February 26, 2008
DELTA Project: SJ8999S1X
SAP: 135244

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

Re: FOURTH QUARTER 2007 GROUNDWATER MONITORING REPORT
Shell-Branded Service Station
8999 San Ramon Road
Dublin, California

DELTA

Dear Mr. Wickham:

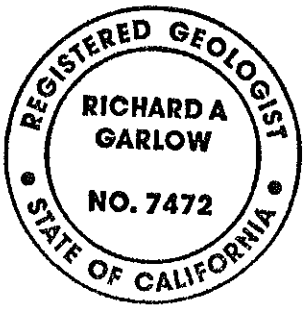
On behalf of Shell Oil Products (SHELL), Delta Consultants (DELTA) has prepared this *Fourth Quarter 2007 Groundwater Monitoring Report* for the above referenced site. The sampling activities at the site were conducted by Blaine Tech Services, Inc. under contract to SHELL and included static water level measurements. A DELTA staff member under the supervision of a California Registered Civil Engineer or a California Professional Geologist performed the data evaluation.

This quarterly report represents DELTA's professional opinions based upon the currently available information and is 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.

If you have any questions regarding this site, please contact Mr. Richard Garlow (DELTA) at (408) 826-1880 or Mr. Denis Brown (SHELL) at (707) 865-0251.

Sincerely,
Delta Consultants

Richard A. Garlow, M.S., P.G.
Project Manager



Attachment: Fourth Quarter 2007 Groundwater Monitoring Report

cc: Denis Brown, Shell Oil Products US, Carson
Carl Cox, C and J Cox Corporation, Pleasanton
Colleen Winey, Zone 7 Water Agency, Livermore

SHELL QUARTERLY STATUS REPORT

Station Address:	8999 San Ramon Road, Dublin, California
DELTA Project No.:	SJ8999S1X
SHELL Project Manager / Phone No.:	Denis Brown / (707) 865-0251
DELTA Site Manager / Phone No.:	Richard Garlow / (408) 826-1880
Primary Agency / Regulatory ID:	ACHCSA / Jerry Wickham
Other Agencies to Receive Copies:	Zone 7 Water Agency

WORK PERFORMED THIS QUARTER (FOURTH - 2007):

1. Quarterly groundwater monitoring and sampling. Submitted quarterly report.
2. Install additional wells

WORK PROPOSED FOR NEXT QUARTER (FIRST - 2008):

1. Quarterly groundwater monitoring and sampling. Submit quarterly report.
2. Complete well installation report

Current Phase of Project:	Site Assessment, 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:	NA
SPH Recovered This Quarter:	NA
Sensitive Receptor(s) and Respective Direction(s):	No municipal water supply wells were identified within a one-mile radius. A domestic drinking water well (25/1W-35L001) is located ~2,300 ft. southwest of the site.
Site Lithology:	Predominately clay with sand and sandy lean clays to a total depth of approximately 30 feet bg plus CPT data to 80 feet.
Current Remediation Techniques:	None
Permits for Discharge:	None
Approximate Depth to Groundwater:	28.39 feet (well MW-5) below top of well casing
Groundwater Gradient:	Not enough data to determine
Current Agency Correspondence:	NA
Site History:	
Case opening	August 2004
On-Site Assessment	July 2005
Off-Site Assessment	July 2006 -Present
Passive Remediation	Monitor Natural Attenuation

Active Remediation	150 cubic yards of soil removed in 2004
Summary of Unusual Activity:	All wells, except well MW-5, were dry. MW-5 contained insufficient water for sampling. No groundwater sampling.

ATTACHED:

- Table 1 – Well Concentrations
- Figure 1 – Site Location Map
- Figure 2 – Groundwater Elevation Map
- Figure 3 – Hydrocarbon Distribution in Groundwater Map
- Appendix A – Field Data Sheets
- Appendix B – Field Procedures

TABLE

Table 1
WELL CONCENTRATIONS
Shell Service Station
8999 San Ramon Road
Dublin, 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.)	GW Elevation (MSL)
MW-1	5/9/2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20.93	NA
MW-1	5/19/2005	<5,000	160 a	<50	<50	<50	<100	1,400	<200	<200	<200	57,000	420.06	20.70	399.36
MW-1	8/15/2005	<5,000	<50	<50	<50	<50	<100	360	<200	<200	<200	56,000	420.06	23.98	396.08
MW-1	11/8/2005	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	420.06	NA	NA
MW-1	1/30/2006	585	438	<0.500	<0.500	<0.500	<0.500	15.6	<0.500	<0.500	<0.500	115,000	420.06	26.39	393.67
MW-1	5/19/2006	2,940	279 c	<0.500	<0.500	<0.500	<0.500	150	<0.500	0.940	<0.500	49,500	420.06	23.10	396.96
MW-1	8/24/2006	812	85.6 c	<0.500	<0.500	<0.500	<0.500	33.0	<0.500	0.890	<0.500	30,700	420.06	23.94	396.12
MW-1	11/2/2006	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	420.06	NA	NA
MW-1	1/29/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	420.06	NA	NA
MW-1	6/5/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	420.06	NA	NA
MW-1	8/27/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	420.06	NA	NA
MW-1	**11/30/2007**	**Well dry**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**420.06**	**NA**	**NA**
MW-2	5/9/2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20.72	NA
MW-2	5/19/2005	<500	<50	<5.0	<5.0	<5.0	<10	11	<20	<20	<20	4,200	418.88	21.26	397.62
MW-2	8/15/2005	<1,000	<50	<10	<10	<10	<20	<10	<40	<40	<40	7,500	418.88	25.33	393.55
MW-2	11/8/2005	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	418.88	NA	NA
MW-2	1/30/2006	<50.0	401	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	1,310	418.88	25.87	393.01
MW-2	5/19/2006	398	134 c	<0.500	<0.500	<0.500	<0.500	7.65	<0.500	<0.500	<0.500	4,910	418.88	21.75	397.13
MW-2	8/24/2006	<50.0	<46.9 c	<0.500	<0.500	<0.500	<0.500	2.82	<0.500	<0.500	<0.500	4,070	418.88	24.60	394.28
MW-2	11/2/2006	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	418.88	NA	NA
MW-2	1/29/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	418.88	NA	NA
MW-2	6/5/2007	Insufficient water		NA	NA	NA	NA	NA	NA	NA	NA	NA	418.88	26.54	392.34
MW-2	8/27/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	418.88	NA	NA
MW-2	**11/30/2007**	**Well dry**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**418.88**	**NA**	**NA**

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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.)	GW Elevation (MSL)
MW-3	5/9/2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.08	NA
MW-3	5/19/2005	<50	120 a	<0.50	<0.50	<0.50	<1.0	40	<2.0	<2.0	<2.0	6.5	417.24	19.08	398.16
MW-3	8/15/2005	<50	73	<0.50	<0.50	<0.50	<1.0	34	<2.0	<2.0	<2.0	<5.0	417.24	22.20	395.04
MW-3	11/8/2005	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	417.24	NA	NA
MW-3	1/30/2006	<50.0	412	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<10.0	417.24	23.64	393.60
MW-3	5/19/2006	<50.0	183 c	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<10.0	417.24	19.00	398.24
MW-3	8/24/2006	<50.0	214 c	<0.500	<0.500	<0.500	<0.500	3.11	<0.500	<0.500	<0.500	661	417.24	21.84	395.40
MW-3	11/2/2006	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	417.24	NA	NA
MW-3	1/29/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	417.24	NA	NA
MW-3	6/5/2007	<50 f	230 c	<0.50	<1.0	<1.0	<1.0	0.38 g	<2.0	<2.0	<2.0	<10	417.24	23.80	393.44
MW-3	8/27/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	417.24	NA	NA
MW-3	**11/30/2007**	**Well dry**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**417.24**	**NA**	**NA**
MW-4	5/9/2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.77	NA
MW-4	5/19/2005	97	59 a	0.66	<0.50	<0.50	<1.0	4.8	<2.0	<2.0	<2.0	8.2	420.52	19.85	400.67
MW-4	8/15/2005	67	<50	<0.50	<0.50	<0.50	<1.0	0.86	<2.0	<2.0	<2.0	<5.0	420.52	23.34	397.18
MW-4	11/8/2005	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	420.52	NA	NA
MW-4	1/30/2006	<50.0	112	<0.500	<0.500	<0.500	<0.500	1.63	<0.500	<0.500	<0.500	<10.0	420.52	24.13	396.39
MW-4	5/19/2006	<50.0	<46.9 c	<0.500	<0.500	<0.500	<0.500	1.08	<0.500	<0.500	<0.500	<10.0	420.52	19.79	400.73
MW-4	8/24/2006	<50.0	<47.2 c	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	78.3	420.52	22.50	398.02
MW-4	11/2/2006	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	420.52	NA	NA
MW-4	1/29/2007	<50	<50 c	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	420.52	25.82	394.70
MW-4	6/5/2007	62 f	120 c	<0.50	<1.0	<1.0	<1.0	1.4	<2.0	<2.0	<2.0	<10	420.52	24.32	396.20
MW-4	8/27/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	420.52	NA	NA
MW-4	**11/30/2007**	**Well dry**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**420.52**	**NA**	**NA**

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MW-5	8/21/2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	416.88	25.25	391.63
MW-5	8/24/2006	<50.0	108 c	<0.500	<0.500	<0.500	<0.500	3.33	<0.500	<0.500	<0.500	21.0	416.88	25.70	391.18
MW-5	11/2/2006	<50	NA	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	416.88	28.00	388.88
MW-5	1/29/2007	<50	66 c	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	416.88	27.80	389.08
MW-5	6/5/2007	<50 f	2,200 c,e	<0.50	<1.0	<1.0	<1.0	0.56 g	<2.0	<2.0	<2.0	<10	416.88	27.72	389.16
MW-5	8/27/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	416.88	NA	NA
MW-5	**11/30/2007**	**Insufficient water**		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**416.88**	**28.39**	**388.49**
MW-6	2/28/2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	422.50	23.55	398.95
MW-6	3/3/2006	<50.0	104	<0.500	<0.500	<0.500	<0.500	4.93	<0.500	<0.500	<0.500	<10.0	422.50	23.30	399.20
MW-6	5/19/2006	<50.0	<46.9	<0.500	<0.500	<0.500	<0.500	5.76	<0.500	<0.500	<0.500	<10.0	422.50	20.31	402.19
MW-6	8/24/2006	<50.0	<47.2 c	<0.500	<0.500	<0.500	<0.500	0.870	<0.500	<0.500	<0.500	<10.0	422.50	23.69	398.81
MW-6	11/2/2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	422.50	28.51	393.99
MW-6	1/29/2007	<50	<50 c	<0.50	<0.50	<0.50	<1.0	1.7	<2.0	<2.0	<2.0	<5.0	422.50	27.08	395.42
MW-6	6/5/2007	<50 f	97 c	<0.50	<1.0	<1.0	<1.0	1.1	<2.0	<2.0	<2.0	<10	422.50	25.77	396.73
MW-6	8/27/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	422.50	NA	NA
MW-6	**11/30/2007**	**Well dry**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**422.50**	**NA**	**NA**
MW-7	8/21/2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	414.35	25.84	388.51
MW-7	8/24/2006	<50.0	<47.2 c	<0.500	<0.500	<0.500	<0.500	2.63	<0.500	<0.500	<0.500	751	414.35	26.21	388.14
MW-7	11/2/2006	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	414.35	NA	NA
MW-7	1/29/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	414.35	NA	NA
MW-7	6/5/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	414.35	NA	NA
MW-7	8/27/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	414.35	NA	NA
MW-7	**11/30/2007**	**Well dry**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**414.35**	**NA**	**NA**

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MW-8	8/21/2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	414.54	23.02	391.52
MW-8	8/24/2006	110	74.5 c	<0.500	<0.500	<0.500	<0.500	4.62	<0.500	<0.500	<0.500	6,610	414.54	23.17	391.37
MW-8	11/2/2006	92	96 c	<0.50	<0.50	<0.50	<1.0	1.4	<2.0	<2.0	<2.0	2,300	414.54	27.69	386.85
MW-8	1/29/2007	<50	<50 c	<0.50	<0.50	<0.50	<1.0	0.51	<2.0	<2.0	<2.0	350	414.54	26.40	388.14
MW-8	6/5/2007	<50 f	120 c	<0.50	<1.0	<1.0	<1.0	0.48 g	<2.0	<2.0	<2.0	290	414.54	25.17	389.37
MW-8	8/27/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	414.54	NA	NA
MW-8	**11/30/2007**	**Well dry**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**414.54**	**NA**	**NA**
MW-9	8/21/2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	412.69	27.75	384.94
MW-9	8/24/2006	<50.0	69.9 c,d	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	86.8	412.69	28.35	384.34
MW-9	11/2/2006	<50	NA	<0.50	<0.50	<0.50	<1.0	<0.50	<2.0	<2.0	<2.0	<5.0	412.69	28.43	384.26
MW-9	1/29/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	412.69	NA	NA
MW-9	6/5/2007	Insufficient water		NA	NA	NA	NA	NA	NA	NA	NA	NA	412.69	28.72	383.97
MW-9	8/27/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	412.69	NA	NA
MW-9	**11/30/2007**	**Well dry**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**412.69**	**NA**	**NA**
MW-10	8/21/2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	419.48	23.90	395.58
MW-10	8/24/2006	626	100 c	1.04	<0.500	1.22	<0.500	12.4	<0.500	<0.500	<0.500	5,740	419.48	24.02	395.46
MW-10	11/2/2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	419.48	28.50	390.98
MW-10	1/29/2007	91	<50 c	<0.50	<0.50	<0.50	<1.0	4.9	<2.0	<2.0	<2.0	1,900	419.48	27.30	392.18
MW-10	6/5/2007	82 f	150 c	<0.50	<1.0	<1.0	<1.0	1.3	<2.0	<2.0	<2.0	540	419.48	26.09	393.39
MW-10	8/27/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	419.48	NA	NA
MW-10	**11/30/2007**	**Well dry**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**419.48**	**NA**	**NA**
MW-11	8/21/2006	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	409.69	NA	NA
MW-11	8/24/2006	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	409.69	NA	NA

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MW-11	11/2/2006	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	409.69	NA	NA
MW-11	1/29/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	409.69	NA	NA
MW-11	6/5/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	409.69	NA	NA
MW-11	8/27/2007	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	409.69	NA	NA
MW-11	**11/30/2007**	**Well dry**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**409.69**	**NA**	**NA**

Abbreviations:
TPPH = Total petroleum hydrocarbons as gasoline by modified 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, analyzed by EPA Method 8260B
ETBE = Ethyl tertiary butyl ether, analyzed by EPA Method 8260B
TAME = Tertiary amyl methyl ether, analyzed by EPA Method 8260B
TBA = Tertiary butyl alcohol or tertiary butanol, analyzed by EPA Method 8260B
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

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Notes:

a = Hydrocarbon reported does not match the pattern of the laboratory's Diesel standard.

b = Quantity of unknown hydrocarbon(s) in sample based on gasoline.

c = Diesel with silica gel clean-up.

d = Insufficient sample available for reanalysis.

e = The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s

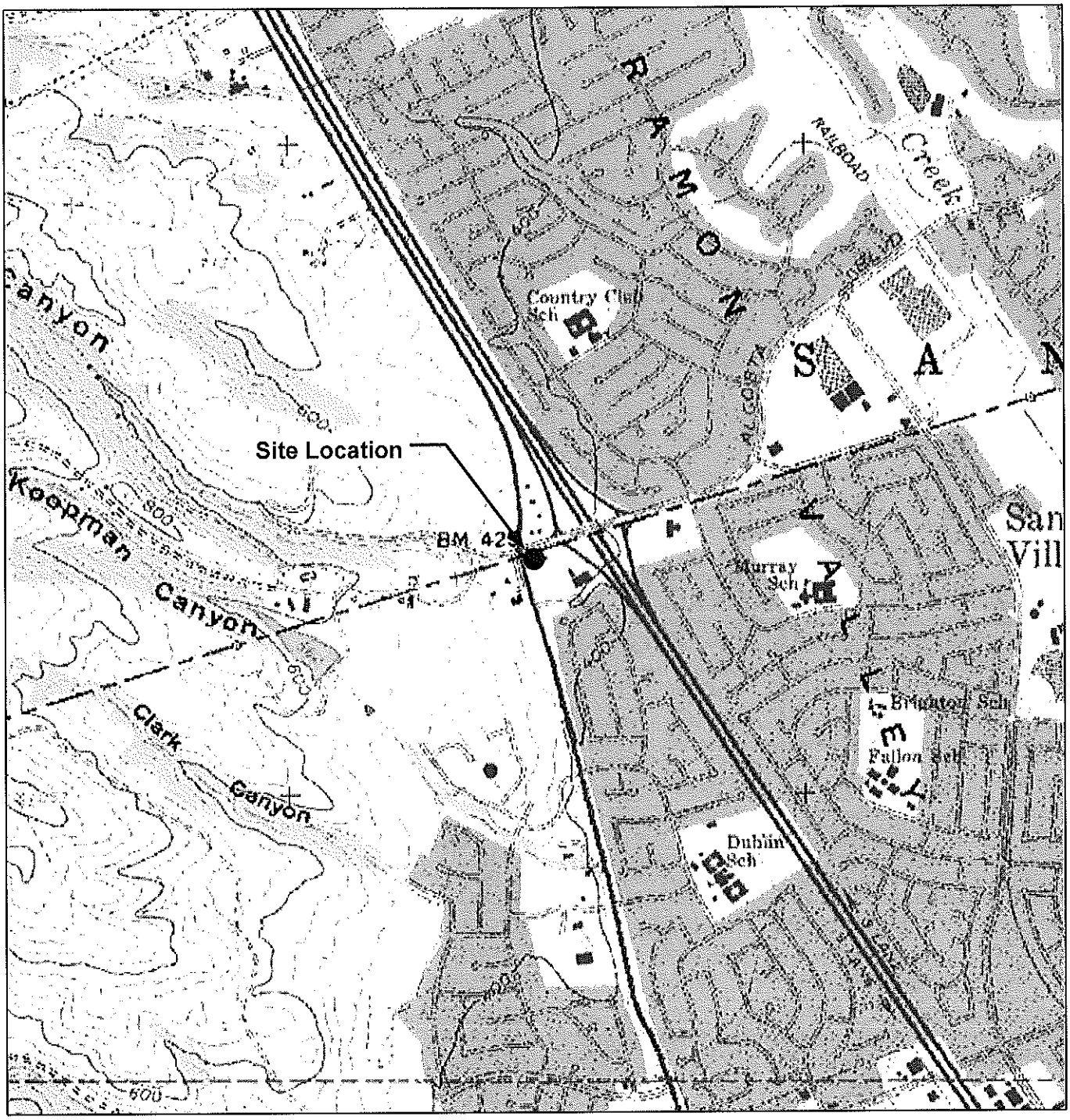
f = Analyzed by EPA Method 8015B (M).

g = Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.

Site surveyed May 10, 2005 by Mid Coast Engineers.

Well MW-6 surveyed March 3, 2006 by Mid Coast Engineers.

FIGURES



GENERAL NOTES:

Base Map from: 3-D TopoQuads DeLorme Yarmouth, ME 04096 Source Data: USGS

North

QUADRANGLE LOCATION

0 1,300 2,600

Scale, Feet

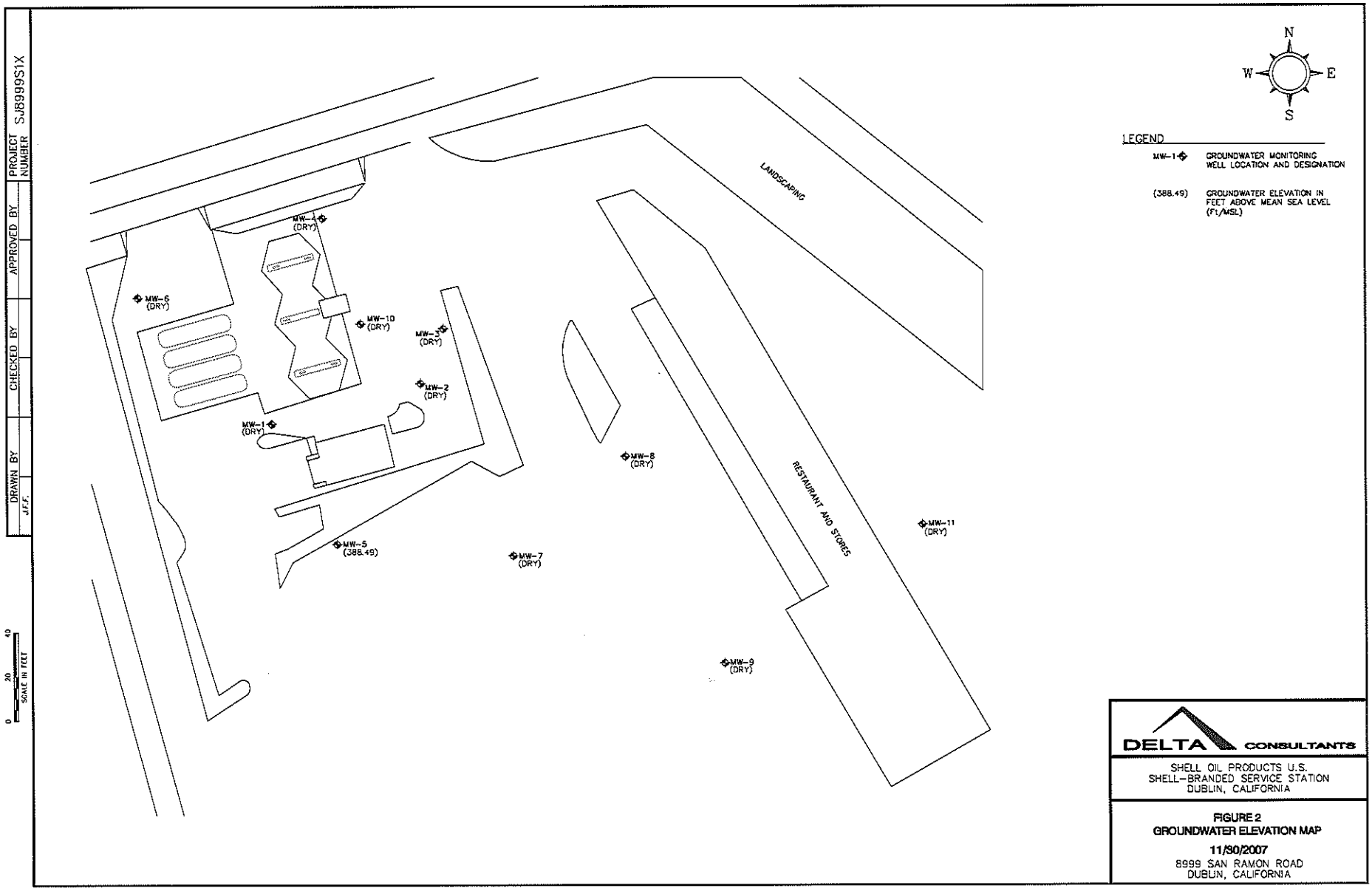
FIGURE 1

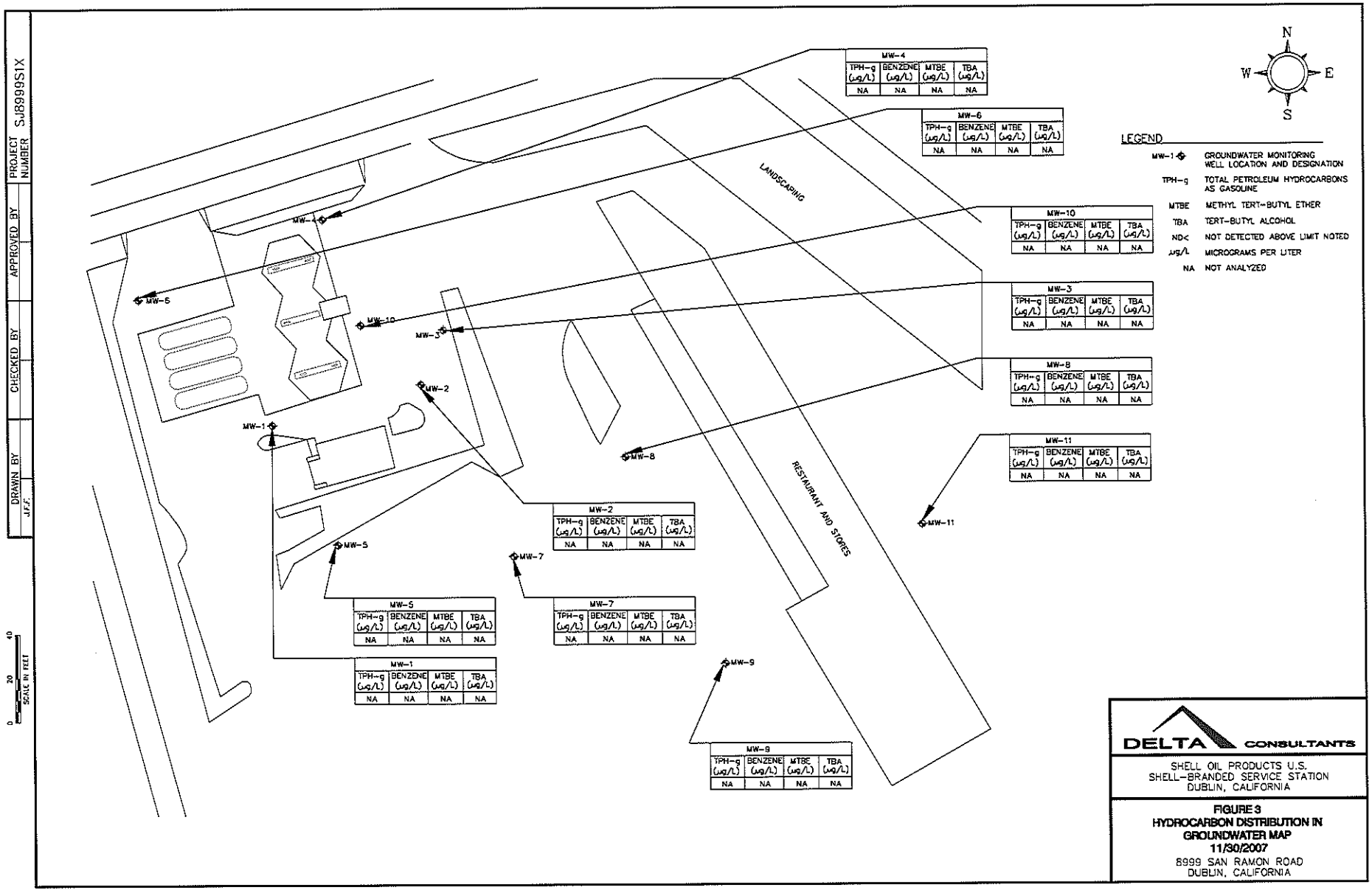
SITE LOCATION MAP

SHELL-BRANDED SERVICE STATION
8999 San Ramon Road
Dublin, California

PROJECT NO. SJ89-99S-1.2005	DRAWN BY V. F. 12/9/04
FILE NO. SJ89-99S-1.2004	PREPARED BY VF
REVISION NO.	REVIEWED BY

Delta Environmental Consultants, Inc.


N
W
E
S
LEGEND
MW-1 GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
(388.49) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (Ft/MSL)
LANDSCAPING
RESTAURANT AND STORES
MW-1 (DRY)
MW-6 (DRY)
MW-10 (DRY)
MW-3 (DRY)
MW-2 (DRY)
MW-1 (DRY)
MW-8 (DRY)
MW-11 (DRY)
MW-5 (388.49)
MW-7 (DRY)
MW-9 (DRY)
0
20
40
SCALE IN FEET
DRAWN BY J.F.F.
CHECKED BY
APPROVED BY
PROJECT NUMBER SJ8999S1X
DELTA CONSULTANTS
SHELL OIL PRODUCTS U.S.
SHELL-BRANDED SERVICE STATION
DUBLIN, CALIFORNIA
FIGURE 2
GROUNDWATER ELEVATION MAP
11/30/2007
8999 SAN RAMON ROAD
DUBLIN, CALIFORNIA


PROJECT NUMBER SJ8999S1X
APPROVED BY
CHECKED BY
DRAWN BY JFZ
N
W
E
S
LANDSCAPING
RESTAURANT AND STORES
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
MW-4 TPH-g (ug/L) BENZENE (ug/L) MTBE (ug/L) TBA (ug/L) NA NA NA NA
MW-6 TPH-g (ug/L) BENZENE (ug/L) MTBE (ug/L) TBA (ug/L) NA NA NA NA
MW-10 TPH-g (ug/L) BENZENE (ug/L) MTBE (ug/L) TBA (ug/L) NA NA NA NA
MW-3 TPH-g (ug/L) BENZENE (ug/L) MTBE (ug/L) TBA (ug/L) NA NA NA NA
MW-8 TPH-g (ug/L) BENZENE (ug/L) MTBE (ug/L) TBA (ug/L) NA NA NA NA
MW-11 TPH-g (ug/L) BENZENE (ug/L) MTBE (ug/L) TBA (ug/L) NA NA NA NA
MW-2 TPH-g (ug/L) BENZENE (ug/L) MTBE (ug/L) TBA (ug/L) NA NA NA NA
MW-5 TPH-g (ug/L) BENZENE (ug/L) MTBE (ug/L) TBA (ug/L) NA NA NA NA
MW-7 TPH-g (ug/L) BENZENE (ug/L) MTBE (ug/L) TBA (ug/L) NA NA NA NA
MW-1 TPH-g (ug/L) BENZENE (ug/L) MTBE (ug/L) TBA (ug/L) NA NA NA NA
MW-9 TPH-g (ug/L) BENZENE (ug/L) MTBE (ug/L) TBA (ug/L) NA NA NA NA
LEGEND
MW-1 GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
TPH-g TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
MTBE METHYL TERT-BUTYL ETHER
TBA TERT-BUTYL ALCOHOL
ND< NOT DETECTED ABOVE LIMIT NOTED
ug/L MICROGRAMS PER LITER
NA NOT ANALYZED
0 20 40 SCALE IN FEET
DELTA CONSULTANTS
SHELL OIL PRODUCTS U.S.
SHELL-BRANDED SERVICE STATION
DUBLIN, CALIFORNIA
FIGURE 3
HYDROCARBON DISTRIBUTION IN GROUNDWATER MAP
11/30/2007
8999 SAN RAMON ROAD
DUBLIN, CALIFORNIA

APPENDIX A

FIELD DATA SHEETS

SHELL WELLHEAD INSPECTION FORM

(FOR SAMPLE TECHNICIAN)

Site Address 8999 San Ramon Rd., Dublin Date 11/30/07

Job Number 071130-SC1 Technician S. Chase Page 1 of 1

Well ID	Well Inspected - No Corrective Action Required	Well Box Meets Compliance Requirements *See Below	Water Bailed From Wellbox	Cap Replaced	Lock Replaced	Well Not Inspected (explain in notes)	New Deficiency Identified	Previously Identified Deficiency Persists	Notes
MW-5	X	X			X				Water bailed from well box
MW-9	X	X							
MW-8	X	X							water bailed from well box
MW-7	X	X							water bailed from well box
MW-11	X	X							
MW-3	X	X							
MW-2	X	X							
MW-6	X	X							
MW-4	X	X							
MW-10	X	X							
MW-1	X	X							

*Well box must meet all three criteria to be compliant: 1) WELL IS SECURABLE BY DESIGN (12"or less) 2) WELL IS MARKED WITH THE WORDS "MONITORING WELL" (12"or less) 3) WELL TAG IS PRESENT, SECURE, AND CORRECT

Notes:

WELL GAUGING DATA

Project # 071130-SC1 Date 11/30/07 Client Shell

Site 8999 San Ramon Rd., Dublin

Well ID	Time	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	Notes
MW-5	0752	4	No/No				28.39	28.48		
MW-9	0758	4	No/No	* Dry	Well		—	28.84		
MW-8	0810	4	No/No	* Dry	Well		—	28.81		
MW-7	0815	4	No/No	* Dry	well		—	28.55		
MW-11	0830	2	No/No	* Dry	Well		—	28.52		
MW-3	0845	4	No/No	* Dry	Well		—	24.35		
MW-2	0850	4	No/No	* Dry	Well		—	26.80		
MW-6	0856	4	No/No	* Dry	Well		—	28.55		
MW-4	0905	4	No/No	* Dry	Well		—	26.54		
MW-10	0910	4	No/No	* Dry	Well		—	28.82		
MW-1	0915	4	No/No	* Dry	Well		—	26.78	↓	

SHELL WELL MONITORING DATA SHEET

BTS #: 071130-SC-1	Site: 97565995
Sampler: S. Chase	Date: 11/30/07
Well I.D.: MW-1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 26.78	Depth to Water (DTW): —
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, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

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

_____(Gals.) X _____ = _____ 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
* MW-1 is a dry well						

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

BTS #: 071130-SC1	Site: 97565995
Sampler: S. Chase	Date: 11/30/07
Well I.D.: MW-2	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 26.80	Depth to Water (DTW): —
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, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

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

_____(Gals.) X _____ = _____ 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
* MW-2 is a dry well						

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

BTS #: 071130-SC-1	Site: 97565995
Sampler: S. Chase	Date: 11/30/07
Well I.D.: MW-3	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 24.35	Depth to Water (DTW): —
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, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

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

_____(Gals.) X _____ = _____ 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
*MW-3 is a dry well						

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

BTS #: 071130-SC1	Site: 97565995
Sampler: S. Chase	Date: 11/30/07
Well I.D.: MW-4	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 26.54	Depth to Water (DTW): —
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~~, ~~Positive Air Displacement~~, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

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

_____(Gals.) X _____ = _____ 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
*MW-4 is a dry well						

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

BTS #: 071130-SC1	Site: 97565995
Sampler: S. Chase	Date: 11/30/07
Well I.D.: MW-5	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 28.48	Depth to Water (DTW): 28.39
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, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

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

_____(Gals.) X _____ = _____ 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
* Insufficient water to purge or sample						

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

BTS #: 071130-SC1	Site: 97565995
Sampler: S. Chase	Date: 11/30/07
Well I.D.: MW-6	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 28.55	Depth to Water (DTW): —
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, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

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

_____(Gals.) X _____ = _____ 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
* MW-6 is a dry well						

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

BTS #: 071130-SC1	Site: 97565995
Sampler: S. Chase	Date: 11/30/07
Well I.D.: MW-7	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 28.55	Depth to Water (DTW): —
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~~ ~~Positive Air Displacement~~ ~~Electric Submersible~~ ~~Waterra~~ ~~Peristaltic~~ Extraction Pump Other_____

Sampling Method: ~~Bailer~~ ~~Disposable Bailer~~ Extraction Port Dedicated Tubing Other: _____

_____(Gals.) X _____ = _____ 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
*MW-7 is a dry well						

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

BTS #: 071130-SC1	Site: 97565995
Sampler: S. Chase	Date: 11/30/07
Well I.D.: MW-8	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 28.81	Depth to Water (DTW): —
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, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

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

_____(Gals.) X _____ = _____ 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
* MW-8 is a dry well						

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

BTS #: 071130-SC1	Site: 97565995
Sampler: S. Chase	Date: 11/30/07
Well I.D.: MW-9	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 28.84	Depth to Water (DTW): —
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, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

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

_____(Gals.) X _____ = _____ 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
* MW-9 is a dry well						

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

BTS #: 071130-SC-1	Site: 97565995
Sampler: S. Chase	Date: 11/30/07
Well I.D.: MW-10	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 28.82	Depth to Water (DTW): —
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, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

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

_____(Gals.) X _____ = _____ 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
*MW-10 is a dry well						

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

BTS #: 071130-SC1	Site: 97565995
Sampler: S. Chesler	Date: 11/30/07
Well I.D.: MW-11	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 28.52	Depth to Water (DTW): —
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 / Positive Air Displacement / Electric Submersible / Waterra / Peristaltic / Extraction Pump / Other_____

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

_____(Gals.) X _____ = _____ 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
*MW-11	is a	dry	well			

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

APPENDIX B

FIELD PROCEDURES

BLAINE TECH SERVICES, INC.
METHODS AND PROCEDURES
FOR THE ROUTINE MONITORING OF
GROUNDWATER WELLS AT SHELL SITES

Blaine Tech Services, Inc. performs environmental sampling and documentation as an independent third party. We specialize in groundwater monitoring assignments and intentionally limit the scope of our services to those centered on the generation of objective information.

To avoid conflicts of interest, Blaine Tech Services, Inc. personnel do not evaluate or interpret the information we collect. As a state licensed contractor (C-57 well drilling –water – 746684) performing strictly technical services, we do not make any professional recommendations and perform no consulting of any kind.

SAMPLING PROCEDURES OVERVIEW

SAFETY

All groundwater monitoring assignments performed for Shell comply with Shell's safety guidelines, 29 CFR 1910.120 and SB-198 Injury and Illness Prevention Program (IIPP). All Field Technicians receive the full 40-hour 29CFR 1910.120 OSHA SARA HAZWOPER course, medical clearance and on-the-job training prior to commencing any work on any Shell site.

INSPECTION AND GAUGING

Wells are inspected prior to evacuation and sampling. The condition of the wellhead is checked and noted according to a wellhead inspection checklist.

Standard measurements include the depth to water (DTW) and the total well depth (TD) obtained with industry standard electronic water level indicators that are graduated in increments of hundredths of a foot.

The water in each well is inspected for the presence of immiscibles. When free product is suspected, its presence is confirmed using an electronic interface probe (e.g. MMC). No samples are collected from a well containing over two-hundredths of a foot (0.02') of product.

EVACUATION

Depth to water measurements are collected by our personnel prior to purging and minimum purge volumes are calculated anew for each well based on the height of the water column and the diameter of the well. Expected purge volumes are never less than three case volumes and are set at no less than four case volumes in some jurisdictions.

Well purging devices are selected on the basis of the well diameter and the total volume to be evacuated. In most cases the well will be purged using an electric submersible pump (i.e. Grundfos) suspended near (but not touching) the bottom of the well.

PARAMETER STABILIZATION

Well purging completion standards include minimum purge volumes, but additionally require stabilization of specific groundwater parameters prior to sample collection. Typical groundwater parameters used to measure stability are electrical conductivity, pH, and temperature. Instrument readings are obtained at regular intervals during the evacuation process (no less than once per case volume).

Stabilization standards for routine quarterly monitoring of fuel sites include the following: Temperature is considered to have stabilized when successive readings do not fluctuate more than +/- 1 degree Celsius. Electrical conductivity is considered stable when successive readings are within 10%. pH is considered to be stable when successive readings remain constant or vary no more than 0.2 of a pH unit.

DEWATERED WELLS

Normal evacuation removes no less than three case volumes of water from the well. However, less water may be removed in cases where the well dewaters and does not immediately recharge.

MEASURING RECHARGE

Upon completion of well purging, a depth to water measurement is collected and notated to ensure that the well has recharged to within 80% of its static, pre-purge level prior to sampling.

Wells that do not immediately show 80% recharge or dewatered wells will be allowed a minimum of 2 hours to recharge prior to sampling. The water level at time of sampling will be noted.

PURGEWATER CONTAINMENT

All non-hazardous purgewater evacuated from each groundwater monitoring well is captured and contained in on-board storage tanks on the Sampling Vehicle and/or special water hauling trailers. Effluent from the decontamination of reusable apparatus (sounders, electric pumps and hoses etc.), consisting of groundwater combined with deionized water and non-phosphate soap, is also captured and pumped into effluent tanks.

Non-hazardous purgewater is transported under standard Bill of Lading documentation to a Blaine Tech Services, Inc. facility before being transported to a Shell approved disposal facility.

SAMPLE COLLECTION DEVICES

All samples are collected using a stainless steel, Teflon or disposable bailers.

SAMPLE CONTAINERS

Sample material is decanted directly from the sampling bailer into sample containers provided by the laboratory that will analyze the samples. The transfer of sample material from the bailer to the sample container conforms to specifications contained in the USEPA T.E.G.D. The type of sample container, material of construction, method of closure and filling requirements are specific to the intended analysis. Chemicals needed to preserve the sample material are commonly placed inside the sample containers by the laboratory or glassware vendor prior to delivery of the bottle to our personnel. The laboratory sets the number of replicate containers.

TRIP BLANKS

Trip Blanks, if requested, are taken to the site and kept inside the sample cooler for the duration of the event. They are turned over to the laboratory for analysis with the samples from that site.

DUPLICATES

Duplicates, if requested, may be collected at a site. The Field Technician uses their discretion in choosing the well at which the Duplicate is collected, typically one suspected of containing measurable contaminants. The Duplicate sample is labeled "DUP" and the time of collection is omitted from the COC, thus rendering the sample blind.

SAMPLE STORAGE

All sample containers are promptly placed in food grade ice chests for storage in the field and transport (direct or via our facility) to the designated analytical laboratory. These ice chests contain quantities of restaurant grade ice as a refrigerant material. The samples are maintained in either an ice chest or a refrigerator until relinquished into the custody of the laboratory or laboratory courier.

DOCUMENTATION CONVENTIONS

A label must be affixed to all sample containers. In most cases these labels are generated by our office personnel and are partially preprinted. Labels can also be hand written by our field personnel. The site is identified with the store number and site address, as is the particular groundwater well from which the sample is drawn (e.g. MW-1, MW-2, S-1 etc.). The time and date of sample collection along with the initials of the person who collects the sample are handwritten onto the label.

Chain of Custody records are created using client specific preprinted forms following USEPA specifications.

Bill of Lading records are contemporaneous records created in the field at the site where the non-hazardous purgewater is generated. Field Technicians use preprinted Bill of Lading forms.

DECONTAMINATION

All equipment is brought to the site in clean and serviceable condition and is cleaned after use in each well and before subsequent use in any other well. Equipment is decontaminated before leaving the site.

The primary decontamination device is a commercial steam cleaner. The steam cleaner is de-tuned to function as a hot pressure washer that is then operated with high quality deionized water that is produced at our facility and stored onboard our sampling vehicle. Cleaning is facilitated by the use of proprietary fixtures and devices included in the patented workstation (U.S. Patent 5,535,775) that is incorporated in each sampling vehicle. The steam cleaner is used to decon reels, pumps and bailers.

Any sensitive equipment or parts (i.e. Dissolved Oxygen sensor membrane, water level indicator, etc.) that cannot be washed using the high pressure water, will be sprayed with a non-phosphate soap and deionized water solution and rinsed with deionized water.

DISSOLVED OXYGEN READINGS

Dissolved Oxygen readings are taken pre- and/or post-purge using YSI meters (e.g. YSI Model 54, 58 or 95) or HACH field test kits.

The YSI meters are equipped with a stirring device that enables them to collect accurate in-situ readings. The probe/stirring devices are modified to allow downhole measurements to be taken from wells with diameters as small as two inches. The probe and reel is decontaminated between wells as described above. The meter is calibrated between wells as per the instructions in the operating manual. The probe and stirrer is lowered into the water column. The reading is allowed to stabilize prior to collection.

OXYIDATON REDUCTION POTENTIAL READINGS

All readings are obtained with either Corning or Myron-L meters (e.g. Corning ORP-65 or a Myron-L Ultrameter GP). The meter is cleaned between wells as described above. The meter is calibrated at the start of each day according to the instruction manual.

FERROUS IRON MEASUREMENTS

All field measurements are collected at time of sampling with a HACH test kit.