

R0304

Hooshang Hadjian
2108 San Ramon Valley Blvd.
San Ramon, CA 94583

July 18, 2005

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

Re: Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California
ACHCSA Case No. 304

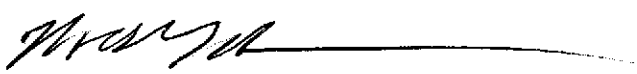
Alameda County
JUL 21 2005
Environmental Health

Dear Mr. Wickham:

I, Mr. Hooshang Hadjian, have retained Pangea Environmental Services, Inc. (Pangea) as the environmental consultant for the project referenced above. Pangea is submitting the attached report on my behalf.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached report is true and correct to the best of my knowledge.

Sincerely,


Hooshang Hadjian

R0304



July 17, 2005

Mr. Jerry Wickham
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Alameda County
JUL 21 2005
Environmental Health

Re: **Groundwater Monitoring Report - Second Quarter 2005**
Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California
ACHCSA Case No. 304

Dear Mr. Wickham:

On behalf of Mr. Hooshang Hadjian, Pangea Environmental Services, Inc. has prepared this *Groundwater Monitoring Report - Second Quarter 2005*. The report describes groundwater monitoring, sampling, and other site activities.

Sincerely,
Pangea Environmental Services, Inc.

A handwritten signature in black ink, appearing to read "Bob Clark-Riddell".

Bob Clark-Riddell, P.E.
Principal Engineer

Attachment: *Groundwater Monitoring Report - Second Quarter 2005*

CC: Mr. Hooshang Hadjian, 2108 San Ramon Valley Blvd, San Ramon, CA 94583

PANGEA Environmental Services, Inc.

436 14th Street, Suite 1123, Oakland, California 94612 Telephone 510.835.1801 Facsimile 510.893.2500 www.pangeaenv.com



GROUNDWATER MONITORING REPORT – SECOND QUARTER 2005

Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California

July 17, 2005

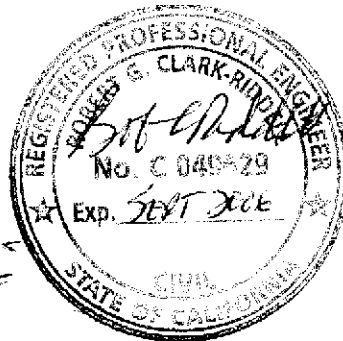
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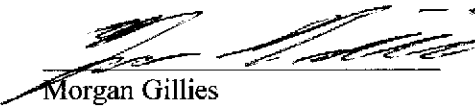
Mr. Hooshang Hadjian
2108 San Ramon Valley Blvd
San Ramon, CA 94583


Prepared by:

Pangea Environmental Services, Inc.
436 14th Street, Suite 1123
Oakland, California 94612

Written by:




Morgan Gillies
Project Manager


Bob Clark-Riddell, P.E.
Principal Engineer

PANGEA Environmental Services, Inc.

INTRODUCTION

On behalf of Mr. Hooshang Hadjian, Pangea Environmental Services, Inc. (Pangea) conducted groundwater monitoring and sampling activities during this quarter at the subject site (Figure 1). The purpose of the monitoring and sampling is to evaluate groundwater flow direction, dissolved contaminant concentrations, and inspect site wells for separate-phase-hydrocarbons (SPH). Current groundwater analytical results and elevation data are shown on Figure 2. Current and historical data are summarized on Table 1.

SITE BACKGROUND

The Chevron-branded service station is located at the southwest corner of Dublin Boulevard and Village Parkway in Dublin, California (Figure 1). Currently there are three 10,000-gallon underground storage tanks (USTs) at the site. Land use immediately surrounding the service station is commercial with residential land use further from the site.

From approximately 1988 to 1997, Chevron Products Company performed assessment and remediation of the site. Mr. Hadjian is the responsible party for an unauthorized release from a leaking stainless steel flex hose near the northernmost dispenser island in February 1997. Subsequently, a new product delivery system was installed and about 31 cubic yards of contaminated soil was removed from the release area. Gettler-Ryan, Inc. monitored the eight existing groundwater wells at the site until 2003, when SOMA Environmental Engineering, Inc. took over groundwater monitoring at the site. SOMA conducted further characterization of the site using electrical conductivity sensors and identified potential water bearing zones. In November 2004, Pangea commenced coordination of ongoing assessment and groundwater monitoring at the site.

GROUNDWATER MONITORING AND SAMPLING

On May 17, 2005, groundwater monitoring and sampling was conducted at the site. Site monitoring wells were initially gauged for depth to water, and groundwater samples were obtained from three (MW-1, MW-2 and EA-3) of the eight groundwater monitoring wells. Monitoring well EA-1 was inaccessible and was not gauged or sampled, and well MW-3 was not sampled due to the presence of SPH. Wells EA-2, MW-4 and MW-5 were not sampled, since these wells are sampled annually during the first quarter.

Before well purging, the dissolved oxygen concentration was measured in each well. Prior to sample collection, approximately three casing volumes of water were purged using disposable bailers, an electric submersible pump, positive air displacement pump, or a peristaltic pump. During well purging, field technicians measured the pH, temperature, conductivity, and turbidity. Groundwater samples were collected from each well with a disposable bailer, and decanted into the appropriate containers supplied by the analytic

laboratory. Groundwater samples were labeled, placed in protective plastic bags, and stored on crushed ice at or below 4° C. All samples were transported under chain-of-custody to the State-certified analytical laboratory. Purge water was stored onsite in DOT-approved 55-gallon drums. Groundwater monitoring field data sheets are presented as Appendix A.

MONITORING RESULTS

Current and historical groundwater elevation data and analytical results are described below and summarized on Table 1. Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015C, and benzene, toluene, ethylene, xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. If MTBE was detected by the laboratory, a confirmation analysis was conducted by EPA Method 8260B. Samples were analyzed by McCampbell Analytical, Inc. of Pacheco, California, a State-certified laboratory. The laboratory analytical report is included in Appendix B.

Groundwater Flow Direction

The groundwater flow direction based on depth-to-water data collected May 17, 2005 is shown on Figure 2. Groundwater apparently flowed from offsite wells MW-4 and MW-5 toward the site in the approximate southeast direction, while groundwater at the eastern portion of the site flowed toward the west. The groundwater elevation was lowest in onsite well MW-2, located in the southwestern corner of the site. The inferred groundwater flow direction is fairly consistent with the three most recent monitoring events of February 2003, December 2004 and February 2005. The groundwater flow direction may be affected by the 18" diameter sanitary sewer line running beneath the southern portion of Dublin Boulevard. In a letter dated October 30, 1995 to the County, Gettler Ryan Inc., a former consultant, stated that the top of the sanitary sewer line was approximately 16 feet below grade surface (bgs), while the depth to water in nearby wells MW-1 and MW-3 has ranged from approximately 11 to 13 feet bgs. Depth-to-water and groundwater elevation data for the site are presented in Table 1.

Hydrocarbon Distribution in Groundwater

A SPH thickness of 0.08 feet was measured in well MW-3, which is the historical maximum thickness measured at the site. Petroleum hydrocarbons were only detected in one of the sampled wells (EA-3), as shown on Table 1 and Figure 2. Hydrocarbon concentrations are generally within historical ranges.

Fuel Oxygenate Distribution in Groundwater

MTBE was detected by EPA Method 8021 above reporting limits in all three of the sampled wells. As confirmed by EPA Method 8260B, the concentrations of MTBE in wells MW-1, MW-2, and EA-3 were 4,400 µg/L, 210 µg/L and 340 µg/L, respectively (Table 1 and Figure 2).

OTHER SITE ACTIVITIES

Soil and Water Investigation Workplan

As required by the November 2, 2004 letter from the Alameda County Environmental Health (ACEH), Pangea prepared a *Soil and Water Investigation Workplan* (Workplan) dated February 20, 2005. Upon approval by the ACEH, Pangea will implement the Workplan.

Upcoming Monitoring and Proposed Frequency

Pangea will continue quarterly groundwater monitoring and sampling at the site in accordance with the approved sampling frequency. Pangea proposes to sample five key site wells quarterly (EA-1, EA-3, MW-1, MW-2 and MW-3) and three wells annually (EA-2, MW-4 and MW-5). This sampling frequency is based on the prior approved sampling frequency, with the slight modification of quarterly sampling for wells EA-3 and MW-1 rather than semi-annual sampling. This monitoring frequency will be modified after decommissioning of select wells and installation of new wells in accordance with the Workplan.

All wells will be gauged for depth to water, and well MW-3 will be inspected for SPH. All groundwater samples will be analyzed for TPHg/BTEX/MTBE by EPA Method 8015Cm/8021B. If detected by EPA Method 8021B, MTBE will be confirmed by EPA Method 8260B. Pangea will summarize groundwater monitoring activities and results in a groundwater monitoring report.

ATTACHMENTS

Figure 1 – Vicinity Map

Figure 2 - Groundwater Elevation Contour and Hydrocarbon Concentration Map

Table 1 – Groundwater Elevation and Analytical Data

Appendix A – Groundwater Monitoring Field Data Sheets

Appendix B – Laboratory Analytical Report

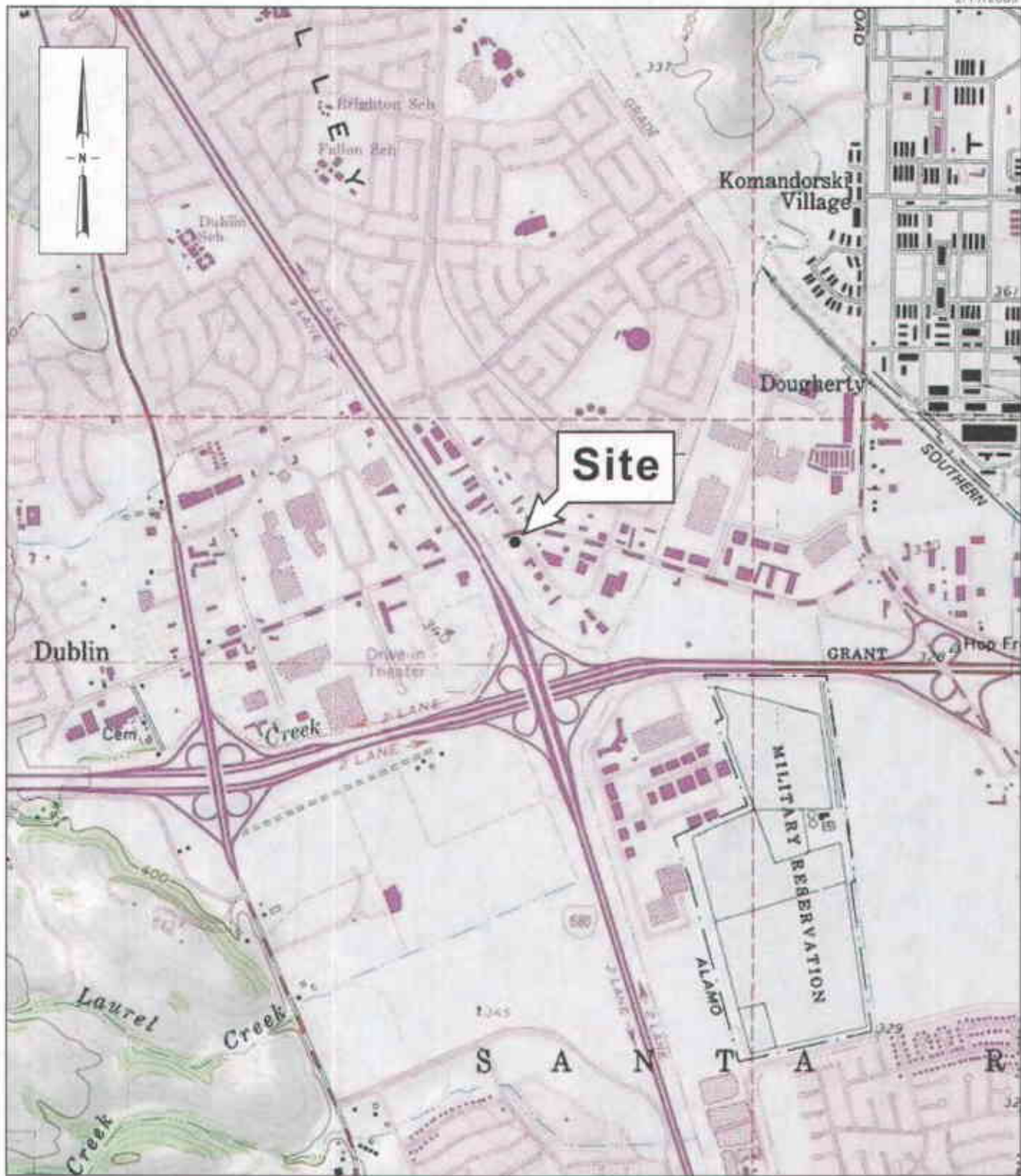
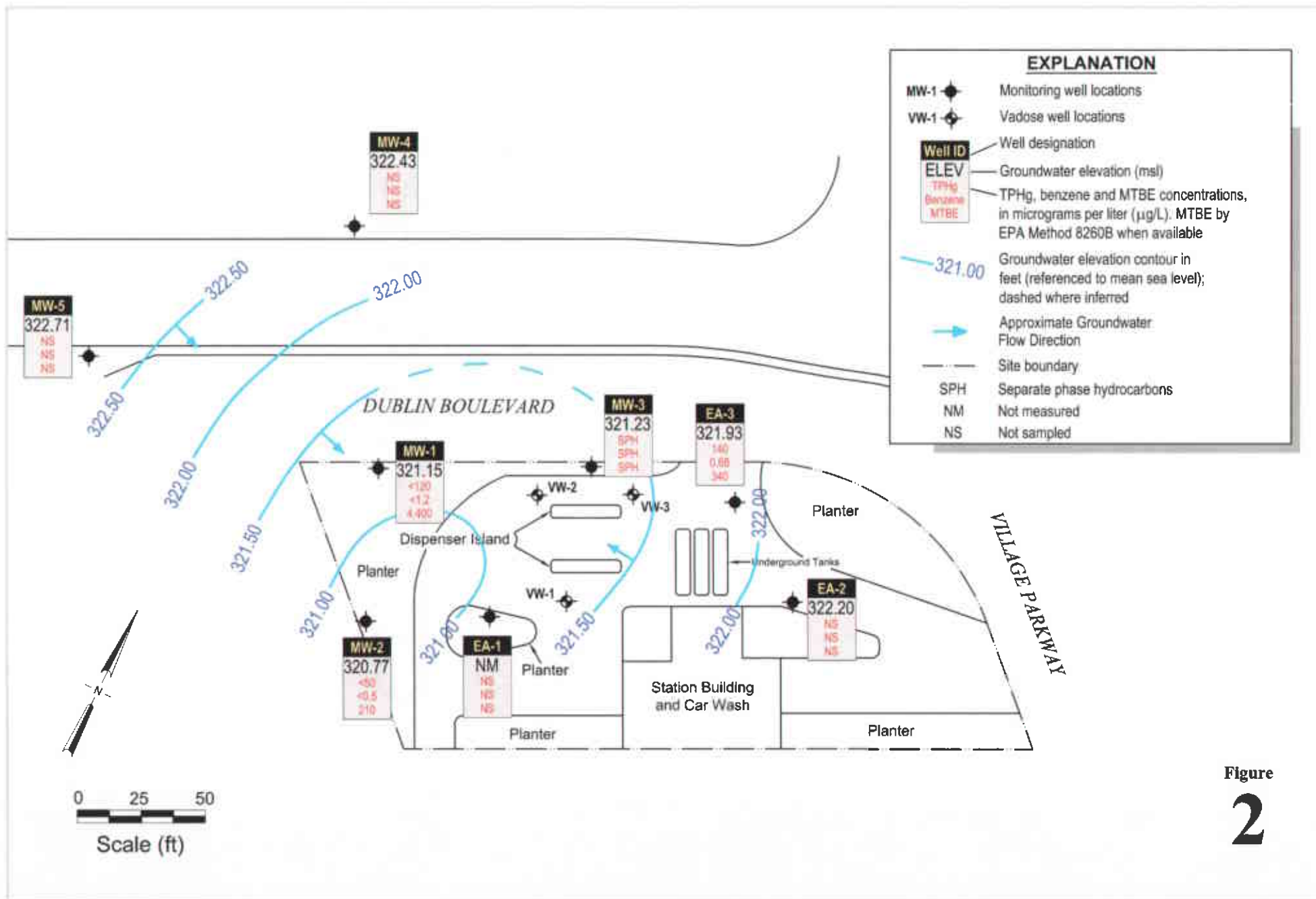


Figure 1

Dublin Auto Wash
 7240 Dublin Boulevard
 Dublin, California



Site Location Map



Figure

2

Pangea

Table 1. Groundwater Elevation and Analytical Data - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Well ID TOC Elev (ft)	Date Sampled	Depth to Water (ft)	Groundwater							MTBE	1,2-DCA	Notes
			Elevation (ft, msl)	TPHg	Benzene	Toluene	Ethylbenzene µg/L	Xylenes				
EA-1 331.21	10/17/88	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	10/24/88	10.64	322.77	--	--	--	--	--	--	--	--	
	11/02/88	10.69	322.72	--	--	--	--	--	--	--	--	
	12/20/88	10.51	322.9	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	03/28/89	9.87	323.54	<250	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	08/02/89	10.34	323.07	<50	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	
	11/06/89	10.65	322.76	<500	<3.0	<5.0	<5.0	<5.0	<5.0	--	<5.0	
	01/25/90	10.6	322.81	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	
	04/23/90	10.58	322.83	71	2	5	3	8	8	--	<0.5	
	08/01/90	10.88	322.53	300	86	21	10	33	33	--	--	
	10/24/91	11.12	322.29	280	69	13	11	16	16	--	--	
	01/31/91	11.16	322.25	460	160	11	17	17	17	--	--	
	08/21/91	10.8	322.61	2,400	400	220	44	120	120	--	--	
	08/21/91	10.8	322.61	2,300	390	210	42	120	120	--	--	Duplicate
	10/07/91	10.79	322.62	--	--	--	--	--	--	--	--	
	01/28/92	10.79	322.62	3,600	320	360	110	310	310	--	--	
	01/28/92	10.79	322.62	3,000	290	320	99	270	270	--	--	Duplicate
	06/05/92	10.84	322.57	1,700	290	89	61	130	130	--	--	
	09/30/92	11.06	322.35	2,100	160	260	80	350	350	--	--	
	12/30/92	10.15	323.26	3,200	240	180	110	310	310	--	--	
	03/29/93	9.42	323.99	23,000	700	3,000	610	3,000	3,000	--	--	
	06/25/93	10.42	322.99	2.7	130	590	130	590	590	--	--	
	09/16/93	10.66	322.75	3.9	410	830	220	890	890	--	--	
	12/20/93	10.6	322.81	27	1,200	2,600	1,100	4,200	4,200	--	--	
	03/29/94	10.41	323	6.3	250	700	200	830	830	--	--	
	06/22/94	10.4	323.01	4.1	71	240	110	460	460	<30	<10	
	09/20/94	10.37	323.04	8,500	1,200	1,300	370	1,400	1,400	--	--	
	10/04/94	10.34	323.07	7,600	97	360	150	620	620	--	--	
	11/30/94	9.46	323.95	8,800	180	490	240	900	900	--	--	
	03/02/95	9.96	321.07	6.9	82	570	210	970	970	--	--	
	06/15/95	9.8	321.23	4.8	44	210	160	620	620	<25	--	
	09/26/95	10.48	320.55	13,000	150	620	370	1,400	1,400	<125	--	
	12/28/95	10.14	320.89	11,000	74	250	200	750	750	79	--	
02/29/96	8.74	322.29	17,000	59	480	350	1,600	1,600	<125	--		
06/27/96	10.21	320.82	3,600	22	130	130	49	46	46	--		
09/12/96	10.49	320.72	2,000	20	<10	18	44	44	<50	--		
03/31/97	10.19	321.02	17,000	87	230	330	1,200	310	310	--		
12/23/98	9.83	321.38	290	20	0.88	1.1	16	<2.5	<2.5	--		
03/25/99	9.13	322.08	500	21	<0.5	21	<0.5	18	18	--		
02/03/00	9.05	322.16	2,310	35.7	90	21.8	147	1,280 (365)	1,280 (365)	--		
01/23/01	--	--	--	--	--	--	--	--	--	--	Inaccessible	
05/01/01	9.82	321.39	7,710	19.9	12.6	22.3	64	31.8	31.8	--		
08/28/01	10.04	321.17	4,800	69	<25	50	140	160	160	--		
11/27/01	10.05	321.16	5,300	25	<5.0	30	120	<20	<20	--		
02/28/02	--	--	--	--	--	--	--	--	--	--	Inaccessible	
05/22/02	9.05	322.16	110	<1.0	<0.50	1	<1.5	<2.5	<2.5	--		
08/20/02	9.21	322	410	2.6	<0.50	8.5	29	<5.0	<5.0	--		
11/11/02	9.01	322.2	3,800	<0.50	1.3	17	47	<5.0	<5.0	--		
05/08/03	8.23	322.98	1,700	11	0.97	63	161	<2.0	<2.0	--		
12/15/04	--	--	--	--	--	--	--	--	--	--	Inaccessible	
02/21/05	--	--	--	--	--	--	--	--	--	--	Inaccessible	
05/17/05	--	--	--	--	--	--	--	--	--	--	Inaccessible	

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Table 1. Groundwater Elevation and Analytical Data - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Well ID TOC Elev (ft)	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft, msl)	Groundwater							Notes	
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	1,2-DCA		
EA-2 330.41	10/17/88	--	--	<50	<0.5	<0.5	<0.5	<0.5	1.2	--	--	
	10/24/88	9.7	322.89	--	--	--	--	--	--	--	--	
	11/02/88	10.03	322.56	--	--	--	--	--	--	--	--	
	12/20/88	9.98	322.61	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	03/28/89	8.8	323.79	<250	<2	<0.5	<0.5	<0.5	<0.5	--	<0.5	
	08/02/89	9.44	323.15	<50	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	
	11/06/89	9.53	323.06	<500	<3.0	<5.0	<5.0	<5.0	<5.0	--	<5.0	
	01/25/90	9.27	323.32	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	
	04/23/90	9.35	323.24	<50	0.6	0.8	<0.5	<0.5	2	--	<0.5	
	08/01/90	9.71	322.88	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	10/24/90	10.08	322.51	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	01/31/91	10.21	322.38	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	01/31/91	10.21	322.38	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	Duplicate
	08/21/91	9.8	322.79	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	10/07/91	9.98	322.61	--	--	--	--	--	--	--	--	
	01/28/92	9.81	322.78	<50	0.8	<0.5	<0.5	<0.5	<0.5	--	--	
	06/05/92	9.86	322.73	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	09/30/92	10.6	321.99	66	1	3.2	1.3	7.4	--	--	--	
	12/30/92	9.11	323.48	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	03/29/93	7.73	324.86	<50	<0.5	<0.5	<0.5	<1.5	--	--	--	
	06/25/93	9.22	323.37	<50	<0.5	<0.5	<0.5	<1.5	--	--	--	
	09/16/93	10	322.59	<50	<0.5	<0.5	<0.5	<1.5	--	--	--	
	12/20/93	9.38	323.21	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	03/29/94	9.3	323.29	<50	<0.5	0.6	<0.5	<0.5	<0.5	--	--	
	06/22/94	9.49	323.1	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	09/26/94	9.72	322.87	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	10/04/94	9.58	323.01	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	11/30/94	8.7	323.89	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	03/02/95	8.34	321.67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	06/07/95	8.42	321.79	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	--	
	09/26/95	9.34	320.87	540	6.8	<0.5	47	29	13	<2.5	--	
	12/28/95	8.84	321.37	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	--	
	02/29/96	7.44	322.77	<50	<0.5	<0.5	<0.5	1.5	<2.5	--	--	
06/27/96	8.63	321.38	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	--		
09/12/96	9.4	321.01	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	--		
03/31/97	9.11	321.3	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	--		
12/23/98	8.91	321.5	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	--		
03/25/99	8.1	322.31	<50	<0.5	<0.5	<0.5	<0.5	<0.5	2.7	--		
02/03/00	8.36	322.05	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5 (<2.0)	--		
01/23/01	9.08	321.33	441 (1)	1.27	0.542	40.3	31	72.9	--	--		
05/01/01	8.87	321.54									SAMPLED ANNUALLY	
08/28/01	9.45	320.96									SAMPLED ANNUALLY	
11/27/01	9.5	320.91									SAMPLED ANNUALLY	
02/28/02	9.05	321.36	<50	<0.50	<0.50	<0.5	<1.5	74				
05/22/02	9.04	321.37									SAMPLED ANNUALLY	
08/20/02	9	321.41									SAMPLED ANNUALLY	
11/11/02	9.03	321.38									SAMPLED ANNUALLY	
05/08/03	7.26	323.15	<50	<0.5	<0.5	<0.5	<0.5	<0.5	2.2/0.9	--		
12/15/04	8.96	321.45	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	--		
02/21/05	7.20	323.21	<50	<0.5	<0.5	<0.5	<0.5	<0.5	13 (11)	--		
05/17/05	8.21	322.20									SAMPLED ANNUALLY	

Pangea

Table 1. Groundwater Elevation and Analytical Data - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Well ID TOC Elev (ft)	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft, msl)	←----- Benzene ----- Toluene ----- Ethylbenzene ----- Xylenes ----- MIIBE ----->							1,2-DCA	Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MIIBE	1,2-DCA		
EA-3 331.5	10/17/88	--	--	<50	1.8	<0.5	<0.5	3	--	--		
	10/24/88	11.03	322.61	--	--	--	--	--	--	--		
	11/02/88	11.03	322.61	--	--	--	--	--	--	--		
	12/20/88	10.96	322.68	240	90	1.2	13	3.3	--	--		
	03/28/89	9.77	323.87	2,300	380	130	240	910	--	--		
	08/02/89	10.65	322.99	<50	<0.1	<0.1	<0.1	<0.1	--	<0.1		
	11/06/89	10.78	322.86	<500	<3.0	<5.0	<5.0	<5.0	--	<5.0		
	01/25/90	10.66	322.98	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5		
	04/23/90	10.68	322.96	<50	0.8	<0.5	0.9	<0.5	--	<0.5		
	08/01/90	11.03	322.61	<50	<0.5	<0.5	<0.5	<0.5	--	--		
	10/24/90	11.35	322.29	<50	<0.5	<0.5	<0.5	<0.5	--	--		
	01/31/91	11.52	322.12	<50	<0.5	<0.5	<0.5	<0.5	--	--		
	08/21/91	--	--	--	--	--	--	--	--	--		
	10/07/91	11.15	322.49	180	40	20	4.7	8.4	--	--		
	10/7/1991	--	--	200	43	17	4.1	6.7	--	--	Duplicate	
	01/28/92	11.08	322.56	640	69	85	13	46	--	--		
	06/05/92	10.98	322.66	250	63	8.3	3	9.5	--	--		
	09/30/92	11.38	322.26	330	120	33	6.3	22	--	--		
	12/30/92	10.48	323.16	58	7.6	1.3	2.5	5.4	--	--		
	03/29/93	9.3	324.34	120	11	4.5	6.2	13	--	--		
	06/25/93	10.46	323.18	<50	<0.5	<0.5	<0.5	<1.5	--	--		
	09/16/93	10.9	322.74	85	3.9	8.8	4.5	22	--	--		
	12/20/93	10.66	322.98	190	12	12	13	50	--	--		
	03/29/94	10.5	323.14	<50	<0.5	1.2	<0.5	0.9	--	--		
	06/22/94	10.64	323	<50	<0.5	<0.5	<0.5	<0.5	<3.0	<1.0		
	09/26/94	10.72	322.92	<50	<0.5	<0.5	<0.5	<0.5	--	--		
	10/04/94	10.68	322.96	<50	<0.5	<0.5	<0.5	0.7	--	--		
	11/30/94	9.66	323.98	170	6.1	3	6.5	28	--	--		
	03/02/95	9.92	321.38	<50	<0.5	<0.5	<0.5	<0.5	--	--		
	06/07/95	9.72	321.58	<50	<0.5	<0.5	<0.5	<0.5	3.2	--		
	09/26/95	10.6	320.7	2,000	140	<5.0	<5.0	190	280	--		
	12/28/95	9.82	321.48	<50	<0.5	<0.5	<0.5	<0.5	26	--		
	02/29/96	8.28	323.02	<50	2.1	<0.5	2.5	6	31	--		
06/27/96	9.91	321.39	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--			
09/12/96	10.59	320.91	13,000	<20	<20	<20	<20	48	--			
03/31/97	--	--	--	--	--	--	--	--	--	Inaccessible		
04/15/97	10.25	321.25	<125	2	<1.2	<1.2	<1.2	680	--			
12/23/98	--	--	--	--	--	--	--	--	--	Inaccessible		
03/25/99	--	--	--	--	--	--	--	--	--	Inaccessible		
02/03/00	--	--	--	--	--	--	--	--	--	Inaccessible		
01/23/01	10.31	321.19	862 (1)	3.97	1.15	18.9	48.6	289	--			
05/01/01	10.15	321.35				SAMPLED SEMI-ANNUALLY						
08/28/01	10.56	320.94	<50	<0.50	<0.50	<0.50	<0.50	37	--			
11/27/01	10.65	320.85				SAMPLED SEMI-ANNUALLY						
02/28/02	10.37	321.13	<50	1.3	<0.50	2	1.8	90	--			
05/22/02	10.27	321.23				SAMPLED SEMI-ANNUALLY						
08/20/02	10.3	321.2	<50	<0.50	<0.50	<0.50	<1.5	40	--			
11/11/02	9.05	322.45				SAMPLED SEMI-ANNUALLY						
05/08/03	8.83	322.67	<50	<0.5	<0.5	<0.5	<0.5	39/37	--			
12/15/04	10.39	321.11	<50	<0.5	<0.5	<0.5	<0.5	18 (17)	--			
02/21/05	8.80	322.70	<50	<0.5	<0.5	2.3	1.4	180 (290)	--			
05/17/05	9.57	321.93	140	0.68	<0.5	6.6	0.94	250 (340)	--			

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Table 1. Groundwater Elevation and Analytical Data - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Well ID TOC Elev (ft)	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft. msl)	TPHg	Benzene	Toluene	Ethylbenzene µg/L	Xylenes	MTBE	1,2-DCA	Notes
MW-1 333.66	10/04/94	12.8	320.76	2,100	150	170	61	320	--	--	
	11/30/94	12.38	321.18	1,500	210	17	73	130	--	--	
	03/02/95	12.88	320.68	2,600	510	<10	160	<10	--	--	
	06/07/95	12.58	320.98	710	160	<2.0	45	<2.0	<10	--	
	09/26/95	13.15	320.41	1,100	140	1.4	92	1.8	<5.0	--	
	12/28/95	13.09	320.47	750	96	2.5	61	7.4	37	--	
	02/29/96	12.17	321.39	250	17	<0.5	18	0.81	9	--	
	06/27/96	12.95	320.61	710	72	<2.0	92	2.2	<10	--	
	09/12/96	13.11	320.55	300	53	<0.5	32	0.65	21	--	
	03/31/97	12.99	320.67	<200	4.1	<2.0	4.8	<2.0	640	--	
	12/23/98	13.87	319.79	<50	<50	<0.5	<0.5	<0.5	3200	--	
	03/25/99	12.01	321.65	<50	<0.5	<0.5	<0.5	<0.5	5,200 (5,200)	--	
	02/03/00	11.91	321.75	<500	<5.0	<5.0	<5.0	<5.0	3,180 (3,350)	--	
	01/23/01	12.57	321.09	<50.0	<0.500	<0.500	<0.500	<0.500	4,420	--	
	05/01/01	12.6	321.06				SAMPLED SEMI-ANNUALLY				
	08/28/01	12.74	320.92	<50	<0.50	<0.50	<0.50	<0.50	4,800	--	
	11/27/01	12.7	320.96				SAMPLED SEMI-ANNUALLY				
	02/28/02	12.7	320.96	<50	<0.50	<0.50	<0.50	<1.5	1,400	--	
	05/22/02	12.38	321.28				SAMPLED SEMI-ANNUALLY				
	08/20/02	12.57	321.09	<50	<0.50	<0.50	<0.50	<1.5	1,400	--	
	11/11/02	11.31	322.35				SAMPLED SEMI-ANNUALLY				
	05/08/03	11.85	321.81	<50	<0.50	<0.50	<0.50	<0.50	1,300 (1,200)	--	
	12/15/04	12.80	320.86	<50	<0.50	<0.50	<0.50	<0.50	1,700 (1,900)	--	
02/21/05	11.81	321.85	<100	<1.0	<1.0	<1.0	<1.0	3,000 (3,800)	--		
05/17/05	12.51	321.15	<120	<1.2	<1.2	<1.2	<1.2	3,400 (4,400)	--		
MW-2 329.29	10/04/94	8.56	320.62	2300	160	280	96	480	--	--	
	11/30/94	8.33	320.85	1,600	170	16	110	120	--	--	
	03/02/95	8.35	320.83	1,200	220	5.6	140	36	--	--	
	06/07/95	8.62	320.56	160	25	<0.5	16	<0.5	240	--	
	09/26/95	8.71	320.47	150	15	<0.5	7.2	<0.5	120	--	
	12/28/95	8.78	320.4	400	34	1.3	26	5.1	170	--	
	02/29/96	7.82	321.36	120	29	<0.5	<0.5	<0.5	790	--	
	06/27/96	8.72	320.46	150	13	<0.5	7	<0.5	850	--	
	09/12/96	8.81	320.48	<1,000	18	<10	<10	<10	3,100	--	
	03/31/97	8.65	320.64	<500	<5.0	<5.0	<5.0	<5.0	1,400	--	
	12/23/98	8.32	320.97	<50	<0.5	<0.5	<0.5	<1.5	900	--	
	03/25/99	7.89	321.4	<50	2.6	<0.5	<0.5	<0.5	1,100 (670)	--	
	02/03/00	7.53	321.76	<125	<1.25	<1.25	<1.25	<1.25	1,020 (1,100)	--	
	01/23/01	8.18	321.11	<50.0	<0.500	<0.500	<0.500	<0.500	642	--	
	05/01/01	8.43	320.86	70.8	<0.500	<5.00	<5.00	<5.00	342	--	
	08/28/01	8.39	320.9	<50	<0.50	<0.50	<0.50	<0.50	530	--	
	11/27/01	8.46	320.83	210	<0.50	<0.50	<0.50	<1.5	260	--	
	02/28/02	8.48	320.81	<50	<0.50	<0.50	<0.50	<1.5	180	--	
	05/22/02	8.14	321.15	<50	<0.50	<0.50	<0.50	<1.5	180	--	
	08/20/02	8.24	321.05	<50	<0.50	<0.50	<0.50	<1.5	160	--	
	11/11/02	8.06	321.23	<50	<0.50	<0.50	<0.50	<1.5	130	--	
	05/08/03	7.86	321.43	<50	<0.50	<0.50	<0.50	<0.50	180 (160)	--	
	12/15/04	8.60	320.69	<50	<0.50	<0.50	<0.50	<0.50	1,400 (1,600)	--	
02/21/05	7.55	321.74	<50	<0.50	<0.50	<0.50	<0.50	800 (1,100)	--		
05/17/05	8.52	320.77	<50	<0.50	<0.50	<0.50	<0.50	160 (210)	--		

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Table 1. Groundwater Elevation and Analytical Data - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Well ID TOC Elev (ft)	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft, msl)	Groundwater							1,2-DCA	Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	µg/L		
MW-3 332.86	10/04/94	12.06	320.67	6,300	610	750	68	670	--	--		
	11/30/94	11.38	321.35	17	3,600	490	430	610	--	--		
	03/02/95	11.97	320.76	8,500	2,200	<50	240	<50	64,000	--		
	06/07/95	11.54	321.19	3,000	710	18	220	44	3,100	--		
	09/26/95	12.36	320.37	<10,000	230	<100	130	<100	64,000	--		
	12/28/95	12.07	320.66	<12,500	760	<125	<125	<125	100,000	--		
	02/29/96	11.01	321.72	1,600	380	<10	84	17	33,000	--		
	06/27/96	14.93	320.8	1,400	<2.5	4.3	130	4	96,000	--		
	09/12/96	12.26	320.6	<10,000	560	<100	110	<100	100,000	--		
	03/31/97	12.04	320.82	<25,000	1,200	370	<250	380	130,000	--		
	12/23/98	12.92	319.94	--	--	--	--	--	--	--	0.1' SPH; 0.079 gal SPH removed	
	03/25/99	12.56	320.3	--	--	--	--	--	--	--	0.05' SPH; 0.05 gal SPH removed	
	02/03/00	11.12	321.74	92,100	4,780	11,400	2,270	15,800	137,000 (162,000)	--		
	1/23/2001	11.78	321.08	60,600	4,810	7,500	1,870	11,000	148,000	--	Absorbent sock in well	
	5/1/2001	10.66	322.2	56,000	3,760	5,640	<2,500	8,740	136,000	--	Absorbent sock in well	
	8/28/2001	11.79	321.07	32,000	3,800	2,600	1,200	7,500	160,000	--	Absorbent sock in well	
	11/27/2001	11.98	320.88	110,000	1,300	2,400	1,500	9,400	90,000	--	Absorbent sock removed	
	02/28/02	11.81	321.05	24,000	1,900	820	520	3,100	90,000	--		
	05/22/02	11.6	321.26	110,000	4,000	3,200	2,800	18,000	140,000	--		
	08/20/02	11.81	321.05	37,000	2,600	1,500	890	4,800	110,000	--		
11/11/02	11.63	321.23	81,000	2,900	2,100	2,100	14,000	110,000	--			
05/08/03	10.91	321.95	5,700	770	69	130	365	76,000 (70,000)	--			
12/15/04	11.97	320.89	33,000	1,700	430	1,300	7,000	70,000 (89,000)	--			
02/21/05	10.81	322.05	--	--	--	--	--	--	--	0.01 SPH		
05/17/05	11.63	321.23	--	--	--	--	--	--	--	0.08 SPH		
MW-4 332.63	03/01/96	9.9	322.74	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--		
	04/02/96	9.77	322.87	--	--	--	--	--	--	--		
	06/27/96	10	322.64	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--		
	09/12/96	11.67	320.96	<50	<0.5	<0.5	<0.5	<0.5	3.5	--		
	03/31/97	10.59	322.04	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--		
	12/23/98	10.37	322.26	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--		
	03/25/99	9.91	322.72	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--		
	02/03/00	10.32	322.31	<50	<0.5	<0.5	<0.5	<0.5	<2.5/<2.0 (3)	--		
	01/23/01	10.54	322.09	<50	<0.500	<0.500	<0.500	<0.500	<5.00	--		
	05/01/01	10.32	322.31				SAMPLED ANNUALLY					
	08/28/01	10.57	322.06				SAMPLED ANNUALLY					
	11/27/01	10.29	322.34				SAMPLED ANNUALLY					
	02/28/02	10.3	322.33	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--		
	05/22/02	10.12	322.51				SAMPLED ANNUALLY					
	08/20/02	10.43	322.2				SAMPLED ANNUALLY					
	11/11/02	9.89	322.74				SAMPLED ANNUALLY					
	05/08/03	9.79	322.84	<50	<0.5	<0.5	<0.5	<0.5	<2	--		
	12/15/04	10.56	322.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--		
02/21/05	9.50	323.13	<50	<0.5	<0.5	<0.5	<0.5	<5.0 (<0.5)	--			
05/17/05	10.20	322.43				SAMPLED ANNUALLY						
MW-5 333.47	03/01/96	10.62	322.58	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--		
	04/02/96	10.14	323.06	--	--	--	--	--	--	--		
	06/27/96	10.22	322.98	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--		
	09/12/96	10.85	322.19	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--		

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Table 1. Groundwater Elevation and Analytical Data - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Well ID TOC Elev (ft)	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft, msl)	TPHg ←	Benzene	Toluene	Ethylbenzene μg/L	Xylenes	MTBE	1,2-DCA	Notes
MW-5 (Cont'd)	03/31/97	10.44	322.6	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
	12/23/98	10.21	322.83	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	
	D3/25/99	9.92	323.12	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
	02/03/00	9.63	323.41	<50	<0.5	<0.5	<0.5	<0.5	<2.5/<2.03	--	
	01/23/01	10.35	322.69	<50	<0.500	<0.500	<0.500	<0.500	<5.00	--	
	05/01/01	10.34	322.7				SAMPLED ANNUALLY				
	08/28/01	10.44	322.6				SAMPLED ANNUALLY				
	11/27/01	10.17	322.87				SAMPLED ANNUALLY				
	02/28/02	10.2	322.84	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	
	05/22/02	10.38	322.66				SAMPLED ANNUALLY				
	08/20/02	10.36	322.68				SAMPLED ANNUALLY				
	11/11/02	10.03	323.01				SAMPLED ANNUALLY				
	05/08/03	9.56	323.48	<50	<0.5	<0.5	<0.5	<0.5	3.4/<0.5	--	
	12/15/04	10.08	322.96	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	
	02/21/05	9.90	323.14	<50	<0.5	<0.5	<0.5	<0.5	<5.0 (0.54)	--	
	05/17/05	10.33	322.71				SAMPLED ANNUALLY				

ABBREVIATIONS AND NOTES:

Groundwater monitoring data and laboratory analytical results prior to December 14, 2004, were scanned from a report by SOMA.

(ft) = Feet

(msl) = Mean sea level

TOC Elev. (ft) = Top of casing elevation

μg/L = micrograms per liter - approximately equal to parts per billion = ppb

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8015M.

BTEX by EPA Method 8020/8021.

MTBE = Methyl tertiary-butyl ether by EPA Method 8020/8021. (Concentrations in parentheses are by EPA Method 8260B).

1,2-DCA = 1,2-Dichloroethane

SPH = Separate Phase Hydrocarbons Thickness, in feet

-- = Not Measured/Not Analyzed

1 Laboratory report indicates weathered gasoline C6-C12.

APPENDIX A

Groundwater Monitoring Field Data Sheets



WELL GAUGING SHEET

Client: Pangea Environmental Services Inc.

Site
Address: 7420 Dublin Boulevard Dublin, CA

Date: 5/17/2005

Signature: 

Well ID	Time	Depth to SPH	Depth to Water	SPH Thickness	Depth to Bottom	Comments
EA-1		Not Accessible				MW-3 Submersed SPH DTW=11.63, SPH @13.18 second DTW = 13.26, SPH thickness = 0.08. DO measurement = mg/L: EA-2 = 0.77, MW-3 = 1.06, MW-4 = 1.29, and MW-5 = 1.47.
EA-2	6:50		8.21			
EA-3	6:55		9.57		34.85	
MW-1	6:40		12.51		25.30	
MW-2	6:45		8.52		20.00	
MW-3	7:00		11.63			
MW-4	6:35		10.20			
MW-5	6:30		10.33			



WELL SAMPLING FORM

Date:		5/17/2005					
Client:		Pangea Environmental Services Inc.					
Site Address:		7420 Dublin Boulevard Dublin, CA					
Well ID:		EA-3					
Well Diameter:		4"					
Purging Device:		Whaler Pump					
Sampling Method:		Disposable Bailer					
Total Well Depth:		34.85	Fe=		mg/L		
Depth to Water:		9.57	ORP=		mV		
Water Column Height:		25.28	DO=		0.86 mg/L		
Gallons/ft:		0.65					
1 Casing Volume (gal):		16.43	COMMENTS:				
3 Casing Volumes (gal):		49.30					
TIME:	CASING VOLUME (gal)	TEMP (Celsius)				pH	COND. (µS)
7:55	16.4	26.9				6.83	562
8:10	32.9	27.5				6.88	595
8:25	49.3	27.3	6.90	617			
Sample ID:	Date:	Time	Container Type	Preservative	Analytes	Method	
EA-3	5/17/2005	8:30	Voa	HCl	TPHg, BTEX, MTBE	8015, 8021, if detected confirm by 8260	
				Signature:			



WELL SAMPLING FORM

Date:		5/17/2005					
Client:		Pangea Environmental Services Inc.					
Site Address:		7420 Dublin Boulevard Dublin, CA					
Well ID:		MW-1					
Well Diameter:		2"					
Purging Device:		Disposable Bailer					
Sampling Method:		Disposable Bailer					
Total Well Depth:		25.30		Fe= mg/L			
Depth to Water:		12.51		ORP= mV			
Water Column Height:		12.79		DO= 0.75 mg/L			
Gallons/ft:		0.16					
1 Casing Volume (gal):		2.05		COMMENTS: Turbid			
3 Casing Volumes (gal):		6.14					
TIME:	CASING VOLUME (gal)	TEMP (Celsius)	pH				COND. (µS)
9:20	2.0	27.3	6.99				520
9:30	4.1	27.7	7.03				642
9:40	6.1	27.8	7.05	638			
Sample ID:	Date:	Time	Container Type	Preservative	Analytes	Method	
MW-1	5/17/2005	9:45	Voa	HCl	TPHg, BTEX, MTBE	8015, 8021, if detected confirm by 8260	
						Signature:	



WELL SAMPLING FORM

Date: 5/17/2005						
Client: Pangea Environmental Services Inc.						
Site Address: 7420 Dublin Boulevard Dublin, CA						
Well ID: MW-2						
Well Diameter: 2"						
Purging Device: Disposable Bailer						
Sampling Method: Disposable Bailer						
Total Well Depth: 20.00	Fe= mg/L					
Depth to Water: 8.52	ORP= mV					
Water Column Height: 11.48	DO= 1.06 mg/L					
Gallons/ft: 0.16						
1 Casing Volume (gal): 1.84	COMMENTS: Turbid					
3 Casing Volumes (gal): 5.51						
TIME:		CASING VOLUME (gal)	TEMP (Celsius)	pH	COND. (μS)	
8:50		1.8	27.9	7.04	830	
8:55		3.7	27.6	7.10	864	
9:00	5.5	27.6	7.13	825		
Sample ID:	Date:	Time	Container Type	Preservative	Analytes	Method
MW-2	5/17/2005	9:05	Voa	HCl	TPHg, BTEX, MTBE	8015, 8021, if detected confirm by 8260
Signature:						

APPENDIX B

Laboratory Analytical Report

**McC Campbell Analytical, Inc.**

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mcccampbell.com E-mail: main@mcccampbell.com

Pangea Environmental Svcs., Inc. 436 14th Street, Suite 1123 Oakland, CA 94618	Client Project ID: Dublin	Date Sampled: 05/17/05
		Date Received: 05/19/05
	Client Contact: Bob Clark-Riddell	Date Reported: 05/25/05
	Client P.O.:	Date Completed: 05/25/05

WorkOrder: 0505301

May 25, 2005

Dear Bob:

Enclosed are:

- 1). the results of 3 analyzed samples from your **Dublin project**,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions please contact me. McC Campbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager



McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mcccampbell.com E-mail: main@mcccampbell.com

Pangea Environmental Svcs., Inc.
436 14th Street, Suite 1123
Oakland, CA 94618

Client Project ID: Dublin

Date Sampled: 05/17/05

Date Received: 05/19/05

Client Contact: Bob Clark-Riddell

Date Extracted: 05/21/05-05/24/05

Client P.O.:

Date Analyzed: 05/21/05-05/24/05

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0505301

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	ND<120	3400	ND<1.2	ND<1.2	ND<1.2	ND<1.2	2.5	90
002A	MW-2	W	ND	160	ND	ND	ND	ND	1	97
003A	EA 3	W	140,a	250	0.68	ND	6.6	0.94	1	96

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.



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Pangea Environmental Svcs., Inc. 436 14th Street, Suite 1123 Oakland, CA 94618	Client Project ID: Dublin	Date Sampled: 05/17/05
		Date Received: 05/19/05
	Client Contact: Bob Clark-Riddell	Date Extracted: 05/25/05
	Client P.O.:	Date Analyzed: 05/25/05

Methyl tert-Butyl Ether*

Extraction method: SW5030B

Analytical methods: SW8260B

Work Order: 0505301

Lab ID	Client ID	Matrix	Methyl-t-butyl ether (MTBE)	DF	% SS
001B	MW-1	W	4400	100	100
002B	MW-2	W	210	10	100
003B	EA 3	W	340	10	101

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	0.5	µg/L
	S	NA	NA

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0505301

EPA Method: SW8021B/8015Cm		Extraction: SW5030B			BatchID: 16301			Spiked Sample ID: 0505332-004A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) [£]	ND	60	97	94.5	2.58	88.4	93.9	6.03	70 - 130	70 - 130
MTBE	ND	10	87.1	89.6	2.85	81.4	87.2	6.89	70 - 130	70 - 130
Benzene	ND	10	101	94.6	6.23	97.1	107	9.56	70 - 130	70 - 130
Toluene	ND	10	90.7	94.7	4.35	102	109	6.46	70 - 130	70 - 130
Ethylbenzene	ND	10	94.9	98.5	3.79	99.2	110	10.2	70 - 130	70 - 130
Xylenes	ND	30	86	90.3	4.91	86.3	96.3	10.9	70 - 130	70 - 130
%SS:	103	10	102	104	2.00	107	108	0.757	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 16301 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0505301-001A	5/17/05 9:45 AM	5/21/05	5/21/05 12:17 AM	0505301-001A	5/17/05 9:45 AM	5/24/05	5/24/05 5:28 AM
0505301-002A	5/17/05 9:05 AM	5/21/05	5/21/05 3:00 AM	0505301-003A	5/17/05 8:30 AM	5/21/05	5/21/05 3:33 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0505301

EPA Method: SW8260B		Extraction: SW5030B			BatchID: 16347			Spiked Sample ID: 0505346-010C		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Methyl-t-butyl ether (MTBE)	ND	10	117	113	3.34	113	112	0.855	70 - 130	70 - 130
%SS1:	99	10	98	99	1.51	101	100	0.234	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 16347 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0505301-001B	5/17/05 9:45 AM	5/25/05	5/25/05 3:42 AM	0505301-002B	5/17/05 9:05 AM	5/25/05	5/25/05 4:25 AM
0505301-003B	5/17/05 8:30 AM	5/25/05	5/25/05 5:08 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

DHS Certification No. 1644

SAT QA/QC Officer

PEO - 0505301

McCAMPBELL ANALYTICAL, INC.

110 2ND AVENUE SOUTH #D7
PACHECO, CA 94553-5560

Website: www.mccampbell.com Email: main@mccampbell.com

Telephone: (925) 798-1620

Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH 24 HR 48 HR 72 HR 5 DAY

EDF Required? Yes No

Report To: Bob Clark Riddell Bill To: [Redacted]
Company: [Redacted] Pangea Environmental Services
436 14th St. Oakland, CA 94612
08 E-Mail: bc@pangeaenv.com
Tele: 1-510-435-8664 Fax: 510-893-2500
Project #: _____ Project Name: Dublin
Project Location: 7240 Dublin Blvd, Dublin, CA
Sampler Signature: [Signature] Muskog Environmental Services

Analysis Request

Other Comment

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED								
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO ₃	Other					
MW-1		5-17-05	9:45	3	Vac	X					X	X							
MW-2			9:05	1		X					X	X							
EA 3			8:30	X		X					X	X							

MTBE / BTX & TPH as Cas (602 / 8021 + 8015)																			
MTBE / BTEX ONLY (EPA 602 / 8021)																			
TPH as Diesel / Motor Oil (8015)																			
Total Petroleum Oil & Grease (1664 / 5520 E/B&F)																			
Total Petroleum Hydrocarbons (418.1)																			
EPA 502.2 / 601 / 8010 / 8021 (HVOCs)																			
EPA 505/608 / 8081 (CI Pesticides)																			
EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners																			
EPA 507 / 8141 (NP Pesticides)																			
EPA 515 / 8151 (Acidic CI Herbicides)																			
EPA 524.2 / 624 / 8260 (VOCs)																			
Fuel Additives (MTBE, ETBE, TAME, DIPE, TBA, 1,2-DCA, 1,2-EDB, ethanol) by 8260B																			

Filter Samples for Metals analysis: Yes / No

confirm if detected by 8260B

X
X
(X)

Relinquished By: [Signature] Date: 5/19/05 Time: 9:50 Received By: [Signature]
Relinquished By: [Signature] Date: 5/19/05 Time: 1:50 Received By: [Signature]

ICBT GOOD CONDITION APPROPRIATE CONTAINERS
HEAD SPACE ABSENT PRESERVED IN LAB
DECHLORINATED IN LAB
PRESERVATION VOAS O&G METALS OTHER

McC Campbell Analytical, Inc.



110 Second Avenue South, #D7
 Pacheco, CA 94553-5560
 (925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0505301

ClientID: PEO

Report to:

Bob Clark-Riddell
 Pangea Environmental Svcs., Inc.
 64 Sonia Street
 Oakland, CA 94618

TEL: (510) 435-8664
 FAX: (510) 654-4006
 ProjectNo: Dublin
 PO:

Bill to:

Bob Clark-Riddell
 Pangea Environmental Svcs., Inc.
 64 Sonia Street
 Oakland, CA 94618

Requested TAT:

5 days

Date Received: 05/19/2005

Date Printed: 05/19/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
0505301-001	MW-1	Water	5/17/05 9:45:00 AM	<input type="checkbox"/>	A	A														
0505301-002	MW-2	Water	5/17/05 9:05:00 AM	<input type="checkbox"/>	A															
0505301-003	EA 3	Water	5/17/05 8:30:00 AM	<input type="checkbox"/>	A															

Test Legend:

1	G-MBTX_W	2	PREF REPORT	3		4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Rosa Venegas

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

McC Campbell Analytical, Inc.



110 Second Avenue South, #D7
 Pacheco, CA 94553-5560
 (925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0505301

ClientID: PEO

Report to:		TEL:	(510) 435-8664	Bill to:		Requested TAT:	5 days
Bob Clark-Riddell		FAX:	(510) 654-4006	Bob Clark-Riddell		Date Received:	5/19/2005
Pangea Environmental Svcs., Inc.		ProjectNo:	Dublin	Pangea Environmental Svcs., Inc.		Date Add-On:	5/24/2005
436 14th Street, Suite 1123		PO:		64 Sonia Street		Date Printed:	5/24/2005
Oakland, CA 94618				Oakland, CA 94618			

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
0505301-001	MW-1	Water	5/17/05 9:45:00 AM	<input type="checkbox"/>	B															
0505301-002	MW-2	Water	5/17/05 9:05:00 AM	<input type="checkbox"/>	B															
0505301-003	EA 3	Water	5/17/05 8:30:00 AM	<input type="checkbox"/>	B															

Test Legend:

1	MTBE_W	2		3		4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Rosa Venegas

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.