/L	EPA 8260B	10/30/2002
Tert-amyl methyl ether (TAME)	**< 2.0**	2.0	ug/L	EPA 8260B	10/30/2002
Tert-Butanol	**< 50**	50	ug/L	EPA 8260B	10/30/2002
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	10/30/2002
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	10/30/2002
4-Bromofluorobenzene (Surr)	96.7		% Recovery	EPA 8260B	10/30/2002

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 29405
Date : 11/01/2002

Project Name : **318 S. Livermore Ave., Livermore**
Project Number : **021025-DW-1**

Sample : **MW-7** Matrix : Water Lab Number : 29405-03
Sample Date :10/25/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Methyl-t-butyl ether (MTBE)	**1.9**	0.50	ug/L	EPA 8260B	10/30/2002
Diisopropyl ether (DIPE)	**< 2.0**	2.0	ug/L	EPA 8260B	10/30/2002
Ethyl-t-butyl ether (ETBE)	**< 2.0**	2.0	ug/L	EPA 8260B	10/30/2002
Tert-amyl methyl ether (TAME)	**< 2.0**	2.0	ug/L	EPA 8260B	10/30/2002
Tert-Butanol	**< 50**	50	ug/L	EPA 8260B	10/30/2002
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	10/30/2002
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	10/30/2002
4-Bromofluorobenzene (Surr)	98.7		% Recovery	EPA 8260B	10/30/2002

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 29405
Date : 11/01/2002

Project Name : **318 S. Livermore Ave., Livermore**
Project Number : **021025-DW-1**

Sample : **MW-8** Matrix : Water Lab Number : 29405-04
Sample Date :10/25/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	10/30/2002
Methyl-t-butyl ether (MTBE)	**2.2**	0.50	ug/L	EPA 8260B	10/30/2002
Diisopropyl ether (DIPE)	**3.3**	2.0	ug/L	EPA 8260B	10/30/2002
Ethyl-t-butyl ether (ETBE)	**< 2.0**	2.0	ug/L	EPA 8260B	10/30/2002
Tert-amyl methyl ether (TAME)	**< 2.0**	2.0	ug/L	EPA 8260B	10/30/2002
Tert-Butanol	**< 50**	50	ug/L	EPA 8260B	10/30/2002
TPH as Gasoline	**140**	50	ug/L	EPA 8260B	10/30/2002
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	10/30/2002
4-Bromofluorobenzene (Surr)	98.7		% Recovery	EPA 8260B	10/30/2002

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 29405

Date : 11/01/2002

QC Report : Method Blank Data

Project Name : **318 S. Livermore Ave., Livermore**

Project Number : **021025-DW-1**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/29/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/29/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/29/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/29/2002
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/29/2002
Diisopropyl ether (DIPE)	< 2.0	2.0	ug/L	EPA 8260B	10/29/2002
Ethyl-t-butyl ether (ETBE)	< 2.0	2.0	ug/L	EPA 8260B	10/29/2002
Tert-amyl methyl ether (TAME)	< 2.0	2.0	ug/L	EPA 8260B	10/29/2002
Tert-Butanol	< 50	50	ug/L	EPA 8260B	10/29/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/29/2002
Toluene - d8 (Surr)	102		%	EPA 8260B	10/29/2002
4-Bromofluorobenzene (Surr)	98.1		%	EPA 8260B	10/29/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 29405

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 11/01/2002

Project Name : **318 S. Livermore Ave.,**

Project Number : **021025-DW-1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	29381-02	<0.50	40.0	40.0	41.4	41.2	ug/L	EPA 8260B	10/29/02	103	103	0.339	70-130	25
Toluene	29381-02	<0.50	40.0	40.0	42.5	41.9	ug/L	EPA 8260B	10/29/02	106	105	1.30	70-130	25
Tert-Butanol	29381-02	<5.0	200	200	207	204	ug/L	EPA 8260B	10/29/02	103	102	1.50	70-130	25
Methyl-t-Butyl Ether	29381-02	0.52	40.0	40.0	39.6	39.8	ug/L	EPA 8260B	10/29/02	97.8	98.3	0.536	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 29405

QC Report : Laboratory Control Sample (LCS)

Date : 11/01/2002

Project Name : **318 S. Livermore Ave.,**

Project Number : **021025-DW-1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	10/29/02	101	70-130
Toluene	40.0	ug/L	EPA 8260B	10/29/02	106	70-130
Tert-Butanol	200	ug/L	EPA 8260B	10/29/02	102	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	10/29/02	97.9	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

LAB: Kiff

SHELL Chain Of Custody Record

Lab Identification (if necessary):

Address:

City, State, Zip:

Shell Project Manager to be invoiced:

☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON

Karen Petryna

29405

INCIDENT NUMBER (S&E ONLY): 9 7 3 0 6 7 8 3

SAP or CRMT NUMBER (TS/CRMT):

DATE: 10-25-02

PAGE: 1 of 1

SAMPLING COMPANY	LOG CODE	SITE ADDRESS (Street and City)	GLOBAL ID NO.
Blaine Tech Services	BTSS	318 S. Livermore Ave., Livermore	pending

ADDRESS: 1680 Rogers Avenue, San Jose, CA 95112

PROJECT CONTACT (Hardcopy or PDF Report to): Leon Gearhart

TELEPHONE: 408-573-0555 FAX: 408-573-7771 E-MAIL: lgearhart@blainetech.com

EDF DELIVERABLE TO (Responsible Party or Designee): Debbie Arnold PHONE NO.: (408) 224-4724 E-MAIL: darnold@khm1.com

CONSULTANT PROJECT NO.: 021025-BW-1 BTS #

SAMPLER NAME(S) (Print): Dave Walter

LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS): ☒ 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

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)	TEMPERATURE ON RECEIPT C°
	MW-5	10-25	10:28	W	3	X	X			X	-01
	mw-6	↓	9:37	↓	↓	X	X			X	-02
	mw-7		11:20			X	X			X	-03
	mw-8	↓	9:53	↓	↓	X	X			X	-04

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

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
David C Galt			
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
	John Cuttle/Kiff Analytical	102802	1146

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

10/16/00 Revision

Q&O Graphic (714) 898-9702

~~October 15, 2002~~December 3, 2002
KHM Project C81- 318 South Livermore

Mr. Scott Seery
Alameda County Environmental Health Services
113 Harbor Bay Parkway
Alameda, CA 94502-6577

Re: SHELL GRASP MONITORING REPORT
Shell Service Station
318 South Livermore Avenue
Livermore, California

Dear Mr. Seery:

KHM Environmental Management, Inc. (KHM) on behalf of Equilon Enterprises LLC dba Shell Oil Products US (SHELL) has prepared the *Shell GRASP Monitoring Report* for the above referenced site.

GRASP (GRoundwater ASsessment Program) is a voluntary initiative by SHELL to install groundwater monitoring wells at numerous retail service stations nationwide that do not have any active release cases but have been identified to be in close proximity to one or more public water supply wells. The purpose of this program is to proactively monitor the groundwater beneath these sites and, in the event of a subsurface release, to respond quickly to protect public wells from this impact.

A telephone notification of an unauthorized release was made to your office on October 10, 2002. An Unauthorized Release Report is being prepared. If you have any questions regarding this site, please contact Lee Dooley (KHM) at (408) 224-4724, or Mr. Lynn Walker (SHELL GRASP Northern California Coordinator) at (925) 706-1559.

Sincerely,
KHM Environmental Management, Inc.

Debbie Arnold
Senior Staff Geologist

R. Lee Dooley, CHG
Senior Hydrogeologist

Attachments: Shell GRASP Monitoring Report

CC: Isabel Mejia, Shell Oil Products US, P.O. Box 7869, Burbank, CA 91510
Joe Lentini, Shell Oil Products US (PDF by email)
Karen Petryna, Shell Oil Products US (PDF by email)
Chuck Headlee, Regional Water Quality Control Board, San Francisco Bay Region, 1515 Clay Street, Suite 1400, Oakland, CA 94612

~~October 15, 2002~~December 3, 2002

SHELL GRASP MONITORING REPORT

Station Address.:	318 South Livermore Avenue Livermore, CA 94550
SHELL GRASP Incident No.	97306783
KHM Project No.	C81-318 South Livermore
SHELL Environmental Engin./Phone No.:	Karen Petryna (925) 706-1559
KHM Project Manager/Phone No.:	Lee Dooley /(408) 224-4724

Current Phase of Project:	GRASP Groundwater monitoring
Frequency of Sampling:	Quarterly
Frequency of Monitoring:	Quarterly
Is Separate Phase Hydrocarbon Present On-site (Well #'s):	☐ Yes ☒ No
Cumulative SPH Recovered to Date :	None
SPH Recovered This Quarter :	None
Water Wells or Surface Waters within 2000 ft. Radius and Their Respective Directions:	Nearest production well, California Water Service Co. Well 12-01 (03S/02E-09P01 M), is approximately 1,192 feet northeast of the site.
Approximate Depth to Groundwater:	34.20' to 35.41'
Groundwater Gradient	West @ approximately 0.012 ft/ft
Summary of Unusual Activity:	None

Lee Dooley
Project Manager (KHM)

ATTACHED:

- Table 1 – Summary of Groundwater Data
- Figure 1 – Site Location Map
- Figure 2 – Groundwater Elevation Contour Map
- Figure 3 – TPH-G, Benzene, MTBE Concentrations Map
- Appendix A – Blaine Tech Services, Groundwater Monitoring and Sampling Report, August 1, 2002

APPENDIX A

GROUNDWATER MONITORING AND SAMPLING REPORT

WELLHEAD INSPECTION CHECKLIST

Client Shell Date 10-25-02

Site Address 318 S. Livermore Ave Livermore

Job Number 021025-DW-1 Technician Dave Walter

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-5	✓							
mw-6	✓							
mw-7	✓							
mw-8	✓							

NOTES:

WELL GAUGING DATA

Project # 021025-DW-1 Date 10-25-02 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					37.26	55.28		
MW-6	2					37.92	53.60		
MW-7	2					36.80	51.26		
MW-8	2					36.98	51.20		

SHELL WELL MONITORING DATA SHEET

BTS #: 021025-DW-1	Site: ~~10-25-02~~ 318 S. Livermore Ave
Sampler: Dave Walter	Date: 10-25-02
Well I.D.: MW-5	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 55.28	Depth to Water (DTW): 37.26
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]: 40.86	

Purge Method: Bailer / Disposable Bailer / X Middleburg / Electric Submersible / Waterra / Peristaltic / Extraction Pump / Other_____

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

2.9 (Gals.) X	3	=	8.7 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
10:03	63.0	7.5	1096	>200	3	Brown
10:06	64.4	7.4	1083	>200	6	
10:09	64.3	7.4	1088	>200	9	

Did well dewater? Yes (No) Gallons actually evacuated: 9

Sampling Date: 10-25-02 Sampling Time: 1028 Depth to Water: 40.85

Sample I.D.: MW-5 Laboratory: (Kiff) SPL Other_____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxygenates(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

SHELL WELL MONITORING DATA SHEET

BTS #: 021025-DW-1	Site: ~~10-25-02~~ 318 S. Livermore Ave
Sampler: Dave Walter	Date: 10-25-02
Well I.D.: MW-6	Well Diameter: (2") 3 4 6 8 ____
Total Well Depth (TD): 53.60	Depth to Water (DTW): 37.92
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]: 41.05	

Purge Method: Bailer, Disposable Bailer, X Middleburg, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other____

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

2.5 (Gals.) X 3 = 7.5 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 (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
9:16	63.9	7.2	842	>200	2.5	Brown
9:19	64.0	7.2	868	>200	5.0	
9:22	64.2	7.2	898	>200	7.5	less brown

Did well dewater? Yes (No) Gallons actually evacuated: 7.5

Sampling Date: 10-25-02 Sampling Time: 9:27 Depth to Water: 40.89

Sample I.D.: MW-6 Laboratory: (Kiff) SPL Other____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxygenates(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

SHELL WELL MONITORING DATA SHEET

BTS #: 021025-DW-1	Site: ~~10-25-02~~ 318 S. Livermore Ave
Sampler: Dave Walter	Date: 10-25-02
Well I.D.: MW-7	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 51.26	Depth to Water (DTW): 36.80
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]: 39.69	

Purge Method: Bailer, Disposable Bailer, X Middleburg, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

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

2.3 (Gals.) X	3	= 6.9 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
10141	65.3	7.0	1429	>200	2.5	Brown
10144	66.4	7.0	1453	>200	5.0	
10147	66.6	7.1	1452	>200	7.5	

Did well dewater? Yes (No) Gallons actually evacuated: 7.5

Sampling Date: 10-25-02 Sampling Time: 11:20 Depth to Water: 39.65

Sample I.D.: MW-7 Laboratory: (Kiff) SPL Other_____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxygenates(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

SHELL WELL MONITORING DATA SHEET

BTS #: 021025-DW-1	Site: ~~10-25-02~~ 318 S. Livermore Ave
Sampler: Dave Walter	Date: 10-25-02
Well I.D.: MW-8	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 51.70	Depth to Water (DTW): 36.98
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]: 39.82	

Purge Method: Bailer / Disposable Bailer / X Middleburg / Electric Submersible / Waterra / Peristaltic / Extraction Pump / Other____

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

2.3 (Gals.) X	3 =	6.9 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
9:42	64.0	7.2	1166	~~>200~~ >200	2.5	Brown
9:45	65.5	7.2	1212	>200	5.0	
9:48	65.0	7.2	1190	>200	7.5	

Did well dewater? Yes (No) Gallons actually evacuated: 7.5

Sampling Date: 10-25-02 Sampling Time: 9:53 Depth to Water: 39.75

Sample I.D.: MW-8 Laboratory: (Kiff) SPL Other____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxygenates(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