

April 25, 2002

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Greater Bay Trust Company Hanson, Bridgett, Marcus, Vlahos & Rudy 333 Market Street, Suite 2300 San Francisco, California 94105-2173

Attention: Rory Campbell, Esq.

QUARTERLY GROUNDWATER MONITORING NOVEMBER 2001 QUARTERLY EVENT FORMER COX CADILLAC FACILITY 230 BAY PLACE OAKLAND, CALIFORNIA

Dear Mr. Campbell:

This report presents the results of groundwater monitoring conducted by PES Environmental, Inc. (PES) on November 20, 2001 at the former Bill Cox Cadillac facility at 230 Bay Place, Oakland, California. The work is being performed as part of a response action to address releases from a former 10,000-gallon gasoline underground storage tank (UST) operated at the site by Bill Cox Cadillac. The location of the site is shown on Plate 1. The work was performed on behalf of Greater Bay Trust Company, trustee for the Robert Shepard Trust, Brian F. Shepard Trust, Douglas C. Shepard Trust, and the Lisa C. Shepard Trust, the former owners of the property. The current owner of the site is Avalon Bay Communities.

In a letter to The Greater Bay Trust Company dated April 6, 2001, ACEHS requested that groundwater monitoring at the site be continued. The objective of the groundwater monitoring program at this site is to evaluate the presence of petroleum hydrocarbons in groundwater. The monitoring is performed in accordance with California Regional Water Quality Control Board (RWQCB) guidelines.

BACKGROUND INFORMATION

One groundwater monitoring well (Well MW-1) and seven temporary monitoring wells (Wells TW-1 through TW-7) were installed at the site by PES in 1993 to investigate subsurface conditions following removal of a 3,000-gallon waste oil storage tank in December 1988.

PES Environmental, Inc.

Rory Campbell, Esq. April 25, 2002 Page 2

5

MW-1 was installed in February 1993 down gradient of the former waste oil tank and a groundwater sample was collected from it in March 1993. Elevated concentrations of total petroleum hydrocarbons quantified as gasoline (TPHg) were detected in the sample analyzed from Well MW-1. Gasoline detected in groundwater was characterized as "fresh" and no waste oil constituents were detected. Temporary wells, Wells TW-1 through TW-7 were subsequently installed in March 1993 to investigate the degree and extent, and the likely source of the gasoline contamination in groundwater. Results of the additional investigation indicated that elevated TPHg and benzene, toluene, ethylbenzene, and total xylenes (BTEX) were detected in groundwater samples from four of the temporary wells and in Well MW-1. MTBE was not detected in the samples. The highest concentrations of petroleum hydrocarbon constituents were detected in groundwater samples from two wells (TW-5 and TW-7) closest to a 10,000-gallon gasoline tank and associated product piping located to the west of the former waste oil tank. The results of the investigations were presented in PES' report, Soil and Groundwater Investigation, Bill Cox Cadillac, 230 Bay Place, Oakland, California dated December 23, 1993. The well locations and former waste oil tank location are shown on Plate 2.

The 10,000-gallon underground gasoline tank and product piping were removed by DECON Environmental Services of Hayward, California and observed and documented by Eisenberg, Olivieri & Associates (EOA) of Oakland, California in January 1994. During removal, a hole was observed in the product piping between the tank and dispenser. Floating free-phase product was observed on the groundwater surface in the tank excavation. EOA, on behalf of Bill Cox, subsequently performed limited investigations to evaluate the lateral downgradient extent of gasoline contamination. EOA performed quarterly groundwater monitoring of wells MW-1, TW-2, TW-6 and TW-7 between December 1994 and February 1996.

Soil and groundwater remediation was subsequently requested by ACEHS in a letter to the Harold Shepard Trust and Bill Cox Cadillac dated October 24, 1996. In the letter, ACEHS specified that soil remediation consisting of excavation of hydrocarbon-affected soil, and groundwater remediation consisting of oxygen introduction was required. PES developed a Remedial Plan in response to that request. PES' Remedial Plan consisted of a *Revised Interim Remedial Action Plan* (IRAP) dated October 31, 1996 and an *Addendum, Revised Interim Remedial Action Plan* dated November 26, 1996. As part of the Remedial Plan, site characterization, additional well installation, soil remediation, baseline groundwater monitoring, and initial groundwater remediation were conducted by PES between June 1997 and April 1999. The results of work conducted between June 1997 and April 1999 were previously submitted to ACEHS in PES' report, *Site Characterization and Interim Remedial Actions, Former Cox Cadillac Facility, Oakland, California,* dated September 30, 1999.

A pilot program commenced in January 1999 to remediate groundwater by applying a combination of in-situ bioremediation methods to introduce oxygen and nutrients into groundwater at the site to enhance natural biodegradation rates of petroleum hydrocarbons.

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The methods included: (1) adding a nutrient- and hydrogen peroxide-enriched water (hereinafter referred to as enriched water); and (2) placement of Oxygen Releasing Compound (ORC) in selected wells at the site. There were a total of eight applications of enriched water from March 1999 to November 1999. Application of hydrogen peroxide-enriched water and ORC in selected wells was not conducted in the current quarter.

The November 2001 monitoring is the seventh monitoring event since the groundwater remediation program and baseline monitoring was initiated by PES in January 1999. The results of the November 2001 groundwater monitoring are presented below.

GROUNDWATER MONITORING ACTIVITIES

Depth to Groundwater Measurements

Water levels were measured by Blaine Tech Services (Blaine Tech) of San Jose, California at monitoring wells MW-1, MW-2, TW-2, TW-4, TW-5, TW-6, and TW-7 on November 20, 2001. Depth-to-groundwater measurements were obtained using an electronic water-level indicator and recorded to the nearest 0.01-foot. The water-level indicator was cleaned with a solution of non-phosphate detergent and de-ionized water and then rinsed before each use. Groundwater elevation data are presented in Table 1 and groundwater elevation contours are presented on Plate 3. Dissolved oxygen concentrations were measured by Blaine Tech in the five wells to be sampled prior to measuring groundwater levels.

Groundwater Sampling and Analyses

Groundwater samples were collected from wells MW-1, MW-2, TW-2, TW-6, and TW-7 by Blaine Tech on November 20, 2001. After dissolved oxygen and water-level measurements were obtained, the wells were purged by bailing until approximately three well volumes of water were removed. During purging, the water was monitored for pH, temperature, conductivity, and turbidity. Purge water was collected in DOT-approved 55-gallon steel drums and stored on site. Following well purging, a groundwater sample was collected from each well using a disposable bailer. The sample was transferred to the appropriate laboratory sample containers using a bottom draining bailer stopcock. The sample containers were filled slowly to minimize sample volatilization and ensure that the sample was free of air bubbles. The sample containers were labeled with project site, well identification number, sample number, sampling date and time, and requested analyses. Well sampling documentation is presented in Appendix A.

The groundwater samples were transported in a chilled, thermally insulated cooler under chainof-custody protocol to Entech Analytical Labs, Inc. of Santa Clara, California, a California Department of Health Services-certified laboratory. The groundwater samples were analyzed

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for TPHg using EPA Test Method 8015 modified, BTEX and methyl tertiary butyl ether (MTBE) using EPA Test Method 8020. MTBE confirmation on the sample from well MW-1 was performed by EPA Test Method 8260. Groundwater sample analytical results are presented in Table 2 and shown on Plate 4. Copies of the laboratory reports and chain-of-custody documentation are presented in Appendix B.

Dissolved Oxygen Measurements

Total dissolved oxygen was measured on November 20, 2001 in wells MW-1, MW-2, TW-2, TW-4, TW-5, TW-6, and TW-7, at the start of the day before measuring groundwater levels and purging and sampling. The measurements were collected from each well within the middle portion of the water column using a YSI, Inc., Model 51B Dissolved Oxygen (DO) Meter. The equipment was calibrated according to the manufacturer's specifications before use. Prior to each measurement, the portion of the equipment submerged in the well was cleaned with a solution of non-phosphate detergent and de-ionized water then rinsed with de-ionized water. Total dissolved oxygen measurements through November 20, 2001 are summarized in Table 3 and are included with the well sampling documentation presented in Appendix A.

GROUNDWATER MONITORING RESULTS

Groundwater Elevation Measurements

Depth-to-groundwater data collected from wells MW-1, MW-2, TW-2, TW-4, TW-5, TW-6 and TW-7 on November 20, 2001 were converted to groundwater elevations referenced to site datum. Groundwater elevations ranged from 92.59 feet in well MW-2 to 99.58 feet in well TW-2. Groundwater flow direction at the site is to the southwest, at a hydraulic gradient of approximately 0.046-foot per foot. No separate-phase free product or hydrocarbon sheen was observed in the wells. Groundwater elevation data are presented in Table 1 and elevation contours are presented on Plate 3.

Groundwater Sample Analytical Results

The analytical results of the groundwater samples collected on November 20, 2001 are presented in Table 2 and shown on Plate 4. TPHg was detected in the samples from wells MW-1, MW-2, and TW-7 at concentrations of 33,000 μ g/L, 12,000 μ g/L, and 26,000 μ g/L, respectively. MTBE was detected in the samples from wells MW-2 and TW-7 at concentrations of 8,700 μ g/L and 1,600 μ g/L. Benzene was detected in the samples from wells MW-1, MW-2, TW-7 at concentrations of 2,100 μ g/L, 870 μ g/L, and 6,400 μ g/L, respectively. The highest concentration of toluene was detected in the sample from well TW-7 at 1,100 μ g/L. The highest concentrations of ethylbenzene and total xylenes were detected in

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the sample from well MW-1 at 2,500 μ g/L, and 3,600 μ g/L, respectively. Copies of the laboratory reports and chain-of-custody documentation are presented in Appendix B.

SUMMARY AND CONCLUSIONS

Results of the November 20, 2001 groundwater elevations indicate a hydraulic gradient of approximately 0.046-foot per foot. As with historical observations, the groundwater flow direction continues to be toward the southwest.

Concentrations of TPHg and BTEX detected in the wells in November 2001 are similar to those detected in July 2001. Hydrocarbon concentrations in groundwater from well TW-6 remained below the laboratory reporting limit, further indicating that previous biodegradation activities were effective in the vicinity of this well. Consistent with historical findings, the highest concentrations of petroleum hydrocarbons were detected in the groundwater from wells nearest to the former gasoline UST and product piping, specifically Wells MW-1 and TW-7.

MTBE remained undetected in the sample from well MW-1, but showed increases in concentrations in samples from wells MW-2 and TW-7. The highest detection of MTBE is in groundwater from the furthest downgradient well, MW-2. MTBE was not previously detected in groundwater from any of the site wells from sampling conducted by PES in 1993. These data suggest that MTBE may be flowing to the downgradient well from a cross gradient source through potential preferential pathways within Bay Place. PES has proposed the installation of a new monitoring well northeast of wells MW-2 and TW-7 to test for this possibility and to provide additional hydrogeologic data for the site and vicinity (as indicated on Plate 2). The well has been proposed in a Workplan dated August 29, 2001 and specifications for the proposed well were presented in an Addendum to Workplan dated December 17, 2001.

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If you have any questions or comments, please do not hesitate to call either of the undersigned.

Yours very truly,

PES ENVIRONMENTAL, INC.

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François Bush **Project Geologist**

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Principal Engineer

Attachments:	Table 1	Groundwater Elevation Data Through November 20, 2001
	Table 2	Groundwater Sample Analytical Results Through
		November 20, 2001
	Table 3	Summary of Total Dissolved Oxygen Measurements
	Plate 1	Site Location Map
	Plate 2	Site Plan and Well Location Map
	Plate 3	Groundwater Elevation Contours on November 20, 2001
	Plate 4	Distribution of Dissolved Hydrocarbons in Groundwater-
		November 20, 2001
	Appendix A	Well Sampling Documentation
	Appendix B	Laboratory Analytical Reports and Chain of Custody
		Documentation

cc: Ms. Cheryl Howell - Greater Bay Trust Company Mr. Don Huang - Alameda County Environmental Health Services Mr. Mark Owens - California UST Cleanup Fund Ms. Lita Freeman - LFR

Table 2Groundwater Sample Analytical Results Through November 20, 2001Quarterly MonitoringFormer Cox Cadillac, 230 Bay PlaceOakland, California

		TPH as				Ethyl-	Total
Well		Gasoline	MTBE	Benzene	Toluene	benzene	Xylenes
Number	Sample Date	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-1	3/3/93	110,000	NA	8,500	7,500	4,400	15,000
	10/13/93	74,000	NA	6,100	4,800	4,000	11,000
	12/22/94	110,000	NA	18,000	11,000	2,000	16,000
	3/24/95	25,000	NA	3,700	1,800	2,200	4,700
	6/29/95	28,000	NA	5,300	2,100	3,200	7,500
	9/29/95	43,000	NA	5.600	2,200	3,800	7,400
	2/23/96	46.000	NA	4,800	3.000	3,400	7,700
	1/12/99	39.000	800	2,600	970	2,900	5,700
	4/13/99	29.000	520	1.500	500	<50	4.000
	7/7/99	31,000	<250	1,900	870	1.600	3.900
	10/6/99	32.000	<250	2,100	910	1.800	4,400
	1/11/00	2,400	<50	52	3.9	63	12
	4/6/01	32,000	470	4.300	3,200	2,600	7.300
	7/25/01	24 000	<25	2,300	1 300	2 500	6,200
	11/20/01	33 000	<100*	2 100	890	2,500	3,600
		00,000		2,100		_,	-,
MW-2	1/12/99	<50	2,900	1.5	<0.50	<0.50	<0.50
	4/13/99	<50	3,800	0.76	<0.50	<0.50	<0.50
	7/7/99	<2,500	7000*	<25	<25	<25	<25
	10/6/99	2,800	300*	73	<25	<25	<25
	1/11/00	11,000	8 400*	890	<100	<100	<100
	4/6/01	2,800	3,800	210	<25	<25	<25
	7/25/01	3,400	4,200*	250	<12.5	<12.5	<12.5
	11/20/01	12,000	8,700	870	<100	<100	200
TW-2	10/13/93	<50	NA	<0.5	<0.5	<0.5	<0.5
	1/12/99	<50	<5	<0.5	<0.5	<0.5	<0.5
	4/13/99	<50	<5	<0.5	<0.5	<0.5	<0.5
	7/7/99	<50	<5	<0.5	<0.5	<0.5	<0.5
	10/6/99	<50	<5	<0.5	<0.5	<0.5	<0.5
	1/11/00	<50	<5	<0.5	<0.5	<0.5	<0.5
	4/6/01	<50	<5	<0.5	<0.5	<0.5	<0.5
	7/25/01	<50	<5	<0.5	<0.5	<0.5	<0.5
	11/20/01	<50	<5	<0.5	<0.5	<0.5	<0.5
TW-6	10/14/93	4,100	NA	3,800	1,600	110	540
	12/22/94	24,000	NA	54° -5,000 °	10 2,000	3100 3,000	65006,000
	3/24/95	10,000	NA	4,900	530	270	380
	6/29/95	28,000	NA	12,000	6,600	1,000	3,000
	9/29/95	47,000	NA	19,000	5,200	1,500	4,000
	2/23/96	25,000	NA	13,000	5,200	1,100	2,770
	1/12/99	29,000	210	9,900	4,100	1,000	4,000
	4/13/99	<50	22	0.70	<0.5	<0.5	0.62
	7/7/99	55	8.1*	13	<0.5	<0.5	2.2
	10/6/99	<50	<5	0.59	<0.5	<0.5	<0.5
	1/11/00	<50	<5	<0.5	< 0.5	{ < 0.5	<0.5

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Table 2Groundwater Sample Analytical Results Through November 20, 2001Quarterly MonitoringFormer Cox Cadillac, 230 Bay PlaceOakland, California

		TPH as				Ethyl-	Total
Well		Gasoline	MTBE	Benzene	Toluene	benzene	Xylenes
Number	Sample Date	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
TW-6	4/6/01	<50	<5	<0.5	<0.5	<0.5	<0.5
(Cont.)	7/25/01	<50	<5	<0.5	<0.5	<0.5	<0.5
• •	11/20/01	<50	<5	<0.5	<0.5	<0.5	<0.5
TW-7	10/14/93	100,000	NA	48,000	15,000	3,400	16,000
	12/22/94	210,000	NA	49,000	33,000	7307,000	28,000
	3/24/95	56,000	NA	13,000	7,000	1,500	5,600
	6/29/95	100,000	NA	39,000	8,100	3,000	8,300
	9/29/95	74,000	NA	32,000	8,700	2,900	8,600
	2/23/96	50,000	NA	22,000	8,400	2,700	5,100
	1/12/99	29,000	<100	7,300	670	2,700	960
	4/13/99	54,000	1,200	4,500	1,800	180	8,200
	7/7/99	42,000	2200*	8,000	4,500	1,200	3,500
	10/6/99	29,000	580*	9,700	1,600	1,600	2,100
	1/11/00	52,000	2600*	8,500	7,100	1,600	6,700
	4/6/01	22,000	990	4,800	1,800	2,200	3,400
	7/25/01	20,000	700*	5,100	660	1,400	2,100
	11/20/01	26,000	1,600	6,400	1,100	1,000	2,400

Notes:

TPH - Total Petroleum Hydrocarbons

MTBE - Methyl tert-butyl ether

 μ g/L = Micrograms per liter.

<0.50 = Not detected at or above indicated laboratory reporting limit.

Samples analyzed by EPA Method 8020 for BTEX and MTBE and by EPA Method 8015 for TPH/gas. *MTBE confirmation by EPA Method 8260.

NA= Not Analyzed

Table 1Groundwater Elevation Data Through November 20, 2001Quarterly MonitoringFormer Cox Cadillac, 230 Bay PlaceOakland, California

		Top-of-Casing		Groundwater
Well	Date	Reference Elevation	Depth to Water	Elevation
Number	Measured	(feet*)	(feet BTOC)	(feet*)
MW-1	12/22/94	100.00	2.96	97.04
	3/24/95		2.21	97.79
	6/29/95		2.44	97.56
	9/29/95		3.00	97.00
	2/23/96		2.18	97.82
	1/12/99		2.79	97.21
	4/13/99		2.00	98.00
	7/7/99		2.60	97.40
	10/6/99		2.94	97.06
	1/11/00		2.69	97.31
	4/6/01		2.00	97.01
	7/25/01		6.00	94.00
	11/20/01		3 32	89.99
	11/20/01		0.02	50.00
MW-2	1/12/99	97.48	5.62	91.86
	4/13/99		5.30	92.18
	7/7/99		5.80	91.68
	10/6/99		5.99	91.49
	1/11/00		5.73	91.75
	4/6/01		5.65	91.83
	7/25/01		6.41	92.07
	11/20/01		5.89	92.59
TW-2	12/22/94	100.43	2.88	97.55
	3/24/95		1.87	98.56
	6/29/95		2.10	98.33
	9/29/95		3.02	97.41
	2/23/96		2.13	98.30
	1/12/99		1.91	98.52
	4/13/99		2.51	97.92
	7/7/99		1.89	98.54
	10/6/99		1.97	98.46
	1/11/00		1.79	98.64
	4/6/01		3.46	96.97
	7/25/01		2.60	98.83
	11/20/01		1.85	99.58
TW-4	4/13/99	99.35	1.82	97.53
	7/7/99		2,36	96.99
	1/11/00		2.63	96.72
	4/6/01		3.97	95.38
	7/25/01		2.55	96.80
	11/20/01		2.33	97.02
	//12/00	00 40	1 96	97 44
1 11-3	7/7/00	JJ.4V	3 1 2	02.44 02.28
	1/11/00		1.02	08.27

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Table 1Groundwater Elevation Data Through November 20, 2001Quarterly MonitoringFormer Cox Cadillac, 230 Bay PlaceOakland, California

		Top-of-Casing		Groundwater
Well	Date	Reference Elevation	Depth to Water	Elevation
Number	Measured	(feet*)	(feet BTOC)	(feet*)
TW-5	4/6/01	99.40	3.04	96.36
(Cont.)	7/25/01		3.90	95.50
	11/20/01		2.55	96.85
TW-6	12/22/94	98.75	4.66	94.09
	3/24/95		3.81	94.94
	6/29/95		5.25	93.50
	9/29/95		6.12	92.63
	2/23/96		3.66	95.09
	1/12/99		5.52	93.23
	4/13/99		4.91	93.84
	7/7/99		6.04	92.71
	10/6/99		6.64	92.11
	1/11/00		6.41	92.34
	4/6/01		4.93	93.82
	7/25/01		6.72	92.03
	11/20/01		5.44	93.31
TW-7	12/22/94	97.96	4.50	93.46
	3/24/95		2.98	94.98
	6/29/95		4.30	93.66
	9/29/95		5.19	92.77
	2/23/96		3.45	94.51
	1/12/99		4.81	93.15
	4/13/99		4.73	93.23
	7/7/99		5.17	92.79
	10/6/99		5.70	92.26
	1/11/00		5.42	92.54
	4/6/01		4.63	93.33
	7/25/01		6.80	91.16
	11/20/01		4.75	93.21

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* = Referenced to site datum BTOC = Below top of casing NA = Data not available NM = Depth to water not measured

Table 3Summary of Total Dissolved Oxygen Measurements
Quarterly MonitoringFormer Cox Cadillac, 230 Bay Place
Oakland, California

Well	Date	Time	Total Dissolved	Notes
Number	Measured	of Day	Oxygen (mg/L)	
MW-1	1/12/99	15:30	3.4	(1)
	3/11/99	15:46	0.72	(1)
	3/17/99	12:30	14.1	(2)
	3/17/99	18:13	>15.0	(3)
	4/13/99	9:44	8.9	(2)
	6/1/99	14:59	6.2	(2)
	6/1/99	18:46	>15.0	(3)
	7/7/99	9:20	3.55	(2)
	7/7/99	19:38	>18.0	(3)
	8/19/99	10:45	1.0	(2)
	8/19/99	18:48	>15.0	(3)
	10/6/99	10:42	10.3	(2)
	10/6/99	17:11	>15.0	(3)
	11/17/99	11:13	4.4	(2)
	11/17/99	17:34	>15.0	(3)
	1/11/00	NA	4.0	(2)
	4/6/01	10:55	0.45	(4)
	7/25/01	11:25	3.60	(4)
	11/20/01	12:30	10.3	(4)
MW-2	1/12/99	12:30	3	(1)
	4/13/99	9:17	0.2	(2)
	4/13/99	19:11	0.6	(3)
	7/7/99	8:56	1.03	(2)
	7/7/99	19:13	7.22	(3)
	10/6/99	10:10	1.2	(2)
	10/6/99	16:58	0.5	(3)
	1/11/00	NA	3.9	(2)
	4/6/01	10:21	0.69	(4)
	7/25/01	11:25	3.10	(4)
	11/20/01	13:20	5.00	(4)
TW-2	1/12/99	15:03	5.5	(1)
	4/13/99	9:10	2.6	(2)
	4/13/99	19:06	5.8	(3)
	7/7/99	8:50	0.65	(2)
	7/7/99	19:01	5.14	(3)
	10/6/99	9:59	3.2	(2)
	10/6/99	16:48	2.6	(3)
	1/11/00	NA	4.6	(2)
	4/6/01	9:45	2.9	(4)
	7/25/01	11:25	3.0	(4)
	11/20/01	11:00	10.3	(4)
TW-4	3/11/99	15:20	3.4	(1)
	3/17/99	12:18	14.4	(2)

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Table 3Summary of Total Dissolved Oxygen MeasurementsQuarterly MonitoringFormer Cox Cadillac, 230 Bay PlaceOakland, California

Well	Date	Time	Total Dissolved	Notes
Number	Measured	of Day	Oxygen (mg/L)	
TW-4	3/17/99	17:54	12.6	(3)
(Cont.)	4/13/99	9:00	12.2	(2)
	4/13/99	19:03	>15.0	(3)
	6/1/99	14:29	9.3	(2)
	6/1/99	18:33	>15.0	(3)
	7/7/99	9.09	>18.0	(2)
	7/7/99	19:36	>18.0	(3)
	8/10/00	10:41	13.4	(2)
	8/10/00	18:27	N15.0	(3)
	10/6/00	9-50	>15.0 >15.0	(2)
	10/6/99	16:40	>15.0	(2)
	11/17/00	11:16	10.6	(0)
	11/17/00	17.25	10.0	(2)
	7/05/01	11:05	17.0*	(3)
	11/20/01	NA	15.0*	(4)
	1/12//01		10.0	(4)
C-44.1	0/11/00	15.40	1.7	(1)
	3/11/99	10:00	0.50	
	3/17/99	12:20	14.3	(2)
	3/17/99	17:57	14.0	(3)
	4/13/99	9:39	3.8	(2)
	4/13/99	19:28	>15.0	(3)
	6/1/99	14:40	5.4	(2)
	6/1/99	18:38	>15.0	(3)
	7/7/99	9:05	0.25	(2)
	7/7/99	19:32	>18.0	(3)
	8/19/99	10:38	1.0	(2)
	8/19/99	18:33	>15.0	(3)
	10/6/99	10:31	0.2	(2)
	10/6/99	17:08	>15.0	(3)
	11/17/99	11:22	0.8	(2)
	11/17/99	17:37	>15.0	(3)
	7/25/01	11:25	0.7	(4)
	11/20/01	NA	5.0	(4)
·				
TW-6	1/12/99	15:02	3.9	(1)
	3/11/99	15:39	0.62	(1)
	3/17/99	12:23	14.1	(2)
	3/17/99	18:06	>15.0	(3)
	4/13/99	9:35	14.2	(2)
	4/13/99	19:23	>15.0	(3)
	6/1/99	14:48	11.1	(2)
	6/1/99	18:40	>15.0	(3)
	7/7/99	9:00	>18.0	(2)
	7/7/99	19:21	>18.0	(3)
	8/19/99	10:35	14.8	(2)
	8/19/99	18:38	>15.0	(3)

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Table 3 Summary of Total Dissolved Oxygen Measurements Quarterly Monitoring Former Cox Cadillac, 230 Bay Place Oakland, California

Well	Date	Time	Total Dissolved	Notes
Number	Measured	of Day	Oxygen (mg/L)	
TW-6	10/6/99	10:27	3.8	(2)
(Cont.)	10/6/99	17:06	>15.0	(3)
	11/17/99	11:24	1.5	(2)
	11/17/99	17:39	>15.0	(3)
	1/11/00	NA	4.9	(2)
	4/6/01	10:00	0.78	(4)
	7/25/01	11:25	2.70	(4)
	11/20/01	11:30	9.40	(4)
TW-7	1/12/99	13:10	2.7	(1)
	3/11/99	15:42	0.74	(1)
	3/17/99	12:25	6.5	(2)
	3/17/99	18:12	14	(3)
	4/13/99	9:25	0.4	(2)
	4/13/99	19:16	>15.0	(3)
	6/1/99	14:52	0.7	(2)
	6/1/99	18:43	>15.0	(3)
	7/7/99	9:15	0.26	(2)
	7/7/99	19:26	>18.0	(3)
	8/19/99	10:30	0.9	(2)
	8/19/99	18:46	>15.0	(3)
	10/6/99	10:19	0.5	(2)
	10/6/99	17:03	>15.0	(3)
	11/17/99	11:28	1.1	(2)
	11/17/99	17:40	>15.0	(3)
	1/11/00	NA	5.2	(2)
	4/6/01	11:25	0.53	(4)
	7/25/01	11:25	2.0	(4)
	11/20/01	13:00	4.6	(4)

Notes:

2

>15 = Above indicated equipment quantification maximum

(1) = Baseline measurement taken before initial introduction of enriched water

(2) = Measured prior to enriched water introduction, and water-level measurement and well purging

(3) = Measured after enriched water introduction

(4) = Measured prior to water-level measurement and well purging

mg/L = milligrams per liter

NA = information not available

* Concentration exceeds DO saturation concentration.



167.002.01.006 1670200006_4QTR-2001.dwg

JOB NUMBER

DATE



INDOOR SERVICE AREA SERVICE SHOW ¢ PARKING MW-3 ROOM Fuel Dispenser đ Pad MW-2 TW-7 **∲**T₩-5 ٦ **MW-1** Former Gasoline Underground Storage Tank, Location TW-4 4 **TW-1** - TW-3 Approximate Groundwater Flow Diraction (11/20/01) Former Waste Oil Underground Storage Tank 🖕 TW-6 Location PARKING 🕈 TW-2 LERNON STREET 60

HARRISON STREET

SCALE IN FEET



Site Plan and Well Location Map Quarterly Groundwater Monitoring Former Cox Cadillac-230 Bay Place Oakland, California

PLATE 2

BAY PLACE





PES Environmental, Inc.

APPENDIX A

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WELL SAMPLING DOCUMENTATION

WELL GAUGING DATA

Project # 011120-50-1 Date 11/20/01 Client Equiva Site 230 Bay Place Oakburd, CA • .

					Thickness	Volume of	·····	· · · · · · · · · · · · · · · · · · ·	r		~
	l	Well	ļ	Depth to	of	Immiscibles			Survey		}
		Size	Sheen /	Immiscible	Immiscible	Removed	Depth to water	Depth to well	Point: TOB		
5	Well ID	(in.)	Odor	Liquid (ft.)	Liguid (ft.)	(ml) [·]	(ft.)	bottom (ft.)	or TOC	DO	1.
	T6-2	2					1.85	9.50 7.80	TOC	10.3	h
il-	TW-4	2					2.33	8.65		15,3	Vi
+	TW-5	2	Oder				2.55	7.60		5.0	
ĸ	TW-6	2	 			· ····································	5,44	7,60		9.4	
K	TW7	2					4.75	19.67		4.6	
*	mw-l	2					332	19.80	7	5.4	
	mw-2	2	· · · · · · · · · · · · · · · · · · ·				5.89	19.61		5.0 9.4	
				<u>.</u>						<u> </u>	
				<u>.</u>						*	
			x venue	ved or	- Forga	USing				· · · ·	
			N co	rFirmed	calibrati	n	<i></i>				
										<u> </u>	
	· · ·										
										·	

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (408) 573-0555

Project #: $OH26 - 50 - 1$ Client: $PEcs$ Sampler: $O'5ryAA$ Start Date: $H/20/A1$ Well I.D.: $TW - 2$ Well Diameter: 2 3 4 6 8 Total Well Depth: TBO Depth to Water: 1.95 $8 - 1$ Before: After: Before: After: Depth to Free Product: Thickness of Free Product (feet): Referenced to: PVC Grade D.O. Meter (if req'd): $HACH$ Purge Method: Watera Sampling Method: Bailer Bailer Disposable Bailer Peristalic Disposable Bailer Peristalic Extraction Pump Dedicated Tubing Dedicated Tubing Electric Submersible Other Other 0.44 0.65 1.00 (Gats.) X 3 5 633 27 5 1.10 Color Turbidity Gals. 25 1.163 1.115 GG.2 5.3 5033 27 5 1.115 GG.2 5.3 5033 27			W	ELL MONIT	ORING DATA	SHEET	
Sampler: $O'D_{VAA}$ Start Date: $1/2o/o/$ Well LD.: $TW = 2$ Well Diameter: 2 3 4 6 8 Total Well Depth: $T&O$ Depth to Water: 1.95 Before: After: Depth to Free Product: Thickness of Free Product (feet): Referenced to: PVC Grade D.O. Meter (if req'd): HACH Parge Method: Disposable Bailer Peristaltic Extraction Pump Decloated Tabing Decloated Tabing Middlekurg Extraction Pump Other Other Decloated Tabing I.ace volume Specified Volumes Calculated Volumes Start Dimese Mathatistic Time Temp (P) pH Cond. Turbidity Gals. Removed Observations III5 66.2 5.3 50.33 2.7 .5 III Image: Active and antipolic in antip	Project #	: 0/112	6-50-	1	Client: PE	\$	
Well I.D.: $T_{00} - 2$ Well Diameter: 2 3 4 6 8 Total Well Depth: T_{00} Depth to Water: $1 \cdot 25^{-}$ Before: After: Before: After: Depth to Free Product: Thickness of Free Product (feet): Referenced to: PVC Grade D.O. Meter (if req'd): Yst HACH Parge Method: Sampling Method: Bailer Bailer Peristaltic Extraction Pump Dedicated Tubing Middleburg Extraction Pump Other: Other: 0.66 1.47 1 Case Volume Specified Volumes Catualated Volume 0.37 Other rodiustret minustret rediustret for the fore rediustret for the fore rediustret for the fore rediustret fore reductions II (14 Gal. 5.1 1/9719 3GG 2S 1115 Gal. 2S 1116 Gal. Gal. 2S 1116 Gal. Gal. 2S 1116 Gal. Gal. Gal.	Sampler:	O'S.	YAN		Start Date: //	Izola	
Total Well Depth:TellDepth to Water: 1.25 Before:After:Before:After:Depth to Free Product:Thickness of Free Product (feet):Referenced to:PvCGradeDugs Method:PvCGradeDisposable BailerVaterraDisposable BailerPerisaliticMiddleburgExtraction PumpElectric SubmersibleOtherOtherOtherCase VolumeSpecified VolumesCalculated VolumeCalculated VolumeTimeTemp (F)pHCond.TurbidityGals. RemovedObservations(114)Gel.Gel.5.1H97936-6.251115Gel.Gel.5.033120Sampling Date:110Gel.Gel.196110Gallons actually evacuated:110Gel.Gel.5.0541116Gel.Gel.5.0541116Gel.Gel.5.0541116Gel.Gel.1.0Calculated VolumeDid well dewater?YesNoGallons actually evacuated:1.0Sampling Time:1120Sampling Date:1120Sampling Date:1120Sampling Time:1120Sampling Time:1120Sampling Time:1120Time <td< td=""><td>Well I.D.</td><td>: Tw</td><td>2</td><td></td><td>Well Diameter</td><td>: (2) 3 4</td><td>68</td></td<>	Well I.D.	: Tw	2		Well Diameter	: (2) 3 4	68
Before: After: Before: After: Depth to Free Product: Thickness of Free Product (feet): Referenced to: Pvc Grade D.O. Meter (if req'd): Pvst HACH Purge Method: File Sampling Method: Bailer Bailer Bailer Purge Method: Bailer Bailer Purge Method: Bailer Bailer Purge Method: Bailer Bailer Purge Method: Bailer Bailer Defocable Bailer Extraction Pump Defocable Bailer Builer Defocable Bailer Extraction Pump Defocable Bailer Extraction Pump Defocable Bailer Muthalite: Viet Diameter Muthalite: Viet Diameter Muthalite: Viet Diameter Muthalite: Viet Office 065 2' 0.64 4' 065 2' 0.16 6' 147 3' 0.37 Other radius' * 0.163 Time Temp (°F) pH Cond. Turbidity Gals. Removed Observations (114 66.1 5.1 4'9'9'7'9' 3'C.6 .2 S 1115 66.2 5.3 50:32 2.7 .5 1116 6'G.1	Total We	ell Depth:	7.80		Depth to Wate	r: 1.85	
Depth to Free Product:Thickness of Free Product (feet):Referenced to:PVCGradeD.O. Meter (if req'd):FrstPurge Method:BailerBailerBailerBailerDisposable BailerDisposable BailerPeristalticDisposable BailerBailerDisposable BailerPeristalticDisposable BailerDisposable BailerDisposable BailerMiddleburgExtraction PumpOtherOtherDedicated TubingI Case VolumeSpecified VolumesCalculated VolumeViel DiameterMultiplierTimeTemp (°F)pHCond.TurbidityGals. RemovedObservations(114)GG.15.1H°T93G.6(25)1115115GG25.3503327.51116116GGAGal50621961.0Column Shrund1116GGAGalons actually evacuated:1.01.0Sampling Time:1120Sampling Date:11/20/G.1Sampling Time:1120Sampling Date:11/20/G.1Sample 1.D.:ThreeTH*DOther:Equipment Blank 1.D.:TheTH*DOther:D.O. (if req'd):Pre-purgeSampling Time; Post-purge:"s'''	Before:		After:		Before:		After:
Referenced to: PVC Grade D.O. Meter (if req'd): FSI HACH Purge Method: Sampling Method: Bailer Bailer Waterra Disposable Bailer Bailer Disposable Bailer Bailer Disposable Bailer Extraction Pump Dedicated Tubing Image: Disposable Bailer Extraction Pump Dedicated Tubing Other: Dedicated Tubing Image: Calculated Volumes Calculated Volumes Calculated Volume Velt Diagester Method: Method: Image: Calculated Volumes Calculated Volumes Calculated Volume Velt Diagester Method: Method: Time Temp (°F) pH Cond. Turbidity Gals. Removed Observations [[14] 466.1 5.1 H°T ° 36.6 ,25 1115 66.2 5.8 503.3 27 ,5 [116 66.2 5.8 503.3 27 ,5 110 dramotically Did well dewater? Yes No Gallons actually evacuated: 1.0 Sampling Date: 11/20/c.1 Sampling Time: 1120 Sampling Date: 11/20/c.1	Depth to	Free Produ	ict:		Thickness of F	ree Product (fe	et):
Purge Method: Sampling Method: Bailer Disposable Bailer Peristaltic Disposable Bailer Disposable Bailer Peristaltic Disposable Bailer Middleburg Extraction Pump Dedicated Tubing Electric Submersible Other Other I Case Volume Specified Volumes Calculated Volume Well Diameter Multiplier Time Temp (°F) pH Cond. Turbidity Gals. Removed Observations [114] GG.1 5.1 4979 3G.6 .2 S 1115 [115] GG.2 5.8 5033 27 .5 1116 [116] GG.1 5.1 4979 3G.6 .2 S 1116 [116] GG.2 5.8 5033 27 .5 1116 [116] GG.2 5.8 5033 27 .5 1116 [116] GG.2 5.8 5033 27 .5 .6 [116] GG.2 5.8 5033 27 .5 .6 .6 .1.0 Sa	Referenc	ed to:	PVC)	Grade	D.O. Meter (if	req'd):	Rysi HACH
$\frac{1}{10} (Gals.) \times \frac{3}{Specified Volumes} = \frac{3}{Calculated Volume} Gals.$ $\frac{1}{2} = \frac{0.04}{0.16} = \frac{4}{6} = \frac{0.64}{1.47}$ $\frac{1}{10} = \frac{1}{0.37} = \frac{0.04}{0.16} = \frac{4}{6} = \frac{0.64}{1.47}$ $\frac{1}{10} = \frac{1}{0.37} = \frac{0.04}{0.16} = \frac{4}{6} = \frac{0.64}{1.47}$ $\frac{1}{10} = \frac{1}{0.16} = \frac{1}{6} = \frac{1}{10}$ $\frac{1}{10} = \frac{1}{10} = $	Purge Method: Bailer Waterra Disposable Bailer Peristaltic Middleburg Extraction Pump Electric Submersible Other			Sampling Method: Other:	Bailer Disposable Bailer Extraction Port Dedicated Tubing	Diameter Multiplier	
TimeTemp (°F)pHCond.TurbidityGals. RemovedObservations (1.14) (46.1) 5.1 4979 36.6 $.25$ 1.15 66.2 5.8 5033 27 $.5$ (1.16) 66.2 5.8 5033 27 $.5$ (1.16) 66.2 6.0 5064 196 1.0 Column Shrouth (1.16) 66.2 6.0 5064 196 1.0 $dvanneticallyDid well dewater?YesNoGallons actually evacuated:1.0Sampling Time:1120Sampling Date:11/20/0.1Sample I.D.:Tho-2Laboratory:EntruchAnalyzed for:FH.9STEXTTBETPH-DD.O. (if req'd):Ter-purge:567699944148Post-purge:100.01000000000000000000000000000000000000$	/iD 1 Case Volur	_(Gals.) X ne Sp	<u>3</u> ecified Volum	$\frac{1}{1} = \frac{3}{2}$	_Gals. 3"	0.04 4" 0.16 6" 0.37 Othe	0.65 1.47 Fradius ² * 0.163
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	((14	66.1	5.1	4979	36.6	.25	
116 66.1 6.0 5062 196 1.0 Column Shrund Did well dewater? Yes No Gallons actually evacuated: 1.0 Sampling Time: 1120 Sampling Date: 11/20/01 Sample I.D.: Tho-2 Laboratory: Entruct Analyzed for: FH-9 BTEX MTBE TPH-D Other: Duplicate 1.D.: Time Duplicate 1.D.: Analyzed for: TPH-6 BTEX MTBE TPH-D Other: Duplicate 1.D.: Time Duplicate 1.D.: Analyzed for: TPH-6 BTEX MTBE TPH-D Other: Duplicate 1.D.: Time Duplicate 1.D.: Analyzed for: TPH-6 BTEX MTBE TPH-D Other: Time Duplicate 1.D.: Time Time D.O. (if req'd): Pre-purge: Set sum of the sum	1115	66.2	5,8	5033	27	,5	
Did well dewater? Yes No Gallons actually evacuated: 1.0 Sampling Time: 1120 Sampling Date: 11/20/01 Sample I.D.: TM-2 Laboratory: Entruct Analyzed for: IFH-0 BTEX MTBE TPH-D Other: Equipment Blank I.D.: Time Duplicate I.D.: MTBE MTBE TPH-D O.O. (if req'd): If re-purge: Surger	(116	66.1	6.0	5064	196	1.0	Column Shrunk
Did well dewater? Yes No Gallons actually evacuated: 1.0 Sampling Time: 1120 Sampling Date: 11/20/01 Sample I.D.: TW-Z Laboratory: Entruct Analyzed for: TH-0 STEX STEE TPH-D Equipment Blank I.D.: Time Duplicate I.D.: Analyzed for: TH-G BTEX MTBE TPH-D Other: D.O. (if req'd): Pre-purge: Surgary ML: Let Post-purge: Img/L							dvamatically
Did well dewater? Yes No Gallons actually evacuated: 1.0 Sampling Time: 1120 Sampling Date: 11/20/01 Sample I.D.: TW-Z Laboratory: Enterthe Analyzed for: PH-0 BTEX PTH-D Other: Equipment Blank I.D.: Time Duplicate 1.D.: Image: Constrained and the second and t							, ,
Sampling Time: 1120 Sampling Date: 11/20/01 Sample I.D.: TW-Z Laboratory: Entruch Analyzed for: TH-9 BTEX MTBE TPH-D Other: Equipment Blank I.D.: Time Duplicate I.D.: Image: Duplicate I.D.: Analyzed for: TPH-G BTEX MTBE TPH-D Other: D.O. (if req'd): Pre-purge: Series and the fost-purge: Image: Dest-purge: Image: Dest-purge: Image: Dest-purge:	Did well	dewater?	Yes	No	Gallons actuall	y evacuated:	1.0
Sample I.D.: TW-2 Laboratory: Entruct Analyzed for: TFH-0 BTEX MTBE TPH-D Other: Equipment Blank I.D.: Time Duplicate I.D.: Image: Duplicate I.D.: Analyzed for: TPH-G BTEX MTBE TPH-D Other: D.O. (if req'd): Pre-purge: Set gauge for gauge f	Sampling	g Time:	120		Sampling Date: 11/20/01		
Analyzed for: TPH-O BTEX MTBE TPH-D Other: Equipment Blank I.D.: THE Duplicate I.D.: Analyzed for: TPH-G BTEX MTBE TPH-D Other: D.O. (if req'd): Pre-purge: Surgary ML sheet Post-purge: Mg/L	Sample I.D.: TN-2				Laboratory: Entrech		
Equipment Blank I.D.: Time Duplicate I.D.: Analyzed for: TPH-G BTEX MTBE TPH-D Other: D.O. (if req'd): Pre-purge: Serriging Letter Post-purge: Mg/L	Analyzed for: TPH-O BTEX TTBE TPH-D				Other:		
Analyzed for: TPH-G BTEX MTBE TPH-D Other: D.O. (if req'd): Pre-purge: Sergargard she Post-purge:	Equipment Blank I.D.: 000 Time				Duplicate I.D.:		
D.O. (if req'd): Pre-purge: Ser gaugand shet Post-purge:	Analyzed	l for: TPH-	G BTEX	MTBE TPH-D	Other:		
	D.O. (if 1	req'd):		Pre-purge:	Sergangandes	Let Post-purge:	^{mg} /L
ORP (if req'd): Pre-purge: mV Post-purge: mV	ORP (if 1	req'd):	/	Pre-purge:	mV	Post-purge:	mV

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·	WELL MONIT	FORING DAT	A SHEET			
Project #: OLL20-SO-	1	Client: PE	Client: PES			
Sampler: O'Bryan		Start Date:	1/20/01			
Well I.D.: TW-6		Well Diamete	r(2) 3 4	6 8		
Total Well Depth: 7.60)	Depth to Wate	er: 5_44			
Before: After:	-	Before:		After:		
Depth to Free Product:)	Thickness of I	Free Product (fe	et):		
Referenced to: PVC	Grade	D.O. Meter (if	req'd):	YSI HACH		
Purge Method: Bailer Disposable Bailer Middleburg Electric Submersible	Waterra Peristaltic Extraction Pump Other	Sampling Method	Bailer Disposable Bailer Extraction Port Dedicated Tubing	Diameter Multiplier		
Gals.) X <u>3</u> <u>1 Case Volume</u> Specified Vo	$= \underline{1}$	Gals. 2" 2" 3"	0.04 4" 0.16 6" .0.37 Othe	0.65 1.47 er radius ² * 0.163		
Time Temp (°F) pH	Cond.	Turbidity	Gals. Removed	Observations		
1144 680 7.4	532	7200	.25			
1145 68.1 7.2	502	7200	.5			
146 68.2 7.1	473	7200	1.0			
Did well dewater? Yes	No	Gallons actuall	y evacuated:	10		
Sampling Time: 1150		Sampling Date: 1/22/04				
Sample I.D.: TW-6	\sim	Laboratory: Enterly				
Analyzed for: (TPH-G) (BTEX	MTBE TPH-D	Other:				
Equipment Blank I.D.: Time Duplicate I.D.:						
Analyzed for: TPH-G BTEX MTBE TPH-D Other:						
D.O. (if req'd):	Pre-purge:	/ ^{mg} /L	Post-purge:	mg/L		
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV		

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· WELL MONIT	ORING DATA SHEET		
Project #: 011120-50-1	Client: PES		
Sampler: O'Brygg	Start Date: 11/20/01		
Well I.D.: TW-7	Well Diameter: (2)3 4 6 8		
Total Well Depth: 19.67 9.50	Depth to Water: 4.75		
Before: After:	Before: After:		
Depth to Free Product:	Thickness of Free Product (feet):		
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH		
Purge Method; Bailer Waterra Disposable Bailer Peristaltic Mtddleborg Extraction Pump Electric Submersible Other	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing Other: Well Diameter Multiplier Well Diameter Multiplier		
$\frac{2}{1 \text{ Case Volume}} \times \frac{3}{3 \text{ Specified Volumes}} = \frac{2.2}{2 \text{ Calculated Volumes}}$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		
Time Temp (°F) pH Cond.	Turbidity Gals. Removed Observations		
1308 Well dewitched. 250	llous removed		
1356	72.25		
DTW=5.67			
Did well dewater? Yes No	Gallons actually evacuated: 2.25		
Sampling Time: 356	Sampling Date: $1(20/01)$		
Sample I.D.: TW-7	Laboratory: Exteria		
Analyzed for: TPH-C BTE MTBE TPH-D	Other:		
Equipment Blank I.D.:	Duplicate I.D.:		
Analyzed for: TPH-G BTEX MTBE TPH-D	Other:		
D.O. (if req'd): Pre-purge:	^{mg} / _L Post-purge: ^{mg} / _L		
ORP (if req'd): ^D re-purge:	mV Post-purge: mV		

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WELL MONITORING DATA SHEET

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Project #: 011120-50-1	Client: PES
Sampler: O'Britan	Start Date: 11/20/01
Well I.D.: MW-/	Well Diameter: 2 3 4 6 8
Total Well Depth: 19.80	Depth to Water: 3.32
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
Purge Method: Bailer Waterra Disposable Bailer Peristaltic Middleburg Extraction Pump Electric Submersible Other	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing Other: Well Diameter Multiplier Well Diameter Multiplier 1" 0.04 4" 0.65
$\frac{2.6}{1 \text{ Case Volume}} (\text{Gals.}) \times \underbrace{Z}_{\text{Specified Volumes}} = \underbrace{7.B}_{\text{Calculated V}}$	Gals. 2" 0.16 6" 1.47 olume 3" 0.37 Other radius ² * 0.163
Time Temp (°F) pH Cond.	Turbidity Gals. Removed Observations
1232 69.2 7.0 2278	7200 2.75 Grey/Oder
1235 69.2 7.1 2654	>20 5.5
1238 69.5 6.8 3084	7200 8
Did well dewater? Yes No	Gallons actually evacuated:
Sampling Time: 12,49	Sampling Date: 11/20/01
Sample I.D.: MW-	Laboratory: Entech
Analyzed for: TPH-G BTEX MTBE TPH-D	Other:
Equipment Blank I.D.:	Duplicate I.D.:
Analyzed for: TPH-G BTEX MTBE TPH-D	Other:
D.O. (if req'd): Pre-purge	:: ^{mg} / _L Post-purge: ^{mg} / _L
ORP (if req'd): Pre-purge	mV Post-purge: mV

Riaina Tach Carviage Inc. 1680 Romare Ava. San Iaca CA 06142 (400) 573 0555

· · · · · · · · · · · · · · · · · · ·	VELL MONIT	ORING DATA	A SHEET					
Project #: 01/120-50-1		Client: Er	tech					
Sampler: O'Paryon	<u> </u>	Start Date: (120/01					
Well I.D.: MU-2		Well Diameter	2 3 4	6 8				
Total Well Depth: 19.6	7	Depth to Water: 5.89						
Before: After:	•. 	Before:		After:				
Depth to Free Product:		Thickness of F	Free Product (fee	et):				
Referenced to:	Grade	D.O. Meter (if	req'd):	YSI НАСН				
Purge Method: Bailer Disposable Bailer Middleburg Electric Submersible	Waterra Peristaltic Extraction Pump Other	Sampling Method: Other:	Bailer Disposable Bailer Extraction Port Dedicated Tubing er Multiplier Well	Diameter Multiplier				
$\frac{2.2}{1 \text{ Case Volume}} (\text{Gals.}) \times \frac{3}{\text{Specified Volume}}$	$= \underline{G} \cdot \underline{Q}$ nes Calculated Vo	_Gals. 3"	0.04 4" 0.16 6" 0.37 Othe	0.65 1.47 r radius ² * 0.163				
Time Temp (°F) pH	Cond.	Turbidity	Gals. Removed	Observations				
1330 68.7 7.1	2371	\$200	2.25	 				
1332 69.2 6.8	2059	7200	4.5					
1335 69.6 6.7	2005	>200	6.75					
Did well dewater? Yes	No	Gallons actuall	y evacuated: 6	.75				
Sampling Time: (338		Sampling Date	11/20/01	·				
Sample I.D.: MW-2		Laboratory: F	Entech					
Analyzed for: TPH-G BTEX	MTBE TPH-D	Other:						
Equipment Blank I.D.:	Time	Duplicate I.D.:						
Analyzed for: TPH-G BTEX	MTBE TPH-D	Other:						
D.O. (if req'd):	Pre-purge:	^{mg} /L	Post-purge:	^{mg} /L				
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV				

PES Environmental, Inc.

APPENDIX B

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LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

December 02, 2001

Francois Bush PES Environmental, Inc. 1682 Novato Boulevard, Suite 100 Novato, CA 94947

Order:	27860	Date Collected:	11/20/01
Project Name:		Date Received:	11/21/01
Project Number:	BTS# 011120-SO-1	P.O. Number:	BTS# 011120-SO-1
Project Notes:	MTBE confirmations by EPA 8260B to follow	·.	

On November 21, 2001, samples were received under documentented chain of custody. Results for the following analyses are attached:

<u>Matrix</u> <u>Test</u> Liquid Gas/BTEX/MTBE

Method EPA 8015 MOD. (Purgeable) EPA 8020

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-588-0200.

Sincerely,

att

Michelle L. Anderson Laboratory Director

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

PES Environmental, Inc. 1682 Novato Boulevard, Suite 100 Novato, CA 94947 Attn: Francois Bush Date: 12/02/01 Date Received: 11/21/01 Project Name: Project Number: BTS# 011120-SO-1 P.O. Number: BTS# 011120-SO-1 Sampled By: Blaine Tech

Certified Analytical Report

Order ID: 2	27860	Lab Sa	mple II): 2 786	0-001		Client Sam	ple ID: MW	7-1	
Sample Time:	12:42 PM	Sam	ple Dat	e: 11/20)/01		3	Matrix: Liq	uid	
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Anałysis Date	QC Batch ID	Method
Benzene	2100		200	0.5	100	μg/L	N/A	11/28/01	WGC42237	EPA 8020
Toluene	890		200	0.5	100	μg/L	N/A	11/28/01	WGC42237	EPA 8020
Ethyl Benzene	2500		200	0.5	100	μg/L	N/A	11/28/01	WGC42237	EPA 8020
Xylenes, Total	3600		200	0.5	100	μg/L	N/A	11/28/01	WGC42237	EPA 8020
-					Surroga	ite	Surr	ogate Recovery	Contr	rol Limits (%)
				82	a-Trifluoro	toluene		97	65	5 - 135
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		200	5	1000	μg/L	N/A	11/28/01	WGC42237	EPA 8020
					Surroga	ite	Surr	ogate Recovery	. Conti	rol Limits (%)
				<u>93</u>	a-Trifluoro	toluene		97	6:	5 - 135
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	33000		200	50	10000	μg/L	N/A	11/28/01	WGC42237	EPA 8015 MOD. (Purgeable)
					Surroga	ite	Surr	ogate Recovery	· Conti	rol Limits (%)
				23	a-Trifluoro	toluene		96	6	5 - 135

DF = Dilution Factor

ND = Not Detected

DLR = Detection Limit Reported

PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

PES Environmental, Inc. 1682 Novato Boulevard, Suite 100 Novato, CA 94947 Attn: Francois Bush Date: 12/02/01 Date Received: 11/21/01 Project Name: Project Number: BTS# 011120-SO-1 P.O. Number: BTS# 011120-SO-1 Sampled By: Blaine Tech

Certified Analytical Report

Order ID: 27860		Lab Sa	mple ID	: 2786	0-002		Client Sam	ple ID: MW	/- 2	
Sample Time: 1:38 PM	1	Sam	ple Date	: 11/20	0/01		1	Matrix: Liqu	uid	
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	870		200	0.5	100	μg/L	N/A	11/29/01	WGC42240	EPA 8020
Toluene	ND		200	0.5	100	μg/L	N/A	11/29/01	WGC42240	EPA 8020
Ethyl Benzene	ND		200	0.5	100	μg/L	N/A	11/29/01	WGC42240	EPA 8020
Xylenes, Total	200		200	0.5	100	μg/L	N/A	11/29/01	WGC42240	EPA 8020
					Surrogs	ıte	Surr	ogate Recovery	Contr	ol Limits (%)
				aa	a-Trifluoro	toluene		98	65	- 135
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	8700		200	5	1000	µg/L	N/A	11/29/01	WGC42240	EPA 8020
					Surroga	ite	Surr	ogate Recovery	- Contr	ol Limits (%)
				aa	a-Trifluoro	toluene		98	65	- 135
Рагатет	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	12000	x	200	50	10000	μg/L	N/A	11/29/01	WGC42240	EPA 8015 MOD. (Purgeable)
					Surrog	ate	Surr	ogate Recovery	- Contr	ol Limits (%)
				aa	a-Trifluoro	toluene		100	65	5 - 135

DF = Dilution Factor

ND = Not Detected

DLR = Detection Limit Reported

PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

PES Environmental, Inc. 1682 Novato Boulevard, Suite 100 Novato, CA 94947 Attn: Francois Bush Date: 12/02/01 Date Received: 11/21/01 Project Name: Project Number: BTS# 011120-SO-1 P.O. Number: BTS# 011120-SO-1 Sampled By: Blaine Tech

Certified Analytical Report

Order ID:	27860	Lab Sa	mple ID:	2786	0-003		Client Sam	ple ID: TW	-2	
Sample Time:	11:20 AM	Sam	ple Date:	11/20	0/01]	Matrix: Liqu	uid	
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.5	0.5	μg/L	N/A	11/28/01	WGC42237	EPA 8020
Toluene	ND		1	0.5	0.5	μg/L	N/A	11/28/01	WGC42237	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	μg/L	N/A	11/28/01	WGC42237	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	μg/L	N/A	11/28/01	WGC42237	EPA 8020
•					Surroga	ite	Surr	ogate Recovery	Conti	rol Limits (%)
				83	a-Trifluoro	toluene		96	6:	5 - 135
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	5	5	μg/L	N/A	11/28/01	WGC42237	EPA 8020
					Surroga	ate	Surr	ogate Recovery	Cont	rol Limits (%)
				aa	a-Trifluoro	toluene		96	6	5 - 135
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	50	50	μ g/L	N/A	11/28/01	WGC42237	EPA 8015 MOD. (Purgeable)
					Surroga	ate	Surr	ogate Recovery	Cont	rol Limits (%)
				aa	a-Trifluoro	otoluene		98	6	5 - 135

DF = Dilution Factor

ND = Not Detected

DLR = Detection Limit Reported

PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

PES Environmental, Inc. 1682 Novato Boulevard, Suite 100 Novato, CA 94947 Attn: Francois Bush Date: 12/02/01 Date Received: 11/21/01 Project Name: Project Number: BTS# 011120-SO-1 P.O. Number: BTS# 011120-SO-1 Sampled By: Blaine Tech

Certified Analytical Report

Order ID:	27860	Lab Sa	mple ID:	2786	0-004		Client Sam	ple ID: TW	-6	
Sample Time:	11:50 AM	Sam	ple Date:	11/20	0/01		1	Matrix: Liq	uid	
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	 Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.5	0.5	μg/L	N/A	11/28/01	WGC42237	EPA 8020
Toluene	ND		1	0.5	0.5	μg/L	N/A	11/28/01	WGC42237	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	μg/L	N/A	11/28/01	WGC42237	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	μg/L	N/A	11/28/01	WGC42237	EPA 8020
•					Surroga	ıte	Surr	ogate Recovery	Contr	ol Limits (%)
				aa	a-Trifluoro	toluene		98	65	5 - 135
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	5	5	μg/L	N/A	11/28/01	WGC42237	EPA 8020
······					Surroga	ate	Surr	ogate Recovery	Contr	ol Limits (%)
				aa	a-Trifluoro	toluene		98	65	5 - 135
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		l	50	50	μg/L	N/A	11/28/01	WGC42237	EPA 8015 MOD. (Purgeable)
					Surroga	ate	Surr	ogate Recovery	Contr	ol Limits (%)
				aa	a-Trifluoro	otoluene		98	65	5 - 135

DF = Dilution Factor

ND = Not Detected

DLR = Detection Limit Reported

PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

PES Environmental, Inc. 1682 Novato Boulevard, Suite 100 Novato, CA 94947 Attn: Francois Bush Date: 12/02/01 Date Received: 11/21/01 Project Name: Project Number: BTS# 011120-SO-1 P.O. Number: BTS# 011120-SO-1 Sampled By: Blaine Tech

Certified Analytical Report

Order ID:	27860		Lab Sa	mple ID:	2786	0-005		Client Sam	ple ID: TW	-7	
Sample Time:	1:56 PM		Sam	ple Date:	11/20	0/01		1	Matrix: Liqu	bid	
Parameter		Result	Flag	DF	PQL	DLR	Uaits	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene		6400		100	0.5	50	μg/L	N/A	11/28/01	WGC42237	EPA 8020
Toluene		1100		100	0.5	50	μg/L	N/A	11/28/01	WGC42237	EPA 8020
Ethyl Benzene		1000		100	0.5	50	µg/L	N/A	11/28/01	WGC42237	EPA 8020
Xylenes, Total		2400		100	0.5	50	μg/L	N/A	11/28/01	WGC42237	EPA 8020
•						Surroga	ite	Surr	ogate Recovery	Contr	ol Limits (%)
					aa	a-Trifluoro	toluene		99	65	- 135
Parameter		Result	Flag	DF	PQL	DLR	Units	Extraction Date	Апalysis Date	QC Batch ID	Method
Methyl-t-hutyl Ether		1600		100	5	500	μg/L	N/A	11/28/01	WGC42237	EPA 8020
						Surroga	ite	Surr	ogate Recovery	Contr	ol Limits (%)
					a a	a-Trifluoro	toluene		99	65	5 - 135
Parameter		Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline		26000		100	50	5000	µg/L	N/A	11/28/01	WGC42237	EPA 8015 MOD. (Purgeable)
						Surroga	ate	Surr	ogate Recovery	Contr	ol Limits (%)
					23	a-Trifluoro	toluene		97	65	5 - 135

DF = Dilution Factor

ND = Not Detected

DLR = Detection Limit Reported

PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Loak Michelle L. Anderson, Laboratory Director

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Quality Control Results Summary

QC Batch #:	WMS11287B	
Matrix:	Liquid	

Units: µg/L Date Analyzed: 12/03/01

Parameter	Method	Blank Result	Spike Sample ID	Spike Amount	Sample Result	Spike Result	QC Type	% Recovery	RPD	RPD Limits	Recovery Limits
Test: EPA 8	260B	-									
1,1-Dichloroethene	EPA 8260B	ND		20		17	LCS	85.0			65.0 - 135.0
Benzene	EPA 8260B	ND		20		20.4	LCS	102.0			65.0 - 135.0
Chlorobenzene	EPA 8260B	ND		20		19.7	LCS	98.5			65.0 - 135.0
Methyl-t-butyl Ether	EPA 8260B	ND		20		22.7	LCS	113.5			56.0 - 135.0
Toluene	EPA 8260B	ND		20		18.6	LCS	93.0			65.0 - 135.0
Trichloroethene	EPA 8260B	ND		20		18.4	LCS	92.0			65.0 - 135.0
	Surrogate		Surrog	ate Recove	гу	Control I	Limits (%)				
	4-Bromofluorob	enzene		104		65 -	135				
	Dibromofluoron	nethane		106		57 -	139				
	Toluene-d8			102		65 -	135			<u></u>	
Test: EPA 8	260B										
1,1-Dichloroethene	EPA 8260B	ND		20		21.2	LCSD	106.0	21.99	25.00	65.0 - 135.0
Benzene	EPA 8260B	ND		20		23	LCSD	115.0	11.98	25.00	65.0 - 135.0
Chlorobenzene	EPA 8260B	ND		20		22	LCSD	110.0	11.03	25.00	65.0 - 135.0
Methyl-t-butyl Ether	EPA 8260B	ND		20		22.4	LCSD	112.0	1.33	25.00	56.0 - 135.0
Toluene	EPA 8260B	ND		20		21.7	LCSD	108.5	15.38	25.00	65.0 - 135.0
Trichloroethene	EPA 8260B	ND		20		22.1	LCSD	110.5	18.27	25.00	65.0 - 135.0
	Surrogate		Surrog	ate Recove	ry	Control I	Limits (%)				
	4-Bromofluorob	enzene		103		65 -	135				
	Dibromofluoron	ethane		104		57 -	139				
	Toluene-d8			100		65 -	135				

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

December 04, 2001

Francois Bush PES Environmental, Inc. 1682 Novato Boulevard, Suite 100 Novato, CA 94947

 Order:
 27860
 Date Collected:
 11/20/01

 Project Name:
 Date Received:
 11/21/01

 Project Number:
 BTS# 011120-SO-1
 P.O. Number:
 BTS# 011120-SO-1

 Project Notes:
 Date Collected:
 11/21/01

On November 21, 2001, samples were received under documentented chain of custody. Results for the following analyses are attached:

<u>Matrix Test</u> Liquid MTBE by EPA 8260B Method EPA 8260B

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-588-0200.

Sincerely,

Madoler

Michelle L. Anderson Laboratory Director

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

PES Environmental, Inc. 1682 Novato Boulevard, Suite 100 Novato, CA 94947 Attn: Francois Bush Date: 12/04/01 Date Received: 11/21/01 Project Name: Project Number: BTS# 011120-SO-1 P.O. Number: BTS# 011120-SO-1 Sampled By: Blaine Tech

Certified Analytical Report

Order ID: 27860		Lab Sam	ple ID:	27860-0	01	Clie	nt Sample ID:	MW-1	
Sample Time: 12:42 PM	ſ	Sample	e Date:	11/20/01	l		Matrix:	Liquid	.
Parameter Methyl-t-butyl Ether	Result ND	Flag	DF 20	PQL 5	DLR 100	Units µg/L	Analysis Date 12/03/01	QC Batch ID WMS11287B	Method EPA 8260B
	Surrogat	e		Surroga	te Recover	y	Control Limits ((%)	
	4-Bromot	fluorobenzene	•		99		65 - 135		
	Dibromot	luoromethan	e		105		57 - 139		
	Toluene-c	18			97		65 - 135		

DF = Dilution Factor

ND = Not Detected

DLR = Detection Limit Reported

PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director Environmental Analysis Since 1983

		1	680 RO	GERS AVEN	IUE		CON	DUCT	ANAL	YSIS T	O DET	ECT	LAB Entech DHS #
BLAINE TECH SERVICES,	SAN	JOSE, C	FA) PHONE	(1408) 573-7 5 (408) 573-7 5 (408) 573-0	105 771 555		2						ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
CLIENT PES	BTS#,	0112	<u>20-5</u>	50-1	UTAINERS								
230 B Oakla	ay Place		 	NTAINERS		- Gas (8015)	X (8020)	3E (8020) *					Invoice and Report to : PES Attn: ディーン こう ち Bush * Confirm MTBE hits by EPA 8260
AMPLE I.D. DATE	TIME	S= SO	TOTAL		0 = 0 0	HdT	BTE	(MTE					ADD'L INFORMATION STATUS CONDITION LAB SAMPLE #
<u>AW-1 [1/20/1</u>	<u>x 1242</u> 1330	$\frac{\omega}{1}$	위	HCLUOF	¥		X	X					002
W-2	1120			-		×	\times	$\tilde{\times}$				<u>- </u>	003
W-6	1150					\times	\times	\times					004
<u>rw-7</u>	<u> </u>	*		V		×	K	\times					005 01 NOV 21
<u></u>													
SAMPLING DATE	TIME	SAMPLIN PERFOR	IG MED(B)	Ja Del		The second							RESULTS NEEDED NO LATER THAN Per Client
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RELEASED BY	///			<u> </u>		E TE		TIME			RECE	IVED B	BY Muly K - 11.21-01 1740 DATE TIME
				······································	DA		NT.	TIME	SENT		COOL	ER #	