ENVIRONMENTAL MANAGEMENT, INC.

KHM

Alameda County

OCT 21 2002

Environmental Health

October 15, 2002
KHM Project C81-4530 Las Positas

Mr. Scott Seery
Alameda County Environmental Health Services
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Re: SHELL GRASP MONITORING REPORT
Shell Service Station
4530 Las Positas Road
Livermore, California 94550

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.

LDooley@ khm1 .com

Sincerely,
KHM Environmental Management, Inc.

D. Arnold

Debbie Arnold
Senior Staff Geologist

R Lee Dooley

R. Lee Dooley, CHG
Senior Hydrogeologist

REGISTERED GEOLOGIST
R. LEE DOOLEY
No. 0183
CERTIFIED HYDROGEOLOGIST
EXP. 04/03
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

Attachments: Shell GRASP Monitoring Report

CC: Isabel Mejia, Shell Oil Products US, P.O. Box 7869, Burbank, CA 91510-7869
Lynn Walker, 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
Livermore-Pleasanton Fire Department, 4550 East Avenue, Livermore, CA 94550
KHM GRASP file

October 15, 2002

SHELL GRASP MONITORING REPORT

Station Address.:	4530 Las Positas Road Livermore, California 94550
SHELL GRASP Incident No.	97306793
KHM Project No.	C81-4530 Las Positas
SHELL Environmental Engin./Phone No.:	Karen Petryna /(559) 645-9306
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 Company Well 17-01 (03S/02E-09L01 M), is approximately 7,500 feet southwest of site.
Approximate Depth to Groundwater:	11.58' to 13.42'
Groundwater Gradient	Southeast @ approximately 0.0185 ft/ft ?
Summary of Unusual Activity:	MtBE concentration in MW-4 increased, from 16 ppb to 470 ppb

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

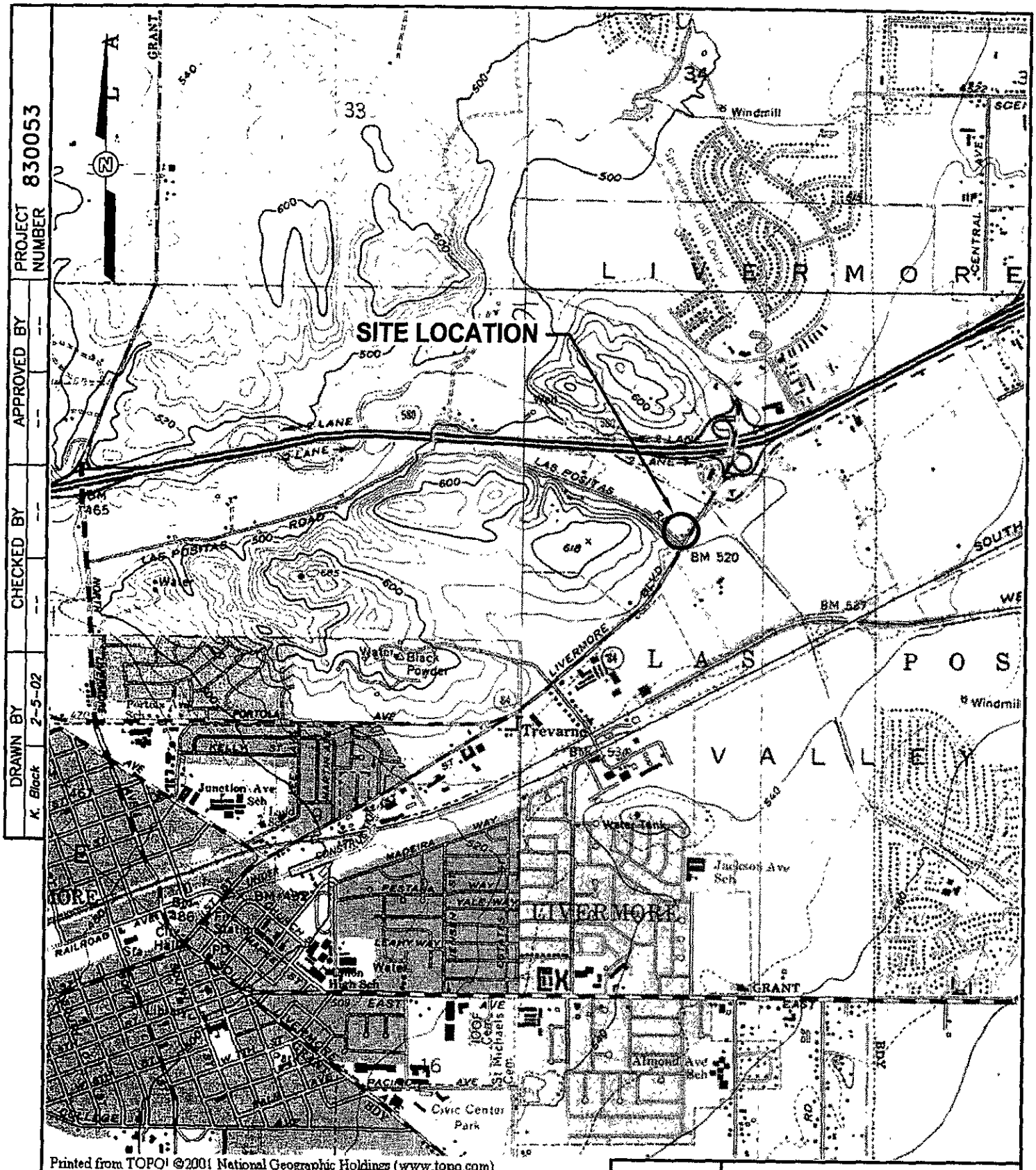
TABLE AND FIGURES

Table 1
Summary of Groundwater Data
Shell Service Station
4530 Las Positas Road
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-1	9/20/01	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	519.86	13.13	506.73
MW-2	9/20/01	NA	<0.50	<0.50	<0.50	<0.50	**0.6**	NM	NM	NM
	7/9/02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	518.50	12.41	506.09
MW-3	9/20/01	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	**32.0**	518.93	11.58	507.35
MW-4	11/6/01	NA	<0.50	<0.50	<0.50	<0.50	**16.0**	NM	NM	NM
	7/9/02	<50	<0.50	<0.50	<0.50	<0.50	**470.0**	519.44	13.42	506.02

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

PROJECT NUMBER	APPROVED BY	CHECKED BY	DRAWN BY
830053	--	--	K. Black 2-5-02



Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

SCALE

0 2,000 4,000 FEET

IT CORPORATION

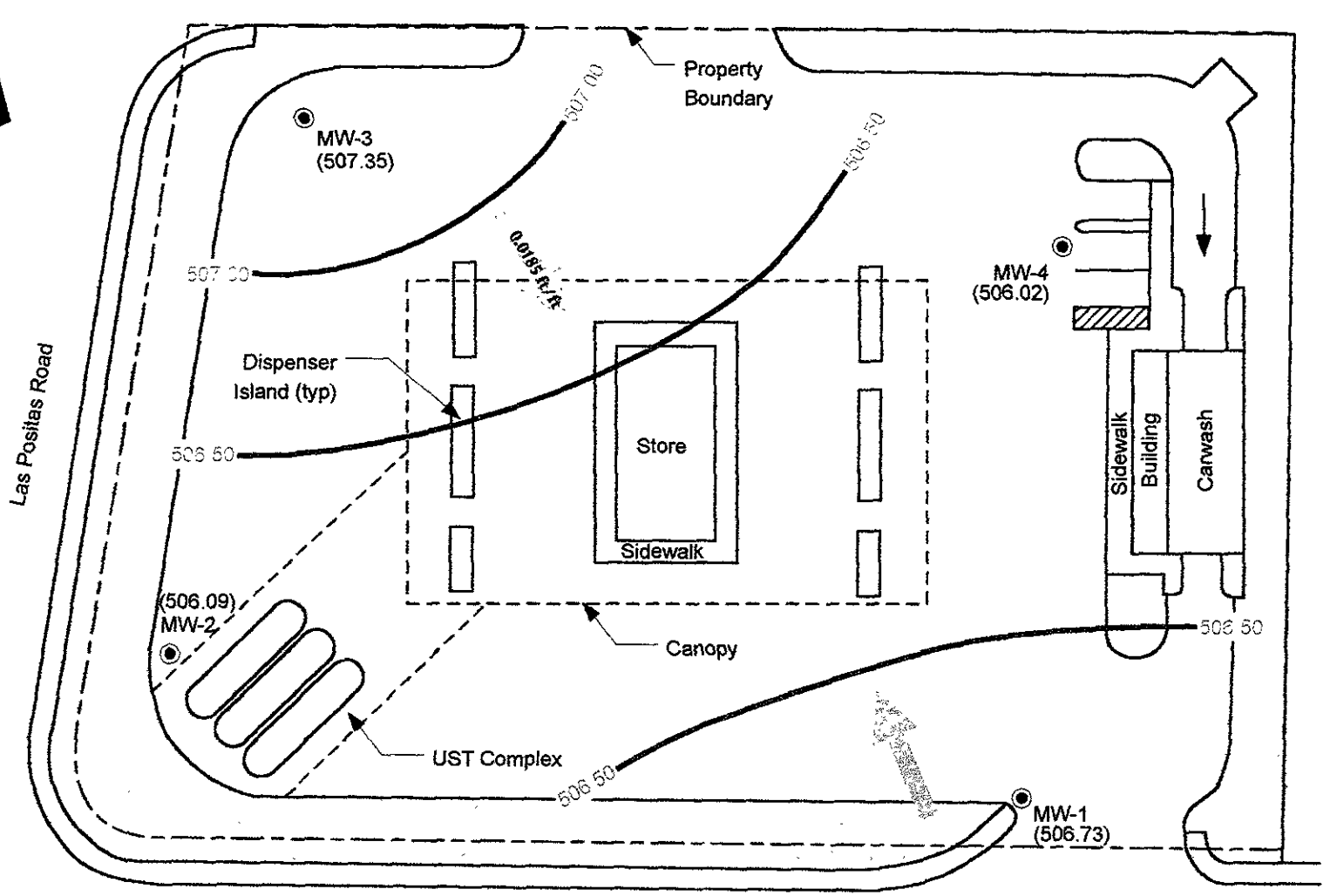
SHELL OIL PRODUCTS US

FIGURE 1

SITE LOCATION MAP

4530 LAS POSITAS ROAD
LIVERMORE, CALIFORNIA

N:\cad\DWG\GRASP\4530LasPositas\SiteLoc.dwg Thu, 21/Mar/02 09:07am kblack



North First

0 ft. 40 ft. 80 ft.

LEGEND

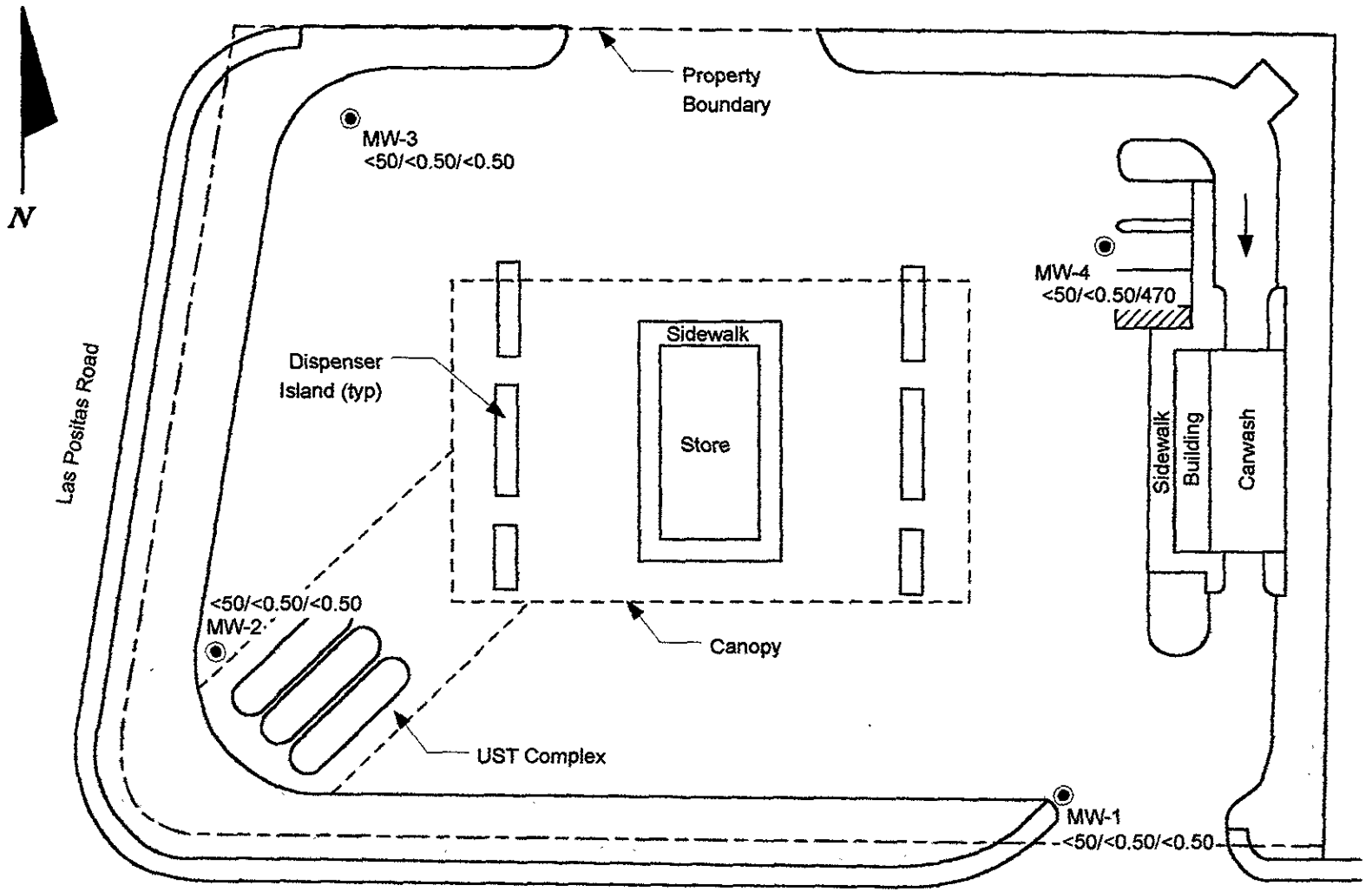
- MW-2 ◉ **GROUNDWATER MONITORING WELL**
- (506.73) **GROUNDWATER ELEVATION (MSL), 7/9/02**
- 506.50 **GROUNDWATER ELEVATION CONTOUR**
- 0.0606 ft/ft **APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT**
- ☐ **PLANTER**

KHM
ENVIRONMENTAL MANAGEMENT, INC.

GROUNDWATER ELEVATION CONTOUR MAP, JULY 9, 2002

Shell-branded Service Station
4530 Las Positas Road
Livermore, California

DATE	PROJECT	FIGURE
09/12/02	C81-4530 Las Positas	2



LEGEND

MW-2 ◉ **GROUNDWATER MONITORING WELL**

☐ **PLANTER**

<50/<0.50/<0.50 **TPH-G/BENZENE/MTBE (UG/L), 7/9/02**

KHM
ENVIRONMENTAL
MANAGEMENT,
INC.

TPH-G, BENZENE, MTBE CONCENTRATIONS MAP, JULY 9, 2002

Shell-branded Service Station
4530 Las Positas Road
Livermore, California

DATE	PROJECT	FIGURE
09/12/02	C81-4530 Las Positas	3

APPENDIX A

GROUNDWATER MONITORING AND SAMPLING REPORTS

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 1, 2002

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

Third Quarter 2002 Groundwater Monitoring at
Shell-branded Service Station
4530 Las Positas Road
Livermore, CA

Monitoring performed on July 9, 2002

Groundwater Monitoring Report **020709-MN-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
4530 Las Positas Road
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-1	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	519.86	13.13	506.73
MW-2	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	518.50	12.41	506.09
MW-3	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	518.93	11.58	507.35
MW-4	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	470	519.44	13.42	506.02

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 : 27410
Date : 7/15/2002

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

Subject : 4 Water Samples
Project Name : 4530 Las Positas Rd., Livermore
Project Number : 020709-MN3
P.O. Number : 97306794

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 : 27410
Date : 7/15/2002

Project Name : **4530 Las Positas Rd., Livermore**
Project Number : **020709-MN3**

Sample : **MW-1** Matrix : Water Lab Number : 27410-01
Sample Date :7/9/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/13/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/13/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/13/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	7/13/2002
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	7/13/2002
Diisopropyl ether (DIPE)	**< 2.0**	2.0	ug/L	EPA 8260B	7/13/2002
Ethyl-t-butyl ether (ETBE)	**< 2.0**	2.0	ug/L	EPA 8260B	7/13/2002
Tert-amyl methyl ether (TAME)	**< 2.0**	2.0	ug/L	EPA 8260B	7/13/2002
Tert-Butanol	**< 50**	50	ug/L	EPA 8260B	7/13/2002
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	7/13/2002
Toluene - d8 (Surr)	97.3		% Recovery	EPA 8260B	7/13/2002
4-Bromofluorobenzene (Surr)	99.2		% Recovery	EPA 8260B	7/13/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 27410
Date : 7/15/2002

Project Name : **4530 Las Positas Rd., Livermore**
Project Number : **020709-MN3**

Sample : **MW-2** Matrix : Water Lab Number : 27410-02
Sample Date :7/9/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/13/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/13/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/13/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	7/13/2002
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	7/13/2002
Diisopropyl ether (DIPE)	**< 2.0**	2.0	ug/L	EPA 8260B	7/13/2002
Ethyl-t-butyl ether (ETBE)	**< 2.0**	2.0	ug/L	EPA 8260B	7/13/2002
Tert-amyl methyl ether (TAME)	**< 2.0**	2.0	ug/L	EPA 8260B	7/13/2002
Tert-Butanol	**< 50**	50	ug/L	EPA 8260B	7/13/2002
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	7/13/2002
Toluene - d8 (Surr)	97.3		% Recovery	EPA 8260B	7/13/2002
4-Bromofluorobenzene (Surr)	98.3		% Recovery	EPA 8260B	7/13/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 27410
Date : 7/15/2002

Project Name : **4530 Las Positas Rd., Livermore**
Project Number : **020709-MN3**

Sample : **MW-3** Matrix : Water Lab Number : 27410-03
Sample Date :7/9/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/14/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/14/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/14/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	7/14/2002
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	7/14/2002
Diisopropyl ether (DIPE)	**< 2.0**	2.0	ug/L	EPA 8260B	7/14/2002
Ethyl-t-butyl ether (ETBE)	**< 2.0**	2.0	ug/L	EPA 8260B	7/14/2002
Tert-amyl methyl ether (TAME)	**< 2.0**	2.0	ug/L	EPA 8260B	7/14/2002
Tert-Butanol	**< 50**	50	ug/L	EPA 8260B	7/14/2002
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	7/14/2002
Toluene - d8 (Surr)	97.9		% Recovery	EPA 8260B	7/14/2002
4-Bromofluorobenzene (Surr)	99.9		% Recovery	EPA 8260B	7/14/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 27410
Date : 7/15/2002

Project Name : **4530 Las Positas Rd., Livermore**
Project Number : **020709-MN3**

Sample : **MW-4** Matrix : Water Lab Number : 27410-04
Sample Date :7/9/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/14/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/14/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/14/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	7/14/2002
Methyl-t-butyl ether (MTBE)	**470**	2.5	ug/L	EPA 8260B	7/14/2002
Diisopropyl ether (DIPE)	**< 2.0**	2.0	ug/L	EPA 8260B	7/14/2002
Ethyl-t-butyl ether (ETBE)	**< 2.0**	2.0	ug/L	EPA 8260B	7/14/2002
Tert-amyl methyl ether (TAME)	**< 2.0**	2.0	ug/L	EPA 8260B	7/14/2002
Tert-Butanol	**< 50**	50	ug/L	EPA 8260B	7/14/2002
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	7/14/2002
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	7/14/2002
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	7/14/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 27410

Date : 7/15/2002

QC Report : Method Blank Data

Project Name : **4530 Las Positas Rd., Livermore**

Project Number : **020709-MN3**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	7/13/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/13/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/13/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/13/2002
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	7/13/2002
Diisopropyl ether (DIPE)	< 2.0	2.0	ug/L	EPA 8260B	7/13/2002
Ethyl-t-butyl ether (ETBE)	< 2.0	2.0	ug/L	EPA 8260B	7/13/2002
Tert-amyl methyl ether (TAME)	< 2.0	2.0	ug/L	EPA 8260B	7/13/2002
Tert-Butanol	< 50	50	ug/L	EPA 8260B	7/13/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/13/2002
Toluene - d8 (Surr)	99.5		%	EPA 8260B	7/13/2002
4-Bromofluorobenzene (Surr)	99.9		%	EPA 8260B	7/13/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 27410

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 7/15/2002

Project Name : **4530 Las Positas Rd.,**

Project Number : **020709-MN3**

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	27397-02	<0.50	40.0	40.0	39.8	39.5	ug/L	EPA 8260B	7/13/02	99.6	98.8	0.781	70-130	25
Toluene	27397-02	<0.50	40.0	40.0	38.0	38.0	ug/L	EPA 8260B	7/13/02	95.0	94.9	0.0790	70-130	25
Tert-Butanol	27397-02	140	200	200	311	313	ug/L	EPA 8260B	7/13/02	87.9	88.9	1.11	70-130	25
Methyl-t-Butyl Ether	27397-02	<0.50	40.0	40.0	37.8	37.6	ug/L	EPA 8260B	7/13/02	94.6	94.1	0.450	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 27410

QC Report : Laboratory Control Sample (LCS)

Date : 7/15/2002

Project Name : **4530 Las Positas Rd.,**

Project Number : **020709-MN3**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	7/13/02	97.6	70-130
Toluene	40.0	ug/L	EPA 8260B	7/13/02	94.7	70-130
Tert-Butanol	200	ug/L	EPA 8260B	7/13/02	93.7	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	7/13/02	90.4	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D 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: Karen Petryna

☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ GRMT HOUSTON

27410

INCIDENT NUMBER (SAE ONLY): 97306794

SAP or GRMT NUMBER (TS/GRMT):

DATE: 07/09/02

PAGE: 1 of 1

SAMPLING COMPANY	LOG CODE	SITE ADDRESS (Street and City)	GLOBAL ID NO.
Blaine Tech Services	BTSS	4530 Las Positas Rd., Livermore	pending

ADDRESS	EDF DELIVERABLE TO (Responsible Party or Designee)	PHONE NO	E-MAIL	CONSULTANT PROJECT NO
1680 Rogers Avenue, San Jose, CA 95112	Debbie Arnold	(408)224-4724	darnold@khm1.com	BTS #020708-MW3

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

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

SAMPLER NAME(S) (Print): Michael Wenkata

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-1	7/9/02	1324	W	3	X	X			X	-01
✓	MW-2		1359			X	X			X	-02
✓	MW-3		1345			X	X			X	-03
✓	MW-4		1419			X	X			X	-04

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

Relinquished by (Signature)	Received by: (Signature)	Date	Time
		7/10/02	1053
	John Cuttell Kiff Analytical	071002	1053

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

10/16/00 Revision

QBQ Graphic (714) 898-9702

WELLHEAD INSPECTION CHECKLIST AND REPAIR ORDER

Client Equiva Inspection Date 7/9/02

Site Address 4530 Las Positas Rd. Livermore Inspected By MAW

1. Lid on box?	6. Casing secure?	12. Water standing in wellbox?	15. Well cap functional?
2. Lid broken?	7. Casing cut level?	12a. Standing above the top of casing?	16. Can cap be pulled loose?
3. Lid bolts missing?	8. Debris in wellbox?	12b. Standing below the top of casing?	17. Can cap seal out water?
4. Lid bolts stripped?	9. Wellbox is too far above grade?	12c. Water even with the top of casing?	18. Padlock present?
5. Lid seal intact?	10. Wellbox is too far below grade?	13. Well cap present?	19. Padlock functional?
	11. Wellbox is crushed/damaged?	14. Well cap found secure?	

[X] Check box if no deficiencies were found. Note below deficiencies you were able to correct.

Well I.D.	Deficiency	Corrective Action Taken

Note below all deficiencies that could not be corrected and still need to be corrected.

Well I.D.	Persisting Deficiency	BTS Office assigns or defers Correction to:	Date assigned	Date corrected

WELL GAUGING DATA

Project # 020709-MN3 Date 7/9/02 Client Equiva

Site # 4530 Las Positas Rd., 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-1	2					13.13	22.77		
MW-2	2					12.41	22.85		
MW-3	2					11.58	22.34		
MW-4	2					13.42	22.73		

SHELL WELL MONITORING DATA SHEET

BTS #: 020709-MN3	Site: ~~0230~~ 97306294
Sampler: Mike N.	Date: 7/9/02
Well I.D.: MW-1	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 22.77	Depth to Water (DTW): 13.13
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]:	

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

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

1.5 (Gals.) X 3 = 4.5 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	radius^2 * 0.163

Time	Temp (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1325	75.3	7.1	1260	>200	1.5	Brown, Cloudy
1327	70.3	7.0	1286	>200	3.0	" "
1329	69.7	7.0	1305	>200	4.5	" "

Did well dewater? Yes (No) — Gallons actually evacuated: 4.5

Sampling Date: 7/9/02 — Sampling Time: 1334 — Depth to Water:

Sample I.D.: MW-1 — Laboratory: (Kiff) SPL Other___

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

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 #: 02769-MW3	Site: [redacted] 97306794
Sampler: Mike N	Date: 7/9/02
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 22.85	Depth to Water (DTW): 12.41
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]:	

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

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

1.7 (Gals.) X 3 = 5.1 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	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (uS))	Turbidity (NTUs)	Gals. Removed	Observations
1350	72.2	7.2	1134	7200	1.7	Brown, Silty
1352	70.8	7.0	1154	7200	3.4	" "
1354	69.9	7.0	1174	7200	5.1	" "

Did well dewater? Yes (No) Gallons actually evacuated: 5.1

Sampling Date: 7/9/02 Sampling Time: 1359 Depth to Water:

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

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: O&G'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 #: 020709-MN3	Site: 97306294
Sampler: MIKE N.	Date: 7/9/02
Well I.D.: MW-3	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 22.34	Depth to Water (DTW): 11.58
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]:	

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

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

1.7 (Gals.) X 3 = 5.1 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	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1338	71.7	7.1	1238	>200	1.7	Brown, Silty
1340	69.8	7.2	1244	>200	3.4	" , "
1341	69.9	7.2	1246	>200	5.1	" , "

Did well dewater? Yes (No) Gallons actually evacuated: 5.1

Sampling Date: 7/9/02 Sampling Time: 1345 Depth to Water:

Sample I.D.: MW-3 Laboratory: (Kiff) SPL 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 #: 020769-MW3	Site: ~~7350~~ 97306284
Sampler: Mike N.	Date: 7/9/02
Well I.D.: MW-4	Well Diameter: 2 3 4 6 8 ___
Total Well Depth (TD): 22.73	Depth to Water (DTW): 13.42
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]:	

Purge Method: (Bailer) Waterra
Disposable Bailer Peristaltic
Middleburg Extraction Pump
Electric Submersible Other_____

Sampling Method: (Bailer)
Disposable Bailer
Extraction Port
Dedicated Tubing
Other:

1.5 (Gals.) X	3	=	4.5 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 (uS))	Turbidity (NTUs)	Gals. Removed	Observations
1410	72.5	6.8	1283	>200	1.5	Brown, Silty
1411	Well dewatered				0	DTW = 22.14
1419	72.9	6.8	1319	>200	0	DTW = 18.91

Did well dewater? (Yes) No Gallons actually evacuated: 1.5

Sampling Date: 7/9/02 Sampling Time: 1419 (Site depart) Depth to Water:

Sample I.D.: MW-4 Laboratory: (Kiff) SPL Other_____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: O&G'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